ᐅᖃᓕᒫᒐᕐᐳᔭᐃᑦ ᐃᓄᓕᖕᒋᓐᓂᒃ ᓇᓄᓇᐃᒃᑯᑕᐃᑦ ᑖᒃᑯᓂ ᓄᓇᕗᒻᒥ ᐆᒪᔪᓕᕆᔨᕐᔪᐊᒃᑯᑦ ᑲᑎᒪᔨᖕᒋᓐᓂ ᓇᖕᒥᓂᖅ ᖃᐃᓯᒪᓗᑎᒃ ᐃᓅᓕᒫᓂᒃ ᓈᓚᒋᐊᖅᑐᕐᕕᖃᕐᓂᖕᒋᓐᓂᒃ ᐃᓱᒪᒃᓴᖅᓯᐅᕈᑕᐅᓂᖕᒋᓐᓄᑦ ᓄᓇᕗᑦ ᒐᕙᒪᐃᑦ ᑐᒃᓯᕋᐅᑎᒋᔭᖕᒋᑦ ᐱᒋᐊᖅᑎᑕᐅᕐᑯᔨᓂᖕᒋᑦ ᐋᕿᒋᐊᖅᑕᐅᕐᑯᔨᓂᖅ ᑕᒪᐃᓐᓂᒃ ᑲᑎᙵᓱᒋᑦ ᐊᖑᓇᓱᒻᕕᐅᔪᓐᓇᕐᓂᖕᒋᑦ ᕐᑯᕐᓗᖅᑑᑉ-ᑲᓇᖕᓇᖕᒐᓂ ᑐᒃᑐᖕᒋᓐᓂᒃ ᒫᓴᐅᔪᖅ ᐊᒥᓱᓂᓕᖕᓂᒃ 340-ᖕᒋᓐᓃᑦᑐᓂᒃ ᐋᕿᒃᑕᐅᓗᑎᒃ 107-ᓄᑦ ᐊᒻᒪᓗ ᐋᕿᓗᑎᒃ ᐸᖕᓃᓐᓇᕐᓂᒃ ᑐᒃᑕᐅᔫᓐᓇᕐᑯᔨᓂᖅ ᑰᑕᑰᖕᒐᓂᐊᖕᒋᑦᑑᒐᓗᐊᓂᒃ ᒪᓕᒐᖃᕐᓗᑎᒃ

ᑲᑎᒪᔾᔪᑎᖏᑦ ᐅᑯᐊ ᓄᓇᕗᒻᒥ ᐆᒪᔪᓕᕆᔨᕐᔪᐊᑦ ᑲᑎᒪᔨᖏᑦ ᑭᒃᑯᓕᒫᓂᒃ ᓈᓚᖅᑎᓯᑎᓪᓗᒋᑦ ᑲᒪᒋᓗᒋᑦ ᒐᕙᒪᖓᑦ ᓄᓇᕗᒻᒥ ᑐᓯᕋᐅᑎᖓᑦ ᓄᑖᙳᓇᐊᖅᓗᒋᑦ ᑲᑎᖅᑐᒋᑦ ᐊᔪᙱᑕᑦ ᐊᙳᓇᓱᒃᑕᐅᓂᖅᒥᒃ ᐅᕙᙵᑦ 340 ᐅᕗᖓ 107 ᐊᒻᒪᓗ ᐋᖅᑭᓪᓗᒋᑦ ᐊᙳᑏᓐᓇᖅᓂᒃ ᐊᙳᓇᓱᓐᓂᖅᔫᑦ ᒪᓕᒐᑦ CHᐃᖅᐸᒃ ᑲᓇᓐᓇᖓᓂ ᑐᒃᑐᓂᒃ		
ᐅᓪᓗᖅ 1: ᒫᑦᓯ 02, 2020		
ᖃᑦᓯᒨᖅᓂᖓ	ᓇᓗᓇᐃᔭᐅᑦ	ᐱᕕᖓᖅ
9:00 – 9:20 a.m.	ᒪᑐᐃᖅᓯᒍᑦ ᑐᓯᐅᑦ ᐊᒻᒪᓗ ᐃᑦᓯᕙᐅᑕᐅᑉ ᒪᑐᐃᖅᑎᓪᓗᒍ ᐅᖃᐅᓯᖏᑦ ᐊᒻᒪᓗ ᐆᒪᔪᓕᕆᔨᕐᔪᐊᑦ ᕿᒥᒡᕈᓂᖏᑦ ᐊᒻᒪᓗ ᐊᖏᕐᓂᖏᑦ ᓈᓚᖅᑎᓯᓂᕐᒥ ᑲᑎᒪᔾᔪᑎᖕᓂᒃ	20 ᒥᓂᑦ
9:20 – 9:35 a.m.	ᐆᒪᔪᓕᕆᔨᕐᔪᐊᓂ ᒪᓕᒐᓕᕆᔨᐅᑉ ᕿᒥᒡᕈᒍᑎᖏᑦ ᓈᓚᖅᑎᓯᓂᐅᑉ ᑲᒪᒋᔭᐅᓂᖓᓂᒃ, ᒪᓕᒐᑦ, ᐊᒻᒪᓗ ᐃᓂᓕᐅᕈᑏᑦ	15 ᒥᓂᑦ
9:35 – 10:05 a.m.	ᒐᕙᒪᒃᑯᑦ ᓄᓇᕗᒻᒥ–ᐱᓕᕆᖁᑎᖓᑦ ᐊᕙᑎᓕᕆᔾᑦ ᐅᓂᒃᑳᖏᑦ ᐅᑯᓂᖓ *ᑐᓯᕋᐅᑦ ᐃᓱᒪᓕᐅᕈᒻᒥᒃ*	30 ᒥᓂᑦ
10:05 – 10:20 a.m.	ᓂᐅᖃᖅᓇᖅ	15 ᒥᓂᑦ
10:20 – 12:00 p.m.	ᐊᐱᖅᑯᑏᑦ ᐊᒻᒪᓗ ᐅᖃᐅᓯᖕᖏᑦ ᐱᓪᓗᒋᑦ ᒐᕙᒪᒃᑯᑦ ᓄᓇᕗᒻᒥ *ᑐᓯᕋᐅᑦ ᐃᓱᒪᓕᐅᕈᒻᒥᒃ*	1 ᐃᑲᕐᕋᖅ: 40 ᒥᓂᑦ
12:00 – 1:15 p.m.	ᐅᓪᓗᑯᕐᒥᓴᖅᓇᖅ	1 ᐃᑲᕐᕋᖅ: 15 ᒥᓂᑦ
1:15 – 2:15 p.m.	ᐊᐱᖅᑯᑏᑦ ᐊᒻᒪᓗ ᐅᖃᐅᓯᖕᖏᑦ ᐱᓪᓗᒋᑦ ᒐᕙᒪᒃᑯᑦ ᓄᓇᕗᒻᒥ *ᑐᓯᕋᐅᑦ ᐃᓱᒪᓕᐅᕈᒻᒥᒃ*	1 ᐃᑲᕐᕋᖅ
2:15 – 2:45 p.m.	ᖁᖅᓗᖅᑐᖅᒥ ᐊᙳᓂᐊᑎᑦ ᑲᑐᔾᔨᖃᑎᒌᖏᑕ ᐅᓂᒃᑳᖏᑦ	30 ᒥᓂᑦ
2:45 – 3:00 p.m.	ᐊᐱᖅᑯᑏᑦ ᐊᒻᒪᓗ ᐅᖃᐅᓯᖕᖏᑦ ᐱᓪᓗᒋᑦ ᖁᖅᓗᖅᑐᖅᒥ ᐊᙳᓂᐊᑎᑦ ᑲᑐᔾᔨᖃᑎᒌᖏᑕ ᐅᓂᒃᑳᖏᑦ	15 ᒥᓂᑦ
3:15 – 3:30 p.m.	ᓂᐅᖃᖅᓇᖅ	15 ᒥᓂᑦ
3:30 – 4:00 p.m.	ᕿᑎᕐᒥᐅᓂ ᐆᒪᔪᓕᕆᔩᑦ ᑲᑎᒪᔨᖏᑕ ᐅᓂᒃᑳᖏᑦ	30 ᒥᓂᑦ
4:00 – 4:15 p.m.	ᐊᐱᖅᑯᑏᑦ ᐊᒻᒪᓗ ᐅᖃᐅᓯᖕᖏᑦ ᐱᓪᓗᒋᑦ ᕿᑎᕐᒥᐅᓂ ᐆᒪᔪᓕᕆᔩᑦ ᑲᑎᒪᔨᖏᑕ ᐅᓂᒃᑳᖏᑦ	15 ᒥᓂᑦ
4:15 – 4:45 p.m.	ᕿᑎᕐᒥᐅᓂ ᐃᓄᐃᑦ ᑲᑐᔾᔨᖃᑎᒌᖏᑕ ᐅᓂᒃᑳᖏᑦ	30 ᒥᓂᑦ
4:45 – 5:00 p.m.	ᐊᐱᖅᑯᑏᑦ ᐊᒻᒪᓗ ᐅᖃᐅᓯᖕᖏᑦ ᐱᓪᓗᒋᑦ ᕿᑎᕐᒥᐅᓂ ᐃᓄᐃᑦ ᑲᑐᔾᔨᖃᑎᒌᖏᑕ ᐅᓂᒃᑳᖏᑦ	15 ᒥᓂᑦ
5:00 – 5:30 p.m.	ᓄᓇᕗᑦ ᑐᙵᕕᒃ ᑎᒥᖓᑕ ᐅᓂᒃᑳᖏᑦ	30 ᒥᓂᑦ
5:30 – 5:45 p.m.	ᐊᐱᖅᑯᑏᑦ ᐊᒻᒪᓗ ᐅᖃᐅᓯᖕᖏᑦ ᐱᓪᓗᒋᑦ ᓄᓇᕗᑦ ᑐᙵᕕᒃ ᑎᒥᖓᑕ ᐅᓂᒃᑳᖏᑦ	15 ᒥᓂᑦ
ᐅᓪᓗᖅ 2: ᒫᑦᓯ 03, 2020		
ᖃᑦᓯᒨᖅᓂᖓ	ᓇᓗᓇᐃᔭᐅᑦ	ᐱᕕᖓᖅ
9:00 – 9:20 a.m.	ᒪᑐᐃᖅᓯᒍᑦ ᑐᓯᐅᑦ, ᐃᑦᓯᕙᐅᑕᐅᑉ ᒪᑐᐃᖅᑎᓪᓗᒍ ᐅᖃᐅᓯᖏᑦ, ᐊᒻᒪᓗ ᐆᒪᔪᓕᕆᔨᕐᔪᐊᑦ ᕿᒥᒡᕈᒍᑎᖏᑦ ᐊᒻᒪᓗ ᐊᖏᕈᑎᖏᑦ ᐅᓪᓗᖅ 2 ᑲᑎᒪᔾᔪᑎᖕᓂᒃ	20 ᒥᓂᑦ
9:20 – 9:50 a.m.	ᒐᕙᒪᒃᑯᑦ ᓄᓇᓯᐊᖅᒥ ᐅᓂᒃᑳᖏᑦ	30 ᒥᓂᑦ

9:50 – 10:05 a.m.	ᐊᐱᖅᑯᑏᑦ ᐊᒻᒪᓗ ᐅᖃᐅᓯᖕᑦ ᐱᓪᓗᒋᑦ ᒐᕙᒪᓐᑯᑦ ᓄᓇᑦᓯᐊᖅᒥ ᐅᓂᒃᑳᖑᑎᑦ	15 ᒥᓇᑦ
10:05 – 10:20 a.m.	ᓂᐅᕐᑲᕐᓇᖅ	15 ᒥᓇᑦ
10:20 – 10:50 a.m.	Wek’èezhìı ᓄᓇᒥᐅᑕᓕᕆᔩᑦ ᑲᑎᒪᔨᖕᒋᑕ ᐅᓂᒃᑳᖑᑎᑦ	30 ᒥᓇᑦ
10:50 – 11:05 a.m.	ᐊᐱᖅᑯᑏᑦ ᐊᒻᒪᓗ ᐅᖃᐅᓯᖕᑦ ᐱᓪᓗᒋᑦ Wek’èezhìı ᓄᓇᒥᐅᑕᓕᕆᔩᑦ ᐅᓂᒃᑳᖑᑎᑦ	15 ᒥᓇᑦ
11:05 – 11:35 a.m.	Délı̨nę Got'ı̨nę ᒐᕙᒪᖕᒋᑕ ᐅᓂᒃᑳᖑᑎᑦ	30 ᒥᓇᑦ
11:35 – 11:50 a.m.	ᐊᐱᖅᑯᑏᑦ ᐊᒻᒪᓗ ᐅᖃᐅᓯᖕᑦ ᐱᓪᓗᒋᑦ Délı̨nę Got'ı̨nę ᒐᕙᒪᖕᒋᑕ ᐅᓂᒃᑳᖑᑎᑦ	15 ᒥᓇᑦ
11:50 – 1:05 p.m.	ᐅᓪᓗᕈᕐᒥᓴᕐᓇᖅ	1 ᐃᑲᕐᕋᖅ: 15 ᒥᓇᑦ
1:05 – 1:35 p.m.	Délı̨nę ʔehdzo Got'ı̨nę's (SRRB) ᐅᓂᒃᑳᖑᑎᑦ	30 ᒥᓇᑦ
1:35 – 1:50 p.m.	ᐊᐱᖅᑯᑏᑦ ᐊᒻᒪᓗ ᐅᖃᐅᓯᖕᑦ ᐱᓪᓗᒋᑦ Délı̨nę ʔehdzo Got'ı̨nę's (SRRB) ᐅᓂᒃᑳᖑᑎᑦ	15 ᒥᓇᑦ
1:50 – 2:50 p.m.	ᐅᓂᒃᑳᑦ/ᐊᐱᖅᑯᑏᑦ ᑭᒃᑯᑐᐃᓐᓇᕐᓂᒃ ᓈᓚᒋᐊᕐᓯᒪᔪᓂᒃ ᐊᒻᒪᓗ ᑭᐅᔾᔪᑏᑦ	1 ᐃᑲᕐᕋᖅ
2:50 – 4:50 p.m.	ᒪᑐᑎᓪᓗᒍ ᐅᖃᐅᓯᖕᑦ ᐆᒪᔪᓕᕆᔩᕐᔪᐊᓂᒃ ᐊᒻᒪᓗ ᓈᓚᑦᑎᑦᓯᓂᕐᒥ ᑲᒪᕐᑲᑕᓂᒃ	2 ᐃᑲᕐᕌᒃ

ᐋᕐᑎᒋᔭᖓ ᐅ

ᐅᑯᐊ ᓄᓇᕗᑦᒥ ᐆᒪᔪᓕᕆᔩᑦᔪᐊᑦ ᑲᑎᒪᔨᖏᑦ (ᐆᒪᔪᓕᕆᔩᑦᔪᐊᑦ) ᑕᑯᓐᓇᖃᑎᒌᓪᓗᑎᒃ ᑭᒃᑯᓕᕕᓂᒃ ᓈᓚᑦᑎᑦᓯᓂᖏᑦ ᑲᒪᒋᓗᒋᑦ ᒐᕙᒪᓐᑯᑦ ᓄᓇᕗᑦᒥᒻ ᑐᑦᓯᕋᐅᑦ ᐃᓱᒪᓕᐅᕈᒻᒥᒃ (ᑐᑦᓯᕋᐅᑦ) ᑲᑎᒪᔨᓄᑦ ᐱᒐᓱᐊᕐᑐᑦ ᐃᓄᐃᓴᓪᓕᒋᐊᕐᓗᒋᑦ ᑲᑎᑦᑐᒋᑦ ᐊᔾᔨᒋᑕᑦ ᐊᖑᓇᓱᒃᑕᐅᓂᕐᒥᒃ ᑕHᐃᕐᐸᒃ ᑲᓇᓐᓇᖓᓂ ᑐᒃᑐᐃᑦ ᐅᕙᖓᑦ 340 ᐅᕗᖓ 107 ᐊᒻᒪᓗ ᐋᕿᓪᓗᒍ ᐊᖑᑏᓐᓇᕐᓂᒃ ᐊᖑᓇᓱᓐᓂᖅ ᐊᖑᓇᓱᓪᓗᓂ ᒪᓕᒐᑦ. ᑐᑦᓯᕋᐅᑦ, ᐃᓚᖃᕐᑐᒍ ᐊᓯᖏᓐᓂᒃ ᑎᑎᖅᑲᓂᒃ ᐱᑕᖃᕈᑕᐅᔪᓂᒃ ᓈᒻᒪᓂᕐᐹᓂᒃ ᐊᑐᐃᓐᓇᕐᓂᒃ ᑐᓴᕋᑦᓴᓂᒃ ᐅᓪᓗᒥᒧᑦ, ᐊᑐᐃᓐᓇᐅᕗᑦ ᕿᒥᒡᕈᔭᐅᒍᓐᓇᕐᑐᑎᒃ ᐅᕝᕙᓘᓐᓃᑦ ᐱᔭᐅᒍᓐᓇᕐᑐᑎᒃ ᐅᕙᖓᑦ ᐆᒪᔪᓕᕆᔩᑦᔪᐊᑦ ᐃᑭᐊᒡᕆᕕᖓᑦ (www.nwmb.com).

ᓈᓚᑦᑎᑦᓯᓂᕐᒧᑦ ᒪᓕᒐᑦ:

1. ᐆᒪᔪᓕᕆᔩᑦᔪᐊᑦ ᐊᒻᒪᓗ ᓄᓇᕘᒃᒥ ᑕᕆᐅᕐᒥᐅᑕᓕᕆᔩᒃᑯᑦ (ᑲᑎᒪᔩᑦ) ᑐᓂᓯᓂᐊᕐᐳᑦ ᑐᓴᕐᑎᑦᓯᒍᒻᒥᒃ ᑭᒃᑯᓕᕕᓂᒃ ᑐᖓᓂᐅᙱᑦᑐᖅ ᐊᕙᑎᓪᓗ ᖁᓕᓪᓗ (30) ᐅᓪᓗᐃᑦ ᓯᕗᕐᖓᒎᑦ ᑐᓂᓯᓯᒪᒡᕕᐅᕆᐊᓕᐅᑉ ᓈᓚᑦᑎᑦᓯᓂᕐᒧᑦ ᐅᓂᒃᑳᓂᒃ.

2. ᑭᓇᑐᐃᓐᓇᖅ ᖃᐅᔨᒪᒍᒪᔪᖅ ᐃᓄᒃ ᐅᖅᑰᓐᓃᑦ ᑎᒥᐅᔪᑦ ᑐᓂᓯᒍᓐᓇᕐᐳᑦ ᑲᑎᒪᔨᓄᑦ ᑎᑎᕋᕐᓯᒪᔪᓂᒃ ᐅᓂᒃᑳᓂᒃ ᐊᒻᒪᓗ ᐃᑲᔪᕐᑐᕈᑎᓂᒃ ᑎᑎᖅᑲᓂᒃ[1] ᑭᒡᒍᑕᐅᔪᓂᒃ ᑐᑦᓯᕋᐅᒻᒧᑦ ᐊᖏᕐᑕᐅᒍᑎᓄᑦ ᐅᑯᓂᖓ ᓄᓇᕗᑦᒥ ᓇᓄᕐᓂᒃ ᐊᐅᓚᑦᓯᖃᑎᒌᓐᓂᕐᒧᑦ ᐸᕐᓇᒍᒌᑦ - ᑐᑭᓕᐅᕐᓯᒪᑦᓯᐊᕐᓗᒋᑦ ᐃᓄᒃᑎᑐᑦ ᐅᖅᑰᓐᓃᑦ ᖃᓪᓗᓈᑎᑐᑦ ᓇᓪᓕᐅᒃᑯᑐᐃᓐᓇᖅ - ᑎᑭᙱᓐᓂᖓᓂ 5:00 ᐅᓐᓄᓴᒃᑯᑦ (ᐃᖃᓗᐃᑦ/ᐃᓄᒃᔪᐊᖅ ᓯᕿᙱᔭᖓᑐᑦ) ᐅᓇ ᕖᕝᕗᐊᕆ 14, 2020.

3. ᐃᓛᒃ ᓱᓕᔪᕆᔭᐅᓕᕈᓐᓇᕐᑐᑦ ᑎᑎᕋᕐᓯᒪᔪᑦ ᐊᒻᒪᓗ ᑐᑭᓕᐅᕐᑕᐅᒪᔪᑦ ᐱᔾᔪᑕᐅᔪᑦ ᑐᓂᔭᑦ ᑲᑎᒪᔨᓄᑦ ᑭᖑᕙᕐᑐᓂᒃ ᑐᓂᓯᓂᕐᒧᑦ, ᑲᑎᒪᔩᑦ ᑲᒪᒌᙱᑕᖏᑦ ᑎᑎᕋᕐᓯᒪᔪᑦ ᓈᓚᑦᑎᑦᓯᓂᕐᒥ ᑐᓂᔭᐅᓂᖏᑉᐸᑕ ᑭᖑᕙᕋᑎᒃ.

4. ᐱᑕᖃᕆᐊᖃᕐᓂᖏᑦ ᑐᑭᓕᐅᕐᑕᐅᒪᔪᑦ ᐅᓂᒃᑳᑦ ᐊᒻᒪᓗ ᐃᑲᔪᕈᑏᑦ ᑎᑎᕋᕐᓯᒪᔪᑦ ᑐᓂᔭᑦ ᑲᑎᒪᔨᓄᑦ ᐊᑐᕐᓂᖃᙱᑦᑐᖅ ᐃᓄᑐᐊᓄᑦ ᑭᒃᑯᑐᐃᓐᓇᕐᓄᑦ.

5. ᐊᓯᓕᒫᖏᑦ ᑐᓂᓯᔪᑦ ᐃᑲᔪᕐᑐᕈᑎᓂᒃ ᑎᑎᖅᑲᓂᒃ ᑲᑎᒪᔨᓄᑦ, ᐱᑕᖃᕆᐊᖃᕐᓂᖓ ᑐᑭᓕᐅᕐᓯᒪᔪᑦ ᐊᑐᙱᑦᑐᖅ ᑎᑎᖅᑲᓄᑦ ᐊᒥᒌᓂᖅᓴᓂᒃ 10 ᒪᐸᕐᑐᕙᓕᓐᓄᑦ, ᐊᑐᓂᑦ ᐃᑲᔪᕐᑐᕈᑏᑦ ᑎᑎᖅᑲᑦ ᑐᑭᓕᐅᕐᑕᐅᒪᙱᑦᑐᑦ ᐱᑕᖃᕐᐸᑕ ᓱᓕᔪᓂᒃ, ᑐᑭᓕᐅᕐᓯᒪᔪᓂᒃ ᓇᐃᓈᕈᑎᓂᒃ (ᖃᓪᓗᓈᑎᑐᑦ ᐊᒻᒪᓗ ᐃᓄᒃᑎᑐᑦ) ᒪᕐᕉᓐᓂᒃ (2) ᒪᐸᕐᑐᓖᓐᓂᒃ.

6. ᑲᑎᒪᔩᑦ ᐃᐸᒋᒍᓱᓐᓂᐊᕐᐳᑦ ᐃᓘᓐᓇᑎᒃ ᑎᑎᕋᕐᓯᒪᔪᑦ ᑐᓂᔭᑦ ᑖᒃᑯᖓ ᐅᖅᑰᓐᓃᑦ ᐊᓚᒃᑲᕐᑕᖏᑦ ᑖᒃᑯᐊ ᑭᒃᑯᑐᐃᓐᓇᕐᓄᑦ ᐊᑐᐃᓐᓇᐅᕙᓗᐊᕐᒪᖔᑕ, ᐃᓱᒪᒋᓗᒋᑦ ᐊᑐᕐᑐᑦ ᒪᐅᖓᑐᐃᓐᓈᓕᐊᖃᙱᓐᓂᖏᓐᓄᑦ ᐅᖅᑰᓐᓃᑦ ᑲᙳᓇᕐᓂᖏᓐᓄᑦ ᐃᓱᒫᓗᒍᑏ.

7. ᐆᒪᔪᓕᕆᔩᑦᔪᐊᑦ ᐱᑕᖃᒃᑲᐃᓂᐊᕐᐳᑦ ᑖᕝᕙᓴᐃᓐᓇᖅ ᖃᓪᓗᓈᑎᑐᑦ ᐊᒻᒪᓗ ᐃᓄᒃᑎᑐᑦ ᑐᓵᔩᖃᒃᑲᐃᓂᕐᒥᒃ ᓈᓚᑦᑎᑦᓯᓂᕐᒥ, ᑎᑭᐅᑎᓗᒍ ᐊᔪᕐᓇᙱᓐᓂᖓ.

8. ᓈᒻᒪᑦᓯᓯᒪᔪᑦ ᐆᒪᔪᓕᕆᔨᕐᔪᐊᓂ ᑲᑎᒪᔩᑦ ᐅᐸᑦᓯᒪᓂᐊᕐᐳᑦ ᓈᓚᑦᑎᑦᓯᓂᕐᒥ.

9. ᓇᓪᓕᐊᑐᐃᓐᓇᖅ ᑭᒡᒐᖕᒐᑦ ᐅᕝᕙᓘᓐᓃᑦ ᐱᓕᕆᔨᖕᒐᑦ ᒐᕙᒪᖓᑦ ᑲᓇᑕᒥ ᐅᕝᕙᓘᓐᓃᑦ ᒐᕙᒪᖓᑦ ᓄᓇᕗᑦᒥ, ᐊᒻᒪᓗ ᐊᖑᓇᓱᒃᑏᑦ ᐊᒻᒪᓗ ᒥᑭᓯᐊᕐᓂᐊᕐᑏᑦ ᑎᒥᖏᑦ ᐅᕝᕙᓘᓐᓃᑦ ᐊᕙᑦᑐᕐᓯᒪᔪᓂ ᓄᓇᕗᑦᒥ ᐆᒪᔪᓕᕆᔩᑦ ᑎᒥᖏᑦ, ᐊᒻᒪᓗ ᑭᓇᑐᐃᓐᓇᖅ ᐃᓄᒃ ᑐᓂᔭᐅᓂᐊᕐᐳᖅ ᑲᒪᒃᑕᐅᓂᕐᒧᑦ ᓈᓚᑦᑎᑦᓯᓂᕐᒥ.

10. ᐃᓚᒃ ᖃᐃᖅᑯᔭᐅᒪᙱᒃᑯᑎᒃ ᑲᑎᒪᔨᓄᑦ ᑲᒪᒃᑕᐅᓂᕐᒥᒃ, ᐊᓯᓕᒫᖏᑦ ᐃᓄᐃᑦ ᐅᕝᕙᓘᓐᓃᑦ ᑎᒥᐅᔪᑦ ᑕᐃᔭᐅᒍᒪᔪᑦ ᑲᒪᒃᑕᐅᓂᕐᒥᒃ ᑲᑎᒪᔨᓄᑦ ᑐᓂᓯᕆᐊᓖᑦ ᓈᒻᒪᑦᑐᓂᒃ ᑐᑦᓯᕋᐅᑎᓂᒃ ᑎᑎᖅᑲᑎᒎᑦ ᑲᑎᒪᔨᓄᑦ.

11. ᐃᓘᓐᓇᑎᒃ ᑲᒪᒃᑕᑦ ᐊᒻᒪᓗ ᐊᓯᖏᑦ ᐱᒃᑕᐅᔪᑦ ᓈᓚᑦᑎᑦᓯᓂᕐᒥ ᐱᑦᓯᐊᒃᑲᑦᑕᐅᑎᓯᐊᓖᖅᑦ ᐊᒻᒪᓗ ᐆᒪᔪᓕᕆᔨᕐᔪᐊᓂᒃ ᓈᓚᑦᓯᐊᕐᓗᑎᒃ.

12. ᐆᒪᔪᓕᕆᔨᕐᔪᐊᑦ ᐱᑕᖃᒃᑲᐃᓂᐊᕐᐳᑦ ᓈᒻᒪᕐᑐᒥᒃ ᐱᕙᑦᓴᐅᔪᒥᒃ ᐅᖃᐅᓯᒃᑯᑦ ᐅᓂᒃᑳᓂᒃᒥᒃ ᐊᑐᓂᑦ ᑲᒪᒃᑕᓂᒃ ᓈᓚᑦᑎᑦᓯᓂᕐᒥ ᓂᕈᐊᕐᑕᖕᒐᓄᑦ ᐱᓕᕆᔨᒧᑦ, ᖃᐅᔨᒪᔪᓪᓚᕆᓪᒧᑦ ᐅᕝᕙᓘᓐᓃᑦ ᒪᓕᒐᓕᕆᔨᒧᑦ.

13. ᓇᓪᓕᐊᑐᐃᓐᓇᖅ ᑲᑎᒪᔨ ᐆᒪᔪᓕᕆᔨᕐᔪᐊᓂ, ᐆᒪᔪᓕᕆᔨᕐᔪᐊᓂ ᑐᑭᒧᐊᕐᑎᑦᓯᔨ ᐆᒪᔪᓕᕆᓂᕐᒧᑦ ᐅᕝᕙᓘᓐᓃᑦ ᐆᒪᔪᓕᕆᔨᕐᔪᐊᑦ ᒪᓕᒐᓕᕆᔨᖕᒐᑦ ᐊᐱᖅᓱᕆᓇᕐᑐᑦ ᓇᓪᓕᐊᓂᑐᐃᓐᓇᖅ ᑲᒪᒃᑕᒥᒃ ᓈᓚᑦᑎᑦᓯᓂᕐᒥ.

14. ᓇᓪᓕᐊᑐᐃᓐᓇᖅ ᑲᒪᒃᑕᖅ ᐊᐱᖅᓱᕆᓇᕐᑐᖅ ᓇᓪᓕᐊᓂᑐᐃᓐᓇᖅ ᑲᒪᒃᑕᒥᒃ ᓈᓚᑦᑎᑦᓯᓂᕐᒥ.

15. ᐆᒪᔪᓕᕆᔨᕐᒧᐊᑦ ᐱᑕᖃᒃᑲᐃᓂᐊᕐᐳᑦ ᐃᓚᐅᔪᓄᑦ ᑭᒃᑯᑐᐃᓐᓇᕐᓄᑦ ᐅᐸᑦᓯᒪᔪᓄᑦ ᓈᓚᑦᑎᑦᓯᓂᕐᒥ ᓈᒻᒪᑦᑐᒥᒃ ᐱᕙᑦᓴᐅᔪᒥᒃ ᐅᖃᓕᒪᓂᕐᒧᑦ ᐊᒻᒪᓗ ᐊᐱᖅᓱᓂᒥᕐᒧᑦ ᑲᒪᒃᑕᓂᒃ ᐊᒻᒪᓗ ᐆᒪᔪᓕᕆᔨᕐᔪᐊᓂᒃ.

16. ᐃᓘᓐᓇᑎᒃ ᓈᓚᑦᑎᑦᓯᓂᕐᒦᑦᑐᑦ ᐅᖃᕈᒪᔪᑦ ᐅᕝᕙᓘᓐᓃᑦ ᐊᐱᖅᓱᕈᒪᔪᑦ ᐃᓰᕆᐊᓖᑦ ᑕᓕᕐᒥᓂᒃ, ᐊᒻᒪᓗ ᐅᖃᓕᑕᐃᓐᓇᕐᓗᑎᒃ ᐆᒪᔪᓕᕆᔨᕐᔪᐊᑦ ᐃᑦᓯᕙᐅᑕᖕᒐᑕ ᑕᐃᑉᐸᒍ ᐊᖑᑦ ᐅᕝᕙᓘᓐᓃᑦ ᐊᕐᓇᖅ.

17. ᐆᒪᔪᓕᕆᔨᕐᒧᐊᑦ ᐃᑦᓯᕙᐅᑕᖕᒐᑦ ᐃᓱᒪᕐᓱᕐᐳᖅ ᐊᔪᙱᒍᑎᒥᓂᒃ ᐃᓕᓯᓂᕐᒧᑦ ᓈᒻᒪᑦᑐᓂᒃ ᐱᕙᑦᓴᐅᔪᑦ ᑭᓪᓕᖏᓐᓂᒃ ᐅᓂᒃᑳᓂᕐᒧᑦ, ᐅᖃᓕᒪᓂᕐᒧᑦ ᐊᒻᒪᓗ ᐊᐱᖅᓱᓂᕐᒧᑦ.

18. ᐆᒪᔪᓕᕆᔨᕐᔪᐊᑦ ᓂᐱᓕᐅᕐᓯᒪᔪᓂᒃ ᓈᓚᑦᑎᑦᓯᓂᕐᒧᑦ ᐊᑐᐃᓐᓇᐅᑎᑦᓯᓂᐊᕐᑐᑦ ᑐᑦᓯᕋᕐᑐᖅᑲᕐᐸᑦ.

[1] “ᐃᑲᔪᕐᑐᕈᑏᑦ ᑎᑎᖅᑲᑦ” ᐅᖃᐅᓯᓕᒃ ᐊᑕᐅᓯᕐᒥᒃ ᐅᕝᕙᓘᓐᓃᑦ ᐊᒥᒋᓐᓂᖕᓴᓂᒃ ᖃᐅᔨᓴᕈᑎᒥᓂᕐᓂᒃ, ᑎᑎᕋᕐᑕᐅᒪᔪᓂᒃ, ᐃᓱᒪᒍᑕᐅᔪᓂᒃ ᐅᕝᕙᓘᓐᓃᑦ ᐊᓯᖏᓐᓂᒃ ᑎᑎᖅᑲᓂᒃ ᐃᒻᒥᒃᑰᕐᑐᓂᒃ ᐃᓅᑉ ᐅᕝᕙᓘᓐᓃᑦ ᑎᒥᐅᔪᑦ ᑎᑎᕋᕐᓯᒪᔭᖏᓐᓂᒃ ᐅᓂᒃᑳᓂᒃ, ᑐᓂᔭᓂᒃ ᐃᓚᐅᑎᑕᐅᓪᓗᑎᒃ ᓇᓗᓇᙱᒍᑎᓄᑦ ᐊᒻᒪᓘᓐᓃᑦ ᐊᐃᕙᒍᑎᓄᑦ ᐃᑲᔪᕐᑐᕐᑎᑦ ᑖᑦᓱᒪ ᐃᓅᑉ ᐅᕝᕙᓘᓐᓃᑦ ᑎᒥᐅᔪᑦ ᐅᓂᒃᑳᖏᓐᓄᑦ.

<u>ᑐᓂᓯᐅᕝ</u>

<u>ᓄᓇᕗᑦ ᐆᒪᔪᓕᕆᔨᕐᔪᐊᒃᑯᑦ ᑲᑎᒪᔨᖏᓐᓄᑦ</u>

<u>ᐱᔾᔪᑎᖓ</u>

ᑐᑭᓯᒋᐊᕈᑎ: **ᑐᑭᑖᕈᑎ: X**

ᐱᔾᔪᑎᖓ: ᕗᓘᕕᔅ-ᑲᓇᓐᓇᕐᒥ ᑐᑦᑐᐃᑦ ᖃᑦᓯᐅᓂᖏᑦᑕ ᒥᑦᓴᐅᕆᕈᑏᑦ ᐱᓯᒪᔪᑦ 2018 ᕿᑐᕐᖏᐅᕐᕕᖏᑦᑕ ᓄᓇᖏᓐᓂ ᐊᔾᔨᓕᐅᕆᓂᒃᑯᑦ ᓈᓴᐃᒍᑏᑦ ᐊᒻᒪᓗ ᑐᑦᑐᑦᑕᐅᒍᓐᓇᖅᑐᓂᒃ ᐱᖁᔨᕗᖓᕕᑏᑦ

ᐃᓗᓕᖏᑦ:

- ᑖᒃᑯᐊ ᕗᓘᕕᔅ ᑐᑦᑐᖏᑦ ᓯᐊᑦᑕᐅᔪᑦ ᐆᒪᔪᕋᓱᐊᖅᑕᐅᕙᑦᓱᑎᑦ ᐊᓯᕙᖅᑎᓄᑦ ᓄᓇᑦᓯᐊᕐᓯ ᓄᓇᕗᒻᒥᓗ.
- ᕗᓘᕕᔅ ᑲᓇᓐᓇᕐᒥ ᑐᑦᑐᖏᑦ ᓇᓗᓇᐃᖅᑕᐅᓯᒪᓕᖅᑐᑦ ᖃᑦᓰᓐᓇᕈᖅᐸᓪᓕᐊᓯᒪᒋᐊᖏᑦ ᑕᐃᒪᙵᓂᒃ 2000 ᐊᕐᕌᒍᖓ, ᑲᔪᓰᓐᓇᖅᑐᒥᓪᓗ ᖃᑦᓰᓐᓇᕈᖅᐸᓪᓕᖅᓯᒪᓪᓗᑎᑦ ᐊᕐᕌᒍᐃᑦ ᐊᑯᓐᓂᖏᓐᓂ 2010-ᓗ 2015-ᓗ. ᑖᒃᑯᐊ ᐊᕐᕌᒍᐃᑦ ᐊᑐᖅᑎᓪᓗᒋᑦ ᑐᑦᑐᖏᑦ ᐃᓄᐃᓴᓪᓕᕚᓪᓕᓚᐅᖅᑐᑦ 120,000-ᒥᑦ 38,500-ᒧᑦ ᑐᑦᑐᐃᑦ (2015).
- ᑲᑎᒪᓕᖃᖅᑎᓪᓗᒋᑦ ᔭᓄᐊᕆ 20, 2016−ᓂ ᕗᓘᕕᔅ ᑲᓇᓐᓇᕐᒥ ᑐᑦᑐᐃᑦ ᖃᑦᓯᐅᓂᖏᑦ ᐱᔭᐅᒍᓇᖅᑐᓂ, ᖃᕐᓗᖅᑐᕐᒥ ᐆᒪᔪᕐᓂᐊᖅᑎᒃᑯᖏᑦ ᐱᖁᔨᕗᖓᓕᐅᓚᐅᖅᑐᑦ ᐱᔭᐅᒍᓇᕐᓗᑎᑦ 35%−ᖑᖓᕐᓗᑎᑦ 36%−ᖑᙱᖓᕐᓗᓂ ᐱᔭᐅᒍᓇᕐᑯᓪᓗᒋᑦ 2% ᑐᑦᑐᑦᑕᐅᒍᓇᕐᓗᑎᑦ ᐊᑕᖏᕐᓗᒋᑦ ᑕᕐᓕᒪᐃᑦ ᓄᓇᓖᑦ ᓄᓇᑦᓯᐊᕐᒥ.
- ᒥᓂᔅᑕᖓᑦ ᐊᕙᑎᓕᕆᔨᒃᑯᑦ ᐊᑐᓕᖅᑎᑦᓯᓚᐅᖅᑐᖅ ᑲᑎᓖᕐᓗᒋᑦ ᑐᑦᑐᑦᑕᐅᒍᓇᖅᑐᓂ 340-ᖑᓗᒋᑦ ᕗᓘᕕᔅ ᑐᑦᑐᖏᓐᓄᑦ 2016−ᖑᑎᓪᓗᒍ ᐃᑲᔪᖅᑐᐃᓚᐅᖅᓱᓂᓗ ᐱᓕᕆᐊᕆᔭᐅᒍᒪᓂᖓᓂᒃ ᓄᓇᓕᓐᓂ ᐊᐅᓚᑦᓯᓂᕐᒧᑦ ᐸᕐᓇᐅᑎᓕᐅᕐᓂᒃᑯᑦ.
- ᖁᕐᓗᖅᑐᕐᒥ ᐆᒪᔪᕐᓂᐊᖅᑏᑦ ᑲᑎᒪᔨᖏᑦ ᐱᓕᕆᖃᑎᖃᖅᓯᒪᓕᖅᑐᑦ ᐆᒪᔪᕐᓂᐊᖅᑏᑦ ᐸᓖᓯᕋᓛᖏᓐᓂᒃ ᐊᑐᓕᖅᑎᑕᐅᑎᓪᓗᒍ ᑲᑎᓕᒫᕐᓗᒋᑦ ᑐᑦᑐᑦᑕᐅᒍᓇᖅᑐᑦ. ᐊᑕᖏᕐᓗᒋᑦ ᑲᑎᓕᒫᕐᓗᒋᑦ ᑐᑦᑐᑦᑕᐅᒍᓇᖅᑐᑦ ᑎᑭᐅᑎᔭᐅᓚᐅᖅᓯᒪᙱᑦᑐᖅ, ᒫᓇᒃᑯᓪᓗ ᑐᑦᑐᑦᑕᐅᕙᑦᑐᑦ ᓄᓇᓕᖓᓄᑦ ᖁᕐᓗᖅᑐᖅ ᒥᑦᓵᓃᑦᑐᑦ 170 ᑐᑦᑐᐃᑦ (ᐆᑦᑑᑎᒋᓗᒍ 2015/2016−ᒥ ᑐᑦᑐᑦᑕᐅᓂᑯᐃᑦ 265-ᖑᓚᐅᖅᑐᑦ (ᓯᕗᓂᐊᒍᑦ ᑲᑎᓖᕐᓗᒋᑦ ᑐᑦᑐᑦᑕᐅᒍᓇᖅᑐᐃᑦ), 2016/2017−ᒥ ᑐᑦᑐᑦᑕᐅᓂᑯᐃᑦ 232−ᖑᓪᓗᑎᑦ, 2017/2018−ᒥ ᑐᑦᑐᑦᑕᐅᓂᑯᐃᑦ 174−ᖑᓪᓗᑎᑦ, ᐊᒻᒪᓗ 2018/2019−ᒥ ᑐᑦᑐᑦᑕᐅᓂᑯᐃᑦ 93−ᖑᓪᓗᑎᑦ).

ᒫᓐᓇᒃᑯᑦ ᖃᓄᐃᓐᓂᖏᑦ:

- ᔫᓂ 2018−ᒥ ᖃᖓᑕᔫᒃᑯᑦ ᐊᒡᔨᕆᐅᕆᓪᓗᑎᑦ ᓈᓴᐃᒍᑎᕕᓃᑦ ᓇᓕᖅᑲᖏᑦ ᓇᓗᓇᐃᖅᓯᔪᑦ ᑖᒃᑯᐊ ᕗᓪᓘᑉ ᑐᑦᑐᖏᑦ ᖃᑦᔾᓈᓇᕈᖅᐸᓪᓕᐊᖏᓐᓇᓄᐊᖏᑦ, ᑲᑎᓕᒫᕐᓗᒋᑦ ᒥᑦᓴᐅᓵᖅᑕᐅᓯᒪᓪᓗᑎᑦ 19,249-ᖏᓐᓃᒋᐊᖏᑦ ᑐᑦᑐᖏᑦ. ᑕᒪᒃᑯᐊ ᐃᓄᐃᓴᓪᓕᕚᓪᓕᖅᓯᒪᓪᓚᓇᑦᑐᑦ 2015−ᒥ ᑲᑎᓕᒫᕐᓗᒋᑦ ᒥᑦᓴᐅᓵᕈᑕᐅᓯᒪᔪᑎᓪᓗᒋᑦ 38,592−ᖏᓐᓃᓚᐅᖅᑎᓪᓗᒋᑦ ᑐᑦᑐᖏᑦ.
- ᖃᐅᔨᓴᓇᐊᒃᑳᓂᕈᑎᕕᓃᑦ ᓇᓗᓇᐃᖅᓯᔪᑦ ᖃᑦᔾᓈᓇᕈᖅᐸᓪᓕᐊᑐᐃᓐᓇᓇᖓᖏᑦ ᑐᑦᑐᖏᑦ: ᐊᕐᓇᕕᐊᖏᑦ ᐊᓐᓇᐅᒪᒍᓐᓇᓗᐊᖅᐸᙱᑦᑐᑦ (0.72) ᖃᑦᔾᓈᓇᐅᓪᓗᑎᓪᓗ ᕿᑐᕐᖏᐅᖅᐸᓐᓂᖏᑦ (0.19).
- ᑲᑎᒪᓂᖃᖅᑎᓪᓗᒋᑦ ᐅᖃᐅᔾᔨᒋᐊᖅᑏᑦ ᑲᑎᒪᔨᖏᑦ ᐃᓚᐅᖃᑕᐅᓂᕐᒧᑦ ᐅᒪᔪᓕᕆᔨᒃᑯᑦ (AACCWM) ᓄᕕᐱᕆ 2018−ᒥ, 2018−ᒥ ᓈᓴᐃᒍᑎᕕᓃᑦ ᓇᓕᖅᑲᖏᑦ ᐅᓂᒃᑳᖑᓚᐅᖅᑐᑦ ᐊᒻᒪᓗ ᑲᑎᒪᔨᖏᑦ ᐱᕐᑯᔨᕗᖕᖠᓚᐅᖅᑐᑦ ᐊᐅᐸᖅᑐᕈᖅᑎᑕᐅᓗᓂ ᐊᑦᑕᓇᖅᑐᒥᓐᓂᖓ ᕗᓪᓘᑉ ᑐᑦᑐᖏᑦ.
- ᖁᕐᓗᖅᑐᕐᒥ ᐆᒪᔪᕐᓂᐊᖅᑏᑦ ᑲᑎᒪᔨᖏᑦ ᐱᓕᕆᐊᖃᖅᓯᒪᔪᑦ ᓴᖅᑭᑎᑦᓯᓯᒪᓪᓗᑎᑦ ᓄᓇᓕᓐᓂ−ᐱᓕᕆᐊᖑᓯᒪᔪᒥ ᐊᐅᓚᑦᑎᓂᕐᒧᑦ ᐸᕐᓇᐅᑎᒥᒃ ᕗᓪᓘᑉ ᑐᑦᑐᖏᓐᓄᑦ. ᐆᒪᔪᕐᓂᐊᖅᑏᑦ ᑲᑎᒪᔨᖏᑦ ᐱᓕᕆᖃᑎᖃᖅᓯᒪᔪᑦ ᐱᓕᕆᕕᖕᖓᓐᓂᒃ ᐊᕙᑎᓕᕆᔨᒃᑯᑦ ᐱᔭᕇᖅᑕᐅᕙᓪᓕᐊᓂᖏᓐᓂ ᐸᕐᓇᐅᑎᓕᐊᖑᔪᑦ ᑐᓂᔭᐅᒍᒫᖅᑎᓪᓗᒋᑦ ᓄᓇᕗᒻᒥ ᐆᒪᔪᓕᕆᔾᔪᐊᒃᑯᑦ ᑲᑎᒪᔨᖏᓐᓄᑦ ᑲᑎᒪᓂᖃᓕᖅᐸᑕ ᑎᓯᐱᕆᒥ. ᑕᐃᒪᙵᓂᒃ 2016−ᖑᓚᐅᖅᑎᓪᓗᒍ, ᖁᕐᓗᖅᑐᕐᒥ ᐆᒪᔪᕐᓂᐊᖅᑏᑦ ᑲᑎᒪᔨᖏᖅ ᐊᑐᓕᖅᑎᑦᓯᓯᒪᔪᑦ ᒪᑯᓂᖓ ᐊᐅᓚᑦᓯᒍᑎᓂᒃ:
  - ᐱᓕᕆᖃᑎᒌᓐᓂᒃᑯᑦ ᓄᓇᓕᓐᓂ ᐅᕝᕙᓘᓐᓃᑦ ᓱᐃᑦᑭᕿᓂᒃᑯᑦ ᑐᑦᑐᓂᐊᖅᑐᖃᕆᐊᖃᙱᑦᑐᖅ
  - ᐆᒪᔪᕐᓂᐊᖅᑎᒃᑯᑦ ᑲᑎᒪᔨᖏᑦ ᐃᑲᔪᖅᑐᐃᙱᑦᑐᑦ ᓂᐅᕈᑎᐅᖃᑦᑕᕐᓂᖏᓐᓂᒃ ᑐᑦᑐᐃᑦ ᐊᑖᒍᑦ ᓂᕿᑐᐃᓐᓇᐃᑦ ᓯᐊᒻᒪᑎᖅᑕᐅᒍᑎᑦᓴᓄᑦ ᐱᓕᕆᐊᖑᔪᒧᑦ
  - ᐆᒪᔪᕐᓂᐊᖅᑎᒃᑯᑦ ᑲᑎᒪᔨᖏᑦ ᐃᑲᔪᖅᑐᐃᕗᑦ ᐊᓯᖍᖏᓐᓂᒃ ᓂᕐᔪᑎᕐᓂᐊᕐᓂᕐᒥ ᓲᕐᓗ ᐅᒥᖕᒪᓐᓂᒃ
  - ᓴᖅᑭᖅᑎᑕᐅᓗᓂ ᐆᒪᔪᕐᓂᐊᕐᕕᐅᑎᐊᖃᙱᑦᑐᑦ ᓄᓇᓕᖓᑦᑕ ᐊᕙᑎᖓᓐᓂᒃ ᕗᓪᓘᑉ ᑐᑦᑐᖏᓐᓄᑦ.
- ᐅᓪᓗᖓᓂ ᔫᓇᐊᕆ 14, 2019, ᑎᓕᑦᓰ ᓚᕙᒪᒃᑯᖏᑦ ᐊᒻᒪᓗ ᐊᕙᑎᓕᕆᔨᒃᑯᑦ ᓄᓇᒦᖓᖅᑐᓕᕆᔨᒃᑯᓪᓗ, ᓚᕙᒪᒃᑯᖏᑦ ᓄᓇᑦᓯᐊᐸ ᑐᓂᓯᓚᐅᖅᑐᑦ ᐊᐅᓚᑦᓯᖃᑎᒌᓐᓂᕐᒧᑦ ᐱᕐᑯᔨᕗᖔᕈᑎᓂᑦ ᒍᐃᒃᑉᔨ ᓄᓇᒦᖓᖅᑐᓂᒃ ᑲᑎᒪᔨᖏᓐᓄᑦ. ᐊᐅᓚᑦᓯᓂᕐᒧᑦ ᐱᕐᑯᔨᕗᖔᕈᑏᑦ ᐃᓚᖃᖅᑐᑦ 1.5% ᑐᑦᑐᑦᑕᐅᒍᓐᓇᕐᓗᑎᑦ, ᑎᑭᐅᑎᓚᕿᓪᓗᒍ ᐱᕐᑯᔨᕗᖔᕐᓂᒃᑯᑦ ᐊᑕᖏᓕᒫᕐᓗᒋᑦ ᑲᑎᓕᒫᕐᓗᒋᑦ ᑐᑦᑐᑦᑕᐅᒍᓐᓇᖅᑐᐃᑦ 300 ᐊᖑᓴᓪᓗᐃᑦ.
- ᐅᓪᓗᖓᓂ ᔫᓂ 26, 2019, ᒍᐃᒃᑉᔨ ᓄᓇᒦᖓᖅᑐᓂᒃ ᑲᑎᒪᔨᖏᑦ ᑐᑭᑖᓚᐅᖅᑐᑦ ᑲᑎᓕᒫᕐᓗᒋᑦ ᑐᑦᑐᑦᑕᐅᒍᓐᓇᖅᑐᐃᑦ 193 ᐊᖑᓴᓪᓗᐃᑦ ᐊᑐᓕᖅᑎᑕᐅᓗᓂ ᐅᓃᓇᖏᓐᓄᑦ ᑐᑦᑐᓚᓯᐊᖅᐸᑦᑐᓂ ᕗᓪᓘᑉ ᑐᑦᑐᖏᓐᓂ 2019-ᒥ 2021−ᒧᓄᑦ (ᑐᑦᑐᑦᑕᐅᒍᓐᓇᖅᑐᑦ 1%−ᖑᓪᓗᑎᑦ). ᒍᐃᒃᑉᔨ ᓄᓇᒦᖓᖅᑐᓂᒃ ᑲᑎᒪᔨᖏᑦᑕ ᑐᑭᑖᕈᑎᖓᑦ ᐊᑦᑐᐊᓂᖃᖅᑐᑐᐊᑦ ᓄᓇᖃᖅᑐᓄᑦ ᒍᐃᒃᑉᔨᐅᑉ ᓄᓇᖓᓐᓂ.
- ᒍᐃᒃᑉᔨ ᓄᓇᒦᖓᖅᑐᓂᒃ ᑲᑎᒪᔨᖏᑦ ᐅᖃᐅᓯᖃᓚᐅᖅᑐᑦ "ᐃᓱᒫᓗᓐᓇᓪᓚᓇᑦᑐᓕᒃ ᐅᖃᖃᑎᒋᓐᓂᖅᑕᖃᕆᐊᖓ" ᕗᓪᓘᑉ ᑲᓇᓐᓇᕐᒥ ᑐᑦᑐᖏᓐᓄᑦ

- ᐊᕙᑎᓕᕆᔨᒃᑯᑦ ᐅᖃᖃᑎᖃᓚᐅᖅᑐᑦ ᐱᓕᕆᖃᑎᖃᐃᓐᓇᖅᓱᑎᓪᓗ ᐊᑦᑐᖅᑕᐅᓂᖃᖅᑐᓂᒃ ᓄᓇᓕᓐᓂ ᐊᒻᒪᓗ ᐊᐅᓚᑦᓯᖃᑎᒌᑦᑐᓂᒃ (ᓄᓇᕗᑦ ᑐᙵᕕᒃ, ᐆᒪᔪᕐᓂᐊᖅᑏᑦ ᑲᑎᒪᔨᖏᑦ, ᐊᒻᒪᓗ ᕿᑎᕐᒥᐅᑦ ᐆᒪᔪᕐᓂᐊᖅᑏᑦ ᑲᑎᒪᔨᖏᑦ) ᐊᒻᒪᓗ ᓄᓇᑦᓯᐊᕐᒥ ᐊᐅᓚᑦᓯᓂᕐᒧᑦ ᐊᑐᖅᑕᐅᓂᐊᖅᑐᓂ ᑭᐅᔾᔪᑎᐅᓗᑎᑦ ᕗᓘᕖᔅ ᑐᑦᑐᖏᑦᑕ ᖃᑦᔩᓐᓇᕈᖅᐸᓪᓕᐊᓂᖏᓐᓄᑦ.

ᐅᖃᕆᐊᖅᑐᖅᓯᒪᓂᑦ:

- ᐅᓪᓗᖓᓂ ᕕᕝᕗᐊᕆᐸ 20, 2019, 2018–ᒥ ᓈᓴᖅᑕᐅᒍᑎᕕᓂᖏᑦᑕ ᓇᓖᖅᑲᖏᑦ ᐅᖃᐅᓯᐅᓚᐅᖅᑐᑦ ᖁᕐᓗᖅᑐᕐᒥ ᐆᒪᔪᕐᓂᐊᖅᑏᑦ ᑲᑎᒪᔨᖏᓐᓄᑦ. ᑖᓐᓇ ᑐᑭᓯᒋᐊᕐᓂᒃᑯᑦ ᑲᑎᒪᓂᐅᓚᐅᖅᑐᖅ

- ᐅᓪᓗᖓᓂ ᔫᓂ 12, 2019, ᓈᓴᖅᑕᐅᒍᑎᕕᓂᖏᑦᑕ ᓇᓖᖅᑲᖏᑦ ᐅᖃᐅᓯᐅᒃᑲᓐᓂᓚᐅᖅᑐᑦ. ᐊᕙᑎᓕᕆᔨᒃᑯᑦ ᖃᐅᔨᒃᑲᖅᑕᐅᓚᐅᖅᑐᑦ ᐊᐅᓚᑦᓯᓂᕐᒧᑦ ᐱᓕᕆᖃᑎᒌᑦᑐᑦ ᐱᕈᔾᔨᕗᖔᕈᑎᖓᑦ ᐊᓯᖅᑕᐅᖁᔭᐅᓂᖓᓂᒃ ᑲᑎᓕᒫᕐᓗᒋᑦ ᑐᑦᑐᑦᑕᐅᒍᓐᓇᖅᑐᐃᑦ 107–ᖑᓕᕐᓗᑎᑦ ᐊᐳᖅᑕᕝᕕᖃᙱᓪᓗᑎᑦ ᐊᖑᓵᓪᓗᐃᓐᓇᐃᑦ ᑐᑦᑐᑦᑕᐅᒍᓐᓇᖅᑐᑦ. ᖁᕐᓗᖅᑐᕐᒥ ᐆᒪᔪᕐᓂᐊᖅᑏᑦ ᑲᑎᒪᔨᖏᑦ ᑭᐅᓚᐅᖅᑐᑦ ᐱᒋᐊᖅᑎᑕᐅᓯᒪᓕᖅᑎᓪᓗᒍ ᑲᑎᓕᒫᕐᓗᒋᑦ ᑐᑦᑐᑦᑕᐅᒍᓐᓇᖅᑐᑦ 2016–ᒥ, ᑐᑦᑐᑦᑕᐅᖃᑦᑕᖅᓯᒪᔪᑦ ᐊᑖᓃᖃᖅᑕᖅᓯᒪᒻᒪᑕ 340 ᑐᑦᑐᐃᑦ.

- ᐅᓪᓗᖓᓂ ᐊᐅᒡᒍᓯ 29, 2019, ᖁᕐᓗᖅᑐᕐᒥ ᐆᒪᔪᕐᓂᐊᖅᑏᑦ ᑲᑎᒪᔨᖏᑦ ᑭᒃᑯᓕᒫᖅᑎᑦᓯᓚᐅᖅᑐᑦ ᐅᖃᐅᓯᖃᕐᓂᒃᑯᑦ ᐊᕙᑎᓕᕆᔨᒃᑯᑦ ᑐᑦᑐᑦᑕᐅᒍᓐᓇᖅᑐᓂ ᐱᕐᑯᔨᕗᖔᕈᑎᖓᓐᓂᒃ ᕗᓘᕖᔅ ᑲᓇᓐᓇᕐᒥ ᑐᑦᑐᖏᓐᓄᑦ. ᑕᕝᕙᓂ ᑲᑎᒪᓂᐅᔪᒥ, ᑭᒃᑯᓕᒫᕆᐊᖅᑐᖅᓯᒪᔪᑦ ᓂᕈᐊᕐᓂᖃᓚᐅᖅᑐᑦ ᐱᕐᑯᔨᕗᖔᓕᐅᖅᓱᑎᑦ 250 ᑐᑦᑐᑦᑕᐅᒍᓐᓇᕐᓗᑎᑦ ᐱᔭᐅᒍᓐᓇᕐᓗᑎᑦ ᐊᑕᐅᓯᖅ ᐊᖑᓵᓪᓗᑦ ᐊᑕᐅᓯᕐᒧᑦ ᐊᕐᓇᕕᐊᖅᑕᐅᔪᒧᑦ. ᐃᓚᖏᑦ ᓄᓇᓕᓐᓂ ᐃᑉᐱᒋᔭᖃᓚᐅᖅᑐᑦ ᐊᐳᖅᑕᕝᕕᖃᕆᐊᖃᙱᒋᐊᖓ ᖁᕐᓗᖅᑐᕐᒥᐅᑦ ᑐᑦᑐᒍᓐᓇᕐᓂᖓᑦ ᕗᓘᕖᔅ ᑲᓇᓐᓇᕐᒥ ᑐᑦᑐᖏᓐᓂᑦ, ᑖᒃᑯᐊᓗ ᑐᑦᑐᑦᑕᐅᕙᑦᑐᑦ ᐊᐅᓚᑕᐅᒍᓐᓇᕆᐊᖏᑦ ᓄᓇᓕᓐᓂ ᐱᓕᕆᐊᖑᓗᓂ ᐸᕐᓇᐅᑎᓕᐊᖅ.

- ᐅᓪᓗᖓᓂ ᐅᑐᐱᕆ 2, 2019, ᑐᖏᓕᐊᒍᑦ ᐅᖃᕆᐊᖅᑐᖅᓯᒪᓂᖃᓚᐅᖅᑐᑦ ᐆᒪᔪᕐᓂᐊᖅᑏᑦ ᑲᑎᒪᔨᖏᓐᓄᑦ. ᖁᕐᓗᖅᑐᕐᒥ ᐆᒪᔪᕐᓂᐊᖅᑏᑦ ᑲᑎᒪᔨᖏᑦ ᓱᖁᐃᕈᓐᓇᓪᓚᕆᓚᐅᙱᑦᑐᑦ ᐱᕐᑯᔨᕗᖔᕈᑎᒥᓐᓂᒃ ᐊᐳᖅᑕᕝᕕᖃᖅᑐᓂᒃ; ᐃᓚᖏᑦ ᐊᖏᖃᑎᖃᓚᐅᖅᑐᑦ ᓄᓇᓕᓐᓄᑦ ᐱᕐᑯᔨᕗᖔᖅᑕᐅᔪᒥᒃ 250 ᑐᑦᑐᑦᑕᐅᒍᓐᓇᕐᓗᑎᑦ ᐃᓚᖏᓪᓗ ᐱᕐᑯᔨᕗᖔᓕᐅᓚᐅᖅᑐᑦ 150 ᑐᑦᑐᑦᑕᐅᒍᓐᓇᕐᓗᑎᑦ. ᐊᖏᖃᑎᒌᑦᑐᐃᓐᓇᐅᓚᐅᖅᑐᑦ ᐆᒪᔪᕐᓂᐊᖅᑏᑦ ᑲᑎᒪᔨᖏᑦ ᓄᓇᓕᓐᓂᓗ ᐱᒍᒪᓂᖅᓴᐅᑦᑎᐊᖏᑦ ᐊᑕᐅᓯᖅ ᐊᕐᓇᕕᐊᖅ ᐱᔭᐅᒍᓂ ᐊᑕᐅᓯᖅ ᐊᖑᑎᕕᐊᖅ ᐱᔭᐅᒍᓐᓇᕐᓗᓂ. ᑕᒪᓐᓇ ᑐᑦᓯᕋᖑᔪᖅ ᐊᑐᕈᓐᓇᕈᒪᓂᒃᑯᒃ ᐃᓕᖅᑯᓯᑐᖃᒥᓐᓂ ᓂᕿᑭᑦᓴᑦᑕᐃᓕᓂᕐᒧᓪᓗ, ᑕᐃᒪᐃᒃᑯᓂ ᐊᔾᔨᒌᙱᑦᑐᓂᒃ ᐊᕐᓇᕕᐊᖑᓂᖏᓐᓂᑦ ᐊᖑᓵᓘᓂᖏᓐᓂᒃ ᑐᑦᑐᓐᓇᖅᐸᑕ ᐊᕿᒍᒪ ᖃᖓᐅᓕᖅᐸᑦ ᒪᓕᓪᓗᒍ ᐱᔾᔪᑎᒋᓪᓗᒋ ᐊᒥᖏᑦ, ᐊᓐᓇᕿᑦᓴᐅᓂᖏᑦ, ᓂᕿᖓᓂᒃ ᒪᒪᖅᓴᕐᓃᓪᓗ. ᐆᒪᔪᕐᓂᐊᖅᑏᑦ ᑲᑎᒪᔨᖏᑦ ᐃᑉᐱᒋᔭᖅᑐᑦ ᐱᕕᑦᓴᖃᐃᓐᓇᕋᔭᕐᒥᓂ ᑕᖅᑭᖏᑦ ᐊᑐᖅᑎᓪᓗᒋᑦ ᐊᐅᒡᒍᓯ ᐊᒻᒪᓗ ᓯᑎᐱᕆ ᐊᑐᐃᓐᓇᐅᓂᖏᓐᓂ ᐊᖑᓵᓪᓗᐃᑦ. ᐊᒥᖅᓯᓂᖅᓴᓂᒃ ᑲᑎᓕᒫᕐᓗᒋᑦ ᐱᕐᑯᔨᕗᖔᓕᐅᓚᐅᖅᑐᑦ ᐃᓱᒫᓘᑎᖃᕐᓂᕐᒧᑦ ᓂᕿᑭᑦᓴᕐᓂᒥ ᐊᒥᓚᖅᓯᓂᖏᓐᓄᑦ ᖁᕐᓗᖅᑐᕐᒥᐅᑦ ᐱᔾᔪᑕᐅᓪᓗᓂ ᖃᑦᔩᓐᓇᕈᖅᐸᓪᓕᖅᓯᒪᓂᖏᑦ ᕗᓘᕖᔅ ᑲᓇᓐᓇᕐᒥ ᑐᑦᑐᖏᑦ.

ᐱᖁᔨᕗᖕᒑᕈᑏᑦ:

- *ᐊᕙᑎᓕᕆᔨᒃᑯᑦ ᐱᖁᔨᕗᖕᒑᓕᐅᖅᓯᒪᔪᑦ ᓄᓇᕗᒻᒥ ᐆᒪᔪᓕᕆᔨᖅᔪᐊᒃᑯᑦ ᑲᑎᒪᔨᖏᑦ ᐃᓄᐃᓴᓪᓕᕆᐊᖁᔨᓪᓗᑎᑦ ᑲᑎᓖᖅᓗᒋᑦ ᑐᑦᑐᑦᑕᐅᒍᓐᓇᖅᑐᓂᒃ 107−ᖑᓗᑎᑦ ᐊᐳᖅᑕᖅᕕᖅᑲᖖᒋᓪᓗᑎᑦ ᐊᖑᓴᓪᓗᐃᑦ ᑐᑦᑐᑦᑕᐅᒍᓐᓇᖅᓂᖏᑦ.*

ᑲᑐᔨᖃᑎᒌᖕᓂᖅ ᐱᕈᖅᓴᐃᓐᓇᕆᐊᖃᑦᑐᒍᑦ ᓄᓇᕗᑦᑎᑦ

Building *Nunavut* Together
*Nunavu*liuqatigiingniq
Bâtir le *Nunavut* ensemble

2018 ᖃᑦᓯᐅᓂᖏᑦ ᒥᑦᓴᐅᓵᖅᑕᐅᓯᒪᔪᑦ ᓄᓘᓈᒃ ᑐᑦᑐᖏᑦ

(*Rangifer tarandus groenlandicus*)

ᓈᓯ–ᒪᕇ ᓚᒃᑯᓘᒃ, ᕿᑎᕐᒥᐅᓂ ᐊᕕᑦᑐᖅᓯᒪᔪᓂ ᐆᒪᔪᓕᕆᔨᒻᒪᕆᒃ

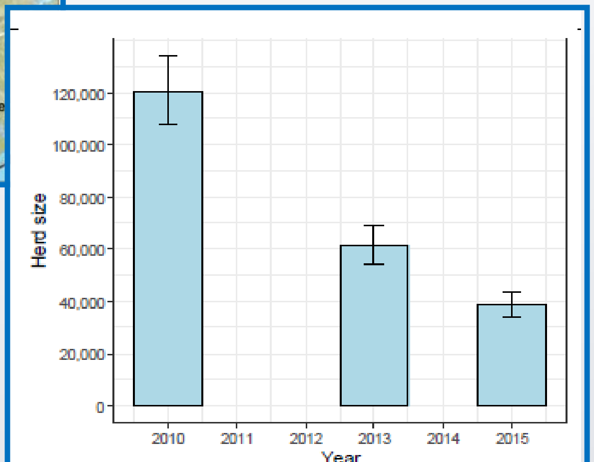
ᐊᕙᑎᓕᕆᔨᒃᑯᑦ ᖃᐅᔨᒃᑲᐃᒧᒪᔪᑦ ᑲᑎᒪᔨᓂᒃ 2018 ᒥᑦᓴᐅᓵᖅᑕᐅᒍᑎᖏᓐᓂᒃ ᓄᓘᓅᔅ ᑐᑦᑐᖏᑦᑕ ᐊᐱᕆᓪᓗᑎᓪᓗ ᑲᑎᒪᔨᓂᒃ ᑐᑭᑖᕐᑯᔨᓪᓗᑎᑦ ᐊᐅᓚᑦᓯᓂᕐᒧᑦ ᐱᕐᑯᔨᕗᖕᒫᖅᑕᐅᓯᒪᔪᓂᒃ

ᐅᓂᒃᑳᓕᐊᑦ ᐃᓗᓕᖏᑦ

- ᓯᕗᓂᐊᒍᑦ ᖃᓄᐃᓐᓂᐅᓯᒪᔪᑦ ᑐᑦᑐᓄᑦ
- 2018 ᓇᓕᖅᑲᖏᑦ
  - ᖃᐅᔨᓴᓇᐊᒃᑲᓐᓂᓂᕐᒧᑦ ᓈᓴᐃᒍᑏᑦ
  - ᐊᕐᓇᕕᐊᑦ ᐅᔾᒥᑦᑕᐅᓯᒪᔪᑦ ᖃᐅᑕᒫᑦ ᖃᓄᐃᓐᓂᖏᑦ ᐊᒻᒪᓗ ᐊᕐᓇᕕᐊᑦ ᓇᒦᓐᓂᖏᑦ
  - ᕿᒥᕐᕈᓂᒃᑯᑦ ᓈᓴᐃᒍᑏᑦ
  - ᖃᓄᐃᓕᖓᓂᖏᑕ ᖃᐅᔨᓴᖅᑕᐅᒍᑎᖏᑦ (ᕿᑐᕐᖏᐅᕕᖏᑦ ᐊᒻᒪᓗ ᐅᑭᐊᑦᓵᒃᑯᑦ)
  - 2018 ᖃᑦᓯᐅᓂᖏᑕ ᓈᓴᖅᑕᐅᒍᑎᖏᑦ
  - ᖃᓄᐃᓕᖓᓕᕐᒪᖔᑕ ᓇᓗᓇᐃᖅᓯᒍᑏᑦ
- ᑲᑎᒪᔩᑦ ᑐᑭᑖᕈᑎᖓᑦ ᓄᓇᑦᓯᐊᕐᒥ
- ᑐᑦᑐᖃᑦᑕᕐᓃᑦ

ᕗᓘᓅᔅ–ᑲᓇᓐᓇᕐᒥ ᑐᑦᑐᖏᑦ ᓈᓯᖅᑕᐅᒪᐅᖅᑐᑦ 2010–ᒥ ᕿᑐᕐᖏᐅᕐᕕᖏᑦ ᐊᔾᔨᓕᐅᖅᑕᐅᓪᓗᑎᑦ ᕿᑐᕐᖏᐅᓵᖅᓯᒪᓕᖅᑎᓪᓗᒋᓪᓗ ᓈᓯᖅᑕᐅᒃᑲᓐᓂᖅᓱᑎᑦ.

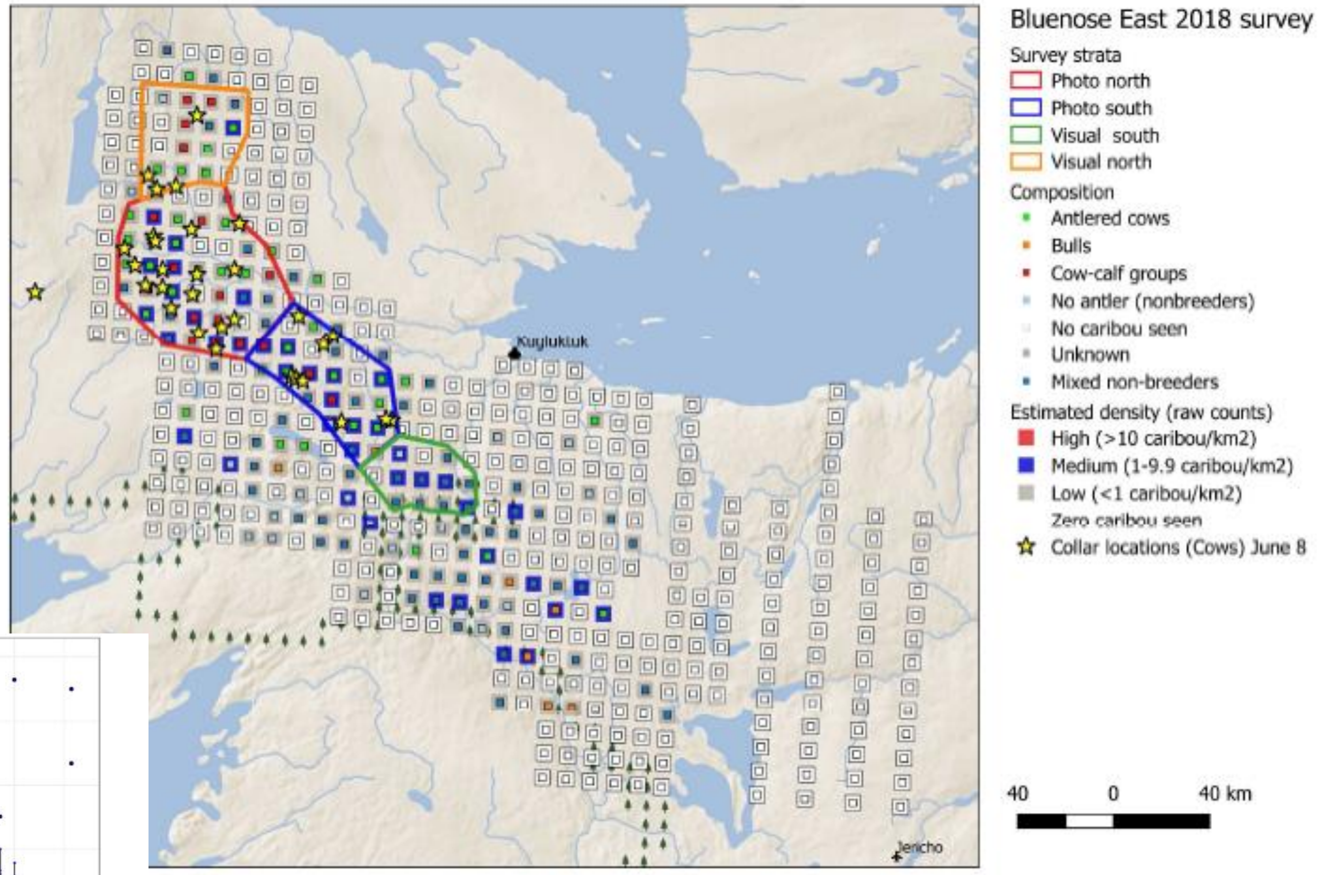
ᐊᕐᕌᒍᖏᓐᓂ 2010 ᑎᑭᓪᓗᒍ 2015, ᑐᑦᑐᐃᑦ ᐃᓄᐃᓯᓪᓕᕚᓪᓕᓚᐅᖅᑐᑦ120,000–ᓂᒃ 38,000–ᓄᑦ ᐱᕈᓵᖅᓯᒪᔪᑦ ᑐᑦᑐᐃᑦ.

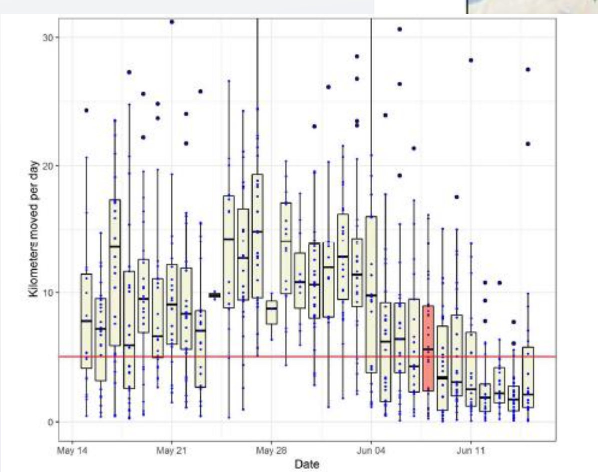


ᑐᑦᑐᐃᑦ ᖃᑦᓰᓐᓇᕈᖅᐹᓪᓕᐸᓪᓕ ᐸᓪᓕᐊᔪᑦ ᓇᓚᐅᑦᓵᖅᑕᐅᓯᒪᓪᓗᓂ 20% ᐊᕐᕌᒍᑕᒫᑦ.

ᕗᓘᓅᔅ–ᑲᓇᓐᓇᕐᒥ ᑐᑦᑐᖏᑦ ᖃᑦᓯᐅᓕᕐᒪᖔᑕ ᒥᑦᓴᐅᓵᕈᑏᑦ ᔫᓂ, 2018
(ᐱᓯᒪᔪᑦ ᕗᓛᓐᔪ ᐊᓯᖏᓪᓗ, 2019)

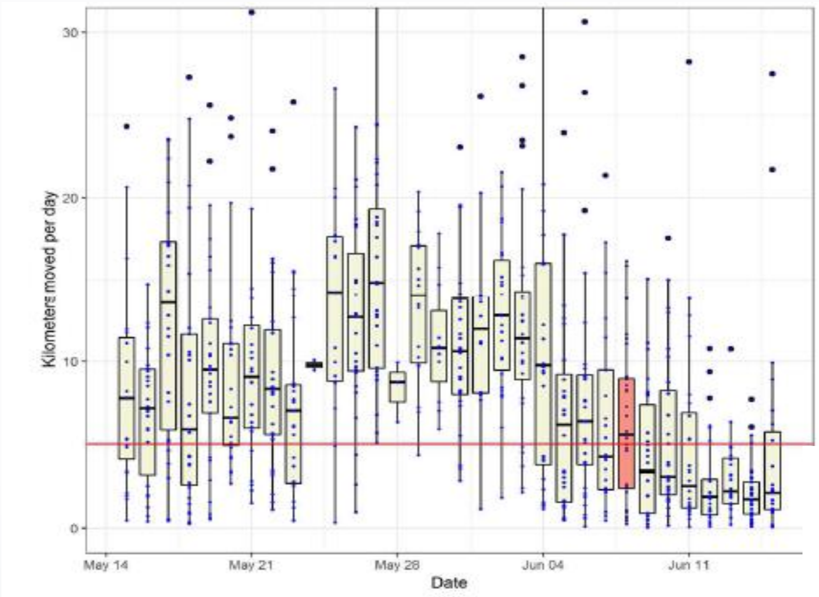
ᖃᐅᔨᓴᕐᓇᐊᖅᑲᓐᓂᕐᓂᕐᒧᑦ ᓈᓴᐃᒍᑏᑦ – ᓇᒦᓕᖅᑲᑦ ᕿᑐᕐᖏᐅᕈᓐᓇᕐᓕᖕᒋᑦ ᐊᕐᓇᕖᐊᑦ?





ᕗᓘᓅᔅ–ᑲᓇᓐᓇᕐᒥ ᖃᐅᔨᓴᕐᓇᐊᖅᑲᓐᓂᕐᓂᕐᒧᑦ ᓈᓴᖅᑕᐅᓂᖏᑦ; ᔫᓂ 1, 6, 7, 2019.

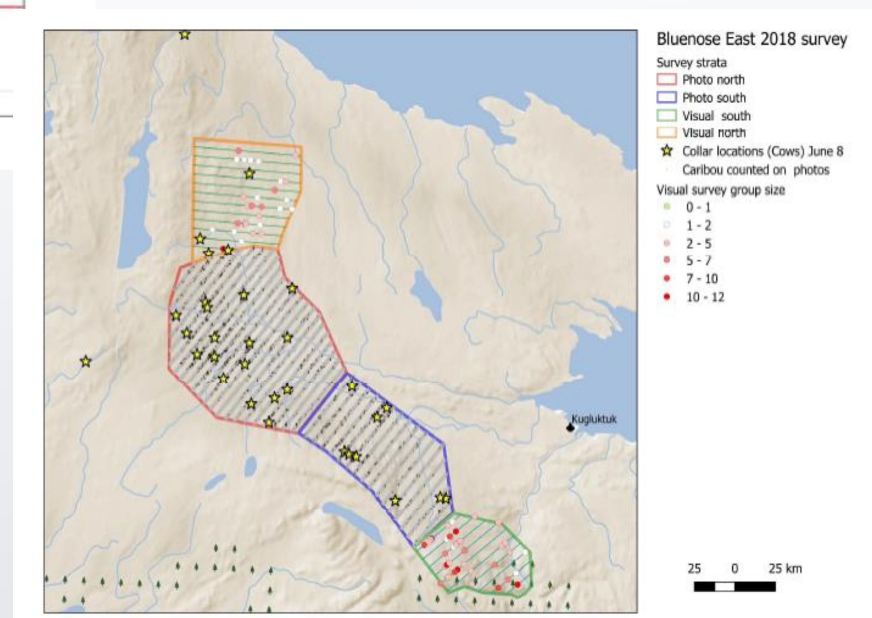
ᑭᒥᕈᓂᒃᑯᑦ ᓈᓯᐃᓂᖅ



ᖃᖓᑕᓚᐅᖅᑎᓇᒋᑦ ᖃᐅᔨᓴᕐᓂᒃᑯᑦ (ᑕᖅᓯᓕᓐᓂ), ᑭᒥᕈᖃᑦᑕᓚᐅᖅᑐᒍᑦ ᖃᐅᑕᒫᑦ ᖃᓄᑎᒋᑦ ᓅᑦᑕᕐᓂᖏᓐᓂ ᐊᕐᓇᕕᐊᖏᑦ, ᐊᒻᒪᓗ ᐅᓯᒋᑦᓯᒪᔪᐃᑦ ᖃᐅᔨᓴᕐᕕᐅᔪᒥ.

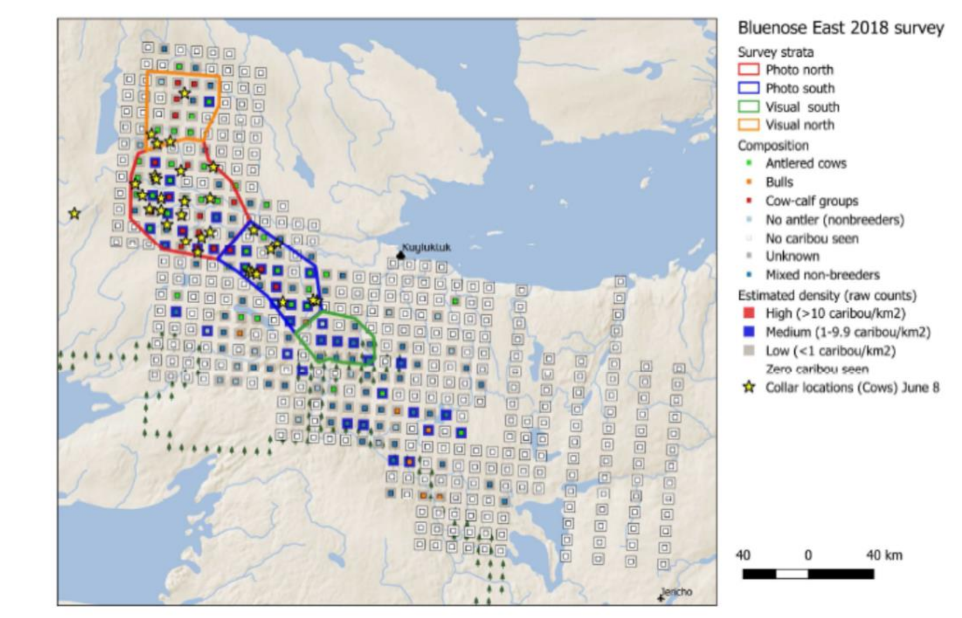
ᑭᒥᕈᓂᒃᑯᑦ ᓈᓯᐃᓂᖅ ᐱᔭᕆᐊᖃᖅᑐᖅ ᐅᓪᓗᐃᑦ 3−ᓗ 4−ᓗ ᓈᓚᐅᙱᓐᓂᖏᓐᓂ ᖃᐅᔨᓴᖅᑕᐅᓯᒪᓕᖅᑎᓪᓗᒋᑦ.

ᓅᑦᑕᕐᓂᖏᑦ ᐊᕐᓇᕕᖓᑦ ᐅᓯᒋᑦᑕᐅᓯᒪᔪᑦ ᕿᑐᕐᖏᐅᓚᐅᖅᑎᓇᒋᑦ ᐊᒻᒪᓗ ᕿᑐᕐᖏᐅᓕᖅᑎᓪᓗᒋᑦ 2018−ᒥ



ᓇᒦᓐᓂᖏᑦ ᐅᓯᒋᑦᑕᐅᓯᒪᔪᐃᑦ ᓴᓗᓅᔅ−ᑲᓇᖕᓇᕐᒥ ᐊᕐᓇᕕᐊᖑᓪᓗᑎᑦ ᑐᑦᑐᐃᑦ ᐊᒻᒪᓗ ᓅᑦᑕᕐᓂᖏᑦ, ᑎᑭᐅᑎᓪᓗᒍ ᔫᓂ 8, 2019

ᐊᔾᔨᓕᐅᕆᓂᒃᑯᑦ ᖃᐅᔨᓴᕐᕕᐅᔪᑦ



ᖃᐅᔨᓴᕐᕕᐅᔪᑦ, ᓇᓗᓇᐃᖅᑕᐅᒪᔪᑦ ᐊᒥᕉᓂᖃᖅᑐᑦ (ᐊᐅᐸᖅᑐᑦ), ᑎᒻᒥᕕᐅᕙᑦᑐᑦ ᐊᑯᓂᐅᓂᖅᓴᖅ ᐊᔾᔨᓕᐅᕈᑎᖃᖅᑐᒧᖅ ᖃᖓᑕᔫᕐᒧᑦ.

ᓈᓴᐃᔩᑦ ᓈᓴᐃᓯᕙᑦᑐᑦ ᑐᑦᑐᓂᒃ ᐊᔾᔨᙳᐊᓃᑦᑐᓂᒃ ᒥᑦᓴᐅᔮᕈᑏᑦ ᓇᓚᐅᑦᓯᓂᖅᓴᐅᕐᑯᓪᓗᒋᑦ.

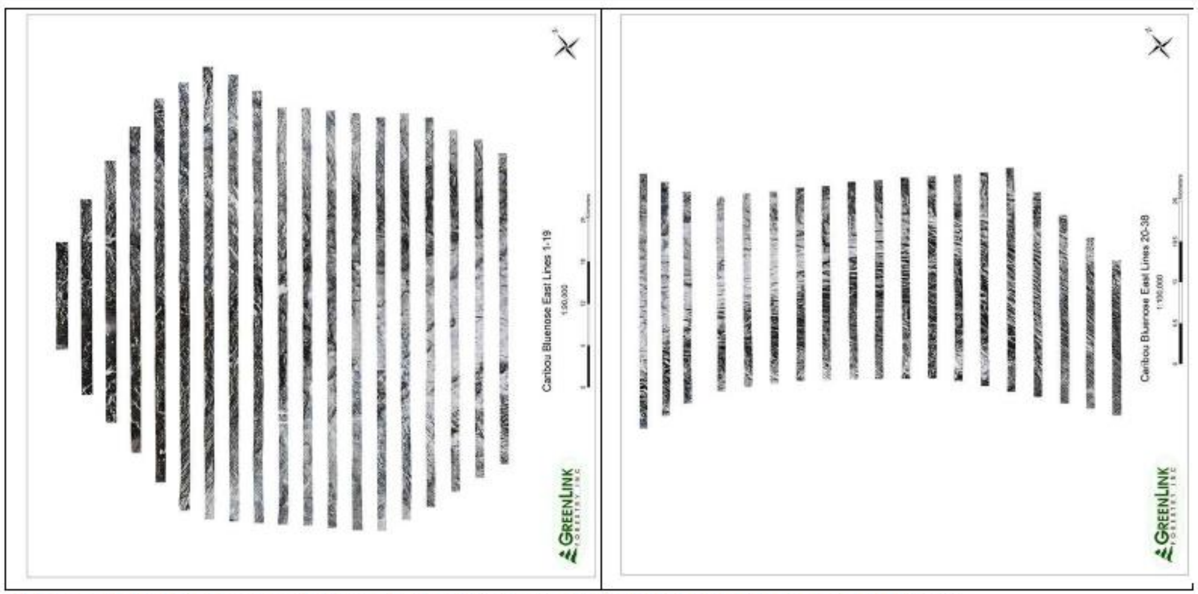


Figure 11: Composite photos of the Bluenose-East North and South photo strata.

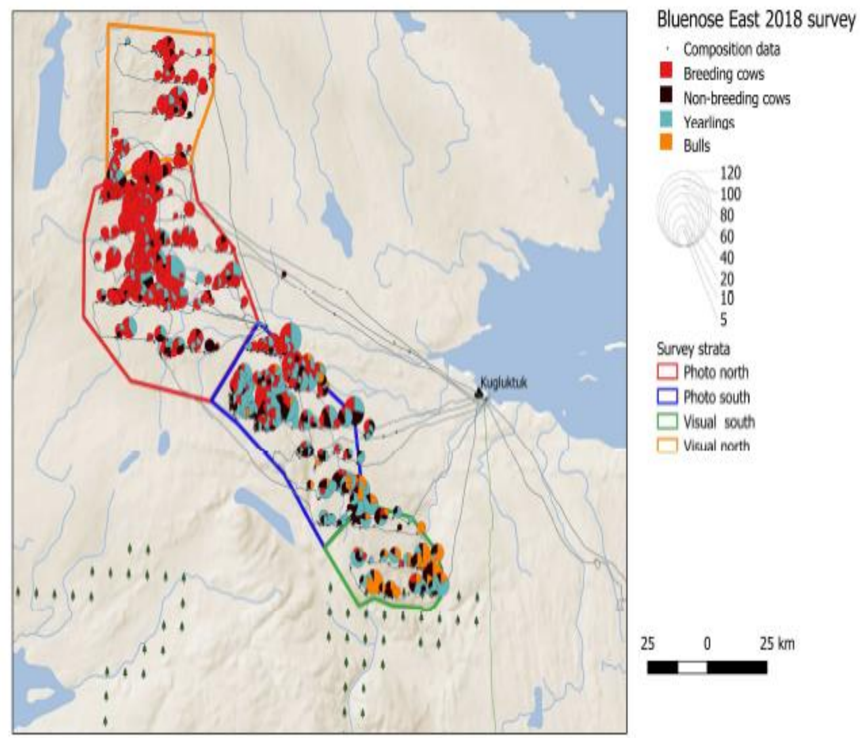
ᕿᑐᕐᖏᐅᕐᕕᖏᑦᑕ ᐊᒻᒪᓗ ᐅᑭᐊᑦᓵᒃᑯᑦ ᖃᓄᐃᓕᖓᓕᕐᒪᖔᑕ ᓈᓴᐃᒍᑏᑦ

Table 15: Summary of composition survey on Bluenose-East calving ground June 2018 in photo and visual strata.

Strata	# Groups	Adult Females Total	Adult Females Breeding	Adult Females Non-breeding	Yearlings	Bulls	Total Caribou (1 yr+)
North Visual	59	158	147	11	16	0	174
North Photo	189	726	677	49	104	0	830
South Photo	166	490	300	190	388	30	908
South Visual	39	53	7	46	71	61	185

Table 19: Summary of observations from fall composition survey on Bluenose-East herd October 23-25, 2018

Cows	Bulls	Calves	Groups Observed
1,542	586	396	115



ᕿᑐᕐᖏᐅᕐᕕᖏᑦᑕ ᓄᓇᐃᑦ ᓈᓴᐃᕙᐅᓂᖏᑦ ᐊᑐᖅᑕᐅᕙᑦᑐᑦ ᑐᑭᑖᕈᑎᐅᓪᓗᑎᑦ ᖃᑦᓯᐅᓂᖏᑦ ᕿᑐᕐᖏᐅᕈᓐᓇᖅᑐᑦ ᐊᕐᓇᕕᐊᑦ, ᕿᑐᕐᖏᐅᕈᓐᓇᙱᑦᑐᑦ ᐊᕐᓇᕕᐊᑦ, ᐊᕐᕌᒍᖅᑖᑕᐃᓐᓇᖅᑐᑦ, ᐊᒻᒪᓗ ᐊᖑᓯᓪᓗᐃᑦ.

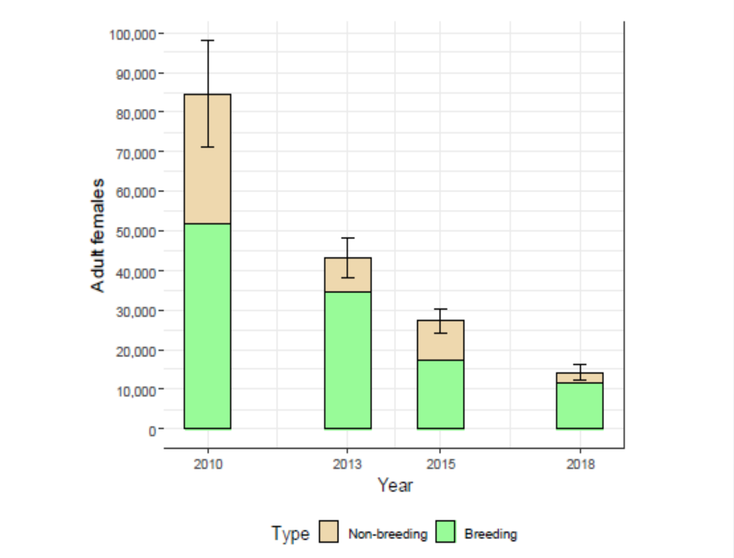
ᐅᑭᐊᑦᓵᒃᑯᑦ ᖃᓄᐃᓕᖓᓕᕐᒪᖔᑕ ᓈᓴᖅᑕᐅᒍᑎᖏᑦ ᐱᔪᑎᖃᖅᐸᑦᑐᑦ ᑐᑭᓯᓇᓱᐊᕐᓂᒥ ᐊᕐᓇᕕᐊᖏᑦ ᐊᖑᓯᓪᓗᖏᓪᓗ ᖃᑦᓯᐅᓕᕐᒪᖔᑕ.

2018 ᖃᑦᓯᐅᓂᖏᑦᑕ ᓈᓴᖅᑕᐅᓂᖏᑦ

Table 22: Extrapolated herd size estimates for the Bluenose-East herd in 2018 based on two estimators

Method	N	SE	Log-based CI		Symmetric Traditional CI		CV
Proportion of adult females	19,294	1,474.7	16,527	22,524	16,303	22,285	7.6%
Constant pregnancy rate (0.72)	22,366	2,861.8	17,247	29,004	16,530	28,202	12.8%

<u>ᖃᓄᐃᓕᖓᓂᖏᑦ ᐱᕈᖅᓯᒪᔪᑦ ᐊᕐᓇᕕᐊᑦ</u>
<u>ᒥᑦᓴᐅᓵᖅᑕᐅᔪᑦ</u> 19,294, (CV 7.6%)
ᑖᓐᓇ ᐊᑐᖅᑕᐅᓚᐅᖅᑐᖅ ᖃᐅᔨᓴᕐᓂᕐᒧᑦ
ᑭᖏᓪᓕᕐᒥ, ᐃᓚᐅᑎᓪᓗᒋᑦ 2015−ᒥ.
ᐊᑐᖅᐸᑦᑐᑦ ᕿᑐᕐᖏᐅᓪᓚᑎᓐᓂᖏᑦ (0.83)



ᐅᓄᖅᑑᑲᑕᒃᑐᑦ ᓇᓅᓐᓂᙱᓐᓂᒃ ᓇᓗᓇᐃᒃᑯᑎ

2018 ᐊᙳᓯᓪᓗᐃᑦ ᑕᐅᑐᒃᓱᒋ ᐊᕐᓇᕐᓗᙳᑦ: 38%, ᒫᓅᒡᒍᓪᓗᓂ 50%.

ᑲᑎᓯᒪᐅᖅᓱᑎᒃ ᐅᓄᕐᓂᕆᔭᐅᔪᑦ ᐊᕐᓇᕐᓗᐃᑦ ᑐᒃᑐᐃᑦ ᐃᓅᔪᓐᓇᕐᓂᙱᑦ ᒫᓅᑦᑐᑦ 72%.

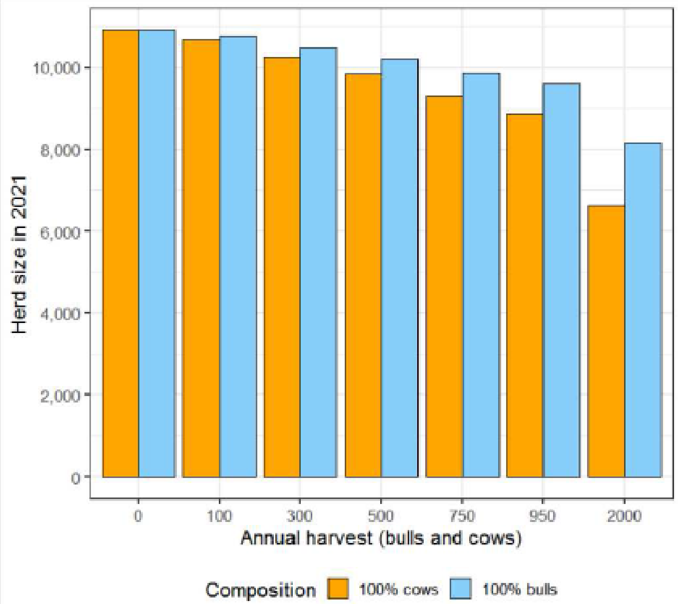
ᕿᑐᕐᖏᐅᖅᐸᓪᓕᐊᓂᖏᑦ 19%, ᑕᐃᒪᓕ ᐊᑦᑎᒃᑐᒦᑉᐳᑦ ᓄᕐᕋᐃᑦ ᐆᒪᓇᔭᕐᓂᖏᑦ.

ᑐᑦᑐᑦᑕᐅᓯᒪᔪᑦ

	2016-2017	2017-2018	2018-2019
ᖁᕐᓗᖅᑐᖅ	232	174	93
ᐊᑕᖏᑦᓗᒋᑦ ᐱᖃᑕᐅᒍᓐᓇᖅᑐᑦ	373	323	?

ᖁᕐᓗᖅᑐᖅ ᐳᓴᓐᑎᖕᒐᑦ ᐱᑎᑕᐅᓯᒪᓂᕐᒧᑦ 35.8%

ᑖᒃᑯᐊ ᑐᑦᑐᐃᑦ ᐱᐅᓯᑐᖃᕐᒥᓐᓂ ᒪᓕᑦᑐᑦ ᐃᓄᐃᓴᓪᓕᕚᓪᓕᐸᑦᓱᑎᑦ. ᑐᑦᑐᒐᓱᐊᖅᐸᑦᑐᐃᑦ ᒫᓐᓇᒃᑯᑦ ᒪᑭᑕᒃᑲᓐᓂᕈᑎᐅᒍᓐᓇᖏᑦᑐᑦ ᑖᒃᑯᐊᓗ ᑐᑦᑐᐃᑦ ᐊᐅᓚᑕᐅᒋᐊᖃᖅᑐᑦ ᐊᑦᑕᓇᖅᑐᒦᒻᒪᑕ.



ᑲᑎᒪᔩᑦ ᑐᑭᓵᕈᑎᙵᑦ ᓄᓇᕐᓯᐊᕐᒥ

- ᒐᕙᒪᒃᑯᙵᑦ ᓄᓇᕐᓯᐊᑉ ᐊᒻᒪᓗ ᑎᓕᕐᓰ ᒐᕙᒪᒃᑯᙵᑦ ᑲᑐᑎᓪᓗᑎᑦ ᐱᖁᔨᕗᖕᓖᓕᐅᓚᐅᖅᑐᑦ ᑲᑎᓕᒫᖅᓗᑎᑦ ᑐᑦᑐᑦᑕᐅᒍᓐᓇᖅᓗᑎᑦ **300 ᐊᖑᓯᓪᓗᐃᓐᓇᐃᑦ** ᑐᑦᑐᐃᑦ ᕗᓘᓅᔅ−ᑲᓇᓐᓇᖅᒥ ᑐᑦᑐᖏᓐᓂ ᒪᓕᓪᓗᒋᑦ 2018−ᒥ ᓈᓴᐃᒍᑎᒥᓃᑦ ᓇᓚᖅᑲᖏᑦ.

- ᐅᓪᓗᖓ ᔫᓂ 16, 2019, ᒍᐃᒃᐄᔨᒃᑯᑦ ᓄᓇᒦᖕᓖᖅᑐᓂᒃ ᑲᑎᒪᔨᖏᑦ ᑐᓂᓯᓚᐅᖅᑐᑦ ᑐᑭᓵᕈᑎᒥᓐᓂᒃ ᐊᐅᓚᑕᐅᓂᕐᓴᖏᓐᓄᑦ ᕗᓘᓅᔅ−ᑲᓇᓐᓇᖅᒥ ᑐᑦᑐᖏᓐᓄᑦ ᒐᕙᒪᒃᑯᖏᓐᓄᑦ ᓄᓇᕐᓯᐊᑉ ᐊᒻᒪᓗ ᑎᓕᕐᓰ ᒐᕙᒪᒃᑯᖏᓐᓄᑦ.

- ᒍᐃᒃᐄᔨᒃᑯᑦ ᓄᓇᒦᖕᓖᖅᑐᓂᒃ ᑲᑎᒪᔨᖏᑦ ᐃᑉᐱᒋᔭᖃᓚᐅᖅᑐᑦ "ᐃᓱᒫᓗᓐᓇᕋᑦᑐᒥ ᐱᐅᖅᓱᖅᐊᖅᓂᒎᖕᒐᔪᓂᒃ ᐱᑕᖃᕋᐊᖓ" ᕗᓘᓅᔅ−ᑲᓇᓐᓇᖅᒥ ᑐᑦᑐᖏᓐᓄᑦ ᐊᒻᒪᓗ ᐱᐅᖅᓱᐊᕋᐊᒃᑲᓐᓂᕋᐊᖃᖅᓱᑎᑦ. ᑲᑎᒪᔨᖏᑦ ᑐᑭᓵᓚᐅᖅᑐᑦ ᑲᑎᓕᒫᖅᓗᑎᑦ ᑐᑦᑐᑦᑕᐅᒍᓐᓇᖅᓗᑎᑦ **193 ᐊᖑᓯᓪᓗᐃᓐᓇᐃᑦ** ᐱᔭᐅᒍᓐᓇᖅᓗᑎᑦ ᕗᓘᓅᔅ−ᑲᓇᓐᓇᖅᒥ ᑐᑦᑐᖏᓐᓂ.

ᐊᕙᑎᓕᕆᔨᒃᑯᑦ ᐱᕐᑯᓯᕗᖕᓛᓕᐊᕆᔭᖕᒋᑦ

ᒐᕙᒪᒃᑯᖕᒋᑦ ᓄᓇᕗᑦ ᐊᕙᑎᓕᕆᔨᒃᑯᑦ ᐃᑲᔪᖅᑐᐃᕗᑦ ᒐᕙᒪᒃᑯᖕᒋᓐᓂᑦ ᓄᓇᖁᓯᐊᑉ ᑲᑎᓕᒫᕐᓗᒋᑦ ᑐᑦᑐᑦᑕᐅᒍᓐᓇᕐᓗᑎᑦ 300 ᐊᖑᓴᓪᓗᐃᑦ, ᑎᑭᐅᑎᓚᕿᓪᓗᒍ ᑲᑎᓕᒫᕐᓗᒋᑦ ᑐᑦᑐᑦᑕᐅᒍᓐᓇᖅᑐᑦ 107 ᐊᖑᓴᓪᓗᐃᓐᓇᐃᑦ (35.8%) ᐱᔭᐅᒍᓐᓇᕐᓗᑎᑦ ᕗᓘᓅᔅ–ᑲᓇᓐᓇᕐᒥ ᑐᑦᑐᖕᒋᓐᓂᒃ ᓄᓇᕗᒻᒥ (ᕐᑯᕐᓗᖅᑐᖅ).

ᑕᒪᓐᓇ ᑭᒡᒐᖅᑐᐃᔪᖅ ᑐᑦᑐᑦᑕᐅᕙᑦᑐᓂ 1.55%

ᐊᕙᑎᓕᕆᔨᒃᑯᑦ ᐱᕐᑯᓯᕗᖕᓛᓕᐅᕐᒥᔪᑦ ᒪᑯᓂᖕᒐ :

- ᓄᓇᓕᓐᓂ–ᐱᓕᕆᐊᖑᔨᒪᔪᑦ ᐊᐅᓚᑦᓯᓂᕐᒧᑦ ᐱᓕᕆᔾᔪᑏᑦ ᕐᑯᕙᐹᓪᓕᕐᑯᓪᓗᒋᑦ ᓇᖅᑭᓪᓗᑎᑦ ᑐᑦᑐᐃᑦ;
- ᖃᐅᔨᓴᕆᐊᓪᓚᒃᑲᓐᓂᕐᓗᑎᑦ ᓈᓴᐃᖃᑦᑕᓂᒃᑯᑦ ᐊᕐᕌᒍᒃ ᒪᕐᕉᒃ ᓈᒐᐃᑉᐸᑕ, ᕿᑐᕐᖏᐅᕐᕖᖏᓪᓗ ᐊᒻᒪᓗ ᐅᑭᐊᑦᓵᒃᑯᑦ ᖃᓄᐃᓕᖓᓕᕐᒪᖔᑕ ᖃᐅᔨᓴᖅᑕᐅᕙᓪᓗᑎᑦ ᐊᕐᕋᒍᑕᒫᑦ.

ᖁᔭᓐᓇᒦᒃ

THANK YOU

QUANAQUTIN

MERCI

ᐅᓂᒃᑳᓂᑦ ᐳᓘᓃᔅ-ᑲᓇᓐᓇᖕᒐᓂ ᑐᑦᑐᐃᑦ 2018
ᒥᔅᓴᐅᓴᑦᑕᐅᔪᑦ, ᓄᓇᕗᒻᒥ

ᓇᐃᓈᕆᔭᑎᑦ

ᐅᓇ ᓇᐃᑦᑐᖅ ᑎᑎᕋᒃᓯᒪᔪᕐᑯᑎᖕᒐ ᓇᐃᓈᕆᓂᐅᕗᖅ ᐅᕐᑲᐅᓯᒃᓴᓂ ᑐᓂᔭᐅᔪᓄᑦ ᐅᓂᒃᑳᓕᐊᒥ ᑕᐃᔭᐃᔪᒥ: "ᒥᔅᓴᐅᓴᑦᑕᐅᔪᑦ ᓄᕐᕋᓕᐅᖅᑐᑦ ᐊᕐᓇᐃᑦ ᐊᒻᒪ ᑐᑦᑐᓪᓚᕆᖕᒋᑦ ᐊᒥᓲᓂᖕᒋᑦ ᐊᖕᒋᓂᖕᒋᑦ ᐊᒻᒪ ᕿᐅᔾᓴᖅᑕᐅᓂᖕᒋᑦ ᐊᕕᖅᓯᒪᔪᖕᒋᑎᒍᑦ ᐳᓘᓃᔅ-ᑲᓇᓐᓇᖕᒐᓂ ᑐᑦᑐᖕᒋᓐᓄᑦ ᐅᑭᐅᑕᖅᑐᒥ ᑐᑦᑐᖕᒋᓐᓂ: 2018 ᓄᕐᕋᓕᐅᕐᕕᒃ ᐊᔾᔨᓐᖑᐊᑎᒍᑦ ᕿᐅᔾᓴᕐᓂᖅ."

ᓄᓇᕗᑦ ᒐᕙᒪᒃᑯᑦ ᐱᔪᓐᓇᐅᑎᕋᖅᑐᑦ ᐊᐅᓚᑦᑎᓂᕐᒧᑦ ᑐᑦᑐᑕᐅᕙᑦᑐᓂ ᑐᑦᑐᓂᑦ ᓄᓇᕗᒻᒥ ᐊᒻᒪ ᐱᕋᑕᐅᕙᑦᑐᑦ ᕿᐅᔾᓴᓂᕐᒥᑦ ᐊᒻᒪ ᕿᐅᔾᓴᕋᑦᑕᓂᕐᒥᑦ (ᐊᒥᓲᓂᖕᒋᓐᓄᑦ ᕿᐅᔾᓴᕐᓂᐅᔪᑦ) ᒐᕙᒪᒃᑯᖕᒋᓐᓂ ᓄᓇᑦᓯᐊᖅ, ᕿᐅᔾᒪᑎᑦᑎᓗᑎ ᐊᐅᓚᑦᑎᓂᕐᒧᑦ ᐳᓘᓃᔅ-ᑲᓇᓐᓇᖕᒐᓂ ᑐᑦᑐᖕᒋᓐᓂ. ᐅᑯᐊ ᐅᓂᒃᑳ ᐱᑕᕐᑲᖅᑎᑦᑎᔪᑦ ᕿᐅᔾᓴᖅᑎᓂᑦ ᑐᑭᓯᒋᐊᕈᑎᓂᑦ ᐃᓱᒪᓕᐅᕐᑲᑦᑕᖅᑐᓄᑦ ᐊᐅᓚᑦᑎᓂᕐᒧᑦ ᐳᓘᓃᔅ-ᑲᓇᓐᓇᖕᒐᓂ ᑐᑦᑐᖕᒋᓐᓂ.

ᓇᓗᓇᐃᔭᐃᓂᖅ

ᐅᓇ ᐃᓚᖓ ᐅᓂᒃᑳᓕᐊᒥ ᐃᓕᓯᕗᖅ ᖃᐅᔨᓴᖅᑕᐅᓂᐅᔪᒥ ᐱᓕᕆᐊᖑᓂᖓᓂ ᑎᑎᕋᖅᑕᐅᓯᒪᓪᓗᓂ. ᐱᑕᖃᖅᑎᑦᑎᔪᖅ ᓇᓗᓇᐃᔭᖅᓯᒪᓂᖏᑦ ᐆᒪᔪᐃᑦ, ᐊᒻᒪ ᐃᓚᖏᓐᓂ ᐅᐊᑦᑎᐊᕈᓂᑦ ᑐᑭᓯᒋᐊᕈᑏᑦ, ᐱᖃᓯᐅᑎᓪᓗᑎ ᐊᒥᓲᓂᕆᖃᑦᑕᖅᓯᒪᔭᖏᑦ ᓈᓴᐅᑎᖏᑦ.

ᐳᓘᓅᔅ-ᑲᓇᓐᓇᖓᓂ ᑐᑦᑐᖏᑦ (BNE) ᐱᑕᖃᕆᐊᓪᓚᓇᑦᑐᑦ ᐃᓅᓯᖏᓐᓂ ᐃᓄᐃᑦ ᐊᒻᒪ ᐱᒻᒪᕆᒋᔭᐅᔪᑦ ᑕᖅᓂᒃᑯᑦ, ᑮᓇᐅᔭᓕᕆᓂᒃᑯᑦ, ᐱᖅᑯᓯᒃᑯᑦ, ᐊᒻᒪ ᐆᒪᔪᖅᑲᑦᑕᓂᕐᒧᑦ ᐃᓱᒪᒋᔭᐅᔪᑦ. ᓄᓇᓕᖓ ᖁᓪᓗᖅᑑᖅ ᓂᕿᔅᓴᖅᑲᖅᑲᑦᑕᖅᑐᑦ ᑖᒃᑯᓂᖓ ᑐᑦᑐᓂᑦ, ᐊᓯᖏᓪᓗᑦᑕᐅᖅ ᐊᒥᓱᓚᐃᑦ ᓄᓈᑦ ᓄᓇᑦᓯᐊᒥᑦ.

ᐳᓘᓅᔅ-ᑲᓇᓐᓇᖓᓂ ᑐᑦᑐᖏᑦ ᐃᓚᒋᔭᖏᑦ ᐅᑭᐅᑕᖅᑐᒥ ᐅᑎᖅᑕᖅᑲᑦᑕᖅᑐᓄᑦ ᐅᑭᐅᑕᖅᑐᒥ ᑐᑦᑐᖏᓐᓄ. ᐊᑕᐅᓯᖅ ᐱᓗᐊᖅᑐᖅ ᖃᓄᐃᓘᖅᓯᓇᕙᑦᑕᖏᑦ ᐊᒥᓯᐊᓘᓪᓗᑎ ᐅᑎᖅᑕᖅᓂᓇᕙᑦᑕᖅᑐᖅ ᓇᐹᖅᑐᐃᑦ ᑭᓪᓕᖏᓐᓂ ᓄᓇᖅᓯᐊᒥ ᓄᖅᑲᓕᐅᖅᑕᐅᖏᓐᓂᓄᑦ ᓄᓇᕗᒻᒥ, ᐊᖅᓇᐃᑦ ᑲᑎᖃᑦᑕᖅᑐᑦ ᓄᖃᓕᐅᖅᑐᑎᑦ. ᐳᓘᓅᔅ-ᑲᓇᓐᓇᖓᓂ ᑐᑦᑐᖏᑦ ᐊᓯᖏᓐᓂᑦ ᐊᐅᓚᑕᐅᔪᓂᑦ ᑐᑦᑐᓂᑦ, ᓄᓇᖅᓯᐊᖅ ᒐᕙᒪᒃᑯᖏᑦ (GNWT) ᑐᑭᒧᐊᖅᑎᑦᑎᔪᑦ ᖃᐅᔨᓴᖅᑕᐅᓂᖏᓐᓄᑦ.

ᓯᕗᓂᐊᒍ ᓄᖃᓕᐅᓈᖅᑎᓪᓗᒋᑦ ᖃᐅᔨᓴᕐᓂᖅ (2000-2010) ᐊᑐᖅᑕᐅᓂᖓ ᐊᓯᔾᔨᖅᑕᐅᓚᐅᖅᑐᖅ ᓄᖃᓕᐅᖅᕕᖏᓐᓂ ᐊᔾᔨᖑᐊᑎᒍᑦ ᖃᐅᔨᓴᓂᕐᒥᑦ ᐊᑐᖅᑕᐅᓂᖓ 2010-ᒥᑦ ᓈᓴᖅᑕᐅᓗᑎ ᑐᑦᑐᐃᑦ ᑲᑎᖓᑎᓪᓗᒋᑦ ᑐᖓᓂᖃᖅᑎᖕᓇᓇᒥ ᓯᓚᖓᓄᑦ ᐊᒻᒪ ᑭᑦᑐᐊᓇᐊᓄᑦ ᐸᕕᓴᑦᑕᐅᓂᖏᓐᓄᑦ, ᖁᑦᑎᑦᑐᒥᑦ ᐊᔾᔨᒌᖏᓂᖃᖅᑐᑦ, ᑭᓯᐊᓂ ᓄᖃᓕᐅᕐᓂᓪᓗᐊᖃᖅᑎᓪᓗᒋᑦ. 2010 ᓄᖃᓕᐅᖅᑐᓂᑦ ᖃᐅᔨᓴᕐᓂᖅ ᓇᓗᓇᐃᖅᓯᔪᑦ ᒥᔅᓴᐅᓴᑦᑕᐅᔪᑦ 120,000 ᐃᓐᓇᐃᑦ ᑐᑦᑐᐃᑦ, ᑕᐃᒪᓕ ᐳᓘᓅᔅ-ᑲᓇᓐᓇᖓᓂ ᑐᑦᑐᖏᑦ ᐊᑦᑎᓪᓕᒋᐊᖅᑐᑎᑦ ᓱᑲᓐᓂᖓ ᖃᓂᒋᔭᐸᓗᐊᓂ 20 ᐳᓴᓐᑎ ᐊᕐᕌᒍᒥ ᐊᑕᐅᓯᕐᒥᑦ, ᑎᑭᑦᑎᔪᑦ ᒥᔅᓴᐅᓴᑦᑕᐅᔪᓂᑦ 38,000 ᐃᓐᓇᐃᑦ ᑐᑦᑐᐃᑦ 2015-ᒥᑦ.

ᒫᓐᓇᕋᑖᖅ ᖁᕝᕙᓯᓐᓂᖏᑦ ᐊᒻᒪ ᖃᑦᑏᓇᕈᓐᓂᖏᑦ ᐳᓘᓅᔅ-ᑲᓇᓐᓇᖓᓂ ᑐᑦᑐᖏᑦ ᓴᖅᑮᓚᐅᖅᑐᑦ ᐃᓱᒫᓘᑕᐅᔪᓂᑦ ᑐᑦᑐᖅᑲᑦᑕᖅᑐᓂᑦ ᓄᓇᓕᓐᓂᑦ ᐊᒻᒪ ᑕᒪᓐᓇ ᐃᓱᒪᒋᔭᖅᑲᖅᑎᑦᑎᓯᒪᔪᖅ ᖁᕝᕙᓯᕿᐊᖅᑕᐅᓗᑎᑦ ᖃᐅᔨᓴᖃᑦᑕᕐᓂᐅᔪᑦ ᐳᓘᓅᔅ-ᑲᓐᓇᖓᓂ ᑐᑦᑐᖏᓐᓂ.

ᑐᕌᒐᒃᓴᐃᑦ

ᑖᓐᓇ ᐱᓕᕆᐊᖅ ᑐᕌᖅᑲᖅᑐᖅ ᐱᓕᕆᐊᖅᑲᕐᓗᑎ ᐃᓱᒫᓘᑕᐅᔪᓂᑦ ᐃᓄᓐᓄᑦ, ᐊᒻᒪᓗᑦᑕᐅᖅ ᐱᑕᖃᖅᑎᑦᑎᓗᓂ ᖃᐅᔨᓴᖅᑎᓂᑦ ᑐᑭᓯᒋᐊᕈᑎᓂᑦ, ᓴᖅᑭᑎᑦᑎᓗᑎ ᓄᑖᒥ 2018 ᐊᒥᓲᓂᖏᓐᓄᑦ ᒥᔅᓴᐅᓴᑦᑕᐅᔪᓂᑦ, ᐊᒻᒪ ᑐᓐᖓᕕᖏᑦ ᐊᕕᑦᑐᖅᓯᒪᔪᒧᑦ ᓇᓗᓇᐃᕈᑏᑦ.

ᐋᖅᑭᒋᐊᕈᑎᑦ

ᑖᓐᓇ ᐱᓕᕆᐊᖅ ᒪᓕᓚᐅᖅᑐᖅ 2010 ᑎᑭᑦᑐᒍ 2015 ᐊᑐᖅᑕᐅᕙᑦᑐᓂᑦ. 32 ᖁᖓᓯᕈᖅᓯᒪᔪᑦ ᑐᑦᑐᐃᑦ ᓇᒦᓐᓂᖏᑦ ᐊᑐᖅᑕᐅᓚᐅᖅᑐᑦ ᖃᐅᔨᓴᖅᑐᑎ ᖃᖓᒃᑰᓂᖏᑦ ᐊᒻᒪ ᓇᒦᓐᓂᖓ ᓄᖃᓕᐅᓪᓗᐊᑕᖅᑎᓪᓗᒋᑦ, ᓴᖅᑭᑲᓐᓂᖅᑲᑦᑕᖅᑐᑦ ᖃᐅᔨᓴᕐᓂᐅᔪᑦ ᖃᐅᔨᓴᕐᕕᓂᑦ ᖃᖓᑕᕕᐅᓚᐅᖅᑐᑦ 10 ᑭᓚᒦᑕᐃᑦ (km) ᐅᖓᓯᓐᓂᓂᑦ ᔫᓂ 1, 6, ᐊᒻᒪ 7 ᓇᓗᓇᐃᖅᑕᐅᑎᐊᕐᓗᑎ ᐊᕐᕌᒍᑕᒫᑦ ᓄᖃᓕᐅᕐᕕᖏᑦ ᓇᒦᓐᓂᖏᑦ ᐊᒻᒪ ᐃᓕᓯᑎ ᖃᐅᔨᓴᓂᕐᒥᑦ ᑕᑯᔭᐅᔪᒃᑯᑦ ᐃᓚᖓᓂ (ᐊᔾᔨᖑᐊᖅ 1).

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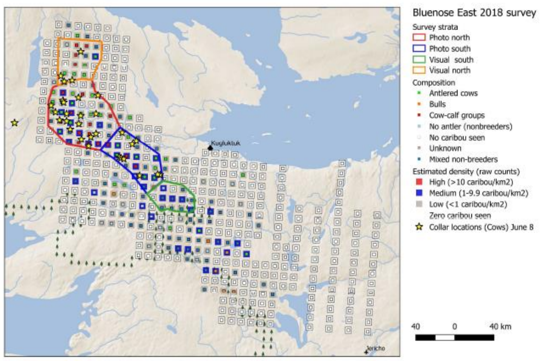
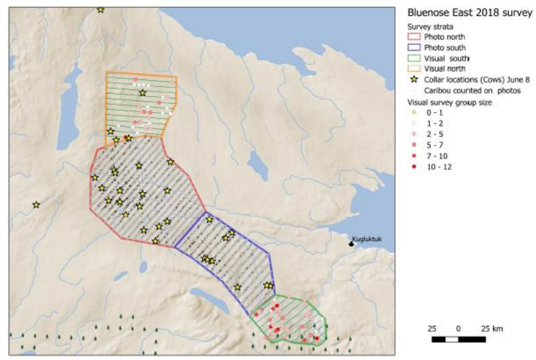


ᐊᔾᔨᖑᐊᖅ 1: ᖃᐅᔨᓴᕐᓂᖅ ᑐᒥᖏᓐᓂᑦ ᖃᐅᔨᓴᕐᓂᐅᔪᒥᑦ ᐱᖃᓯᐅᔾᔭᐅᔪᖅ ᐊᒻᒪ ᑕᑯᔭᐅᔪᓂᑦ ᖃᐅᔨᓴᕐᕕᐅᔪᑦ (ᐅᕕᓂᐊᔭᖅ, ᐊᐅᐸᖅᑐᖅ, ᑐᖑᔪᖅᑕᖅ ᐊᒻᒪ ᐆᔭᐅᔭᖅ) ᑐᓐᖓᓂᖅᖅᑐᖅ ᖃᓄᐃᓕᖓᓂᖏᓐᓄᑦ ᐊᒻᒪ ᐱᑕᖃᕐᓂᖏᓐᓄᑦ.



ᐊᔾᔨᖑᐊᖅ 2: ᑕᑯᔭᐅᔪᓂᑦ ᖃᐅᔨᓴᕐᓂᖅ ᖃᐅᔨᓴᕐᕕᐅᔪᒥᑦ ᖃᐅᔨᓴᕐᕕᐅᔪᓂᑦ ᑭᓪᓕᖅᖅᑐᑎᑦ ᐊᒻᒪ ᖁᖓᓯᑭᖅᑕᐅᓯᒪᔪᑦ ᑐᑦᑐᐃᑦ. ᖁᖓᓯᑭᖅᑕᐅᓚᐅᖅᑐᑦ ᓂᒋᖓᓂ ᐊᒻᒪ ᐅᐊᓐᓇᖓᓂ ᐳᕘᓅᔅ ᑕᓯᖓᓂ ᐳᕘᓅᔅ-ᒋᖓᓐᓇᖓᓂ ᐊᕐᓇᐃᑦ.

ᑐᓐᖓᕕᒋᓪᓗᒋᑦ ᑐᑦᑐᐃᑦ ᓇᒧᙵᖃᑦᑕᕐᓂᖏᑦ ᐊᒻᒪ ᐱᑕᖃᕐᓂᖏᑦ, ᖃᐅᔨᓴᕋᓱᓐᓂᐅᔪᖅ ᐃᓚᖏᓐᓂ ᐃᓕᐅᖅᑲᖅᑕᐅᓚᐅᖅᑐᑦ ᐊᑐᖅᑐᑎ ᐃᓚᖓᓂ ᐃᓕᐅᖅᑲᖅᑕᐅᔪᓂᑦ ᐊᑐᖅᑕᐅᔪᓂᑦ ᐊᔾᔨᐸᓗᖏᑦ ᐊᓯᖏᓐᓂ ᓄᕋᓕᐅᕐᕕᐅᔪᓂᑦ ᖃᐅᔨᓴᓂᕐᒧᑦ ᐅᑭᐅᑕᖅᑐᒥ ᑐᑦᑐᓂᑦ. ᒪᕐᕈᒃ ᓇᒦᓐᓂᖏᑦ (ᐊᐅᐸᖅᑐᖅ ᐊᒻᒪ ᑐᖑᔪᖅᑕᖅ) ᑐᑦᑐᖃᕐᓂᖅᓴᐃᑦ ᐊᔾᔨᓐᖑᐊᑎᒍᑦ ᖃᐅᔨᓴᖅᑕᐅᓚᐅᖅᑐᑦ, ᐱᖃᓯᐅᑎᓪᓗᑎ ᒪᕐᕈᒃ ᐊᒥᓲᖏᓂᖅᓴᓂᑦ ᓇᒦᓐᓂᖏᓐᓄᑦ (ᐅᕕᓂᐊᔭᖅ ᐊᒻᒪ ᐆᔭᐅᔭᖅ) ᓇᓗᓇᐃᖅᑕᐅᓚᐅᖅᑐᑦ ᑕᑯᔭᐅᓗᑎ ᖃᐅᔨᓴᕐᓂᐅᔪᓄᑦ ᒪᕐᕈᓐᓂᒃ ᖃᐅᔨᓴᖅᑎᖃᖅᑐᑎᑦ ᐊᑐᓂ ᐊᕙᑎᒃᑭᓐᓂ ᖃᖓᑕᓲᒥᑦ (ᒪᕐᕈᓐᓂᒃ ᖃᐅᔨᓴᖅᑎᓪᒃ ᐊᑐᖅᑕᐅᓂᖓ, ᐊᔾᔨᙳᐊᖅ 2). ᑕᑯᔭᐅᔪᓂᑦ ᖃᐅᔨᓴᕐᓂᖃᓚᐅᖅᑐᑦ ᔫᓂ 8, ᑐᑦᑐᐃᑦ ᓅᖃᑦᑕᓗᐊᖅᑎᓐᓇᒋᑦ, ᓄᕋᓕᐅᓪᓗᐊᕐᓂᖅᖅᑎᓪᓗᒋᑦ. ᑕᑯᔭᐅᔪᓂᑦ ᖃᐅᔨᓴᕐᕕᓕᒫᖑᔪᑦ ᖃᐅᔨᓴᖅᑕᐅᓚᐅᖅᑐᑦ ᓲᑲᓐᓂᖅᖅᑐᑎᑦ 160 ᑭᓚᒥᑕ/ᐃᑲᕋᖅ, ᐊᑉᐸᓯᓐᓂᖅᖅᑐᑎᑦ ᖃᓂᒋᔭᐸᓗᐊᓂ 120 ᒦᑕᐃᑦ, ᐊᒻᒪᑐᑦᑐᓕᒫᑦ ᐃᓗᐊᓃᑦᑐᑦᓇᓗᓇᐃᖅᑕᐅᓯᒪᔮᕆᖅᑐᒥ ᖃᐅᔨᓴᕐᕕᐅᔪᒥᑦ ᓯᕗᑐᓂᖅᖅᑐᑦ 800 ᒦᑕᐃᑦ ᑎᑎᕋᖅᑕᐅᓚᐅᖅᑐᑦ.

ᐅᓇᐅᑎᓪᓗᒍ ᔫᓂ 8, ᖃᓄᐃᓕᖓᓂᖏᓐᓄᑦ ᖃᐅᔨᓴᕐᓂᖃᓚᐅᖅᑐᑦ ᖁᑮᖑᓕᒃᑯᑦ ᐱᓪᓗᑎ ᓇᓗᓇᐃᔭᖅᓯᒪᓂᖅᓴᓂᑦ ᒥᔅᓴᐅᓴᑦᑕᐅᔪᓂᑦ ᕿᑐᙵᕆᐅᖅᑐᓂ, ᐊᕐᓇᐃᑦ ᐊᒻᒪ ᐊᓯᖏᑦ ᐊᒻᒪ ᐊᕐᖁᖏᑦ ᖃᓄᐃᑦᑐᓂᖏᑎᒍᑦ ᓄᕋᓕᐅᕐᕕᐅᔪᒥᑦ.

ᖃᓄᐃᓕᖓᓂᐅᔪᓂᑦ

ᐅᓄᕐᓂᖏᓐᓂ ᓇᓚᐅᑦᑖᕆᔭᐅᓯᒪᓂᖏᑦ, 2018

ᒥᔅᓴᐅᓴᑦᑕᐅᓕᖅᑐᑦ ᐳᕘᓅᔅ-ᑲᓇᓐᓇᖓᓂ ᑐᑦᑐᖏᓐᓄ ᐊᒥᓲᓂᖏᑦ 2018-ᒥᑦ ᐅᓇᐅᓚᐅᖅᑐᖅ 19,294 ᐃᓐᓇᐃᑦ ᑐᑦᑐᐃᑦ (ᐊᔾᔨᖑᐊᖅ 3). ᐊᔾᔨᕌᓐᖑᐊᖅᑎᑕᐅᓂᖏᑦ ᐅᑯᓇᓂ ᐊᑯᓐᓂᖏᓐᓂ 2015 ᐊᒻᒪ 2018 ᒥᔅᓴᐅᓴᑦᑕᐅᔪᑦ ᓇᓗᓇᐃᖅᓯᔪᑦ ᑲᑎᑦᑐᒋᑦ ᐊᑦᑎᓪᓕᕆᐊᖅᑐᑦ 49% ᐃᓇᓂᑦ ᐊᕐᓇᓂᑦ ᐊᒻᒪ 33% ᓄᕋᓕᐅᖅᑐᓂᑦ ᐊᕐᓇᓂᑦ. ᑖᓐᓇ ᐊᑦᑎᓪᓕᕆᐊᕐᓂᖓ ᐊᖏᔪᖅ.

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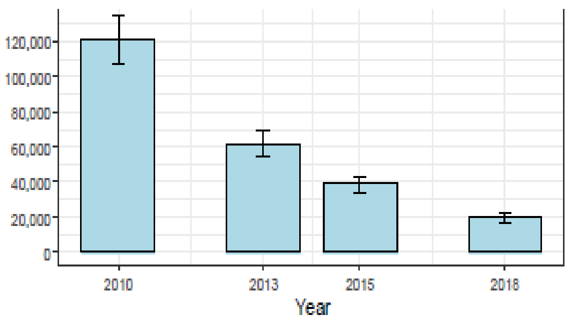

ᐊᔾᔨᙳᐊᖅ 3: ᒥᒃᓵᓴᑦᑕᐅᓯᒪᔪᑦ ᐳᓘᕝ ᑐᑐᖏᑦ ᐊᒥᓱᓂᖏᑦ ᐊᖏᓂᖏᑦ (ᐃᓐᓇᐃᑦ ᑐᑐᐃᑦ) ᐊᑐᖅᑐᑎ ᐃᓚᖓᓂ ᐊᕐᓇᓄᑦ ᐊᑐᖅᑕᐅᔪᓄᑦ ᐅᑯᓇᓂ 2010-2018.

ᐅᓄᕐᓂᐅᔪᑦ ᓇᓗᓇᐃᖅᑕᐅᓯᒪᔪᓄᑦ ᑲᑎᙵᓂᐅᔪᓄᑦ ᓇᓗᓇᐃᒃᑯᑕᐅᔪᑦ

ᖃᐅᔨᓴᖅᑕᐅᓂᖏᑦ ᐳᓘᕝ-ᑲᓇᓐᓇᖓᓂ ᑐᑐᐃᑦ ᐊᕕᑦᑐᖅᓯᒪᓂᖓᓃᑦᑐᑦ ᓇᓗᓇᐃᖅᓯᔪᑦ ᓄᕐᖃᓕᐅᑦᑎᐊᖃᑦᑕᖏᓐᓂᖏᓐᓄᑦ 19% ᖃᐅᔮᔭᐅᓚᐅᖅᑐᑦ 2018-ᒥᑦ, ᓇᓗᓇᐃᖅᑕᐅᓯᒪᔪᑦ ᖃᑦᑏᓐᓇᕈᖅᐸᓪᓕᐊᓂᖏᓐᓄᑦ ᓄᕋᐃᑦ ᐆᒪᖃᑦᑕᖅᑐᑦ, ᐱᖃᓯᐅᑎᓪᓗᑎᑦ ᐊᑦᑎᑦᑐᑦ ᐃᓐᓇᐃᑦ ᐊᕐᓇᐃᑦ ᐆᒪᖃᑦᑕᕐᓂᖏᑦ ᖁᕝᕙᓯᓐᓂᖏᑦ, ᐱᔾᔪᑎᒋᔭᐅᔪᑦ ᖃᑦᑏᓇᕈᖅᐸᓪᓕᐊᖏᓐᓇᕐᓂᖏᓐᓄᑦ. ᐊᕐᓇᐃᑦ ᑐᑐᐃᑦ ᐆᒪᖃᑦᑕᕐᓂᖏᓐᓄᑦ ᖁᕝᕙᓯᓐᓂᓇᓚᐅᖅᑕᖓ 72% (CI = 0.60-0.83), ᐊᕐᓇᐃᑦ ᑐᑐᐃᑦ ᐆᒪᖃᑦᑕᕐᓂᖏᓐᓄᑦ 92% ᐱᑕᖃᖓᐊᖅᑲᖅᑐᑦ ᒪᑭᑕᓪᓗᐊᕐᓗᑎ, ᓄᕋᓕᐅᖃᑦᑕᕐᓂᖏᑦ ᐊᑦᑎᑦᑑᖏᓐᓇᕈᓂ.

ᑖᒃᑯᐊ ᐊᕕᑦᑐᖅᓯᒪᓂᖓᓄᑦ ᓴᑦᓯᐅᑎᑦᑎᖏᑦᑐᑦ ᐅᑎᕐᓂᖏᓐᓄᑦ ᐳᓘᕝ-ᑲᓇᓐᓇᖓᓂ ᑐᑐᖏᑦ ᑭᖑᓪᓕᖅᐹᒥᓂᑦ ᖃᐅᔨᓴᕐᓂᐅᔪᔪᒥᑦ.

ᐅᖃᓪᓚᑲᑕᓐᓂᖅ

ᖃᓄᐃᓐᓂᓇᔭᖏᑦ ᐳᓘᕝ-ᑲᓇᓐᓇᖓᓂ ᑐᑐᖏᓐᓂ ᓄᕋᓕᐅᖅᓂᐅᔪᑦ ᐊᔾᔨᙳᐊᑎᒍᑦ ᖃᐅᔨᓴᕐᓂᐅᔪᖅ ᑎᑎᕋᖅᑕᐅᓚᐅᖅᑐᑦ ᐊᖏᔪᒥᑦ ᐊᑦᑎᓪᓕᒋᐊᖅᑐᑎᑦ 2015-ᒥᓂᑦ, ᐊᒻᒪ ᖃᑦᑏᓇᕈᖅᐸᓪᓕᐊᓂᖏᑦ 2010-ᒥᓂᑦ ᐊᕿᒍᑕᒫᑦ ᓱᑲᓐᓂᖅᑲᖅᑐᑦ ᖃᓂᒋᔭᐸᓗᐊᓂ 20%. ᖃᐅᔨᓴᖅᑕᐅᓂᖏᑦ ᐊᕐᓇᐃᑦ ᑐᑐᖏᑦ ᓇᒨᕆᖃᑦᑕᕐᓂᖏᑦ ᐊᒻᒪ ᐅᑎᖅᑕᖃᑦᑕᕐᓂᖏᓐᓄᑦ ᖃᐅᔨᓴᖅᑕᐅᔪᑦ ᐃᓚᒋᓪᓗᓂᐅᒃ ᐆᒎᖓ ᖃᐅᔨᓴᕐᓂᐅᔪᒧᑦ ᓇᓗᓇᐃᖅᓯᔪᑦ ᒥᑭᔪᒥ ᐊᒥᓱᕈᓇᐊᕐᓂᕐᑲᕈᓐᓇᖅᑐᑦ ᐊᒥᓲᓂᖏᓐᓄᑦ ᖃᐅᔮᔭᐅᔪᑦ ᖃᐅᔨᓴᕐᓂᐅᔪᓂᑦ ᐱᔾᔪᑎᖃᖅᑎᑦᑎᒍᓐᓇᖅᑐᑦ ᓇᒨᕆᖃᑦᑕᕐᓂᖏᓐᓄᑦ ᐳᓘᕝ-ᑲᓇᓐᓇᖓᓂ ᑐᑐᖏᑦ ᐊᓯᖏᓐᓄᑦ ᓄᕋᓕᐅᕐᕕᐅᔪᓄᑦ. ᑖᓐᓇ ᐃᓱᒫᓗᓐᓇᖅᑐᖅ ᖃᑦᑏᓐᓇᕈᖅᐸᓪᓕᐊᔪᑦ ᐊᒥᓱᓂᖏᓐᓄᑦ ᐱᖃᓯᐅᔾᔨᓚᐅᖅᑐᖅ ᖃᑦᑏᓐᓇᕈᕐᓂᖏᓐᓄᑦ ᐊᒥᓱᓂᖏᑦ ᓄᕋᓕᐅᖅᑐᑦ ᐊᕐᓇᐃᑦ ᐊᒻᒪᓗ ᐊᑦᑎᓂᖅᓴᓂᑦ ᒥᔅᓵᓴᑦᑕᐅᔪᑦ ᐆᒪᖅᑲᑦᑕᕐᓂᖏᓐᓄᑦ ᖁᕝᕙᓯᓐᓂᖏᑦ ᐊᒻᒪ ᐊᑎᓂᖏᓐᓄᑦ ᓄᕋᐃᑦ:ᐊᕐᓇᐃᑦ ᑐᑐᐃᑦ. ᐊᑦᑎᑦᑐᒥ ᐆᒪᖃᑦᑕᕋᔪᓘᙳᓂᖏᓐᓄᑦ ᖁᕝᕙᓯᓐᓂᖏᑦ ᑕᑯᔅᓴᐅᑎᑦᑎᔪᓐᓇᖅᑐᑦ ᓇᓄᕐᓄᑦ ᐊᒻᒪ ᐊᒪᕈᕐᓄᑦ ᓂᕆᔭᐅᖃᑦᑕᕐᓂᖏᓐᓄᑦ. ᐊᖏᒧᒥᑦ ᓯᓚᙳᓄᑦ ᖃᓄᐃᓐᓂᕆᔭᖏᑦ ᐱᐅᖏᑦᑐᓂᑦ ᐊᑦᑐᐃᓂᖃᖅᑐᑦ ᐱᕈᖅᑐᓂᑦ, ᐊᐅᔭᒃᑯᑦ ᐸᓂᖅᑐᓂ, ᐊᒻᒪ ᐊᒥᓲᓪᓗᑎ ᐃᒍᑦᑕᐃᑦ ᖃᐅᔨᒪᔭᐅᒻᒥᔪᑦ ᐃᓚᒋᓕᐅᔾᔭᐅᓪᓗᑎ ᖃᐅᔨᔭᐅᓯᒪᔪᓂᑦ ᐊᑦᑎᓪᓕᒋᐊᕐᓂᖏᓐᓄᑦ ᐊᓯᕐᕆᓂᖏᓐᓄᑦ ᐱᑕᖅᑲᕐᓂᖏᓐᓄᑦ.

ᑭᐅᔾᔪᑎᒋᓗᒍ ᖃᑦᑏᓐᓇᕈᖅᐸᓪᓕᐊᖏᓐᓇᕐᓂᖏᓐᓄᑦ ᐊᒻᒪ ᐱᐅᑦᑎᐊᖏᑦᑐᑦ ᐊᕕᑦᑐᖅᓯᒪᔪᒧᑦ ᓇᓗᓇᐃᑯᑏᑦ ᖃᐅᔮᔭᐅᔪᑦ, ᖁᕝᕙᓇᐊᓇᐊᖔᑦ ᖃᐅᔨᓴᖅᑕᕐᓂᖅ ᐊᒻᒪ ᖃᐅᔨᓴᕐᓂᖅ ᖃᐅᔨᒐᓯᐊᕐᓗᑎ ᑭᓯᐅᐃᓐᓇᕐᓂᑦ ᐊᓯᔾᔨᒃᓐᓂᖅᑐᓂᑦ ᑐᑐᖏᓐᓂᑦ ᐊᓯᔾᔨᖅᑕᑦᑕᕐᓂᖏᓐᓄᑦ ᐊᒻᒪ ᖃᓄᐃᓕᙵᓂᖏᓐᓄᑦ. ᓈᒻᒪᑦᑐᓂᑦ ᐊᐅᓚᑦᑎᓂᕐᒧᑦ ᖃᓄᐃᓕᓯᒋᐊᕈᑏᑦ ᐊᑐᖅᓕᖅᑎᑕᐅᔭᓇᐊᓖᑦ ᐱᖃᓯᐅᔾᔨᓗᑎ ᖁᕝᕙᓯᑦᑐᒥᑦ

ᑲᑐᑎᓪᓗ ᓄᓇᕗᑦ ᐱᕈᖅᐸᓪᓕᐊᑎᓪᓚᕗᑦ
Building Nunavut Together
Nunavuliuqatigiingniq
Bâtir le Nunavut ensemble

ᐊᕙᑎᓕᕿᔨᒃᑯᑦ
Department of Environment
Avatiliqiyikkut
Ministère de l’Environnement

ᖃᑦᑏᓇᕈᖅᐸᓪᓕᐊᓂᖏᑦ ᐳᓗᓃᔅ-ᑲᓇᓐᓇᖓᓂ
ᑐᑦᑐᖏᑦ.

ᐆᒪᔪᕐᓂᐊᖅᑎᒃᑯᑦ ᑲᑎᒪᔨᖏᑦ ᐅᖃᓇᐊᕐᕕᐅᓂᖏᑦᑕ ᐅᓂᒃᑳᓕᐊᖅ ᕗᓘᕖᔅ ᑲᓇᓐᓇᕐᒥ ᑐᑦᑐᐃᑦ ᐊᐅᓚᑕᐅᓂᖏᓐᓄᑦ ᐱᕐᑯᔨᕗᖕᓛᕈᑎᓂᒃ

ᕕᕝᕗᐊᕆ–ᐅᑐᐱᕆ 2019

ᐱᓕᕆᕕᖕᒐᑦ ᐊᕙᑎᓕᕆᔨᒃᑯᑦ, ᒐᕙᒪᒃᑯᖏᑦ ᓄᓇᕗᑦ, ᖁᕐᓗᖅᑐᖅ, ᓄᓇᕗᑦ

ᐊᖏᔪᖅᑲᐅᑎᓅᖓᔪᖅ ᓇᐃᓪᓕᒋᐊᖅᓯᒪᔪᖅ

ᒐᕙᒪᒃᑯᖏᑦ ᔪᓇᕗᑦ, ᐱᓕᕆᕖᖓᑦ ᐊᕙᑎᓕᕆᔨᒃᑯᒃ (DOE) ᑭᒡᒐᖅᑐᐃᔨᖏᑦ ᐱᓕᕆᐊᖃᓚᐅᖅᑐᑦ, ᕿᑦᕋᐊᓂᒥ ᑐᑭᓯᒋᐊᖅᑎᑦᓯᓂᕐᒥ ᐆᒪᔪᕐᓂᐊᖅᑎᒃᑯᑦ ᑲᑎᒪᔨᖏᓐᓂ (HTO) ᖁᕐᓗᖅᑐᒥ, ᔫᓂᐅᑎᓪᓗᒍ ᓯᕗᓪᓕᖅ ᐊᒻᒪᓗ ᐅᑐᐱᕆᐅᑎᓪᓗᒍ ᑐᖏᓕᐊᒍᑦ ᐅᖃᕆᐊᖅᑐᕐᕿᐅᓯᒪᓚᐅᖅᑐᑦ ᐊᐅᓚᑦᓯᓂᕐᒧᑦ ᐱᓕᕆᖃᑎᐅᔪᑦ. ᐱᔾᔪᑎᒋᓗᐊᓚᐅᖅᑕᖓ ᐅᖃᕆᐊᖅᑐᖅᓯᒪᓂᐅᑉ ᐅᖃᐅᓯᖃᕆᐊᖅᑐᖅᓱᑎᑦ ᐱᕐᑯᔨᕗᖔᕐᓂᒃᑯᑦ ᖃᑦᓯᐅᓂᖏᑦ ᑲᑎᓪᓗᒋᑦ ᐆᒪᔪᖅᑕᐅᒍᓇᖅᑐᑦ (TAH) ᒪᓕᓪᓗᒋᑦ ᓇᓕᖅᑲᖏᑦ 2018–ᒥ ᕗᓘᓃᔅ–ᑲᓇᓐᓇᕐᒥ ᕿᑐᕐᖏᐅᕐᕖᖏᑦᑕ ᑭᓪᓕᓯᓂᐊᖅᑕᐅᑎᓪᓗᒋᑦ ᐊᔾᔨᙳᐊᑎᒍᑦ. ᑕᐃᒃᑯᓂ ᐅᖃᕆᐊᖅᑐᖅᓯᒪᓂᐅᔪᓂ, ᐅᖃᐅᓯᑦᓴᕆᔭᐅᔪᑦ ᐆᒪᔪᕐᓂᐊᖅᑎᒃᑯᑦ ᑲᑎᒪᔨᖏᓐᓄᑦ ᐊᒻᒪᓗ ᐊᐅᓚᑦᓯᖃᑕᐅᔪᓄᑦ ᑐᓴᖅᑕᐅᓚᐅᖅᑐᑦ ᐱᔾᔪᑎᖃᖅᑐᓂ ᑭᓪᓕᓯᓂᐊᕐᓂᕐᒥ ᐊᒻᒪᓗ ᐊᐅᓚᑕᐅᓂᖏᑦᑕ ᐱᕐᑯᔨᕗᖔᕈᑕᐅᓯᒪᔪᑦ.

ᑖᒃᑯᐊ ᕗᓘᓃᔅ ᑲᓇᓐᓇᕐᒥ (BNE) ᑐᑦᑐᖏᑦ ᑐᙵᕕᐅᓪᓚᓂᑦᑐᑦ ᐊᓐᓇᐅᒪᒐᓱᐊᕐᓂᕐᒧᑦ, ᐃᓄᐃᓴᓪᓕᕙᓪᓕᐊᓂᖏᑦᑕᓗ ᑐᑦᑐᐃᑦ ᐃᓱᒫᓘᑎᐅᔪᑦ ᓂᕿᑦᓴᓂᕐᒧᑦ. ᖃᑦᔫᓐᓇᕈᖅᐹᓪᓕᕐᓂᖏᑦ ᐃᓱᒫᓗᓐᓇᓪᓚᓂᑦᑐᑦ. ᓖᓐᓇᐅᓕᖅᑐᖅ, ᐱᔭᐅᒍᓐᓇᕐᒪᑕ ᑲᑐᓪᓗᒋᑦ ᑐᑦᑐᑦᑕᐅᒍᓐᓇᖅᑐᑦ 340 ᕗᓘᓃᔅ ᑲᓇᓐᓇᕐᒥ ᑐᑦᑐᖏᑦ ᐊᕐᕋᒍᑕᒦᑦ ᑭᓯᐊᓂᓕ ᑖᒃᑯᐊ ᑲᑎᓪᓗᒋᑦ ᑐᑦᑐᑦᑕᐅᒍᓐᓇᖅᑐᑦ ᐋᖅᑭᒋᐊᖅᑕᐅᒋᐊᖃᖅᑐᖅ ᑭᐅᔾᔪᑎᒋᓗᒍ ᖃᑦᓯᐅᓂᖏᑕ ᑭᓪᓕᓯᓂᐊᕈᑎᐅᓯᒪᔪᑦ 2018–ᒥ ᖃᐅᔨᓴᕐᓂᑦᑯᑦ. ᐆᒪᔪᕐᓂᐊᖅᑎᒃᑯᑦ ᑲᑎᒪᔨᖏᑦ ᐊᒻᒪᓗ ᔪᓇᓕᖅᑲᖅᑐᐃᑦ ᐊᓚᒃᑲᐅᒪᑎᑦᓯᔪᑦ ᓵᙱᔪᓂᒃ ᐱᓕᕆᔾᔪᑎᐅᔪᓂᒃ ᐸᖅᑭᑦᓯᓂᕐᒥᓪᓗ ᐊᑐᓕᖅᑎᑕᐅᓪᓗᑎᓪᓗ ᔪᓇᓕᓐᓂ–ᐊᑐᖅᑕᐅᓯᒪᔪᑦ ᖃᑦᔫᓐᓇᕈᖅᐹᓪᓕᖅᓯᒪᑎᓪᓗᒋᑦ ᓖᓐᓇᐅᓕᖅᑐᖅ. ᑖᒃᑯᐊ ᐆᒪᔪᕐᓂᐊᖅᑏᑦ ᑲᑎᒪᔨᖏᑦ ᐃᓕᑕᕆᔭᐅᖁᔨᒻᒥᔪᑦ ᓇᒻᒥᓂᖅ ᐱᓕᕆᐊᕆᓯᒪᔭᒥᓐᓂ ᔫᒍᑎᑦᓯᑦᑕᐃᓕᓂᕐᒧᑦ. ᑖᓐᓇ ᐅᓂᒃᑳᓕᐊᖅ ᓇᐃᓪᓕᒋᐊᖅᓯᒐᓯᐊᖅᑐᖅ ᐅᖃᐅᓯᐅᓚᐅᖅᑐᓂᒃ ᐊᐅᓚᑦᓯᖃᑎᒌᑦᑐᓄᑦ ᑖᒃᑯᓇᓂ ᑲᑎᒪᓂᐅᔪᓂ.

ᐃᓗᓕᖏᓐᓂᒃ ᑐᑭᓯᒋᐊᕐᑎᑦᓯᒍᑎ

ᑖᓐᓇ ᐅᓂᒃᑳᓕᐊᖑᓯᒪᔪᖅ ᑭᒡᒐᖅᑐᐃᔪᖅ ᐱᓕᕆᕕᖕᒐᑕ ᐊᕙᑎᓕᕆᔨᒃᑯᑦ ᐊᑕᖏᕋᓱᐊᕐᑐᓂᒃ ᑐᑭᓯᒋᐊᕈᑎᓂᒃ ᐅᖃᐅᓯᐅᓚᐅᕐᑐᓂᒃ ᐅᖃᓇᐊᕐᑐᖅᕕᐅᓯᒪᑎᓪᓗᒋᑦ ᑲᑎᒪᓂᒃᑯᑦ ᐆᒪᔪᕐᓂᐊᕐᑎᒃᑯᑦ ᑲᑎᒪᔨᖏᑦ.

ᑕᒪᒃᑯᐊ ᐅᖃᐅᓯᐅᓯᒪᔪᑦ ᑕᕝᕙᓂ ᑭᒡᒐᖅᑐᐃᑦᓴᐃᓐᓇᙱᑦᑐᑦ ᐃᓱᒪᒋᔭᖏᓐᓂ ᐱᓕᕆᕕᖕᒐᑕ ᐊᕙᑎᓕᕆᔨᒃᑯᑦ, ᓄᓇᕗᑦ ᐅᕝᕙᓘᓐᓃᑦ ᒐᕙᒪᒃᑯᖏᑦᑕ ᓄᓇᕗᑦ.

ᓇᓗᓇᐃᖅᓯᒍᑎ ᐃᓗᓕᖏᓐᓂᒃ

1.0 ᐅᓂᒃᑳᓕᐊᑉ ᐱᔾᔪᑎᖓ ᐋᖅᑭᑦᓯᒪᓂᖓᓗ

ᑖᓐᓇ ᐅᓂᒃᑳᓕᐊᖑᓯᒪᔪᖅ ᑲᑎᖅᓯᐃᓚᓯᐊᖅᓯᒪᔪᖅ ᓇᐃᓪᓕᒋᐊᖅᓯᒪᔪᓂᒃ ᐅᖃᐅᓯᐅᓯᒪᔪᓂᒃ, ᐊᐱᖅᑯᑎᐅᓯᒪᔪᓂᒃ, ᐃᓱᒫᓗᑎᐅᓯᒪᔪᓂᒃ, ᐊᒻᒪᓗ ᖃᓄᖅᑑᓇᐊᕈᑕᐅᓯᒪᔪᓂ ᑲᑎᒪᓂᖃᖅᑎᓪᓗᒋᑦ ᐊᐅᓚᑦᓯᔨᐅᖃᑕᐅᔪᑦ ᐱᖁᔨᕚᓖᕐᓂᒃᑯᑦ ᐊᑐᓕᖁᔭᐅᓯᒪᔪᓂ ᕗᓘᓅᔅ-ᑲᓇᓐᓇᕐᒥ ᑐᑦᑐᖏᓐᓄᑦ (BNE). ᑖᒃᑯᐊ ᓇᐃᓪᓕᑎᖅᑕᐅᓯᒪᔪᑦ ᐊᒻᒪᓗ ᑎᑎᕋᖅᑕᐅᓯᒪᔪᑦ ᑕᕝᕙᓂ ᑭᓯᐊᓂ ᑲᑎᒪᓂᐅᔪᓂ ᐅᖃᐅᓯᐅᓚᐅᖅᑐᓂ.

2.1 ᐱᔾᔪᑎᖓᑦ ᐅᖃᓕᐊᕐᕕᐅᓯᒪᓂᖏᑕ

ᐅᓪᓗᖓᓂ ᕕᕝᕗᐊᕆ 20, 2019, ᑲᑎᒪᓂᖃᓚᐅᖅᑐᑦ ᒐᕙᒪᒃᑯᖏᑦ ᓄᓇᑦᓯᐊᒃᑯᑦ (GNWT) ᐆᒪᔪᓕᕆᔩᒻᒪᕆᖓᓪᓗ ᑐᓂᔭᐅᓪᓗᑎᑦ 2018-ᒥ ᕗᓘᓅᔅ ᑲᓇᓐᓇᕐᒥ ᑭᓪᓕᓯᓂᐊᖅᑕᐅᒍᑎᕕᓃᑦ ᓇᓕᖅᑲᖏᑦ ᒐᕙᒪᒃᑯᖏᑦ ᓄᓇᑦᓯᐊᑉ ᓯᕗᓕᕐᒪᑕ ᖃᐅᔨᓴᖅᑎᐅᓪᓗᑎᑦ ᖃᑦᓯᐅᓕᕐᓂᖏᓐᓂᒃ ᕗᓘᓅᔅ ᑲᓇᓐᓇᕐᒥ ᑐᑦᑐᖏᑦ. ᐱᔾᔪᑎᒋᓚᐅᖅᑕᖏᑦ ᑲᑎᒪᓂᐅᔪᐃᑦ ᐅᖃᓕᐊᖅᑐᕐᕕᐅᓪᓗᑎᑦ ᐱᖁᔨᕚᓖᖅᑕᐅᔪᒥᒃ ᑲᑎᓪᓗᒋᑦ ᑐᑦᑐᑦᑕᐅᒍᓐᓇᖅᑐᑦ (TAH) ᐊᕙᑎᓕᕆᔩᒃᑯᑦ ᐱᖁᔨᕚᓖᕈᑎᖓᑦ ᐃᑲᔪᖅᓯᖁᓪᓗᒍ ᐃᓄᐃᓴᓪᓕᕙᓪᓕᐊᓂᖏᓐᓄᑦ ᑐᑦᑐᐃᑦ. ᑖᒃᑯᐊ ᑲᑎᒪᓃᑦ ᐱᕕᑦᓴᖃᖅᑎᑦᓯᓚᐅᖅᑐᑦ ᑎᑎᖅᑕᐅᕙᓪᓕᐊᓪᓗᑎᑦ ᐃᓱᒫᓘᑎᐅᔪᑦ ᐅᖃᐅᓯᑦᓴᐅᔪᓪᓗ ᐊᐅᓚᑦᓯᖃᑎᐅᔪᓂᒃ ᑐᑦᓯᕌᓇᔭᖏᑦ ᐊᑐᓕᕈᓐᓇᖁᓪᓗᒋᑦ ᐊᒻᒪᓗ ᓇᓗᓇᐃᔭᖅᓯᓈᕐᓗᒋᑦ ᒫᓇᒃᑯᑦ ᓄᓇᓕᓐᓂ ᐊᐅᓚᑦᓯᓂᕐᒧᑦ ᐊᑐᖅᑕᐅᔪᑦ. ᖁᕐᓗᖅᑐᕐᒥ ᐆᒪᔪᕐᓂᐊᖅᑏᑦ ᑲᑎᒪᔩᖏᑦ (HTO) ᐅᖃᓕᐊᖅᑐᕐᕕᐅᓯᒪᓚᐅᖅᑐᑦ ᑎᒃᑯᐊᖅᑕᐅᓯᒪᒐᒥᒃ ᑭᒡᒐᖅᑐᐃᓂᖏᓐᓂᒃ ᓄᓇᓕᓐᓂ ᐆᒪᔪᕐᓂᐊᖅᑎᓂᒃ ᐊᑖᓂ ᓄᓇᕗᑦ ᐊᖏᕈᑎᖓᑕ.

2.2 ᖃᓄᐃᓕᖓᓂᖏᑦ ᑲᑎᒪᓂᐅᔪᑦ

ᑲᑎᒪᓂᖃᖃᑦᑕᓚᐅᖅᑐᑦ ᐅᓐᓄᒃᑯᑦ ᐊᒻᒪᓗ ᐅᓪᓗᒃᑯᑦ ᖃᓄᑎᒋᐅᓂᖏᑦ ᐊᔾᔨᒌᙱᓐᓂᖃᓪᓛᓪᓗᑎᑦ. ᐃᓚᖏᑦ ᑲᑎᒪᓂᖃᖃᑦᑕᓚᐅᖅᑐᑦ ᐃᑲᕐᕋᕐᓂᒃ ᐱᖓᓱᓂᒃ ᐃᓚᖏᑦ ᑲᑎᒪᓃᑦ ᐅᓪᓗᓕᒫᖅᑎᓪᓗᒋᑦ. ᑐᑭᓯᒋᐊᕈᑏᑦ ᓰᕐᓗ ᖃᓄᐃᓕᖓᓕᕐᒪᖔᑕ ᑐᑦᑐᖏᑦ, ᐱᖁᔨᕚᓖᕈᑏᑦ ᐱᓯᒪᔪᑦ ᑭᓪᓕᓯᓂᐊᕈᑏᑦ ᓇᓕᖅᑲᖏᓐᓂ, ᓂᕐᔪᑎᕐᓂᐊᕐᓂᕐᒧᓪᓗ ᑐᑭᑖᕈᑕᐅᓯᒪᔪᑦ ᐊᕕᑦᑐᖅᓯᒪᔪᖏᓐᓂ ᓄᓇᑦᓯᐊᕐᒥ ᐅᓂᒃᑳᖑᓚᐅᖅᑐᑦ. ᓄᓇᕗᒻᒥ ᐊᐅᓚᑦᓯᖃᑎᖏᓐᓂᖏᑕ ᐃᓱᒪᒋᔭᐅᓯᒪᔪᑦ ᑎᑎᖅᑕᐅᓚᐅᖅᑐᑦ ᑲᑎᒪᓂᐅᔪᒥ. ᐅᓂᒃᑳᓕᐊᖑᓯᒪᔭᖓᑦ ᓄᓇᑦᓯᐊᒃᑯᑦ ᒐᕙᒪᒃᑯᖏᑦᑕ ᐋᖅᑭᑦᓯᖅᓯᒪᓂᖃᓗᐊᓚᐅᙱᑦᑐᑦ ᐊᒻᒪᓗ ᐊᐅᓚᑦᓯᖃᑎᖏᑦᑐᑦ ᖃᐃᖅᑯᔭᐅᓚᐅᖅᑐᑦ ᐊᐱᖅᓱᓇᐊᖅᑐᖅᑯᔭᐅᓪᓗᑎᑦ, ᐃᓱᒫᓘᑎᒥᓂᒃ ᐅᖃᐅᓯᖃᓇᐊᖅᑐᕐᓗᑎᑦ, ᐱᖁᔨᕚᓖᕐᓕᐅᕐᓗᑎᓪᓗ ᐊᑐᓕᖁᔭᐅᔪᓂᒃ. ᐅᖃᖃᑎᒌᓐᓂᐅᔪᑦ ᒪᑐᐃᖓᓚᐅᖅᑐᑦ. ᐊᕙᑎᓕᕆᔩᒃᑯᑦ ᐱᓕᕆᕝᕕᖓ ᓯᕗᓕᓚᐅᖅᑐᑦ ᐅᖃᖃᑎᒌᓐᓂᐅᔪᓂ ᐊᒻᒪᓗ ᒪᑐᐃᖓᑎᑕᐅᓪᓗᓂ ᐅᖃᐅᓯᖃᕈᒪᔪᓄᑦ ᐆᒪᔪᕐᓂᐊᖅᑎᒃᑯᖏᓐᓂ.

3.0 ᑭᒃᑯᓕᒫᖅᓯᐅᑎ ᐊᒻᒪᓗ ᐆᒪᔪᕐᓂᐊᖅᑏᑦ ᑲᑎᒪᔩᖏᑦ ᐅᖃᓕᐊᕐᕕᐅᓯᒪᓂᖓᑕ ᓇᐃᓪᓕᒋᐊᖅᓯᒪᔪᖅ

ᐱᔾᔪᑎᖓ ᑕᒪᑐᒪ ᐅᖃᓕᐊᖅᑐᖅᓯᒪᓂᐅᑉ ᑐᑭᓯᓇᑦᓯᐊᖅᑐᒥᒃ ᐅᖃᐅᓯᐅᓚᐅᖅᑐᖅ ᑐᑭᓯᒋᐊᕈᑎᑦᓴᐃᓪᓗ ᑐᓂᔭᐅᓚᐅᖅᓱᑎᑦ ᐆᒪᔪᕐᓂᐊᖅᑎᒃᑯᑦ ᑲᑎᒪᔩᖏᓐᓄᑦ ᓯᕗᓂᒻᒪᕆᐊᒍᑦ ᐅᖃᓕᐊᖅᑐᕐᕕᐅᓚᐅᖅᑎᓐᓇᒋᑦ, ᐊᒻᒪᓗ ᐱᒋᐊᓕᖅᑎᓪᓗᒋᑦ ᑲᑎᒪᓂᖏᑦ. ᐊᒥᒎᓚᐅᖅᑐᑦ ᐊᐱᖅᑯᑎᐅᔪᑦ, ᐃᓱᒫᓘᑎᐅᔪᑦ, ᐱᖁᔨᕚᓖᖅᑕᐅᔪᓪᓗ ᐅᖃᐅᓯᐅᔪᑦ ᐆᒪᔪᕐᓂᐊᖅᑏᑦ ᑲᑎᒪᔩᖏᓐᓄᑦ. ᕗᓘᓅᔅ ᑲᓇᓐᓇᕐᒥ ᑐᑦᑐᖏᑦ ᐱᒻᒪᕆᐅᔪᑦ ᐊᓐᓇᐅᒪᒍᓐᓇᕐᓂᖓᓐᓄᑦ ᓄᓇᓕᖓᑦᑕ ᖁᕐᓗᖅᑐᖅ. ᐆᒪᔪᕐᓂᐊᖅᑏᑦ ᑲᑎᒪᔩᖏᑦ ᐅᖃᐅᓯᖃᓚᐅᖅᑐᑦ ᐊᖏᓕᕆᐊᖁᔨᓪᓗᑎᑦ ᐊᒪᕈᕐᓂᐊᕐᓂᕐᒧᑦ ᐱᓕᕆᐊᖑᔪᒥᒃ ᐃᑲᔪᖅᓯᕙᒃᓴᖅᓯᓂᓪᓗ ᐆᒪᔪᕐᓂᐊᖅᑎᓂᒃ ᐊᒥᖏᑦ ᓂᐅᕐᕈᓯᐅᕐᑕᐅᕙᓪᓗᑎᑦ ᐊᒪᕈᔭᐃᑦ. ᒪᑯᐊ ᒪᓕᑦᑐᑦ ᐊᑖᓂ ᓇᓗᓇᐃᖅᓯᔪᑦ ᓇᐃᓪᓕᒋᐊᖅᓯᒪᓪᓗᑎᑦ ᐅᖃᓕᐊᖅᑐᖅᓯᒪᓂᐅᓚᐅᖅᑐᑦ.

3.1. ᖁᕐᓗᖅᑐᕐᒥ ᐆᒪᔪᕐᓂᐊᖅᑎᒃᑯᑦ ᑲᑎᒪᔨᖏᑦ – ᑐᑭᓯᒋᐊᖅᑎᑦᓯᓂᕐᒧᑦ ᑲᑎᒪᓂᖅ 2018–ᒥ ᑮᓕᓯᓂᐊᑭᑏᑦ ᓇᓕᖅᑲᖏᓐᓂᑦ

ᐱᔾᔪᑎᖏᑦ ᐅᖃᓇᐊᖅᑐᖅᓯᒪᓃᑦ:
ᐊᑐᖅᑕᐅᓗᐊᖅᐸᖏᑦᑐᒥ ᑲᑎᒪᑎᑦᓯᓚᐅᖅᑐᑦ ᖁᕐᓗᖅᑐᕐᒥ ᐅᓪᓗᖓᓂ ᕕᕝᕈᐊᕆ 20, 2019. ᐱᔾᔪᑎᒋᔭᐅᓗᐊᓚᐅᖅᑐᖅ ᑲᑎᒪᓂᐅᔪᒧᑦ ᑐᑭᓯᒋᐊᖅᑎᑕᐅᓪᓗᑎᑦ ᖁᕐᓗᖅᑐᕐᒥ ᐆᒪᔪᕐᓂᐊᖅᑏᑦ ᑲᑎᒪᔨᖏᑦ ᐱᔪᓂ 2018 ᑮᓕᓯᓂᐊᑭᑏᑦ ᓇᓕᖅᑲᖏᓐᓂ ᐊᒻᒪᓗ ᓄᑖᙳᕆᐊᖅᓯᒪᔪᓂᒃ ᖃᑦᓯᐅᓂᖏᑕ ᒥᑦᓵᓐᓂᖏᑦ. ᑖᓐᓇ ᑲᑎᒪᓂᖅ ᐱᕕᑦᓴᖃᖅᑎᑦᓯᓚᐅᖅᑐᖅ ᑐᑭᓯᒋᐊᖅᑎᑦᓯᓂᕐᒥ ᑲᑎᒪᔪᓕᐊᖅᓯᒪᔪᓂᒃ ᐅᓪᓗᒥᐅᓕᖅᑐᖅ ᐊᐅᓚᑦᓯᒍᑎᐅᔪᓂᒃ ᐱᕈᔨᕗᙱᖅᓯᒪᓂᒃᑯᑦ ᓄᓇᑦᓯᐊᕐᒥ.

ᐅᓪᓗᖅ: ᕕᕝᕈᐊᕆ 20, 2019 ᐱᒋᐊᖅᓱᓂ 3:10 pm ᑎᑭᓪᓗᒍ 6:30 pm

ᑭᒻᒐᖅᑐᐃᔪᑦ:
ᐆᒪᔪᕐᓂᐊᖅᑏᑦ ᑲᑎᒪᔨᖏᑦ: ᕓᕕ, ᐊᓇᕕᓗᒃ ᑭᐊᕙᓐ ᑲᓚᓐᕗᒃ (ᐃᑦᓯᕙᐅᑕᖅ), ᔭᐃᑯᐱ, ᒪᐃᔪᓪᔅ ᐲᑐᓵᓐ, ᐋᓛᓇ, ᓯᑖᓐᓕ ᑲᐅᐸᓐᑐ, ᔭᐃᑯ ᐸᓗᖓᔭᒃ
ᓄᓇᑦᓯᐊᕐᒥ ᐆᒪᔪᓕᕆᔨᒪᕆᒃ: ᔮᓐ ᐋᑕᒻᔨᐅᔅᑭ (Jan Adamczewski)
ᑎᐅᓪHᐊᐅᓯ (Dalhousie): ᓘᓯᐊ ᕚᓂᖕ (Lucia Fanning), ᔭᐃᑦ ᐆᐊᓐ (Jade Owen)
ᓄᓇᑦᓯᐊᕐᒥ ᐆᒪᔪᓕᕆᔨᒪᕆᒃ: ᓯᑏᕝ ᕙᐅᓛᒃ (Steve Barlock)
ᐱᓕᕆᕖᖑᑦ ᐊᕙᑎᓕᕆᔨᒃᑯᑦ: ᑎᐅᕆ ᒥᐅᓪᑕᓐ (Terry Milton), ᕋᓱᓪ ᐊᕿᐊᒋᖅ (Russell Akeaagok), ᐋᓚᓐ ᓂᑉᑕᓇᑦᑎᐊᖅ (Allen Niptinatiak), ᑭᐊᕙᓐ ᒥᑑᐃᓐ (Kevin Methuen), ᓖᓴ–ᒪᕆ ᓕᒃᑯᓗᒃ (Lisa-Marie Leclerc)

ᓇᐃᓪᓕᒋᐊᖅᓯᒪᔪᑦ ᐅᖃᐅᓯᐅᓚᐅᖅᑐᑦ:
ᕗᓗᕓᑦ ᑲᓇᓐᓇᕐᒥ ᑐᑦᑐᖏᑦ ᓄᓇᐅᑉ ᑭᓪᓕᖅᖃᑎᒌᑦᑐᓄᑦ ᑐᑦᑐᒋᔭᐅᔪᑦ ᐊᒻᒪᓗ ᒐᕙᒪᒃᑯᖏᑦ ᓄᓇᑦᓯᐊᑉ ᓯᕗᓕᖅᑐᑦ ᖃᐅᔨᓴᕐᓂᕐᒥ ᑖᒃᑯᓂᖓ ᑐᑦᑐᓂᒃ. ᔮᓐ ᐋᑕᒻᔨᐅᔅᑭ, ᒐᕙᒪᒃᑯᖏᓐᓂ ᓄᓇᑦᓯᐊᑉ ᐊᕙᑎᓕᕆᔨᒃᑯᖏᓪᓕ ᐊᒻᒪᓗ ᓄᓇᕐᒥᙱᖅᑐᓂᒃ ᐊᑐᒃᑲᓂᕈᓐᓇᖅᑐᓂᒃ ᐆᒪᔪᓕᕆᔨᒪᕆᒃ, ᐅᓂᒃᑳᓚᐅᖅᑐᖅ 2018–ᒥ ᕿᑐᕐᖏᐅᕐᕕᖏᑦᑕ ᓄᓇᒥ ᑮᓕᓯᓂᐊᑭᑎᖏᑦᑕ ᓇᓕᖅᑲᖏᓐᓂᒃ. ᓇᓗᓇᐃᖅᑕᐅᓚᐅᕆᓪᓗᓂ ᑕᐃᒫᑦᓴᐃᓐᓇᖅ ᖃᐅᔨᓴᕈᑎᐅᕙᑦᑐᑦ ᐊᓯᔾᔨᖅᓯᒪᙱᒻᒪᑕ ᑕᐃᒪᙵᓂᒃ 2010, ᑕᐃᒪᐃᒻᒪᑦ ᐊᓯᔾᔨᖅᓯᒪᓂᖏᑦ ᖃᑦᓯᐅᓂᖏᑕ ᐱᔾᔪᑕᐅᙱᑦᑐᖅ ᖃᐅᔨᓴᕈᑏᑦ ᐊᑐᖅᑕᐅᓂᖏᓐᓄᑦ. ᕿᒥᕐᕈᔭᐅᓂᖏᑦ ᑐᑦᑐᐃᑦ ᓄᓇᒥ ᐱᔭᕆᐊᑐᓚᐅᖅᑐᖅ ᐊᐱᓯᒪᓂᖅᓴᐅᓚᐅᕐᒪᑦ ᓄᓇ, ᑖᒃᑯᐊᓗ ᐃᓚᓕᐅᖅᑕᐅᓚᐅᖅᑐᑦ ᖃᐅᔨᓴᕈᑎᓄᑦ. ᑲᑎᓕᒫᕐᓗᒋᑦ ᓇᓚᐅᑦᓈᖅᑕᐅᓯᒪᔪᑦ ᐱᕈᕇᖅᓯᒪᓂᖏᑦ ᕗᓗᕓᑦ ᑲᓇᓐᓇᕐᒥ ᑐᑦᑐᐃᑦ ᒥᑦᓵᓂᑦᑐᑦ 19,249 ᐆᒪᔪᐃᑦ. ᕿᑐᕐᖏᐅᕐᓂᖏᑦ ᑖᒃᑯᐊ ᑐᑦᑐᐃᑦ ᐱᐅᔪᑦ, 83%, ᑭᓯᐊᓂᓕ ᐅᑭᐊᑦᓵᒃᑯᑦ ᕿᑐᕐᖓᖏᑦ ᐊᓈᓇᖏᓪᓗ ᐃᓄᐃᓭᑐᑦ, 0.25, ᐊᒻᒪᓗ ᐊᓈᓇᖏᑦᑕ ᐆᒪᖃᑦᑕᕐᓂᖏᑦ ᐊᑉᐸᓯᑦᑐᑦ, 0.72. ᐆᒪᔪᖅᑕᐅᕙᓐᓂᖏᑦ ᑲᑦᔫᓇᐅᔪᑦ ᒫᓇᒧᑦ, ᑕᐃᒪᐃᒻᒪᑦ ᐊᒥᓱᓗᐊᖅᑐᓂᒃ ᑐᑦᑐᓂᐊᕐᓂᖅ ᐱᔾᔪᑕᐅᓚᕿᙱᑦᑐᖅ ᖃᑦᔫᓇᕈᖅᐹᓪᓕᐊᓕᖏᓐᓄᑦ.

ᑖᒃᑯᐊ ᒪᓕᑦᓱᒋᑦ ᒥᑦᓵᐅᕌᕈᑏᑦ, ᐅᖃᐅᔾᔨᒋᐊᖅᑏᑦ ᑲᑎᒪᔨᖏᑦ ᐆᒪᔪᓕᕆᓂᕐᒧᑦ ᐊᐅᓚᑦᓯᔩᑦ (ACCWM) ᓄᑖᙳᕆᐊᕆᓚᐅᖅᑐᑦ ᖃᓄᐃᓐᓂᖏᓐᓂᒃ ᕗᓗᕓᑦ ᑲᓇᓐᓇᕐᒥ ᑐᑦᑐᖏᓐᓂᑦ ᐊᐅᐸᓀᖓᔪᒥᒃ ᐊᐅᐸᖅᑐᑭᖅᑎᑕᐅᓪᓗᓂ. ᑎᓕᑦᓱ (Tlicho) ᒐᕙᒪᒃᑯᖏᑦ ᐊᒻᒪᓗ ᓄᓇᑦᓯᐊᑉ ᒐᕙᒪᒃᑯᖏᑦ ᐱᖁᔨᕗᙱᕐᓂᒃᑯᑦ ᐃᓄᐃᓭᓪᓕᒋᐊᖁᔨᔪᑦ ᑐᑦᑐᑦᑕᐅᔫᓇᖅᑐᓂᒃ 750–ᙳᔪᓂᒃ (2016 ᒍᐃᒃᐄᔨ (Wek'èezhìi) ᓄᑖᙳᑭᓐᓇᖅᑐᓂᒃ ᐊᑐᖅᑕᐅᔫᓇᖅᑐᓂ ᑲᑎᒪᔨᖏᑦᑕ ᑐᑭᑖᑭᑎᖑᑦ) ᐃᓄᐃᓭᓪᓕᒋᐊᖅᑕᐅᓗᑎᑦ 300 ᐊᙳᓭᓪᓗᐃᑦ ᑐᑦᑐᑦᑕᐅᔫᓇᖅᑐᑐᐊᑦ. ᖄᒃᑲᓐᓂᐊᒍᑦ ᐃᓄᐃᓭᓪᓕᒋᐊᕆᓂᖅ ᑲᑎᓪᓗᒋᑦ ᑐᑦᑐᑦᑕᐅᔫᓇᖅᑐᓂᒃ, ᓄᓇᑦᓯᐊᑉ ᒐᕙᒪᒃᑯᖏᑦ ᖁᕝᕙᕆᐊᕆᔪᑦ ᐊᒪᕈᖅᑕᐅᔫᓇᖅᑐᓂᒃ ᕗᓗᕓᑦ ᑲᓇᓐᓇᕐᒥ ᑐᑦᑐᐃᑦ ᐅᑭᐊᓪᓕᕕᖏᓐᓂ, ᓴᖅᑮᔭᖅᑎᑦᓯᓗᑎᓪᓗ ᐊᐅᓚᑦᓯᒍᑎᐅᔪᓂᒃ ᐱᖁᔨᕗᙱᕐᓂᒃᑯᑦ ᓇᔪᖏᑦ ᓴᐳᑎᔭᐅᕐᑯᓪᓗᒋᑦ ᐊᒻᒪᓗ ᐃᓕᓐᓂᐊᕈᑎᐅᓗᑎᑦ.

ᑕᐃᒪᙵᓂᒃ ᑐᑦᑐᖏᑦ ᖃᑦᔫᓇᕈᖅᐹᓪᓕᓪᓚᑦᓯᒪᑎᓪᓗᒋᑦ, ᒐᕙᒪᒃᑯᖏᑦ ᓄᓇᑦᓯᐊᕐᒥ ᖃᐅᔨᓴᕐᐊᓪᓚᓐᓂᖃᕐᓂᐊᖅᑐᑦ ᑖᒃᑯᓂᖓ ᑐᑦᑐᓂᒃ. ᑕᐃᒪᐃᒻᒪᑦ ᖃᑦᓯᐅᓕᕐᒪᙱᑕ ᑮᓕᓯᓂᐊᖅᑕᐅᖃᑦᑕᕐᓂᐊᖅᑐᑦ ᐊᕐᕌᒍᒃ ᒪᕐᕉᒃ ᓈᓚᐃᐸᑕ, ᖃᓄᐃᓕᖓᓕᕐᒪᙱᑕᓗ ᖃᐅᔨᓴᖅᑕᐅᕙᓪᓗᑎᑦ ᔪᓂ/ᐆᑦᑑᐱᕆ ᐊᒻᒪᓗ ᒫᑦᓯᐅᓕᕈᓂ ᐊᕐᕌᒍᑕᒫᑦ ᐊᒻᒪᓗ ᐅᔦᒥᑦᑕᐅᓯᒪᔪᑦ ᑐᑦᑐᐃᑦ ᐊᒥᓱᙳᕆᐊᖅᑕᐅᓂᐊᖅᑐᑦ 50–ᒥᑦ 75–ᒧᑦ.

ᐅᖃᐅᓯᕆᔭᐅᔪᑦ ᐊᒻᒪᓗ ᐊᐱᖅᑯᑎᐅᔪᑦ:

ᐃᓚᖓᑦ ᐊᐱᕆᓚᐅᖅᑐᖅ ᖃᓄᐃᑦᑐᓂᒃ ᖃᐅᔨᓴᕈᑎᖃᕐᒪᖔᑕ. ᑲᑎᒪᔾᑦ ᐃᓚᖓᑦ ᐊᐱᕆᓚᐅᖅᑐᖅ ᓱᒻᒪᑦ ᓯᓈᓃᑦᑐᑦ ᓈᓴᖅᑕᐅᓂᕐᒪᖔᑕ 2015−ᒥ ᑭᓯᐊᓂᓕ ᓈᓴᖅᑕᐅᒐᑎᑦ 2018−ᒥ. ᑕᒪᓐᓇ ᖃᐅᔨᓴᕐᕕᖕᓂᐅᔪᖅ ᖃᖓᑕᕕᐅᓚᐅᙱᑦᑐᖅ 2018 ᖃᐅᔨᓴᕐᓂᖃᖅᑎᓪᓗᒋᑦ ᐅᐱᓐᓇᕋᓂ ᐅᔾᒥᑦᑕᐅᓯᒪᔪᑦ ᐆᒪᔪᐃᑦ ᑎᑭᐅᑎᑕᐃᓐᓇᓚᐅᕐᒪᑕ ᕿᑐᕐᖏᐅᕝᕕᖏᓐᓄᑦ, ᑕᐃᑲᓂ ᐆᒪᔪᖅᑕᖃᓚᐅᙱᑦᑐᖅ 2015−ᒥ, ᐊᒻᒪᓗ ᖃᐅᔨᒪᔭᐅᓪᓗᑎᑦ ᐊᕐᕌᒍᕐ ᑭᖑᓪᓕᖏᓐᓂ ᐊᑐᖅᑲᓐᓂᖃᑦᑕᕆᐊᖏᑦ ᕿᑐᕐᖏᐅᓚᐅᖅᑎᓪᓗᒋᑦ.

3.2. ᓯᕗᓪᓕᖅᐹᒥ ᐅᖃᓇᐊᖅᑐᕐᕕᐅᓯᒪᓂᖅ ᐱᓕᕆᕖᔅᓚᑕ ᐊᕙᑎᓕᕆᔨᒃᑯᑦ ᑲᑎᓕᒫᕐᓗᒋᑦ ᑐᑦᑐᑦᑕᐅᒍᓐᓇᖅᑐᓂᒃ ᐱᕐᑯᔨᕗᔅᒑᕐᓂᒃᑯᑦ

ᐱᕝᕙᑎᓪᓚ ᐅᖃᓇᐊᖅᑐᕐᕕᐅᓯᒪᓃᑦ:

ᐅᖃᓇᐊᖅᑐᕐᕕᐅᓯᒪᓂᕐᒧᑦ ᐱᓕᕆᐊᓪᒍᓚᐅᖅᑐᑦ ᕐᑯᕐᓗᖅᑐᕐᒥ ᐅᓪᓗᓪᓚᓂ ᔫᓂ 12, 2019. ᐱᕝᕙᑎᒋᓗᐊᓚᐅᖅᑕᓪᓚᑦ ᑲᑎᒪᓂᐅᕙᒥ ᐅᖃᖃᑎᒌᒃᑲᓐᓂᕐᓂᖅ ᐊᐅᓚᑦᓯᔨᐅᖃᑕᐅᕙᑦ ᒥᑦᓵᓅᓪᓚᕙᓂᒃ ᕗᓘᓃᔅ ᑲᓇᓐᓇᕐᒥ ᑐᑦᑐᓪᓕᑦᑕ ᓯᕗᓂᑦᓴᑎᓐᓂ ᐊᐅᓚᑦᓯᒍᑎᑦᓴᓂᒃ ᐱᕐᑯᔨᕗᔅᒑᕐᓂᒃᑯᑦ. ᑖᓐᓇ ᑲᑎᒪᓂᐅᕙᖅ ᐱᕕᑦᓴᖃᖅᑎᑦᓯᓚᐅᖅᑐᖅ ᑐᑭᓯᒋᐊᖅᑎᑦᓯᓂᕐᒥ ᑲᑎᒪᒋᐊᖅᑐᖅᓯᒪᕙᓂᒃ ᐊᕙᑎᓕᕆᔨᒃᑯᑦ ᐱᕐᑯᔨᕗᔅᒑᕈᑎᓪᓚᓐᓂᒃ ᖃᑦᔩᓇᕈᓇᐊᖅᑕᐅᓗᑎᑦ ᑲᑎᓕᒫᕐᓗᒋᑦ ᑐᑦᑐᑦᑕᐅᒍᓐᓇᖅᑐᑦ 107−ᖑᓗᑎᑦ ᐊᖑᓴᓪᓗᐃᑦ ᐱᔭᐅᒍᓐᓇᖅᑐᑐᐊᑦ ᒪᓕᑦᓱᒋᑦ ᐊᑐᐃᓐᓇᐅᕙᑦ ᓄᑖᑦ ᖃᐅᔨᓴᕈᑎᒥᓃᑦ ᓇᓕᖅᑲᓐᒋᑦ.

ᐅᓪᓗᖅ: ᔫᓂ 12, 2019

ᑭᒡᓚᖅᑐᐃᕙᑦ:
ᑲᑎᒪᕙᓕᐊᖅᓯᒪᕙᑦ: ᔫᓐ (ᒐᕙᒪᒃᑯᖕᒋᑦ ᓄᓇᑦᓯᐊᑉ), ᑯᐊᕈ ᓂᐅᒪᓐ (Coral Newman) (ᕿᑎᕐᒥᐅᑦ ᐃᓄᐃᑦ ᑲᑐᔾᔨᖃᑎᒌᖕᒋᑦᑕ ᐊᐅᔭᒃᑯᑦ ᐃᓕᓐᓂᐊᖅᑎᐅᓪᓗᓂ ᐱᓕᕆᕙᖅ), ᔭᕗ ᑲᓚᐅᒃ (Geoff Clark) (ᕿᑎᕐᒥᐅᑦ ᐃᓄᐃᑦ ᑲᑐᔾᔨᖃᑎᒌᖕᒋᑦ), ᓯᐅᕈᓪ (Cheryl) (ᓄᓇᕗᑦ ᑐᙵᕕᒃ), ᑎᐅᕆ (Terry) (ᐊᕙᑎᓕᕆᔨᒃᑯᑦ), ᐋᓚᓐ (Allen) (ᐊᕙᑎᓕᕆᔨᒃᑯᑦ) ᕗᐃᐅᓪ (Breale) (ᐊᕙᑎᓕᕆᔨᒃᑯᑦ ᐊᐅᔭᒃᑯᑦ ᐃᓕᓐᓂᐊᖅᑎᐅᓪᓗᓂ ᐱᓕᕆᕙᖅ), ᓖᓴ (Lisa) (ᐊᕙᑎᓕᕆᔨᒃᑯᑦ), ᑭᐊᕙᓐ (ᐊᕙᑎᓕᕆᔨᒃᑯᑦ), ᐊᒫᓐᑕ (Amanda) (ᐆᒪᔪᕐᓂᐊᖅᑎᒃᑯᑦ ᐊᖏᔪᖅᑳᖓᑦ) ᐊᒻᒪᓗ ᕚᕕ (Bobby) (ᐆᒪᔪᕐᓂᐊᖅᑎᒃᑯᑦ ᐊᓪᓚᑦᑎᖓᑦ).
ᓚᐅᕆ ᐋᑦᔪᓐ (Larry Adjun) (ᐊᓚᒃᑲᙳᑎᑦᑐᖅ, ᐱᕝᕙᑎᑦᓴᖃᕐᒥ)

ᓇᐃᓪᓕᒋᐊᖅᓯᒪᕙᖅ ᐅᖃᖃᑎᒌᓐᓂᐅᕙᖅ:

ᑭᓪᓕᓯᓂᐊᕐᓂᕐᒧᑦ ᓇᓕᖅᑲᖕᒋᑦ ᐅᓂᒃᑳᖑᒃᑲᓐᓂᓚᐅᖅᑐᑦ ᐊᑕᐅᓯᐊᒃᑲᓐᓂᖅᓱᑎᑦ, ᐱᖃᓯᐅᑎᓚᐅᕆᓪᓗᑎᑦ ᒫᓐᓇᒃᑯᑦ ᐊᐅᓚᑦᓯᒍᑎᐅᕙᑦ ᓄᓇᑦᓯᐊᕐᒥ. ᑖᒃᑯᐊ ᕗᓘᓃᔅ ᑲᓇᓐᓇᕐᒥ ᑐᑦᑐᐃᑦ ᖃᑦᓯᐅᓂᖕᒋᑦ ᒥᑦᓴᐅᓵᖅᑕᐅᓯᒪᕙᑦ 19,149−ᖏᓐᓃᒋᐊᖏᑦ, ᐃᓄᐃᓴᓪᓕᒋᐊᖅᓯᒪᓪᓗᑎᑦ 50%-ᒥᒃ ᑕᐃᒪᙵᓂᒃ 2015−ᖑᓚᐅᖅᑎᓪᓗᒍ. ᐊᓇᐅᒪᒍᓇᕐᓂᖏᑦ ᑐᑦᑐᖏᑦᑕ ᐱᐅᓯᕚᓪᓕᕐᓂᐊᖅᑑᔾᙳᑦᑐᑦ (ᕿᑐᕐᙵᑦᓴᑖᖅᐸᓐᓂᖏᑦ 83% ᐱᐅᕙᖅ ᑕᒪᓐᓇ, ᓄᕋᖏᑦ ᐃᓄᐃᓴᑦᑑᓪᓗᑎᑦ: ᐊᕐᓇᕕᐊᖏᑦ ᐅᑭᐊᑦᓵᒃᑯᑦ 25%−ᖑᕙᑦ, ᐱᕈᕇᖅᐸᓐᓂᖏᑕᓗ ᐊᕐᓇᕕᐊᖏᑦᑕ ᐊᑉᐸᓯᑦᑑᓪᓗᓂ 72%−ᒥ). ᐃᓄᐃᓴᓪᓕᕙᓪᓕᐊᓂᖏᑦ ᐱᕝᕙᑎᖃᖅᑑᔾᖅᑐᑦ ᓄᓇᐅᑉ ᐱᐅᓯᖓ ᐱᕝᕙᑕᐅᓪᓗᓂ ᐊᒻᒪᓗ ᓂᕐᕙᑎᓄᑦ ᐊᓯᖏᓐᓄᑦ ᐱᔭᐅᕙᓐᓂᖏᓐᓄᑦ; ᑐᑦᑐᑦᑕᐅᖃᑦᑕᖅᑐᐃᑦ ᐃᓄᐃᓴᓐᓂᖅᓴᐅᓚᐅᖅᑐᑦ ᐱᔭᐅᒍᓐᓇᖅᑐᓂᒃ ᐊᕐᕌᒍᐃᑦ ᐱᖓᓱᑦ ᖃᖏᖅᑐᓂ ᐱᔭᕆᐊᑐᓗᐊᓚᐅᕐᓂᖓᓄᑦ ᐅᐸᒋᐊᖏᑦ ᑐᑦᑐᖏᑦ.

ᕿᑎᕐᒥᐅᑦ ᐃᓄᐃᑦ ᑲᑐᔾᔨᖃᑎᒌᖕᒋᑦᑕ (KIA) ᑭᒡᓚᖅᑎᙵ ᐅᖃᓚᐅᖅᑎᓪᓗᒍ ᓱᓕᕙᖅᓴᕐᓂᖅᓱᓂ ᑐᓂᔭᐅᕙᓂ ᑐᑭᓯᒋᐊᕈᑎᓂᒃ ᐅᓂᒃᑳᓕᐅᖑᓯᒪᕙᓂᒃ ᐊᐱᖅᑯᑎᑦᓴᖃᓚᐅᖁᓂᓗ, ᕐᑯᕐᓗᖅᑐᕐᒥ ᐆᒪᔪᕐᓂᐊᖅᑏᑦ ᑲᑎᒪᔩᖏᑦ ᓱᓕ ᑲᑎᒪᓚᐅᙱᑦᑐᑦ ᕿᒥᕐᕈᓂᖃᕐᓂᒃᑯᑦ ᐅᓂᒃᑳᓕᐅᖑᓯᒪᕙᒥᒃ. ᑕᐃᑦᓱᒪᓂ, ᐃᑲᔪᖅᑐᐃᒍᓇᓚᐅᙱᑦᑐᑦ ᐅᓂᒃᑳᓕᐅᖑᓯᒪᕙᒥᒃ ᓇᓕᖅᑲᖏᓐᓂᓪᓗ ᐅᓂᒃᑳᖅᑕᐅᕙᓂᒃ. ᑕᒪᒃᑮᒃ ᐅᔾᔨᕈᓱᓚᐅᖅᑑᒃ ᖃᑦᔩᓇᕈᖅᐹᓪᓕᕆᐊᖏᑦ, ᑭᓯᐊᓂᓕ ᐃᑉᐱᒋᔭᖃᓚᐅᖅᑑᒃ ᑕᒪᓐᓇ ᐱᐅᓯᕆᔭᐅᒋᐊᖓ. ᕿᑎᕐᒥᐅᑦ ᐃᓄᐃᑦ ᑲᑐᔾᔨᖃᑎᒌᖏᑦ ᐃᓱᒪᒋᔭᖃᕐᒪᑕ ᐃᓱᒫᓗᓐᓇᙱᒋᐊᖓ ᑐᐊᕕᕐᓇᖏᓪᓗᓂ. ᕿᑎᕐᒥᐅᑦ ᐃᓄᐃᑦ ᑲᑐᔾᔨᖃᑎᒌᖏᑦ ᐃᓕᑕᖅᓯᕙᑦ ᐱᐅᖅᓱᐊᕆᐊᖃᕐᓂᕐᒥᓐᓂ ᑕᒪᓐᓇᓗ ᐱᓕᕆᐊᖑᒋᐊᖃᖅᓱᓂ ᕗᓘᓃᔅ ᑲᓇᓐᓇᕐᒥ ᑐᑦᑐᖏᓐᓄᑦ.

ᐱᕐᑯᔨᕗᔅᒑᓚᐅᖅᑐᑦ ᑐᑦᑐᑦᑕᐅᒍᓐᓇᖅᑐᐃᑦ ᖃᑦᔩᓇᐅᓂᖅᓴᐅᓯᒪᒻᒪᑕ 340 ᑐᑦᑐᐃᑦ ᐱᔭᐅᒍᓐᓇᖅᑐᓂ ᐊᑐᓕᖅᑎᑕᐅᓯᒪᓕᖅᑎᓪᓗᒍ ᑲᑎᓕᒫᕐᓗᒋᑦ ᑑᑦᑐᑦᑕᐅᒍᓐᓇᖅᑐᐃᑦ, ᑭᓪᓕᖃᕆᐊᖃᕐᓂᖏᑦ ᑐᑦᑐᑦᑕᐅᒍᓐᓇᖅᑐᑦ ᐱᑕᖃᕆᐊᑐᙱᒋᐊᖓ. ᐆᒪᔪᕐᓂᐊᖅᑏᑦ ᑲᑎᒪᔨᖏᑦ ᐃᓱᒫᓘᑎᖃᕐᒪᑕ "ᒫᓐᓇᒃᑯᑦ ᑲᑎᓕᒫᕐᓗᒋᑦ ᑐᑦᑐᑦᑕᐅᒍᓐᓇᖅᑐᓂᒃ" 340-ᖑᕙᓂᒃ. ᓄᓇᓕᖅᑲᖅᑐᐃᑦ ᐃᑉᐱᒋᔭᖃᓚᐅᖅᑐᑦ ᑕᒪᓐᓇ ᐊᓯᒥᓐᓄᑦ ᐊᐅᓚᑕᐅᒋᐊᖓ. ᐆᒪᔪᕐᓂᐊᖅᑎᒃᑯᑦ ᑲᑎᒪᔨᖏᑦ

ᐱᓕᕆᐊᖃᖅᑐᑦ ᐊᓯᐊᒍᑦ ᐊᐅᓚᑦᓯᒍᑕᐅᔪᓐᓇᖅᑐᓂᒃ ᕗᓗᕖᔅ ᑲᓇᓐᓇᕐᒥ ᑐᑦᑐᙱᓐᓄᑦ. ᖁᕐᓗᖅᑐᕐᒥ ᐆᒪᔪᕐᓂᐊᖅᑏᑦ ᑲᑎᒪᔨᙱᑦ ᐃᑉᐱᒋᔭᖃᖅᑐᑦ ᓄᓇᓕᙵᑦᑕ ᐱᓕᕆᐊᕆᓯᒪᔭᙱᑦ ᐊᐅᓚᑦᓯᓂᕐᒧᑦ ᐸᕐᓇᐅᑎ ᐊᑐᖅᑕᐅᕐᑯᓯᓪᓗᑎᑦ ᑲᑎᓕᒫᕐᓗᒋᑦ ᑐᑦᑐᑦᑕᐅᔪᓐᓇᖅᑐᓂ. ᑕᐃᒪᐃᓚᓗᐊᖅᑎᓪᓗᒍ ᓄᓇᓕᓐᓂ ᐱᓕᕆᐊᖑᓯᒪᔪᖅ ᐊᐅᓚᑦᓯᓂᕐᒧᑦ ᐸᕐᓇᐅᑎ ᐊᖏᖅᑕᐅᓯᒪᑎᓐᓇᒍ ᐆᒪᔪᓕᕆᔨᕐᔪᐊᒃᑯᓐᓄᑦ ᓄᓇᕗᒻᒥ, ᐃᓚᖏᑦ ᖃᓄᐃᓕᐅᕆᐊᕈᑏᑦ, ᐊᑐᓕᖅᑎᑕᐅᕖᖅᓯᒪᓪᓗᑎᑦ, ᐊᑑᑎᓪᓚᕆᓐᓂᙶ ᓇᓗᓇᐃᖅᑕᐅᓯᒪᔪᖅ, ᑕᐃᒪᐃᓕᓯᒪᑎᓪᓗᒋᑦ ᖁᕐᓗᖅᑐᕐᒥ ᐆᒪᔪᕐᓂᐊᖅᑎᒃᑯᑦ ᑲᑎᒪᔨᙱᑦ. ᖃᓄᐃᓕᐅᕆᐊᕈᑎᒋᔭᙱᑦ ᐃᓚᖃᖅᑐᑦ ᒪᑯᓂᖓ: ᓱᐃᓛᕿᓂᒃᑯᑦ ᑐᑦᑐᓂᐊᕆᐊᖃᙲᓂᖅ/ᓂᐅᕕᐊᑦᓴᖃᖅᑎᓄᑦ ᐱᔭᐅᕆᐊᖃᙲᑦᑐᑦ, ᐆᒪᔪᕐᕕᐅᕆᐊᖃᙲᑦᑐᑦ ᓄᓇᐃᑦ, ᑐᑦᑐᐃᑦ ᐲᖅᓯᕕᐅᕙᓪᓗᑎᑦ ᖃᐅᔨᓴᖅᑕᐅᓚᑦᓴᓂᒃ, ᐃᓕᓐᓂᐊᑎᑦᓯᒍᑎᐅᔪᑦ ᑐᑦᑐᓕᕆᓂᕐᒧᑦ, ᐊᓯᙱᓐᓂᓗ ᓂᕿᑐᐃᓐᓇᖃᕋᓱᐊᕐᓂᖅ (ᐅᒥᒻᒪᓐᓂᒃ, ᐃᖃᓗᓐᓂᒃ, ᐊᒻᒪᓗ ᐊᕿᒡᒋᕐᓂᒃ).

ᐊᑦᑐᐃᓂᖃᖅᓯᒪᓂᖓ ᒫᓐᓇᒃᑯᑦ ᓄᓇᓕᓐᓂ ᐱᓕᕆᐊᖑᓯᒪᔪᑦ ᐊᐅᓚᑦᓯᒍᑏᑦ ᐃᑲᔪᖅᑐᖅᑕᐅᔪᑦ ᐱᑕᖃᕐᓂᖓᑕ ᑲᑎᓕᒫᕐᓗᒋᑦ ᑐᑦᑐᑦᑕᐅᔪᓐᓇᖅᑐᓂᒃ ᐃᑲᔪᖅᑐᖅᑕᐅᕆᓪᓗᑎᑦ ᐆᒪᔪᕐᓂᐊᖅᑎᒃᑯᑦ ᐱᓕᕆᔾᔪᑎᖏᓐᓄᑦ. ᑕᐃᒪᐃᒻᒪᑦ, ᐱᑕᖃᕐᓂᖓᓄᑦ ᓄᑖᓂᒃ ᑐᑭᓯᒋᐊᕈᑎᓂᒃ ᐊᑐᐃᓐᓇᐅᔪᓂᒃ, ᐊᐅᓚᑦᓯᖃᑎᒌᑦᑐᐃᑦ ᐱᓕᕆᖃᑎᒌᐊᖃᖅᑐᑦ ᐃᑲᔪᖅᑕᐅᓗᑎᑦ ᐆᒪᔪᕐᓂᐊᖅᑎᒃᑯᑦ ᑲᑎᒪᔨᙱᑦ ᓄᑖᙳᕆᐊᕈᑎᓪᓗᒋᑦ ᐋᖅᑭᐊᕈᑎᓪᓗᒋᓪᓗ ᐸᕐᓇᐅᑎᒋᓯᒪᔭᖏᓐᓂ. ᒫᓐᓇᒃᑯᑦ ᓇᓚᐅᖅᓵᖅᑕᐅᓯᒪᑎᓪᓗᒋᑦ ᖃᑦᓯᐅᓂᖏᑦ ᐃᓄᐃᓯᓕᕙᓕᐊᓂᖏᓪᓗ, ᐱᓕᕆᕕᖓᑦ ᐊᕙᑎᓕᕆᔨᒃᑯᑦ ᐱᖁᔭᕗᙵᖅᑐᐃᑦ ᑲᑎᓕᒫᕐᓗᒋᑦ ᑐᑦᑐᑦᑕᐅᔪᓐᓇᕐᓗᑎᑦ 107 ᐊᖑᓴᓪᓗᐃᑦ ᑭᓯᐊᓂᑐᐊᖅ. ᐆᒪᔪᕐᓂᐊᖅᑎᒃᑯᑦ ᑲᑎᒪᔨᙱᑦ ᐊᑭᕋᖅᑐᖅᑐᑦ ᑕᒪᑐᒥᙵ ᑲᑎᓕᒫᕐᓗᒋᑦ ᑐᑦᑐᑦᑕᐅᔪᓐᓇᖅᑐᓂᒃ, ᑭᓯᐊᓂᓕ ᐊᖑᓴᓪᓗᐃᓐᓇᕐᓂᒃ ᑐᑦᑐᒃᑕᕈᓯᒪᔪᑦ. ᑕᒪᓐᓇ ᐃᑲᔪᖅᑐᖅᑕᐅᓂᐊᙱᑦᑐᖅ ᐱᓕᕆᖃᑎᒌᑦᑐᓄᑦ.
ᓂᕐᔪᑏᑦ ᑐᑦᑐᓂᐊᖅᐸᑦᑐᑦ ᐅᖃᐅᓯᐅᓚᐅᕐᒥᔪᑦ. ᕿᑎᕐᒥᐅᑦ ᐃᓄᐃᑦ ᑲᑐᔾᔨᖃᑎᒌᙱᑦ ᐃᑲᔪᖅᑐᐃᓚᕙᓴᖅᑐᑦ ᓂᕐᔪᑏᑦ ᑐᑦᑐᓂᐊᖅᐸᑦᑐᑦ ᐊᐅᓚᑕᐅᓂᙱᓐᓄᑦ, ᐱᓕᕆᐊᕆᔭᐅᓚᕆᓪᓗᓂ ᑕᕝᕗᓇ ᐃᓕᖅᑯᓯᑐᖃᒃᑯᑦ ᐊᑐᖅᑕᐅᕙᑦᑐᐃᑦ ᐃᓕᓐᓂᐊᑎᑦᓯᓗᑎᓪᓗ ᐆᒪᔪᕐᓂᐊᕐᓂᐅᑉ ᖃᐅᔨᒪᓕᕆᐊᓕᖏᓐᓂᒃ. ᐱᕆᐊᖃᖅᐸᑕ, ᕿᑎᕐᒥᐅᑦ ᐃᓄᐃᑦ ᑲᑐᔾᔨᖃᑎᒌᙱᑦ ᐃᑲᔪᖅᑐᐃᓂᐊᖅᑐᑦ ᐱᓕᕆᐊᕆᔭᐅᓚᐅᕐᓂᖓᓂᒃ ᓂᕐᔪᑏᑦ ᑐᑦᑐᓚᕆᐊᖅᐸᑦᑐᑦ. ᕿᑎᕐᒥᐅᑦ ᐃᓄᐃᑦ ᑲᑐᔾᔨᖃᑎᒌᙱᑦ ᑮᓇᐅᔭᓂᒃ ᐊᑐᐃᓐᓇᕈᐃᒃᑲᓐᓂᕈᑎᕆᔪᑦ ᐊᒪᕈᓂᐊᕈᑎᑦᓴᓂᒃ, ᑮᓇᐅᔭᐃᑦ ᐃᑲᔪᖅᓯᒍᓯᖃᖅᑎᓪᓗᒋᑦ ᐊᓯᕗᖅᑎᓂ ᐊᒪᕈᖅᓯᐅᑎᓄᑦ ᐊᑭᙱᓐᓂ. ᐅᓇ ᓱᓕᔪᖅ, ᖁᕐᓗᖅᑐᕐᒥ ᐆᒪᔪᕐᓂᐊᖅᑏᑦ ᑲᑎᒪᔨᙱᑦ ᓈᒻᒪᓯᙱᑎᐊᖏᑦ ᒥᑭᓗᐊᖅᓴᖅᓯᑎᑦ $300−ᓂᒃ ᐊᑭᓖᒍᑕᐅᕙᑦᑐᓂᒃ. ᐆᒪᔪᕐᓂᐊᖅᑏᑦ ᑲᑎᒪᔨᙱᑦ ᐃᓚᐅᑎᑦᓯᓚᐅᙱᑦᑐᑦ ᑲᑎᓕᒫᕐᓗᒋᑦ ᑮᓇᐅᔭᖅᑖᕆᓴᐅᔪᓐᓇᖅᑐᑦ ᐊᖏᓂᖅᓴᐅᕆᐊᖏᑦ $300−ᓂᒃ ᐃᓚᐅᑎᑕᐅᐸᑕ ᐊᒥᖏᑦᑕ ᓂᐅᕐᕈᑎᐅᓂᖏᑦ ᐊᓯᖏᓪᓗ ᐱᓕᕆᐊᑦᓴᐃᑦ ᐊᑐᖅᑕᐅᔪᓐᓇᖅᑐᑦ ᓴᕙᒪᒃᑯᓐᓂᙵᖅᑐᑦ ᐃᓚᐅᑎᑕᐅᐸᑕ. ᐱᔪᐊᖅᑎᑕᐅᓚᐅᖅᓯᒪᓪᒪᓂᑦ ᐃᑲᔫᑎᑦᓴᐃᑦ ᐆᒪᔪᕐᓂᐊᖅᑎᓄᑦ ᐊᒪᕈᖅᓯᓂᐊᖅᑎᑦᓯᓃᑦ, ᐆᒪᔪᕐᓂᐊᖅᑏᑦ ᑐᓂᓯᓯᒪᓕᖅᑐᑦ 100 ᐊᒪᕈᖅᓯ ᐱᔭᐅᓯᒪᔪᓂᒃ ᖃᐅᔨᓴᕋᑦᓴᓂᒃ. ᐅᖃᖅᓯᒪᑎᓪᓗᒋᑦ ᐆᒪᔪᕐᓂᐊᖅᑎᒃᑯᑦ ᑲᑎᒪᔨᙱᑦ, ᑖᓐᓇ ᓈᓴᐅᑎ ᐊᖏᓂᖅᓴᐅᔪᓐᓇᕐᓂᐊᖓ ᐊᖏᓕᕆᐊᖅᑕᐅᒍᓂ ᑮᓇᐅᔭᖅᑖᕆᓴᐅᔪᓐᓇᖅᑐᑦ ᐊᒪᕈᖅᓯᐊᖅᓯᒪᑦ. ᐱᑎᑕᐅᒍᒪᙱᑦᑐᓕ ᐊᒪᕈᖅ ᐊᐅᓚᑦᓯᒍᑎᑦᓴᓂᒃ, ᑭᓯᐊᓂᓕ ᑮᓇᐅᔭᒃᑲᓐᓂᖅᓯᓂᒃ ᐱᒍᔪᑦ ᓂᐅᕕᖅᕕᓐᓂ ᓂᕿᑖᕈᑎᑦᓴᓂᒃ ᐊᑭᓕᖅᑐᓇᐊᓕᓐᓄᑦ. ᐅᖃᐅᓯᖃᓚᐅᖅᑐᑦ ᐊᒃᓴᐃᑦ ᐱᓪᓚᕆᐅᕆᐊᖏᓐᓂ ᑐᑦᑐᐃᑦ ᖃᓄᐃᓕᓗᐊᕐᓂᖏᓐᓄᑦ. ᑕᑯᔭᐅᕙᑦᑐᑦ ᐊᒃᓴᐃᑦ ᐊᑎᖅᑕᐅᕋᖅᑎᓪᓗᒋᑦ ᐊᑯᓂᖏᓐᓂ ᒪᕐᕉᒃ ᓯᑕᒪᐃᓗ, ᑕᒪᓐᓇᓗ ᓇᓗᓇᐃᒃᑯᑕᐅᓗᓂ ᐊᒥᓲᙱᓐᓂᖏᓐᓄᑦ. ᑕᐃᒪᐃᒻᒪᑦ ᖁᕐᓗᖅᑐᕐᒥ ᐆᒪᔪᕐᓂᐊᖅᑎᒃᑯᑦ ᑲᑎᒪᔨᙱᑦ ᓱᐃᓛᕿᓂᒃᑯᑦ ᐊᒃᓴᒃᑕᐅᔪᓐᓇᖅᑐᓂᒃ ᐊᒥᓱᙱᓐᓂᐊᕐᑯᓯᑦ 15−ᖑᓕᕐᓗᑎᑦ ᐊᒃᓴᒃᑕᐅᔪᓐᓇᖅᑐᑦ ᓄᓇᓕᙳᓐᓂ ᐊᐅᓚᑕᐅᓂᖅᓴᐅᕐᑯᓗᑎᑦ ᑕᒃᑯᐊ ᑐᑦᑐᓂᐊᖅᐸᑦᑐᑦ.

<u>ᐱᖁᔭᕗᙳᕈᑎ ᑐᕌᖓᔪᖅ ᓴᕙᒪᒃᑯᖏᓐᓄᑦ ᓄᓇᕗᑦ:</u>

ᐃᓚᐅᖅᑕᐅᓚᐅᙱᓐᓂᖓᓄᑦ ᐆᒪᔪᕐᓂᐊᖅᑎᒃᑯᑦ ᑲᑎᒪᔨᙱᑦᑕ ᐊᖏᔪᖅᑳᖓᑦ, ᐃᓚᐅᒻᒥᑎᓪᓗᒋᑦ ᐊᒥᓲᓂᖅᓴᐃᑦ ᑲᑎᒪᔨᙱᑦ, ᑖᒃᑯᐊ ᐆᒪᔪᕐᓂᐊᖅᑎᒃᑯᑦ ᑲᑎᒪᔨᙱᑦ ᑐᓂᔭᐅᑕᐃᓐᓇᓚᐅᕐᒪᑕ ᖃᐅᔨᒃᑲᐃᒍᑎᒥᒃ ᐅᐸᓗᖓᐃᔭᕈᑎᑦᓴᒥᒃ ᑕᒪᑐᒧᖓ ᑲᑎᒪᓂᐅᔪᒧᑦ, ᐅᖃᓕᒫᓚᐅᕐᓇᑎᒃ ᐅᓂᒃᑳᓕᐊᖑᓯᒪᔪᕐᒥᒃ, ᐅᖃᐅᓯᖃᕐᓯᒪᓚᐅᙱᑦᑐᑦ ᓯᕗᓂᐊᓂ ᐊᐅᓚᑦᓯᓂᕐᒧᑦ ᐊᑐᖅᑕᐅᓚᐅᖅᓯᒪᔪᓂᒃ, ᓲᕐᓗ ᐃᓄᐃᑦ ᑲᑎᓕᒫᕐᓗᒋᑦ ᑐᑦᑐᑦᑕᐅᔪᓐᓇᖅᑐᓂᒃ. ᑕᑯᓚᐅᖅᑐᐃᓪᓚ ᑕᒪᑐᒥᙵ ᑲᑎᒪᓂᐅᔪᖅ ᐱᓕᕆᐊᕆᔭᐅᓯᒪᔪᖅ ᐅᖃᐅᔾᔪᐃᓯᓂᕐᒧᑦ. ᑲᑎᒪᔨᙱᑦ ᐊᑦᑐᓂᖅᓴᐅᓯᒪᐊᖅᑭᑕ ᐅᖃᖅᓯᒪᑲᑲᓐᓂᕈᓐᓇᕐᒪᑕ ᑲᑎᓕᒫᕐᓗᒋᑦ ᑐᑦᑐᑦᑕᐅᔪᓐᓇᖅᑐᓂᒃ. ᐃᐸᒋᔭᖃᓚᐅᖅᑐᑦ ᑭᒃᑯᓕᒫᖅᑎᑦᓯᓂᒥ ᐊᑲᓐᓇᔭᖃᙲᑦᑐᐊᖅ ᑕᒪᑐᒥᙵᓕᖓᑦᓯᐊ, ᑲᑎᒪᔨᙱᑦ ᐅᖃᖅᑎᖃᓕᐅᖅᑎᒋᔭᐅᓂᖏᓐᓄᑦ (ᓄᓇᓕᓐᓂ ᐱᓕᕆᐊᖑᓯᒪᔪᓂᒃ

ᐊᐅᓚᑦᓯᓂᕐᒧᑦ ᐊᒻᒪᓗ ᐊᕙᑎᓕᕆᔨᒃᑯᑦ ᐱᕐᖁᔾᔭᖅᑲᕈᑎᖓᓐᓂᒃ). ᐃᓘᓐᓇᑎᑦ ᑲᑎᒪᔨᖏᑦ ᐊᓯᕙᖅᓯᒪᓚᐅᖅᑐᑦ, ᐊᑕᖏᖅᑐᐃᓐᓇᐅᒐᑎᓗ ᑐᑭᓕᐅᕐᓂᕐᒧᑦ.

<u>ᐅᖃᐅᓯᑦᓴᐃᑦ ᐊᒻᒪᓗ ᐊᐱᖅᑯᑎᑦᓴᐃᑦ:</u>
ᐱᑕᖃᙱᑦᑐᖅ

3.3. ᐆᒪᔪᕐᓂᐊᖅᑎᒃᑯᑦ ᑲᑎᒪᔨᖏᑦ ᑭᒃᑯᓕᒫᖅᑎᑦᓯᓂᖓᑦ ᐱᔾᔪᓯᖏᓪᓗᒍ ᑲᑎᓕᒫᕐᓗᒋᑦ ᑐᑦᑐᑦᑕᐅᒍᓐᓇᖅᑐᓂᒃ ᐱᕐᖁᔾᔭᖅᑳᖅᑕᐅᔪᒥᒃ

<u>ᐱᔾᔪᑎᖏᑦ ᐅᖃᓇᐊᖅᑐᕕᐅᓯᒪᓃᑦ</u>: ᐆᒪᔪᕐᓂᐊᖅᑎᒃᑯᑦ ᑲᑎᒪᔨᖏᑦ ᑭᒃᑯᓕᒫᖅᑎᑦᓯᓚᐅᖅᑐᑦ ᓄᓇᓕᓐᓂ ᑐᓴᕈᒪᓪᓗᑎᑦ ᐅᖃᐅᓯᑦᓴᐅᔪᓂᒃ ᐊᒻᒪᓗ ᐃᓚᓕᐅᕈᑎᖃᕐᓗᑎᑦ ᐱᓕᕆᕕᖓᑕ ᐊᕙᑎᓕᕆᔨᒃᑯᑦ ᑲᑎᓕᒫᕐᓗᒋᑦ ᑐᑦᑐᑦᑕᐅᒍᓐᓇᖅᑐᓂᒃ ᐱᕐᖁᔾᔭᖅᑲᕈᑎᖓᓐᓂ.

<u>ᐅᓪᓗᖓ</u>: ᐊᐅᒡᒍᓯ 28, 2019

<u>ᑭᒡᒐᖅᑐᐃᔪᑦ: ᑭᐊᕙᓐ ᒪᑐᐃᓐ (</u>Kevin Methuen) (ᐊᕙᑎᓕᕆᔨᒃᑯᑦ), ᕋᓯ ᐊᕿᐊᑉᐹ (Russell Akeeagok) ᐊᕙᑎᓕᕆᔨᒃᑯᑦ, ᑎᐅᕆ ᒥᐅᑦᑕᓐ (Terry Milton) (ᐊᕙᑎᓕᕆᔨᒃᑯᑦ), ᓚᐅᕆ ᐊᑦᔪᓐ (Larry Adjun) (ᖁᕐᓗᖅᑐᕐᒥ ᐆᒪᔪᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔨᖏᑦᑕ ᐃᑦᓯᕙᐅᑕᖓᑦ), ᕚᕕ ᐊᓇᕕᓗᒃ (Bobby Anavilok) (ᖁᕐᓗᖅᑐᕐᒥ ᐆᒪᔪᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔨᖏᑦ), ᔦᐃᑯ ᐸᓗᖏᔭᒃ (Jayko Palongayak) (ᖁᕐᓗᖅᑐᕐᒥ ᐆᒪᔪᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔨᖏᑦ), ᔪᐊᒐᓐ ᐹᓪᑦ (Jorgen Bolt) (ᓄᓇᐹᒻᒥ ᐆᒪᔪᓕᕆᔨᕐᔪᐊᒃᑯᑦ)

<u>ᓇᐃᓪᓕᒋᐊᖅᓯᒪᔪᑦ ᐅᖃᖃᑎᒌᓐᓂᐅᓚᐅᖅᑐᓂ:</u>

ᐅᐸᒍᑎᓚᐅᖅᑐᑦ ᑲᑎᒪᔪᓄᑦ 35 ᐃᓄᐃᑦ, ᑲᑎᒪᓂᕐᓗ ᐃᑲᕐᕋᓐᓂᒃ ᒪᕐᕉᓐᓂᒃ ᐊᐅᓚᓂᖃᓚᐅᖅᑐᖅ. ᕋᓯ ᐊᕿᐊᑉᐹ (COII) ᐱᓕᕆᐊᖃᓚᐅᖅᑐᖅ ᖃᑦᓯᓪᓚᕆᐅᓂᖏᓐᓂᒃ ᑐᑦᑐᑦᑕᐅᓯᒪᔪᑦ ᐊᑐᓪᓗᑎᑕᐅᓯᒪᓪᓗᑎᓪᓗᒍ ᑲᑎᓕᒫᕐᓗᒋᑦ ᑐᑦᑐᑦᑕᐅᒍᓐᓇᖅᑐᑦ ᐊᒻᒪᓗ ᐆᒪᔪᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔨᖏᑦᑕ ᐃᑦᓯᕙᐅᑕᖏᑦ ᐅᖃᐅᓯᖃᓚᐅᖅᑐᖅ ᑖᒃᑯᓂᙵ ᓇᓪᓕᖅᑲᖏᓐᓂᒃ ᑭᒃᑯᓕᒫᖅᑕᐅᖅᓯᒪᔪᓄᑦ ᐊᑕᐅᓯᐊᕋᓂ. ᑐᑭᓯᒋᐊᖅᑎᑦᓯᓚᐅᕆᓪᓗᓂ ᐱᕈᔾᔭᖅᑲᕈᑎᑦᑎᓐᓂ, ᖃᓄᕐᓗ ᑐᑦᑐᐃᑦ ᖃᑦᔫᓇᕈᖅᐸᓪᓕᐊᑐᐃᓐᓇᓂᐊᖏᑦ. ᑭᐊᕙᓐ ᑐᑭᓯᒋᐊᖅᑎᑦᓯᓚᐅᖅᑐᖅ ᐊᕙᑎᓕᕆᔨᒃᑯᑦ ᐱᕐᖁᔾᔭᖅᑲᕈᑎᖓᑦ

ᑭᒡᒐᖅᑐᐃᒋᐊᖓ ᖁᕐᓗᖅᑐᒥᐅᑦ ᐱᒍᓇᖅᑕᕆᓐᓂᒃ 1.5%-ᖑᔪᓂᒃ ᑖᒃᑯᓄᖓ ᓄᑖᖑᓂᖅᐸᓅᑦ ᒥᑦᓴᐅᕝᕈᑕᐅᓯᒪᔪᓄᑦ ᖃᑦᓯᐅᓂᕆᓐᓂ, ᒪᓕᓪᓗᑎᑦ ᑐᑭᑖᕈᑎᖃᖅᓯᒪᔪᑦ ᑕᐃᒫᑦᓴᐃᓐᓇᖅ ᒫᓈᒃᑯᑦ ᑐᑦᑐᑦᑕᐅᒍᓐᓇᖅᑐᓂ (340). ᑭᐊᕙᓐ ᐅᖃᐅᓯᒑᓚᐅᕐᒥᔪᖅ ᒍᐃᒃᐋᔅᒃᑯᑦ ᐊᕙᑎᓕᕆᓂᕐᒧᑦ ᑲᑎᒪᔨᕆᑦᑕ ᑐᑭᑖᕈᑎᒋᓯᒪᔭᖓᓂ 1% ᑐᑦᑐᑦᑕᐅᒍᓐᓇᕐᓗᑎᑦ ᐊᑐᓕᖅᑎᑕᐅᓯᒪᓪᓗᓂ ᑕᒪᓐᓇ ᓄᓇᑦᓯᐊᕐᒥ, ᐅᖃᐅᓯᖅᓯᓂ ᑕᒪᓐᓇ ᐊᕙᑎᓕᕆᔨᒃᑯᑦ ᐱᖁᔭᖅᑳᕈᑎᖓᑦ ᐱᕕᑦᓴᖃᕐᓂᖅᓴᐅᒋᐊᖓ ᐃᓱᒪᒋᔭᖃᖅᓯᓈᖅᓯᑎᑦ ᐊᓈᐅᒪᒋᐊᖃᕐᓂᕆᓐᓂ ᑐᑦᑐᐃᑦ.

ᓕᐅᓇ ᐊᑦᔪᓐ ᑐᑭᓯᒋᐊᖅᑎᑦᓯᓚᐅᖅᑐᖅ ᐊᒪᖅᑯᐃᑦ ᖃᐅᔨᓴᖅᑕᐅᓂᕆᐊᑦᑕᕆᑦᑕ ᐃᓄᐃᓴᓗᐊᕐᓂᕆᓐᓂ ᐊᒻᒪᓗ ᐊᕙᑎᓕᕆᔨᒃᑯᑦ ᑐᑭᑖᕋᑖᓚᐅᕐᓂᕆᓐᓂ ᑲᔪᖅᑎᑦᓯᕆᑦᓯᑎᑦ ᐱᖁᔭᖅᑳᕈᑎᖓᓐᓂ ᐊᒃᓱᓂᒃ ᓂᕕᖓᑖᓂᒃ ᐱᒃᑲᓂᕈᒪᓕᑎᓪᓗᒋᑦ. ᐃᓘᓐᓇᒍᑦ, ᐊᑐᕈᒪᙱᓐᓂᖅᓴᐅᓚᐅᖅᑐᑦ ᐊᖑᓯᓪᓗᐃᓐᓇᕐᓂᒃ ᑐᑦᑐᖁᔭᐅᓂᕐᒥ. ᑖᓐᓇ ᓄᓇᓕᐅᔪᖅ ᑐᑦᑐᓂᐊᖅᐸᒻᒪᑕ ᐊᖑᓯᓪᓗᓂᓪᓗ ᐊᕐᓇᕕᐊᓂᓪᓗ ᖃᖓᐅᓕᕋᐃᒻᒪᑦ ᐊᕐᕋᒍᖓ ᒪᓕᓪᓗᒍ, ᐱᒐᓱᐊᓗᐊᖅᐸᑦᓯᑎᑦ ᐊᕐᓇᕕᐊᓂᑦ ᐅᑭᐅᒃᑯᑦ ᐅᐱᕐᖔᒃᑯᓪᓗ, ᐊᖑᓯᓪᓗᓂᒃ ᐱᒐᓱᐊᕐᓂᖅᓴᐅᓪᓗᑎ ᐊᐅᔭᒃᑯᑦ. ᑕᒪᓐᓇ ᐊᔾᔨᒌᙱᓐᓂᕆᓐᓂ ᓂᕿᕆᑦᑕ ᐊᒥᕆᑦᑕᓗ ᐱᔪᑎᖃᖅᐸᑦᓯᓂ ᓯᓇᒃᑯᑖᓕᐊᕆᔭᐅᒍᓐᓇᕐᓂᕆᑦ.

ᐃᓱᓕᓕᖅᑎᓪᓗᒍ ᑲᑎᒪᓂᖅ, ᓕᐅᓇ ᐊᐱᕆᓚᐅᖅᑐᖅ ᑭᒃᑯᓕᒫᕆᐊᖅᑐᖅᓯᒪᔪᓂᒃ ᐊᕐᕿᖁᓪᓗᒋᑦ ᐱᖁᔭᖅᑳᕈᑎᖓᓐᓂᒃ ᐊᕙᑎᓕᕆᔨᒃᑯᑦ ᐅᓚᕙᓘᓐᓃᑦ ᓇᒻᒥᓂᖅ ᐱᖁᔭᖅᑳᕈᑎᒥᓐᓂᒃ ᐋᔩᖃᑎᖃᖅᑳᕐᓗᑎᑦ. ᒪᕿᐆᒃ ᑲᑎᒪᔪᓕᐊᖅᓯᒪᔫᒃ ᐱᖁᔭᖅᑳᕆᓕᐅᕆᐅᖅᑑᑦ 250 ᑐᑦᑐᑦᑕᐅᒍᓐᓇᕐᓗᑎᑦ ᓇᓪᓗᐃᓐᓇᖅᑦ ᐊᕐᓇᕕᖕᒎᒐᓗᐊᖅᐸᑕ, ᐃᓱᒪᒋᔭᖃᖅᓯᑎᑦ ᐊᕙᑎᓕᕆᔨᒃᑯᑦ ᐱᖁᔭᖅᑳᕈᑎᖓᓐᓂᒃ ᓇᑲᑦᓯᓂᐊᕆᐊᖅᑦ ᐊᓪᕙᖅᑭᓐᓂ. ᑲᔪᓯᑎᑦᓯᓚᐅᖅᑐᑦ ᒨᓴᓐᓕᐅᕐᓂᒃᑯᑦ ᑕᒪᑐᒥᖓ ᐱᖁᔭᖅᑳᕈᑎᒥᒃ. ᐱᑕᖃᓚᐅᙱᑦᑐᖅ ᐊᑭᕋᖅᑐᖅᑐᒥᒃ ᑭᒃᑯᓕᒫᕆᐊᖅᑐᖅᓯᒪᔪᓂᒃ, ᑐᓂᔪᖃᓚᐅᕋᓂᓪᓗ ᐱᖁᔭᖅᑳᕈᑎᑦᓴᓂᒃ ᑕᒪᓐᓇᓗ ᑲᑎᒪᓂᐅᔪᖅ ᐃᓱᓕᓐᓂᖃᓚᐅᖅᑐᖅ.

<u>ᐱᖁᔭᖅᑳᕈᑎ ᑐᓂᔭᐅᔪᖅ ᒐᕙᒪᒃᑯᖏᓐᓄᑦ ᓄᓇᕗᑦ:</u> ᑭᒃᑯᔮᓕᕆᐊᖅᓯᒪᔪᑦ ᐱᖁᔭᖅᑳᕐᓗᑎᑦ ᒨᓴᓕᐅᕐᓂᒃᑯᑦ ᑲᑎᓕᒫᕐᓗᒋᑦ ᑐᑦᑐᑦᑕᐅᒍᓐᓇᕐᓗᑎᑦ 250 ᐊᕐᓇᕕᐊᖑᒐᓗᐊᖅᐸᑕ.

<u>ᐅᖃᐅᓯᑦᓴᐃᑦ ᐊᒻᒪᓗ ᐊᐱᖅᑯᑎᓴᐃᑦ:</u> ᐱᑕᖃᙱᑦᑐᖅ

3.4. ᐊᕙᑎᓕᕆᔨᒃᑯᑦ ᐅᖃᕆᐊᖅᑐᖅᓯᒪᓂᖓᑦ ᑲᑎᓕᒫᕐᓗᒋᑦ ᑐᑦᑐᑦᑕᐅᒍᓐᓇᖅᑐᓂᒃ ᖁᕐᓗᖅᑐᒥ ᐆᒪᔪᕐᓂᐊᖅᑎᒃᑯᑦ ᑲᑎᒪᔨᖏᓐᓄᑦ

<u>ᐱᔾᔪᑎᖓ ᐅᖃᕆᐊᖅᑐᖅᓯᒪᓃᑦ:</u> ᐅᖃᕆᐊᖅᑐᖅᓯᒪᓗᑎᑦ ᖁᕐᓗᖅᑐᒥ ᐆᒪᔪᕐᓂᐊᖅᑎᒃᑯᑦ ᑲᑎᒪᔨᖏᓐᓄᑦ ᐊᕙᑎᓕᕆᔨᒃᑯᑦ ᐱᖁᔭᖅᑳᕈᑎᖓᓐᓂᒃ ᑲᑎᓕᒫᕐᓗᒋᑦ ᑐᑦᑐᑦᑕᐅᒍᓐᓇᖅᑐᓂ 107 ᐊᐳᖅᑕᕕᖃᙱᓪᓗᑎᑦ ᐊᖑᓯᓪᓗᐃᓐᓇᐃᑦ (NQL) **ᕘᓗᓃᑦ ᑲᓇᓐᓇᕐᒥ ᑐᑦᑐᕆᓐᓄᑦ ᐃᓚᓕᐅᕈᑎᐅᓗᑎᓪᓗ ᓄᓇᕗᒻᒥ ᐆᒪᔪᓕᕆᔩᑦᔪᐊᒃᑯᕆᓐᓄᑦ** (NWMB).

<u>ᐅᓪᓗᖅ</u>: ᐆᑦᑑᐱᕆ 2, 2019

<u>ᑭᒡᒐᖅᑐᐃᔪᑦ:</u> ᐊᕙᑎᓕᕆᔨᒃᑯᑦ (ᓖᓴ–ᒪᕇ ᓕᒃᑯᕌᒃ (Lisa-Marie Leclerc), ᑫᑦ ᐃᖕᓚᓐ (Kate England), ᑭᐊᕙᓐ ᒥᑎᐅᓐ (Kevin Methuen), ᑎᐅᕆ ᒥᐅᓪᑕᓐ (Terry Milton), ᐋᓚᓐ ᓂᑉᑕᓈᑦᑎᐊᖅ (Allen Niptanatiak); ᓄᓇᕗᒻᒥ ᐆᒪᔪᓕᕆᔩᑦᔪᐊᒃᑯᑦ ᑲᑎᒪᔨᕆᑦ (ᔪᐊᒐᓐ ᐆᓪᑦ (Jorgen Bolt), ᑲᐃᐅᓪ ᕆᑦᓯ (Kyle Ritchie); ᖁᕐᓗᖅᑐᒥ ᐆᒪᔪᕐᓂᐊᖅᑎᒃᑯᑦ ᑲᑎᒪᔨᕆᑦ (ᐊᑕᕆᖅᑐᑦ ᑲᑎᒪᔩᑦ)

<u>ᓇᐃᓪᓕᒋᐊᖅᓯᒪᔪᑦ ᐅᖃᖃᑎᒌᓐᓂᐅᓚᐅᖅᑐᓂ:</u>

ᑲᑎᒪᓂᖅ ᐊᐅᓚᓂᖃᓚᐅᖅᑐᖅ ᐃᑲᕐᕋᕐᓂᖅ ᐱᖓᓱᓂᑦ ᐅᖃᖃᑎᒌᑦᑐᕌᓗᓚᐅᖅᓯᑎᓪᓗ ᕘᓗᓃᑦ ᑲᓇᓐᓇᕐᒥ ᑐᑦᑐᕆᑦᑕ

ᖃᑦᓲᓐᓇᕈᖅᐸᓪᓕᐊᓂᖏᑦ, ᑲᑎᓕᒫᕐᓗᒋᑦ ᑐᑦᑐᑦᑕᐅᒍᓐᓇᖅᑐᐃᑦ, ᓄᓇᓕᓐᓂ ᐱᓕᕆᐊᖑᓯᒪᔪᖅ ᐊᐅᓚᑦᓯᓂᕐᒧᑦ ᐸᕐᓇᐅᑎᖓᑦ, ᐃᓚᖏᓪᓗ ᐱᔾᔪᑎᖃᖅᑐᑦ ᑕᒪᒃᑯᓂᖓ. ᐅᖃᐅᓯᐅᓚᐅᖅᑐᖅ ᑭᒃᑯᓕᒫᕐᓂᖃᖅᑎᓪᓗᒋᑦ ᐅᓪᓗᖓᓂ ᐊᐅᒡᒍᓯ 28, 2019, ᑭᒃᑯᓕᒫᓇᐊᖅᓯᒪᔪᑦ ᐱᕐᑯᔾᔨᖕᒫᓕᐅᓚᐅᖅᑐᑦ ᒨᔅᓕᐅᕐᓂᒃᑯᑦ ᑲᑎᓕᒫᕐᓗᒋᑦ ᑐᑦᑐᑦᑕᐅᒍᓐᓇᕐᓗᑎᑦ 250 ᓇᓪᓗᑐᐃᓐᓇᖏᑦ ᐊᕐᓇᕙᐊᖑᒐᓗᐊᖅᐸᑕ ᑐᑦᑐᐃᑦ.

ᐅᖃᖃᑎᒌᓐᓂᖃᓚᐅᖅᑐᑦ ᖃᑦᓯᐅᓂᖏᓐᓂ ᐊᕐᓇᕙᐊᖑᓂᖅᓴᐃᑦ, ᐊᑦᑐᐊᓂᖃᕐᓂᐅᓴᑐᐃᓐᓇᕐᒪᑦ ᐊᖑᓭᓪᓗᐃᓐᓇᐃᑦ ᑐᑦᑐᑦᑕᐅᒍᓐᓇᖅᐸᑕ ᒪᑐᐃᖓᒐᒐᔭᓇᐊᖓ ᑐᑦᑐᓂᐊᕈᓐᓇᕐᓂᖅ ᐊᐅᒡᒍᓯᒥ ᓯᑎᐱᕆᒥᓗ, ᐊᑕᐅᑦᓯᒃᑯᐊᓗᒃ ᑐᑦᑐᓂᐊᕋᓱᐊᓯᒐᔭᖅᓱᑎᑦ ᐱᕙᓪᓚᖃᑦᓯᐊᖏᓪᓗᑎᓪᓗ ᓂᕿᑦᓴᓯᐅᕐᓂᕐ. ᓇᓪᓕᑐᐃᓐᓇᖏᓐᓂ ᐊᕐᓇᕙᐊᖑᒐᓗᐊᖅᐸᑕ ᑐᑦᑐᒍᓐᓇᖅᐸᑕ ᓂᕿᑦᓴᖃᑦᓯᐊᕐᓂᖅᓴᐅᒐᔭᓇᐊᖏᑦ ᑲᔪᓲᓐᓇᖅᑐᒥᓪᓗ ᑐᑦᑐᒐᓱᐊᕈᓐᓇᕐᓗᑎᑦ (ᐱᒐᓱᐊᕈᓐᓇᕐᓗᑎᑦ ᐊᔾᔨᒌᖕᖏᑦᑐᓂᒃ ᐊᒥᕐᓂᒃ, ᐱᔭᐅᓚᕿᒍᓐᓇᕐᓗᑎᓪᓗ ᐃᓕᖅᑯᓯᑐᖃᖅᑎᒍᑦ ᓂᕆᔭᐅᖃᑦᑕᖅᓯᒪᔪᓂᒃ). ᖃᓄᖅᑑᕈᑕᐅᓚᐅᖅᑐᖅ ᑕᒪᓐᓇ ᐅᖃᖃᑎᒌᓐᓂᐅᔪᒥ ᓲᕐᓗ “ᐱᓂᖅᓴᐅᓗᑎᑦ ᐊᖑᓭᓪᓗᓂᒃ” ᐅᓪᓓᓘᓐᓃᒃ ᓇᐸᑲᓭᖏᑦ 60:40-ᖑᓗᑎᑦ, ᑭᓯᐊᓂᓕ ᐊᖏᖃᑎᒋᒍᓐᓇᓚᐅᕐᖏᑦᑐᑦ ᓄᓇᓕᖏᑦᑕ ᐆᒪᔪᕐᓂᐊᖅᑎᒃᑯᑦ ᑲᑎᒪᔨᖏᑦ. ᓂᕈᐊᖅᑕᐅᓯᒪᒐᒥᒃ, ᒪᓕᒋᐊᖃᓚᐅᖅᑐᑦ ᒨᔅᓕᐊᓇᔭᐅᓯᒪᔪᒥᒃ ᑲᔪᓯᑎᑕᐅᓚᐅᖅᑐᒥᒃ.

ᖁᕐᓗᖅᑐᕐ ᐆᒪᔪᕐᓂᐊᖅᑎᒃᑯᑦ ᑲᑎᒪᔨᖏᑦ ᓇᓚᐅᑦᑳᖅᓯᒪᔪᑦ 600 ᑐᑦᑐᐃᑦ ᐊᔾᔨᒌᖕᖏᑦᑐᓂᒃ ᓇᑭᖕᒫᖅᓯᒪᓂᖃᖅᑐᑦ ᑐᑦᑐᑦᑕᐅᓚᐅᓇᐊᖏᑦ ᖁᕐᓗᖅᑐᕐ ᐊᕐᕌᒨᓚᐅᖅᑐᒥ, ᑕᐃᒪᐃᒻᒪᑦ ᐃᓱᒫᓗᓚᐅᖅᑐᑦ ᐱᒍᓐᓇᕋᔭᕐᖏᒋᐊᖅ ᐱᔭᐅᓯᒪᕐᖏᑦᑐᓂ ᑐᑦᑐᓂ ᐃᓄᐃᓭᓪᓕᒋᐊᖅᑕᐅᓯᒪᑎᓪᓗᒋᑦ ᑲᑎᓕᒫᕐᓗᒋᑦ ᑐᑦᑐᑦᑕᐅᒍᓐᓇᖅᑐᑦ, ᐊᒻᒪᓗ ᐋᖀᓕ ᑐᑦᑐᖏᑦ ᐅᑎᕐᖏᑉᐸᑕ ᑖᓪᓚᓂ ᐊᕿᕈᕐ. ᖃᐅᔨᒪᒍᒪᒻᒪᑕ ᓇᑭᒃᑲᓐᓂᖅ ᓂᕿᑦᓴᖃᕐᓂᐊᕆᐊᖏᑦ ᐱᖃᑦᑕᓕᓃᖅᓱᑎᓪᓗ ᐃᖃᓗᓐᓂᒃ ᑐᑦᑐᕖᓂᓪᓗ, ᑭᓯᐊᓂᓕ ᐃᓱᒫᓗᓪᓚᕆᑦᑐᑦ. ᐅᖃᐅᓯᐅᓚᐅᖅᑐᖅ ᑲᔪᓯᑎᑕᐅᑉᐸᑦ 107 ᐱᔭᐅᒍᓐᓇᕐᓗᑎᑦ, ᓯᖁᒥᑦᓯᓂᒃᑯᒃ ᒪᓕᒐᕐᓂᒃ ᐊᑐᓕᑐᐃᓐᓇᕆᐊᖃᕆᐊᖓ ᑕᒪᓐᓇᓗ ᐊᕙᑉᐸᓪᓕᐊᒍᑕᐅᒃᑲᓐᓂᕈᓐᓇᖅᓱᓂ ᐊᕗᑎᓕᕆᔾᔪᑎᒃᑯᓐᓄᑦ ᐊᒻᒪᓗ ᐆᒪᔪᕐᓂᐊᖅᑎᒃᑯᑦ ᒪᓕᑦᑕᐅᖁᔭᖏᓐᓂ.

ᐅᖃᐅᓯᐅᓗᐊᓚᐅᖅᑐᖅ ᓂᕆᐅᑦ ᑐᑦᑐᒐᓱᐊᖅᐸᑦᑐᑦ ᐊᐅᓚᑕᐅᒍᓐᓇᕐᓂᖓ. ᐅᖃᐅᓯᐅᕆᐊᓪᓚᓚᐅᕆᓪᓗᓂ ᐊᒥᓲᓂᖅᓴᐃᑦ ᐊᒪᕈᖅᑕᐅᓯᒪᔪᑦ ᐊᕐᕋᒍᐃᑦ ᐱᖓᓱᑦ ᖄᖏᖅᑐᓂ ᓄᓇᑐᐃᓐᓇᕐᒥᐅᑦᓴᔭᐅᕆᐊᖏᑦ ᓇᐹᖅᑑᓂᖕᒫᖏᑦᓱᑎᑦ ᑐᑦᑐᒐᓱᐊᕐᓂᖅᓴᐅᕙᑦᑎᓪᓗᒋᑦ ᕿᑎᕐᒥᐅᑦ ᑐᑦᑐᖏᓐᓂ. ᐊᒪᕈᕐᓂᐊᕐᓂᖅ ᓄᕝᕙᑉ ᑕᓯᖓᓂ ᐃᑲᔪᖅᓱᒍᓐᓇᖅᑐᖅ ᕚᑑᔅᑦ ᐊᒻᒪᓗ ᕙᕝᕕ ᑐᑦᑐᖏᓐᓂᑦ ᑖᒃᑯᐊ ᑐᑦᑐᓂᐊᖅᑎᒋᔭᐅᕙᒻᒪᑕ, ᑕᐃᒫᑦᓴᐃᓐᓇᖅ ᒍᓃᑦ ᕓᐅ ᑕᓯᖓᓂ ᕗᓘᓅᔅ ᑲᓇᓐᓇᕐ ᑐᑦᑐᖏᓐᓄᑦ. ᐱᔮᕈᓯᒃᑯᑦ ᐅᖃᐅᓯᐅᓚᐅᖅᑐᖅ ᐆᒪᔪᕐᓂᐊᖅᑎᒃᑯᓐᓄᑦ “ᐱᔭᓇᐊᕿᓐᓂᖅᓴᐅᒥᐊᖓ ᐊᐅᓚᑕᐅᖕᒫᕐᓗᑎᑦ ᑐᑦᑐᒐᓱᐊᖅᐸᑦᑐᐃᑦ ᓂᕆᐅᑦ ᐊᐅᓚᑕᐅᖕᖏᖕᒫᕐᓗᑎᑦ ᑲᑎᓕᒫᕐᓗᒋᑦ ᑐᑦᑐᑦᑕᐅᒍᓐᓇᖅᑐᐃᑦ”.

ᖁᕐᓗᖅᑐᒥ ᐆᒪᔪᕐᓂᐊᖅᑎᒃᑯᑦ ᐅᖃᖃᑎᖃᕐᓂᐊᖅᑐᑦ ᐊᕗᑎᓕᕆᔾᔪᓐᓂᒃ ᐱᓇᓱᐊᕈᓯᕐᓂᒃ ᐊᒡᒋᖅᑐᓂᒃ ᐅᐸᓗᖓᐃᔭᕈᑕᐅᓗᑎᑦ ᓄᓇᓕᓐᓂ ᐱᓕᕆᐊᖑᓯᒪᔪᑦ ᐊᐅᓚᑦᓯᓂᕐᒧᑦ ᐸᕐᓇᑕᐅᓯᒪᔪᖅ ᑐᓂᔭᐅᒃᑲᓐᓂᕐᓂᑦᓴᖓᓄᑦ ᑎᓯᐱᕆᒥ ᑲᑎᒪᓕᖅᐸᑕ

<u>ᐱᕐᑯᔾᔨᖕᒫᕈᑎ ᑐᓂᔭᐅᔪᖅ ᒐᕙᒪᒃᑯᖏᓐᓄᑦ ᓄᓇᕗᑦ:</u>
ᑖᒃᑯᐊ ᐆᒪᔪᕐᓂᐊᖅᑏᑦ ᑲᑎᒪᔨᖏᑦ ᐃᑲᔪᖅᑐᐃᔪᑦ ᑲᑎᒪᔨᖓᑦᑕ ᒨᔅᓕᐊᖓᓂᒃ ᑲᑎᓕᒫᕐᓗᒋᑦ ᑐᑦᑐᑦᑕᐅᒍᓐᓇᕐᓗᑎᑦ 250 ᓇᓪᓗᑐᐃᓐᓇᖏᑦ ᐊᕐᓇᕙᐊᖑᒐᓗᐊᖅᐸᑕ ᐱᔭᐅᒍᓐᓇᕐᓗᑎᑦ.

<u>ᐅᖃᐅᓯᑦᓴᐃᑦ ᐊᒻᒪᓗ ᐊᐱᖅᑯᑎᑦᓴᐃᑦ:</u> ᐱᑕᖃᙱᑦᑐᖅ

4.0 ᐱᔭᕇᕈᓯᖅ - ᑭᖑᓪᓕᕐᒥ ᐊᓪᓗᓇᐊᕈᑎᓵᐃᑦ

ᑕᐃᒪᙵᓂᒃ 2016, ᑖᒃᑯᐊ ᓄᓘᓃᔅ ᑲᓇᓐᓇᕐᒥ ᑐᑦᑐᖕᒋᑦ ᖃᑦᓯᐅᓂᖕᒋᑕ ᑭᓪᓕᓯᓂᐊᖅᑕᐅᓯᒪᓂᖕᒋᑦ ᓇᓕᖅᑲᖕᒋᑦ ᐅᖃᐅᓯᐅᖃᑦᑕᖅᓯᒪᓕᖅᑐᑦ ᐊᒥᓱᐊᖅᑎᖅᓱᒋᑦ ᐆᒪᔪᕐᓂᐊᖅᑎᒃᑯᑦ ᑲᑎᒪᔨᖕᒋᓐᓄᑦ ᐊᓯᖕᒋᓐᓄᓗ ᐊᐅᓚᑦᓯᖃᑕᐅᔪᓄᑦ. ᐱᓕᕆᕖᖕᒐᑦ ᐊᕙᑎᓕᕆᔨᒃᑯᑦ ᐱᓕᕆᐊᖃᓪᓚᕆᓐᓂᐅᓴᔪᑦ ᐊᒥᓲᕐᒍᕆᐊᖅᑕᐅᓗᑎᑦ ᑲᑎᒪᓂᐅᕙᑦᑐᑦ ᓄᓇᓕᓐᓂ ᐆᒪᔪᓕᕆᔨᒃᑯᓐᓂᓗ ᐅᖃᐅᓯᖃᖃᑦᑕᕈᒪᒧᑦ ᐱᒻᒪᕆᐅᔪᓂᒃ ᑐᓴᖅᑕᐅᒥᐊᓕᓐᓂᒃ ᖃᐅᔨᓴᕐᓂᐅᔪᖅ ᑲᔪᓯᕙᓪᓕᐊᑎᓪᓗᒍ. ᒫᓐᓇᒃᑯᑦ ᐊᕙᑎᓕᕆᔨᒃᑯᑦ ᐱᖁᔨᕗᖕᒌᕈᑎᒋᓯᒪᔭᖕᒋᑦ ᐊᔾᔨᒌᓐᓂᖃᖅᑐᑦ ᐱᖁᔨᕗᖕᒌᕈᑎᓕᐊᕆᓯᒪᔭᖕᒐᓐᓂᒃ ᓄᓇᑦᓯᐊᕐᒥ ᒐᕙᒪᒃᑯᖕᒋᑦᑕ ᐊᒻᒪᓗ ᑕᒪᓐᓇ ᑭᐅᔾᔪᑎᓵᑦᓯᐊᕙᐅᓪᓗᓂ ᒫᓐᓇᒃᑯᑦ ᖃᑦᓯᐅᓂᖕᒋᓐᓄᑦ ᑐᑦᑐᖕᒋᑦᑕ. ᑭᖑᓪᓕᕐᒥ ᐊᓪᓗᓇᐊᕈᑎᓵᐅᓂᐊᖅᑐᖅ ᑐᓂᔭᐅᓗᓂ ᐱᖁᔨᕗᖕᒌᕈᑎᐅᔪᖅ ᓄᓇᕗᒻᒥ ᐆᒪᔪᓕᕆᔩᕐᔪᐊᒃᑯᑦ ᑲᑎᒪᔨᖕᒋᓐᓄᑦ ᑲᔪᓯᑦᓯᐊᕐᑯᓪᓗᒍ ᐱᐅᖅᓱᐊᕈᑎᐅᕙᓯᐊᖅᑐᑦ ᐊᑐᖅᑕᐅᔪᑦ ᐃᑲᔪᖅᓯᕐᑯᓪᓗᒋᑦ ᐊᒥᓲᕐᒍᕆᐊᒃᑲᓂᕐᑯᓪᓗᒋᑦ.

Government of Northwest Territories Gouvernement des Territoires du Nord-Ouest

ESTIMATES OF BREEDING FEMALES & ADULT HERD SIZE AND ANALYSES OF DEMOGRAPHICS FOR THE BLUENOSE-EAST HERD OF BARREN-GROUND CARIBOU: 2018 CALVING GROUND PHOTOGRAPHIC SURVEY

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ABSTRACT

This report describes the results of a calving ground photo survey of the Bluenose-East caribou herd conducted in June of 2018 west of Kugluktuk, Nunavut (NU). The survey objective was to estimate abundance of breeding females and overall herd size that could be compared to results of previous calving ground surveys done in 2010, 2013 and 2015.

We used collared caribou locations and flew systematic reconnaissance survey transects at 10 kilometer (km) intervals over the calving ground and adjacent areas to delineate the annual concentrated calving area, assess calving status, allocate survey effort to geographic strata of similar caribou density, and time the aerial photography to coincide with the peak of calving. Based on collar movements and observed proportions of calves, it appeared that the peak of calving would occur soon after June 8 and the photo plane survey was flown with excellent field conditions (blue skies) on June 8. We delineated two relatively large photographic strata in the higher density areas, in part because we were concerned that patchy snow would reduce sightability of caribou and we thought that aerial photography would provide better accuracy and precision compared to visual counts under these conditions. On June 8 we also conducted visual surveys of two other strata with lower densities of breeding caribou. For the visual surveys, we used a double observer method to estimate and correct for sightability of caribou. A double observer method was also used to estimate sightability of caribou on the aerial photographs as some caribou (on or on the edges of snow patches) required extra effort to identify.

The estimate of 1+year old caribou on the core calving ground was 19,161 (95 percent Confidence Interval (CI) =16,512-22,233) caribou. Combining these numbers with the results of the composition survey, the estimate of breeding females was 11,675 (CI=9,971-13,670). This estimate was precise with a coefficient of variation (CV) of 7.7 percent. The estimate of adult females in the survey area was 13,988 (CI=12,042-16,249). The proportion of adult females classified as breeding was higher in 2018 (83 percent) than in 2015 (63 percent). Herd size was estimated as the number of adult females on the survey area divided by the proportion of females in the herd from a 2018 fall composition survey. The resulting estimate of Bluenose-East herd size in 2018 was 19,294 caribou at least two years old (CI=16,527-22,524). Comparison of 2015 and 2018 adult female numbers and overall trend 2010-2018 indicated an annual rate of decline of 20 percent (CI=13-27 percent) and a herd reduction of 50 percent between 2015 and 2018. This decline could not be attributed to issues with survey methods. Assessment of movement of collared females between the Bluenose-East and neighbouring Bluenose-West and Bathurst calving grounds from 2010-2018 showed minimal movement of cows to or from neighbouring herds. Demographic modeling that used composition, collared caribou, and survey data estimated that the cow survival rate was low in 2018 (0.72, CI=0.60-0.83) and calf survival has declined

since 2010. We suggest population surveys every two years, and annual monitoring of cow survival, calf productivity and calf survival for this herd in the future.

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INTRODUCTION

This report describes results of a calving ground photo-survey of the Bluenose-East caribou herd conducted during June of 2018. This herd's extent of calving area (Russell et al. 2002) has been found in recent years west of Kugluktuk, and the summer range includes the calving ground as well as areas south and east of it. The winter range is primarily south, southeast and east of Great Bear Lake (Figure 1).

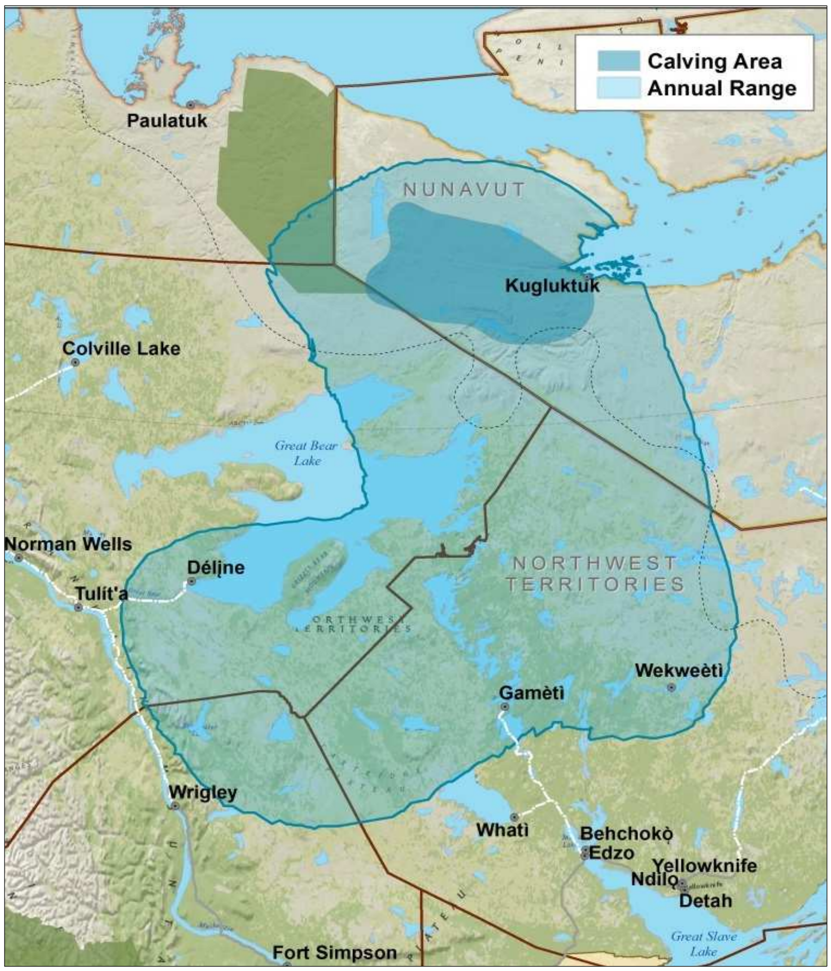

Figure 1: Annual range and extent of calving for the Bluenose-East herd, 1996-2009, based on accumulated radio collar locations of cows (Nagy et al. 2011). The calving area and a portion of the summer range are in Nunavut (NU) and the rest of the range is in the Northwest Territories (NWT).

The Bluenose-East survey was conducted concurrently with a survey of the Bathurst calving ground; results of the Bathurst caribou survey are reported separately. Figure 2 shows paths of collared caribou cows between May 15 and June 8 to the Bluenose-West, Bluenose-East, and Bathurst calving grounds.

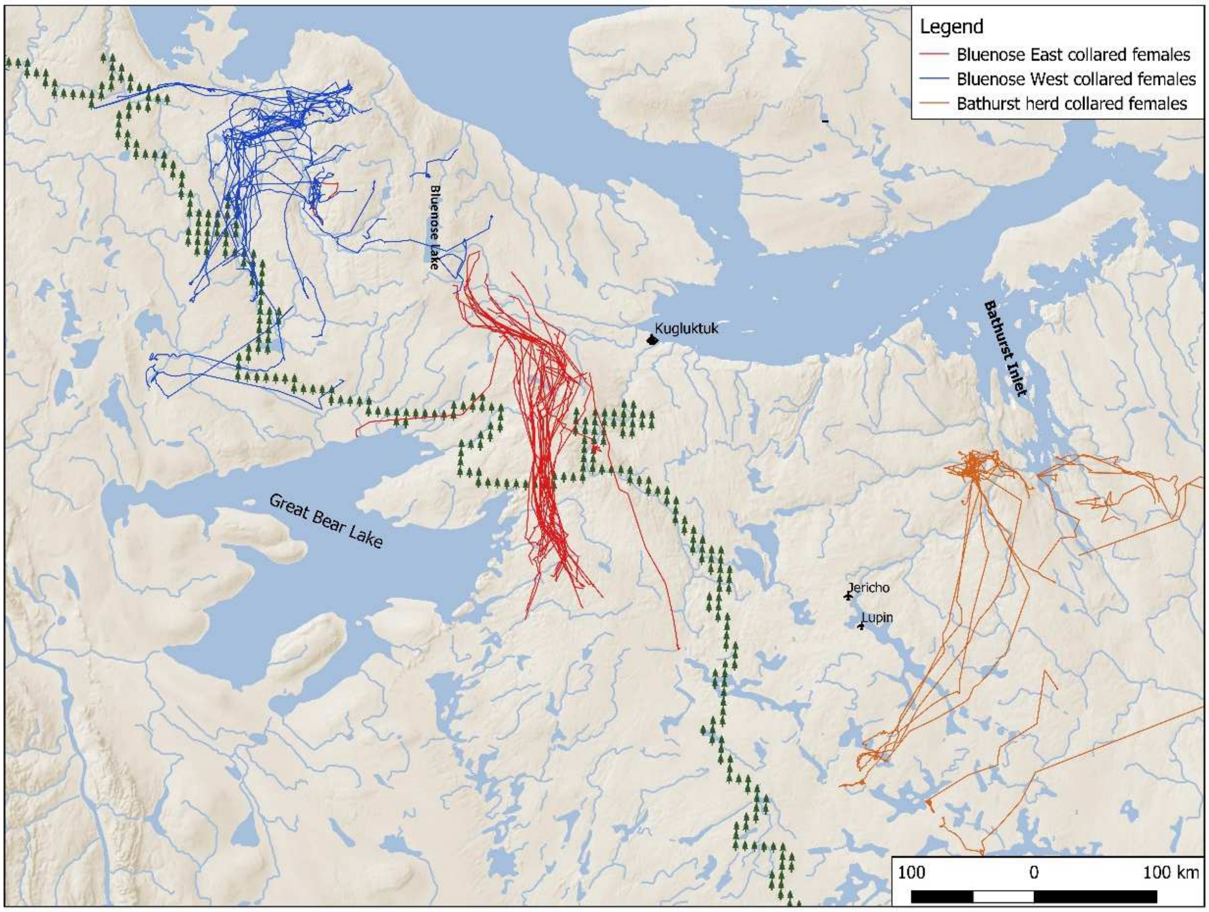

Figure 2: Spring migration paths of satellite collared Bluenose-West (blue), Bluenose-East (red) and Bathurst (orange) cows from May 15 - June 8, 2018.

In earlier years (2000-2010), post-calving surveys were used for this herd (Patterson et al. 2004, Adamczewski et al. 2009) but surveys were challenged by the lack of consistent formation of the tightly packed caribou groups this survey depends on. Since aggregation of caribou into large, compact groups is a behavioural response to reduce harassment by blood-sucking insects, the observed pattern of aggregation varies with insect abundance and environmental conditions. Insect harassment generally increases with temperature and decreases with wind (Patterson et al. 2004). Thus, success of post-calving surveys is contingent on suitable summer weather and aggregation patterns of caribou, which are highly variable within and between post-calving survey windows.

The Bluenose-East herd was surveyed in 2010 using both a calving ground photo-survey and a post-calving survey (Adamczewski et al. 2017, Boulanger et al. 2018). Both the calving and post-calving surveys in 2010 indicated that the herd was over 120,000 adult caribou. Additional calving photo surveys followed in 2013 (Boulanger et al. 2014b) and 2015 (Boulanger et al. 2016). Based on these surveys, the herd was declining at an approximate rate of 20 percent per year 2010-2015, based on adult female estimates (Figure 3).

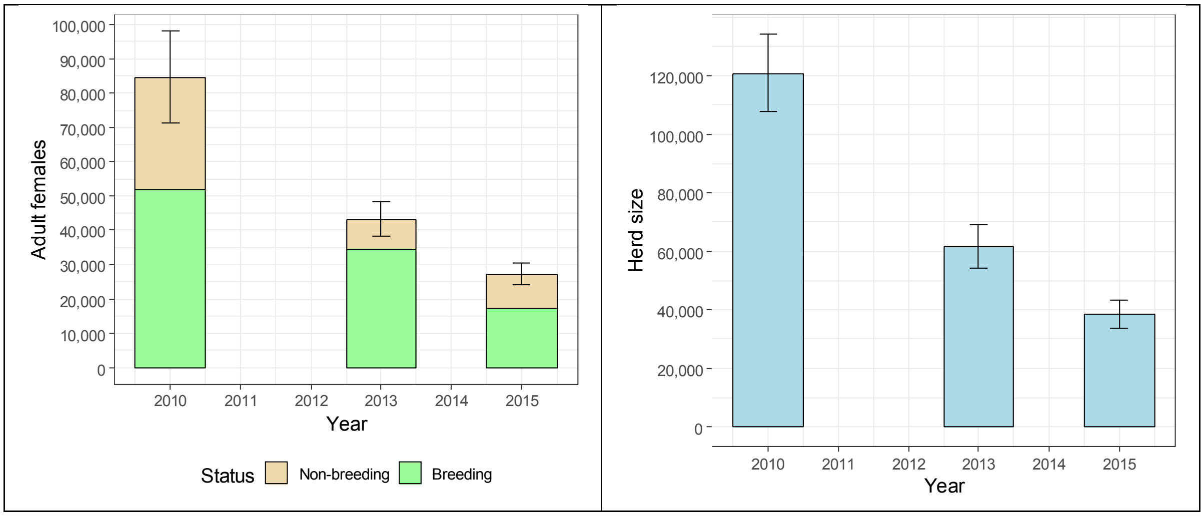

Figure 3: Estimates of adult females (subdivided by breeding status) on the left and extrapolated herd size on the right, from 2010, 2013, and 2015 calving ground surveys of the Bluenose-East caribou herd.

METHODS

The calving ground photographic survey was conducted as a sequence of steps described briefly below, then in greater detail in following text.

1. Locations from collared caribou, historic records of calving ground use, and systematic aerial reconnaissance surveys of the Bluenose-East calving area were used to identify the extent of calving between Kugluktuk and Bluenose Lake in NU in June 2018.
2. The systematic aerial reconnaissance survey was conducted before the peak of calving, where 800 m strip transects were flown at 10 km intervals to determine areas where breeding females were concentrated on the calving ground, as well as locations of bulls, yearlings, and non-breeding cows on or near the calving ground. Timing of the peak of calving was assessed by (a) observers who estimated the proportion of cows with newborn calves from survey flying, and (b) from a pattern of reduced movement rates of collared cows which was used as an indication of calving when average daily movement declined to $\leq$5 km/day.
3. Using data from the reconnaissance survey, geographic areas called strata (or survey blocks) were delineated for the more intensive survey, either by the photo plane or visually. We allocated photographic sampling effort to areas with the highest densities of breeding cows. Two photo blocks were delineated based on higher relative densities of breeding cows and were surveyed with photo-planes. Two visual blocks were delineated based on lower relative densities of adult female caribou and were surveyed by human observers in fixed-wing aircraft. The aerial survey was conducted with the photo-plane and by visual survey.
4. We initiated the helicopter-based composition survey at the same time of the photographic and visual surveys of the calving area. The composition survey crew classified larger groups (i.e. >~50-100 caribou) on the ground and classified smaller groups primarily from the air. Groups of caribou in each stratum were classified to determine the proportions of breeding and non-breeding cows, as well as bulls, yearlings, and newborn calves.
5. The estimate of breeding females was derived using the estimates of total 1+year old caribou within each stratum, and the proportion of breeding females within that stratum. The total number of adult females was estimated from the proportion of females and the estimate of 1+year-old caribou in the survey area.
6. The adult female estimate was then used to extrapolate the total size of the Bluenose-East herd (caribou at least two years old) by accounting for males using an estimate of the bull:cow ratio from a fall composition survey flown in October 2018.
7. Demographic data for the herd and the new estimates were used in trend analyses and population modeling to further evaluate population changes from 2015-2018 and their likely causes.

Analysis of Collared Caribou Data

Locations of 32 collared female caribou were monitored to assess movement rates and pathways and serve as a geographic guide for overall survey coverage. Of these, 17 were known Bluenose-East cows that had occurred on the Bluenose-East calving ground in June 2017 and 15 were collared during the winter of 2017-2018. Four were most likely Bluenose-West cows based on collaring locations in winter and June locations during calving. In addition, changes in daily movement rates of collared cows were assessed to determine the timing of calving. Usually, movement rates of parturient female caribou are reduced to <5 km/day during the peak of calving and for a few days after calving (Gunn et al. 1997, Nishi et al. 2007, Gunn et al. 2008, Gunn and Russell 2008, Nishi et al. 2010).

Reconnaissance Surveys to delineate Strata

Reconnaissance transect lines were systematically spaced at 10 km intervals (i.e. eight percent coverage) across the extent of calving and in adjacent areas. The initial focus was on delineating the annual concentrated calving area based on observations of caribou density and composition and the distribution of collared caribou cows. Once the extent of the calving area had been covered, additional survey transects were flown adjacent to the annual concentrated calving area to make sure that no large aggregations of female caribou were missed. Transect lines were generally extended at least 10 km past the last caribou seen, with the exception of the southern trailing edge where composition was increasingly comprised of bulls, yearlings and non-breeding females.

Kugluktuk was the base of operations for the Bluenose-East survey (Figure 1). Two Cessna Caravans were used for the systematic reconnaissance surveys and visual blocks. During visual surveys, caribou were counted within a 400 meter (m) strip on each side of the survey plane (800 m total, Gunn and Russell 2008). For each side of the plane, strip width was defined by the wheel of the airplane on the inside, and a single thin rope attached to the wing strut, that became horizontal during flight, served as the outside strip marker. Planes were flown at an average survey speed of 160 km/hr. at an average altitude of 120 m (by monitoring a radar altimeter) above the ground to ensure that the strip width of the plane remained relatively constant.

Two observers (one seated in front of the other) and a recorder were used on each side of the airplane to minimize the chance of missing caribou. Previous research (Boulanger et al. 2010) demonstrated that this method increases sightability compared to single observers. The two observers on the same side communicated to ensure that groups of caribou were not double counted.

Caribou groups were classified by whether they contained breeding females. Breeding caribou were defined as female caribou with hard antlers or a newborn calf at heel. A mature female with hard antlers is a general indicator that the caribou had yet to give birth, as cows usually shed their antlers within a week after birth (Whitten 1995). Caribou groups were classified as non-breeders based on the absence of breeding females and newborn calves, and the predominance of yearlings (as indicated by a short face and a small body), bulls (as indicated by thick, dark antlers in velvet and a large body), and non-antlered females or females with short antlers in velvet. The speed of the aircraft did not allow all caribou to be classified; the focus was on identifying breeding cows if they were present, and otherwise on the most common types of caribou present. In most cases, each group was recorded individually, but in some cases, groups were combined if the numbers were larger and distribution was more continuous. Data were recorded on Trimble YUMA 2 tablets (Figure 4). As each data point was entered, a real-time GPS waypoint was generated, allowing geo-referencing of the survey observations. Other large animals like moose, muskoxen and carnivores were also recorded with a GPS location.

North-south oriented transects were divided into 10 km segments to summarize the density and distribution of geo-referenced caribou counts. The density of each segment was estimated by dividing the count of caribou by the survey area of the segment (0.8 km strip width x 10 km = 8 km^2). The segment was classified as a "breeder" segment if at least one breeding female caribou (or newborn calf) was identified. Segments were then displayed spatially and used to delineate strata within the annual concentrated calving area based on the composition and density of the segments. During the survey, daily weather briefings were provided by Dr. Max Dupilka (Beaumont, AB) to assess current and future survey conditions.

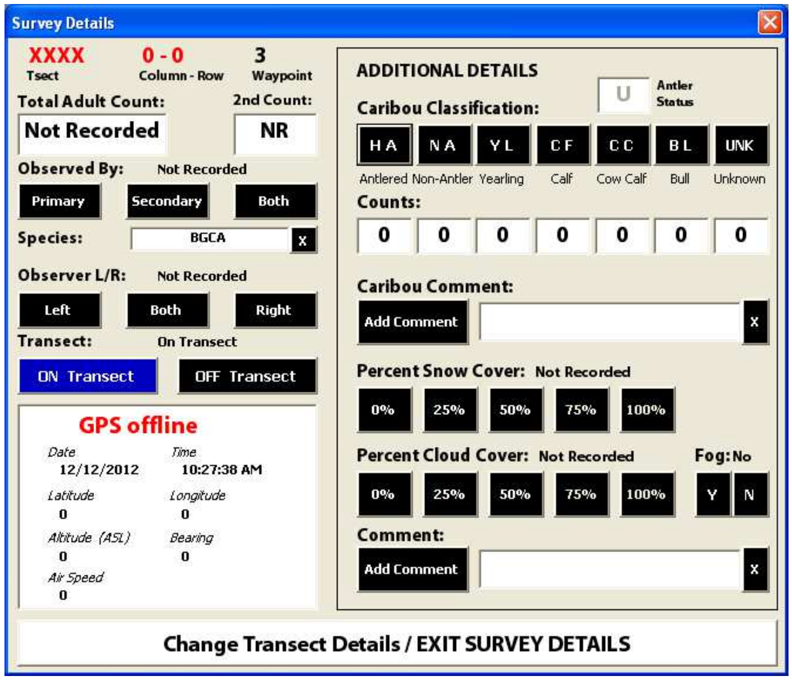

Figure 4: The tablet data entry screen used during reconnaissance and visual survey flying on Bathurst and Bluenose-East June surveys in 2018. A GPS waypoint was obtained for each observation, allowing efficient entry and management of survey data. In addition, the unique segment unit number was also assigned by the software for each observation to summarize caribou density and composition along the transect lines.

Stratification and Allocation of Survey Effort

The main objective of the survey was to obtain a precise and accurate estimate of breeding female caribou on the calving ground. To achieve this, the survey area was stratified using the results of the systematic reconnaissance survey, a procedure of grouping areas with similar densities into contiguous blocks. Areas of higher caribou densities were considered for survey by the photo plane, with lower-density areas designated for visual surveys with two observers on each side. In this survey, two relatively large photo blocks were defined. We delineated the large photo strata because we were concerned that patchy snow conditions would reduce visual sightability of caribou (particularly single animals or small groups) and that aerial photography would provide a more consistent and reliable method for detecting and counting caribou in the area where most breeding females occurred. We thought that caribou would still be found reliably on the high-resolution aerial photos, which could be searched slowly and repeatedly using multiple counters. Two other relatively small strata were designated for visual survey, one north of the photo blocks and one south of them. Given that a key objective of the survey was to estimate breeding females, areas that contained breeding females were given priority, but all areas with collared female caribou were also surveyed.

Once the survey strata were delineated, an estimate of caribou numbers (animals at least 1+year-old) was derived from the reconnaissance data (Jolly 1969). The relative population size of each stratum and the degree of variation in caribou numbers of each block were used to allocate survey effort and a suitable number of transects to each stratum.

We used two approaches for allocating survey effort. First, optimal allocation of survey effort was considered based on sampling theory (Heard 1987, Thompson 1992, Krebs 1998). Optimal allocation basically assigned more effort to strata with higher densities, given that the amount of variation in counts is proportional to the relative density of caribou within the stratum. Optimal allocation was estimated using estimates of population size for each stratum and survey variance.

Secondly, based on relative sizes of delineated strata, we adjusted optimal allocation estimates to ensure an adequate number of transects. Based on previous surveys, we considered 10 transects per stratum to be a minimum level of coverage, with closer to 20 transects being optimal for higher density areas. In general, we considered 15 percent coverage as a minimum to achieve adequate precision, and allocated higher levels of coverage for higher density strata. In the context of sampling, increasing the number of transects in a stratum is "insurance" because it minimizes the influence of any one transect on estimate precision. As populations become more clustered, a higher number of transects is required to achieve adequate precision (Thompson 1992, Krebs 1998).

Estimation of Caribou on the Calving Ground

Photo Surveys of High-density Strata

GeodesyGroup Inc. aerial survey company (Calgary, AB) was contracted for the aerial photography in the 2018 June surveys. They used two survey aircraft, a Piper PA46-310P Jet-prop and a Piper PA31 Panther, each with a digital camera mounted in the belly of the aircraft. Survey height to be flown for photos was determined at the time of stratification based on cloud ceilings and desired ground coverage. Both aircraft were used for the two Bluenose-East photo blocks. Coverage on each photo transect was continuous and overlapping so that stereoscopic viewing of the photographed areas was possible.

Caribou on the aerial photos were counted by a team of photo interpreters and supervised by Derek Fisher, president of GreenLink Forestry Inc., (Edmonton, AB) using specialized software and 3D glasses that allowed three-dimensional viewing of photographic images. Two of the authors (J. Boulanger and J. Adamczewski) visited the GreenLink office in Edmonton and tested the photo-counting equipment to gain greater familiarity with this process in fall 2018. The number of caribou counted was tallied by stratum and transect.

The exact survey strip width of photo transects was determined using the geo-referenced digital photos by GreenLink Forestry. Due to differences in topography the actual strip width varied slightly for each transect flown. Population size ($\widehat{N}$: number of caribou at least one year old) within a stratum is usually estimated as the product of the total area of the stratum (A) and the mean density ($\overline{D}$) of caribou observed within the strata ($\widehat{N} = \overline{D}A$) where density is estimated as the sum of all caribou counted on transect divided by the total area of transect sampling ($\overline{D}$=caribou counted/total transect area). An equivalent estimate of mean density can be derived by first estimating transect-specific densities of caribou ($\widehat{D}_i = caribou_i/area_i$) where $caribou_i$ is the number of caribou counted in each transect and $area_i$ is the transect area (as estimated by transect length X strip width). Each transect density is then weighted by the relative length of each transect line (w_i) to estimate mean density ($\overline{D}$) for the stratum. More exactly, $\overline{D} = \sum_i^n \widehat{D}_i w_i / \sum_i^n w_i$ where the weight (w_i) is the ratio of the length of each transect line (l_i) i to the mean length of all transect lines($w_i = l_i/\overline{l_i}$.) and n is the total number of transects sampled. Using this weighting term accommodates for different lengths of transect lines within the stratum, ensuring that each transect line contributed to the estimate in proportion to its length. Population size is then estimated using the standard formula ($\widehat{N} = \overline{D}A$) (Norton-Griffiths 1978).

When survey aircraft first flew north to Kugluktuk on June 1, snow cover on the survey area was 90 percent or greater, and in some areas 100 percent. Over the following 10 days, however, snow melted rapidly and in many areas on June 8, snow cover was highly variable and patchy. This made spotting caribou by observers in the Caravans challenging, and also made complete counting of caribou on the aerial photos more difficult than usual. Caribou on snow-free ground were easy to see, but caribou on small snow patches or on their edges required extra effort to find. Two approaches were used to address this: (1) observers took extra time to search all photos carefully, approximately doubling the time these counts usually take, and (2) a double observer method was used to estimate sightability of the caribou on photos for a subset of photos.

For the double observer method, we systematically resampled a subset of photos to estimate overall sightability for each stratum. For these photos, a second photo interpreter provided an independent count of caribou. This two-stage approach to estimation, where one stage is used to estimate detection rates that are then used to correct estimates in the second stage, has been applied to a variety of wildlife species (Thompson 1992, Barker 2008, Peters et al. 2014). The basic principle was to systematically resample the photo transects to allow an unbiased estimate of sightability from a subset of photos that were sampled by two independent observers. Systematic samples were taken by overlaying a grid over the photo transects and sampling photos that intersected the grid points.

This cross-validation process was modeled as a two-sample mark-recapture sample with caribou being "marked" in the original count and then "re-marked" in the 2nd count for each photo resampled. Using this approach avoids the assumption that the 2nd counter detects all the caribou on the photo. The Huggins closed N model (Huggins 1991) in program MARK (White and Burnham

1999) was then used to estimate sightability. A session-specific sighting probability model was used, allowing unique sighting probabilities for the first and second photo interpreter to be estimated. Model selection methods were then used to assess whether there were differences in sightability for different strata sampled. The fit of models was evaluated using the AIC index of model fit. The model with the lowest AIC_c score was considered the most parsimonious, thus minimizing estimate bias and optimizing precision (Burnham and Anderson 1998).

Non-independence of caribou counted in photos most likely caused over-dispersion of binomial variances. The over-dispersion parameter (c-hat) was estimated as the ratio of the bootstrapped (photo-based) and simple binomial variance. Sightability-corrected estimates of caribou were then generated as the original estimate of caribou on each stratum divided by the photo sightability estimate for the stratum. The delta method (Buckland et al. 1993) was used to estimate variance for the final estimate, thus accounting for variance in the original stratum estimate and in the sightability estimate.

Visual Surveys in Low-density Strata

Visual surveys were conducted in two low density strata, one north of the photo blocks and one south of them. For visual surveys, the Caravans were used with double observers and a recorder on each side of the aircraft. The numbers of caribou sighted by observers were then entered into the Trimble YUMA 2 tablet computers and summarized by transect and stratum.

A double observer method was used to estimate the sighting probability of caribou during visual surveys. The double observer method involves one primary observer who sits in the front seat of the plane and a secondary observer who sits behind the primary observer on the same side of the plane (Figure 5). The method followed five basic steps:

1. The primary observer called out all groups of caribou (number of caribou and location) he/she saw within the 400 m-wide strip transect before they passed halfway between the primary and secondary observer. This included caribou groups that were between approximately 12 and 3 o'clock for right side observers and 9 and 12 o'clock for left side observers. The main requirement was that the primary observer be given time to call out all caribou seen before the secondary observer called them out.
2. The secondary observer called out whether he/she saw the caribou that the first observer saw and observations of any additional caribou groups. The secondary observer waited to call out caribou until the group observed passed half way between observers (between 3 and 6 o'clock for right side observers and 6 and 9 o'clock for left side observer).
3. The observers discussed any differences in group counts to ensure that they were calling out the same groups or different groups and to ensure accurate counts of larger groups.
4. The data recorder categorized and recorded counts of caribou groups into primary (front) observer only, secondary (rear) observer only, or both, entered as separate records.

5. The observers switched places approximately half way through each survey day (i.e. on a break between early and later flights) to monitor observer ability. The recorder noted the names of the primary and secondary observers (Boulanger et al. 2010, Buckland et al. 2010, Boulanger et al. 2014a).

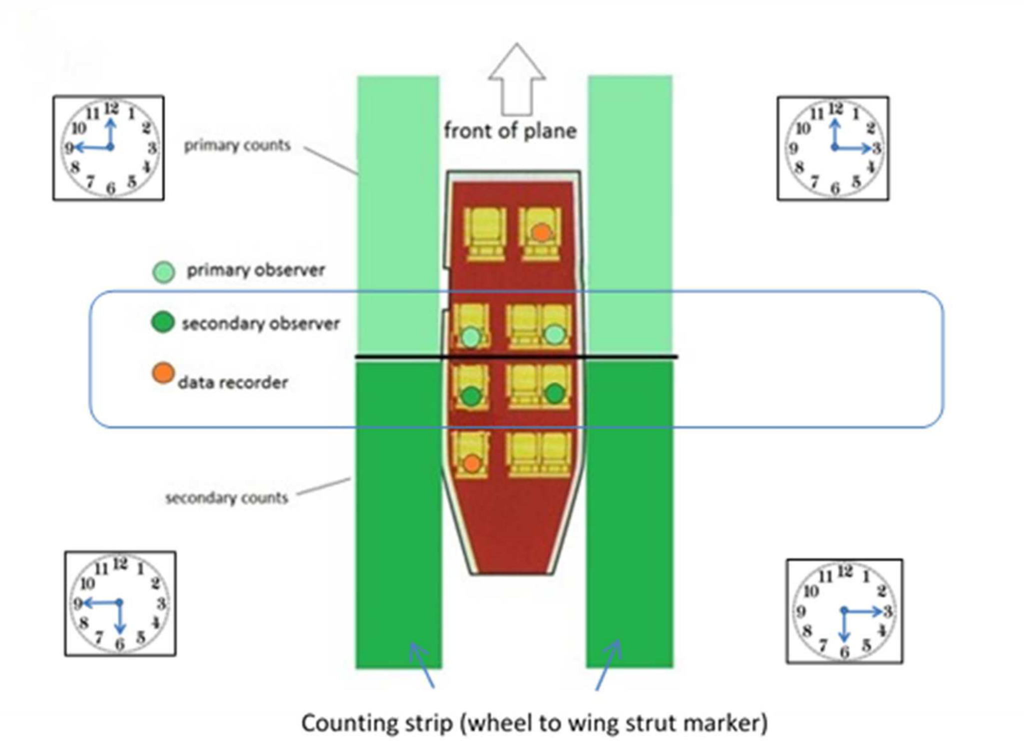

Figure 5: Observer and recorder positions for double observer methods on June 2018 caribou survey of Bluenose-East caribou. The secondary observer confirmed or called caribou not seen by the primary observer after the caribou have passed the main field of vision of the primary observer. Time on a clock can be used to reference relative locations of caribou groups (e.g. "caribou group at 1 o'clock"). The recorder was seated behind the two observers on the left side, with the pilot in the front seat. On the right side the recorder was seated at the front of the aircraft and was also responsible for navigating in partnership with the pilot.

The statistical sample unit for the survey was groups of caribou, not individual caribou. Recorders and observers were instructed to consider individuals to be those caribou that were observed independent of other individual caribou and/or groups of caribou. If sightings of individuals were influenced by other individuals, then the caribou were considered a group and the total count of individuals within the group was used for analyses.

The Huggins closed mark-recapture model (Huggins 1991) in program MARK (White and Burnham 1999) was used to estimate and model sighting probabilities. In this context, double observer sampling can be considered a two sample mark-recapture trial in which some caribou are seen ("marked") by the ("session 1") primary observer, and some of these are also seen by the second observer ("session 2"). The second observer may also see caribou that the first observer did not see. This process is analogous to mark-recapture except that caribou are sighted and re-sighted rather than marked and recaptured. In the context of dependent observer methods, the sighting probability of the second observer was not independent of the primary observer. To accommodate this removal, models were used which estimated *p* (the initial probability of sighting by the primary and secondary observer) and *c* (the probability of sighting by the second observer given that it had been already sighted by the primary observer). The removal model assumed that the initial sighting probability of the primary and secondary observers was equal. Observers were switched midway in each survey day (on most days there were two flights with a re-fueling stop between them), and covariates were used to account for any differences that were caused by unequal sighting probabilities of primary and secondary observers.

One assumption of the double observer method is that each caribou group seen has an equal probability of being sighted. To account for differences in sightability we also considered the following covariates in the MARK Huggins analysis (Table 1). Each observer pair was assigned a binary individual covariate and models were introduced that tested whether each pair had a unique sighting probability. An observer order covariate was modeled to account for variation caused by observers switching order. If sighting probabilities were equal between the two observers, it would be expected that order of observers would not matter and therefore the confidence limits for this covariate would overlap 0. This covariate was modeled using an incremental process in which all observer pairs were tested followed by a reduced model where only the beta parameters whose confidence limits did not overlap 0, were retained.

Table 1: Covariates used to model variation in sightability for double observer analysis for Bluenose-East caribou survey in June 2018.

Covariate	Acronym	Description
observer pair	obspair	each unique observer pair
observer order	obsorder	order of pair
group size	size	size of caribou group observed
Herd/calving ground	Herd (h)	Calving ground/herd being surveyed.
snow cover	snow	snow cover (0, 25, 75, 100)
cloud cover	cloud	cloud cover(0, 25, 75, 100)
Cloud cover*snow cover	Cloud*snow	Interaction of cloud and snow cover

Data from both the Bluenose-East and Bathurst calving ground surveys were used in the double observer analysis given that most planes flew the visual surveys for both calving grounds. It was possible that different terrain and weather patterns on each calving ground might affect sightability and therefore herd/calving ground was used as a covariate in the double observer analysis. Estimates of total caribou that accounted for any caribou missed by observers were produced for each survey stratum. Appendix 1 provides more details on estimation using double observer methods.

The fit of models was evaluated using the AIC index of model fit. The model with the lowest AIC_c score was considered the most parsimonious, thus minimizing estimate bias and optimizing precision (Burnham and Anderson 1998). The difference in AIC_c values between the most supported model and other models (ΔAIC_c) was also used to evaluate the fit of models when their AIC_c scores were close. In general, any model with a ΔAIC_c score of <2 was worthy of consideration.

Estimates of herd size and associated variance were estimated using the mark-recapture distance sampling (MRDS) package (Laake et al. 2012) in program R (R Development Core Team 2009). In MRDS, a full independence removal estimator which models sightability using only double observer information (Laake et al. 2008a, Laake et al. 2008b) was used. This made it possible to derive double observer strip transect estimates. Strata-specific variance estimates were calculated using the formulas of Innes et al. (2002). Estimates from MRDS were cross checked with strip transect estimates (that assume sightability = 1) using the formulas of Jolly (1969) (Krebs 1998). Data were explored graphically using the ggplot2 (Wickham 2009) R package with GIS maps being produced in QGIS software (QGIS Foundation 2015).

Composition Survey of Breeding and Non-breeding Caribou on the Calving Ground

The composition survey was initiated in the survey strata at the same time of the photo and visual surveys on June 8. Caribou were classified in strata that contained significant numbers of breeding females (based on the reconnaissance transects) to estimate proportions of breeding females and other sex and age classes. This survey allowed more detailed and accurate classification than the relatively broad classification applied during the reconnaissance survey. For this, a helicopter (initially a Long Ranger, later replaced by an A-Star) was used to systematically survey groups of caribou. Caribou groups that comprised ~<50 individuals were classified from the air by a front-seat observer using motion-stabilized binoculars (Canon 10X42L IS WP). Classified caribou counts were called out to a rear-seat data recorder who entered the data into a computer tablet.

Caribou were classified following the methods of Gunn et al. (1997) (and see Whitten 1995) where antler status, presence/absence of an udder, and presence of a calf are used to categorize breeding status of females. Newborn calves, yearlings and bulls were also classified (Figure 6). Presence of a newborn calf, presence of hard antlers signifying recent or imminent calving, and presence of a distended udder were all considered as signaling a breeding cow that had either calved, was about to calve, or had likely just lost a calf. Cows lacking any of these criteria and cows with new (velvet) antler growth were considered non-breeders.

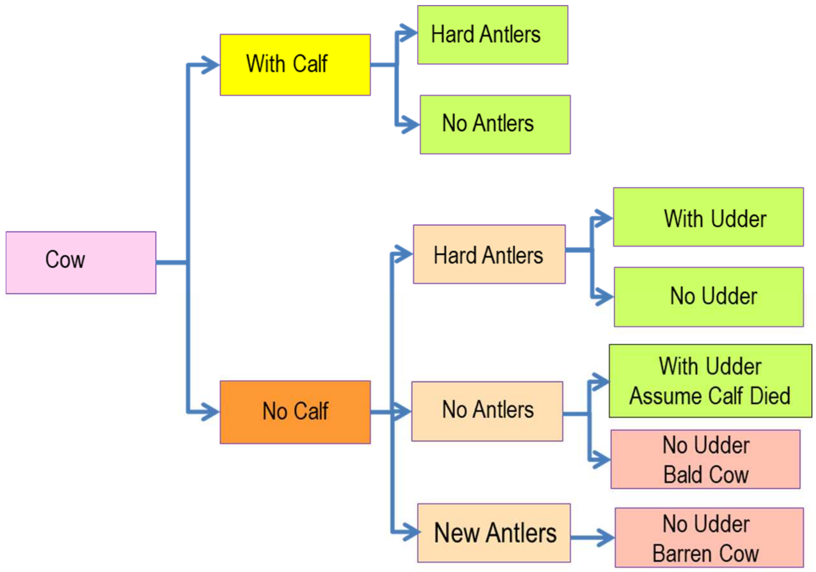

Figure 6: Classification of breeding females used in composition survey of Bluenose-East caribou in June 2018. Shaded boxes were classified as breeding females (diagram adapted from Gunn et al. (2005b)). Udder observation refers to a distended udder in a cow that has given birth, and antler observation is a hard antler distinct from new antlers growing in velvet.

The number of each group was totaled as well as the numbers of bulls and yearlings (calves of the previous year) to estimate the proportion of breeding caribou on the calving ground. Bootstrap resampling methods (Manly 1997) were used to estimate standard errors (SE) and percentile-based confidence limits for the proportion of breeding caribou.

Estimation of Breeding Females and Adult Females

The numbers of breeding females were estimated by multiplying the estimate of total (1+year old) caribou on each stratum by the estimated proportion of breeding females in each stratum from composition surveys. This step basically eliminated the non-breeding females, yearlings, and bulls from the estimate of total caribou on the calving ground.

The number of adult females was estimated by multiplying the estimate of total (1+year old) caribou on each stratum by the estimated proportion of adult females (breeding and non-breeding) in each stratum from the composition survey. This step basically eliminated the yearlings and bulls from the estimate of total caribou on the calving ground.

Each of the field measurements had an associated variance, and the delta method was used to estimate the total variance of breeding females under the assumption that the composition surveys and breeding female estimates were independent (Buckland et al. 1993).

Estimation of Adult Herd Size

Total herd size was estimated using two approaches. The first approach, which had been used in earlier calving ground surveys, assumed a fixed pregnancy rate for adult females whereas the second approach avoided this assumption.

Estimation of Herd Size Assuming Fixed Pregnancy Rate

As a first step, the total number of adult (2+year old) females in the herd was estimated by dividing the estimate of breeding females on the calving ground by an assumed pregnancy rate of 0.72 (Dauphiné 1976, Heard and Williams 1991). This pregnancy rate was based on a large sample of several hundred Qamanirjuaq caribou in the 1960s (Dauphine' 1976). The estimate of total females was then divided by the estimated proportion of females in the herd based on a bull:cow ratio from a fall composition survey conducted in October of 2018, to provide an estimate of total adult caribou in the herd (methods described in Heard and Williams 1991). This estimator assumes that all breeding females were within survey strata areas during the calving ground survey and that the pregnancy rate of caribou was 0.72 for 2017-2018. Note that this estimate corresponds to adult caribou at least two years old and does not include yearlings because yearling female caribou are not considered sexually mature.

Estimate of Herd Size Based upon Estimates of Adult Females

An alternative extrapolated herd size estimator was developed to explore the effect of variable pregnancy rates as part of the 2014 Qamanirjuaq caribou herd survey (Campbell et al. 2016) and has been used in other calving photo surveys for the Bluenose-East herd (Boulanger et al. 2016, Adamczewski et al. 2017). This estimator first uses data from the composition survey to estimate the total proportion of adult females, and adult females in each of the survey strata. The estimate of total adult females is then divided by the proportion of adult females (cows) in the herd from one or more fall composition surveys. Using this approach, the fixed pregnancy rate is eliminated from the estimation procedure. This estimate assumes that all adult females (breeding and non-breeding) were within the survey strata during the calving ground survey. It makes no assumption about the pregnancy rate of the females and does not include the yearlings.

In calving photo surveys since the 2014 Qamanirjuaq survey (Campbell et al. 2016), the estimate of females based on total adult females on the calving ground survey area has become the preferred way (for the Department of Environment and Natural Resources (ENR)) of estimating this number, and herd estimates based on this method are the ones graphed in Figure 3. With sufficient numbers of collared cows and extensive systematic reconnaissance surveys, it has become possible to define the full distribution of the females in the herd reliably. Pregnancy rates do vary depending on cow condition (Cameron et al. 1993, Russell et al. 1998). We found that the proportion of breeding females on the Bluenose-East calving grounds in 2010, 2013, 2015 and 2018 has been quite variable. Using survey-specific estimates of breeding and non-breeding cows is a more robust method of extrapolating to herd size, rather than assuming a constant deterministic pregnancy rate that ignores this source of variation. This method also increases the precision of the overall herd estimate.

Trends in Breeding and Adult Females.

As an initial step, a comparison of the estimates from the 2015 and 2018 surveys was made using a t-test (Heard and Williams 1990), with gross and annual rates of changes estimated from the ratio of estimates.

Longer term trends 2010-2018 were estimated using Bayesian state space models, which are similar to previously used regression methods. However, Bayesian models allow more flexible modeling of variation in trend through the use of random effects models (Humbert et al. 2009). This general approach is described further in the demographic model analysis in the next section. The population size was log transformed to partially account for the exponential nature of population change (Thompson et al. 1998). The rate of change could then be estimated as the exponent of the slope term in the regression model (*r)*. The per capita growth rate can be related to the population rate of change (λ) using the equation $\lambda=e^r=N_{t+1}/N_t$. If $\lambda=1$ then a population is stable; values > or <1 indicate increasing and declining populations. The rate of decline was also estimated as $1-\lambda$.

Demographic Analyses

Survival Rate Analyses

Collar data for female caribou 2010-2018 were compiled for the Bluenose-East caribou herd by the Government of the Northwest Territories (GNWT) ENR staff. Fates of collared caribou were determined by assessment of movement of collared caribou, with mortality being assigned to collared caribou based on lack of collar movement that could not be explained by collar failure or device drop-off. The data were then summarized by month as live or dead caribou. Caribou whose collars failed or were scheduled to drop off were censored from the analysis. Data were grouped by “caribou years” that began during calving of each year (June) and ended during the spring migration (May). The Kaplan-Meier method was used to estimate survival rates, accounting for the staggered entry and censoring of individuals in the data set (Pollock et al. 1989). This approach also ensured that there was no covariance between survival estimates for the subsequent demographic model analysis.

Demographic Model Analyses

One of the most important questions for the Bluenose-East herd was whether the breeding female segment of the population had declined since the last survey in 2015. The most direct measure that indicates the status of breeding females is their survival rate, which is the proportion of breeding females that survive from one year to the next. This metric, along with productivity (recruitment of yearlings to adult breeding females) determines the overall population trend. For example, if breeding female survival is high then productivity in previous years can be relatively low and the overall trend in breeding females can be stable. Alternatively, if productivity is consistently high, then slight reductions in adult survival rate can be tolerated. The interaction of these various indicators can be difficult to interpret and a population model can help increase understanding of herd demography.

We used a Bayesian state space Integrated Population Model (IPM) (Buckland et al. 2004, Kery and Schaub 2012) based upon the original (OLS) model (White and Lubow 2002) developed for the Bathurst herd (Boulanger et al. 2011) to further explore demographic trends for the Bluenose-East herd. A state space model is basically a model that allows separate modeling of field sampling estimates and demographic processes. This work was in collaboration with a Bayesian statistician/modeller (Joe Thorley-Poisson Consulting) (Thorley 2017, Ramey et al. 2018, Thorley and Boulanger 2019).

We used the 2010, 2013, 2015 and 2018 breeding female estimates, as well as calf-cow ratios, bull-cow ratios (Cluff et al. 2016), estimates of the proportion of breeding females, and adult female survival rates from collared caribou to estimate the most likely adult female survival values that would result in the observed trends in all of the demographic indicators for the Bluenose-East herd. Calf cow ratios were recorded during fall (late October) and spring (late March-April) composition surveys whereas proportion of breeding females was measured during composition surveys conducted on the calving ground. Proportion of females breeding was estimated as the ratio of breeding females to adult females from each calving ground survey.

The Bayesian IPM model is a stage based model that divides caribou into three age-classes, with survival rates determining the proportion of each age class that makes it into the next age class (Figure 7); this structure is identical to the OLS modeling done previously on the Bathurst and Bluenose-East herds.

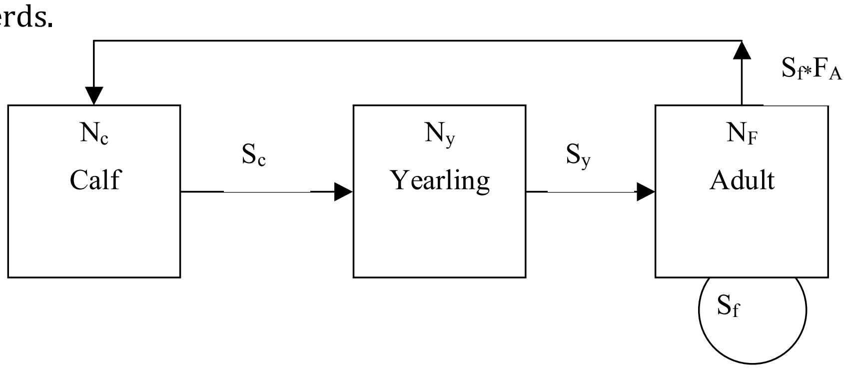

Figure 7: Underlying stage matrix life history diagram for the caribou demographic model used for Bluenose-East and Bathurst caribou. This diagram pertains to the female segment of the population. Nodes are population sizes of calves (N_c), yearlings (N_y), and adult females (N_F). Each node is connected by survival rates of calves (S_c), yearlings (S_y) and adult females (S_f). Adult females reproduce dependent on fecundity (F_A) and whether a pregnant female survives to produce a calf (S_f). The male life history diagram was similar with no reproductive nodes.

We restricted the data set for this exercise to composition and survey results between 2008 and 2018, which covered the time period in which calving ground photographic surveys had been conducted on the Bluenose-East herd. In addition, this interval basically covered potential recruitment into the breeding female class since any surviving female calf born from 2008-2010 would be a breeding female by 2013, and breeding females recruited prior to 2008 were accounted for by the 2010 calving ground estimate of breeding females (Table 2). It was assumed that a calf born in 2010 would not breed in the fall after it was born, or the fall of its second year, but it could breed in its third year (see Dauphiné 1976 for age-specific pregnancy rates). It was considered a non-breeder until 2013. Calves born in 2014 and 2015 had the most direct bearing on the number of new breeding females on the 2018 calving ground that were not accounted for in the 2015 breeding female estimate.

Table 2: A schematic of the assumed timeline 2011-2018 in the Bayesian IPM analysis of Bluenose-East caribou in which calves born are recruited into the breeding female segment (green boxes) of the population. Calves born prior to 2013 were counted as breeding females in the 2013 and 2015 surveys. Calves born in 2014 and 2015 recruited to become breeding females in the 2018 survey.

Calf	**Survey Years**							
Born	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**
2010	yearling	non-breeder	breeder	breeder	breeder	breeder	breeder	breeder
2011	calf	yearling	non-breeder	breeder	breeder	breeder	breeder	breeder
2012		calf	yearling	non-breeder	breeder	breeder	breeder	breeder
2013			calf	yearling	non-breeder	breeder	breeder	breeder
2014				calf	yearling	non-breeder	breeder	breeder
2015					calf	yearling	non-breeder	breeder
2016						calf	yearling	non-breeder

We note that the underlying demographic model used for the Bayesian state space model is identical to the previous OLS model. However, the Bayesian IPM method provides a much more flexible and robust method to estimate demographic parameters that takes into account process and observer error. One of the biggest differences is the use of random effects modeling to model temporal variation in demographic parameters. For random effects models, it is assumed that there is a central mean value for a parameter (i.e. Cow survival) with a distribution of values created over time based on temporal variation. This contrasts with the OLS method where temporal variation was often not modeled or modeled with polynomial terms which assumed an underlying directional change over time. Appendix 3 provides details on the Bayesian IPM state space modeling, including the base R code used in the analysis.

RESULTS

Survey Conditions

Weather conditions were challenging due to the late spring with higher than normal snow cover in most of the core calving ground area (Figure 8). On June 8, snow cover varied from nearly 100 percent at the north end of Bluenose Lake to nearly 0 percent at the south end near the Coppermine River. Most areas had about 50 percent snow cover and much of it was a "salt-and-pepper" patchy mosaic. This reduced sightability of caribou and we decided to photo-survey the majority of the core calving ground area to offset this potential issue. The rationale was that caribou would still be reliably seen on high-resolution photos that could be searched carefully and repeatedly with a three-dimensional projection. We expected that 80-90 percent of the female caribou found would be in the photo blocks. In addition, the sightability of caribou on photos could be tested further using independent observers.

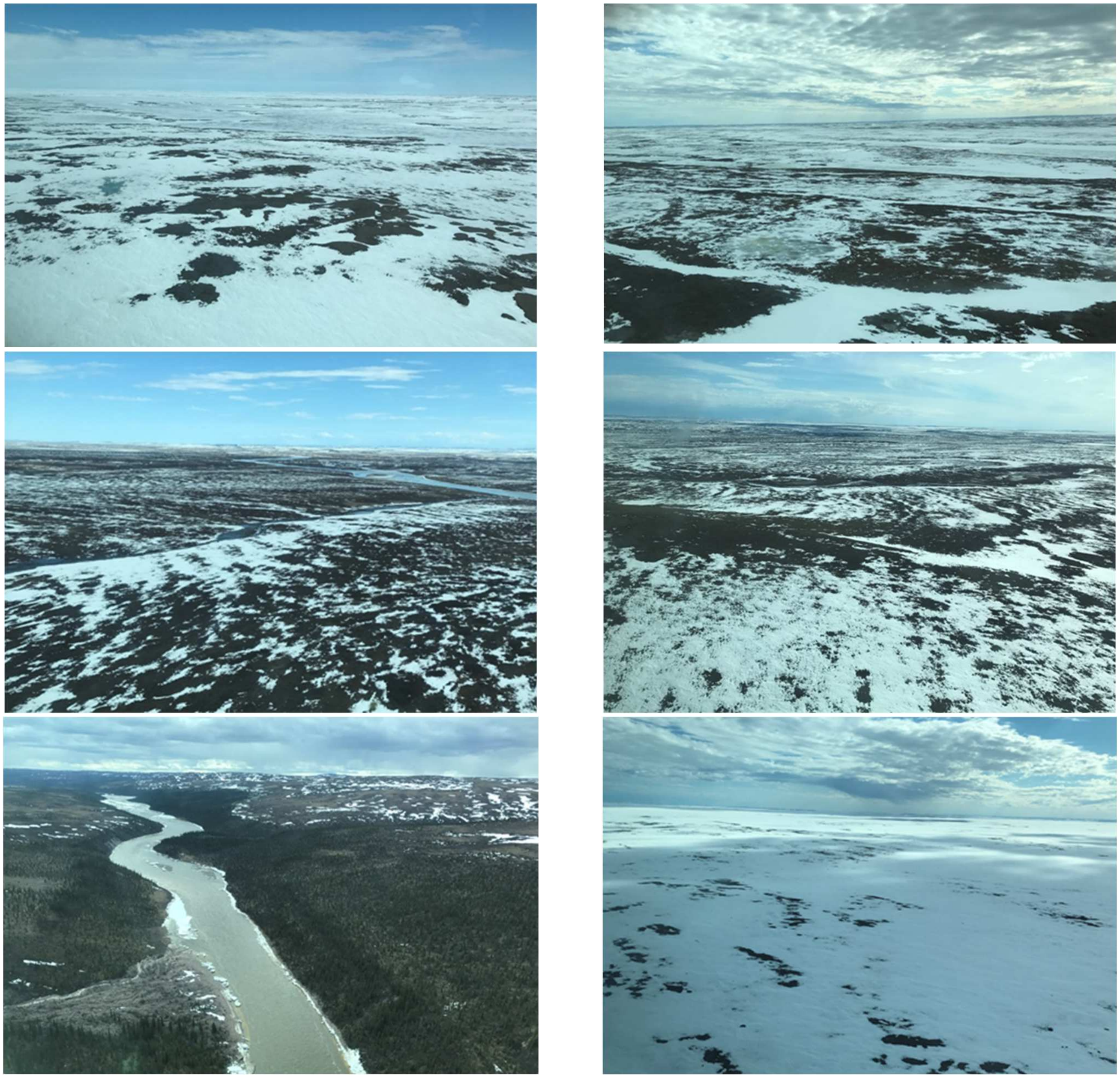

Figure 8: Photos of variable Bluenose-East survey conditions on June 8, 2018 when the visual and photo surveys were conducted (photos J. Adamczewski). Snow cover ranged from 95 percent or more at the north end near Bluenose Lake (bottom right) to nearly bare ground near the Coppermine River (bottom left).

Movement Rates of Collared Caribou

The locations of 30 adult female caribou that occurred in or around the Bluenose-East survey area were monitored throughout the June survey to assess movement rates. The peak of calving is considered close when the majority of collared female caribou exhibit movement rates of <5 km/day (Gunn and Russell 2008). Using this parameter, we surmised that the peak of calving was near starting on June 8, when mean daily movement rates were 5 km or less for half of the radio collared caribou (Figure 9). The peak of calving was further verified from observations of substantial numbers of cows with calves from the composition and visual survey flying on June 8.

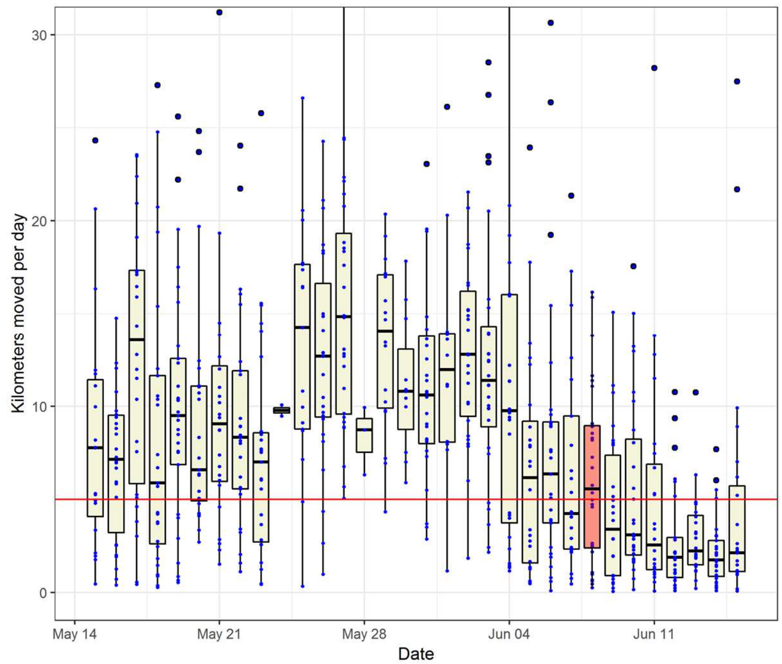

Figure 9: Movement rates of female collared caribou on or around the Bluenose-East calving ground before and during calving in 2018. The boxplots contain the 25th and 75th percentile of the data with the median shown by the central bar in each plot. The ranges up to the 95th percentile are depicted by the lines with outlier points shown as larger dots. The movement rates of collared cows on June 8, the date of the visual and photo surveys are highlighted in red.

Reconnaissance Surveys to Delineate Strata

An initial exploratory survey was conducted on June 1st to assess the breeding status of caribou. This survey focused on collared caribou and determined that calving was in the very early stages (very few cows with calves). Low ceilings and ground fog delayed subsequent flying until June 6 and 7 when full days of reconnaissance flying were conducted. A single day of clear weather with blue skies occurred on June 8, and on this day the two photo blocks and two visual blocks were surveyed (Table 3).

Table 3: Summary of reconnaissance and visual survey flying on the June 2018 Bluenose-East calving ground survey

Date	Caravan 1	Caravan 2
June 1	Arrive in Kugluktuk/recon of calving area with collared cows	Arrived in Kugluktuk
June 2-5	Grounded due to fog	Grounded due to fog
June 6	Recon of core calving ground	Recon of core calving ground
June 7	Recon of Northern area	Recon of areas SE of Kugluktuk
June 8	Visual surveys and areas to SE of Kugluktuk	Visual surveys and extra recon on northern edges of strata
June 9	Bathurst survey	Bathurst survey and lines in between Bathurst and BNE
June 10	Recon lines to the East of Kugluktuk & return to Yellowknife	Recon lines to the East of Kugluktuk & return to Yellowknife

Our objectives for the reconnaissance survey were to map the distribution of adult and breeding females and define the concentrated calving area for the Bluenose-East herd. As with the previous survey in 2015, the highest densities of breeding females were to the west of Kugluktuk with lower densities of antlered female caribou and non-breeders to the south. No collared females were found east of the Coppermine River. The distribution of caribou based on reconnaissance surveys and collared females suggested the highest concentrations of breeding caribou along the Rae River up to the east of Bluenose Lake (Figure 10).

The distribution and relative density of hard-antlered female caribou, together with the movement patterns of collared females and recent tracks in the snow, clearly showed that most breeding females were moving in a northwestern direction within a wide corridor along the headwaters of the Rae and Richardson River valleys and northward along the eastern slopes of the Melville Hills east of Bluenose Lake. The leading edge of breeding females in the northern part of the survey area was conspicuous because the density of caribou dropped markedly along the northern boundary. The leading edge and associated distribution of breeding females was included within the visual north stratum (Figure 10).

Within the observed distribution of breeding females mapped during the systematic reconnaissance, relatively consistent densities and distribution of breeding females were observed in the western reaches of the Rae and Richardson River valleys. Based on reconnaissance surveys and distribution of collared cows, we delineated the photo north stratum to encompass what we considered was a majority of breeding females. The photo south stratum was delineated directly adjacent to the photo north strata, and included remaining collared cows and observations of smaller groups with breeding females. Based on the reconnaissance survey, we delineated the photo south stratum to include the mapped distribution of breeding females but observed and expected this stratum to include more non-breeders as it included the trailing edge of the north-western migratory push of breeding females.

We added the visual south stratum as a smaller adjacent area that extended to tree-line to cover what we observed to be a dispersed trailing edge of caribou at medium densities but with no sightings of hard-antler cows and calves during the systematic reconnaissance survey. Observations of bulls and yearlings were predominant in this stratum. The southern edge of this stratum aligned with the bend of the Coppermine River and included the Coppermine Mountains. A trailing edge towards the south, increasingly composed of bulls and yearlings, is characteristic of this herd, based on previous June surveys (Boulanger et al. 2016, Adamczewski et al. 2017).

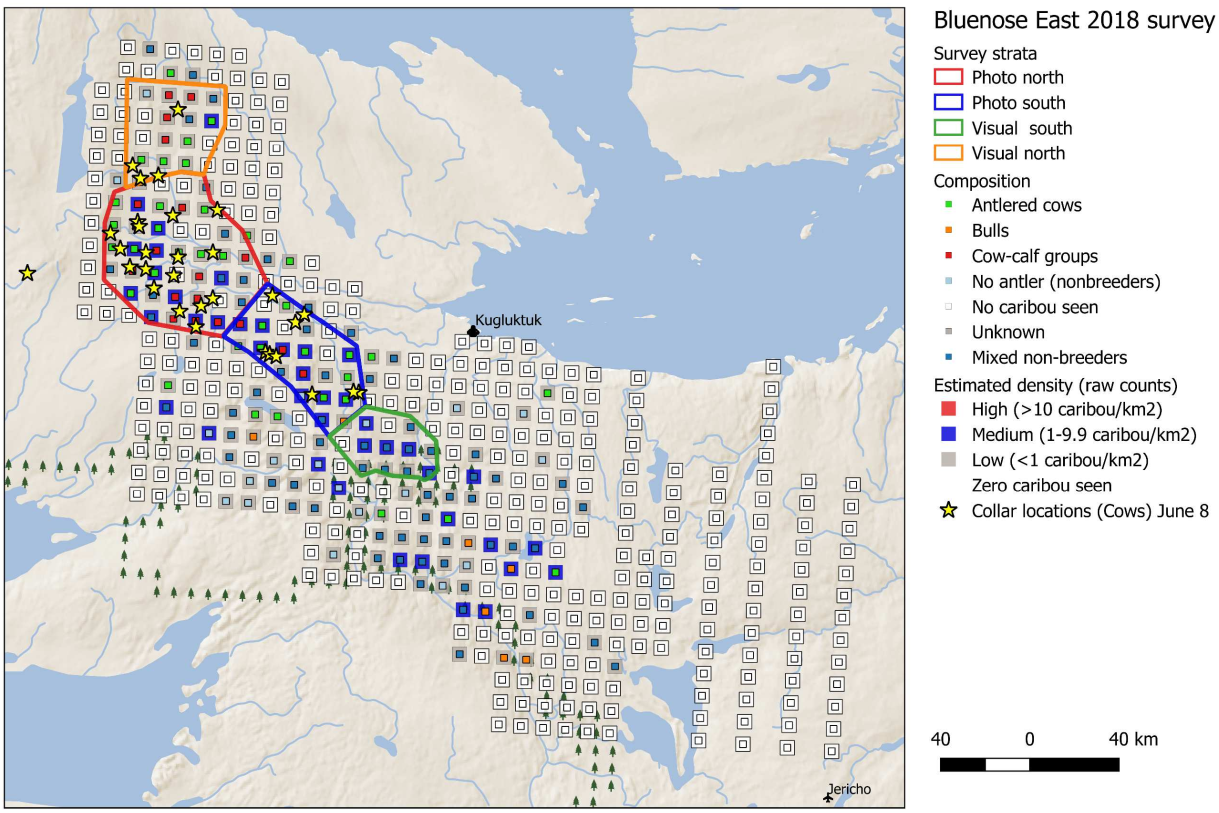

Figure 10: Reconnaissance survey coverage for the June 2018 Bluenose-East calving ground survey. The two photo blocks are shown in red and blue outlines and the two visual blocks are shown to the north and south in orange and green. Outer squares show density of the caribou found (high, medium and low), and inner squares show the kind of caribou seen. Gold stars show locations of collared female caribou, of which 30 occurred in the survey strata. The collared female south of Bluenose Lake was from the Bluenose-West herd. There was also a single caribou to the north of the survey strata from the Bluenose-West herd as shown in Figure 13.

Stratification and Allocation of Survey Effort

Photo Strata

Two photo strata were defined for the Bluenose-East 2018 survey (Figures 10, 11), which included the majority of adult and breeding females and almost all the collared cows. Based on reconnaissance data, relative abundance and density were estimated for the two strata, with higher densities suggested for the south. However, observation of the kinds of caribou recorded in segments suggested that the proportion of breeding caribou was higher in the northern stratum, which argued for higher coverage for this stratum. As a result, roughly equal coverage was given to each stratum.

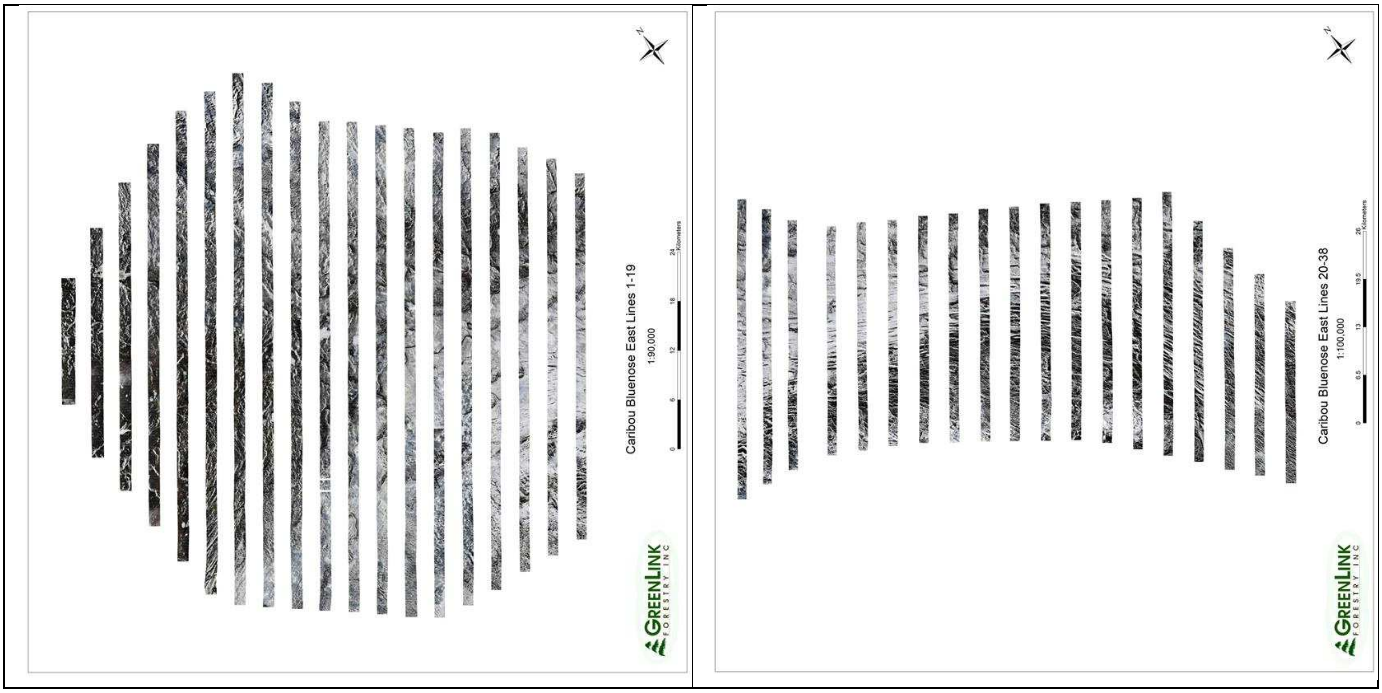

Figure 11: Composite photos of the Bluenose-East North and South photo strata.

Table 4 provides the stratum dimensions for the photo strata.

Table 4: Stratum dimensions and reconnaissance-based estimates of density for the Bluenose-East photo strata in June 2018. Average transect (the average length of a transect), baseline (length of longest axis; transects are flown perpendicular to the baseline), area surveyed, and preliminary estimates of density and abundance (N) based on reconnaissance surveys are given.

Stratum	Area (km^2)	Avg. transect (km)	Baseline (km)	Caribou counted	Area surveyed (km^2)	Density Caribou/ km^2	N	SE (N)	CV
North	3,787.8	49.8	76	221	296	0.75	2,828	442.2	0.15
South	2,051.5	34.0	68	207	208	0.99	2,042	261.9	0.13

With photo planes using high-resolution digital cameras, it is possible for the plane to fly at different altitudes. Flying at a higher altitude increases the strip width and reduces the number of pictures but also reduces the resolution of the pictures as indexed by Ground Sample Distance (GSD). GSD is a term used in aerial photography to describe the distance between pixels on the ground for a particular photo sensor. In practical terms, the GSD for the aerial photos used in this survey translates into strip width and elevation above ground level (AGL) as follows (Table 5).

Table 5: GSD for photo sensor used on Bluenose-East June 2018 caribou survey, along with associated elevation AGL and photographed ground strip width. Typical elevation and strip width used in earlier analog photo surveys are included for reference.

GSD (cm)	Elevation AGL (feet)	Strip width (m)
4	2,187	692
5	2,734	866
6	3,281	1,039
7	3,828	1,212
8	4,374	1,385
9	4,921	1,558
10	5,468	1,731
Analog Photos	2,000	914.3

The coverage of photos for the Bluenose-East survey was based upon the approximate total number of photos budgeted for the Bluenose-East and Bathurst surveys occurring at the same time (6,000) and corresponding levels of coverage across a range of likely altitudes (Table 6). When viewed in this context, GSD levels of 5 were not feasible for the Bluenose-East survey with GSD levels of at least 6 needed to keep within 2,000 photos of the budgeted number of 6,000.

Table 6: Stratum dimensions and photos required for various levels of survey coverage for the Bathurst and Bluenose-East photo strata in June 2018. The GSD/photos levels used are underlined and bold.

	Stratum Dimensions				Approximate No. of Photos at GSD				Estimated % Coverage at GSD			
Strata	Stratum Area (km^2)	Average Transect Length (km)	No. Transects	Total Transect Length (km)	5	6	7	8	5	6	7	8
Bathurst	1,159	35.0	15	525	2,389	2,003	**<u>1,715</u>**	1,458	40%	48%	**<u>56%</u>**	74%
Bluenose-East												
North	3,788	49.8	22	1,096	4,852	4,046	3,426	**<u>3,046</u>**	25%	30%	34%	**<u>45%</u>**
South	2,052	34.0	16	544	2,407	2,007	1,700	**<u>1,511</u>**	23%	27%	31%	**<u>41%</u>**
Total photos					7,259	6,053	5,126	4,557				
Total photos					9,648	8,056	6,841	6,015				

In the June 2018 surveys, the Bathurst photo stratum was flown at GSD 7 (average elevation 3,828 feet (1,167 m) above ground) and the Bluenose-East photo strata were flown at GSD 8 (average elevation 4,374 feet (1,333 m) above ground) with a resulting total of 6,170 photos. Of these, 4,455 were taken in the Bluenose-East calving ground survey and 1,715 were taken in the Bathurst survey. There was only one relatively small higher-density area on the Bathurst calving ground, while the Bluenose-East calving ground, similar to past surveys, has tended to be larger in area with calving caribou more dispersed. Ground coverage on the Bluenose-East North photo block was 37.0 percent and 30.3 percent on the South photo block.

Visual Strata

The Bluenose-East north and south visual strata were relatively small and were flown on June 8, the same day as the aerial photography. These strata had lower densities of caribou (0.36 and 0.88 caribou/km for the north and south stratum respectively). As with the Bathurst surveys, coverage was determined so that each stratum could be completed in one survey flight and each stratum had a minimum of 10 flight lines for acceptable precision. The resulting levels of coverage were 22 percent and 20 percent for the north and south visual strata (Table 7).

Table 7: Final dimensions of strata surveyed for the 2018 Bluenose-East caribou survey.

Stratum	Total Transects Possible	Sampled Transects	Area of Stratum (km^2)	Strip Width (km)	Transect Area (km^2)	Coverage
North Photo	60	22	3,787.8	1.31[A]	1,402.4	37.0%
South Photo	54	16	2,051.5	1.28[A]	621.3	30.3%
North Visual	51	12	1,746.9	0.8	378.5	21.7%
South Visual	40	10	1,085.4	0.8	214.9	19.8%

[A] Mean strip width for stratum-transect width varied by transect.

Movements of collared caribou from reconnaissance to photo/visual surveys.

Thirty-two collared females were within or around the Bluenose-East calving ground (Figure 12). Of these, 30 occurred in survey strata (Photo North 18, Photo South 8, Visual North 4, Visual South 0). One caribou moved from the south to the north photo stratum between June 7th and 8th. The general movement paths of caribou also occurred within survey strata. Collared caribou that had movement rates of >5 km/day were mainly located within the central regions of strata, suggesting that the strata contained the range of caribou movements as indicated by collared caribou (Figure 12).

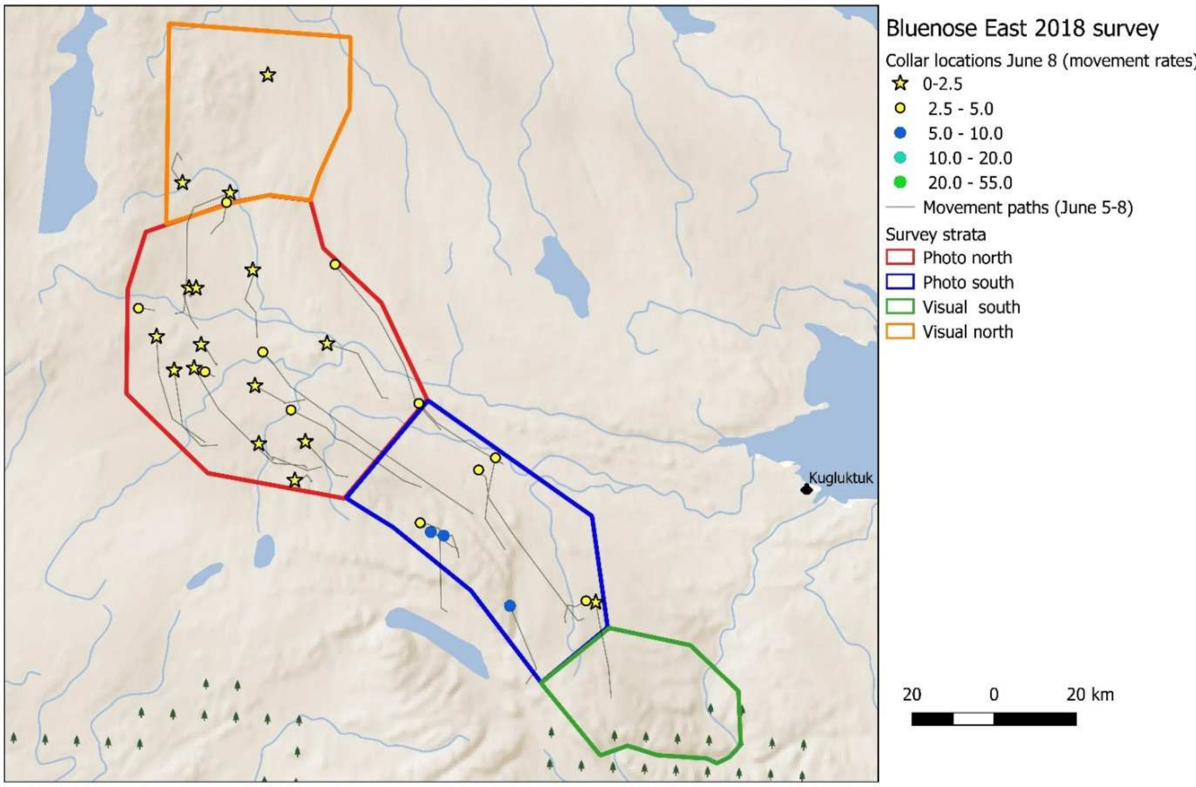

Figure 12: Locations of collared Bluenose-East female caribou and movements up to and during June 8, 2018 when the photo and visual surveys occurred.

Figure 13 displays the distribution of caribou on photos as indicated by points of caribou counted on photos. Dots with color delineating group size illustrate distribution on visual surveys. Two collared cows were north and south of Bluenose Lake and were identified as Bluenose-West females.

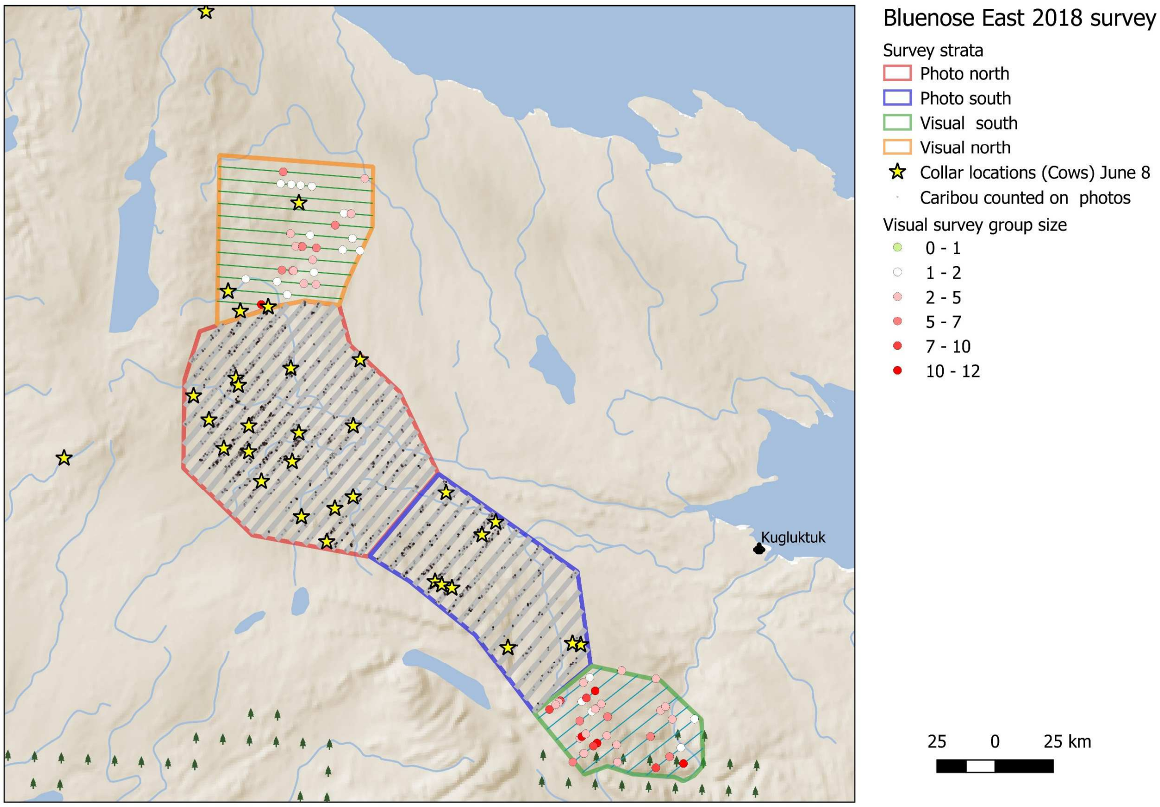

Figure 13: A plot of the Bluenose-East photo data counts and visual survey results with collar locations on June 8, 2018 when surveys occurred. Collared caribou south and north of Bluenose Lake were Bluenose-West females.

Estimates of Caribou on Photo Strata

Photo Sightability Estimation

Photo interpreters found that the sightability of caribou on photos was influenced by snow cover. If the ground was bare caribou were readily visible, however, sightability decreased with snow cover especially in cases of intermittent snow and bare ground at the edges of snow patches (Figure 14).

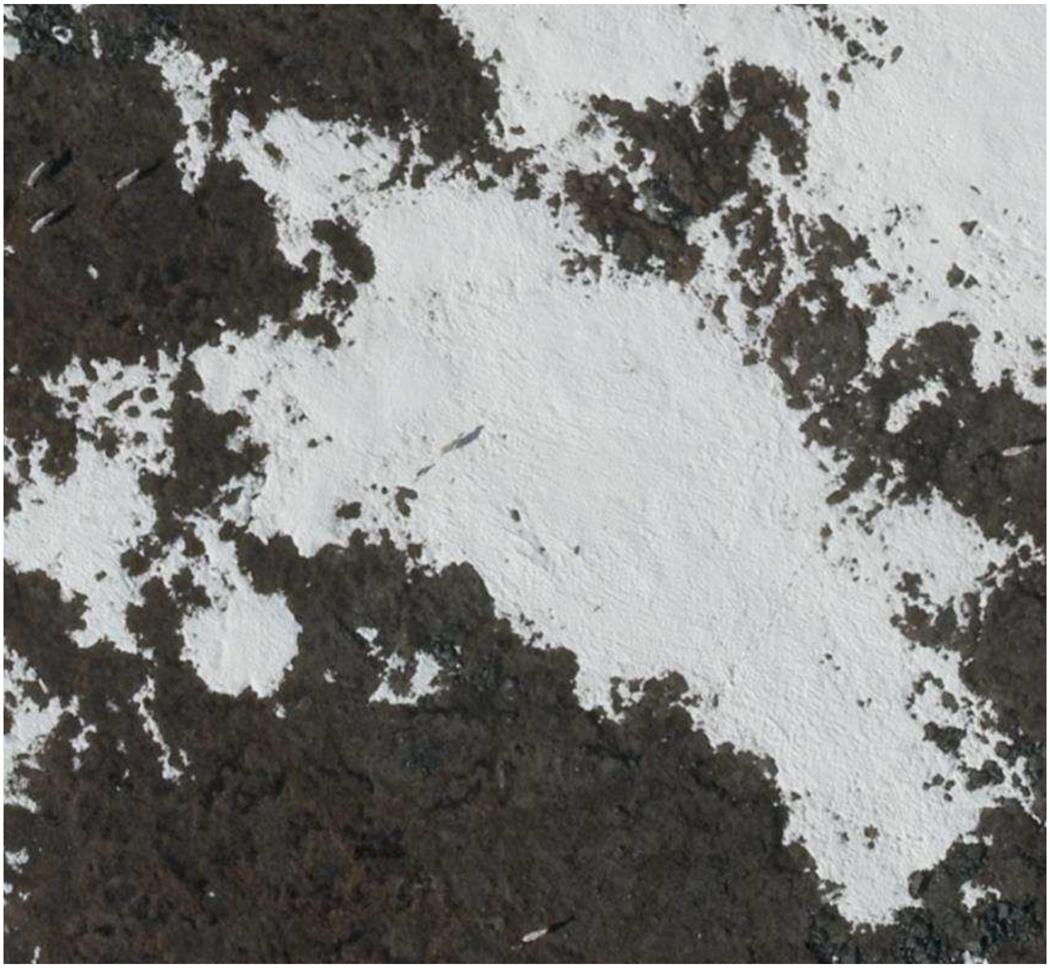

Figure 14: Close-up view of one zoomed-in portion of an aerial photo on Bluenose-East survey on June 8, 2018. Among others, three caribou are visible in the upper left corner, and a cow and calf can be seen walking (along with their shadows) across the snow-patch in the middle of the photo. Caribou in areas without snow are readily visible. There is also one caribou on the edge of the snow-patch at bottom right, which is less obvious.

Sightability of caribou on photos was estimated by having a second observer from GreenLink Forestry independently re-count caribou on a subset of photos (i.e. without knowing what the first observer had found). The second observer was Derek Fisher, who is the most experienced observer of aerial photographs at the company. The photo survey transect lines were resampled systematically using transects perpendicular to the original photo-plane transects. A design that sampled the closest photo to the transect line in which at least one caribou was detected, was used to select photos for resampling. This systematic resampling approach ensured an adequate sample size of photos with caribou on them (Figure 15).

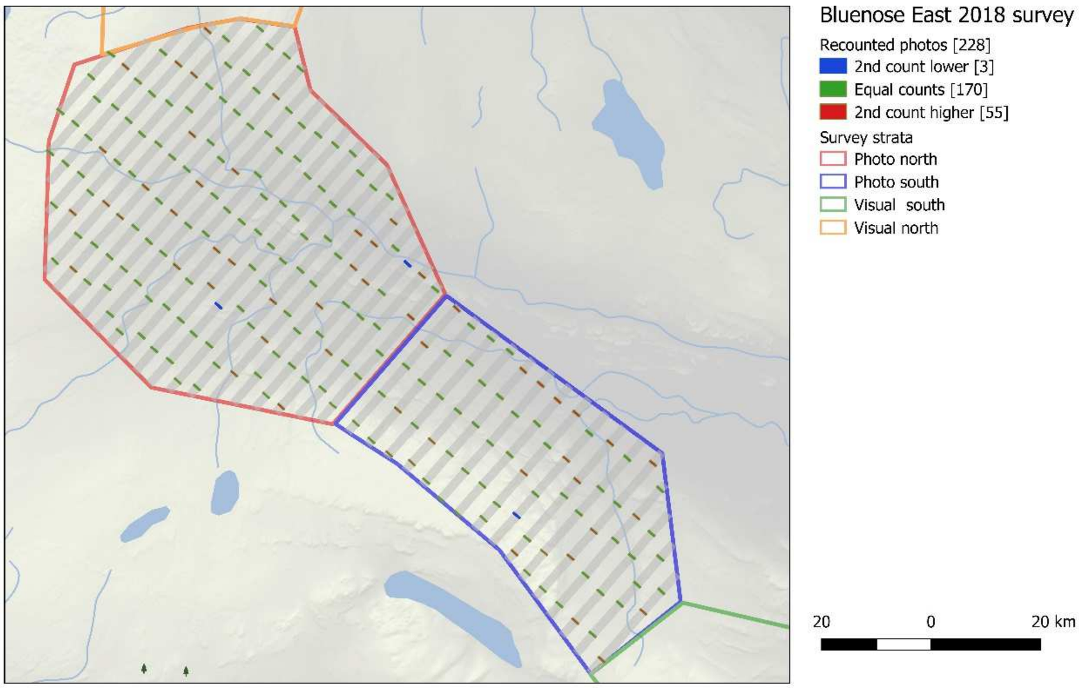

Figure 15: Systematic sampling design for cross validation of photos for the Bluenose-East June 2018 calving ground survey.

Overall, 228 photos were resampled in the North and South photo strata (Table 8). Ratios of second to original count suggested higher photo sightability in the North stratum. One assumption in this comparison is that the first and second counters were counting the same caribou on a given photo. To test this assumption the distances between points of counted caribou in the first and second count was measured in GIS to identify any counted caribou that were further distant from the original counts. This process did not identify any new caribou.

Table 8: Summary of photo cross validation data set for Bluenose-East June 2018 caribou survey photo blocks. The ratio of the original count to second count is an estimate of photo sightability.

Strata	Photos Resampled	Original Count	Second Count	New Caribou Counted in Second Count	Caribou not Detected in Second Count	Ratio of Original Count/Second Count
North	158	447	490	43	2	0.91
South	70	257	301	44	1	0.85

This cross-validation process was modeled as a two sample mark-recapture sample with caribou being "marked" in the original count and then be "re-marked" in the second count (Table 9). Model selection suggested that the difference in sightability between strata was supported even when over-dispersion was accounted for. Therefore, strata-specific sightability estimates were used for subsequent estimates.

Table 9: Model selection of photo sightability cross validation data set for Bluenose-East June 2018 caribou survey using Huggins closed models in program MARK. Quasi Akaike Information Criterion ($QAIC_c$), the difference in $QAIC_c$ between the most supported model and given model $\Delta QAIC_c$, the model weight (w_i), number of parameters (K) and quasi-Deviance (QDeviance) is given.

Model		**Model Selection**				
First Count	**Second Count**	**$QAIC_c$**	**$\Delta QAIC_c$**	**w_i**	**K**	**QDeviance**
Strata	Constant	269.90	0.00	0.50	3	3,609.0
Constant	Constant	270.77	0.87	0.32	2	3,611.9
Strata	Strata	271.91	2.00	0.18	4	3,609.0

The estimates of sightability are given below along with the bootstrap-based estimates of SE, CV and confidence limits, CI (Table 10). The bootstrap estimates, which use caribou counted on each photo as the sample unit, were used for subsequent variance estimates.

Table 10: Estimates of sightability from the most supported Huggins model for Bluenose-East June 2018 caribou survey.

Count-stratum	**Sightability Estimate**	**Binomial SE**	**Binomial CV**	**Bootstrap SE**	**Bootstrap CV**	**Bootstrap (95% CI)**	
1st count-North stratum	0.912	0.013	0.014	0.015	0.016	0.884	0.941
1st count -South stratum	0.853	0.020	0.024	0.035	0.040	0.782	0.919
2nd count-Both stratum	0.996	0.002	0.002				

Estimates of Total Caribou in Photo Strata

The standard Jolly 2 estimator (Jolly 1969, Norton-Griffiths 1978) was used to obtain estimates of caribou on the calving ground from the transect data. Consistent with the 2015 Bluenose-East survey (Boulanger et al. 2016), transect densities were weighted to ensure equal representation of transects with varying strip widths (Table 11). The initial estimate was divided by photo sightability to obtain the sightability-corrected abundance estimate. Overall, sightability-corrected estimates were 12 percent higher than initial estimates.

Table 11: Initial estimates of abundance in photo survey strata, estimated photo sightability and estimates of abundance with photo sightability for Bluenose-East June 2018 caribou survey.

Strata	Initial Estimate of N			Photo Sightability			Photo-sightability N Estimate		
	N	SE	CV	p	SE	CV	N	SE	CV
North	9,887	849.5	0.086	0.912	0.015	0.016	10,841	948.4	0.087
South	5,488	837.0	0.154	0.853	0.035	0.041	6,426	1,014.8	0.158

Overall, densities of caribou were lower on transects compared to previous years with all densities below the 10 caribou/km^2 level (Figure 16).

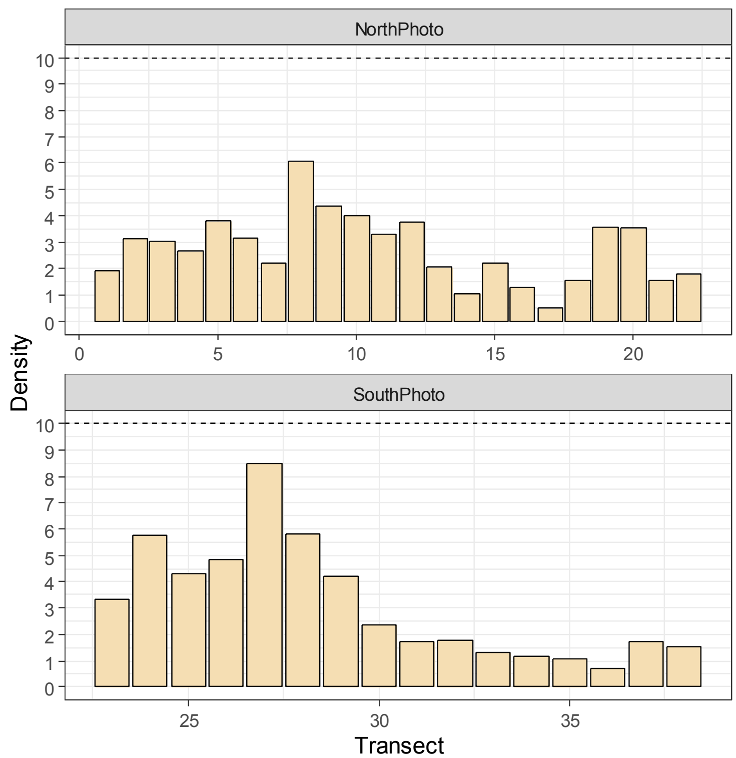

Figure 16: Transect-specific densities for the Bluenose-East photo blocks in June 2018. Transects go from west to east. Sightability was accounted for in density estimates.

Estimates of Total Caribou in Visual Strata

Double Observer Analysis

Data from both the reconnaissance and visual surveys were used in the double observer analysis, however, only the visual survey data were used to derive estimates of abundance for survey strata. Observers were grouped into pairs which were used for modeling the effect of observer on sightability. A full listing of observer pairs is given in Appendix 1. Frequencies of observations as a function of group size, survey, and phase suggested that approximately half of the single caribou were seen by both observers in most cases (Figure 17). In previous years approximately 70-80 percent of single caribou were seen by both observers. As group size increased the proportion of observations seen by both observers increased. This general pattern suggests low sightability compared to previous surveys, which generally had much less snow cover.

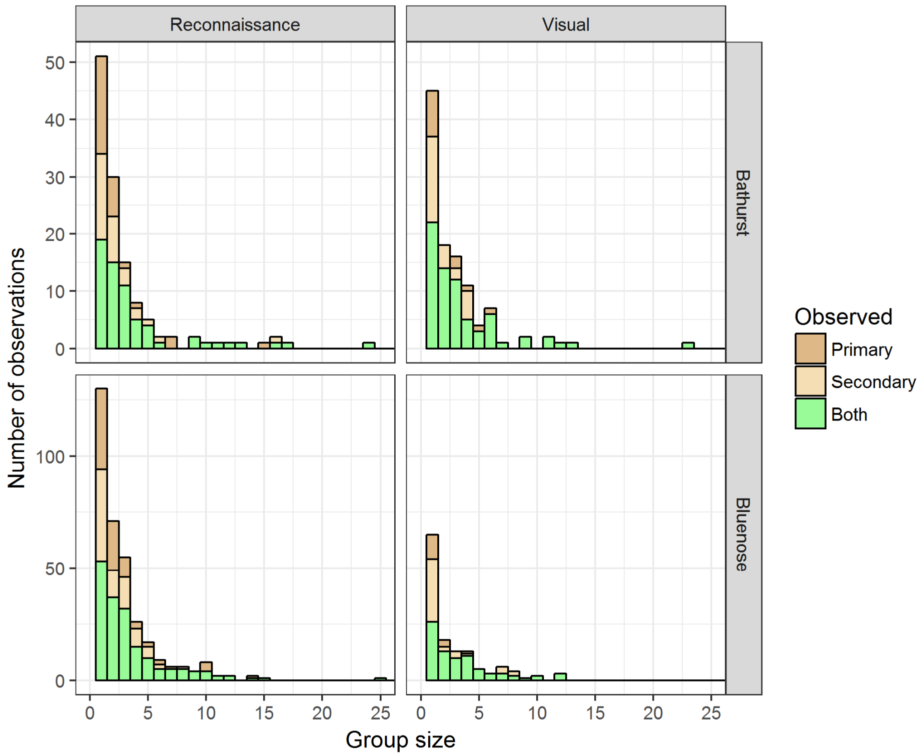

Figure 17: Frequencies of double observer observations by group size, survey phase and survey for Bluenose-East and Bathurst June 2018 caribou surveys. Each observation is categorized by whether it was observed by the primary (brown), secondary (beige), or both (green) observers.

Snow and cloud cover also influenced sightability, however, the pattern depended on survey phase and herd surveyed (Figure 18). The most noteworthy trends occurred for higher snow cover (75 percent) for the Bathurst and higher cloud cover. Snow cover was evident in all surveys with few observations of 0 snow cover and most within the 25-75 percent range. This range corresponds to the "salt and pepper" patchy snow cover where sightability is lower. The lack of "effect size" of snow cover (i.e. minimal 0 and 100 percent snow cover observations) potentially made it problematic to model the effect of increasing snow cover on observations. Instead, sightability was lower (as modeled by an intercept term) due to the poor survey conditions.

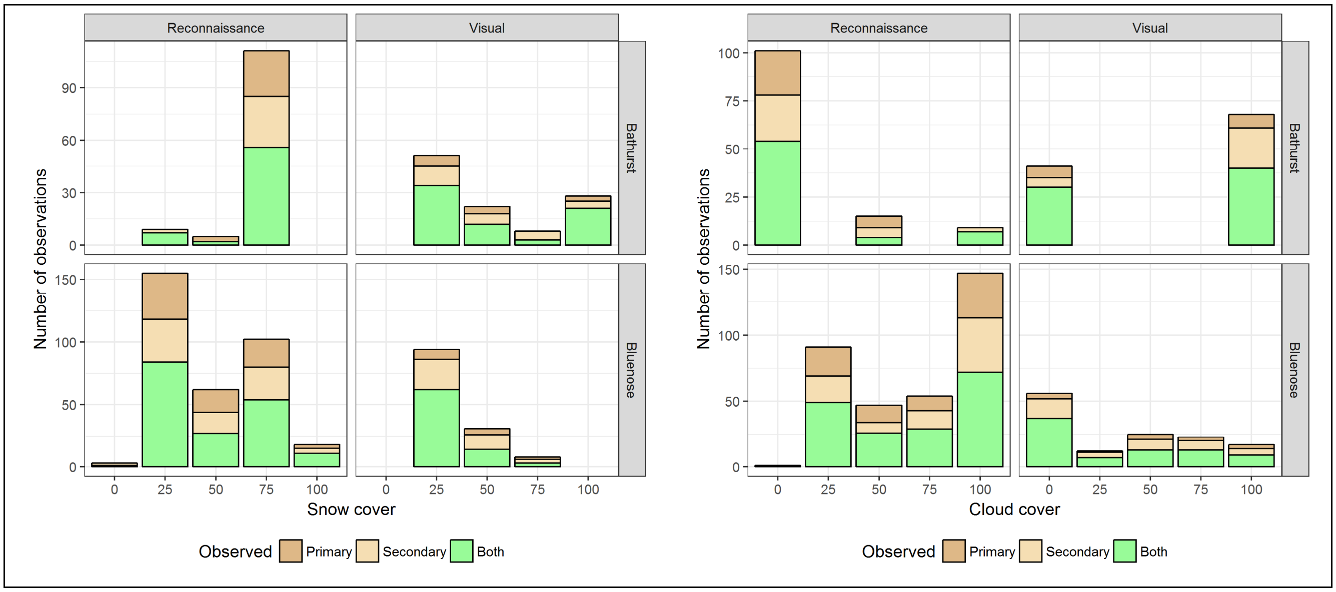

Figure 18: Frequencies of double observer observations by snow cover, cloud cover, survey phase and survey for Bluenose-East and Bathurst June 2018 caribou surveys. Each observation was categorized by whether it was observed by the primary, secondary, or both observers.

Snow cover was modeled as a continuous (snow) or categorical covariate (snow 25, snow 50, snow 75) based on the categorical entries in the tablets. Model selection identified a strong effect of the log of group size, observers, snow cover and the interaction of snow and cloud cover (Table 12). An additional effect of snow cover at 75 percent for the Bathurst herd was evident. Observer pairs were reduced to the pairs to those that showed substantial differences from the mean level of sightability in the survey.

Table 12: Double observer model selection using Huggins mark-recapture models in program MARK for Bluenose-East and Bathurst June 2018 caribou surveys. Covariates follow Table 1 in the methods section of the report. Reduced observer pairs are denoted as red_A and red_B. AIC_c, the difference in AIC_c values between the *i*th and most supported model 1 (ΔAIC_c), Akaike weights (w_i), and number K, and deviance (Dev) are presented.

No	Model	AIC_c	ΔAIC_c	w_i	K	Dev
1	log(group size)+obs(red_A)+order+herd*snow75+cloud+snow*cloud	764.99	0.00	0.33	8	748.9
2	log(group size)+obs(red_B)+order+herd*snow75+cloud+snow*cloud	767.02	2.03	0.12	9	748.9
3	log(group size)+obs(red_B)+order+snow75+cloud+snow*cloud	768.15	3.16	0.07	8	752.1
4	log(group size)+obs(red_B)+order+herd*snow75+cloud+snow+snow*cloud	768.32	3.33	0.07	10	748.2
5	log(group size)+obs(red_B)+order+herd*snow75+cloud	768.63	3.63	0.06	8	752.5
6	log(group size)+obs(red_B)+order+snow+cloud +snow*cloud	770.75	5.75	0.02	9	752.6
7	log(group size)+obs(red_B)+order+snow25+log(group)*snow25	772.54	7.55	0.01	8	756.4
8	log(group size)+obs(red_B)+order+snow(categorical)	773.52	8.52	0.00	10	753.4
9	log(group size)+obs(red_B)+order+snow+$snow^2$+cloud+$cloud^2$+snow*cloud	774.15	9.15	0.00	11	752.0
10	log(group size)	781.88	16.89	0.00	2	777.9
11	log(group size)+snow +cloud	782.04	17.05	0.00	4	774.0
12	group size	783.22	18.22	0.00	2	779.2
13	log(group size)+snow25+cloud0	784.31	19.31	0.00	4	776.3
14	log(group size)+snow25+sno50+snow75+snow100	784.84	19.95	0.00	6	772.8
15	log(group size)+obs(all))	785.96	20.97	0.00	13	759.7
16	constant	802.05	37.06	0.00	1	800.0

Plots of single and double observation probabilities show lower probabilities for individual or smaller group sizes especially in moderate snow cover and higher cloud cover, for Bluenose-East and Bathurst June 2018 caribou surveys (Figure 19). The mean detection probability (across all groups) was 0.66 (CI=0.60-0.72). This compares to a mean probability of 0.91 (CI=0.88-0.92) for the 2015 Bluenose and Bathurst surveys.

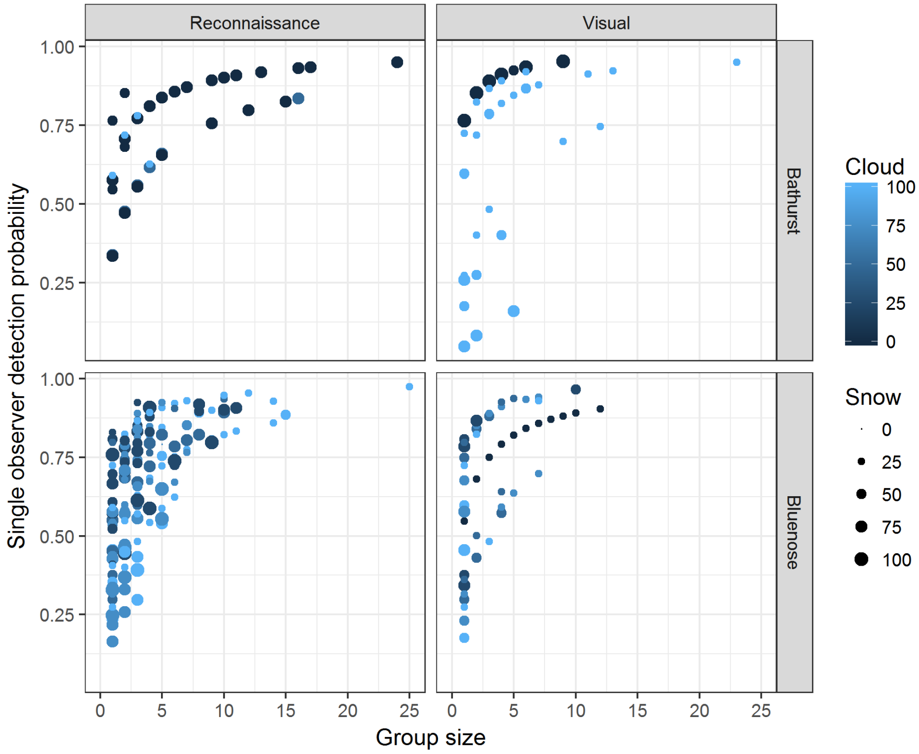

Figure 19: Estimated single observer probabilities from model 1 (Table 12) by snow cover, cloud cover, survey phase and survey for Bluenose-East and Bathurst June 2018 caribou surveys. Each observation is categorized by whether it was observed by the primary, secondary, or both observers.

Double observer probabilities (the probability that at least one of the observers saw the caribou) were higher but still relatively low for single caribou, especially for cases of higher cloud cover and snow cover (and for some observer pairs) (Figure 20).

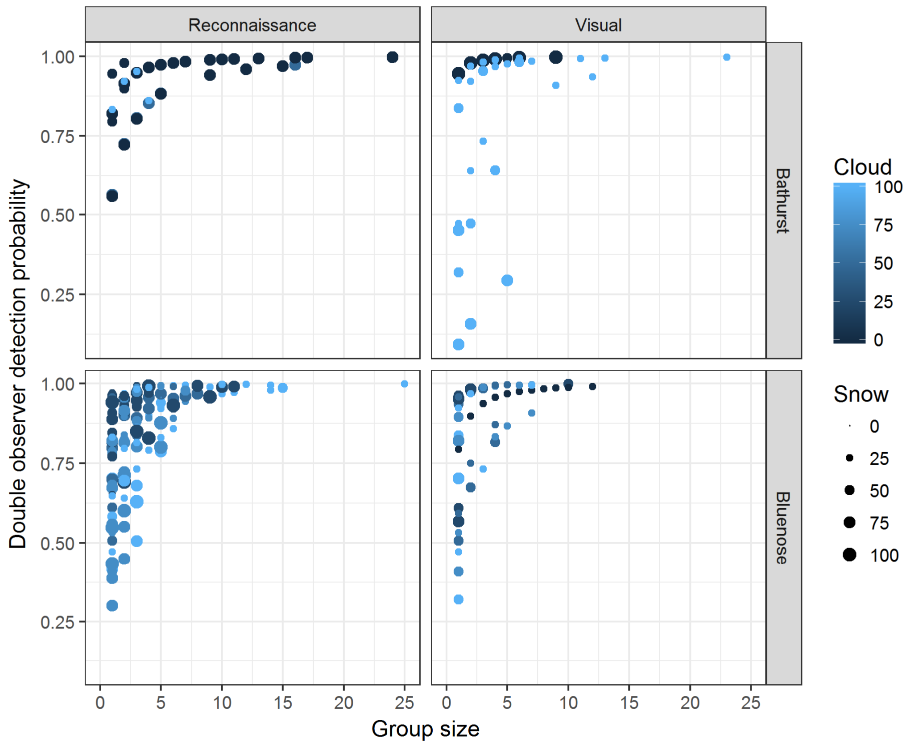

Figure 20: Estimated double observer probabilities from model 1 (Table 12) by snow cover, cloud cover, survey phase and survey for Bluenose-East and Bathurst June 2018 caribou surveys. Each observation is categorized by whether it was observed by the primary, secondary, or both observers.

Estimates of Total Caribou in Visual Strata

Double observer estimates (using the MRDS R package) were about 6 percent higher than non-double observer estimates. Precision was lower than uncorrected count-based estimates but still acceptable (Table 13).

Table 13: Standard strip transect (two observers per side with no estimation of sightability) and double observer model estimates (with sightability accounted for) of caribou on Bluenose-East visual strata in 2018 from the MRDS package in R.

Strata	Caribou	Standard Estimate			Double Observer Estimate				
	Counted	Estimate	SE	CV	Estimate	SE	CI		CV
North	159	734	100.4	13.7%	788	140.4	541	1,149	17.8%
South	210	1,061	113.7	10.7%	1,106	173.5	778	1,571	15.7%
Total	369	1,795	151.7	8.5%	1,894	223.1	1,482	2,419	11.8%

An estimate where there was only one observer per side of plane without the estimation of sightability was also run to assess the importance of having double observers on each side of the plane during surveys. This data set was created by only using observations from the front observer (excluding caribou groups only seen by the rear observer). This resulted in an overall estimate of 1,397 caribou which was 23 percent lower than the standard double observer estimate and 26 percent lower than the double observer estimate with sightability correction. The lower single observer estimate demonstrates the need for double observers on each side of the plane to ensure higher sightability of caribou and reliable estimates.

Estimation of Total Caribou on the Calving Ground

The photo data (corrected for double observer analysis) were combined with visual data (corrected for double observer analysis) to obtain a total estimate of caribou on the calving ground of 19,161 caribou at least one year old (Table 14). This total applies to strata with corresponding composition survey data. Overall, the photo strata accounted for 90.1% of caribou.

Table 14: Estimates of caribou abundance on all survey strata (photo and visual) for Bluenose-East herd in 2018.

Strata	N	SE	Conf. Limit		CV
North Visual	788	140.4	541	1,149	17.8%
North Photo	10,841	948.4	9,041	13,000	8.7%
South Photo	6,426	1,014.8	4,599	8,979	15.8%
South Visual	1,106	173.5	778	1,571	15.7%
Total	**19,161**	**1,406.8**	**16,512**	**22,233**	**7.3%**

Composition Survey

A composition survey was conducted June 8-10 in the photo strata and June 10-11 in the visual strata. During the composition survey, caribou were relatively stationary as there were few caribou groups observed outside stratum boundaries relative to search effort and flight-lines (Figure 21). Observations of the pattern of distribution, abundance, and composition of caribou during the composition survey were consistent with the delineated visual and photographic strata, which in turn provided additional confidence in representativeness of the overall survey design. The photo north and visual north blocks had high proportions of breeding cows, while the photo south block had increasing proportions of yearlings and non-breeding cows toward the south end. The visual south block had substantial proportions of bulls and yearlings and few cows.

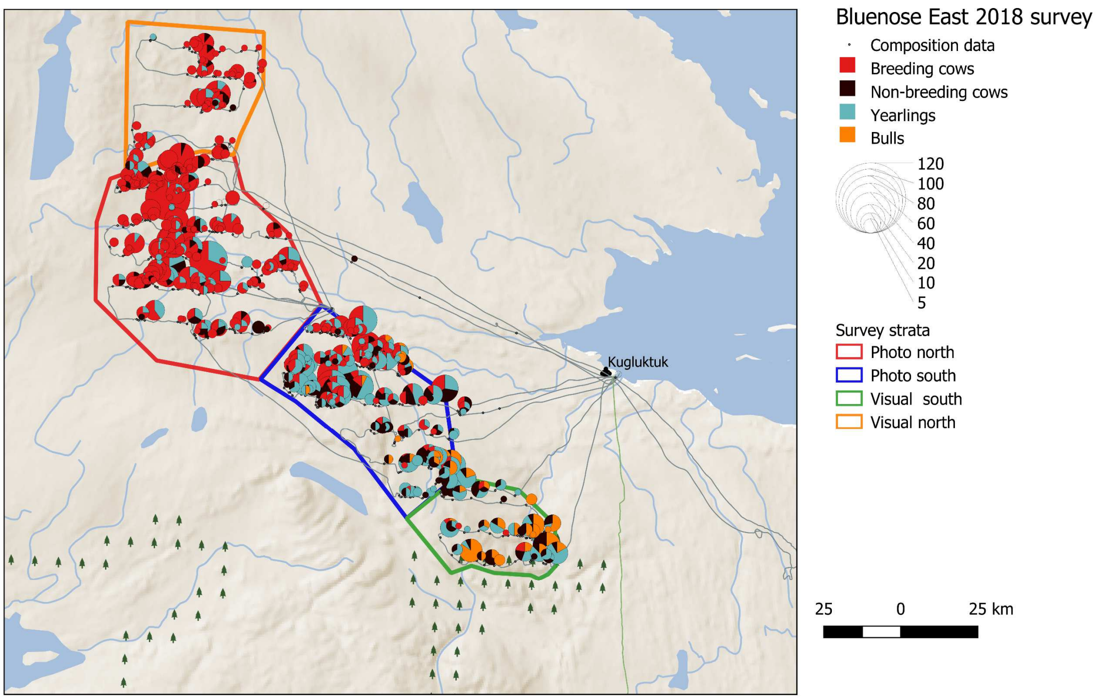

Figure 21: Helicopter flight paths and pie charts of groups classified during calving ground composition survey of Bluenose-East caribou in 2018. The size of pie charts is proportional to the number of caribou in each classification group as indicated by the scale diagram. Proportions of age-sex classes make up the individual pie sections.

Individual caribou were classified in each group based on physical characteristics as well as presence of a calf, hard antler(s) or distended udder (for breeding females) and are summarized in Table 15.

Table 15: Summary of composition survey on Bluenose-East calving ground June 2018 in photo and visual strata.

Strata	# Groups	Adult Females Total	Adult Females Breeding	Adult Females Non-breeding	Yearlings	Bulls	Total Caribou (1 yr+)
North Visual	59	158	147	11	16	0	174
North Photo	189	726	677	49	104	0	830
South Photo	166	490	300	190	388	30	908
South Visual	39	53	7	46	71	61	185

Estimates of adult females and breeding females were then derived with variance and confidence limits estimated via bootstrap methods (Table 16).

Table 16: Proportions of breeding females and adult females from composition survey on Bluenose-East calving ground June 2018

Strata	Estimate	SE	Conf. Limit	
Breeding females=breeding females/caribou 1 yr+				
North Visual	0.845	0.027	0.786	0.892
North Photo	0.816	0.020	0.774	0.853
South Photo	0.330	0.033	0.269	0.396
South Visual	0.038	0.016	0.012	0.072
Adult females=Adult females/caribou 1 yr+				
North Visual	0.908	0.024	0.861	0.951
North Photo	0.875	0.016	0.841	0.903
South Photo	0.540	0.027	0.491	0.595
South Visual	0.286	0.042	0.213	0.380

Estimates of Adult and Breeding Females

Estimates of breeding females were derived by the product of caribou and the proportion of breeding females in each stratum (Table 17).

Table 17: Estimates of breeding females based upon initial abundance estimates and composition surveys on Bluenose-East calving ground June 2018.

Strata	Caribou		Proportion Breeders		Breeding Females				
	N	CV.N	pb	CV	N	SE	Conf. Limit		CV
North Visual	788	0.178	0.845	0.032	666	120.5	454	976	18.1%
North Photo	10,841	0.087	0.816	0.025	8,846	803.7	7,326	10,681	9.1%
South Photo	6,426	0.158	0.330	0.100	2,121	396.4	1,429	3,148	18.7%
South Visual	1,106	0.157	0.038	0.421	42	18.9	16	110	45.0%
Total	**19,161**				11,675	904.4	9,971	13,670	7.7%

Estimates of adult females are given in Table 18.

Table 18: Estimates of adult females based upon initial abundance estimates and composition surveys on Bluenose-East calving ground June 2018.

Strata	Caribou		Prop. Adult Females		Adult Females				
	N	CV.N	pf	CV	N	SE	Conf. Limit		CV
North Visual	788	0.178	0.908	0.026	716	128.9	489	1,048	18.0%
North Photo	10,841	0.087	0.875	0.018	9,486	847.7	7,880	11,419	8.9%
South Photo	6,426	0.158	0.540	0.050	3,470	574.8	2,444	4,928	16.6%
South Visual	1,106	0.157	0.286	0.147	316	68.0	196	510	21.5%
Total	**19,161**				13,988	1,034.6	12,042	16,249	7.4%

The ratio of breeding females to adult females suggests a relatively high proportion of pregnant females of 83 percent compared to previous years.

Extrapolated Herd Estimates for Bluenose-East Herd

A composition survey was conducted October 23-25, 2018 to estimate the bull-cow ratio of the Bluenose-East herd. Overall there were 115 groups observed with totals of bulls, cows and calves summarized in Table 19.

Table 19: Summary of observations from fall composition survey on Bluenose-East herd October 23-25, 2018

Cows	Bulls	Calves	Groups Observed
1,542	586	396	115

Bootstrap methods were used to obtain SEs on estimates (Table 20).

Table 20: Estimates of the bull-cow ratio, proportion cows, and calf-cow ratio from the fall composition survey on Bluenose-East herd October 2018.

Indicator	Estimate	SE	Conf. Limit		CV
Bull cow ratio	0.380	0.027	0.333	0.437	7.0%
Proportion cows	0.725	0.014	0.697	0.750	1.9%
Calf-cow ratio	0.257	0.016	0.229	0.291	6.1%

Comparison of bull:cow ratios from composition surveys 2009-2018 suggest a slowly decreasing bull cow ratio (Table 21).

Table 21: Estimates of proportion of cows and the bull cow ratio from fall surveys on the Bluenose-East herd 2009-2018.

	Proportion Cows					Bull-cow Ratio			
Year	Estimate	SE	Conf. Limit		CV	Estimate	SE	Conf. Limit	
2009	0.700	0.008	0.684	0.716	1.1%	0.429	0.017	0.396	0.463
2013	0.701	0.009	0.685	0.720	1.3%	0.426	0.019	0.389	0.461
2015	0.706	0.014	0.678	0.734	2.0%	0.417	0.029	0.367	0.479
2018	0.725	0.014	0.697	0.750	1.9%	0.380	0.026	0.332	0.437

Estimates of adult herd size (caribou at least two years old) for the Bluenose-East herd in 2018 are presented in Table 22. The estimate based on an assumed fixed pregnancy rate estimate is higher since it assumes a constant pregnancy rate of 0.72, which is lower than that observed in 2018 (0.83), thereby inflating the estimate. The preferred estimate uses the proportion of females, which is simply the estimate of adult females (13,988), divided by the proportion of cows in the herd (0.725) from the October 2018 survey. Log-based confidence limits, which were used for other estimates as well as traditional symmetrical confidence limits (estimate ± t*SE) are given. In most cases log-based limits give better representation of confidence estimates than traditional symmetrical methods because the distribution of estimates has a slight positive skew. However, previous analyses have used the symmetrical method. The actual difference in CI's is relatively minor.

Table 22: Extrapolated herd size estimates for the Bluenose-East herd in 2018 based on two estimators

Method	N	SE	Log-based CI		Symmetric Traditional CI		CV
Proportion of adult females	19,294	1,474.7	16,527	22,524	16,303	22,285	7.6%
Constant pregnancy rate (0.72)	22,366	2,861.8	17,247	29,004	16,530	28,202	12.8%

Trends in Breeding and Adult Females and Herd Size 2010-2018

Comparison of 2015 and 2018 Estimates

Comparison of 2015 and 2018 estimates suggests a gross reduction of 49 percent in adult females, which translates into a mean annual rate of decline of 20 percent in the 2015-2018 interval (Figure 22). In contrast, breeding females had a gross reduction of 32.9 percent which translates to an annual rate of change of -13 percent in the interval since 2015. The difference in gross and annual changes of breeding and adult females was due to an increase in proportion of breeding females in 2018 compared to 2015. Using a t-test the gross reduction in estimates is significant for adult females (t=-7.35, df=42, p<0.0001) and breeding females (t=-3.9, df=47, p=0.002).

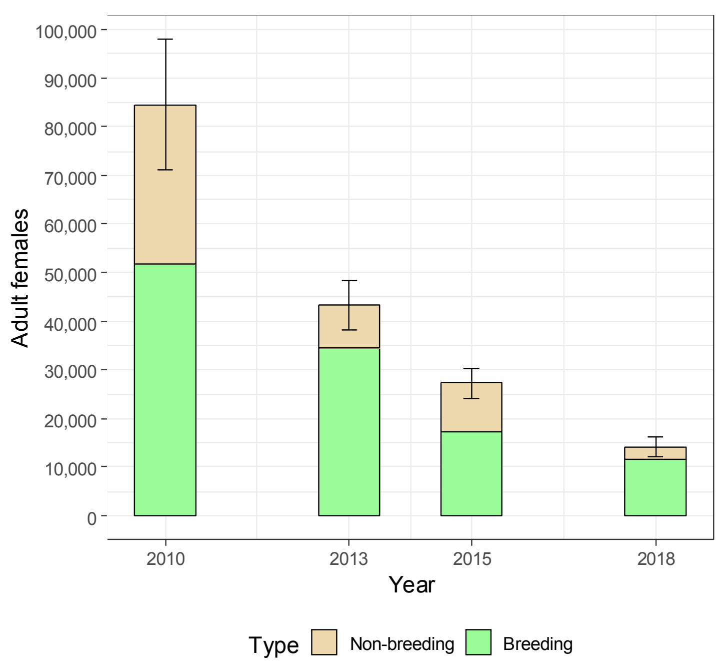

Figure 22: Estimates of total adult females in the Bluenose-East herd from 2010-2018 dichotomized shown by breeding and non-breeding females status from 2010-2018.

Overall Trends 2010-2018

A Bayesian state space model (Humbert et al. 2009, Kery and Royle 2016) was used to estimate longer term trends in the Bluenose-East data set. For this analysis, trend (log λ) was modeled as a random effect therefore allowing assessment of variation in λ in intervals between surveys.

For breeding females, yearly trends in breeding females were marginally significant (p=0.071) with estimates of λ overlapping 1 for some years between 2010 and 2018. The mean estimate of λ for breeding females was 0.81 (CI=0.62-1.04). Variation in λ for breeding females was presumably due to the influence of variable pregnancy rate on estimates of breeding females (Figure 23).

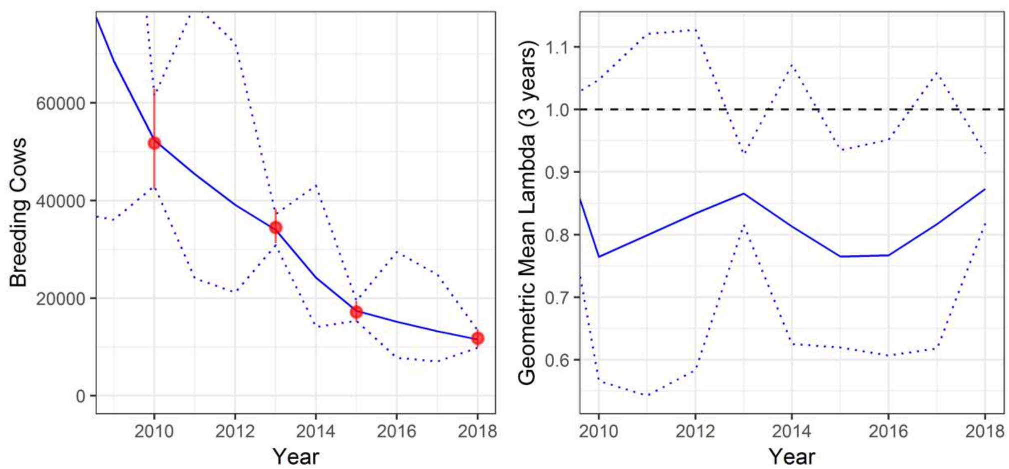

Figure 23: Estimates of breeding cows and λ (geometric mean of three previous years) in the Bluenose-East herd 2010-2018 from Bayesian state space model analysis.

In contrast, trends in adult females were significant (p=.0087) with minimal yearly variation in λ and no overlap of λ estimates with one in any of the years considered (Figure 24). The mean estimate of λ was 0.8 (CI=0.73-0.87) which translates into an annual rate of decline of 20 percent (CI=13-27percent).

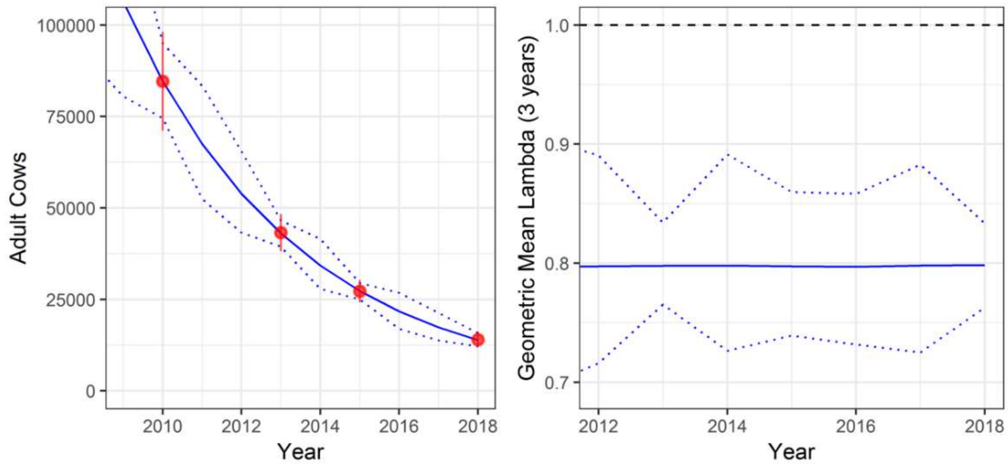

Figure 24: Estimates of adult cows and λ (geometric mean of three previous years) in the Bluenose-East herd 2010-2018 from state space model analysis.

Overall Bluenose-East herd size followed the general trend in adult and breeding females (Figure 25).

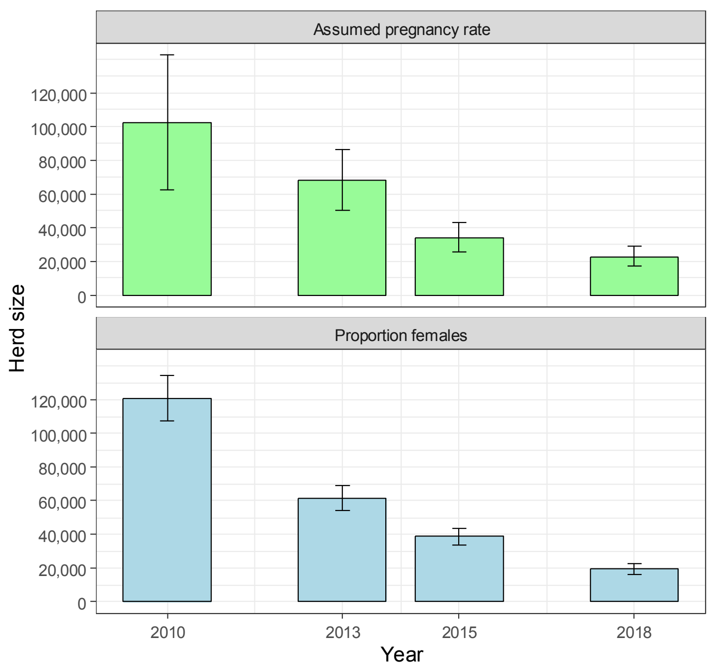

Figure 25: Estimates of Bluenose-East herd size (adults at least two years old) using the constant pregnancy rate of 0.72 and proportion of females method from 2010-2018. We suggest the estimates based on proportion of females (bottom) are more reliable.

The core calving ground area as well as densities of adult female caribou have both declined 2010-2018 suggesting that the degree of aggregation of caribou on the calving ground has not changed substantially. A full analysis of trends in core calving ground area and densities of females on the calving ground is presented in Appendix 5.

Exploration of Potential Reasons for Decline in Herd Size

Potential contributing factors to the apparent large numerical decline in breeding females on the Bluenose-East calving ground 2015-2018 could include (a) a portion of female caribou may have been missed based on limited survey coverage, (b) some female caribou may have moved to adjacent calving grounds, and (c) demographic factors including reduced survival of adult caribou, reduced pregnancy rates, and reduced calf survival. We considered the likelihood of each factor contributing significantly to the estimated reduction in abundance.

Breeding and Adult Females not Occurring on Survey Strata

One potential reason for lower estimates would have been female caribou occurring outside survey strata. We note first that extensive additional reconnaissance flying to the north, west and east of the main concentrations of calving caribou resulted in almost no caribou observations (see blank squares on Figure 27), suggesting that the herd's distribution had been well defined in those areas. Only at the southern trailing edge were there any substantive numbers of caribou seen on reconnaissance flying outside the survey strata.

All 30 Bluenose-East collared female caribou that were monitored occurred within the survey strata, and none of them were in the south visual block (Figure 13). Two collared females, which were most likely from the Bluenose-West herd, occurred to the north and south of the central study area. The south visual block contributed just 42 of 11,675 breeding females (0.3 percent) (Table 17) and 316 of 13,988 adult females (2.2 percent) (Table 18) in the survey area. The composition survey showed that the south visual block had substantial numbers of yearlings and bulls, and progressively higher proportions of them at the southern end (Figure 21). In addition, a map of the movements of 15 Bluenose-East collared bulls in May-June 2018 (Figure 26) demonstrates that most of the herd's bulls were at the southern fringe of the south visual block and south of it in the two reconnaissance-based strata. Our observations suggest that areas further south of the south visual block were likely to have mostly bulls and yearlings, a few non-breeding cows and virtually no breeding cows.

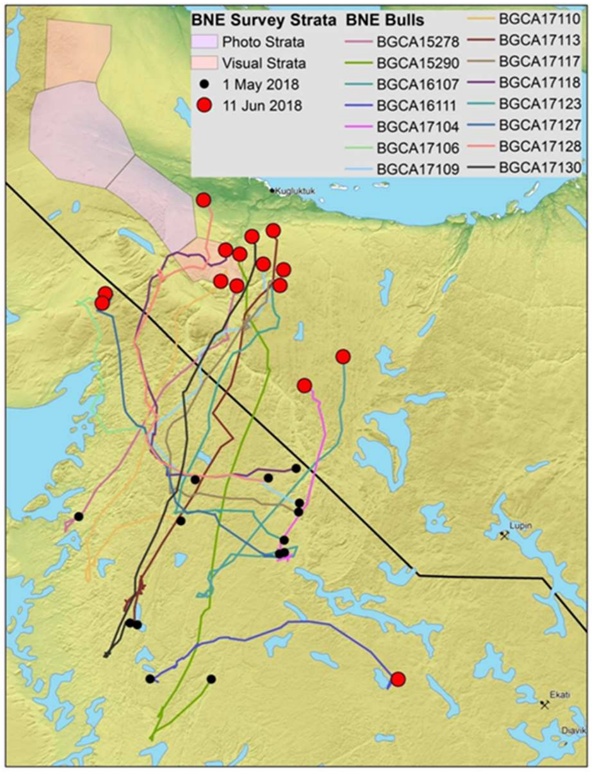

Figure 26: Spring movements (May 1 - June 11) of 15 Bluenose-East collared bulls in 2018 in relation to the survey area. Most bulls were concentrated at the south end of the survey area and some were scattered far to the south.

We added two post-hoc reconnaissance-based strata to the area south of the survey strata to assess the relative sensitivity of estimates to inclusion of these areas (Figure 27). No composition surveys were conducted for these areas, making estimates of breeding females and adult females problematic, but these areas most likely were dominated by bulls and yearlings.

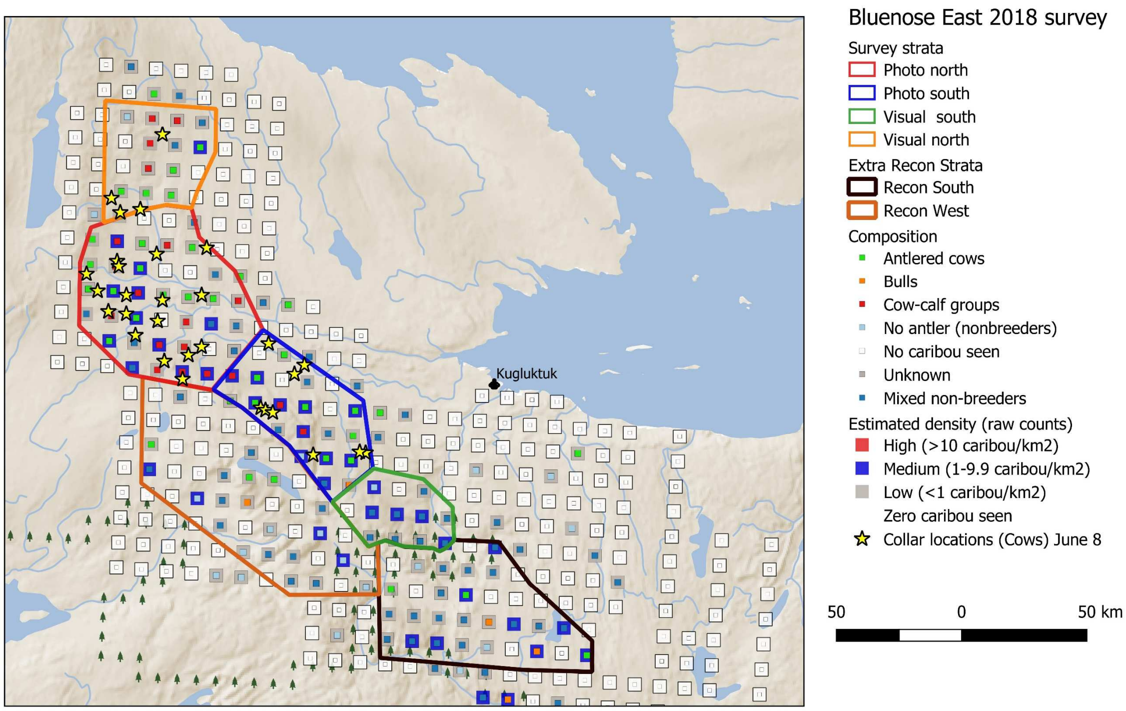

Figure 27: Bluenose-East June 2018 survey area with extra (post-hoc) reconnaissance-based strata at bottom in black and brown outlines.

The resulting estimate of total caribou was 22,425 caribou (Table 23), which is higher than the extrapolated herd estimate of 19,294 caribou at least 1-year-old for the survey area with two photo and two visual blocks (Table 22). However, the estimate of 22,425 caribou (Table 23) *includes* yearlings (calves from 2017) whereas the extrapolated herd estimate includes adult caribou and *excludes* yearlings. An estimate of yearlings in 2018 of 6,594 (CI=5,590-7,782) was derived from the demographic model (described in the next section) which suggests that the difference in extrapolated herd estimates (19,294) and total caribou on the calving ground (22,245) can largely be explained by the presence of yearlings in the total caribou on the calving ground estimate.

Table 23: Estimates of total caribou at least one year old on Bluenose-East June 2018 calving ground survey area with two supplemental reconnaissance strata (as delineated in Figure 27).

Strata	N	SE	Conf. Limit		CV
North Visual	788	140.4	541	1,149	17.8%
North Photo	10,841	948.4	9,041	13,000	8.7%
South Photo	6,426	1,014.8	4,599	8,979	15.8%
South Visual	1,106	173.5	778	1,571	15.7%
Recon South	2,117	250.2	1,616	2,773	11.8%
Recon West	1,147	285.0	661	1,991	24.8%
Total	**22,425**	**1,457.0**	**19,669**	**25,565**	**6.5%**

Movement to Adjacent Calving Grounds

Figure 28 displays movement in the mean location of calving for collared females that were monitored for successive years. The head of the arrow is the mean location for the current year and the tail is the location for the previous year. From this it can be seen that in general caribou have shown reasonable fidelity to the Bluenose-West, Bluenose-East and Bathurst calving grounds 2010-2018. Some unusual June 2018 movements of collared Bathurst cows are considered in the survey report for that herd.

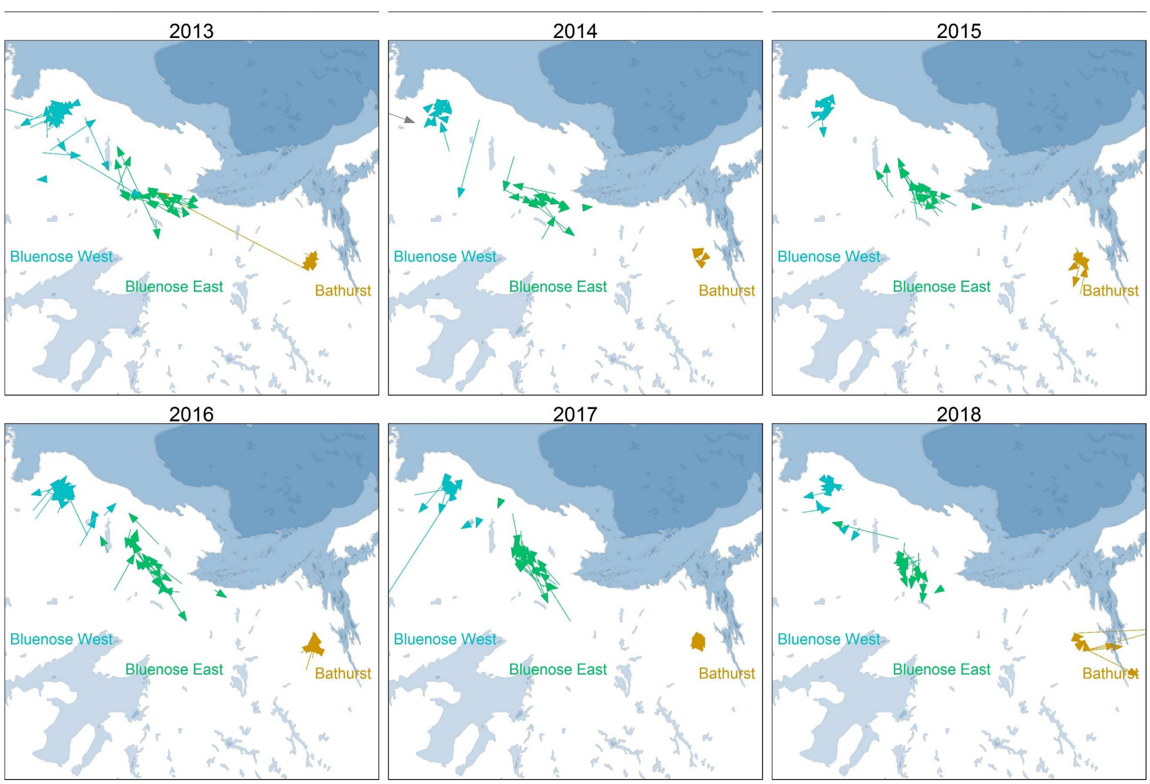

Figure 28: Yearly fidelity and movements to calving grounds in the Bluenose-West, Bluenose-East and Bathurst herds 2013-2018. The head of the arrow indicates the current calving ground in the given year and the tail indicates the mean location from the previous year calving ground.

Frequencies of movement events were assessed for collared female caribou monitored for consecutive years and tabulated (Figure 29). Overall, the rates of switching between the Bluenose-East and neighbouring Bluenose-West and Bathurst calving grounds were low for both 2010-2015 and 2015-2018. The low rate of switching of collared cows is consistent with previous estimates of about 3 percent switching and 97 percent fidelity in the Bathurst herd (Adamczewski et al. 2009) and similar fidelity in the Cape Bathurst, Bluenose-West and Bluenose-East herds (Davison et al. 2014). This factor was not likely responsible for the decline in Bluenose-East females, as there were very few switches between calving grounds and they occurred in both directions about equally.

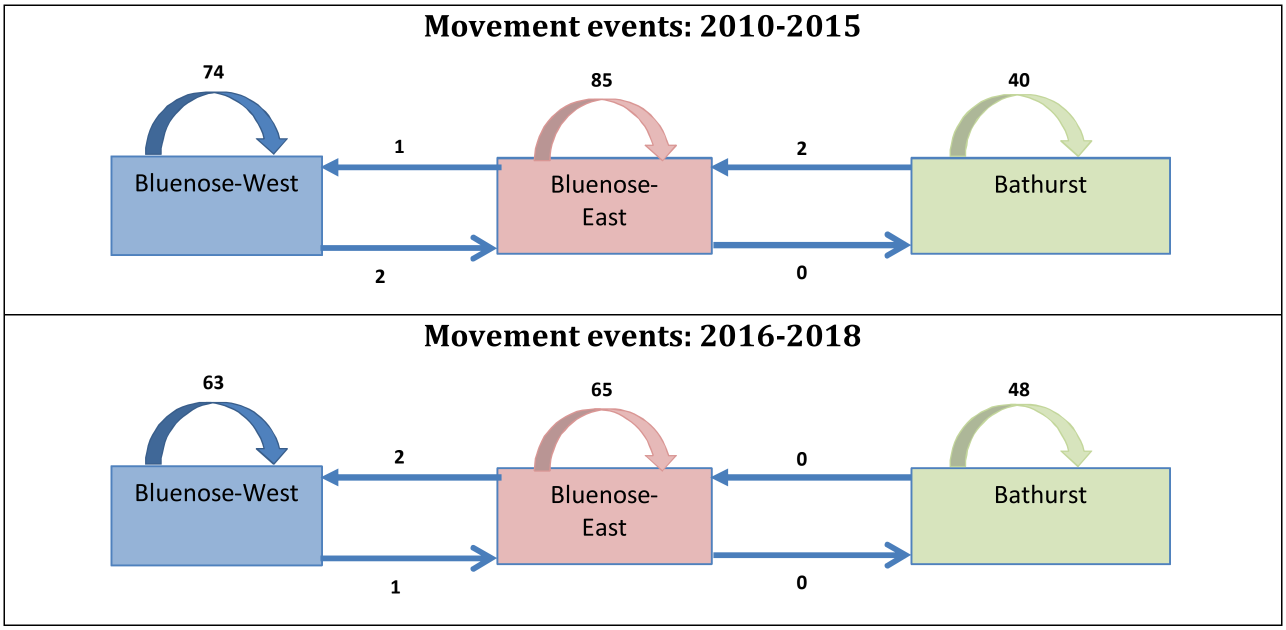

Figure 29: Frequencies of caribou movement events for the Bluenose-East and neighbouring Bluenose-West and Bathurst herds from 2010-2015 and 2016-2018 based on consecutive June locations of collared females on calving grounds. The curved arrows above the boxes indicated the number of times a caribou returned to each calving ground for successive years. The straight arrows indicate movement of caribou to other calving grounds.

Demographic Analysis using Multiple Data Sources

Survival Analysis of Collared Cows

The monthly collar data used in the Bluenose-East survival analysis are shown in Figure 30, which estimates monthly mortality rates as the ratio of the number of collared caribou mortalities divided by the number of collars monitored each month. The actual analysis was based on calving ground year which begins in June of each year. Sample sizes were in the range of 30 collars per month with the exception of 2010 and 2011 when collar sample sizes were lower. A gap in collars monitored occurred in late 2011 and early 2012 before re-deployment of collars in the spring of 2012. Survival estimates were scaled to account for this interval. Collared caribou mortalities occurred mostly in summer periods for 2016 and 2017 compared to earlier years.

Figure 30: Summary of monthly mortality rates for the Bluenose-East herd by calendar year. The mortality rate, which is the ratio of number of collar mortalities/number of available collars, is given above each bar. The analysis is based on calving ground year which begins at June of each year and ends at May the following year.

Table 24 shows the Bluenose-East collar-based cow survival data defined by caribou year (the year begins on the calving ground each year in June and ends the following May) along with summary statistics for each year. Mortalities are broken down by known and stationary (assumed mortality). The data set ends in caribou year 2017 which goes up to May 2018, the month before the 2018 calving ground survey.

Table 24: Summary of Bluenose-East collared female data used for survival analysis 2010-2018. Caribou year starts June of the caribou year and ends in May of the next year.

Caribou Year	Annual Mortalities		Live Caribou Sample Sizes			
	Known	Stationary Collar	Collar Months	Mean Alive	Min	Max
2010	3	0	103	8.6	6	12
2011	0	1	137	11.4	0	38
2012	4	12	415	34.6	31	39
2013	0	6	257	21.4	17	25
2014	0	6	319	26.6	21	37
2015	0	2	363	30.3	24	37
2016	0	5	369	30.8	26	37
2017	2	5	290	24.2	18	32
Total	9	37				

Figure 31 displays the Bluenose-East collar-based female survival estimates based on the current data set 2010-2017 using the Kaplan-Meier estimator (Pollock et al. 1989). In general, the earlier estimates had high variance due to limited numbers of collars. The overall mean number of live collared cows was 23.5 for this period, and the average annual survival rate for collared cows over the eight years was 0.79 (Table 24) with no clear trend 2010-2017. The trend 2015-2018 was a decline with the last year's survival (2017-2018) estimated at 0.76. Survival estimates were further explored and refined using information from all data sources using the Bayesian IPM model described in the next section. One concern was that the 2011 survival estimate was influenced by lack of sampling of winter months during this year. A sensitivity analysis was conducted with this estimate not included in the 2011 to assess the relative influence of this data point on overall IPM model estimates.

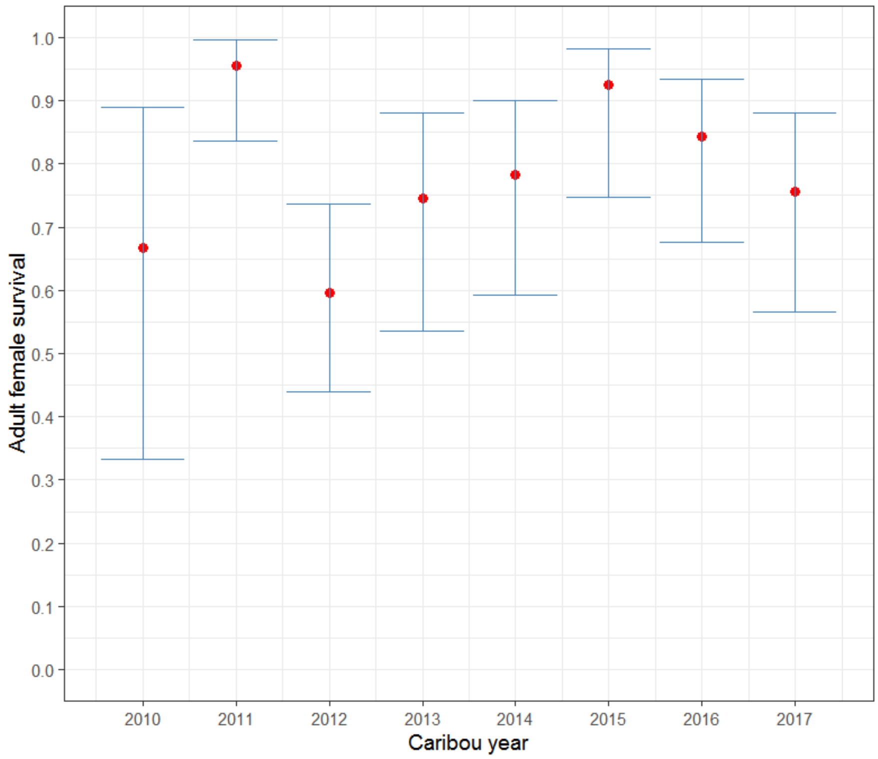

Figure 31: Annual Kaplan-Meier estimates of survival from collared Bluenose-East female caribou for caribou years 2010-2017, based on collar data in Table 24.

Table 25 provides the survival rate estimates for calving ground years (June 1 - May 31), which are also shown in Figure 31. Years begin at calving in June and extend to the following May. Note that all estimates of survival include hunting mortality.

Table 25: Estimates of yearly survival rate for the Bluenose-East herd 2010-2018 from Kaplan-Meier survival rate estimator.

Caribou Year	Survival	SE	Conf. Limit	
2010	0.67	0.16	0.33	0.89
2011	0.96	0.03	0.84	1.00
2012	0.60	0.08	0.45	0.74
2013	0.74	0.09	0.54	0.88
2014	0.78	0.08	0.59	0.90
2015	0.93	0.04	0.77	0.98
2016	0.84	0.07	0.67	0.93
2017	0.76	0.08	0.57	0.88

Bayesian Integrated Population Demographic Model

The main objective of the Bayesian IPM was to provide refined estimates of demographic parameters using all of the field data sources available. For the Bluenose-East model, temporal variation in main parameters (cow/yearling survival, calf survival) was modeled as random effects. Sparse data prevented modeling fecundity and bull survival as a random effect and therefore these parameters were held constant. A technical description of the model including tests of model parameters and the associated *R* code is given in Appendix 3.

The IPM fit most field measurements adequately (Figure 32). The main exceptions were a slight overestimate of cows and cows+bulls (compared to extrapolated estimates) in 2018. Also, since fecundity was fixed (estimated at 0.69, CI=0.64-0.75), the model did not capture variation in proportion of breeding females, however model predictions did intersect the confidence limits of field estimates in all cases. Confidence in model predictions tended to be highest for the years in which there were field estimates.

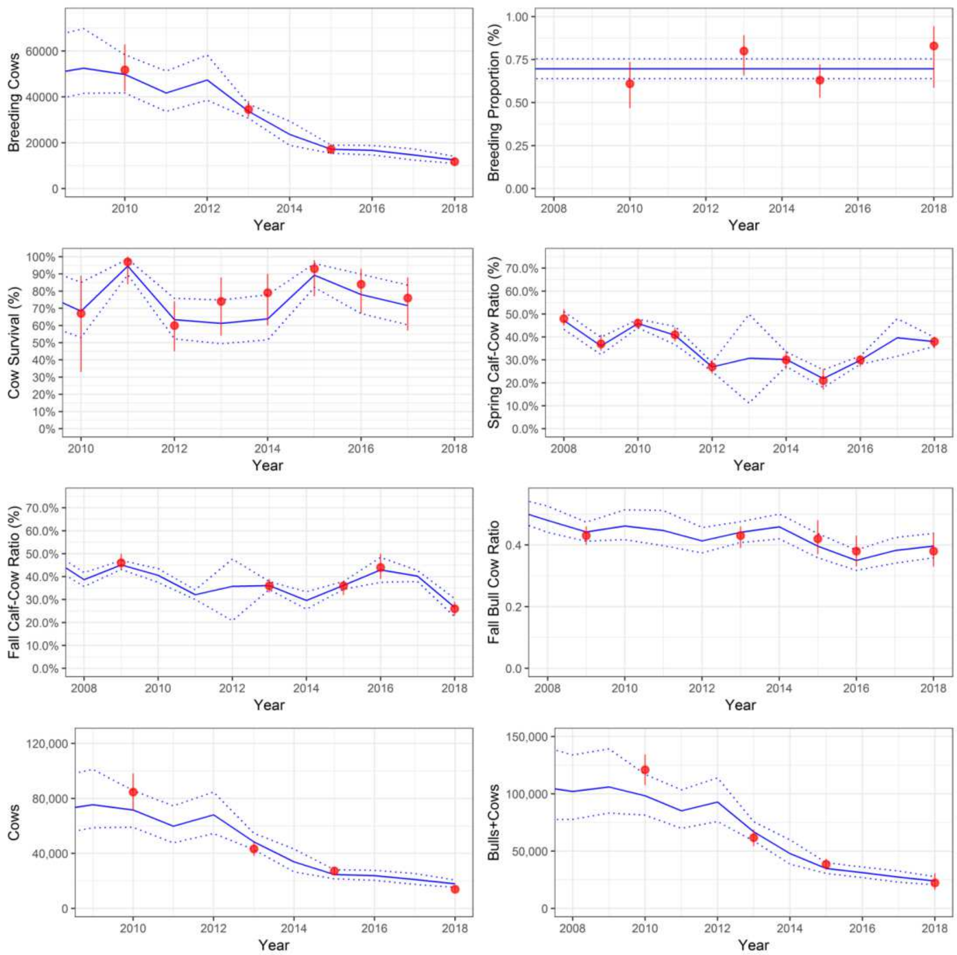

Figure 32: Predictions of demographic indicators from Bayesian IPM analysis compared to observed values, for Bluenose-East herd 2010-2018. The solid blue lines represent model predictions and confidence limits are shown as hashed blue lines. The red points are field estimates with associated confidence limits. Spring calf:cow ratios are flown in March or April and are also called late-winter surveys.

We modeled summer (June - late October) and winter (October - June) calf survival with the transition being the fall rut when fall composition surveys occur (Figure 33). This parameterization takes advantage of years where fall and spring calf cow surveys occur therefore allowing assessment of change in proportion calves between calving ground, fall surveys, and late winter surveys and subsequent estimation of calf survival for each period. As found in previous studies (Gunn et al. 2005a), summer survival is lower than winter survival (when calves are larger). We note that the survival rates in the graphs below are expressed on the annual scale for comparison purposes. The actual rates will be different (slightly higher) given that summer or winter is shorter in time than a year.

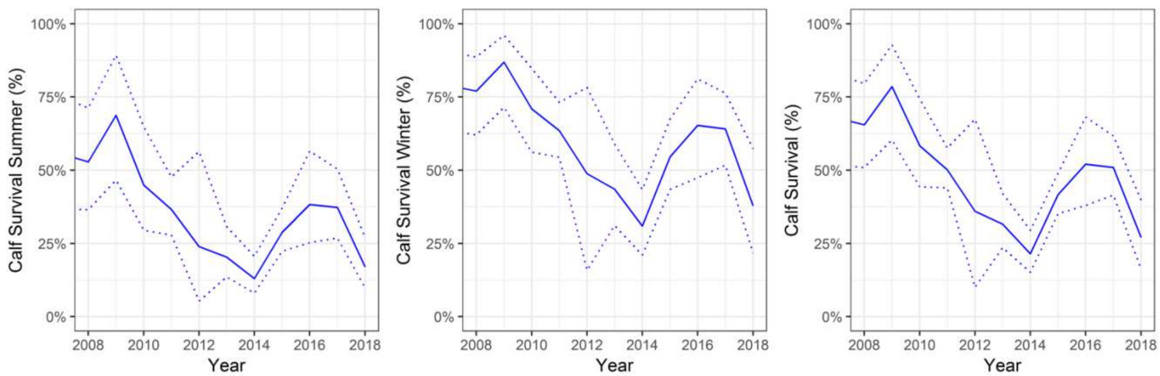

Figure 33: Trends in summer and winter and overall calf survival for the Bluenose-East herd 2010-2018 from the IPM analysis.

Overall calf productivity, which is basically the proportion of adult females that produce a calf that survives the first year of life, can be derived as the product of fecundity (from the previous caribou year) and calf survival (from the current year) (Figure 34). Calf productivity estimates suggest a negative trend in productivity 2008-2018 which was influenced by decreasing calf survival. An additional model run was conducted to test for a negative trend in calf survival which was found to be significant (p=0.02). Calf productivity is predicted to be lower in the caribou year of 2018 (June 2018 - June 2019) than 2017 due to a low calf-cow ratio in the fall 2018 survey (Figure 32). Future analyses will explore calf survival trends as well as linkages in calf survival and other demographic parameters with environmental covariates.

Spring calf-cow ratios, which are recorded in March or April, are overlaid in the productivity graph (Figure 34) and similarly suggest an overall negative trend 2008-2018. Note that the spring calf-cow ratio is influenced by cow survival, calf survival as well as fecundity and therefore will not directly correspond directly to productivity. It will be greater than actual productivity because lower cow survival rates, which influence the count of cows in the spring, will inflate calf-cow ratios. The model predictions of spring calf-cow ratios, which account for cow survival, are shown in Figure 32.

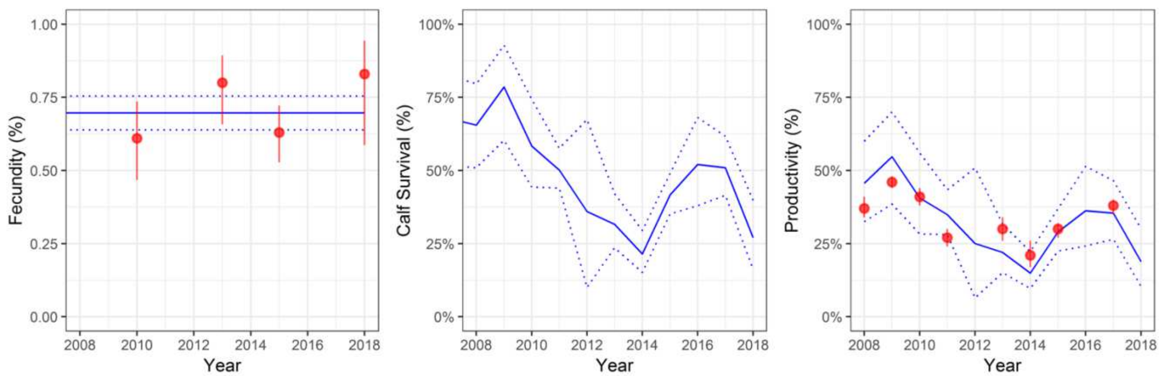

Figure 34: Trends in fecundity, calf survival and productivity (which is the product of the previous year's fecundity times the current year calf survival) for Bluenose-East herd 2010-2018. Spring calf cow ratios, which are lagged by one year (so that they correspond to the productivity/caribou year prediction of the model), are shown for reference purposes.

One of the most important determinants of herd trend is adult cow survival since this directly influences the overall productivity of the herd. Collar-based point estimates, and modeled annual and three year average values for cow survival are shown in Figure 35. A grey box indicates the range of cow survival needed for the herd population size to stabilize (as assessed using a stage-based matrix model described in Appendix 4) across the range of observed levels of productivity (Figure 34). The lower level is a cow survival of 0.84 which is the minimum level needed for herd recovery at a higher productivity level of 0.46, which is like that observed in 2009. The upper level is a cow survival of 0.92 which is the level required for stability if productivity remains low at the 0.19 observed in 2018. If productivity is at levels observed from 2015-2018 (0.30) then cow survival would need to be 0.88 for stability. The lower hashed line is 0.71 which was the mean level (for 2010-2015) estimated in the previous demographic analysis conducted after the 2015 calving ground survey (Boulanger et al. 2016).

Estimates of cow survival suggest an increasing trend in cow survival from 2015 to 2018 with a three-year average survival of 0.79 (CI=0.71-0.84) for the 2015-2018 period. However, this estimate should be interpreted cautiously since both the collar-based and IPM estimates suggest a decreasing trend in cow survival from 2015-2018. The IPM estimate of cow survival for the caribou year of 2017 (which spans from June 2017 - June 2018) is 0.716 (0.60-0.83). We suggest this average value for cow survival be used for prospective harvest modeling purposes. All estimates of survival include harvest mortality. Harvest pressure was low from 2015 to 2018 and targeted bulls, as detailed in the next section, and therefore it is likely that that harvest had minimal effect on survival rates from 2015 to 2018.

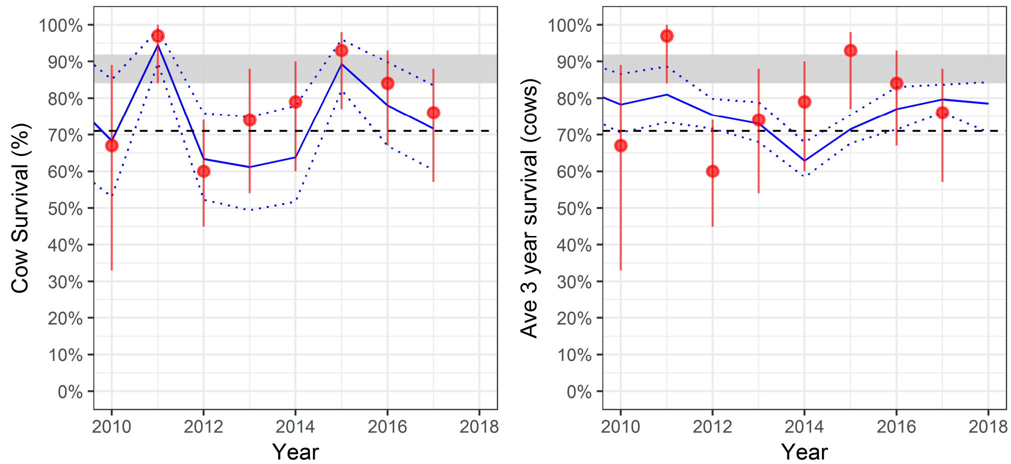

Figure 35: Trends in Bluenose-East cow survival 2010-2018 from IPM analysis. The solid blue lines represent model predictions and confidence limits are the hashed blue lines. The right graph represents a three-year moving average. The red points are field estimates from collars with associated Confidence Limit. The dashed horizontal lines indicate previous estimates of mean cow survival in 2015 (0.71). The shaded region represents the range of cow survival levels needed for population stability across lowest observed levels of productivity (19 percent) to higher levels of productivity (46 percent) as shown in Figure 34.

Bull survival was estimated at 0.52 (CI=0.48-0.57) from 2010 to 2018 which was lower than the estimate in 2015 (0.58; CI=0.55-0.60). This was presumably due to the slight decrease in bull cow ratios in fall surveys (Table 21) as well as changes in productivity. The demographic model basically estimates bull survival as the level needed to produce the observed bull-cow ratios based on levels of recruitment to the adult bull class and estimated cow survival. One potential enhancement to the model that will be considered is direct estimates of bull survival from collared bulls to further verify bull survival estimates.

Population rates of change (λ) for cows suggests a rate of 0.80 (as also indicated by regression analysis of calving ground survey estimates) up to 2015 followed by a slight increase in λ from 2015-2018 up to 0.90 (CI=0.85-0.94) (Figure 36). However, point estimates of λ decrease from 2015-2018 so that the λ estimate for 2018 is 0.85 (CI=0.71-0.99). We suggest the point estimate for 2018 be considered given the decreasing trend in λ from 2015-2018.

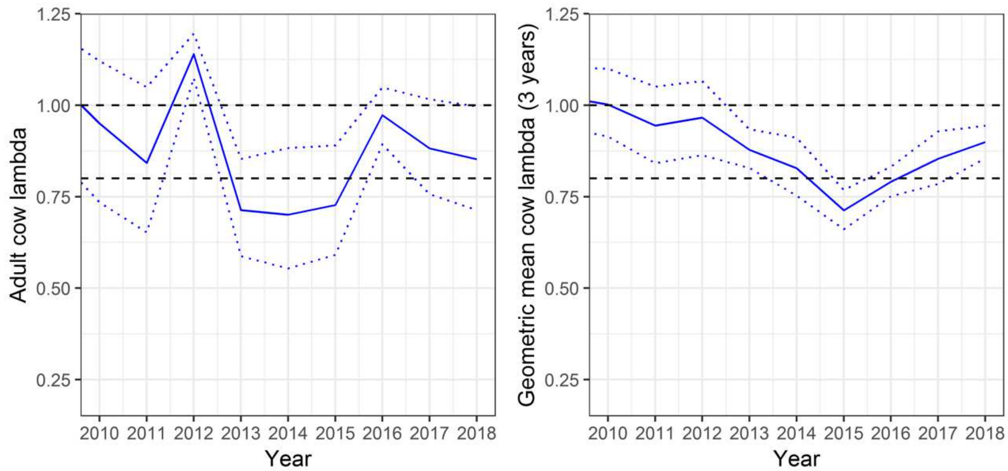

Figure 36: Overall trends in Bluenose-East adult female trend (λ) 2010-2018 from the IPM analysis. A value of 1.0 indicates stability.

Overall, the demographic model suggests that cow survival rates, which are one of the main determinants of overall herd trend, are still at lower values than needed for herd recovery (Figure 35). Low cow survival levels and an apparent negative trend in calf survival (Figure 33) both contributed to the overall decline in herd size. Overall trend estimates (three year λ) suggest a slightly less negative trend in adult cow numbers (0.90), however, there is an overall negative trend in cow survival and λ and therefore this result should be interpreted cautiously.

Sensitivity analyses were conducted to the effect of directional calf survival trends (by including a calf survival trend in the model) and the 2011 cow survival data point which may have been influenced by lower collar coverage (Figure 30), by running the model without this data point. In both cases, estimates were minimally affected. Of most interest was the 2018 cow survival estimate which was 0.72 (CI=0.62-0.83) if the 2011 cow survival data point was removed and 0.70 (CI=0.60-0.82) if a declining calf survival trend is assumed. This contrasts with the estimate of 0.72 (0.60-0.83) from the main model used in the analysis. More details are provided on this analysis including a plot of all model predictions from alternative models in Appendix 4.

Future analyses will further refine demographic predictions using environmental covariates to model temporal trends in parameters. Preliminary analysis of a limited environmental covariate data set (2008-2016) using remote sensing covariates (Russell et al. 2013) suggest negative correlations between IPM estimates of cow survival (Figure 35) and June temperature (Pearson ρ=-0.829,CI=0.96 to -0.37,t=-3.95,df=7,p=0.005) as well as negative correlation between estimated calf survival (Figure 33) and Oesterid (warble and bot fly) indices for the summer after calving (Pearson ρ =-0.831,CI=-0.96 to 0.37,df=7,p=0.0056). Once the full temporal data set is available (up to 2018) these covariates will be used to further refine estimates and explore mechanisms causing temporal variation in demographic parameters. Analyses that further explore seasonal survival estimates with the effect of hunting mortality (on earlier data points) will also be considered at this time.

Hunter Harvest of Bluenose-East Caribou 2016-2018

In 2016, three co-management boards – the Wek'èezhìi and Sahtú Renewable Resource Boards (WRRB and SRRB) in the NWT and the NU Wildlife Management Board (NWMB) in NU – held formal hearings on management of the Bluenose-East caribou herd. The WRRB determined a total allowable harvest (TAH) for Wek'èezhìi of 750 bulls and recommended that this be the harvest limit herd-wide, recognizing that the board has no jurisdiction outside Wek'èezhìi. The SRRB endorsed a community-based caribou management plan from Délı̨nę (*Belare Wíle Gots'ç Æekwç* , the Délı̨nę caribou plan), which included a harvest limit of 150 caribou and 80 percent bulls. The NWMB endorsed a similar plan from the Kugluktuk Hunters and Trappers Organization for the Bluenose-East herd, called an Integrated Community Caribou Management Plan or ICCMP (the Kugluktuk caribou plan); this included a harvest limit of 340 caribou (no gender specified). Since that time, actual estimated/reported harvest of Bluenose-East caribou has been below the limits in the three plans (Table 26). Overall totals were 373 caribou in 2016-2017 and 323 caribou in 2017-2018, with a substantial number of these being bulls; however, the harvest recorded for Kugluktuk is the largest part of the harvest for these two years and gender of harvested caribou was not specified. In 2017-2018, particularly, the herd was relatively inaccessible to hunters for a large part of the year. This harvest was less than 1 percent of the herd's estimated size in 2015 (38,592). These harvest numbers suggest that harvest contributed relatively little to the herd's most recent decline, in contrast to the situation prior to 2015 (Boulanger et al. 2016).

Table 26: Reported/estimated harvest of Bluenose-East caribou in harvest seasons 2016-2017 and 2017-2018.

Harvest Season	North Slave Region NWT (including Wek'èezhìi)	Délı̨nę, NWT	Kugluktuk, NU	Total	Notes
2016-2017	15 bulls	93 bulls, 33 cows	232 caribou	373 caribou	Most N. Slave hunters harvested Beverly caribou in east
Source	ENR wildlife officers	Délı̨nę RRC	GN wildlife staff		
2017-2018	142 bulls	7 caribou	174 caribou	323caribou	Most N. Slave hunters harvested Beverly caribou in east; Délı̨nę harvest possibly boreal caribou
Source	Tłı̨chǫ Government	Délı̨nę RRC	GN wildlife staff		

Hunter Harvest Modeling of Bluenose-East Caribou 2018-2021

To assist in preparation of a joint management proposal for Bluenose-East caribou (Tłı̨chǫ Government (TG) and ENR) that was submitted to the WRRB in Jan. 2019, a limited set of harvest modeling runs was carried out to assess how harvest might affect the herd's likely numbers in 2021, three years after the 2018 survey. The full results are included in Appendix 4 of this report. We include a selection of results here as they build on the Bayesian modeling described in preceding pages.

The methodology used for simulations followed the original generic harvest model approach (Boulanger and Adamczewski 2016). In review, the harvest model assumes that harvest mortality is additive to natural mortality each year. It assumes that harvest occurs in the new year (January) for both bulls and cows with mortality of cows not affecting calf survival in the year the cow is shot (it basically assumes that the calf has weaned at that point).

We note that the main objective of simulations was to provide an assessment of relative risk of accelerated decline of the herd at various harvest levels as opposed to firm predictions of herd status in 2021. It is challenging to assess future demographic rates and therefore we suggest that the results of simulations be used with ongoing demographic monitoring to assess herd status and response to harvest.

The following simulations were considered. Simulations with estimated cow survival levels in 2018 (minimal harvest, female survival (S_f)=0.716: CI=0.6-0.83) were considered across a range of calf productivity levels. This estimate of cow survival assumes low harvest pressure from 2017-2018 so that the difference in natural and harvest-influenced survival is minimal. This assumption is reasonable since harvest levels were relatively low (2015-2016, ≈800 caribou, 2016-2017 ≈300 caribou, 2017-2018 ≈200 caribou) in the 2015-2018 interval.

Variation in productivity was simulated by varying calf survival while keeping fecundity constant. This scenario most closely follows the results of the IPM analysis where fecundity was held constant with yearly variation in calf survival estimated using a random effects model (Figures 33 and 34). The values of calf survival and productivity simulated followed the range of values estimated from the 2008-2018 data sets. We based the average productivity scenario on the last three years given that this level of productivity will have the higher influence on future herd size of the Bluenose-East herd. We note that the assumption of constant fecundity in the IPM analysis was due partially to data constraints (n=4 breeding proportion measurements) rather than lack of biological variation in pregnancy rates.

Estimates of demographic parameters in 2018 were relatively similar to those from 2015. The estimate of cow survival in 2018 of 0.716 was similar to that estimated from the 2015 analysis of 0.708. The mean cow survival rate 2015-2018 was 0.76; however the overall trend suggested a declining recent trend in cow survival 2015-2018 and therefore the 2018 estimate was used for simulations. The average level of calf productivity (0.30) from 2015-2018 was slightly higher than the previous average calf productivity of 0.26 (from 2013-2015). The lower calf productivity scenario (0.187) was based on the 2018 estimate of calf productivity. Bull survival in 2018 was estimated at 0.52, which was lower than the estimate of 0.59 in 2015. Simulations were also run at the 2015 bull survival level of 0.59 to assess the sensitivity of estimates of bull cow ratio to this change in bull survival, as detailed in Appendix 4.

Table 27: Demographic scenarios considered in harvest simulations for the Bluenose-East caribou herd in 2018. S_f = cow survival rate; S_c = calf survival rate; S_m = bull survival rate; S_y = yearling survival rate; $F_a{*}S_c$ = calf productivity as the product of pregnancy and calf survival rates. Results of all simulations are detailed in Appendix 4.

Scenario	Productivity	Survival				Pregnancy Rate	λ (Cows Only)	Stable Age Distribution Proportions at 2018		
	$F_a{*}S_c$	Cow (S_f)	Calf (S_c)	Bull (S_m)	Yearling (S_y)	F_a		Calves	Yearlings	Cows
High productivity (95th percentile)	0.455	0.716	0.655	0.523	0.716	0.694	0.870	0.190	0.143	0.666
Average productivity (2015-2018)	0.301	0.716	0.433	0.523	0.716	0.694	0.828	0.206	0.108	0.686
Low productivity (2018)	0.187	0.716	0.270	0.523	0.716	0.694	0.793	0.221	0.075	0.704

As an initial cross check, demographic parameters for the female segment of the population were analyzed using a stage-based matrix model to determine stable age distributions as well as estimate the resulting lambda from the matrix model. The average productivity scenario resulted in a rate of decline (deterministic λ=0.83 from a stage-based matrix model of the female segment of the population) which is slightly higher than that observed by comparison of the 2015 and 2018 adult female calving ground survey estimates (λ=0.80). Estimates of trend from the demographic model were slightly higher than the observed difference between calving ground survey estimates, which accounts for this difference. The low productivity (2018) scenario resulted in a λ of 0.79 which is closer to the observed difference in adult female survey estimates.

The herd size estimate for 2018 (19,294) was used as the starting point for simulations with bull and cow numbers based on the fall bull cow ratio of 2018 (0.38). A stable age distribution was assumed. Harvest levels of 0-950 were considered with an additional harvest level of 2,000 to demonstrate the effects of a large-scale harvest. Simulations were kept to a short interval of three years (2018-2021) as the herd's demography has changed dynamically since 2010. In addition, population surveys have been carried out on a three-year interval in recent years.

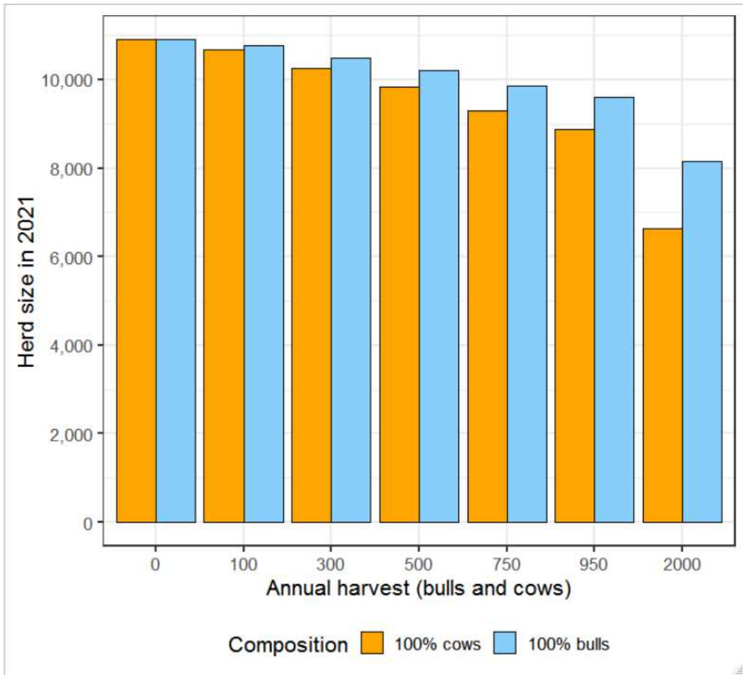

Figure 37: Projected herd size of the Bluenose-East herd in 2021 with various levels of harvest and harvest sex ratio of 100 percent bulls and 100 percent cows. Key assumptions: cow survival rate of 0.716 and average calf productivity of 0.301 (Table 27). Further simulations conducted across the range of observed productivity levels are given in Appendix 4.

Figure 37 shows projected herd size in 2021 (y-axis) across a range of harvest levels from 0-2,000 caribou/year (x-axis) and with harvest either 100 percent cows or 100 percent bulls in the harvest. Projections suggest that the herd would almost be halved again in 2021 to about 11,000 caribou with moderate productivity and 0 harvest, if recent demographic indicators stay the same. At low harvest levels of 100-300, incremental effects of harvest on herd size are limited because the scale of the harvest is small in relation to herd size (100 is 0.5 percent of the herd of 19,300 and 300 is 1.6 percent of this herd size). As the harvest level increases, the effect on herd size in 2021 increases. At the highest harvest level of 2,000 caribou/year and 100 percent cows, projected herd size in 2021 approaches 6,000-8000 caribou or 30-40 percent the size of the 2018 estimate. The effects of a cow-focused harvest vs. a bull-focused harvest are most pronounced at higher harvest levels and they increase with time.

A more detailed description of the model and predictions is given in Appendix 4. This includes simulations across a full range of observed levels of productivity.

DISCUSSION

Results from the Bluenose-East 2018 calving photo survey documented a significant decline in adult and breeding females and an overall decline in the herd since the 2015 calving ground survey, and a continuing decline since 2010 at an annual rate of decline of about 20 percent. We suggest that this decline is not attributed to poor survey methods or sampling. The caribou counted on the visual blocks may have under-estimated caribou in those blocks somewhat due to the patchy snow conditions and relatively low sightability, but 90 percent of the caribou estimated on the survey area were from the two photo blocks, where extra time spent searching photos and the double observer check suggested that a very high proportion of the caribou were found. An analysis of the herd's demography using multiple data sources suggests that low calf productivity in 2018 (Figure 34) as indicated by declining calf survival rates and pregnancy rates, combined with low adult female survival rates (Figure 35) both contributed to the continuing decline of the Bluenose-East herd. Harvest as estimated/reported for 2016-2017 and 2017-2018 was relatively small and likely contributed little to the most recent decline. Based on available data, the switching of collared female caribou between the Bluenose-East and neighbouring calving grounds was very low (Figure 29) and therefore changes in abundance are not attributable to movement to other calving grounds.

The decline in breeding females, coupled with the low estimated survival rates and low recent calf:cow ratios is cause for serious concern. In general, barren-ground caribou herds have a high probability of declining, if cow survival rates are below 80-85 percent (Crête et al. 1996, Boulanger et al. 2011); results of the IPM analysis in this study suggest that survival levels of 0.84-0.92 are needed (Figure 35) for stability given the range of productivity levels observed for the Bluenose-East herd (Figure 34). Low natural survival rates may reflect significant predation by wolves and bears (Haskell and Ballard 2007). Cyclical patterns in abundance of migratory caribou herds may also reflect the influence of large-scale weather patterns on vegetation and range conditions (Joly et al. 2011); declines of multiple NWT caribou herds from 2,000 to 2006-2008 in part reflected late calving and sustained low calf recruitment (Adamczewski et al. 2009, Adamczewski et al. 2015). A recent study (Boulanger and Adamczewski 2017) suggested that high summer drought and warble fly indices on the Bathurst and BNE ranges may in part have contributed to low pregnancy rates in some years; for example, very high drought and warble fly indices for both herds in 2014 were followed by low percentages of breeding females in both herds in June 2015. These results are further supported by the Bayesian analysis that found correlations between warble fly indices and calf survival, and June temperature and cow survival based upon estimates between 2008 and 2016.

Monitoring Recommendations

As a result of the significant declines in the Bluenose-East and Bathurst herds documented by 2018 calving photo surveys, the TG and GNWT ENR submitted joint management proposals for each herd to the WRRB in January 2019. While the WRRB has yet to determine what management actions and monitoring it will recommend, we include here the revised and increased monitoring and research included in the two proposals.

1. Calving photo surveys every two years, an increase in survey frequency from the three-year interval that has been used since about 2006. Population estimates from these surveys are key benchmarks for management decisions.
2. Annual composition surveys in June, October and late winter (March/April) to monitor initial calf productivity, survival through the first four to five months, and survival to nine to ten months in late winter. Results in 2018 suggested that initial fecundity was high for the BNE herd (83 percent breeding females) but by late October the calf:cow ratio had dropped to 25 calves:100 cows, far below recruitment and productivity needed for a stable population. Annual fall surveys will also allow close monitoring of the bull:cow ratio that has been decreasing in this herd.
3. An increase in numbers of collars on the BNE herd (and the Bathurst herd) from 50 (30 cows, 20 bulls) to 70 (50 cows, 20 bulls). This will improve estimation of annual cow survival rates and improve monitoring of herd distribution and harvest management, along with many other uses for collar information. Assessment of collar fate is essential to obtain unbiased survival estimates.
4. Suspension of reconnaissance surveys on the calving grounds. Although reconnaissance surveys on the calving grounds in years between photo surveys generally tracked abundance of cows on the calving grounds, the variance on these surveys has been high. In particular, results of the June 2017 reconnaissance survey on the BNE calving ground suggested that the herd's decline had ended and the herd had increased substantially, while the 2018 photo survey showed that in reality the herd's steep decline had continued.
5. Increased support for studies of predator abundance and predation rates, as well as studies of factors affecting range condition, caribou productivity and health.
6. Increased support for on-the-land traditional monitoring programs like the Tłı̨chǫ Boots-on-the-Ground program (Tłı̨chǫ Research and Training Institute 2017) that provide insights into caribou health and the influence of weather and other factors on caribou.

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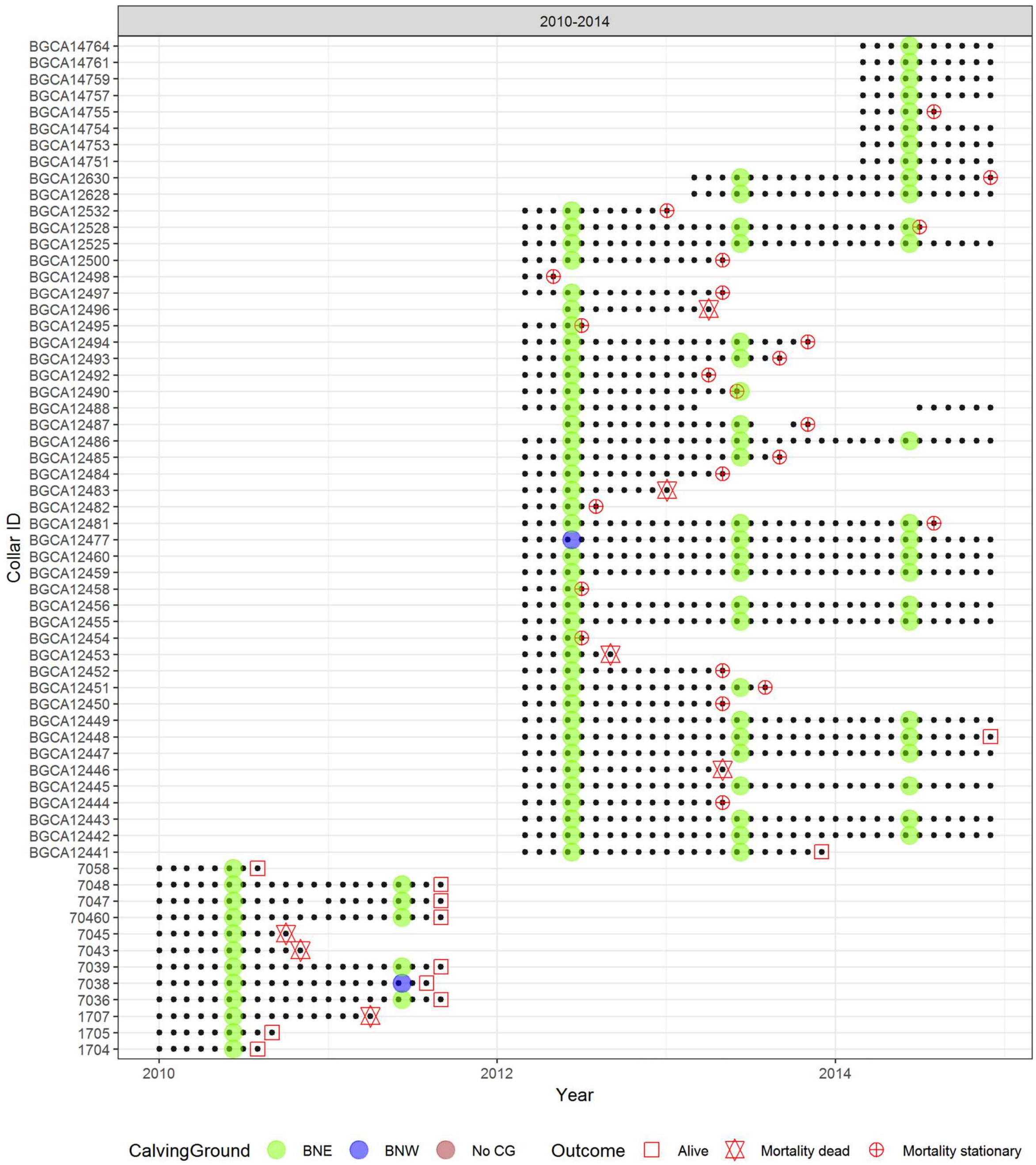
Appendix 1: Double observer visual model observer pairings

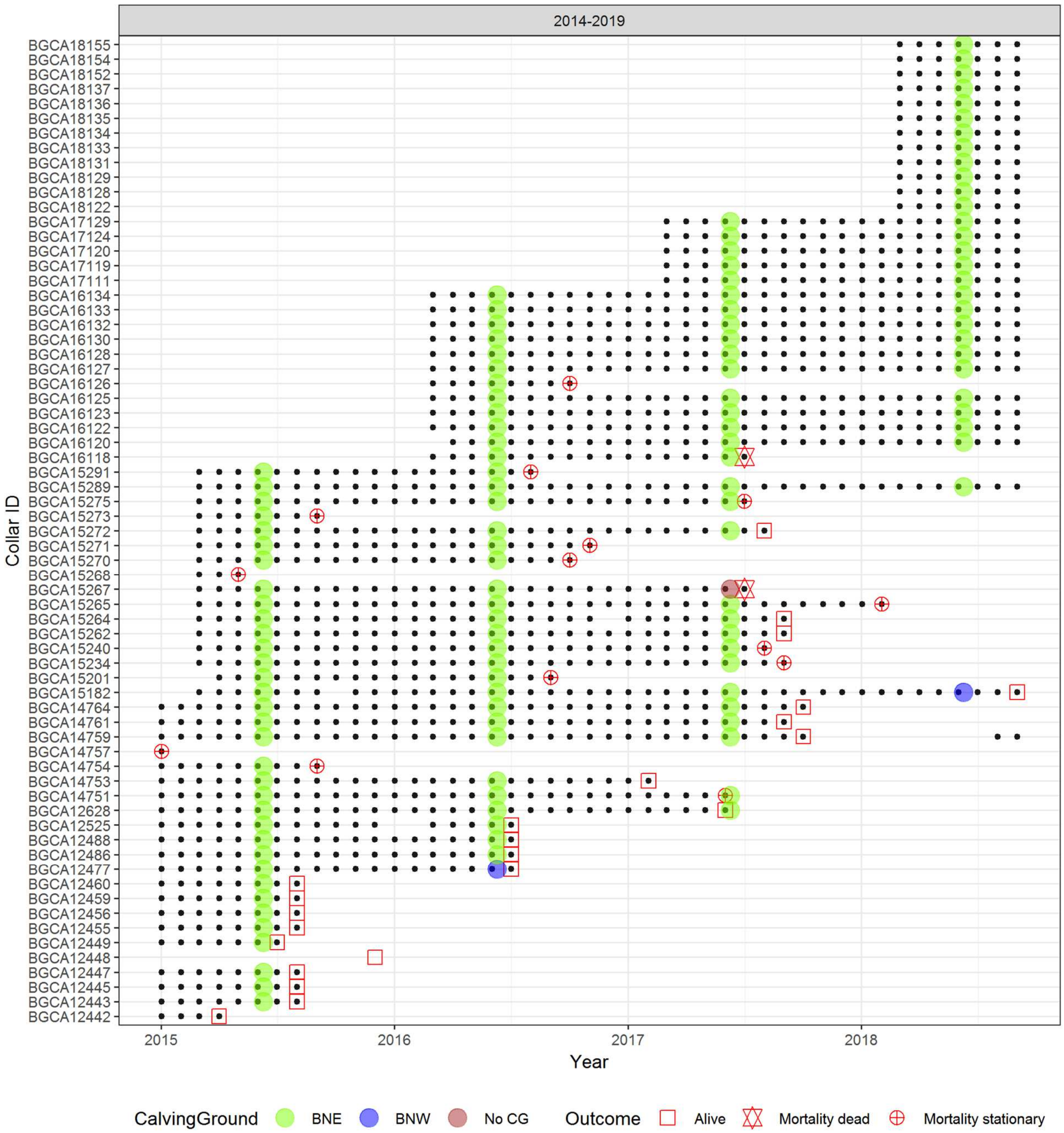
Double observer pairings with associated summary statistics.

Observer Information			Frequencies				Probabilities	
Pair No	**Pooled Pair no.**	**Notes**	**Secondary**	**Primary**	**Both**	**Total observations**	**Single ob p**	**Double ob p**
1	1	did not switch	5	6	14	25	0.80	0.96
2	2		6	3	16	25	0.76	0.94
3	2		0	0	1	1	1.00	1.00
4	3		1	4	11	16	0.94	1.00
5	3		6	10	16	32	0.81	0.96
6	4	did not switch	11	8	17	36	0.69	0.91
7	5	did not switch	14	17	48	79	0.82	0.97
8	6		18	19	46	83	0.78	0.95
9	6		17	20	38	75	0.77	0.95
10	7		16	4	23	43	0.63	0.86
11	7		5	6	8	19	0.74	0.93
12	8		0	2	3	5	1.00	1.00
13	8		20	3	20	43	0.53	0.78
14	9		5	1	7	13	0.62	0.85
15	9		20	18	42	80	0.75	0.94
16	9	pooled with 9	1	0	0	1	0.00	0.00
17	10		14	3	16	33	0.58	0.82
18	10		1	3	0	4	0.75	0.94
19	11	did not switch	10	9	41	60	0.83	0.97
20	12		0	0	1	1	1.00	1.00
21	12	pooled with 12	0	0	3	3	1.00	1.00
22	12		9	1	20	30	0.70	0.91

Appendix 2: Bluenose-East Collared Female Collar Histories

The following charts detail the histories of collared caribou in the Bluenose-East herd including monthly locations (black dots), presence on calving grounds (as indicated by mean location on June 15), and fate. Fates include alive releases (collar released when caribou was alive and therefore the record was censored at the last location), known dead (stationary collar was directly determined to be a mortality due to harvest or other factors) and stationary dead (collar became stationary before its end date and a mortality was inferred).




2014-2019
Collar ID
Year
2015
2016
2017
2018
CalvingGround
BNE
BNW
No CG
Outcome
Alive
Mortality dead
Mortality stationary

Appendix 3: Bayesian IPM Details

This appendix details the development of the Bayesian IPM analysis. The primary IPM R coding was developed by Joe Thorley (Poisson Consulting, poissonconsulting.ca) in collaboration with John Boulanger (Thorley and Boulanger 2019). The underlying demographic model used was similar to the OLS model used in previous analyses (Boulanger et al 2011). The primary development was to evolve model fitting to a more robust Bayesian IPM state space approach. The objective of this appendix is to provide a brief description of the model used in the analysis rather than a complete description of the Bayesian model approach. Readers interested in the Bayesian modeling approach should consult Kery and Schaub (2011) which is an excellent introduction to Bayesian analysis.

Data Preparation

The estimates of key population statistics with SEs and lower and upper bounds were provided in the form of a csv spreadsheet and prepared for analysis using R version 3.5.2 (R Core Team 2018).

Statistical Analysis

Model parameters were estimated using Bayesian methods. The Bayesian estimates were produced using JAGS (Plummer 2015). For additional information on Bayesian estimation the reader is referred to McElreath (2016).

Unless indicated otherwise, the Bayesian analyses used normal and uniform prior distributions that were vague in the sense that they did not constrain the posteriors (Kery and Schaub 2011, p. 36). The posterior distributions were estimated from 1,500 Markov Chain Monte Carlo (MCMC) samples thinned from the second halves of three chains (Kery and Schaub 2011, pp. 38–40). Model convergence was confirmed by ensuring that the split potential scale reduction factor $\hat{R} \leq 1.05$ (Kery and Schaub 2011, p. 40) and the effective sample size (Brooks et al. 2011) ESS ≥ 150 for each of the monitored parameters (Kery and Schaub 2011, p. 61). In addition, trace plots of Markov Chains and the posterior distributions were inspected to further check convergence and symmetry of estimated parameter distributions.

The sensitivity of the estimates to the choice of priors was examined by multiplying the standard deviations (sd) of the normal priors by ten and using the split $\hat{R}$ (after collapsing the chains) to compare the posterior distributions (Thorley and Andrusak 2017). An unsplit $\hat{R} \leq 1.1$ was taken to indicate low sensitivity.

The parameters are summarized in terms of the point *estimate*, *sd*, the *z-score*, *lower* and *upper* 95 percent confidence/credible limits (CLs) and the *p-value* (Kery and Schaub 2011, p 37 and 42). The estimate is the median (50^{th} percentile) of the MCMC samples, the z-score is mean/sd and the 95 percent CLs are the 2.5^{th} and 97.5^{th} percentiles. A p-value of 0.05 indicates that the lower or upper 95 percent CL is 0.

The results are displayed graphically in the main body of the report with 95 percent confidence/credible intervals (CIs, Bradford, Korman, and Higgins 2005). Data are indicated by points (with lower and upper bounds indicated by vertical bars) and estimates are indicated by solid lines (with CIs indicated by dotted lines).

The analyses were implemented using R version 3.5.2 (R Core Team 2018) and the mbr family of packages.

Model Descriptions

The data were analyzed using state-space population models (Newman et al. 2014).

Population

The fecundity, breeding cow abundance, cow survival, fall bull cow, fall calf cow and spring calf cow ratio data complete with SEs were analyzed using a stage-based state-space population model similar to Boulanger et al. (2011). Key assumptions of the female stage-based state-space population model include:

- Calving occurs on the 11^{th} of June (with a year running from calving to calving).
- Cow survival from calving to the following year varies randomly by year.
- Cow and bull survival is constant throughout the year.
- Calf survival to the following year (when they become yearlings) varies by season and randomly by year.
- Yearling survival to the following year is the same as cow survival.
- The sex ratio is 1:1.
- The proportion of breeding cows is the fecundity the previous year.
- Female yearlings are indistinguishable from cows in the fall and spring surveys.
- The number of calves in the initial year is the number of cows in the initial year multiplied by the product of the fecundity and cow survival in a typical year.
- The number of yearlings in the initial year is the product of the number of calves in the initial year and the calf survival in a typical year.
- The data are normally distributed with *sd* equal to their SEs.

Model Templates

The base R code used in the analysis is summarized below.

Population (R-code)

```
.model {
  bSurvivalCow ~ dnorm(0, 2^-2)
  bSurvivalBull ~ dnorm(0, 2^-2)
  bFecundity ~ dnorm(0, 2^-2)
  bSurvivalCalfSummerAnnual ~ dnorm(0, 2^-2)
  bSurvivalCalfWinterAnnual ~ dnorm(0, 2^-2)

  sSurvivalCowAnnual ~ dnorm(0, 1^-2) T(0,)
  sSurvivalCalfAnnual ~ dnorm(0, 1^-2) T(0,)
  for(i in 1:nAnnual){
    bSurvivalCowAnnual[i] ~ dnorm(0, sSurvivalCowAnnual^-2)
    bSurvivalCalfAnnual[i] ~ dnorm(0, sSurvivalCalfAnnual^-2)

    logit(eSurvivalCow[i]) <- bSurvivalCow + bSurvivalCowAnnual[i]
    logit(eSurvivalBull[i]) <- bSurvivalBull
    logit(eFecundity[i]) <- bFecundity
    logit(eSurvivalCalfSummerAnnual[i]) <- bSurvivalCalfSummerAnnual + bSurvivalCalfAnnual[i]
    logit(eSurvivalCalfWinterAnnual[i]) <- bSurvivalCalfWinterAnnual + bSurvivalCalfAnnual[i]
  }
  bBreedingCows1 ~ dnorm(50000, 10000^-2) T(0,)
  logit(eFecundity1) <- bFecundity
  logit(eSurvivalCalfSummerAnnual1) <- bSurvivalCalfSummerAnnual
  logit(eSurvivalCalfWinterAnnual1) <- bSurvivalCalfWinterAnnual

  bCows[1] <- bBreedingCows1 / eFecundity1
  bBulls[1]<- bCows[1] * 1/2
  bCalves[1] <- bBreedingCows1
  bYearlings[1] <- bCalves[1] * eSurvivalCalfWinterAnnual1^(154/365) *
eSurvivalCalfWinterAnnual1^(211/365)

  bSpringCalfCow[1] <- bCalves[1] / (bCows[1] + bYearlings[1] / 2)

  for(i in 2:nAnnual){
    bCows[i] <- (bCows[i-1] + bYearlings[i-1] / 2) * eSurvivalCow[i-1]
    bBulls[i] <- bBulls[i-1] * eSurvivalBull[i-1] + (bYearlings[i-1] / 2) * eSurvivalCow[i-1]
    bCalves[i] <- bCows[i-1] * eSurvivalCow[i-1] * eFecundity[i-1]
    bYearlings[i] <- bCalves[i-1] * eSurvivalCalfSummerAnnual[i-1]^(154/365) *
eSurvivalCalfWinterAnnual[i-1]^(211/365)
```

```
}

for(i in 1:nAnnual) {
  eFallCor[i] <-  FallCalfCowDays[i] / 365

  eFallCows[i] <- (bCows[i] + bYearlings[i] / 2) * eSurvivalCow[i]^eFallCor[i]
  eFallBulls[i] <- (bYearlings[i] / 2) * eSurvivalCow[i]^eFallCor[i] + bBulls[i] * eSurvivalBull[i]^eFallCor[i]
  eFallCalves[i] <- bCalves[i] * eSurvivalCalfSummerAnnual[i]^eFallCor[i]

  bFallBullCow[i] <- eFallBulls[i] / eFallCows[i]
  bFallCalfCow[i] <- eFallCalves[i] / eFallCows[i]
}

for(i in 2:nAnnual) {
  eSpringCows[i] <- (bCows[i-1] + bYearlings[i-1] / 2) * eSurvivalCow[i-1]^(SpringCalfCowDays[i] / 365)
  eSpringCalves[i] <- bCalves[i-1] * eSurvivalCalfSummerAnnual[i-1]^(154/365) *
eSurvivalCalfWinterAnnual[i-1]^((SpringCalfCowDays[i] - 154) / 365)

  bSpringCalfCow[i] <- eSpringCalves[i] / eSpringCows[i]
}

for(i in SurvivalAnnual) {
  CowSurvival[i] ~ dnorm(eSurvivalCow[i], CowSurvivalSE[i]^-2)
}

for(i in CowsAnnual) {
  BreedingProportion[i] ~ dnorm(eFecundity[i], BreedingProportionSE[i]^-2)
  eBreedingCows[i] <- bCows[i] * eFecundity[i]
  BreedingCows[i] ~ dnorm(eBreedingCows[i], BreedingCowsSE[i]^-2)
}

for(i in FallBCAnnual) {
  FallBullCow[i] ~ dnorm(bFallBullCow[i], FallBullCowSE[i]^-2)
}

for(i in FallAnnual) {
  FallCalfCow[i] ~ dnorm(bFallCalfCow[i], FallCalfCowSE[i]^-2)
}

for(i in SpringAnnual) {
  SpringCalfCow[i] ~ dnorm(bSpringCalfCow[i], SpringCalfCowSE[i]^-2)
}
..
```

Parameter Estimates

The Bayesian model estimated principal parameters pertaining to the mean estimates of fecundity, bull survival, calf survival and cow survival. In addition, temporal variation in calf survival and cow survival were estimated as random effects (Table 1).

Table 1. Bayesian IPM state space model coefficients. Parameters are given on the logit scale (which is then transformed to the probability scale using a logit transform). Parameter significance is determined by overlap of confidence limits with 0. The parameters are summarized in terms of the point *estimate*, *sd*, the *z-score*, *lower* and *upper* 95 percent confidence/credible limits (CLs) and the *p-value* (Kery and Schaub 2011, p 37 and 42). The estimate is the median (50^{th} percentile) of the MCMC samples, the z-score is mean/sd and the 95 percent CLs are the 2.5^{th} and 97.5^{th} percentiles. A p-value of 0.05 indicates that the lower or upper 95 percent CL is 0.

Term	Estimate	sd	zscore	lower	upper	pvalue
Main effects						
bFecundity	0.831	0.141	5.931	0.571	1.126	0.000
bSurvivalBull	0.092	0.095	0.955	-0.100	0.272	0.337
bSurvivalCalfSummerAnnual	-0.683	0.354	-1.913	-1.380	0.041	0.062
bSurvivalCalfWinterAnnual	0.421	0.362	1.177	-0.275	1.162	0.228
bSurvivalCow	1.377	0.317	4.393	0.800	2.068	0.000
Random effects						
sSurvivalCalfAnnual	0.887	0.250	3.704	0.557	1.526	0.000
sSurvivalCowAnnual	0.932	0.286	3.407	0.547	1.661	0.000

Model fit was judged using r-hat value which suggested adequate model convergence. In addition, the distribution of parameter estimates was inspected to assess model convergence.

Table 2. Model summary. N is the number of parameters, nchains is the number of Markov chains used, nthin is the number of Markov chain samples that were thinned, ess is the effective sample size, rhat is the rhat convergence metric and convergence is the score based on effective sample size and number of parameters in the model.

n	K	nchains	niters	nthin	ess	rhat	converged
12	8	3	3000	300	5328	1.00	TRUE

Unsplit R-hat values were used to assess if choice of prior distribution influenced the posterior distribution of parameter estimates.

Table 3. Split R-hat values indicating sensitivity of posterior distributions to the choice of priors.

Term	rhat
bBreedingCows1	1.005
bFecundity	1.001
bSurvivalBull	1.004
bSurvivalCalfSummerAnnual	1.000
bSurvivalCalfWinterAnnual	1.002
bSurvivalCow	1.019
sSurvivalCalfAnnual	1.030
sSurvivalCowAnnual	1.041

The Bayesian model generated yearly estimates of demographic parameters as well as field measurements which were used in the fitting of the model. These estimates are detailed in Table 4. Most of the actual estimates are shown in Figures 32-36 of the main report.

Table 4. Parameter descriptions for estimates generated by the model.

Parameter	Description
Annual	The year as a factor
bCows1	The number of cows in the initial year
bFecundity	The proportion of cows breeding in a typical year
BreedingCows[i]	The data point for the number of breeding cows in the i^{th} year
BreedingCowsSE[i]	The SE for BreedingCows[i]
BreedingProportion[i]	The data point for the proportion of cows breeding in the i^{th} year
BreedingProportionSE[i]	The SE for BreedingProportionSE[i]
bSurvivalBull	The log-odds bull survival in a typical year
bSurvivalCalfAnnual[i]	The random effect of the i^{th} Annual on bSurvivalCalfSummerAnnual and bSurvivalCalfWinterAnnual
bSurvivalCalfSummerAnnual	The log-odds summer calf survival if it extended for one year
bSurvivalCalfWinterAnnual	The log-odds winter calf survival if it extended for one year
bSurvivalCow	The log-odds cow (and yearling) survival in a typical year
bSurvivalCowAnnual[i]	The random effect of the i^{th} Annual on bSurvivalCow
CowSurvival[i]	The data point for cow survival from the $i\text{-}1^{th}$ year to the i^{th} year
CowSurvivalSE[i]	The SE for CowSurvivalSE[i]
FallBullCow[i]	The data point for the bull cow ratio in the fall of the i^{th} year
FallBullCowSE[i]	The SE for FallBullCow[i]
FallCalfCow[i]	The data point for the calf cow ratio in the fall of the i^{th} year
FallCalfCowSE[i]	The SE for FallCalfCow[i]
SpringCalfCow[i]	The data point for the calf cow ratio in the spring of the i^{th} year
SpringCalfCowSE[i]	The SE for SpringCalfCow[i]
sSurvivalCalfAnnual	The SD of bSurvivalCalfAnnual
sSurvivalCowAnnual	The SD of bSurvivalCowAnnual

A sensitivity analysis was conducted to determine the effect of a declining calf survival trend and the including of the 2011 caribou year survival estimate which was higher than other estimates which may have been influenced by lack of collars for the winter months of 2011-2012 (Figure 30). In general, estimates were minimally affected by either of these alternative model runs (Figure 1) demonstrating the robustness of random effect models to smaller scale underlying trends in the model (calf survival) or individual historic data points (the 2011 survival rate estimate).

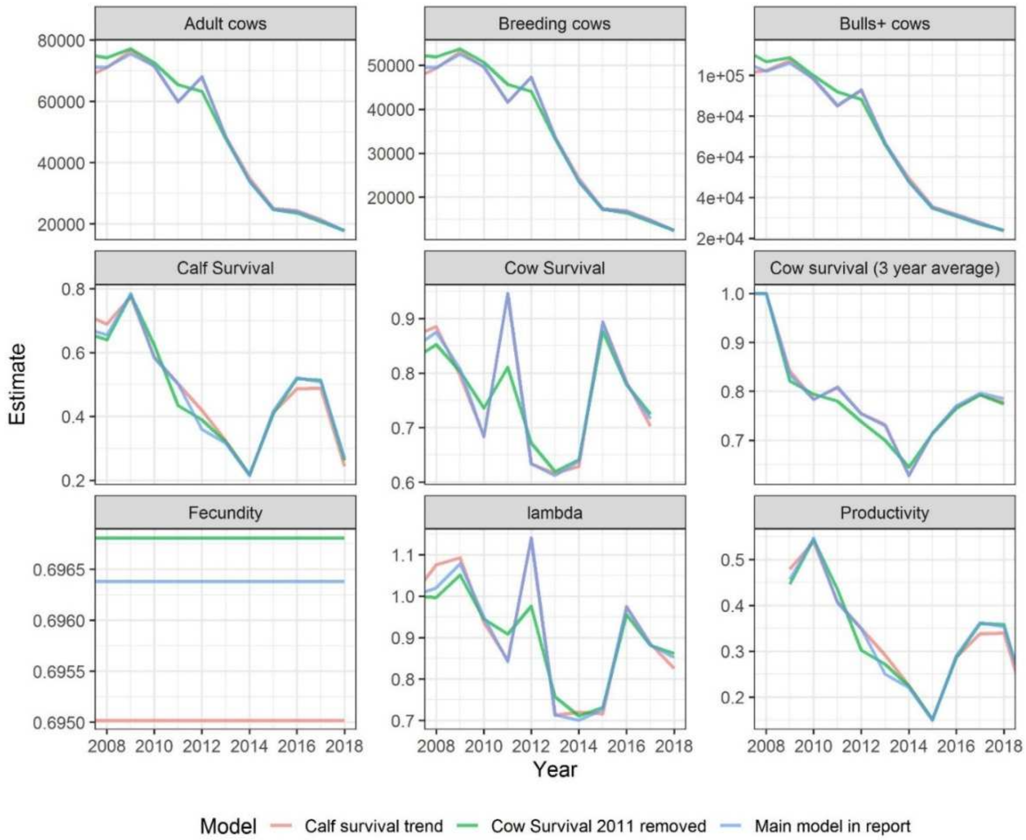


Figure 1: Comparison of model predictions of the main model used in report to a model with calf survival trends and the main model run without the 2011 collared cow survival data point.

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Appendix 4: Updated Harvest Simulations for the Bluenose-East Herd

This appendix briefly summarizes harvest simulations for the Bluenose-East herd carried out in winter 2018-2019 following the June 2018 calving photo survey for this herd. A previous version was dated January 2, 2019. The present summary uses direct estimates from the demographic model analyses described in the main body of this survey report, which were finalized after the initial harvest simulations had been completed. Harvest modeling outcomes are very similar between the January 2, 2019 summary and this version; there are slight changes in a few parameters. We suggest that readers review the original harvest simulation report with a broad range of modeling scenarios (Boulanger and Adamczewski 2016), the 2015 Bluenose-East calving ground survey report (Boulanger et al. 2016), the original Bathurst herd demographic model paper (Boulanger et al. 2011) and the section on demographic modeling of the current report, for more details on the approach used in simulations.

The IPM analysis detailed in the main report was used to produce updated estimates of demographic parameters based on the recent calving ground survey results, recent collar data and other demographic indicators. In addition, harvest pressure was reduced between 2015 and 2018 from levels 2010-2014, thus it is likely that herd decline was less influenced by harvest during the more recent interval. Updated parameter estimates were used in this updated harvest modeling.

The methodology used for simulations followed the original generic harvest model approach (Boulanger and Adamczewski 2016). In review, the harvest model assumes that harvest mortality is additive to natural mortality each year. It assumes that harvest occurs in the new year (January) for both bulls and cows with mortality of cows not affecting calf survival in the year the cow is shot (it basically assumes that the calf has weaned at that point).

We note that the main objective of simulations is to provide an assessment of relative risk of accelerated decline of the herd at various harvest levels as opposed to firm predictions of herd status in 2021. It is challenging to assess future demographic rates and therefore we suggest that the results of simulations be used with ongoing demographic monitoring to assess herd status and response to harvest.

The following simulations were considered. Simulations with estimated cow survival levels in 2018 (minimal harvest, female survival (Sf=0.716: CI=0.6-0.83) were considered across a range of calf productivity levels. This estimate of cow survival assumes low harvest pressure from 2017-2018 so that the difference in natural and harvest-influenced survival is minimal. This assumption is reasonable since harvest levels were relatively low (2015-2016, ≈800 caribou, 2016-2017 ≈300 caribou, 2017-2018 ≈200 caribou) in the 2015-2018 interval.

Variation in productivity was simulated by varying calf survival while keeping fecundity constant. This scenario most closely follows the results of the IPM analysis where fecundity was held constant with yearly variation in calf survival estimated using a random effects model (Figures 33 and 34 in main report). The values of calf survival simulated, and levels of productivity simulated follow the range of values estimated from the 2008-2018 data set. We based the average productivity scenario on the last three years given that this level of productivity will have the higher influence on future herd size of the Bluenose-East herd. We note that the assumption of constant fecundity is based partially on restrictions of the data set (n=4 estimates of proportion females breeding-Figure 32 in main report).

Estimates of demographic parameters in 2018 were relatively similar to those from 2015. The estimate of cow survival in 2018 of 0.716 was similar to that estimated from the 2015 analysis of 0.708. The mean cow survival rate 2015-2018 was 0.76, however the overall trend suggested a declining recent trend in cow survival 2015-2018 and therefore the 2018 estimate was used for simulations. The average level of calf productivity (0.30) from 2015-2018 was slightly higher than the previous average calf productivity of 0.26 (from 2013-2015). The lower calf productivity scenario (0.187) was based on the 2018 estimate of calf productivity. Bull survival in 2018 was estimated at 0.523, which was lower than the estimate of 0.58 in 2015. Simulations were also run at the 2015 bull survival level of 0.58 to assess the sensitivity of estimates of bull cow ratio to this change in bull survival.

Table 1: Demographic scenarios considered in harvest simulations for the Bluenose-East caribou herd in 2018. S_f = cow survival rate; S_c = calf survival rate; S_m = bull survival rate; S_y = yearling survival rate; F_a*S_c = calf productivity as the product of pregnancy and calf survival rates.

Scenario	Productivity	Survival				Pregnancy Rate	λ (cows only)	Stable Age Distribution Proportions at 2018		
	F_a*S_c	Cow (S_f)	Calf (S_c)	Bull (S_m)	Yearling (S_y)	F_a		Calves	Yearlings	Cows
High productivity (95th percentile)	0.455	0.716	0.655	0.523	0.716	0.694	0.870	0.190	0.143	0.666
Average productivity (2015-2018)	0.301	0.716	0.433	0.523	0.716	0.694	0.828	0.206	0.108	0.686
Low productivity (2018)	0.187	0.716	0.270	0.523	0.716	0.694	0.793	0.221	0.075	0.704

As an initial cross check, demographic parameters for the female segment of the population were analyzed using a stage-based matrix model to determine stable age distributions as well as estimate the resulting λ from the matrix model. The average productivity scenario resulted in a rate of decline (deterministic λ=0.83 from a stage-based matrix model of the female segment of the population) which is slightly higher than that observed by comparison of the 2015 and 2018 adult female calving ground survey estimates (λ=0.80). Estimates of trend from the demographic model were slightly higher than the observed difference between calving ground survey estimates, which accounts for this difference. The low productivity (2018) scenario resulted in a λ of 0.79 which is closer to the observed difference in adult female survey estimates.

The herd size estimate for 2018 (19,294) was used as the starting point for simulations with bull and cow numbers based on the fall bull cow ratio of 2018 (0.38). A stable age distribution was assumed. Harvest levels of 0-950 were considered with an additional harvest level of 2,000 to demonstrate the effects of a large-scale harvest. Simulations were kept to a short interval of three years (2018-2021) as the herd's demography has changed dynamically since 2010; In addition, population surveys have been carried out on a three-year interval in recent years. Results of the simulations are shown graphically.

Figure 1 shows projected herd size in 2021 across a range of harvest levels (x-axis) and percent bulls in the harvest. Projections suggest that the herd would almost be halved again in 2021 (top dashed line) to about 10,000 caribou with moderate productivity and 0 harvest, if recent demographic indicators stay the same. As the harvest level increases, the effect on herd size in 2021 increases. At the highest harvest level of 2,000 caribou/year, projected herd size in 2021 approaches 5,000 caribou or about one quarter the size of the 2018 estimate (the second dashed line). A harvest of primarily bulls offsets the effect of harvest to an extent; however, productivity needs to be higher to offset low cow survival rates regardless. The effects of a cow-focused harvest vs. a bull-focused harvest are most evident at higher harvest levels and they increase with time.

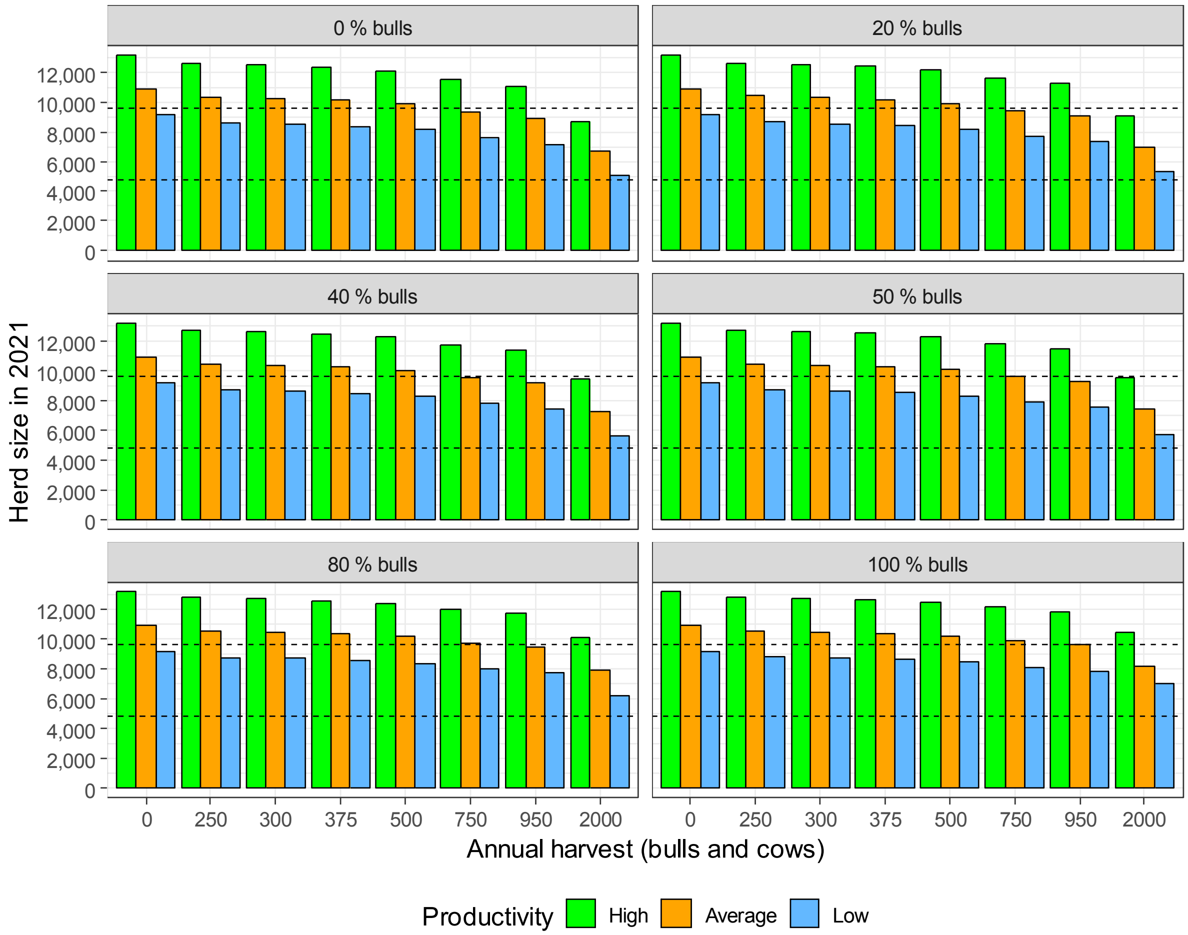

Figure 1: Projected Bluenose-East herd size in 2021, assuming a cow survival of 0.716 and three levels of calf productivity, across a range of harvest levels and percent bulls in the harvest. See Table 1 for the parameterization of each productivity level.

Figure 2 shows herd trajectories from 2018-2021 for each productivity scenario.

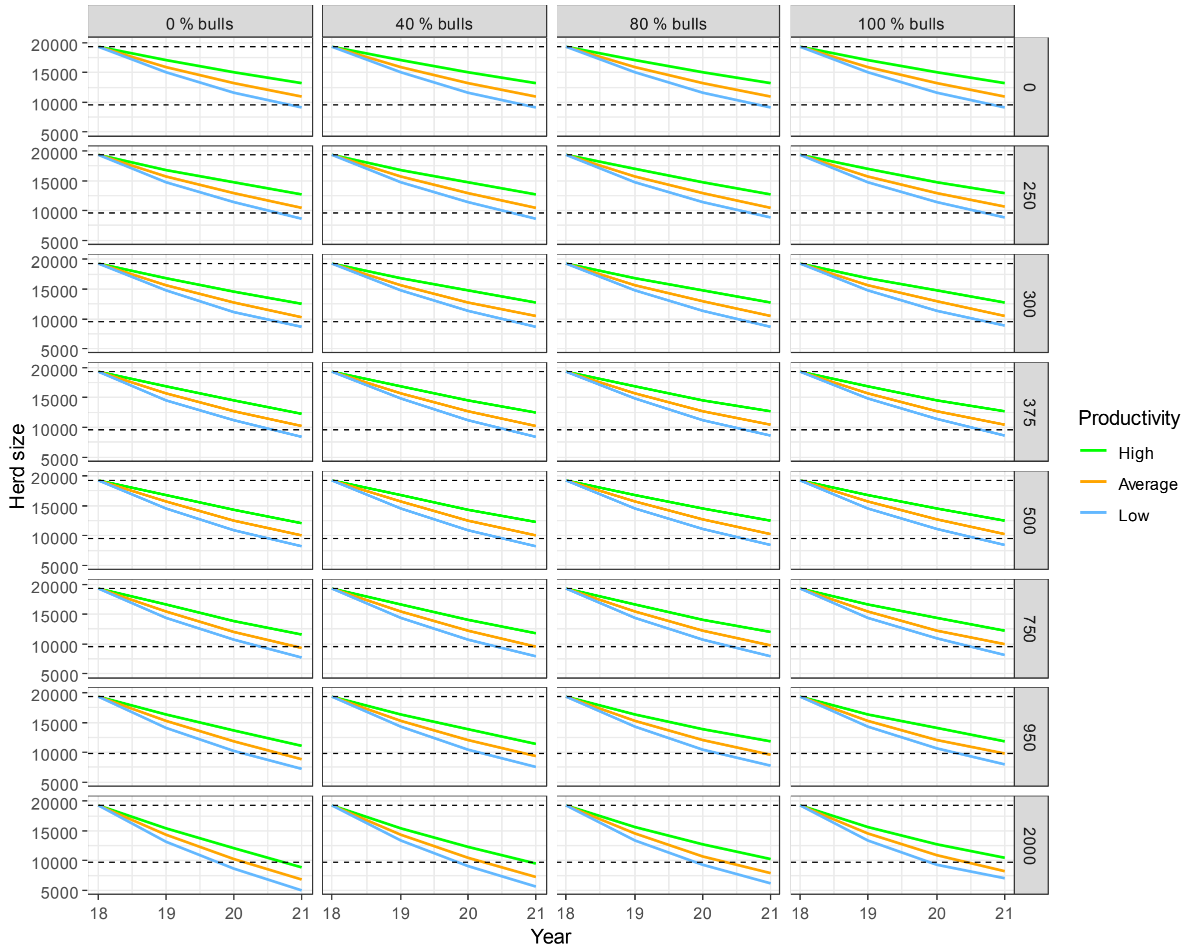

Figure 2: Projected herd trajectories for the Bluenose-East herd 2018-2021 assuming cow survival of 0.716 and three levels of calf productivity across a range of harvest levels and percent bulls in the harvest. See Table 1 for the parameterization of each productivity level.

One important point to consider with bull-dominated harvest is the effect on the bull-cow ratio. Figure 3 demonstrates the quick decline in bull-cow ratio at higher harvest levels when bulls are primarily harvested. The red line in this graph is a bull-cow ratio of 0.23 which is considered a preferred lower limit based roughly on other studies (Mysterud et al. 2002), although it is likely that all females would be bred even if the sex ratio was reduced further (Mysterud et al. 2002). At a harvest level of 300/year, the bull-cow ratio stays between the 2018 level and the lower limit regardless of productivity. When harvest is 2,000 per year, the modeled bull population in essence goes to 0 in 2020 with lower to moderate productivity. The bull cow ratio is inflated due to the decrease in cow numbers if cows are primarily harvested at higher harvest levels; ratios depend on the number in the denominator as well as the number in the numerator. In any case, it is unlikely that harvest of the herd after 2018 will be anywhere near this scale of bull or cow harvest, and increased monitoring proposed for the herd includes frequent (potentially annual) fall composition surveys that will monitor the bull:cow ratio.

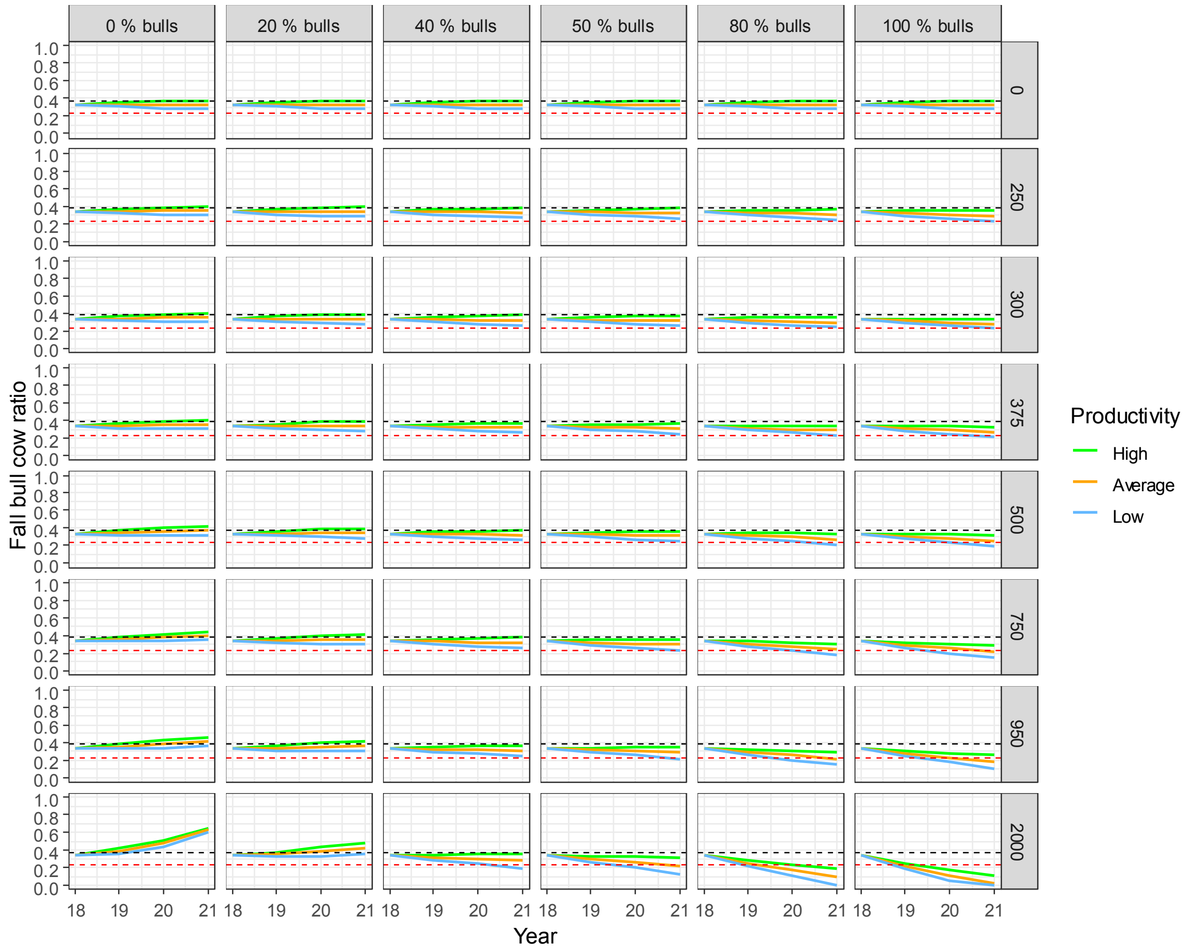

Figure 3: Projected bull-cow ratios in the Bluenose-East herd 2018-2021 assuming cow survival of 0.716 and bull survival of 0.523 and three levels of calf productivity, across a range of harvest levels and percent bulls in the harvest. See Table 1 for the parameterization of each productivity level.

Figure 4 shows predicted bull cow ratios in 2021 for the BNE herd; these are essentially the end-points of the changing ratios shown in Figure 3. Unless calf productivity is high, a reduction in bull cow ratio is projected due to the lower estimate of bull survival (0.523).

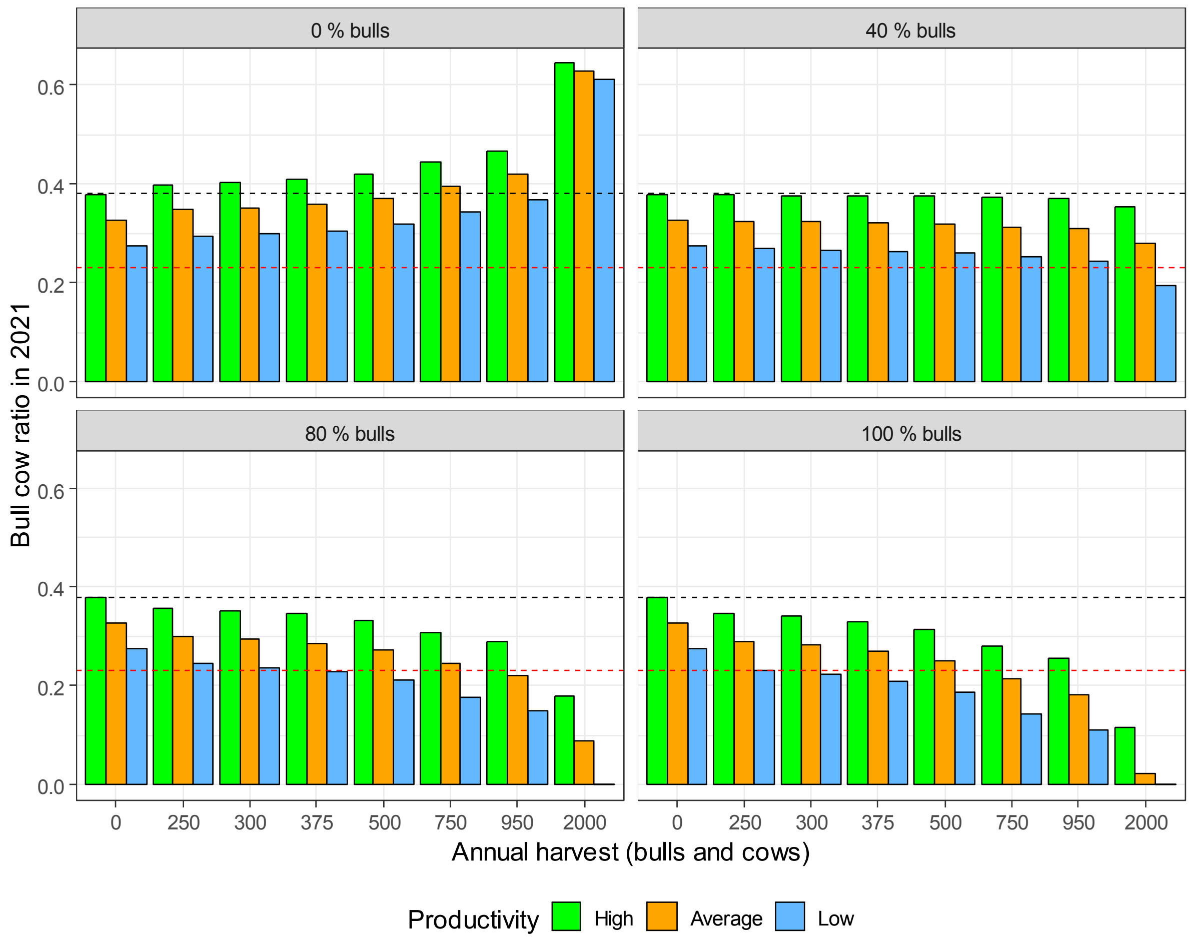

Figure 4: Projected bull-cow ratios in the Bluenose-East herd in 2021 assuming cow survival of 0.716 and bull survival of 0.523 and three levels of calf productivity, across a range of harvest levels and percent bulls in the harvest. See Table 1 for the parameterization of each productivity level.

Simulations with the previous slightly higher bull survival estimate of 0.58 from 2015 were also run to assess the sensitivity of harvest model predictions of bull cow ratio to bull survival, to compare results of projections at a bull survival of 0.523. It can be seen that in these simulations the projected bull cow ratios remain similar in 2021 to those observed in 2018 under the no harvest scenario.

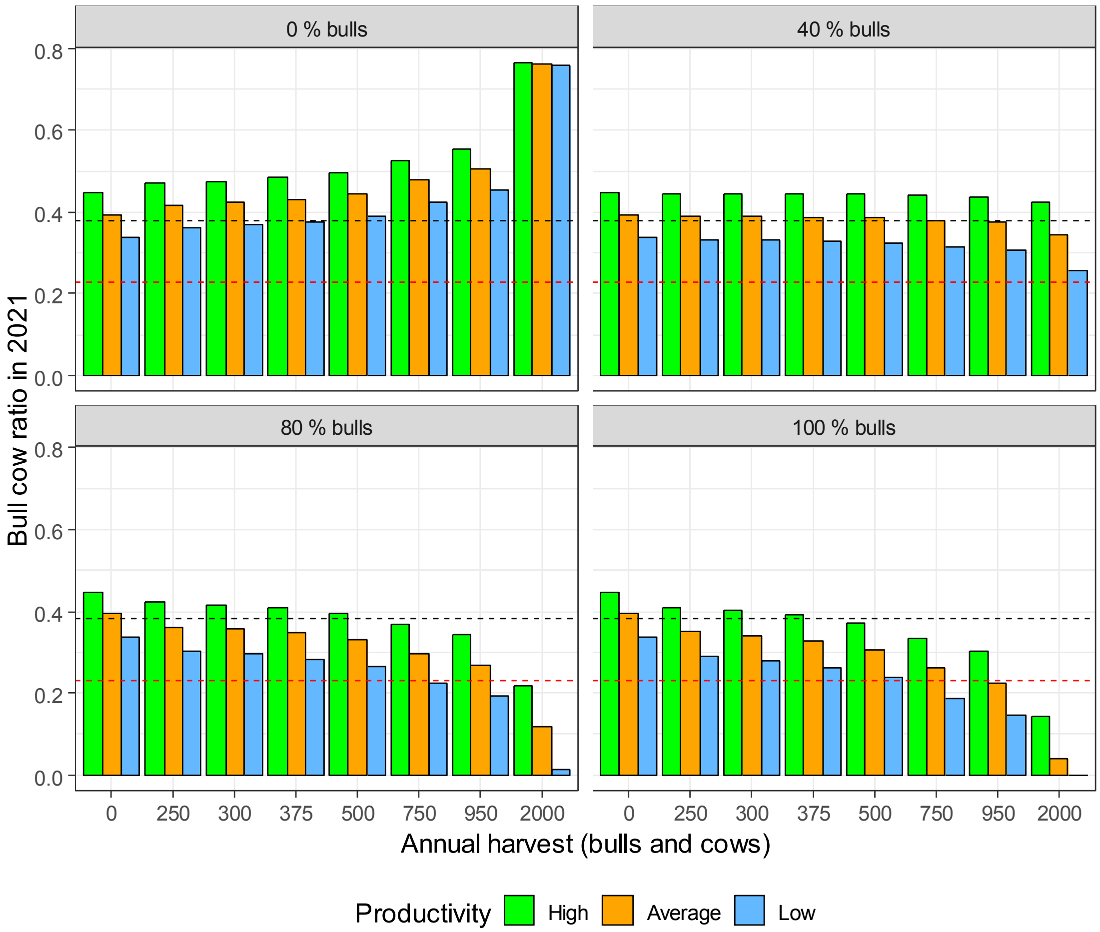

Figure 5: Projected bull cow ratios in the Bluenose-East herd in 2021, assuming cow survival of 0.716 and three levels of calf productivity and a bull survival of 0.58 (value from 2015 demographic model analysis). See Table 1 for the parameterization of each productivity level.

Why Do Low Harvest Levels have Minimal Effect on Herd Trajectories?

One question that has come up is the seemingly minimal effect of lower harvest levels on population trend. The main reason for this is that at these levels a relatively small proportion of the herd is being harvested as demonstrated in Figure 6, and thus harvest accounts for only a small proportion of the herd and mortality rates are predominantly natural. Once harvest level becomes higher (950 or higher) the proportion of the herd harvested increases as the herd declines. If the harvest remains at a constant number of caribou/year and the herd continues to decline, then the incremental effect of the harvest harvest-caused mortality keeps increasing and can lead to a downward acceleration. Then harvest adds substantially to the natural mortality rates. This effect was shown for the Bathurst herd in 2006-2009 (Boulanger et al. 2011), when harvest levels remained at 4,000-6,000/year as the herd declined rapidly. Although all harvest adds to decline if a herd is declining naturally, small-scale harvest rates have small incremental effects on a declining trend.

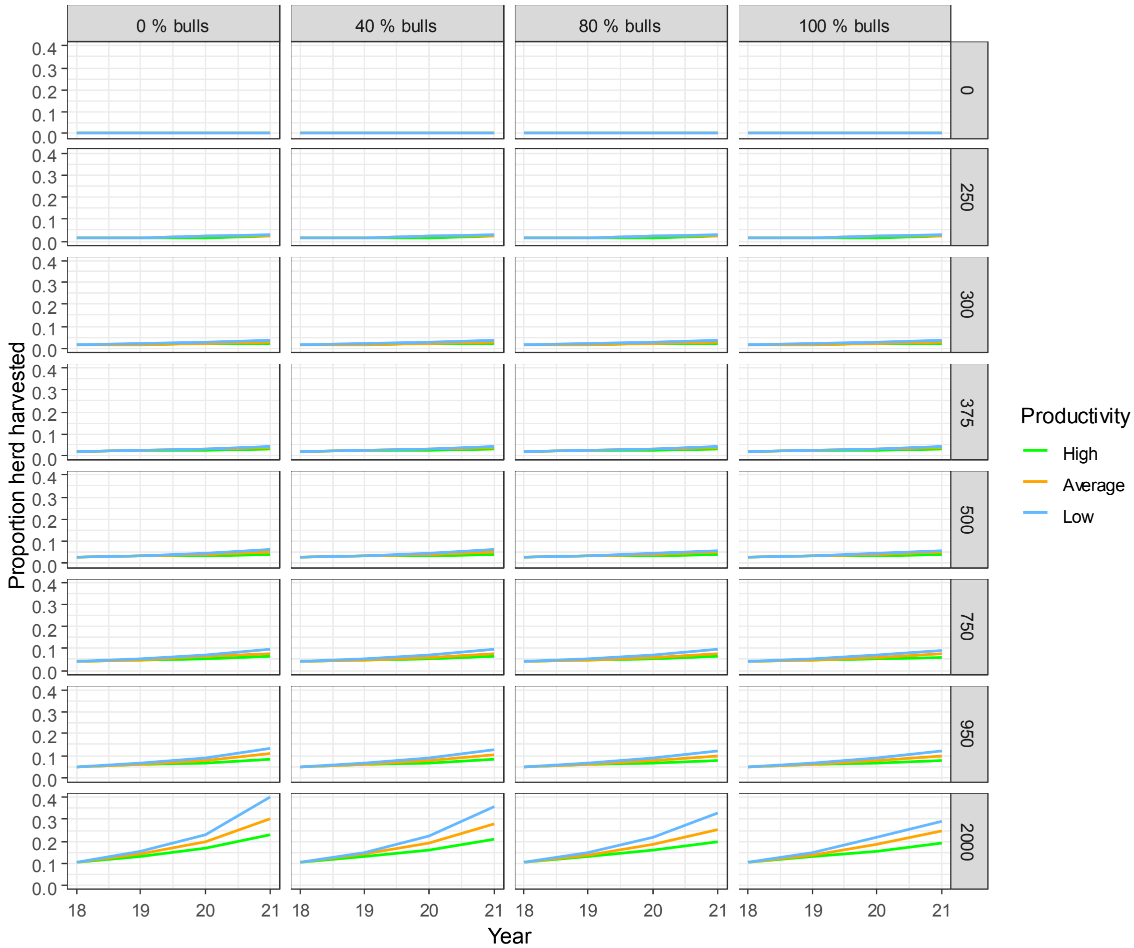

Figure 6: Proportion of the Bluenose-East herd harvested through 2021 across a range of harvest levels and proportion of the bulls in the harvest. See Table 1 for the parameterization of each productivity level.

In Figure 6 it can be seen that the proportion of herd harvested increases at a greater rate when the harvest is primarily cows. The reason for this is that harvest of cows reduces longer-term productivity of the herd through the reduction of future calves each cow would produce. For this reason, it is important to track proportion of cows (cow harvested/total cows) and proportion of bulls harvested (bulls harvested/total bulls) each year rather than just total harvest. Figure 7 provides total herd estimates subdivided by bulls and cows to further illustrate this point. It can be seen that at higher harvest levels (>750) a bull dominated harvest can adversely impact the bull population especially if productivity is low. This impact is also demonstrated by a substantial decrease in bull-cow ratios (Figures 3, 4) when bull harvest is higher.

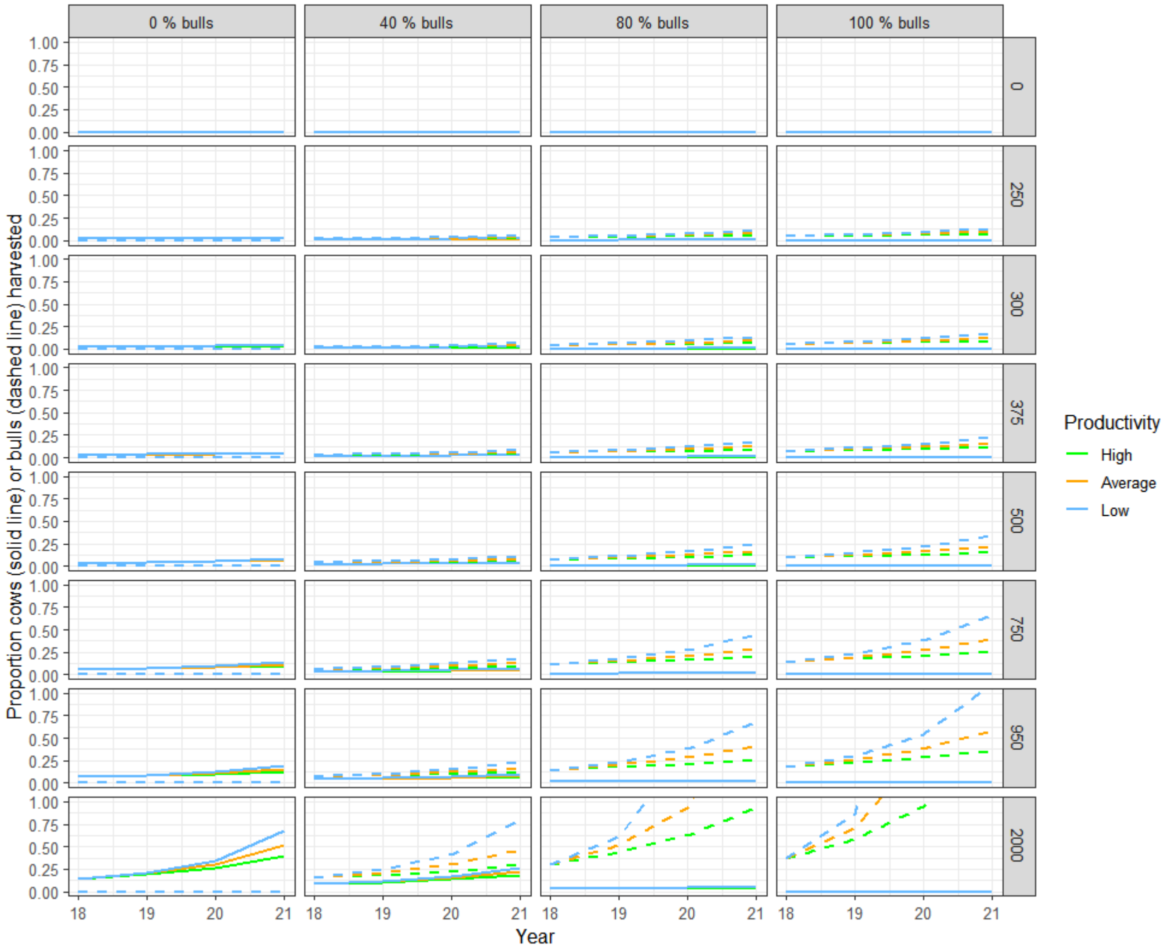

Figure 7: Proportion of bulls and cows harvested for each harvest and productivity scenario. This figure basically summarizes proportion harvested in Figure 6 by bulls and cows. See Table 1 for the parameterization of each productivity level.

Potential Future Analyses

These simulations illustrate the sensitivity of the bull cow ratio estimates to assumed bull survival. Estimates of bull survival from the demographic model are based on bull-cow ratios from fall surveys and are therefore indirect in nature. Collar-based estimates of bull survival could be used to further verify the indirect estimates from the IPM analysis.

Simulations with demographic variation could also be used to generate estimates of herd size in 2021 with confidence limits.

Literature cited (see main survey report).

Appendix 5: Trends in Calving Ground Size and Core Densities

This appendix provides additional information calving ground size, distribution of caribou on calving ground, and core calving ground densities in the Bluenose-East and Bathurst herd calving grounds based on reconnaissance survey and photo survey data. This appendix provides a summary of data from previous surveys as opposed to full documentation of methods used to define core calving areas. Readers should consult previous calving ground survey reports for the Bluenose-East (Adamczewski et al. 2014, Boulanger et al. 2014b, Boulanger et al. 2016, Adamczewski et al. 2017) for more details on each survey.

Methods

Trends in segment densities from reconnaissance surveys that occurred during photo surveys were initially assessed to infer distribution and aggregation of higher densities of caribou. Segments that were contained within core calving strata were included in the analysis. Data was plotted spatially and by segment density class.

Estimates of density based on photo survey data and core calving ground size (based on the area of survey strata) were used to estimate numbers of adult and breeding females. One potential issue with this approach is that the degree of aggregation of adult and breeding females varies among years, and therefore changes in the core area will be due to both changes in abundance, aggregation, and survey coverage. To explore this issue, a scaled estimate of core calving ground size based on the summation of the product of stratum areas and proportions of breeding and adult females was also considered as an index of core calving area. For example, if a 100 km^2 stratum had 20 percent breeding females, then its core area was estimated as 20 km^2. Each survey stratum area was estimated using this approach and summed for the survey year. Density estimates using this approach will be more robust to strata layout and composition each year. For example, this approach avoids the subjective inclusion or exclusion of survey strata areas for estimation of core areas and uses all the survey strata to estimate core area. However, the actual weighted density estimate will not directly pertain to a defined geographic area.

Results

Figure 1 displays reconnaissance segments that defined the core calving areas for the Bluenose-East herd during years that calving ground surveys were conducted (2010, 2013, 2015 and 2018). The distribution of higher density segments showed a trend toward shifting to the northwest over these years. There was also a strong trend toward fewer high density segments (at least 10 caribou/km^2) from 2010-2015, and none in 2018. The high density segments in 2010 to the south of Kugluktuk were partially influenced by higher densities of non-breeding cows, bulls and yearlings in this area.

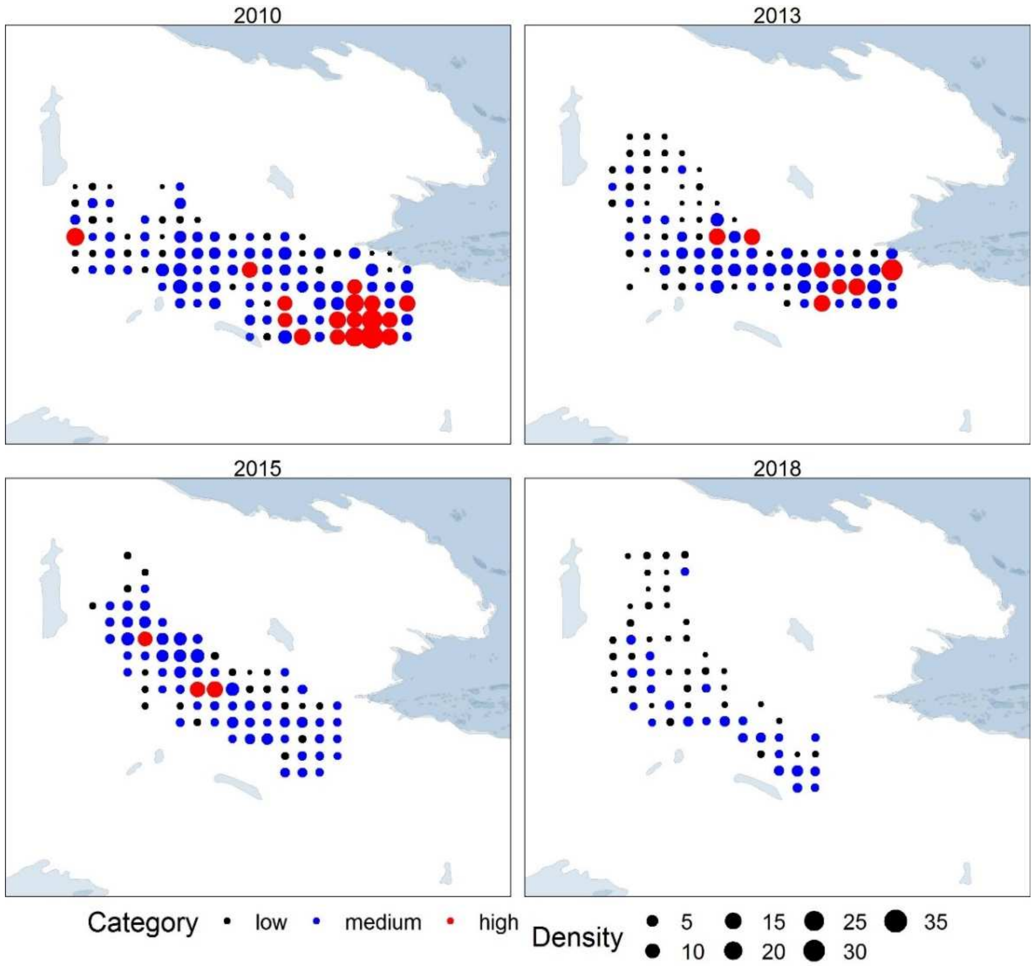

Figure 1: Segment densities in core calving areas for the Bluenose-East caribou herd 2010-2018 from calving photo surveys. Low density = <1 caribou/km^2, medium density = 1-9.9 caribou/km^2, and high density = at least 10 caribou/km^2.

Figure 2 provides a histogram of segment densities from the same Bluenose-East calving ground surveys, further demonstrating the shift to lower density segments.

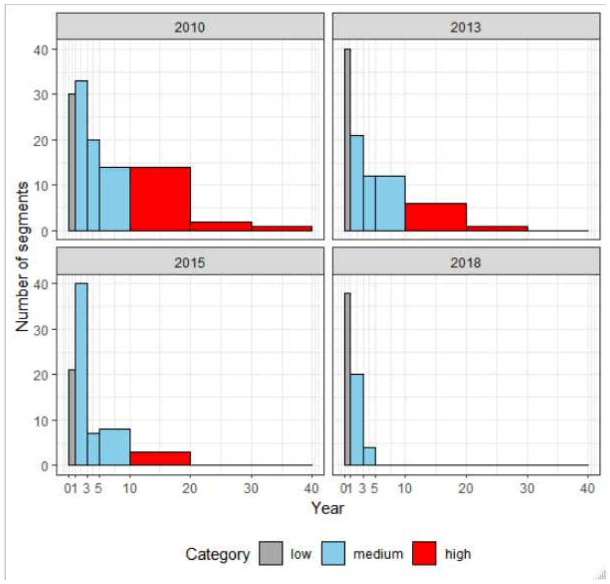

Figure 2: Segment densities in core calving areas for the Bluenose-East caribou herd 2010-2018. Low density = <1caribou/km^2, medium density = 1-9.9 caribou/km^2, and high density = at least 10 caribou/km^2.

A boxplot of the Bluenose-East segment data set shows that the median segment densities were generally <5 caribou per km^2 with the majority of segments being in the medium density category (Figure 3). In 2018 a substantial proportion of the segments were in the low density category of <1 caribou/km^2.

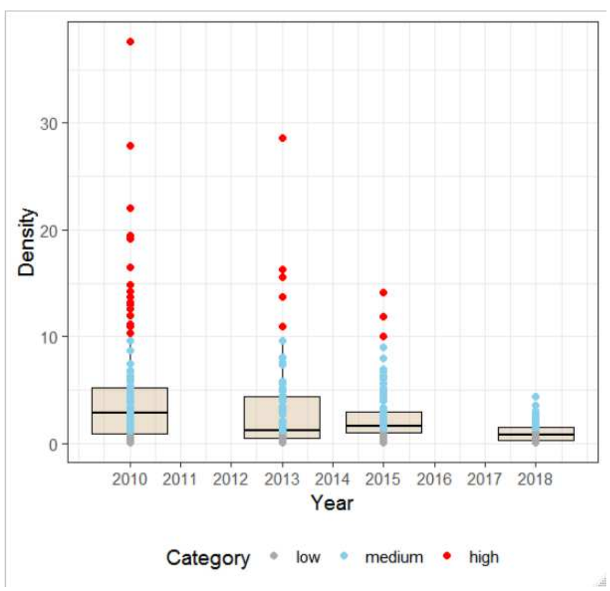

Figure 3: Boxplot of segment densities for the Bluenose-East herd 2010-2018.

Figure 4 shows the total areas of core strata for each year and the weighted area for breeding females and adult females. The weighted area n this case is simply the summation of the product of each stratum area times the proportion breeding females or adult females. Trends estimated using this approach should be less sensitive to differences in survey strata layout and yearly differences in aggregation of females.

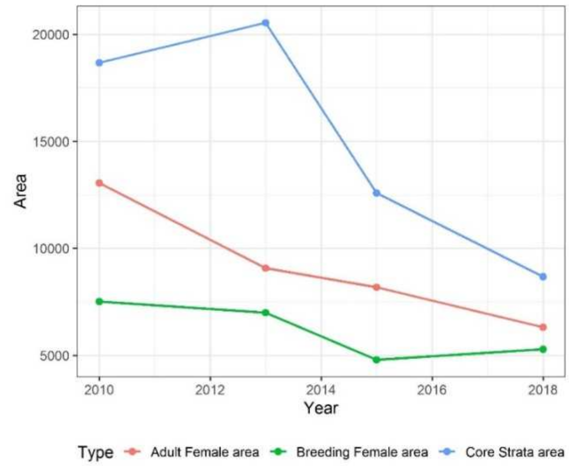

Figure 4: Estimated area of core survey strata, area weighted by proportion of breeding females, and proportion adult females in survey strata for the Bluenose-East caribou herd 2010-2018.

Comparison of the 2010 and 2018 area estimates suggests an overall decrease in area of 46 percent, 48 percent and 70 percent for core strata area, adult female, and breeding female areas. This translates to an annual decrease of 9 percent for core and adult female area and 4 percent for breeding female area. It could be argued that the breeding female area, which will be most affiliated with core densities, is most applicable to overall trends in core calving ground area. Abundance of adult and breeding females decreased at an approximate rate of 20 percent per year (Figure 5) from 2010-2018.

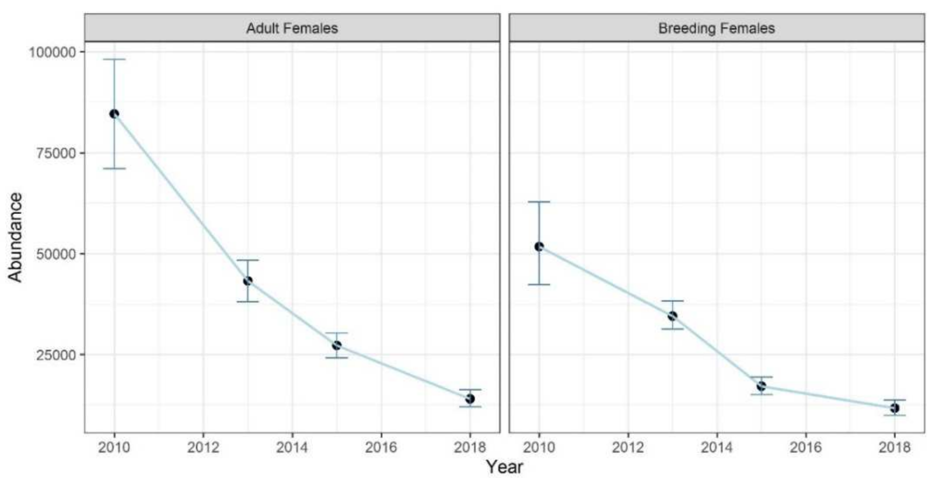

Figure 5: Estimate of abundance of adult and breeding females on core calving areas from 2010-2018 for the Bluenose East herd.

Density was estimated using abundance estimates for adult and breeding females (Figure 5) divided by the associated calving ground area (Figure 4). Comparison of 2010 and 2018 density estimates suggests a gross change in densities of 36 percent and 49 percent for adult and breeding females using strata area (Figure 6). Using weighted areas, the gross change is 34 percent and 32 percent for adult and breeding females. These rates of change translate to annual decreases that range from 9 percent (breeding females using core area) and 13 percent (breeding females using weighted area).

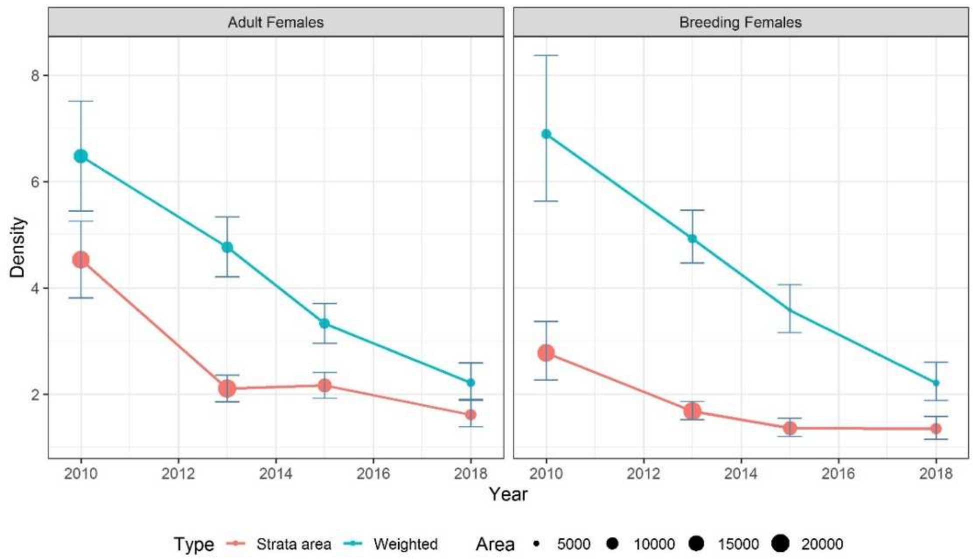

Figure 6: Density (number/km^2) of adult females and breeding females in survey strata using total area (Strata area) and corresponding breeding female or adult female areas, for the Bluenose-East caribou calving grounds 2010-2018. The symbol size is proportional to the calving ground area used to estimate density.

Discussion

Defining the core calving area is challenging due to differences in levels of aggregation of caribou during each survey year. The weighted method used to infer trends in core area attempts to confront this issue by weighting the contribution of survey stratum to the overall estimate of core area by the proportion of adult and breeding females estimated in the given strata. The resulting area estimates are best used to infer trends rather than define an absolute area.

In general, the Bluenose-East herd has not aggregated substantially as the herd size has declined as indicated by similar trends in calving ground area and density (Figure 6). Using breeding females as an indicator, the breeding female weighted core area decreased annually by 4 percent with densities decreasing by 9 percent. This general trend suggests that caribou are not aggregating into smaller areas to maintain higher densities as observed with the Bathurst herd in 2012 (Boulanger et al. 2014c).

Alternative methods such as use of collared caribou locations could be used to further infer core areas. This type of analysis could be useful for the 2018 survey year when the core area was mainly defined in a single small area. This type of analysis is beyond the scope of this report but could be pursued in the future.

Literature cited (see main survey report).

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TUNIYAKGAIKHIMAYUNIK TAHAPKUNUNGA NUNAVUT NIRGIUTIITIGUT MUNAKHIYIT KATIMAYIT
INUGIANGNIKMI KATIMADJUTAUYUKHANIK KITIKAUYAKVIA 3-4, 2020; KUGLUKTUK NUNAVUT

MIKHARUT

TUKIHIGIARUTINIK: XX **TIKUAKTAUYUKHANIK:**

Ihumagiyainik:

Kavamanik talvani Nunavut havagiyakhainik mikharut aah ikikliyauhimayunik TAH pilugit 340 nik mikharutlu 107 nik pangniinainik kihimi havagiyauyunik Ahiakmiutanik Kivatani Tuktutainik Ammihuakyuinik.

Havagaikhimayunik Ilidjuhinik:

Aah havakhikipaktunit Tamatkiumayunik Angunahuaktautaktunik pihimayunik 340 nik havakhiktauvaktunik uvani 2017 tahapkuninga Ahiakmiutanik Kivatani Tuktutainik ammihuakyuinik talvanikmiutanik nunalingni Kugluktuk.

Tahapkuat Kavamaitlu Nunatsiami Nunavut iniktikpakhimayunik aah kufiutilanginik nallautakgutauvaktunik uvani 2018 talvanilu havakhikhimayuniklu 19,294 nirgitinik, aah ikiklivaliavaliktuniklu talvanganit 2015 ihiviukhikpaktunik havagiyauvaktunik mikharut 38,592 nik.

Uvani upalungaiyaktauyunik mikharut katimadjutauyukhanik tahapkuatlu Havakvit Nunalikiyit, Kugluktuk Angoniaktit Katimayit, Kugluktuk Angoniaktit Nanikgiaktuktit Katimayit (KHTO) pivakhimayunik ipiknakpiaktumik katimadjutauvaktunik Nikilikiviani 28, 2019. Tahapkunani nunatutukanik Kugluktukmiunik hivuniktuidjutikhanik kangiktaulimaitunik 250 nik nirgitinik pihimayunik 1:1 ungnaluk unguhuluknik nallautakgutaulutik angunahuaktauvakumik hila maliklugu kihimi. Kanukgiliukpaktunik huli nunalingni talvanilu Angoniaktit Nanirgiaktuktit Katimayit pihimayunik kauhimayauvaktunik ikiklivaliayunik Ahiakmiutanik Kivatani tuktuinik ammihuakyuinik, angunahuaktautaktut huli nikikgiyaulutik, ammikhaniklu mikharutlu atuktauganginakpaktukhaniklu pitkuhiktukpaktunik inuhikgivakgainiklu.

Tahapkuat KHTO katimakatigivakgaitlu Kavamat Nunavut uvani Tatiaknakhivia 2, 2019 piyukhanik ukakgiyauyukhanik ublumimut uvunalu kakugu Tamutkiumayumik Angunahuaktautaktunik tahapkunanga Ahiakmiutanik Kivatani tuktutainik ammihuakyuinik. Tahapkuat Kavamat talvani Nunavut havagiyauyukhanik aah Tamutkiumayumik Angunahuaktautaktunik 107 nik pangniinaknik kihimi Nunavut Anguhikiyit Ataninut Katimayit uvani Ubluikviani 2019.

107 nik pangniinaknik kihimi pilunilu nungumagiyakhainik angunahuaktauvaktukhanik hila maliklugu angunahuaknikmunlu, piyaulutik kihimi ukiakhami nugyuugaktinagitlu Ukalukhimayunik talvani Tatiaknakhivia 2 katimadjutauvaktunik pidjutauhimayunik angunahuaknikmik tamangnik ungnuluk unguhuluk anguyautaktunik, Ukalukpakhimayunik talvuna Tatiaknakhiviani 2 mi katimadjutauhimayunik pidjutitaktunik angunahuaktautaktunik tamangnik ungnaluknik unguhulukniklu angunahuaktautaktunik, atuktauvangmut inungnit nikiggigumitku ukiukgalluk atuktauvaktuk: imalu atukhugit anuraakgiblugit kaagiblugitlu. Tadja unguhuluit ungnuluitlu ilidjuhinit naunaitunik kugluktukmiuni angunahuayuktunik nallautaqkgutauvaktunik hila malikhugu kauhimayauvaktunik. Pivakhimayunik ahiagut angunahuakpaktunit hila malikhugu pidjutivakhimayunik namukgiyauvaktunik napkidjutigikpaktunik unguhuluinik ungnuluinik nallautakgutauvaktunik.

Tahapkuatlu KHTO havagivagaitlu ihumadjutigivagainiklu kanukgitakhainik ilingaktunik Ahiakmiutanik Kivatani tuktunik TAH ilingaitakhainiklu alauyunik tuktunik ammihuakyunik alauyuniklu nirgitinik talvani Kugluktukmi inituklinikIu (ilidjuhinik: Taryumi Kikiiktautainik tuktuinik; tuktuvak, omingmak). Kanukgiliukgutauvaktunik alauyunik nirgitinik angunahuaktauvaktukhanik ikayutauvaktukhaniklu BNE tuktuinik, taimailihimayunik TAH pivakhimayunik 340 nik; aah ilingakpaktunik TAH pilakikpiaklutik ilingaktiklugit alauyuniklu nirgitinik.
Aah ukkakgiyauluakpaktunik ukkakgiblugit nirgitinik nikikhakhiukpaktunik nikirgivakgainiklu ammigiyauyukhaniklu havagiyaulutik. Tadja ublumimut havagiyauvaktunik nunalingni havagiblugit mikharut amaguit niakuit naunaitkutakhanik katitiktauvaktunik havagiyauvaktunik tahapkunanga Havakvit Nunalikiyit Umayulikiyit. Talvanganit havagiyaulikgamik aulaktikhimayunik ukiumi uvani 2018/19, 101 nik amagunik angunahuaktauvaktunik. Tahapkununa ammigaikhimayunik kilamik pilakihimagumik havakhikpakhimagumik $300/ilidjuhinik taimaanimit ukiukgivakgainik. Angunahuayuktunik pihimayut ukallukhimayunik tamna akiliktauvaktuk akkituyukhauyuk kihimi, tahapkuat pidjutiniakgulluaktutlu aullakhimaniakgulluaktut amgukhiuklutik, pihimagumik 101 nik pivakhimayunik angunahuaktauvaktunik, uktuknikmunlu havagihimakhugu pinnahuaknikmunlu. Uvani ukiunganik amakikiluangitunik apuutaitpalakmut nuna tamani nunatutukaniklu kihimi kakugu apihunguyuk tatkikhiutit atuukhavyakumik.

Atuktauvaktunik Pitkuhiktukpaktunik Kauhimayauvaktunik huli naunaitunik tahapkuninga akhaanik kufiuvaktunik ammigaikpaliayuniklu, pilingnik takungnakhivaktunik aipanganiknitaniklu akhaaniklu ammigaikpaliktuniklu, ammigaikhutik pilikhutik akhaakalikhutik ammigaitunik, ilanginik aktikikyukilikpaktuniklu akhaakgit. Tahapkuat Kugluktuk Angoniatit Katimayit pinahuat havagilugit mikharut atuktauvaktunik pitkuhiktukpaktunik kauhimayauvaktunik ihiviukhinikmun naunaiyainikmun naunaitkutakhanik tahapkuninga akhaanik kakugu havakhiklutik tatkikhiutikukgutaulutik ubluliuktaulutik.

Ahiakmiutanik Kivatani Nunalingni Tuktunik Munakgiyauyukhanik Pangnutauyunik

Havakhikpaktunik Kugluktuktumi Ahiakmiutanik Kivatani Tuktuinik Munakgiyauyukhanik Pangnutauyunik havakhikpak ilidjuhikgiyainik tuniyauvaktunik tahapkununga NWMB uvani Imakguktikviani 2019; pilingnik aah kiuyauyukhanik havakatigiktukhanik panarinik piyukhanik nutanguktikgiyukhanik pangnutauyukhanik havakatigiktiaklutik. Atugakhaliuknikmun havakatigiktiaknikmunlu akungainik tuklianik munakgiyauyukhanik panarinik pilugit havagiganginaklugit kakugu tatkikhiutikuklutik ubluliuktaulutiklu

KHTO havagiyakgaiktauyunik havagiyauyunik, pilingnik munakgiyauyunik pangnutauyunik, piliktukhanik ikayutauyukhanik tuktuktunik kufiutilanginik. Tahapkununa havagiyauyunik pidjutitaktunik Nutkaktitauhimayunik Pilimaitunik Angunahuakviulimaituniklu Nunaani; alauyunik nirgitinik angunahuaktauluaktukhaniklu; munakgiyauyukhanik; ihiviukhinikmun naunaiyainikmun; Nutkaktitauvaktunik pilimaitunik nanminilingnik havagiblugit maniliuknikmun talvunalu inuit tikitpaktunik aihinit angunahuakgiaktukpaktunik akilikhugu anguyakhamingnik tuktuhiukgiaktukpaktunik uvani nunatutukanik; uvunalu inugiangnikmi katimakatigiktukhanik tuhayauyukhanik/ukakgiyauyukhaniklu kanukgilidjutivaktuniklu.

Tamna Nutkaktitauhimayunik Pilimaitunik Angunahuakviulimaitunik Nunaani havagiyauhimayunik uvani Imakguktikviani 2017, piyukhanik ungnuluinik ingilgayukhanik apkutainik atuktauvaktunik ingniukvinut piyukhanik aihikpaktaililugit/kuugluktaililugit/angunahuakyuaktaililugit pidjutiyanginik ilingaikgianginik nauvakgianginiklu. Tamna nunatutukak pivaktuklu atuktauvaktuk kauhimayauvakhutik kayakgivaktukhaniklu tahapkunani nunalingni. Tuktukakgangut anguyauvaktunik ungaahiktuliaknaitumik nunalingni, pilingnik aaktukvinit nirguukgainit pilakivaktunik nirgitiit nikikhakhiukpaktunik. Pidjutiplutiklu angunahuaktungniktunik kangnilguinik nunalingni, ilihimadjutiplugit angnaainaitumiklu nirgitinik.

Tahapkuat KHTO nutkautigiyuitainiklu havakatigikpaktunik tahapkunani Havakvit Nunalikiyit munakgiyauvaktunik imalu ihiviukhginikmun naunaiyainikmun katitiktauvaktunik.

Havagiyauyukhanik:

Aipanginimit hitamanik ukiunik, Kugluktukmiut pivakhimayunik angunahuakpakhimayunik napiyanik pihimayunik tamakpianganik angunahuaktautaktunik 340 nik. Talvuna aipanganimit hila malikhugu angunahuaktauvaktunik takungnaktunik tahapkunani TAH pihimayunik 340 nik tamutkiktauhimaitunik imalu ungnuluitlu ungunahuaktauvaktutlu.

Angunahuaktauvaktunik Nallautakgutauvaktunik:

2016/17 163 angunahuaktauvaktunik (aviktuihimaitumik kanukgitakhainik unguhuluit ungnuluiniklu)

2017/18 174 angunahuaktauvaktunik: 101 unguhuluit; 73 ungnuluiniklu

2018/19 93 ungunahuaktauvaktunik: 59 unguhuluit; 34 ungnuluiniklu

2019/20 (talvunga Idjikgukvia 31, 2020) 128 angunahuaktauvaktunik: 60 unguhuluit; 68 ungnuluiniklu

Tamakpiavyainik angunahuaktauvakhimayunik kuniaktauvaktuniklu Ahiakmiutanik Kivatani tuktuinik uvani 2018 pihimayunik ilingaitunik tuktuinik; takungnaktuniklu ammigaitunik nurganik, ilauhimayunik malgiakakpakhutiklu. Nunalingni kuniaktauvaktunik aipangunimit auyami ilauhimayunik ilingaitunik tuktulik, niglaumainakhunilu hila, ikiklihimavakhunilu kiktukgiaklukpaktuk niglaumainakgumi, angnuukhikganginakpakhunilu, nipaluinakpakhunilu, taimaitumiklu pidjutinaktuk ilingaikgianginik ammihuakyuinik nauvaliayukhaniklu.

Tahapkuat KHTO kauhimadjutigiyatlu ilingakpaliavaliktunik BNE tuktunik uvunalu ilidjuhikgingukfaakniaklugit nallautakgutaulutik havagiyaulutik, kihimi angnigutivaktukhaniklu mikharut TAH aah tamainak ungniguutivaktukhanik nakutkiyak atuktauvaktuk huli, pihimagumik havakhikhimagumik Nunavut Angiutauvaktunik.

Tahapkuat KHTO havakuihimayunik pilutik Tamakpianganik Angunahuaktautaktunik taimaitunik Ahiakmiutanik Kivatani tuktuinik havakhiklutik kangilimaitunik 250 nik nirgitinik aa 1:1 unguhuluit ungnuluinik nallautakgutaulutiklu. Uvunalu havagiyauyukhanik pipkailunilu ihumagiyauvaktukhanik mikharut kufiutilanginik nallautakgutauvaktunik tahapkunani Kavamat talvunalu pidjutitkiyumikpaktunik ipiknakpiaktuk tahapkunani nunalingni angunahuayuktuniklu havagiyauyukhaniklu havaktitauyukhanik tahapkuat KHTO.

Havagivaktukhanik nikikhaigutinaitumiklu mikharutlu pitkuhiktukpaktunik kauhimayauvaktunik, tahapkuat KHTO pivaktunik naahugiplugit tahapkuanit Kavamanit Nunavut's havakuihimayunik kihimi 107 nik pangniinakniklu. Ikikliyaugumik tahapkununa TAH pilugit 107 nik pangniinakniklu pilakilutik aah nakungikgutiluni ilingaktikgutivalialunilu nauvaliayumik nunalingnni. Inuit pikariakaktutlu nikainaktukariakakgumik nikikgiluakgumitkulu; tamnalu atuktaulluakpaktuklu inuhikgingnaktuk imalu nikigilluakpagumitkulu.

ᑐᓂᓯᒪᔭᕗᑦ ᓄᓐᓇᕗᑦ ᐆᒪᔪᓕᕆᖕᓂᕐᔪᐋᑯᑦ ᑲᑎᒪᔨᖏᑦᓄᑦ
ᓈᓚᖕᓂᖃᕐᑎᑎᑐᒋᑦ ᐃᓄᓕᒫᕐᓄᑦ
BLUENOSE ᑲᓇᖕᓇᖕᒐᑐ ᑐᒃᑐᖏᓂᑦ TAHᖕᒐᓂᑦ
ᒫᓯ 2-3,2020

ᑐᓴᒃᓴᑐᐃᓐᓇᖅ: ᐃᓱᒪᓕᐆᕿᑕᐅᔭᕐᓇᐋᓕᒃ: X

ᐱᔪᑎᒋᔭᕗᑦ: ᕿᑎᕐᒥᐅᑦ ᐊᕕᒃᑐᕐᓯᒪᓂᖏᑦ ᐆᒪᔪᓕ1ᕐᓇᓂᕐᒧᑦ ᑲᑎᒪᔨᖏᑦᑕ ᐃᑲᔪᕐᑐᕐᓂᖏᑦ ᖁᕐᓗᕐᑐᕐᒥᑦ ᐊᖑᓂᐋᑎᖏᓄᑦ ᑲᑎᒪᔨᕐᕿᖏᓄᑦ ᑐᒃᑐᑕᐅᔪᖕᓇᕐᓂᖏᑦ TAH ᒪᓕᒃᑐᒍ ᐊHᐃᐋᒃ ᑭᕙᓖᑕ ᑐᒃᑐᖏᓂᑦ

ᖃᐅᔨᒪᕗᕗᑦ:

- ᕿᑎᕐᒥᐆᑦ ᐊᕕᒃᑐᕐᓯᒪᓂᕐᒧᑦ ᐆᒪᔪᓕᕐᓇᔾᖏᑦᑕ ᑲᑎᒪᔨᖏᑦ ᑭᒐᕐᑐᐃᖕᒪᑕ ᕿᑎᕐᒥᐅᑕᕐᓂᑦ ᐊᖑᓇᓱᖕᓂᕐᒧᑦ ᑐᕐᕋᖕᒐᔪᓄᑦ ᐊᑐᕐᑖᔭᕐᓇᐋᓕᖕᓂᑦ ᐆᒪᔪᓕᕐᓇᔾᐊᕵᑯᑦ ᐊᑉᖁᑎᒋᔭᐅᓗᑎᒃ ᐃᓄᕐᑯᑎᖕᒋᓄᓗ
- ᓄᓐᓇᕗᒃ ᐆᒪᔪᓕᕐᓇᕐᔪᐋᑯᑦ ᑲᑎᒪᔨᖏᑦ ᑐᓴᕐᑎᑎᓚᐅᕐᓂᖏᑦ ᑎᓯᐱ1ᕐᓇ 13, 2019ᖑᑎᓗᒍᑦ ᐃᓄᓕᒫᕐᑎᑎᓂᐊᕐᓂᖏᓂᑦ ᓈᓚᖕᓂᖃᓂᐋᕐᑎᓗᒋᑦ ᐱᔪᑎᖃᕐᓗᑎᒃ ᓄᓐᓇᕗᑦ ᑲᕙᒪᖏᑦᑕ ᓯᕗᒧᒃᑎᓚᐅᕐᑕᖏᓂᑦ ᑎᑎᖃᑦ
    - ᐊᓯᖑᕐᑯᔨᓗᑎᒃ total allowable harvest ᐃᓚᖕᒐᕐᑕᐅᔪᖕᓇᕐᑐᑦ ᐆᒪᔫᑦ (TAH) ᖑᓂᕐᕿᕐᑕᐅᕙᑐᒃᒥᑦ ᑐᕐᕌᖕᒐᑎᓗᒍ ᐊHᐃᐋᖅ ᑭᕙᓖᑕ ᑐᒃᑐᖏᓂᑦ 340ᖑᑎᓗᒋᑦ ᑐᒃᑐᑕᕐᓇᔭᐆᔪᖕᓇᕐᑐᑦ ᑭᒃᓕᖃᓕᕐᓗᒍ 107ᒧᑦ
    - ᐊᑐᕐᑕᐅᕐᑯᔭᕗᑦ ᐊᖑᑕᐋᓐᓇᕐᓂᑦ ᑐᒃᑐᕿᑕᓕᕐᓗᑎᒃ ᒪᓕᒃᑐᒍ non quota limitation (NQL)

ᓈᓴᐃᓚᐆᕐᒪᑕ ᐅᑭᐆᖑᓚᐆᕐᑐᒥᑦ 2018ᒥᑦ ᓇᓗᓇᕈᐋᓚᐆᕐᑐᖅ ᓄᖑᑰᓕᕐᓯᒪᓂᖕᒋᑦ ᐊᒥᓲᓂᖕᒋᑦ ᑕᑯᓗᑕ 19,000ᓂᒃ ᓈᓴᐃᓚᐆᕐᑎᓗᒋᑦ 2015ᒥᒃ ᐊᒥᓲᓂᖃᓚᐆᕐᓯᒪᔪᑦ 38,592.

ᖁᕐᓗᕐᑐ ᐊᖑᓂᐋᕐᑎᑯᑦ ᑲᑎᒪᔨᖏᑦ ᑲᑎᒪᓂᖃᓚᐆᕐᒪᑕ ᐃᓄᕐᑯᑎᒥᓐᓂᑦ ᑲᑎᒪᖃᑎᖃᕐᑎᓗᒋᑦ ᐋᒍᓯ 28, 2019ᒥᑦ ᐱᔪᑎᖃᕐᓗᑎᒃ ᓄᖑᑰᓕᕐᓯᒪᓂᖏᓂᑦ ᑐᒃᑐᖏᑦ ᐊᒪᓗ ᐱᒋᐋᕐᑎᑎᓚᐆᕐᒪᑕ ᓈᒪᒋᔭᐆᓗᑎᒃᓗ ᐃᓄᕐᑯᑎᒥᓐᓂᑦ ᑐᒃᑐᑕᕐᓇᔭᐆᔪᖕᓇᕐᑐᑦ TAH ᒪᓕᒃᑐᒍ 250ᖑᑎᓗᒋᑦ ᐊᒪᓗ 1:1 ᐊᕐᓇᓗᕐᓂᑦ ᐊᒪᓗ ᐊᖑᓴᓗᕐᓂ ᐊᖑᓇᓱᒃᕕᕐ ᐅᑭᐆᖕᒐ ᐊᑐᕐᑎᓗᒍ...

Kitikmeot
ᕿᑎᕐᒥᐅᑦ
Kitikmeot

Cambridge Bay
ᐃᕐᑲᓗᒃᑑᑎᐊᖅ
Ikaluktutiak

Gjoa Haven
ᐅᖅᓱᖅᑑᖅ
Uqhuqtuuq

Kugaaruk
ᑰᒑᕐᔪᒃ
Kugaaruk

Kugluktuk
ᕐᑯᕐᓗᖅᑐᖅ
Kugluktuk

Taloyoak
ᑕᓗᕐᔪᐊᖅ
Taloyoak

ᑐᒃᑐᑕᕐᓇᔭᐆᔪᖕᓇᕐᑐᑦ ᒥᒃᓵᒋᐋᕐᑕᐆᒃᐸᑕ 107ᒧᑦ ᐸᖕᓂᐆᑎᑐᒋᑦ ᑐᒃᑕᐆᔪᑦ ᐅᑭᐋᒃᓵᑯᑦ ᐊᒥᓲᖏᓂᒃᓴᐅᓕᕐᕿᔭᕐᑐᑦ.

ᓄᓇᓕᒃᒥᑦ ᐃᓄᕐᑲᓕᕐᐸᓕᐋᑎᑐᒍᑦ ᑐᒃᑐᑕᕐᓇᔭᐅᔪᖕᓇᕐᑐᑦ 107ᖑᓂᐋᕐᐸᑕ ᐊᒥᒐᕐᓇᔭᐆᓇᔭᕐᑐᑦ ᐊᒪᓗ ᐃᓱᒪᕐᑲᕐᓗᑕ ᑐᒃᑐᑕᕐᓇᔭᐆᔪᖕᓇᕐᑐᑦ ᐊᒥᓲᓂᖏᑦ 250ᖑᒃᐸᑕ ᓈᒪᖕᓂᕐᓴᐆᓇᔭᕐᑐᖅ. ᐃᓚᒋᐋᕈᑎᕗᑦ, ᑯᐆᑕᖓ 340ᖑᒪᑦ ᑕᒪᕐᒥ ᐊᑐᕐᑕᐅᓚᐆᓯᒪᖏᒪᑦ ᓄᖑᑕᐆᓚᐆᕐᓯᒪᖏᒪᕐ, ᐃᓱᒪᕐᑲᕐᑐᒍᑦ ᕐᑯᐋᓵᕐᓇᕿᔭᖏᑐᑦ ᑐᕐᑐᐃᕈᑎᓂᐋᖏᓇᓱᒋᓗᑎᒍ.

ᐃᓱᒪᒋᔭᕗᑦ:

ᐃᓱᓖᓗᑎᒋᕐᑯᔭᕗᑦ ᑕᑯᔭᐆᕐᑯᔭᕗᑦ ᓄᓇᓕᖓ ᕐᑯᕐᓗᕐᑐᕐᒥᐆᓄᑦ ᑐᕐᖀᖓᔪᖅ ᐱᓱᒪᔭᕐᓇᒡᐊᕐᑲᕐᒪᔪᑦ ᑐᒃᑭᕐᑲᑎᐋᕐᕈᓂᓗ ᑐᒃᑐᓯᐆᕐᕿᑕᕐᑐᓄᑦ ᐃᓄᕐᑯᑎᖏᓄᑦ ᐃᑲᔫᑎᕐᑲᕐᕿᓗᐋᕐᒪᑦ ᐊᖑᑕᕐᓇᔭᐆᔪᑦ ᐊᕕᒃᑐᕐᑕᐆᕐᕿᑕᕐᒪᑦ ᓄᓇᓕᐆᑉ ᐃᓗᐋᓂ

- 250 ᐊᖏᕐᑕᐆᓯᒪᔪᑦ ᐃᓄᓕᒫᕐᓂ ᑲᑎᒪᕐᑲᑎᕐᑲᕐᑎᑐᒋᑦ ᕐᑯᕐᓗᕐᑐᕐᒥᑦ ᐊᖑᓐᓂᐋᕐᑎᑯᑦ ᑲᑎᒪᔩᖕᒋᑦ
- 1:1 ᐊᖑᑏᑦ ᑐᒃᑐᑕᕐᓇᔭᐆᔪᖕᓇᕐᑐᑦ ᐊᒪᓗ ᐊᓐᓇᓗᐋᑦ ᐊᕐᖀᒍᑕᒪᑦ

ᕐᑯᔭᓐᓇᒦᕐᐳᖓ,

ᐹᐱ ᑭᓕᖕᑭᖕᐹᑦ
ᐃᒃᓯᕙᐆᑕᖅ

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Bathurst Inlet
Kingaok

Bay Chimo
Umingmaktok

Cambridge Bay
Ikaluktutiak

Gjoa Haven
Okhoktok

Taloyoak

Kugaaruk

February 14th, 2020

Jason Akearok
Executive Director
Nunavut Wildlife Management Board
Iqaluit, Nunavut
X0A 0H0

Kitikmeoni Inoet Katimayet tonihiyotaet Nonavomi Omayolikiyit Katimayenot omiga Atoligomayaoyomik Ataotimot Agoyakhanik Aheakmi Kivalikheani Toktonik.

Hivonikhiyotikhamik: Ihomaleogot: X

Ihomagiyaoyok: Kavamat Nonavomi Atoligomayat Ihomaleogotikhamik okonoga Omayonik Monaginigagot Katimayenot kiniktot Ikiklivaligeagani Ataotimot Agoyakhat Aheakmi Kivalikheani toktonik 340-nit 107-mot inikhiyagani Agohaloenaknik Agovageagani Atatakagitomik kiklikagitoni.

HIVONIKHIYOTIT NALONAEKTAOYONIKLO

Kavamat Nonavomi ("GN") tokhiktot Nonavomi Omayolikiyit Katimayenit ("NWMB") ikikligeaklogit Tamaeta Agoyaoyokhat ("TAH") Aheakmi Kivalikheani Toktonik amihoakyoknit Nonavomi 340-nit 107- inikhiyagani Agohaloenaknik Agovageagani Atatakagitomik kiklikagitoni.

NWMB-kot agikhimayot Kitikmeoni Inoet Katimayenik ("KIA") ilaoyagani ilitagiyaonignik omiga piyotaoyomik.

KIA-kot Nonami Inoet Katimayet Kitikmeoni. KIA-kot kivgakteoyot ihomagiyaenik Kitikmeoni Inoet monaginigagot atokpaligeaganilo inoyoheni, ilitkoheni, maligalikiyoheni, avatilikiyoheni manikhakheogotenilo inoteaknignik. KIA-kot ihivgeoknigani GN-kot tokheotanik opalogaeyakniganilo oma tonihiyotip, KIA-kot okakatikakhimayot Kogloktomi Ekaloktoteamilo Angonahoaktinik Nanigeaktoktiniklo Timeoyonik, Kitikmeoni Nonami Omayolikiyit Katimayenik ("KRWB"), Nonavot Tongavik Timeoyoklo ("NTI").

KIA-kot havaktikaktot Takti Anne Gunn-mik ihigeogeagani GN-kot notaonikhanik hivonikhiyotaenik atoligomayaoyomi TAH-mik. Takti Gunn toktonik ilitokhaeyi

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kaoyimanikakhoni kanoginiganik monagiyotiniklo toktot monaginigagot havanik okeoktaktomi kavamani ihomakhakheokgotivlogilo monagikatigektot katimayit omayonik monaginigagot avataoyomiklo aktoknignik ilitokhaotinik piyotikaktonik toktonik. Okaohet ilitokhagakhani naonaeyaotinik GN-kolo atoligomayaenik ilaleotihimayot ovani tonihiyotimi Oegoanilo A-mi.

Toktot ilomi atoknikateaktot Inoet ilitkoheni. Atogeagani toktot kayaknaktok Inoet nikikhakateaknigani ilitkohikmiklo atokhimageagani. Omayonik agonahoaknik ilagiteakta inoheni Inoet nonagiyaeni.

GN-kot pipkaeyot okoniga makpiganik ikayoktogeagani atoligomayanik ikikligeaknigani TAH-mi 107-mot:

Inikhilotiklo agohaloenaknik agovageagani atatakagilotik kiklikagilotik:

1 GN-konit Naetomik Itkaeyotikhamik Aheakmi Kivalikheani toktot amigaeniganik nalaotaganik 2018-mi nogivikni piksaleokhimayonik naonaeyaonmit agoyakhaniklo atoligomayaoyonik;

2 okaohik 2018-mi amigaeniginik nalaotagaoyonik Aheakmi Kivalikheani toktot amihoakyoet;

3 HTO-kot okakatigeknikot Onipkaga Aheakmi Kivalikheani Toktot Monaginigagot Atolikoyaenik;

4 Onipkat Aheakmi Kivalikheani Toktot Amihoakyoet 2018-mi Nalaotagonmik, Nonavomi;

5 Kavamat Nonateami Nalaotagotit Nogiyonik Aknaloknik Iniknigoktoniklo Ataotimi Amigaenigit ilitokhakniganiklo Nogaet Inikneoyolo Aheakmi Kivalikheani Kigaokmi Ataotimeoyot Manikameoyot Toktot: 2018-mi Nogiveoyok Nona Piksaleotikot Ilitokhaot.

Tikoaktotikagitok Igilgat Kaoyimayaenik (“IK”) Inoelonet Kaoyimayaenik (“IQ”) GN-kot tonihiyotaeni. Okaohikagitoli aktokniganik oma atoligomayoayot Inoet ilitkohenik, aneaginiganik, ihomakhotiniklo agiktaohimayonik Nonavomi Agikatigegonmi, Maligakyoamilo.

ILITOKHAKNIGA AKIGAKTOTAOYOKLO

KIA-kot kagikhimayot Aheakmi Kivalikheani toktot amihoakyoet ikiklivaleaniginik piyageagaliktoklo atoligeagani nogogitagani pigeagotimik. Kiheani, nogogitagani pigeagot mikiyomik ihoeliyotaoyageakaktok Inoet ihomakhotaenik ilagani Nonavot

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Agikatigegonmi, Maligakyoamilo ataotikot pipkaeniganik kagikhiyotimik tamat atoligomayaoyomik GN-kot monagiyotimik pigeagotanik Aheakmi Kivalikheani toktot amigaeniganik kagikhiteageagani aktoknigilaktaet Inoenaknot, ihomakhotaenolo.

KIA-kot tonihiyotaet inikhimayot aleoyoni ihoakhakhimayolo ilagani okoa okaoheoyot:

1 Inikhilotik TAH-mik agohaloet talvatoak agoyaoyokhat atatakagilotik kiklikhani ihoaginmat pigeagot Aheakmi Kivalikheani toktonik. GN-kot ikayoktogeakaktotk ikayoktikaklotiklo Inoenaknik nonagiyaoyonit Agonahoaktit Nanigeaktoktilo Timeoyot (“HTO”) opalogaeyageagani nonagiyaoyomit atoligomayoayomik nogogitagani monaginiganik Aheakmi Kivalikheani amihoakyoknik. Ona piyotikageakaktotklo GN-kot ikayotanik KHTO-kolo atoliknigani atoligomayaoyok.

2 GN-kot atoligomayat ilakagitok TK-mik IQ-miklonet;

3 Keoyotit NWMB-konit Tokhigaoyonik Tonihiyotaenik KIA-kot atoligomayaenik NWMB-konot ihoanetot tonihiyotipta.

1. <u>Ihageaginiga Pigeagot Nogogitagani Mikinikhamik ihoeliyotinik Inoet ihomakhotaenik ovani Nonavomi Agikatigegonmi, Maligaqyoamilo IlaleotivlogiloInoet Monagiyohet</u>

KIA-kot atolikoeyot NWMB-kot kigiyagani inigekhimayok TAH-goyok Aheakmi Kivalikheani amihoakyoet.

KIA tokhiktot okoa NWMB-kot pikoelotik GN-konik pigeagotikageagani nogogitagani monaginigagolo Aheakmi Kivalikheani toktot takopkaeyomik atogeakaktonik ovanga Nonavomi Agikatigegonmit, Maligakyoamilo, ayikotakagitomiklo monagikatigegonmi kanoginiginik

inikhimayonik Nonavomi. Nonavomi Akikatigegot Apikhoeyilo naonaetot pikageakakniganik nogogitagani piyotinik, nogogitagani opiyotit mikinikhamik ihoeliyotiyokhat Inoet ihomakhotaenik.[1]

1 R v Sparrow-mit [1990] 1 SCR 1075, [1990] SCJ No 49. Takologolo Kadlak akigakteoyok Nonavomi (Ministaoyomik Nogogitagani Pivaleanikot) 2001-mi NUCJ 1.

KIA-kot kagikhimayot Kavamat Nonateami kagitaoyakot kanogilineaknigiyaet havami Aheakmi Kivalikheani amihoakyoet atoktokhani pigahoni okeoni pikaginiganiklo nalonaelaktomik alagokniginik amihoakyoet agitilagit okonani TAH-mi 100-nik, 300-

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niklo. TAH-mik taemaetomik hatkigotaolimagitok naonaetomik ikikligeaknignik Aheakmi Kivalikheani toktonik hivigitomi pivikhakaknikmi.

Ilaganilo, kiklikaktitagani Inoet agonahoaknigit agohaloenaknik talvatoagoneakmat agoyakhat ikitot ilaginik toktot okeomi, agohaloet toktot kanikligagata nonagiyaoyomot agoyaoyagani. Ona ihomalotaoliktok nikikhakateagagani, kahakniginik amet anogakhat kakhalo, atokhimakniganiklo ilitkohikmi pigeagotaoyot. Una ihomalot okaotaoyok GN-konot October 2-mi 2019-mi katimanikmi KHTO-kolo. Kiheani, GN-kot aplogeagotikagitot ihoakhiyagani ona aktokniga Inoet agonahoakniganik, aneaginiganik, ilitkoheaneniklo.

Agonahoaknik ilagiteakmago inoyoheni Inoet nonagiyaoyoni. Toktot atoknikaktot pipkageagani Inoet aolagigeagani timikmini, napatikmikni, ilitkohikmiknilo. Inoet ihomakhotaet agonahoaknikolo pitkohenik atoknikateaktot ihomagiyakhat honamilika opalogaeyaknikmi toktonik nogogitagani piyotinik monagiyotiniklo. GN-kot atoknigit TAH-mik oblomimot piyotaoginmat amigaegeakniginik Aheakmi Kivalikheani amihoakyoet. GN-kot atoligomayat Atatakagilotik kikligiyaenik Aheakmi Kivalikheanik amihoakyoet amigaegotilimagitot aktokniganik kitomilika TAH-mi Inoet agonahoakniginit.

Pivaligeakaktot monagiyagani alat aktoknigit toktot anakhimayagani.

Pikaktok atoktomik havamik amakot agonahoageami. GN-kot makpigagit tikoaktoeyot Ikayoktokniganik Opitpaktot Agonahoaktit Havaganik. GN-kot pikaktoyagitot opalogaeyaotinik agikligeaknigani amigaekpaligeaganilo ikayotit omiga havamik. Ona havak agikligeakaktok amigaekpaligeagani toktonik nikikaktot monagiyagani atoklogit igilrat ayogiyotaet Inoet agonahoaktit. Havak akilikhiyokhaogaloaklo opitpaligotikhanik takopkaeyomik nakogotaoniganik oma havap toktoni amigaenigini takonaktomiklo akhokhayagani Inoet agonahoaktit ilaonigit.

GN-kot ihoakhaeginmata ihomalotinik nikikaktonik toktonik akhaknit. Ona ihomalot kaganoak okaotaohimayok KHTO-konit nonagiyaoyonilo ilaoyonit. Akhaet agonahoayoktot okoniga aktoknikakhotiklo toktonik amihoakyoknik. KHTO-kot nonagiyaoyomilo ilaoyot okaoyihimayot

GN-koniik akhaet kaveoniginik amigaekpaleakmat, amigaetot takoyaovakhotik aknaet malroknik pigakaktonik, pigahonik ilaginilo hitamanik. GN-kot atoligomaya TAH-mi ilakaktok atolikoyaoyomik “nonagiyaoyomit” monagiyotikhamik holiyotinik pivaligotaoyomik amihoakyoet otikpaleayagani amigaekpaligeaganilu amigilogit aktoknigit ima:

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Amigaenignik naonaeyaelotik malgok okeok natkagat, nogivet nonat okeakhamilo kanoginiginik aepagotoagagat."[2] Kiheani, okateakhimaginmat GN-kot tonihiyotaeni okonoga holiyotinik kanoklo ikayolakmaga toktot nogogitagani.

Nakogotaoyok opalogaeyaot toktonik nikikaktot monagiyagani atokloageakaktok monagiyagani amihoakhoet agitilaginik ikikligeaklogilo toktot tokovaktot.

KHTO-kot atoliktot monagiyotinik atoligomayamiknik Aheakmi Kivalikheani toktonik.

KHTO-kot ikayokteohimagitot nonagiyaoyomik toktonik agonahoaknikmik atogeokhogilo toktonik agonahoaktitiyit aleahokhotik. Pikoegitot noevgotigiyagani neovigeaganilonet toktot ilagani nikaenaet toneokhaktaonignik havami ikayokhimayolo aheagoknikmik agonahoaknikmi aheanik omayonik ila omikmaktot. KHTO-kot havakhimayolo inikhiyagani agonahoakvikhaogitonik toktonik kanitoani Kugluktuup.

Pivikhakaliktok GN-kot ikayoktogeagani Inoet nonagiyaeni HTO-kolo havakatigilogilo Inoet pivaleayagani nogogitagani monagiyotikhamik opalogaeyaknigani mikinikhamik ihoeliyotikaktomik Inoet ihomakhotaenik opihimatilogit ilageagotikhanik ihoakhaotinik, ila amigaegeaklogit toktonik nikikaktot manikami monagiyotimik, atoktitpaligeagani nogogitagani pigeagotit.

NWMB-kot atoktitiyokhaogitot notamik Aheakmi Kivalikheani TAH-mik taya. Aheani, NWMB-kot pikoeyokhaogaloet GN-konik havakatikageagani KHTO-konik pivaleayagani nakoyomik ihoaktomiklo Inoenaknit nogogitagani pigeagotiknik opalogaeyaonmik Aheakmi Kivalikheani toktonik ihoahaotaoyokhamik toktot monaginiganik agonahoaktaonigniklo.

2 <u>Atogeakakniga TK-goyok IQ-lo.</u>

Piyotikaktot makpigat pipkagaoyok, GN-kot ikitonik nonagiyaoyot katimanikaktotl Takokhaoyoyagitok GN-kot ihomagiyakakmaga honaniklika TK-mit IQ-milonet ihoakhaknigani atoligomayaoyok tonihiyotani NWMB-konot.

3 <u>Keoyota NWMB-konot Tokheotanik Tonihoyotinik</u>

Titikiyotimikni obloani February 4-mi 2020-mi, NWMB-kot tokhikhimayot ilaoyot pipkaeyagani keoyotinik titigakhimayonik naonaetonik ihomagiyaoyonik. Naetomik okaohea KIA-kot koeyota okoniga ihomagiyaoyonik inikhimayot aleoyoni. Amigaetkiyat okateakhimayot keoyotit Oegoani A-metot.

1 Keoyotit tohaktaoyolo kaganoak naonaeyaotinit amigaeniginik nalaotaktaoyot Aheakmi Kivalikheani toktot, okonigaloak:

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a) kaganoak ikiklikyoakniginik amihoakyoet agitilagit (napaenaolikhotik 2015-mit 2018-mot) tohaktaoyoklo ihomagiyaoyonik piyotikaktonik naonaeyaotit atoktot nalaotagotit taya amihoakyoet agitilaginik.

KIA-kot Keoyota: nalonaetok ikayoktoeyok malgoknik ihomagiyaoloaktoknik 2018-mi nalaotaganik Aheakmi Kivalikheani amihoakyoet (nalaotaktaoyot nalaomayut tapkoagoyolo tamaetalo aknaloet otikpaktot nogivikmiknot).

b) nona kititiveoyok hivitonigalo naonaeyaoyotit

KIA-kot Keoyota: Hivitoyot avatiknogaktok tikmivlotik kolaohimayot agiyomik nonamik naonaeyaeniklo aolaktigeakvikaktok nogitilogit (hagovalagitilogit) kogovageagitotik.

c) naonaegotit kolavaet anaknignik nogiyolo kanogalok anakhimayolo

KIA-kot Keoyota: honaonignik amigaenigata atoktok ilaleotihimayok manikami naonepkotit inikniknik toktonik nogaelo anakhimayhonik, inikneoyot akanloet agohaloet kanoginigit, kaveoniginik noleaktaoyot aknaloet ihomagiyaoyoklo agoyaoyot amigaenigit.

d) kanogalok Inoet ilaonigit naonaeyaotini atokniginiklo Inoet kaoyimayaenik amihoakyoet ilitokhaktaonigini

KIA-kot Keoyota: Hitamat Inoet taotoktilogit atoktilogo 2018-mi naonaeyaot, pikagitok Inoet Koayimayatokaginik atoktaoniganik ilitokhakniganik amihoakyoet agitilagnik 2018-mi.

e) nonagiyaet kanoginigit aktogotaolaktolo inuit holiyotaenit

KIA-kot keoyota: Hivonikhiyotit nonagiyaet kanoginiginik aktogotaolaktolo inuit holiyotainit ilaogitot GN-kot 2019-mi TAH-mik tonihoyota

2 Nonavot Kavamat atoligomayanik TAH-mik NQL-miklo aheaniklo atolikoyaoyonik, pikakat, hoklo

KIA-kot Keoyota: GN-kot atolikoeyot 2019-mi Aheakmi Kivalikheani toktot amihoakyoet TAH-ga 107-nik toktonik Atatakagitomik Kiklikaktomik agohaloenaknik agoyagani TG-kot GNWT-kolo agikhimakmata WRRB-kot kayaknaetkiyak TAH-mi 193-nik homeniginik Aheakmi Kivalikheani amihoakyoet

3 Inoet Kaoyimayatokagit Aheakmi kivalikheani toktot, piyotikaktot okoniga:

a) Inoet pigeagotaet toktot monaginigagot ikiklivaleanigni

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b) inohikmi ilitkohikmilo atoknignik Aheakmi kivalikheani toktot amihoakyoet Inoenakni

c) kaoyimayalniginik toktok kanogileoknigini, homenigiloak nogiveoyok nonat alagoknigilo okeoni

KIA-kot Keoyota: Pikaktok agiyomik IQ-nik kahaktonik ilaoyoniklo KHTO-kot Nonagiyaoyomi Aheakmi Kivalikheani Monagiyotimik Opalogaeyaonmik. Takokhaoyoyagitok IQ-nik ilaoginiganik GN-kot atoligomayani.

4 Ataniktoeyotikatiget ihomagiyakhaet ihoakhaetilogit monagiyotikhani opiyotikhanik avanmot atoknigini amihoakyoet.

KIA-kot Keoyota: Hivonikhiyotit amiginigagot monaginigagotlo avanmot atoktaoniginik NWT-konit NU-konilo ataniktoeyonit ovoga Ihomakhakheoktit Kamiteoyokot Havakatigegotinik okonani

Omayot Monaginigagot naonaetot hivonikhiyotit agoyakhanik monaginigagot avanmot atoktaonigni ataniktoeyotigot pigahot monagikatigektonik katimayinit.

KIA-KOT ATOLIKOYAET

Piyotigivlogit naonaektot ihomagivlogilo akigaktoeyotit koleoyoni, KIA-kot ihomagiteakhogit tokhiktot okoa NWMB-kot ihomaleoyavot ima:

1. Nogogitagani ihomalotikaktok Aheakmi Kivalikheani toktonik amiheakyoknik

2. Nogogitagani pigeagot Aheakmi Kivalikheanik toktot amihoakyoet ihoateaktokhak hivoliktoktaolonilo KHTO-konit Inoenaknilo. Opalogaeyaot ilakalaktok agonahoaknikmi atogeakagitonik, toktonik nikikaktonik omayot monaginiganik, aheanik omayonik agonahoaknikmik (ihoaknikat), ilitokhaknikmik amigiyotiniklo nalaomayonik notaonikhaniklo amigaenignik, (aknaloelo nogaelo), nonagiyaet hilap pivaleayolo aktokniginit. GN-kot pipkaeyokhat ikayotikhaenik KHTO-kot atolikniganí opalogaeyaot

3. Nogogitagani pigeagot nalaomayokhak ihomakhotaenik Inoet agonahoaknikot ihomakhotaenik ilitagiyaonigniklo akhogotaeniklo agonahoakhimaginageagani ilitkohikmiklo pigeagotiknik piyotikaktonik toktonik

4. Nogogitagani pigeagot ilitakhoyokhak toktot ilagiya atoknikateaktokmik ilaonikmik ilitkohikmi, okaohikmi nikikhakateaknikmilo

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5. GN-kot pigeagota ovani nalaktitivikmi ihoaginmat. GN-kot atoligomayot ikitkiyanik TAH-mi pikagitomik akhogotikhanik atolikniganik ilageagotit nogogitagani monagiyotinik okaohenik HTO-kot nonagiyaoyonilo ilaoyot okakatigektilogit, onalo ihageagiyaoyomk toktonik nikikaktot omayot monaginiganik. GN-kot havakatikakneakot HTO-konik, NTI-konik, KIA-konik, GNWT-konik, TG-konik aheniklo ihoakhaeyagani ihoaktomik, Inoenaknit nogogitagani monagiyotinik pigeagonmik notkaktitiyotikhamik ikiklivaleanignik Aheakmi Kivalikheanik toktonik amihoakyoknik ihomagilogilo Inoet Itkilgilo ihomakhotaet

6. GN-kot nalonaektitaet ovani piyotaoyomik ilaopkaeginmat honaniklika TK-nik IQ-niklonet, hivonikhiyotikhali kayaknakmata nakogotaoyagani monagikatigeknik Aheakmi Kivalikheani toktoknik ilaoyageakakhotiklo hivonikhami atoligomayaoyonik NMWB-konot

7. Pikagiloni notamik TAH-mi inigektaoyonik Aheakmi Kivalikheani amihoakyoet pikagilonilo NQL-mi okoaginaknik Inoet toktonik agovageagani agohalenaknik talvatoak. Aheavot GN-kot havakatikakneaktok HTO-konik aheniklo pivaleayagani Inoenaknit nogogitagani monagiyotinot opalogaeyaonmik pipkaelotiklo ikayotikhanik atoliknigani opalogaeyaot KHTO-konit.

TAMAETA ILA IHOMAGITEAKHOHI TONIHIYOTAOYOK:

OVANI 14-MI OBLOANI FEBRUARY-MI 2020-MI

KIA Technical response to NWMB's issues relevant to the Government of Nunavut's proposal to modify the TAH for Bluenose East caribou

To address NWMB's issues, on behalf of KIA, I reviewed GN's briefing note and presentation for NWMB's December 2019 regular meeting and given that the submission was a summary, I also reviewed GNWT's information specifically the 2018 calving ground survey report which was provided to NWMB[1]. Relevant information is available through the WRRB proceedings and so I also reviewed the technical information summarized in the WRRB's Reasons for Decision reports[2] as well as using the NWMB and SRRB's public registry to find relevant information and documents.

Abbreviations and Acronyms	
ENR-GNWT	Department of Environment and Natural Resources, Government of Northwest Territories
GN	Government of Nunavut
KHTO	Kitikmeot Hunters' and Trappers' Organization
KIA	Kitikmeot Inuit Association
SRRB	Sahtu Renewable Resource Board
TAH	Total Allowable Harvest
TG	Tłįchǫ Government
WRRB	Wek'èezhìi Renewable Resource Board

1. Responses and feedback on the most recent science population abundance estimate for Bluenose East caribou, particularly about:

1.1. The recent steep decline in population size (by half in 2015-2018) and feedback on the assumptions associated with the statistical models used to estimate the current population abundance.

Summary: The evidence supports that the two main assumptions for the 2018 estimate of the Bluenose East herd (the estimates are accurate and precise and all the breeding cows return to their calving ground).
Comment: The Bluenose East herd declined 50% between 2015 and 2018 which is an annual and high rate of decline of about 20%. Only slightly less than a quarter of the caribou estimated in 2010 were left in 2018 (an 82% decline). The estimate in 2018 was 19,294 2+ years old and its statistical confidence limits were 6,527-22,524 which do not overlap those estimated in 2015 (33,859-43,325).

The 2018 estimate of herd size is based on extrapolating from the number of caribou estimated during a systematic aerial survey of the calving ground using visual and aerial photography methods that have become standardized since 2010. The number of caribou is then extrapolated to estimate the number of breeding cows and then in a further extrapolation, to the total number of 2 year and older caribou in the herd. The first assumption is that all the breeding cows migrate to the calving ground. In 2018, all 16 collared cows with a known calving location history returned to within the 2018 mapped Bluenose-East calving ground. Movements of collared cows between Bluenose East and the neighboring Bluenose

[1] https://www.nwmb.com/en/public-hearings-a-meetings/meetings/regular-meetings/2019/rm-004-2019-kugluktuk-december-4-2019/english-9
[2] https://www.wrrb.ca/public-information/public-registry

West and Bathurst calving grounds since 2010 have been extremely infrequent so there is no current evidence that emigration is a factor.

The second assumption is that the estimates are both accurate (minimal bias) and precise. Although in June 2018, patchy snow cover meant caribou were not easy to see, paired observers and recounting was used to estimate and correct levels of accuracy for both aerial and photo counts. The allocation of survey effort and the photo coverage were reasonable and lead to conventionally acceptable levels of precision for example; the estimate of breeding females was precise (7.7%). The extrapolation of the counts of caribou on the calving ground to herd size has been standardized since 2014 in NU and is conceptually and statistically consistent.

The report for the calving ground survey is detailed and I did not find any substantive issues to question the methods or whether the under-lying assumptions were invalid or weak. Even with rigor of methods and detailed statistical analyses, it is worth remembering that the emphasis is on standardization to ensure the estimates are comparable over time (to measure trend). The resulting numbers are estimates: a mid-value within a likely range of values.

1.2. The area covered and the duration of the aerial surveys

Summary: Extensive reconnaissance flights covered a large area and the survey was anchored to the peak of calving (when movements are minimal) with no delays.
Comment: There were no weather-caused delays during the survey that could have influenced the estimated numbers. The peak of calving was about 8 June which is within the typical date range (for example, 5-6 June in 2015). Extensive reconnaissance flights covered a large area. The calving area including the high density has shifted slightly west but overall, the area covered in June 2018 is similar to other calving ground surveys in 2010, 2013 and 2015.

1.3. The level of Inuit involvement in the study and use of Inuit Qaujimajatuqangit in the population assessment.

Summary: While four Inuit were observers during the 2018 survey, there was no evidence that Inuit Qaujimajatuqangit was used for the assessment of herd size in 2018.
Comment: The 2018 Bluenose East calving ground report acknowledges four Kugluktuk HTO representatives who were observers during the survey. I did not find mention of Inuit Qaujimajatuqangit for the calving ground survey in GN's presentation in December 2019 although for example, IQ was previously shared with GN in 2007[3] on the Bluenose East caribou herd.

It is a current and recurring theme that management decisions struggle to be based on the co-production of knowledge (in this case, science and indigenous society). For example, in the WRRB's 2019 Bluenose East hearings, Dr. John B. Zoe (TG) recounted that "One (1) purpose of traditional knowledge research is to gather and use the Elders' knowledge, but also create space for that knowledge in decision-making and management".[4]

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[3] Dumond, M. 2007. Western Kitikmeot caribou workshop. Government of Nunavut, Department of Environment, Final Wildlife Report: 19, Iqaluit, 47 pp.
[4] Transcript – April 9, 2019 (DAY 1) - 2019 Bluenose-East Caribou Herd WRRB Public Hearing. p 82

2. Any information which is used in demographic models including indices of cow and calf productivity/survival, and collar movement data.

Summary: The demographical model integrates field data on adult cow and calf survival, adult sex ratio, number of breeding females and an assumed harvest rate.
Comment: GNWT's computer demographic model uses GNWT's field data on spring and fall calf cow, and bull cow ratios and integrates them with the collared cow survival rates to generate rates such as adult and calf survival and productivity. The model has the strength that it incorporates trends in the field data. Details for the field data are not published but are summarized in the GNWT calving ground survey reports. The calving ground reports have been at roughly 3-year intervals which imposes a time lag in the availability of the annual estimates.

The individual field estimates tend to align with the model estimates but the devil is in the details. Annual variability in adult survival is high partially because sample size is relatively low. Adult survival, for example, was especially low in 2012/2013 (60%), recovered to 93% in 2015, but then declined for the next 3 years to 76% in 2017 based on the collared caribou. However, to illustrate, there can be differences between field and model estimates such as *the model* estimate of cow survival for 2017 is 72%. Based on the demographic model, adult survival suggests the same declining trend in cow survival from 2015 to 2018 collar estimates but the 3-year average suggests an increase although lower than the level expected for halting the decline and recovery.

Although these differences in field and model adult survival rates are a few percentage points, they are noteworthy as trends in herd size are especially sensitive to levels of adult female survival (as adult females are the typically the majority of a herd). Both GN and GNWT refer to the modelled survival rate of 72% for 2017/18 which is too low to expect the decline to halt without management actions to increase it. The survival estimates include harvest mortality which was 373 caribou in 2016-2017 and 323 caribou in 2017-2018.

GNWT's demographic model projects estimated numbers of breeding females which align closely with the field estimates. This adds credibility to using the model. Thus there is no evidence to disagree with GNWT's conclusion that harvest likely had minimal effect on survival rates from 2015 to 2018 (in contrast to before 2015). Furthermore, using the model, GNWT projected that by 2021, the herd would be reduced to about 10,000 (a further halving of herd size) and that a harvest between 100 and 300 would not have a detectable impact.

2.1. Habitat conditions and potential impacts from human activities in the range of the Bluenose East caribou herd.

Summary: Information on habitat conditions and potential impacts from human activities were not included in the GN's 2019 TAH submission.
Comment: The GNWT 2018 calving ground report was not designed to address this although concerns for habitat and human activities especially for calving and summer ranges were reviewed and are the basis for recommendations in the 2019 WRRB's Reasons for Decision report. The recommendations included one for mobile protection measures for Bluenose East

caribou in the NWT which echoes the recommendation in Kugluktuk's draft 2019 Community Management Plan filed at the NWMB December 2019 meeting.

3. Information regarding the relationship between environmental variables and health of Bluenose East caribou.

Summary: Information on environmental variables and health were not included in the GN's 2019 TAH submission although some information on weather and caribou survival is available in GNWT's 2018 calving report.
Comment: Although preliminary, GNWT's analysis suggests that June temperatures correlate with cow survival: the drought index was unusually severe in summer 2012 when adult survival was reduced to 60%. Summer hot temperatures and low wind speeds are favorable to warbles flies harassment which in turn correlates with calf survival. However, more analysis is needed including updated trends in weather and a more detailed understanding of why survival is affected.

4. The Government of Nunavut's proposed TAH and any alternative recommendations, if any, and why.

Summary: GN recommended in 2019 for the Bluenose East caribou herd a TAH of 107 caribou with the Non-Quota Limitation of a male only harvest while TG and GNWT have accepted WRRB's more conservative TAH of 193 for the range of the Bluenose East herd.
Comment: At the December 2019 NWMB regular meeting, the GN briefing note recommended that the NWMB reduce the TAH for the Bluenose East caribou herd to 107 caribou with the Non-Quota Limitation of a male only harvest based on a herd-wide TG/GNWT recommendation TAH of 300 bulls.

The GN briefing note mentioned the January 2019 TG and ENR-GNWT joint management proposal for WRRB with its recommendation of a herd-wide TAH of 300 bulls using the same harvest allocation used in 2015 (35.8% for Kugluktuk). GN noted that WRRB had, in June 2019, determined a total allowable harvest of 193 bulls as a more conservative TAH than TG and GNWT. GN did not summarize WRRB's reasoning for the more conservative TAH which, however, WRRB did share with NWMB in December 2019. WRRB's reasons are the recent high rate of decline, uncertainties about the underlying mechanisms for the decline, the importance of caribou for food security and cultural strength, and the comparison to the rate of decline of the Bathurst herd.

There is then, an alternative recommendation for the TAH as TG and GNWT had in August 2019 accepted WRRB's determination for TAH of 193 caribou and also accepted the determination for the proportional allocation of the total allowable harvest for the 2019/20 and 2020/21 harvest seasons as Tłı̨chǫ Citizens: 39.29% (76 animals) and members of an Indigenous people who traditionally harvest Sahtì ekwǫ̀ includes Nunavut): 60.71% (117 animals).

The Kugluktuk Hunters and Trappers Organization (KHTO) has developed a community-based management plan for the Bluenose-East herd which was provided to NWMB in December 2019. KHTO explained that it has implemented 4 of the 7 proposed management actions (No organized community or sport caribou hunts; no sale/purchase of caribou under the country food distribution program; support a shift in harvest to alternate species like muskoxen and create a no harvest zone for the BNE around the community). The other management actions include KHTO setting harvest limits, a requirement for reporting and educating KHTO members and reaching out for partners to create a predator management program.

In 2019, GN did not include a recommendation for wolf management but GNWT did in their 2019 joint proposal to WRRB acknowledge they were drafting a wolf management proposal which became available in January 2020 for the NWT.

5. Inuit Qaujimajatuqangit of the Bluenose East caribou, related to:

- Inuit approaches to caribou management in times of decline
- the socio-economic and cultural value of the Bluenose East caribou herd to Inuit
- knowledge of caribou behaviour, especially about the location of calving grounds and changes over time

IQ is outside my field although I am aware that the Inuit have a remarkable amount of information some of which has been compiled on these topics especially by the KHTO and is summarised in, for example, the KHTO Community Bluenose East Management Plan.

6. Inter-jurisdictional considerations when setting management actions for shared herds.

Summary: Information on monitoring and management is shared between the NWT and NU jurisdictions through the Advisory Committee for Cooperation on Wildlife Management while specific information on harvest management is shared through the jurisdiction of three co-management boards.

Comment: The KHTO Community Bluenose East Management Plan acknowledges that while Kugluktuk is the only community in NU that harvests the Bluenose East, the herd is harvested in the NWT.

In the NWT and Nunavut, the Bluenose East herd falls under the jurisdictions of three governments: TG, GNWT and GN and three co-management boards NWMB, SRRB and WRRB and the Yellowknives Dene First Nation, NWT Métis Nation, and North Slave Métis Alliance. The SRRB is developing community based management plans (Colville Plan - Dehlá Got'ı̨nę ʔədə Plan and Deline Community Conservation Plan).

Management knowledge and actions are coordinated through the Advisory Committee for Cooperation on Wildlife Management (Gwich'in Renewable Resources Board, ʔehdzo Got'ı̨nę Gots'ę́ Nákedı, Wek'èezhìi Renewable Resources Board, Kitikmeot Regional Wildlife Board and Tuktut Nogait National Park Management Board, Nunavut Wildlife Management Board).

Completed by:
Anne Gunn Ph.D.
Salt Spring Island, BC
10 February 2019

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ᐱᔾᔪᑎᖓ: ᓄᓇᕗᑦ ᐆᒪᔪᓕᕆᔩᑦ ᑲᑎᒪᔨᖏᑕ ᑭᒃᑯᓕᒫᓂᒃ ᓈᓚᒃᑎᑦᑎᓂᐊᑦ ᐃᓱᒪᒃᓴᖅᓯᐅᕈᑎᒋᓗᒋᑦ ᐋᖅᑮᒋᐊᕐᓂᒥᑦ ᐅᓗᑕᒦᑦ ᐱᑕᖅᑕᐅᔪᓐᓇᖅᑐᑦ ᐊᖑᓇᓱᒃᓗᑎᒃ ᐅᑯᓂᖓ ᐅᒥᖕᒪᒃᑑᑉ ᑲᓇᖕᓇᖕᖓᓂ ᑐᒃᑐᓂᒃ.

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ᐅᖃᐅᓯᑐᐃᓐᓇᐃᑦ:

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- ᓄᓇᕗᑦ ᐊᖏᕈᑎᖏᑦ ᓱᓕ ᐃᓕᑕᖅᓯᔪᑦ ᑕᐅᕗᖓ ᓴᖏᓂᖏᔪᓂᒃ ᐱᔪᓐᓇᐅᑎᒃᑯᑦ ᓇᖕᒥᓂᖅ-ᒪᓕᒐᒃᓴᓕᐅᕐᓂᕐᒥᑦ ᐅᑯᓄᖓ ᓄᓇᓕᖕᒥ ᐆᒪᔪᓕᕆᔨᐊᓖᑦ ᑲᑎᒪᔨᖏᓐᓄᑦ ᐊᒻᒪᓗ ᓄᓇᕗᒥ ᐊᕕᒃᑐᖅᓯᒪᔪᓂ ᐆᒪᔪᓕᕆᔨᑦ ᑲᑎᒪᔨᖏᑦ (RWOs)

- ᓇᓪᓕᐊᑐᐃᓐᓇᖅ ᐊᔪᖅᑎᑦᑎᔪᑦ ᐃᓱᓕᕝᕕᖃᖅᑎᑦᑎᓪᓗᑎᒃ ᐃᓄᐃᑦ ᑐᒃᑐᒎᓇᕐᓂᖏᓐᓂᒃ ᐊᖑᓇᓱᒃᓂᒃᑯᑦ ᑭᓯᐊᓂ ᐃᓕᓯᕝᕕᐅᔪᓐᓇᖅᑐᑦ ᑕᐅᕗᖓ ᐱᓯᓇᐊᖃᖅᐸᑦ ᐊᒃᑐᖅᓯᓂᐊᖅᑎᓪᓗᒋᑦ ᓴᐳᒥᕕᐅᔪᓄᑦ ᐊᓐᓇᖅᑐᐃᓂᕐᒥᑦ ᐃᓱᓖᓘᑎᒃᑯᑦ.

- ᑐᑭᐊ ᐱᔾᔪᑎᐅᐸ ᐆᒪᔪᓂᒃ ᓴᐳᒥᓂᕐᒥᑦ, ᐅᕝᕙᓗ ᐱᒪᑐᑦᑎᐊᕐᓂᖅ ᐅᒪᓇᒃᑐᓂᒃ ᐊᒻᒪᓗ ᖃᓄᐃᖏᑦᑎᐊᖅᑐᓂᒃ ᐋᓐᓂᐊᖃᕋᑎᒃ ᐆᒪᔪᐃᑦ ᐅᓄᖅᑐᑦ ᐊᔪᖏᑦᑐᖅ ᐊᓐᓇᒃᑐᕈᓐᓇᕐᓗᒋᑦ ᐃᓄᐃᑦ ᐊᖑᓇᓯᐊᕐᓂᖏᑦ ᐱᓯᓇᐊᖃᖅᑕᖏᓐᓂᒃ, ᐊᔪᕐᓇᖑᔭᖏᑦᑐᖅ ᐅᑯᐊ ᓄᓇᕗᒥ ᐆᒪᔪᓕᕆᔩᑦᐊᒃᑯᑦ ᑲᑎᒪᔨᖏᑦ ᐃᓕᓯᓗᑎᒃ ᐊᒥᓱᓗᐊᖏᑦᑐᓂᑦ ᐃᓱᓕᕝᕕᖃᖅᑎᑦᑎᓗᑎᒃ ᐱᓯᓇᐊᖃᖅᐸᑕ ᐃᓄᐃᑦ ᐊᖑᓇᓯᐊᕐᓂᖏᓐᓄᑦ. ᐃᓄᐃᑦ ᑕᐃᒪᖕᖓᓂᒃ ᑐᑭᓯᐊᔪᑦ – ᐊᒻᒪᓗ

ᐊᑐᖅᐸᒃᓱᑎᒃ – ᐅᖓᑕᐅᔾᔨᓗᐊᖅᑕᐃᓕᒪᓂᕐᒥᑦ ᐱᒪᑐᒃᓱᑎᒃ ᐊᖑᓇᓱᐊᕐᓂᕐᒥᑦ ᑕᐅᑐᒃᓱᒋᑦ ᓴᐳᒻᒥᔾᔭᑎᐅᔪᑦ ᐱᓗᐊᖅᑕᐃᓂᕐᒧᑦ.

- ᓄᓇᕗᓕᒦᒥ, ᓄᓇᓕᑦ–ᐃᓕᖓᔪᑦ ᐆᒪᔪᓕᕆᓂᕐᒧᑦ ᐊᐅᓚᑦᑐᓂᖅᒥᑦ ᐅᓄᖅᓯᕙᓪᓕᐊᔪᑦ ᐃᓕᑕᕆᔭᐅᓂᖏᑦ ᐊᐅᓚᑦᑎᓂᕐᒥᑦ ᑐᑭᖃᑦᑎᐊᖅᑐᓂᒃ ᐃᓱᒪᒃᓴᖅᓯᐅᖃᑦᑕᕐᓂᕐᒥᑦ ᐅᑯᐊᑎᒍᑦ *ᐃᓄᐃᑦ ᖃᐅᔨᒪᔭᑐᖃᖏᑦ* ᐆᒪᔪᓂᒃ ᐊᐅᓚᑦᑎᓂᕐᒥᑦ ᑲᔪᓯᓂᐅᔪᓂᒃ, ᐃᓱᒪᓕᐅᕆᓂᕐᒧᑦ–ᐋᖅᑭᒃᓱᐃᓂᕐᒥᑦ ᐊᒻᒪᓗ ᓴᖅᑭᑎᑦᑎᓂᕐᒥᑦ.

- ᓄᓇᕗᑦ ᑐᓐᖓᕕᒃ ᑎᒥᖓᑦ ᑐᓴᖅᓯᒪᔪᑦ ᐃᓅᓯᓕᕆᓂᕐᒧᑦ ᐱᖅᑯᓯᓕᕆᓂᒃᑯᓪᓗ ᐅᔾᔨᖅᑐᕐᓂᕐᒥᑦ, ᖃᐅᔨᓂᑦ ᐊᐅᓚᑎᑕᐅᓂᖏᑦ ᔭᒐᐃᓂᕐᒧᑦ ᐊᒻᒪᓗ ᓂᕿᑲᐃᓐᓇᕆᐊᖃᕐᓂᕐᒧᑦ ᐱᒻᒪᕆᐊᓗᒃᑯᑦ ᐊᒻᒪᓗ ᐅᖓᓯᒃᑐᒃᑯᑦ–ᑲᔪᓯᖁᓪᓗᑎᒋᑦ ᐊᒃᑐᖅᓯᓂᖏᑦ ᐃᓄᖕᓂᒃ ᐊᖏᔪᐊᓗᖕᓂᑦ ᒥᑭᒃᓕᕆᐊᖅᓯᒍᑎᖃᖅᐸᑕ ᐃᓕᓯᓗᑎᒃ ᐊᑐᖅᑕᐅᓇᔭᖅᑐᓂᒃ. ᐃᒪᓐᓇᐃᑐᐃᓐᓇᕆᐊᖃᕐᒥᔪᑦ ᓱᕈᕐᓗᑎᒃ ᑭᒃᑯᓕᒦᑦ ᐅᒃᐱᓂᓚᐅᖅᑕᖏᑦ ᑕᑎᖃᕐᓂᒃᑯᑦ ᑕᒪᐃᓐᓂ ᓄᓇᕗᑦ ᐊᕕᒃᑐᖅᓯᒪᔪᖏᓐᓂ ᐊᒻᒪᓗ ᓄᓇᓕᖕᒥ ᐊᐅᓚᑦᑎᓂᕐᒧᑦ ᐋᖅᑭᐅᒪᑎᑕᒃᑯᑦ ᐃᒪᓐᓇᐃᓯᒪᔪᑦ ᐊᒃᓯᐊᓗᒃ ᐱᓇᓱᐊᖅᓯᒪᓪᓗᑎᒃ ᐊᓐᓇᖅᑐᐃᓂᕐᒥᑦ ᐊᑐᓗᐊᖅᑕᐃᓕᒪᓂᒃᑯᑦ ᐆᒪᔪᐃᑦ ᐅᓄᕐᓂᖏᓐᓂᒃ ᐃᓕᖓᔪᓂᒃ ᓄᓇᖏᓐᓂ.

- ᓄᓇᕗᑦ ᑐᓐᖓᕕᒃ ᑎᒥᖓᑦ ᐃᑲᔪᖅᑐᐃᔪᑦ ᐃᓂᒋᔭᖏᓐᓂᒃ ᐅᑯᐊ ᐅᐊᖕᓇᖓᓂ ᕿᑎᕐᒥᐅᑦ ᐃᓄᐃᑦ ᐃᑲᔪᑐᐃᖏᑦᑐᑦ ᐅᑯᓂ ᓄᓇᕗᑦ ᖓᕙᒪᒃᑯᖏᑦᑕ ᑐᒃᓯᕋᐅᑎᖏᓐᓂᒃ ᒦᓐᓇᐅᔪᖅ.

ᐅᖃᐅᓯᐅᓪᓚᕆᒃᑐᑦ

ᐃᓄᐃᑦ ᖃᐅᔨᒪᔭᖏᑦᑎᒍᑦ ᐊᒻᒧᒃᐸᓪᓕᐊᔪᑦ ᓅᓴᐅᑎᒃᑯᑦ 2010–ᒥ. ᑭᓯᐊᓂ, ᐱᑕᓕᒃ ᓇᓗᓇᕈᑎᓂᒃ ᓱᓇᐅᓂᖏᓐᓂᒃ ᓈᒪᐅᑎᑦ ᖃᑉᓯᐅᓂᖏᓐᓂᒃ ᑐᒃᑐᐃᑦ.

- ᓄᓇᕗᑦ ᑐᓐᖓᕕᒃ ᑎᒥᖓᑦ ᐃᑲᔪᖅᑐᐃᔪᑦ ᓴᖅᑭᑎᑕᐅᓂᖏᓐᓂᒃ ᓄᓇᓕᖕᓂ–ᐃᓕᖓᔪᓂᒃ ᑐᒃᑐᓕᕆᓂᕐᒧᑦ ᐊᐅᓚᑦᑎᓂᕐᓂᒃ ᐸᕐᓇᐅᑎᒃᑯᑦ ᒪᑯᓄᖓ ᓴᐳᒻᒥᓂᕐᒥᑦ ᐊᓐᓇᒃᑐᐃᓗᓂ ᐅᑯᓂᖓ ᐅᒥᖕᒪᑦᑑᑉ ᑐᒃᑐᖏᓐᓂᒃ ᑲᓇᖕᓇᖓᓂ ᓄᓇᕗᑦ.

ᓄᓇᕗᑦ ᑐᓐᖓᕕᒃ ᑎᒥᖓᑦ ᐃᑲᔪᖅᑐᐃᔪᑦ ᑕᐅᑐᒃᑕᖏᓐᓂᒃ ᐅᑯᐊ ᖁᕐᓗᖅᑐᖅ ᓄᓇᓕᖕᓂ ᐆᒪᔪᓕᕆᔨᐊᑦ ᑲᑎᒪᔨᖏᑦᑕ ᐅᑯᐊ ᓄᓇᓕᖕᓂ ᑐᒃᑐᓕᕆᓂᕐᒧᑦ ᐊᐅᓚᑦᑎᓂᕐᒧᑦ ᐸᕐᓇᐅᑎᖏᓐᓂᒃ ᐃᓱᒪᓇᑦᑎᐊᖅᑐᑦ ᐅᐱᓇᖅᑐᒃᑯᑦ, ᓈᒻᒪᒃᑐᑦ ᐃᓗᐊᖅᓱᑎᒃ ᐊᒻᒪᓗ ᐊᔪᖏᑦᑎᐊᖅᑐᑦ ᐊᓯᐊᒍᑦ ᐊᐅᓚᑦᑐᓂᕐᒥᑦ ᑭᐅᓗᑎᒃ ᐱᐊᓂᒃᓯᓂᕐᒥᑦ ᓴᐳᒻᒥᓂᕐᒥᑦ ᐊᓐᓇᒃᑐᐃᓂᒃᑯᑦ ᐅᑯᓂᖓ ᐅᒥᖕᒪᒃᑑᑉ ᑐᒃᑐᖏᓐᓂᒃ–ᑲᓇᖕᓇᖓᓂ ᑐᒃᑐᐃᑦ ᓄᓇᕗᒥ.

- ᓄᓇᕗᑦ ᑐᓐᖓᕕᒃ ᑎᒥᖓᑦ ᐅᖃᒃᑲᓐᓂᖅᑐᑦ ᐃᓂᒋᔭᖓᓐᓂᑦ ᖁᕐᓗᖅᑑᑉ ᐆᒪᔪᓕᕆᔨᐊᑦ ᑲᑎᒪᔨᖏᑦᑕ ᐊᒻᒪᓗ ᐃᓄᐃᑦ ᐃᓛᓐᓂᒃᑯᑦ ᐅᖃᑕᐅᔾᔭᕙᒻᒪᑕ ᐃᓯᓕᕝᕕᖃᖅᑎᑦᑎᓂᕐᒥᑦ ᐅᓄᖅᑐᒃᑯᑦ ᐃᓯᓕᕝᕕᖃᖅᓱᑎᒡᓗ ᑭᓯᐊᓂ ᐊᑐᖅᑕᐅᓗᑎᒃ ᑕᒪᕐᒥ ᐊᓯᖏᑦ ᓴᐳᒻᒥᓂᕐᒧᑦ ᐊᓐᓇᒃᑐᐃᓂᕐᒧᑦ ᐅᔾᔨᖅᑐᕈᑎᑦ ᐃᓱᓕᑉᐸᑕ ᐊᑐᖅᑕᐅᓂᕐᒧᑦ ᐊᓯᐊᒎᕐᕕᖃᕈᓐᓃᕐᓗᑎᒡᓗ.

- ᐆᒃᑑᑎ ᐅᓇ, ᐅᑭᐅᖅᑲᓂ 2016, ᓄᓇᑦᓯᐊᑉ ᓵᑑ ᐊᓪᓚᐃᑦ ᐆᒪᔪᓕᕆᓂᕐᒧᑦ ᑲᑎᒪᔨᖏᑦ ᐊᖏᖅᑯᓚᐅᖅᑐᑦ ᓈᒻᒪᒃᓴᖅᓱᑎᒃ ᑐᑭᖏᓐᓂᒃ ᓯᕗᓕᓪᓂᒃ ᓇᖏᓂ–ᒪᓕᒐᒃᓴᓕᐅᕐᓂᕐᒥᑦ ᐊᐅᓚᑕᐅᓪᓗᑎᒃ ᐱᒋᐊᖅᑕᐅᓂᖏᑦ ᓄᓇᓕᖕᓂ–ᐃᓕᖅᑲᔪᓄᑦ ᓇᐅᑦᑎᓯᑐᐃᓂᐃᒥᑦ ᐊᒻᒪᓗ ᐃᓱᒪᓕᐅᕆᓂᕐᒧᑦ–ᐋᖅᑭᒃᓱᐃᓂᕐᒥᑦ ᐊᐅᓪᓛᑦᑎᐊᖅᑐᑦ ᑐᖓᑎᖏᑦ ᑐᒃᑐᓕᕆᓂᕐᒧᑦ ᐊᐅᓚᑦᑎᓂᒃᑯᑦ ᐱᔪᒪᔭᐅᔪᑦ ᐊᑲᐅᓂᐅᓪᓗᑎᒃ ᐅᑯᓄᖓ ᑎᓕᓃ ᐊᓪᓚᐃᑦ ᑐᒃᑐᓄᑦ ᐊᓐᓇᒃᑐᐳᑎᒃᓴᓄᑦ ᐸᕐᓇᐅᑎᑦ ᐅᑯᐊᖑᖏᖅᖢᖅᑐᑦ ᖃᕙᒪᒃᑯᑦ–ᐃᓕᓯᖏᓪᓗᑎᒃ ᑰᑕᓂᒃ ᑎᑭᐅᑎᓗᑎᒃᓗ ᓴᐳᒻᒥᓂᕐᒥᑦ ᐊᓐᓇᒃᑐᐃᓗᑎᒃ ᐱᔭᕆᐊᕐᑲᖅᑕᖏᑦ ᐅᑯᓄᖓ ᐅᒥᖕᒪᒃᑑᑉ–ᑲᓚᖕᓚᒥ ᑐᒃᑐᖏᓐᓂᒃ.

- ᓄᓇᓕᐊᑦ ᐅᓇ ᑰᕐᕕᐅ ᓖᒃ ᐅᓂᒃᑳᓚᐅᕐᒥᔪᑦ ᐅᑯᓄᖓ SRRB ᓄᓇᓕᖕᓂ ᑐᖓᔪᑦ ᑐᒃᑐᓕᕆᓂᕐᒧᑦ ᐊᓐᓇᒃᑐᐃᓂᕐᒥᑦ ᓴᐳᒻᒥᔾᔪᑎᒃᓴᓂᒃ ᐸᕐᓇᐅᑎᒃᑯᑦ ᐊᑐᖅᑕᐅᓪᓗᑎᒃ ᑎᐊᓂ ᒪᓕᒐᖏᑦᑎᒍᑦ ᐊᒻᒪᓗ ᐃᓕᖅᑯᓯᖏᑦᑐᑦ. ᑲᑎᒪᓂᑦ, ᐋᖅᑭᒃᑕᐅᓯᒪᔪᑦ ᐅᑯᓄᖓ SRRB, ᑐᓂᓯᔪᑦ ᑐᑭᓯᓇᑦᑎᐊᖅᑐᓂᒃ ᑕᑯᒃᓴᐅᑎᑦᑎᓪᓗᑎᒃ ᐅᓪᓗᒥᒧᑦ ᓱᓕᓂᖏᓐᓂᒃ ᓄᓇᖃᖅᑳᖅᓯᒪᔪᑦ ᐱᔾᔪᓯᖏᓐᓂᒃ ᐃᓅᓯᖏᓐᓂ ᐊᒻᒪᓗ ᖃᐅᔨᒪᓪᓗᓂ ᐆᒪᔪᓕᕆᓂᕐᒧᑦ ᐊᐅᓚᑦᑎᓂᕐᒥᑦ ᐃᓕᖅᑲᔪᑦ ᐊᑐᖅᑕᑦ ᑐᖓᑎᓕᑦ ᐊᑯᓐᓂᖏᓐᓂᒃ ᐅᐱᒍᒌᑎᓂᒃᑯᑦ ᐊᒻᒪᓗ ᓄᓇᓕᖕᓂ–ᐋᖅᑭᐅᒪᔪᑦ ᓴᖏᓂᖅᑲᖅᑎᑦᑎᖃᑎᒌᒃᓂᐅᔪᓂᒃ ᐊᐅᓚᑦᑎᓂᒃᑯᑦ.

- ᓄᓇᕗᑦ ᑐᓐᖓᕕᒃ ᑎᒥᖓᑦ ᐅᖃᖅᑎᐊᖅᑐᑦ ᑕᒪᓐᓇ ᐊᓐᓇᒃᑐᐃᓂᖅ ᓴᐳᒻᒥᓪᓗᓂ ᐃᓱᒫᓘᑏᑦ ᓇᓗᓇᐃᖅᑕᐅᔪᑦ ᐅᑯᓄ ᐅᓄᕐᓂᖏᑦ ᓯᕗᓪᓕᐅᓗᑎᒃ ᐱᓕᕆᐊᖑᔭᕆᐊᓕᑦ ᐊᑐᕐᓗᑎᒃ ᐅᑯᓄᖓ ᖁᕐᓗᖅᑐᖅ ᓄᓇᓕᖕᓂ ᐆᒪᔪᓕᕆᔨᐊᓛᑦ ᑲᑎᒪᔨᖏᓐᓄᑦ ᓄᓇᓕᖕᓂ–ᐃᓕᖅᑲᔪᑦ ᑐᖓᔪᑦ ᑐᒃᑐᓕᕆᓂᕐᒧᑦ ᐊᐅᓚᑦᑎᓂᕐᒧᑦ ᐊᐅᓚᔾᔨᐊᖅᑕᐅᓯᒪᔪᑦ, ᒪᓕᒃᓗᒋᑦ ᐅᑯᐊ ᐃᓚᖅᑲᓂ ᑎᑎᕋᖅᓯᒪᔪᑦ 5.7.3 ᐅᑯᓇᓂ ᑕᑯᓗᒋᑦ *ᓄᓇᕗᑦ ᐊᕐᕿᒍᑎᖏᓐᓂ*.

- ᓄᓇᕗᑦ ᑐᓐᖓᕕᒃ ᑎᒥᖓᑦ ᐅᖃᒃᑲᓐᓂᖅᑐᑦ ᓴᖏᔪᒥᑦ ᐅᑯᐊ *ᓄᓇᕗᒥ ᐊᕐᕿᒍᑏᑦ* ᐅᖃᖅᑐᑦ ᓇᓗᓇᐃᖅᓯᓂᒃᑯᑦ ᐅᑯᐊᓗ ᐅᓪᓗᒧᑦ ᐱᑕᖅᑕᐅᔪᓐᓇᖅᑐᑦ ᓂᕿᒃᓴᐅᓪᓗᑎᒃ ᑭᓯᐊᓂ ᓱᑲᖅᑲᓕᖅᑎᑦᑎᔪᓐᓇᖅᑐᑦ ᐱᓗᐊᖅᑕᐃᓕᓂᕐᒥᑦ ᐃᓄᐃᑦ ᐊᖑᓇᓱᐊᕐᓂᖅᑎᖕᓂᒃ ᑕᐅᕗᖓ ᐱᔭᕆᐊᖅᑲᖅᐸᑦ ᐊᑐᖅᑕᐅᓗᑎᒃ (s. 5.3.3), ᐊᒻᒪᓗ ᐅᑯᐊ **NQL** ᐊᔪᖅᑐᑦ ᐱᔪᓐᓇᖅᑎᑦᑐᑦ ᓈᒻᒪᖅᑎᑦᑐᒃᑯᑦ ᓄᖅᑲᖅᑎᑦᑎᓂᕐᒥᑦ ᐃᓄᐃᑦ ᐊᖑᓇᓱᐊᕐᓂᕐᒧᑦ ᐱᓕᕆᐊᕆᐊᖃᕐᓂᖅᑕᖅᑲᖅᐸᑦ (s. 5.6.50).

- ᐅᑭᐅᑦ ᑕᓪᓕᒪᑦ ᓈᑎᓪᓗᒋᑦ, ᖁᕐᓗᖅᑐᕐᒥ ᐃᓄᐃᑦ ᐊᖑᓇᓱᒃᑲᑦᑕᖅᓯᒪᔪᑦ ᐅᒥᖕᒪᒃᑑᑉ ᑐᒃᑐᖏᓐᓂᒃ–ᑲᓇᖕᓇᖅᑲᓂ ᑐᒃᑐᐃᑦ ᓈᓴᐅᑎᒃᑯᑦ ᐅᓄᕐᓂᖏᑦ ᐊᑖᓃᑦᑐᑦ ᐋᖅᑭᒃᑕᐅᓯᒪᔪᑦ ᒪᓕᒃᓗᒋᑦ ᐅᑯᐊ ᖃᐅᑕᒫᑦ ᐊᖑᔭᐅᔪᓐᓇᖅᑐᑦ ᐱᑕᖅᑕᐅᓗᑎᒃ ᓄᓇᖏ. ᑕᐃᒪᐃᒻᒪᑦ, ᒥᑭᓕᕆᐊᖅᑎᑦᑎᓂᖅ ᐅᑯᓇᓂ ᐅᓄᕐᓂᖏᑦ ᐱᑕᖅᑕᐅᔪᓐᓇᖅ ᖃᑕᐅᒫᑦ ᐊᖑᓇᓱᒃᑎᓄᑦ ᐃᒪ33ᓐᓇᐃᑐᐃᓐᓇᕆᐊᓕᑦ ᐊᑐᖅᑕᐅᖏᓪᓗᑎᒃ ᐊᖑᓇᓱᖕᓂᖅ ᒫᓐᓇ ᐊᐅᓚᑕᐅᖅᒪᑕ ᓄᓇᓕᖕᒥᐅᓄᑦ. ᑭᓯᐊᓂ, ᐃᓕᓯᓂᖅ ᒥᑭᓕᕆᐊᖅᑎᑦᑎᓂᕐᒥᑦ ᐱᔪᒪᔭᐅᔪᓄᑦ ᓄᓇᓕᖕᓂ ᓱᕈᐃᑐᐃᓐᓇᕐᓂᐊᖅᑐᖅ ᒪᑭᒪᓂᖏᓐᓂᒃ ᐊᒻᒪᓗ ᑕᑎᖅᑲᕐᓂᖏᑦ ᑕᒪᑦᓱᒧᖓ ᐊᐅᓚᑦᑎᓂᕐᒧᑦ ᐃᓕᖅᑲᔪᓄᑦ.

- ᐊᔾᔨᓴᐃᓐᓇᖅᑲ ᐊᑯᓂᐅᓂᐊᑕ, ᖁᕐᓗᖅᑐᖅ ᐃᓄᐃᑦ ᐊᖑᓇᓱᐊᖅᐸᒃᑐᑦ ᐅᒥᖕᒪᒃᑑᑉ–ᑲᓇᖕᓇᖅᑲᓂ ᑐᒃᑐᓂᒃ ᐃᒪᓐᓇ ᐊᖑᑎᑦ–ᐊᕐᓇᐃᑦ ᑭᐳᒃᑕᖅᓗᒋᑦ ᐃᒪ3ᓐᓇ 1.3:1.

ᑕᒪᓐᓇ ᐃᓚᖓᒍᑦ ᐱᔾᔪᑎᐊᑕ ᐊᔾᔨᒌᖏᓐᓂᖏᑦ ᐅᑭᐅᑉ ᐃᓗᐊᓂ ᐱᔪᒪᓂᖅᓴᐅᓚᖓᓂᖏᑦ ᐃᓄᐃᑦ ᐊᖑᓇᓱᐊᕐᓂᖏᑦᑎᒍᑦ. ᐸᖕᓂᑦ ᑭᓱᐊᓂ ᐅᓚᓂ NQL ᑕᐃᒪᐃᒻᒪᑦ ᑭᓱᐊᓂ ᐊᑦᑐᓯᔪᑦ ᐊᖑᑕᐅᓂᖏᓐᓂᒃ ᐊᕐᓇᓪᔫᓂᖏᓐᓂᒃ ᓂᕈᐊᕐᓗᑎᒃ ᐃᓱᓖᕝᕙᖅᑎᓪᓗᒋᑦ ᑭᓱᐊᓂᑦᑕᐅᖅ ᓱᕈᐃᓇᔾᖅᑐᑦ ᐃᓄᐃᑦ ᐱᖁᓯᖏᓐᓂᒃ ᐊᑐᖅᑲᑦᑕᕐᓂᕐᒥᑦ ᐊᖏᔪᒥᑦ.

- ᐃᓱᒪᒃᑯᑦ ᑎᒍᓪᓗᒋᑦ ᐃᓱᒪᒃᓴᖅᓯᐅᕈᑎᑦ ᓱᓕᓂᖏᓐᓄᑦ, ᓄᓇᕗᑦ ᑐᓐᖓᕕᒃ ᑎᒥᖓᑦ ᐃᑲᔪᖅᑐᐃᔪᑦ ᓈᒻᒪᒃᓴᖏᓐᓂᖏᓐᓂᒃ ᖁᕐᓗᖅᑐᖅ ᐃᓄᖏᑦᑕ ᒥᒃᓵᕆᐊᖅᑎᑦᑎᓂᕐᒥᑦ ᖃᐅᑕᒫᑦ ᐱᑕᖅᑕᐅᓚᒃᑐᑦ ᐊᖑᓇᓱᐊᕐᓂᒃᑯᑦ ᐅᓚᓐᖓᑦ 340 ᑎᑭᐅᑎᓗᒍ 107 ᑐᒃᑐᓂᒃ ᐊᒻᒪᓗ ᐋᖅᑭᒃᓱᓗᑎᒃ ᐃᒪᓐᓇ ᐊᖑᑎᑦ–ᑭᓱᐊᓂ ᐊᖑᔭᐅᓗᑎᑦ ᐱᑕᖅᑕᐅᓂᒃᑯᑦ ᐅᓚᓂ NQL.
- ᓄᓇᕗᑦ ᑐᓐᖓᕕᒃ ᑎᒥᖓᑦ ᐅᒃᐱᕈᓱᒃᑐᑦ ᑕᒪᒃᑯᐊ ᐃᓅᓱᒃᑯᑦ ᐱᖅᑯᓱᒃᑯᓪᓗᑦ ᐅᔾᔨᖅᑐᕆᐊᕐᑲᕐᓂᖅ, ᖃᐅᔨᓴᓂᖏᑦ ᑐᓂᓯᓂᖅ ᐊᓯᒨᑦ, ᔭᒐᐃᓂᖅ ᐊᒻᒪᓗ ᓂᕿᑲᐃᓐᓇᕆᐊᕐᑲᕐᓂᖅ ᐃᓱᒪᒃᓴᖅᓯᐅᕈᑕᐅᒋᐊᓕᑦ ᖃᐅᔨᓴᐃᑎᓪᓗᒋᑦ ᐅᑯᓚᖓ ᐊᒃᑐᖅᓯᓂᐅᑐᐃᓐᓇᕆᐊᕐᑲᖅᑐᓂᒃ ᐅᑯᐊ ᑐᒃᓯᕐᐅᑎᑦ ᐃᓱᓕᕝᕙᕐᑲᖅᑎᑦᑎᓂᕐᒥᑦ ᐃᓄᐃᑦ ᐊᖑᓇᓱᐊᕐᑲᑦᑕᕐᓂᖏᓐᓂᒃ ᐅᒥᖕᒪᒃᑑᑉ–ᑲᓇᖕᓇᒥ ᑐᒃᑐᖏᓐᓂᒃ.

ᐋᖅᑭᒃᓱᖅᑕᐅᔪᑦ ᐅᑯᓄᖓ: ᐱᓕᕆᕕᐊᓐᓂᒃ ᐆᒪᔪᓕᕆᔩᒃᑯᑦ ᐊᒻᒪᓗ ᐊᕙᑎᓕᕆᔩᒃᑯᑦ, ᓄᓇᕗᑦ ᑐᓐᖓᕕᒃ ᑎᒥᖓᑦ.

ᓄᓇᕗᒻᒥ ᐆᒪᔪᓕᕆᔨᑦ ᔪᐊᒃᑯᑦ ᑲᑎᒪᔨᖏᑦ ᑎᑭᓯᒪᔪᑎᒃ ᓄᓇᓕᖕᒧᑦ ᑐᓴᕐᕕᖃᓇᐊᖅᑐᕐᓂᖏᑦ ᐃᓱᒪᒃ ᓴᖅᓯᐅᕈ ᑕᐅᔭᓇᐊᖅᑲᖅᑐᓂᒃ ᓄᓇᕗᑦ ᒐᕙᒪᐃᑦ ᐱᓕᐊᖅᑎᑕᐅᖁᔭᖏᓂᒃ ᐋᖅᑭᒋᐊᖅᑕᐅᖁᔨᓂᖅ ᑐᒃᑐᓯᐅᕐᕕᐅᔪᓐᓇᕐᓂᖏᓂᒃ ᖁᓗᖅᑰᑉ-ᑲᓇᖕᓇᖕᓂ ᑐᒃᑐᖏᓂᒃ 340-ᖑᕆᑦ ᑐᓂᒃ ᑕᒪᐅᖓ ᐋᖅᑭᒃᑕᐅᓗᑎᒃ 107-ᓄᑦ ᐊᒻᒪᓗ ᐋᖅᑭᒃᑕᐅᓗᑎᒃ ᐸᖕᓂᖕᓇᐅᔭᓂᒃ ᑐᒃᑐᑕᐅᖃᑦᑕᖅᑯᐃᓂᖅ ᒪᓕᒐᓕᐅᕆᑕᐅᖕᒐᓗᐊᖅᓗᑎᒃ ᐃᓱᖃᖅᑎᑕᐅᔭᓐᓇᕐᓂᖏᓂᒃ ᑳᑕᑎᒍᑦ

ᐅᖃᐅᓯᒃ ᓴᐃᑦ ᖃᐃᑕᐅᓯᒪᔪᑦ ᓄᓇᑦᓯᐊᑉ ᒐᕙᒪᒃᑯᖏᑦ ᓂᖕᒌᖅᑐᑦ (ᓄᓇᑦᓯᐊᑉ ᒐᕙᒪᐃᑦ) ᐃᖃᓇᐃᔭᕐᕕᖕᓂᒃ ᐊᕙᑎᓕᕆᔨᒃᑯᑦ ᓄᓇᒥ ᐅᑕᐅᖅᑲᓕᕆᔨᒃᑯᓪᓗ

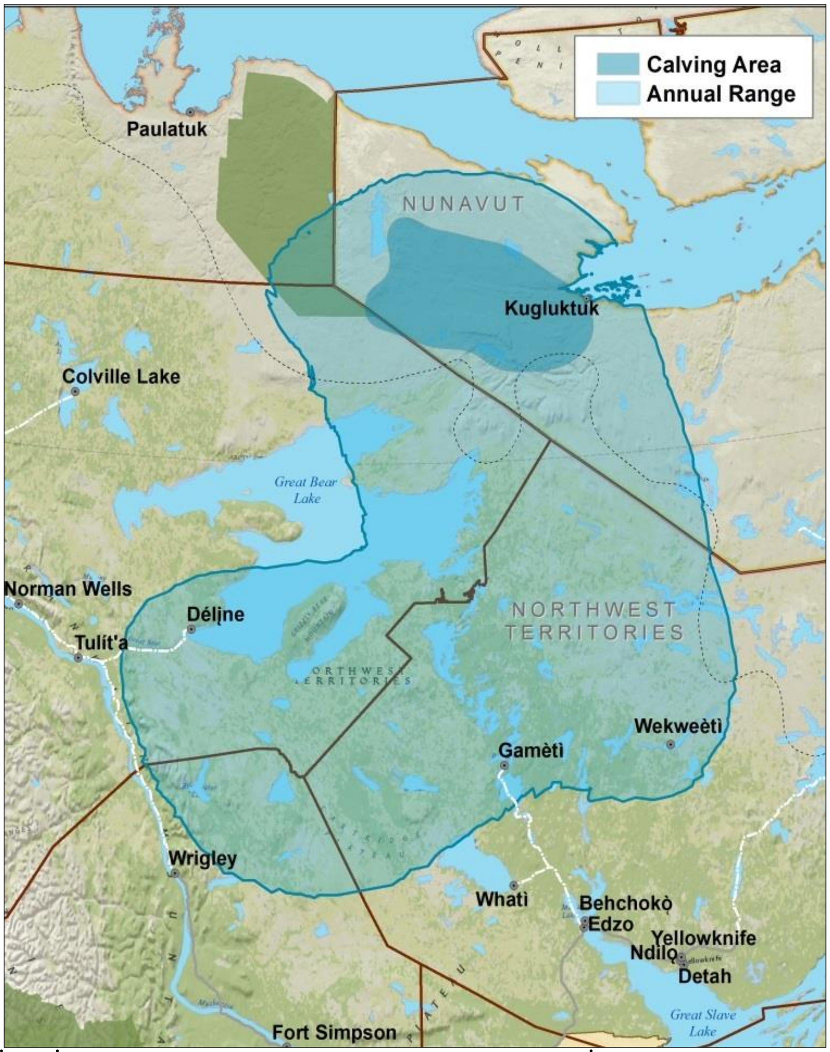
ᓇᐃᓈᖅᑕᐅᓪᓗᑎᒃ : ᐅᑯᐊ ᑎᑎᖅᑲᐃᑦ ᓇᐃᓈᖅᓯᒪᔭᓂᒃ ᖃᐅᔨᒪᑎᑦᑎᑦᔭᑎᒃ ᓴᓂᒃ ᖃᓄᐃᓕᖕᓂᖏᓂᒃ ᖁᓗᖅᑰᑉ-ᑲᓇᖕᓇᖕᓂ ᓇᐹᖅᑐᖃᖏᑦᑐᕐᒥᐅᑦ ᑐᒃᑐᖏᑦ, ᒪᓐᓇᕈᖅᑭᓯᒪᔪᓗ ᑐᒃᑐᓯᐅᕐᕕᐅᕙᖕᓂᖏᓂᒃ, ᐊᐅᓚᑕᐅᕙᖕᓂᖏᓐᓄ ᑖᒃᑯᐊ ᑐᒃᑐᖏᑦ ᓄᓇᑦᓯᐊᕐᒥ (ᓄᓇᑦᓯᐊᕐᒥ) ᐊᒻᒪᓗ ᓄᓇᑦᓯᐊᑉ ᒐᕙᒪᐃᑦ ᐊᑐᓕᖁᔭᖏᓂᒃ ᑐᒃᑐᓯᐅᕐᕕᐅᔭᓐᓇᕐᓂᖏᓂᒃ ᖁᓗᖅᑰᑉ-ᑲᓇᖕᓇᖕᓂ ᑐᒃᑐᖏᑦ. ᐅᓂᒃᑳᖅᓯᒪᓪᓚᑎᐊᒃ ᑲᓐᓂᖅᑐᓂᒃ ᖃᐅᔨᑎᑦᑎᓕᐊᕈᑎᒃᓴᖅᑲᓇᕗᑦ ᑐᒃᑐᓂᒃ ᐊᔪᖏᓂ ᐃᑲᔪᖅᓱᐃᓗᑕᐅᔪᓂ ᑎᑎᖃᓂ. ᑕᒫᓂ ᐊᕐᕌᒍᒥ 2010-ᒥ ᖁᓗᖅᑰᑉ-ᑲᓇᖕᓇᖕᓂ ᑐᒃᑐᐃᑦ ᐊᒥᐦᓰᓂᖅᑲᕐᓯᕆᔭᐅᓚᐅᖅᐳᑦ 120,000-ᓂᒃ ᑐᒃᑐᓂᒃ, ᑭᓯᐊᓂ ᑕᐃᒪᖓᑦ ᐊᒥᐦᓰᔭᓐᓂᖅᓯᒪᑎᑭᐳᑦ ᓇᓚᐅᑦ ᑖᖅᑕᐅᓯᒪᔪᓂ 68,300-ᓂᒃ ᑕᐃᒪᖓᑦ ᐊᕐᕌᒍᒥ 2013-ᒥ, ᐊᒻᒪᓗ ᑕᒫᓂᓐ ᓇᓱᕆᔭᐅᓕᓚᐅᖅᑐᑦ 38,600 ᐊᕐᕌᒍᒥ 2015-ᒥ, ᐊᒻᒪᓗ ᑕᒫᓂ 19,300 ᐊᕐᕌᒍᒥ 2018-ᒥ. ᑕᒪᕐᒥᒃ ᑕᒪᒃᑯᐊ ᓇᓚᐅᑖᖅᑕᐅᓯᒪᓂᖏᑦ ᐊᒥᐦᓰᓂᖏᓂ ᑐᖕᕕᖅᐳᑦ ᑕᐃᒃᑯᓂᖓ ᓴᐃᓐᓇᖅ ᔪᕐᓇᕕᖕᓂ ᔪᓇᓂᒃ ᐊᑉᓯᓕᐅᖅᑕᖅᑲᐃᓐᓇᕐᓂᖏᓂᒃ. ᓄᓇᑦᓯᐊᕐᒥ, ᐃᔪᖕᔪᑦ ᓂᕿᒃᓴᓇᔭᐅᓂᖏᓪᓗᑦ ᐊᒻᒪᓗ ᑮᓇᐅᔭᓕᐅᕈᑎᒃᓴᐅᓂᖅᒧᑦ ᑐᒃᑐᑕᐅᖃᑦᑕᕋᓐᓇᕐᓂᖏᑦ ᓄᖅᑲᖅᑎᑕᐅᓚᐅᖅᑐᑦ ᐊᕐᕌᒍᒥ 2010-ᒥ. ᓄᓇᑦᓯᐊᕐᒥ ᖁᓗᖅᑰᑉ-ᑲᓇᖕᓇᖕᓂ ᑐᒃᑐᖅᑯᑦ ᕕᐅᕙᖕᓂᖏᑦ ᐊᖕᒐᖅᑲᖅᑎᑦᑎᒍᓐ ᒪᕐᕉᖕᓂᒃ ᐊᓪᓚᖓᑦ ᓄᓇᑖᑦᕕᐅᔪᒪᔫᖕᓂᒃ; ᓴᑑᒥ ᐅᑕᓄᑦ ᓄᓇᑖᑎᔭᐅᓯᒪᔪᓂ ᐊᒻᒪᓗ ᐅᐊᑭᓯᒥᐅᑦ (ᒃ ᓈᑦ ᓲᒥᐅᑦ ᓄᓇᑖᑦᕕᑎᓯᒪᔭᖏᓂ).

ᑕᒫᓂ ᐊᕐᕌᒍᒥ 2016, ᐅᐊᑭᓯᒃᑯᑦ ᓄᓇᒥ ᐅᑕᖅᑭᔩᑦ ᑲᑎᒪᔨᖏᑦ (WRRB) ᐃᓅᖁᑎᒥᓂᒃ ᑐᓴᕐᕕᖃᐃᑦᑐᓚᐅᖅᑐᑦ ᐊᐅᓚᑕᐅᕙᖕᓂᖏᓂᒃ ᖁᓗᖅᑰᑉ-ᑲᓇᖕᓇᖕᓂ ᑐᒃᑐᐃᑦ ᐊᒻᒪᓗ ᑐᑭᓕᐅᖅᑕᐅᖁᔭᐅᓂᖏᓄᑦ ᑕᒪᐃᓐᓂᒃ ᑲᑎᓐᓂᑦ ᑐᒃᑐᐦ ᕕᐅᔭᓇᐊᖅᑐᖅ, ᑕᒫᓃᓐ ᓂᐊᖅᒪᑕ 750-ᓂ (ᑕᒪᕐᒥᒃ ᐸᓐᓃᑦ) ᑕᒪᐃᓐᓂᒃ ᓇᓂᑐᐃᓐᓇᖅ ᑐᒃᑐᖅᑲ ᕕᐅᔪᓂᒃ ᑕᒪᒃᑯᓂᖕᒐ ᐃᓕᑕᕆᔭᐅᓯᒪᓪᓗᓂ ᓗ ᑲᑎᒪᔨᑐᐊᑦ ᑎᐊᑦ ᐊᐅᓚᑦᑎᔨᐅᔭᓇᐊᖅᑐᑦ ᑕᒫᓂ ᐅᐊᑭᓯᒥ. ᐅᐊᑭᓯᒥ ᐊᐅᓚᑦᑎᔩᑦ ᑲᑎᒪᔨᖏᑦ ᐃᓅᓕᒫᓂᒃ ᑐᓴᕐᕕᖃᐃᑦᑐᖅᓯᒪᓚᐅᖅᒥᔪᑦ ᐊᕐᕌᒍᒥ 2019-ᒥ ᖁᓗᖅᑰᑉ-ᑲᓇᖕᓇᖕᓂ ᑐᒃᑐᓕᕆᔨᓂᒃ, ᑐᑭᓕᐅᖅ ᕕᐅᓕᓚᐅᖅᑐᑦ ᑕᒪᐃᓐᓂᒃ ᑲᑎᓐᓂᑦ ᑐᒃᑐᖏᓂᒃ ᑐᑕᐅᔭᓇᐊᖅᑐᖏᓂᒃ ᐊᒥᐦᓰᔭᓐᓂᕆᐊᖅᓱᐊᓪᓗᑎᒃ 193-ᓂᒃ ᐸᖕᓂᖕ ᓇᐅᓂᐊᖅᑐᑦ, ᐃᓚᒋᔭᐅᓗᑎᒃ 1% ᐳᓴᓐᑎᖏᓄᑦ ᐊᒥᐦᓱᓂᖏᓄᑦ ᑐᒃᑐᐃᑦ ᐊᕐᕌᒍᒥ 2018-ᒥ ᑕᐃᒃᑯᐊ ᓴᓅᒥ ᐅᑕᐃᑦ ᓄᓇᒥ ᐅᑕᖅᑭᔩᑦ ᑲᑎᒪᔨᖏᑕᖅ ᐃᓅᖁᑎᒥᓂᒃ ᑐᓴᕐᕕᖃᐃᑦᑐᖅᓯᒪᓚᐅᖅᑐᑦ ᐊᕐᕌᒍᒥ 2016-ᒥ, ᐊᑐᓕᖁᔭᓕᐅᓚᐅᖅᓯᑎᓪᓗ ᖁᓗᖅᑰᑉ-ᑲᓇᖕᓇᖕᓂᒃ ᑐᒃᑐᓯᐅᕐᕕᐅᔭᓇᐊᖅᑐᖏᓂᒃ ᓄᓇᓕᖕᓄᑦ ᑕᐃᓕᓇᐃᒥ ᐅᑕᓄᑦ-Deline ᒪᓕᒋᐊᖃᕐᓂᖏᓂᒃ ᓄᓇᓕᖕᓄᑦ-ᐊᐅᓚᑕᐅᔪᓂᒃ ᐸᕐᓇᐅᓯᐊᓂᒃ, ᓄᓇᖕᓂᒃ (ᑕᐃᓕᓇᐃᒥ ᐅᑦ 2016-ᒥ) ᑐᒃᑐᓯᐅᔭᓇᐊᖅᑐᖏᓂᒃ ᐃᓱᖅᑎᑕᐅᔪᓂᒃ 150-ᓂᒃ ᓇᐸᖅᑐᖃᖏᑦᑐᒥᐅᑕᐅᔪᑦ ᑐᒃᑐᖏᓂᒃ, ᐱᔭᐅᓂᖅᓴᐅᖁᔭᐅᓗᑎᒃ ᐱᕈᐊᓃᖅᓯᒪᔪᑦ ᐸᓐᓃᑦ. 2019-ᒥ ᑎᑎᕋᖅᑕᐅᑦ ᑎᐊᒃ ᑲᓂᓚᐅᖅᑐᑦ ᐋᖅᑭᒋᐊᖅᑕᐅᓯᒪᓗᑎᒃ ᐸᕐᓇᐅᑏᑦ ᓄᓇᖑᐊ ᑎᐊᓕᓇᐃᐸ ᐃᓚᖅᑲᓚᐅᖅᑐᑦ ᐸᕐᓇᐅᑎᖏᑦ ᐊᒥᐦᓰᖏᓐᓴᐅᓕᖅᑐᓂᒃ ᑐᑕᐅᔭᓇᐊᖅᑐᖏᓂᒃ ᖁᓗᖅᑰᑉ-ᑲᓇᖕᓇᖕᓂ ᓇᐸᖅᑐᖃᖏᓂᒥ ᑐᓂᒃ ᐱᔭᐅᓂᖅᓴᐅᖁᔭᐅᓗᑎᒃ ᐱᕈᐊᓃᖅᓯᒪᔪᑕᖅ ᐸᓐᓃᑦ.

ᐊᒥᐊᒃ ᑯᖏᑦ ᐅᖃᐅᓯᒃᓴᓂᒃ ᑕᐅᓯᒪᔪᑦ ᑖᒃ ᑯᓇᓂ ᐅᓂᒃᑳᖅᓯᒪᓪᓚᑎᐊᒃ ᑲᓂᖅᑐᓂᒃ ᐃᓚᖅᑲᖅᐳᑦ ᒪᑯᓂᖓ ᐱᔭᑎᖅᑐᓂᒃ: (1) ᖁᓗᖅᑰᑉ-ᑲᓇᖕᓇᖕᓂ ᓇᐸᖅᑐᖃᖏᑦᑐᒥᐅᑦ ᑐᒃᑐᐃᑦ ᖃᓄᐃᓕᖕᓂᖏᓂᒃ, (2) ᐊᐅᓚᑦ ᑕᐅᓂᖏᓂᒃ ᐱᔭᑎᖅᑐᓂᒃ ᖁᓗᖅᑰᑉ-ᑲᓇᖕᓇᖕᓂ ᑐᒃᑐᓂᒃ, ᐊᒻᒪᓗ (3) ᒪᓇᕈᖅᑭᓯᒪᔪᖅ ᑐᒃᑐᓯᐅᕐᕕᐅᖃᑦᑕᖅᓯᒪᓂᖏᓂᒃ ᐊᒻᒪᓗ ᐊᐅᓚᑕᐅᕙᖕᓂᖏᓂᒃ ᖁᓗᖅᑰᑉ-ᑲᓇᖕᓇᖕᓂ ᓇᐸᖅᑐᖃᖏᑦᑐᒥᐅᑦ ᑐᒃᑐᖏᑦ ᓄᓇᑦᓯᐊᕐᒥ, ᐊᕐᕌᒍᒥ 2016-ᒥᑦ 2019-ᒧᑦ. ᓄᓇᑦᓯᐊᑉ ᒐᕙᒪᐃᑦ ᐃᑲᔪᖅᓱᐃᔪᖅ ᓄᓇᕗᑦ ᒐᕙᒪᐃᑦ ᐊᑐᓕᖁᔭᓕᐊᕆᓯᒪᔭᖏᓂᒃ ᑕᒪᐃᓐᓂᒃ ᑲᑎᓐᓂᑦ ᑐᒃᑐᓯᐅᕐᕕᐅᔭᓇᐊᖅᑐᖏᓂᒃ ᐊᑐᓕᖁᔭᐅᔪᓂᒃ ᐊᒥᐦᓰᓕᖓᓂᒃ 107-ᓂᒃ ᐸᓐᓂᑦ ᓂᒃ ᑖᒃᑯᓇᖓᑦ ᖁᓗᖅᑰᑉ-ᑲᓇᖕᓇᖕᓂ ᑐᑐᓂᒃ ᓄᓇᕗᒻᒥ. ᐊᒥᐦᓰᓃᖓᓐᓇᐊᕐᓂᖏᑦ 340-ᓂᒃ 107-ᒧᑦ ᒪᓕᖕᒪᑕ ᐊᒥᐦᓰᓐᓃᖅᑎᑕᐅᓯᒪᓂᖏᓂᒃ ᑐᒃᑐᓯᐅᕐᕕᐅᔭᓇᐊᖅᑐᖏᑦ ᓄᓇᑦᓯᐊᕐᒥ, ᓄᓇᖏᓂ ᓵᑐᒥ ᐅᑦ ᐊᒻᒪᓗ ᒃ ᓈᑦ ᓲᒥ ᐅᑦ ᓄᓇᑖᑦ ᕕᑎᓯᒪᔭᖏᓂ.

1. ᖁᓗᖅᑰᑉ-ᑲᓇᖕᓇᖕᓂ ᓇᐸᖅᑐᖃᖏᑦᑐᒥᐅᑦ ᑐᒃᑐᐃᑦ ᐊᒥᐦᓰᓂᖏᓂ ᖃᓄᐃᓕᖕᓂᖏᑦ

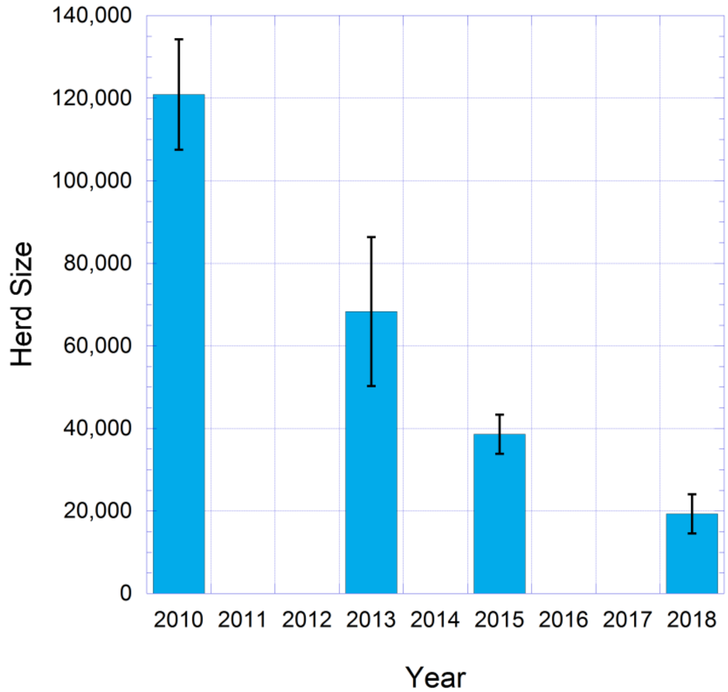
ᖁᕐᓗᖅᑑᑉ-ᑲᓇᖕᓇᖕᓂ ᓇᐹᖅᑐᖃᖕᖏᑦ ᑐᕐᒥᐅᑦ ᑐᒃ ᑐᐃᑦ ᑐᑭᓯᔭᐅᓯᒪᒐᒥᒃ ᖁᖕᖓᕈᑦ ᑎᖅᑕᐅᓯᒪᓂᖕᖏᓂᒃ ᐅᔭᒥᖃᖅᑐᓂᒃ ᑐᒃᑐᓂᒃ ᐊᑐᖃᑕᖅᓯᑎᒃ, ᓇᐹᖅᑐᖃᖕᖏ ᓂᕐ ᒦᓐᓂᖕᖏᓂᒃ ᑕᐃᒪᖕᖑ 1996-ᒥᒃ ᓄᓇᖕᖏ ᓅᓰ ᖕᖑᔪᓂᒃ ᐊᖕᖏᓂᓕᖕᓂᒃ ᓴᓂᒧᓪᓗ ᑐᑭᒧᓪᓗ ᑭᐹᓇᒃ ᑐᒥᒃ 200,000-250,000 km^2 (ᑕᑯᔭᒃᓴᖅ 1). ᑐᒃᑐᖕᖏᑦ ᑖᒃ ᑯᐊ ᓄᕐ ᓇᕙᖃᖅᐳᑦ ᑕᒫᓂ ᒫᓐ ᓇᓴ ᖕᖑᓕᖅᑐᖅ ᐊᕐ ᕋᒍᓂ ᐱᖕᖑᖅ ᓇᖅᐸᓯ ᖕᓂ ᖁᕐᓗᖅᑑᑉ, ᓄᓇᕘᑦ ᓄᓇᖕᖏᑦ ᐃᓕᕆᔭᐅᓪ ᓗᑎᒃ ᐊᐅᔭᕐ ᕕᕆ ᕙᑕᖕᖏᑦ. ᐊᒥᐊᒃ ᑯᖕᖏᑦ ᑐᒃᑐᖃᕐ ᕕᖕᖏᑦ ᐃᓚᖃᖅᑎᕗᑦ ᑕᒪ ᐃᓐ ᓂᑲᓴᒃ ᐅᑮᕕᕆ ᕙᑦ ᑕᖕᖏᑦ ᓄᓇᑦᓯᐊᕐᒥ, ᐱᓗᐊᖅᑐᒥᒃ ᑲᓇᖕᓇᖕᓂᓗ ᓂᕆ ᐊᓂᓗ ᑕᓯᕐ ᔭᐊᖕᖓ Great Bear Lake-ᒥᒃ. ᓄᓇᑦᓯᐊᕐᒥ, ᖁᕐᓗᖅᑑᑉ-ᑲᓇᖕᓇᖕᓂ ᑐᒃᑐᐃᑦ ᒪᕐ ᕈᖕᓂᒃ ᓄᓇᑖᕆᔭᐅᓯᒪᔫᐸᐳᑦ: ᓵᑐᒥ ᐅᓄᑦ ᓄᓇᑖᕐ ᕕᕆᓯᒪᔭᖕᖏᓂ ᐊᒻᒪᓗ ᐅᐊᑮᓯᒥᐅᑦ (ᒃ ᓚᓃᑦ ᓰᒥᐅᑦ ᓄᓇᑖᕐ ᕕᑎᓯᒪᔭᖕᖏᓂ).



ᑕᑯᔭᒃᓴᖅ 1. ᐊᕐ ᕌᒍᑕᒫᖅ ᓇᔪᖅᐸᒃ ᑕᖕᖏᑦ ᐊᒻᒪᓗ ᓄᕐ ᓇᕕᖕᖏᑦ ᖁᕐᓗᖅᑑᑉ-ᑲᓇᖕᓇᖕᓂ ᑐᒃᑐᖕᖏᑦ, 1996-2009-ᒥ, ᖃᐅᔨᔭᐅᓯᒪᔪᑦ ᑐᖕᖓᕙᖅᑐᓂᒃ ᐃᓕᔭᐅᓯᒪᔪᓂᒃ ᓈᓚᐅᑎᓕᖕᓂ ᖁᖕᖓᕈᑎᓂᒃ ᐊᕐ ᓇᓪ ᓗᐃᑦ ᑐᒃᑐᖕᖏᓂᒃ.

ᑕᒫᓂ ᔫᓐ 2018-ᖑᑎᓪ ᓗᒍ ᓄᕐ ᓇᕖᑦ ᓄᓇᒥᒃ ᐊᔾ ᔨ ᓕᐅᖅᑕᐅᓚᐅᖅᑐᑦ ᖁᕐᓗᖅᑑᑉ-ᑲᓇᖕᓇᖕᓂ ᓇᐹᖅᑐᖃᖕᖏᑦ ᑐᕐ ᒥᐅᑕᓂᒃ ᑐᒃᑐᓂᒃ ᓴᕿᑎᑦ ᑎᓚᐅᖅᑐᓂᒃ ᑐᑭᓯ ᓇᖅᑐᓂᒃ ᓇᓚᐅᑖᖅᑕᐅᔪᓂᒃ ᐊᒥᕐ ᓱᖕᖏ ᓂᓕᖕ ᓂᒃ 19,294 ± 3,230 (95% ᓇᓗᓇᕐ ᓂᖃᖅ ᑎᕆᔪᓂᒃ (CI) ᐱᕈᐊᓂᒃ ᓯᒪᔪᓂᒃ ᑐᒃᑐᓂᒃ, ᑕᒫᓃᓪ ᓚᐅᖅᑐᓂᒃ ᐊᕝ ᕙᓪ ᓗᐊᑲᓴᖕᖏᓂᒃ ᔩᓐᒥ 2015-ᒥ ᐊᒥᓱᓂᖕᖏᓂᒃ ᓇᓚᐅᑖᖅᑕᐅᓚᐅᖅᓯᒪᔪᓂ 38,592 ± 4,733-ᓂᒃ ᐊᔾ ᔨ ᕕᖕᖏ ᓂᖃᕈᓐ ᓇᖅᑐᑦ ᐊᒥᕐ ᓱᓂᖅᓴ ᐅᓂᖃᕈᓐ ᓇᖅᓱᑎᒃ ᐊᒥᕐ ᓱᖕᖏ ᓂᖅᓴ ᐅᓂᖃᕈᓐ ᓇᖅᓱᑎᑉ ᓗᓐ ᓃᑦ (ᑕᑯᔭᒃᓴᖅ 2). ᑕᒡ ᑰᓇ ᖃᐅᔨᓴᖅᑕᐅᓚᐅᖅᑐᓂ ᓴᕿᑎᑦ ᑎᓚᐅᖅᑐᑦ ᖁᐊᖅᓵᕐ ᓇᖅᑑᓕᖅᑐᓂᒃ, ᒪᕐ ᕉᖕ ᓂᒃ ᐱᔾ ᔪᑎᖃᖅᑑᖕ ᓂᒃ: 1) ᐊᕐ ᕋᒍᑕᒫᖅ ᐊᒥᕐ ᓱᔫᓐ ᓃᖅᐸᓪ ᓕᐊᖕᖏ ᓇᕐ ᓂᖕᖏ ᓄᑦ (-22% ᐳᓴᓐ ᑎᖕᖏᓕᖅᑐᓂ ᒫᓐ ᓇᐅᓕᖅᑐᖅ) - ᓱᒃ ᑲᓕᓂᖅᓵ ᓘᓕᖅᑐᒥᒃ ᑕᐃᑉ ᓱᒪᓂ ᐊᕐ ᕋᒍᐃᑦ ᐊᑯᓐ ᓂᖕᖏᓕᐅᐸᓚᐅᖅᑐᓂᒃ 2015-ᒥᓗ 2018-ᒥᓗ ᓴᓂᐊᓂ -16% ᐳᓴᓐ ᑎᖕᖏᓕᐅᖅᑐᓂᒃ ᐊᕐ ᕋᒍᑕᒫᖅ ᐊᔾ ᔨ ᖅᐸᓪ ᓕᐊᖃᑦ ᑕᓚᐅᕐ ᓂᖕᖏ ᓂᒃ ᐊᕐ ᕋᒍᓂ ᖃᐅᔨᓴᖅᑕᐅᔪᓂᒃ 2010-ᒥ ᐊᒻᒪᓗ 2013-ᒥ; ᐊᒻᒪᓗ 2) ᐊᒥᕐ ᓱᔫᓐ ᓂᖅᐸᓪ ᓕᐊᓂᖕᖏᑦ ᐊᕐ ᕋᒍᖕᖏᓂᒃ 2015-ᒥᒃ 2018-ᒧᑦ ᑲᔪᓯ ᑐᐃᓐ ᓇᕈᑎᒃ ᑕᐃᒪᒃ, ᓇᓚᐅᑖᖅᑕᐅᓂᖕᖏᑦ ᐊᒥᕐ ᓱᓂᖕᖏᑦ ᑐᒃ ᑐᐃᑦ 2021-ᖑᓕᖅᐸᑦ

ᑕᐃᓐᓇ ᓄᓇ ᓂᐊᕋᓱᒋᔭᐅᕙᑦ ᖃᓂᒋᔭᕐᓂ 10,000-11,000 ᐱᕈᐊᓂᒃ ᓯᒪᓂᕐᓂ, ᐊᕝ ᕙᓪ ᓘᐊᕐᓂ ᓅᓪ ᓘᑎᒡ ᓘᓐ ᓅᑦ ᓇᓚᐅᑖᕐ ᑕᐅᓚᐅᕐᑐᓂᒃ ᐊᕐ ᕿᒧᒥ 2018-ᒥ. ᑕᒪᕐ ᒥᒃ ᓯᑕᒪ ᐃᑦ ᑐᒃ ᑐᖃᕐ ᕖᐅᓂᕐᓃ ᐊᒥᔅ ᓱᓂᕐᓂ ᓂᒃ ᓇᓚᐅᑖᕐ ᑕᐅᓚᐅᕐᑐᑦ (2010, 2013, 2015, ᐊᒻ ᒪᓗ 2018-ᒥ) ᑐᑭ ᓕᐅᕐ ᑕᐅᓚᐅᕐᑐᑦ ᑕᐃᒃ ᑯᓂᙱᖅ ᓴᐃᓐ ᓇᖅ ᓄᕐ ᓇᕖᒋᔭᕐᓂ ᓂᒃ ᓄᓇᒥᒃ ᐊᔾ ᔾ ᓕᐅᕐ ᑕᐅᓯᒪᔪ ᓂᒃ ᐊᑐᖅᓯ ᑎᒃ, ᐅᖃᐅᓯ ᐅᓯᒪᓪ ᓗᑎᒃ ᖃᓄᐃᓕᐅᓚᐅᕐ ᓂᕐᓃ Bᐅᓛᓐᔭᐃᒃᑯᑦ-Boulanger et al. (2019). ᓱᒃ ᑲᓕᔪᒥᒃ ᐊᒥᔅ ᓵᔪᓐ ᓅᖅᐸᓪ ᓕᐊᓂᕐᓃ ᖁᕐ ᓗᖅᑑᑉ-ᑲ ᓇᕐ ᓇᙳ ᑐᒃ ᑐᕐᓂ ᓂᒪᓕᒃ ᑐᔫᖅᐸᑦ ᐊᒥᓵᔪᓐ ᓅᖅᐸᓪ ᓕᐊᓂᕐᓂ ᓂᒃ ᑕᐅᖅ ᖃᐅᔾᔭ ᐅᕙᓪ ᓕᐊᔪᓂᒃ ᕿᓐ ᙵᐅᒻ ᒥ ᑐᒃ ᑐᕐᓂ ᓂᒃ ᐊᕐ ᕿᒧᕐᓂ 2006-2009-ᒧᑦ, 30% ᐳᓴᓐ ᑎᙳᓐᑦ ᑐᓂᒃ ᐊᕐ ᕿᒧ ᑕᐃᓐᖅ ᖄᕐᑭᐅᑎᓯᒪᔪᓂᒃ ᐊᒥᔅ ᓵᔪᓐ ᓂᖅᐸᓪ ᓕᐊᓯᒪᓂᕐᓂ ᓂᒃ.

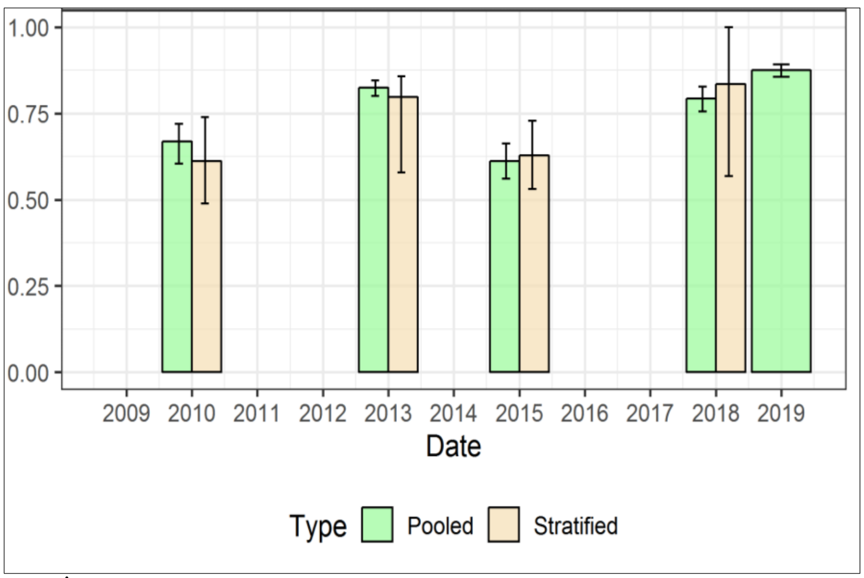


ᑕᑯᔭᒃ ᓴᖅ 2. ᓇᓚᐅᑦ ᑖᖅ ᑕᐅᓯᒪᓂᕐᓃ ᐊᒥᔅ ᓵᓂᕐᓃ ᐱᕈᐊᓂᒃ ᓯᒪᔪᑦ ᑐᒃ ᑐᐃᑦ (ᐊᒥᓱᓂᖅ ᓴᐅᔪᓐ ᓇᖅ ᑐᑦ ᐊᒥᔅ ᓵᙳᓂᖅ ᓴᐅᔪᓐ ᓇᖅ ᑐᓪ ᓘᓐ ᓅᑦ ±95% ᓇᓗᓇᕐ ᓂᖅᑲᖅ ᓱᑎᒃ) ᖁᕐ ᓗᖅᑑᑉ-ᑲ ᓇᕐ ᓇᙳ ᑐᒃ ᑐᕐᓃ, ᐊᕐ ᕿᒧᓂᒃ 2010-2018-ᒧᑦ ᒪᓕᒃ ᑐᑦ ᑐᑭ ᓕᐅᕐ ᑕᐅᓚᐅᕐ ᓂᕐᓂ ᓂ ᓄᕐ ᓇᕖᓕᓇᓂᕐᓂ ᓂᒃ ᓄᓇᒥ ᐊᔾ ᔾ ᓕᐅᕐ ᑕᐅᖃᑕᓚᐅᕐᑐᓂᒃ ᖃᐅᔾ ᓴᖅ ᑕᐅᓚᒥᒃ.

ᐊᓯᕐ ᓂᒃ ᓄᓇᒥ ᓇᓗᓇᐃᒃ ᑯᑕᐃᑦ ᑕᐅᖅ ᖁᕐ ᓗᖅᑑᑉ-ᑲ ᓇᕐ ᓇᙳ ᑐᒃ ᑐᓂᒃ ᒪᓐ ᓇᔫᖅ ᒪᓕᕐ ᒥᔪᑦ ᓱᒃ ᑲᓕᔪ ᐊᓘᕐ ᒥᒃ ᐊᒥᔅ ᓵᔪᓐ ᓅᖅᐸᓪ ᓕᐊᓂᕐᓂ ᓂᒃ ᐊᕐ ᕿᒧᑲᓴᐅᔪᓂ 2010-2015-ᒧᑦ. ᐱᙳ ᐃᓕᖅᑳᙳ ᓂᒃ ᓄᓇᒥᒃ ᓇᓗᓇᐃᒃ ᑯᑕᖅᑲᓵᙳᔭᑦ ᑐᒃ ᑐᐃᑦ ᖃᓄᐃᙳᓂᕐᓂ ᓄᑦ ᑐᙳᕖᖅᖃᑐᓂᒃ ᐊᕐ ᓇᓪ ᓗᐃᑦ ᐆᒪᔪᓐ ᓇᕐ ᓂᕐᓂ ᓂᒃ, ᐊᕐ ᓇᓪ ᓗᐃᑦ ᐃᑉ ᓚᐅᖅᑲᓵᙳᓂᕐᓂ ᓂᒃ ᐊᒻ ᒪᓗ ᓄᕐ ᓇᓯᒪᔭᕐᓂ ᐆᒪ ᐃᓐ ᓇᕈᓐ ᓇᕐ ᓂᕐᓂ ᓂᒃ. ᐆᒪᔪᓕᓇᔾᑦ ᐅᖃᐅᓯᕐ ᓂᒃ ᐊᑐᖅᐸᒃ ᑐᑦ ᑕᒪᒃ ᑯᓂᙵᑕᐃᒍ ᐃᓂᖅ ᑐᒃ ᑐᐃᑦ ᐆᒪᔪᓐ ᓇᕐ ᓂᕐᓂ ᓂᒃ.

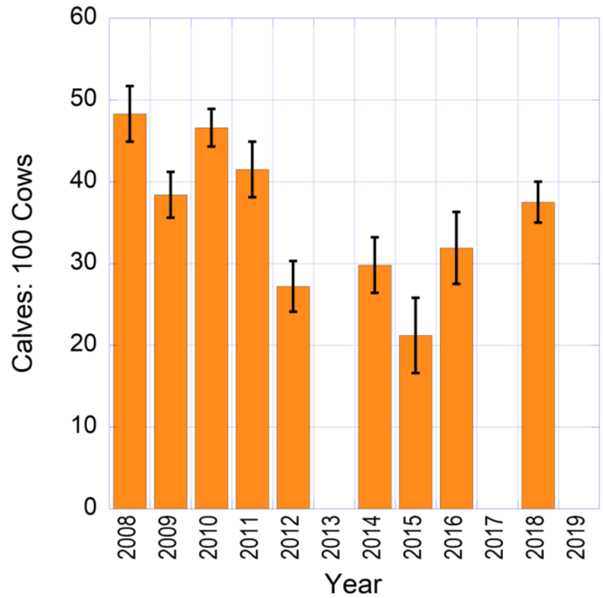
ᑕᒪᒃ ᑯᓇᙱᖅ ᓇᓗᓇᐃᒃ ᑯᑕᓇᔭ ᐅᕚᒃ ᑐᓂᒃ, ᐱᒻ ᒪᓇᐅᓂᐹᙳᕚᒃ ᑐᑦ ᐊᕐ ᓇᓪ ᓗᐃᑦ ᑐᒃ ᑐᐃᑦ ᐆᒪᔪᓐ ᓇᕐ ᓂᕐᓃ; ᐊᒥᓱᑲᓴᓐ ᓂᒃ ᑐᑭᓯ ᓂᐊᕈ ᑕᐅᖃᑦ ᑕᖅᓯᒪᔭᑦ (ᐆᒃ ᑑᑎᑭ ᓗᒍ Bᐅᓛᓐᔭᐃᒃᑯᓐ ᓂᙳᖅ ᑐᑦ-Boulanger et al. 2011-ᒥ) ᓴᕿᑎᑦ ᑎᓯᒪᓐᒪᑕ ᐊᑯᓐ ᓂᕐᓂ ᓅᑦ ᑕᓇᐊᖃᕐ ᓂᕐᓂ ᓂᒃ ᓈᓴᐅᑎᓕᖅ ᓂᒃ 84% ᐳᓴᓐ ᑎᓂᒃ ᐊᒻ ᒪᓗ 90% ᐳᓴᓐ ᑎᕐᓂ ᓂᒃ ᖃᓄᐃᙳᓂᕋᖅ ᑕᐅᔪᓐ ᓇᕐ ᓂᐊᕈᑎᒃ ᑐᒃ ᑐᐃᑦ. ᖃᐅᔾ ᓯᐊᖅ ᑕᐅᓚᒥᒃ ᐆᒪ ᐃᓐ ᓇᕈᓐ ᓇᕐ ᓂᕐᓃ ᖁᙳ ᕈᑦ ᑎᖅ ᑕᐅᓯᒪᔪᑦ ᐅᔭᒥᓃᑦ ᐊᕐ ᓇᓪ ᓗᐃᑦ, ᐊᑐᖅ ᑕᐅᓂᕐ ᕼᓐ ᓗ ᓄᓇᒦ ᓐ ᓂᕐ ᓂ ᖃᐅᔾ ᓴᕈᑎᕐᓃ ᑐᑭᓯ ᕖᐅᓰ ᙳᕙᑦ ᖁᕐ ᓗᖅᑑᑉ-ᑲ ᓇᕐ ᓇᙳ ᐊᕐ ᓇᓪ ᓗᐃᑦ ᑐᒃ ᑐᐃᑦ ᐆᒪᔪᓐ ᓇᕐ ᓂᕐᓂ ᓂᒃ ᐊᔾ ᔾ ᕿᕐᓃ ᑑᑎᐅᖃᑦ ᑕᖅᓯᒪᔪᑦ ᐊᑯᓂᕐᓂ ᓂᒃ ᓈᔅ ᓴᐅᑎᓕᕐ ᓂ ᑖᓐ ᙱᖅ 71% ᐳᓴᓐ ᑎᓂᒃ ᐊᒻ ᒪᓗ 79% ᐳᓴᓐ ᑎᓂᒃ, ᐊᕐ ᕿᒧᓂ ᑖᓐ ᓂ 2015-ᒥ ᐊᒻ ᒪᓗ 2018-ᒥ ᐊᒻ ᒪᓗ ᐱᐅᓂᖅ ᑳᙳᔪ ᓂᒃ ᓇᓚᐅᑖᕈ ᑕᐅᔪ ᓂ ᐊᕐ ᕿᒧᒥ 2017-2018-ᒥ ᑖᓐ ᓅᓚᐅᕐ ᑐᑦ 72% ᐳᓴᓐ ᑎᙳᓐ ᓂ Bᐅᓛᔭᐃᒃᑯᓐ ᓂᙳᖅ ᑐᑦ-Boulanger et al. 2019-ᒥ). ᐊᕐ ᓇᓪ ᓗᐃᑦ ᑐᒃ ᑐᕐᓃ ᐆᒪ ᐃᓐ ᓇᕈᓐ ᓇᕐ ᓂᕐᓃ ᐳᖅ ᑐᓂᖅ ᓴᒦᑦ ᑕᓇᐊᖅᑲᖅ ᐸᑦ ᐊᒻ ᒪᓗ ᑕᒪ ᐃᓐ ᓂᑦ ᑎᐊᖅ ᐅᙱᑖᓄᓪ ᓗᑎᒃ 80% ᐳᓴᓐ ᑎᓂᒃ ᑐᒃ ᑐᐃᑦ ᖃᓄᐃᙳ ᓂᕿᖅ ᑕᐅᔪᓐ ᓇᕐ ᓂᐊᕈᑎᒃ.

ᐱᐅᓂᖅᐹᙱᔾᔪᓐᓇᖅᑐᑦ ᖃᐅᔨᒪᔾᔪᑎᑦᓴᐃᑦ ᐊᑐᐃᓐᓇᐅᔪᑦ ᐃᑉᓕᐊᖅᑕᕐᓂᖏᓂ ᑕᒃᑯᓇᓂ ᑐᒃᑐᓂᒃ ᑲᑎᖅᓱᖅᑕᐅᔪᓐᓇᖅᑐᑦ ᑕᖅᑭᖓᓂ ᔫᓐᒥ ᖃᓄᐃᓕᖓᓂᖏᓐᓂᒃ ᖃᐅᔨᓴᖅᑕᐅᓚᐅᖅᑐᓂ 2010, 2013, 2015, 2018 ᐊᒻᒪᓗ 2019-ᒥ, ᓇᓚᐅᑦᑖᕐᓇᕐᒪᑕ ᐃᓚᖏᓐᓂᒃ (% ᐳᓴᓐᑎᑦᑎᒍᑦ) ᓄᓕᐊᕈᓐᓇᕐᓂᖏᓐᓂ ᐊᕐᓇᓪᓗᐃᑦ. ᐊᒥᓲᓂᖏᑦ ᐊᔾᔨᒌᖃᑦᑕᖏᑦᒪᑕ ᑕᒪᒃᑯᐊᓗ ᐊᒥᔅᓲᖏᓂᖅᓴᐅᓚᐅᖅᓯᑎᒃ 2010-ᒥ ᐊᒻᒪᓗ 2015-ᒥ, ᖃᓂᒋᔭᖏᓃᑐᓂᒃ 60%-65% ᐳᓴᓐᑎᖏᓂᒃ ᖁᕝᕙᓯᖕᓂᖅᓴᐅᓚᐅᖅᓯᑎᒃ ᖃᓂᒋᔭᖏᓂ 80% ᐳᓴᓐᑎᒦᓚᐅᖅᑐᓂ ᐊᕐᕌᒍᒥ 2013-ᒥ ᐊᒻᒪᓗ 2018-ᒥ ᐊᒻᒪ ᓱᓕ ᐊᒥᔅᓲᓂᖅᓴᐅᓚᐅᕐᒥᔪᑦ 87.5% ᐳᓴᓐᑎᖏᓃᓚᐅᖅᑐᓂᒃ ᔫᓐ 2019-ᒥ (ᑕᑯᔭᒃᓴᖅ 3). ᑕᐃᒪ ᐃᓕᖓᓚᐅᕐᓂᖏᑦ ᑕᒪᒃᑯᐊ ᐃᓱᒪᓇᖅᐳᑦ ᐊᒥᔅᓲᖏᓂᖏᓄᑦ ᐃᑉᓚᐅᖃᓚᐅᖅᑐᑦ ᐱᔾᔪᑕᐅᖕᒥᔪᑦ ᑐᒃᑐᐃᑦ ᐊᒥᔅᓲᔪᓐᓃᕐᓂᖏᓄᑦ ᐃᓚᖏᓐᓂ ᐊᕐᕌᒍᓂᒃ, ᐳᓴᓐᑎᑎᒍᑦ ᐊᕐᓇᓪᓗᐃᑦ ᓄᓕᐊᕈᓐᓇᖅᑐᔮᕐᓂᖏᑦ, ᑕᒫᓂᑐᓐ ᓇᕈᑎᒡᓗᓐᓃᑦ 80% ᐳᓴᓐᑎᖏᓂ ᖃᓄᐃᖏᓂᕋᖅᑕᐅᔪᓐᓇᕐᒪᑕ ᑐᒃᑐᖏᑦ.



ᑕᑯᔭᒃᓴᖅ 3. ᐊᒥᔅᓲᓂᖏᑦ ᑖᒡᕙᓂ (% ᐳᓴᓐᑎᑎᒍᑦ) ᐊᕐᓇᓪᓗᐃᑦ ᑐᒃᑐᖏᓂ ᖁᕐᓗᖅᑑᑉ-ᑲᓇᖕᓇᖕᓂ ᓄᕐᓇᕕᖏᓂ ᑕᐃᔭᐅᕙᒃᑐᑦ ᓄᓕᐊᕈᓐᓇᕐᓂᕋᖅᑕᐅᔪᓂᒃ ᔫᓐᒥ ᐊᒥᔅᓲᓂᖅᐸᓇᔭᖕᓂ ᓄᕐᓇᕙᓕᐊᓚᐅᕐᓂᖕᓂ ᐊᕐᕌᒍᒥ 2010-2019-ᒥ. ᑲᑎᑕᐅᓯᒪᓂᖏᑦ ᐊᒻᒪᓗ ᑐᑭᓕᐅᕈᑕᐅᓂᖏᑦ ᓈᓴᖅᑕᐅᖃᑦᑕᕐᒪᑕ ᐊᑐᖅᐸᒃᓯᑎᒃ ᐊᔾᔨᒌᖏᑦᑐᓂᒃ ᓈᓴᐅᓯᓕᔾᔪᑎᓂᒃ, ᑕᐃᒪ ᐃᑲᓗᐊᖅᑎᓪᓗᒍ ᓱᓕ ᐊᔾᔨᒌᒃᑐᐃᓐᓇᑲᓴᐅᔪᓂᒃ ᓴᕿᑎᑦᑎᖃᑦᑕᓚᐅᖅᐳᑦ ᐊᒥᔅᓲᓂᖏᓂᒃ.

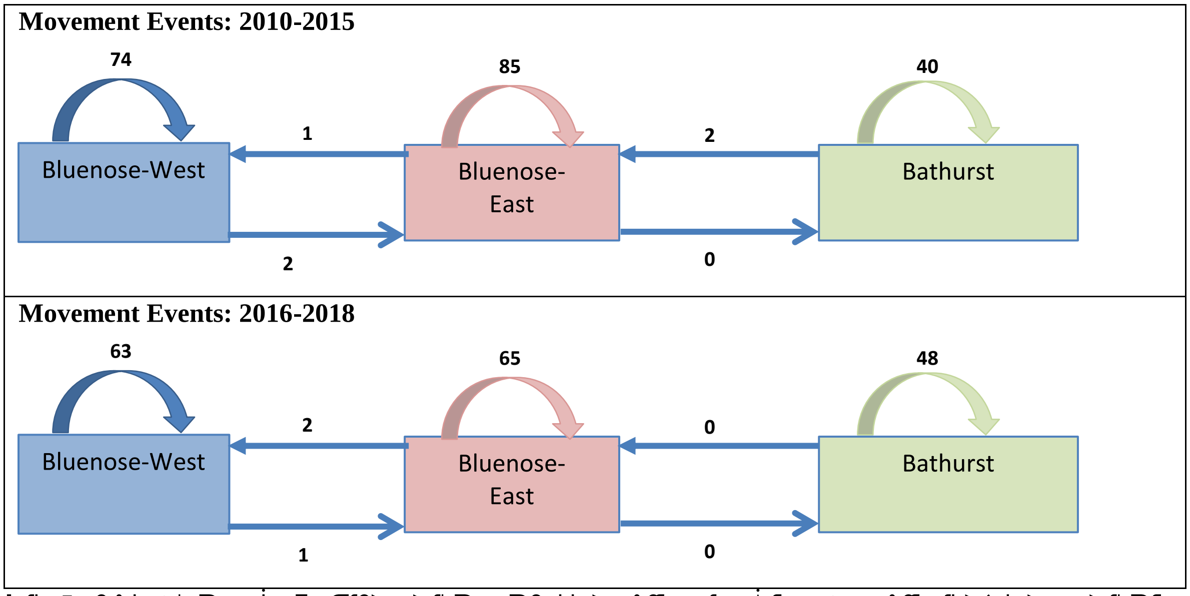
ᐅᑭᐅᒻᒪᕆᒃᑯᑦ ᓄᕐᕋᖃᕐᓂᖏᑦ: ᐊᕐᓇᓪᓗᐃᑦ ᐊᒥᔅᓱᓂᖏᑦ ᑐᑭᓯᓇᕈᑕᐅᕙᒃᑐᑦ ᐊᒥᔅᓲᓂᖏᓂᒃ ᐊᑐᖅᓯᑎᒃ ᓯᕗᓂᐊᒍᑦ ᐊᐅᔭᖕᒥ ᔫᓐᖑᓚᐅᖅᑐᒥᒃ ᓄᓇᔭᐅᓚᐅᖅᑐᓂᒃ, ᐆᒪᐃᓐᓇᕈᓐᓇᓚᐅᕐᓂᖏᓂᒃ ᓯᕗᓪᓕᕐᓂᒃ ᑎᑭᐅᒪᓗᑎᒃ ᑕᖅᑭᓄᑦ 9-ᖑᓚᐅᖅᑐᓄᑦ ᖁᓕᓂᓪᓗᓐᓃᑦ 10 ᑕᖅᑭᐅᓚᐅᖅᑐᓄᑦ, ᑕᐃᒪᖓᑦ ᓄᕐᓇᔭᐅᕙᒥᒃ. ᓇᓗᓇᐃᒃᑯᑕᓪᓚᑎᐅᖅᑕᕐᒪᑕ ᐱᑭᐊᕐᕕᖄᖑᓪᓗᑎᒃ ᐊᒥᔅᓲᓂᖏᓂ 30-ᓂᒃ ᓄᕐᓇᔭᐅᓚᐅᖅᑐᓂᒃ :100-ᖏᓃᑦᑐᓄᑦ ᐊᕐᓇᓪᓗᕐᓄᑦ ᐊᒥᔅᓲᓂᓕᖕᓂᒃ ᐊᑐᖃᑕᖅᓯᑎᒃ ᓈᓴᐅᓯᕆᓂᖏᓂ, ᓇᓗᓇᐃᒃᑯᑕᕆᔭᐅᓂᕐᒧᑦ ᖃᓄᐃᖏᓂᖏᓄᑦ ᐊᒥᔅᓲᓂᖏᓄᑦ ᑐᒃᑐᓄᑦ; ᑭᓯᐊᓂᓕᑦᑕᐅᖅ, ᑕᒪᓐᓇ ᓇᓗᓇᐃᒃᑯᑕᕆᔭᐅᕙᓐᓂᖓ ᐊᑐᖅᑕᐅᓲᖑᕐᕗᖅ ᑕᒪᐃᓐᓄᑲᓴᒃ ᑐᒃᑐᓄᑦ ᐊᕐᓇᓪᓗᐃᑦ ᐆᒪᐃᓐᓇᕈᓐᓇᕐᓂᖏ ᖃᓄᐃᖏᓂᖏᓄᑦ ᑐᑭᓕᐅᕈᑕᐅᕙᖕᓂᕐᒧᑦ (85-90% ᐳᓴᓐᑎᖏᓃᑯᑎᒃ). ᐊᕐᓇᓪᓗᐃᑦ ᐊᒥᔅᓲᖑᒻᒪᕆᐅᒍᑎᒃ, ᓲᕐᓗ ᑕᐃᒃᑯᓇᓂ ᖁᕐᓗᖅᑑᑉ-ᑲᓇᖕᓇᖕᓂ ᑐᒃᑐᖏᓂ ᐊᕐᕌᒍᓂᒃ ᑕᒫᖓᑦ 2010-ᒥᒃ 2018-ᒧᑦ, ᓄᕐᕋᓃᑦ :ᐊᕐᓇᓪᓗᐃᓪᓗ ᐊᑐᓂ ᐊᒥᔅᓲᓂᖏᑦ ᐊᒥᔅᓯᓂᖅᓴᒻᒪᕆᐊᓘᔭᕆᐊᖅᑲᖅᐳᑦ (45-50-ᖏᓂᓪᓗᑎᒃ ᓄᕐᓇᔭᐅᓂᖏᑦ :100-ᓄᑦ ᐊᕐᓇᓪᓗᐃᑦ ᐊᒥᔅᓲᓂᖏᓂ ᐅᖓᑖᓃᓗᑎᒡ ᓘᓐᓃᑦ) ᑐᑭᓯᓇᕐᓂᐊᕈᑎᒃ ᖃᓄᐃᖏᓂᖏᓄᑦ ᑐᒃᑐᐃᑦ. ᐅᑭᐅᒃᑯᑦ ᓄᕐᕋᐃᑦ :ᐊᕐᓇᓪᓗᐃᓪᓗ ᐊᑐᓂ ᐊᒥᔅᓱᓂᖏᑦ ᐃᒪᓐᓇᐃᓕᖑᔪᓚᐅᖅᐳᑦ 30-ᖏᓃᔅᓯᑎᒃ ᓄᕐᕋᖏ :100-ᖏᓃᔅᓯᑎᒃ ᐊᕐᓇᓪᓗᖏᑦ ᖁᕐᓗᖅᑑᑉ-ᑲᓇᖕᓇᖕᓂ ᑐᒃᑐᖏᓂᒃ ᐊᕐᕌᒍᓂᒃ 2014-2018-ᒥ (ᑕᑯᔭᒃᓴᖅ 4).



ᑕᑯᔭᒃᓴᖅ 4. ᐅᑭᐅᒻ ᒪᓇᒃᑯᑦ ᓄᕐ ᕋᐃᑦ-ᐊᕐ ᓇᓪ ᓗᐃᓪ ᓗ ᐊᒥᔅ ᓲᓂᖕᒌ ᖁᕐ ᓗᖅᑑᑉ-ᑲ ᓇᖕ ᓇᖕᓂ ᑐᒃ ᑐᓂᒃ, 2008-ᒥᒃ -2018.-ᒧᑦ

ᐊᑕᐅᑎᒃ ᑯᑦ ᑕᒪᕐ ᒥᒃ ᑕᑯᓪ ᓗᒋᑦ, ᖃᐅᔨᒪᔾ ᔪᑎᒃ ᓴᐃᑦ ᖁᕐ ᓗᖅᑑᑉ-ᑲ ᓇᖕ ᓇᖕᓂ ᑐᒃ ᑐᖕᒌ, ᐊᕐ ᓇᓪ ᓗᐃᑦ ᐆᒪ ᐃᓐ ᓇᕿᓐ ᓇᕐ ᓂᖕᒌ, ᐊᒥᔅ ᓲᕚ ᓂᖕᒋᓗ ᓄᓪᓚᕿᓐ ᓇᓚᐅᖅᑐᑦ ᔫᓐ ᖑᑎᓪ ᓗᒍ, ᐊᒻ ᒪᓗ ᐅᑭᐅᒫᓇᒃ ᑯᑦ ᓄᖃᖅᑎᒋ ᓂᖕᒌ :ᐊᕐ ᓇᓪ ᓗᐃᑦ ᐊᒥᓲᓂᖕᒌ ᑐᑭᓯ ᓇᖅᑐᑦ ᐊᑦ ᑎᓗᐊᖅᑐᒦ ᓂᖕᒋ ᓂᒃ ᑕᒪᕐ ᒥᒃ ᐆᒪ ᐃᓐ ᓇᕿᓐ ᓇᕐ ᓂᖕᒋ ᓂᒃ ᑐᑭᓯᔭ ᐅᓯᒪᔦᑦ ᐱᔾ ᔦᑕᐅᕆᓪ ᓗᑎᒡ ᓗ ᑐᒃ ᑐᐃᑦ ᑲᔦᓲᓐ ᓇᖅᑐᒥᒃ ᐊᒥᔅ ᓲᔦᓐ ᓃᖅᐸᓪ ᓕᐊᓂᖕᒋ ᓄᑦ, ᐊᒥᔅ ᓱᖕᒋᓗᐊᖃᑦᕐ ᓂᖕᒋ ᓄᑦ ᐊᕐ ᓇᓪ ᓗᐃᑦ ᐆᒪ ᐃᓐ ᓇᕿᓐ ᓇᕐ ᓂᖕᒌ ᐱᒻ ᒪᓇᐅᓂᖅ ᐹᖑᓪ ᓗᓂᓗ ᑕᒪᓐ ᓇ ᐱᐅᓯᕆ ᐊᓇᐊᖃᖅᑐᖅ ᐊᖕᕆᒥᒃ ᑐᒃ ᑐᐃᑦ ᖃᓄᐃᑦ ᑐᓃᕿᓐ ᓇᕐ ᓂᐊᕿᑎᒃ ᐊᒻ ᒪᓗ ᐊᒥᓯᕿᖅᐸᓪ ᓕᐊᔦᓐ ᓇᕐ ᓂᐊᕿᑎᒃ.

ᒪᓕᒃ ᑕᐅᖃᑕᕿᓐ ᓇᕐ ᓂᖕᒌ ᖃᓐ ᖓᐅᒻ ᒥ ᐊᕐ ᓇᓪ ᓗᐃᑦ ᖁᖓᕿᑦ ᑎᖅᑕᐅᓯᒪᓂᖕᒌ ᐊᕐ ᕋᒍᖕᒋ ᓂᒃ 2010-2015-ᒥ ᐊᒻ ᒪᓗ 2016-2018-ᒥ ᑐᑭᓯ ᓇᖅᑐᔦᖅᐳᑦ ᐊᒥᓲᖃᑦ ᑕᖅᓯᒪᓐ ᖏᓂᖕᒌ ᑮᐳᑎᕚᒃ ᑐᑦ ᖁᕐ ᓗᖅᑑᑉ-ᑲ ᓇᖕ ᓇᖕᓂ ᑐᒃ ᑐᖕᒋ ᓂ ᐊᕐ ᓇᓪ ᓗᐃᑦ ᓄᕐ ᓇᕚᕆ ᓂᐊᖅᑕᖕᒋ ᓂ ᓴᓂᓕᓇᔭ ᖕᒋ ᓂ ᖃᖓᐅᒻ ᒥ ᑐᒃ ᑐᐃᑦ ᓄᕐ ᓇᕙ ᖕᒋ ᓂ ᐊᒻ ᒪᓗ ᖁᕐ ᓗᖅᑑᑉ-ᐱᖕᒎᖕ ᓇᖕᓂᒃ ᑐᒃ ᑐᐃᑦ ᓄᕐ ᓇᕙ ᖕᒋ ᓂᒃ, ᐊᒥᓲᖃᑦ ᑕᖅᓯᒪ ᖕᒋ ᓇᒥᒃ ᓴᖑᕚᒃ ᑐᑦ ᐊᓯ ᖕᒋ ᓄᑦ, ᐊᕐ ᕋᒍ ᓂ 2010-ᒥ 2018-ᒧᑦ ᑎᑭᓪ ᓗᒍ (ᑕᑯᔭᒃ ᓴᖅ 5). ᖃᖕᒍᑐᐃᓐ ᓇᖅ ᑐᒃ ᑐᐃᑦ ᑮᐳᑎᕙᖕ ᓂᖕᒌ ᓄᓇᕙᕆ ᓂᐊᖅᑕᖕᒋ ᓂᒃ ᑕᐃᒪ ᐃᓕᖕᕚᔭ ᖃᑦ ᑕᖅᑐᑦ ᓇᓕᒧᒌᒃ ᑐᓂᒃ ᐊᓯᒥ ᓄᑦ ᑐᒃ ᑐᓄᑦ ᓴᕿᑦ ᑎᓯᒪᓪ ᓗᑎᒃ ᑕᒪ ᐃᓐ ᓂᒃ ᓅᓚᔦ ᐃᑦ ᑑᖃᑦᕐ ᓂᖕᒋ ᓂᒃ ᐊᔾ ᔾᕆᖕᑐᓄᑦ ᐊᓯ ᖕᒋ ᓄᑦ. ᑕᒪ ᐃᓐ ᓂ ᐊᒥᓲᓚᐅᖅᑐᑦ 199-ᖕᓂᑦ ᑐᑦ ᐊᕐ ᓇᓪ ᓗᐃᑦ ᐱᖕᒐ ᓂᒃ ᑖᒃ ᑯᓇᖕᒐᑦ ᑐᒃ ᑐᖃᕐ ᕚᐅᔦ ᓂᒃ ᐅᑎᖅᐸᒃ ᑐᑦ ᑕᐃᒃ ᑯ ᓄᖕᒐᑦ ᓴᐃᓐ ᓇᖅ ᓄᕐ ᓇᕚᕆ ᕚᒃ ᑕᑐᖃᓇᔭ ᒥ ᓄᑦ ᐊᕐ ᕋᒍ ᓂ 2010-2015-ᒥ ᐊᒻ ᒪᓗ ᑕᓕᒪ ᐅᓚᐅᖅᓯᑎᒃ ᑮᐳᑎᓚᐅᖅᑐᑦ ᓄᕐ ᓇᕙᑐᖃᓇᔩᓐ ᖏᑕᒥ ᓄᑦ (2.4% ᐳᓴ ᑎᖕᒌ). ᐊᒥᔅ ᓲᓚᐅᖅᑐᑦ 174-ᓂᒃ ᐊᕐ ᓇᓪ ᓗᐃᑦ ᐅᑎᖅᐸᓚᐅᖅᑐᑦ ᓄᕐ ᓇᕙᑐᖃᓇᔩᓐ ᓇᖅᑕᒥ ᓄᑦ ᐊᕐ ᕋᒍ ᓂ ᑖᒻ ᓂ 2016-2018-ᒥ ᐊᒻ ᒪᓗ ᐱᖕᒎ ᓚᐅᖅᑐᑦ ᐊᓯ ᐊᓄᐊᖃᑦ ᑕᓚᐅᖅᑐᑦ ᓄᕐ ᓇᕙᖕ ᓄᑦ (1.7% ᐳᓴ ᑎᖕᓃᑦ ᑐᑦ). ᑕᒪᓐ ᓇ ᐃᓯᒪ ᓇᖅᑐᖅ ᓅᖃᑦᕐ ᓂᖕᒌ ᐊᓯ ᖕᒋ ᓄᑦ ᓴᓂᓕᓇᔭ ᒥ ᓄᑦ ᑐᒃ ᑐᖃᕐ ᕚᐅᔦ ᓄᑦ ᐱᔾ ᔦᑕᐅᕙᖕᒌ ᑐᑦ ᐊᒥᔅ ᓲᔦᓐ ᓃᑐᑕᐅᔦᓐ ᓇᕐ ᓂᖕᒋ ᓄᑦ ᖁᕐ ᓗᖅᑑᑉ-ᑲ ᓇᖕ ᓇᖕᒪ ᓄᑦ ᑐᒃ ᑐᓄᑦ ᑖᒻ ᓂ ᐊᕐ ᕋᒍᖕᒋ ᓂ 2015-2018-ᒥ.



ᑕᑯᓯᒃ ᓴᖅ 5. ᑭᖑᓕᕇᒃ ᑐᓂ ᔫᓐᒥ ᑕᕿᐅᓚᐅᖅᑐᓂ ᑐᑭᓯᓯᐅᓂᖏᑦ ᓄᕐ ᕆᕕᑦ ᓇᓃᓐ ᓂᖏᑦ ᖃᐅᔨᓯᐅᕙᓚᐅᖅᑐᑦ ᐊᖅᑐᖅᓱᑎᒃ ᓈᓚᐅᑎᓕᙵᓂᒃ ᖁᖕᙳᕈᑦ ᑎᖅᑕᐅᓯᒪᓂᖏᓐ ᓂᒃ ᐊᕐ ᓇᓪ ᓗᐃᑦ ᖁᕐ ᓗᖅᑑᑉ -ᑲᓇᖕ ᓇᖕᓂ ᑐᒃ ᑐᓂᒃ ᐊᒻ ᒪᓗ ᓴᓂᓕᕆᔭᖏᓐ ᓂᒃ ᐱᖑᖅ ᓇᖅᐸᓯᖕᒥ ᖁᕐ ᓗᖅᑐᑉ -ᐱᖑᖅ ᓇᖕᓂ ᑐᒃ ᑐᓂᒃ, ᐊᒻ ᒪ ᓯᓕ ᓴᓂᓕᕆᖕᒥᔭᖏᓐ ᓂᒃ ᑲᓇᖕ ᓇᖅᐸᓯ ᐊᓂ ᖃᓐ ᖕᐅᒻ ᒥ ᑐᒃ ᑐᖏᓐ ᓂᒃ, ᐊᕐ ᕋᒍᓂᒃ 2010-ᒥᒃ 2018-ᒧᑦ. ᖃᐅᔾ ᕚᖃᓃᑦ ᑭᖑᓕᕆᒃ ᐸᒃ ᑑᖕ ᓂᒃ ᒪᕐ ᕈᖕ ᓂᒃ ᐊᕐ ᕋᒎᖕ ᓂᒃ ᑕᖅᑮᖏᓐ ᓂ ᔫᓐᒥ ᑕᒪ ᐃᓐ ᓂᒃ, ᓇᓃᓐ ᓂᖏᓐ ᓂ, ᐊᑐᖅᑕᐅᓪ ᓗᑎᒃ ᓈᓚᐅᑎᓖᑦ ᖁᖕᙳᕈᑎᖕᓂ ᐊᕐ ᓇᓪ ᓘᑉ. ᐊᖕ ᒪᓗᖅᑐᑦ ᐱᑎᒃ ᓯᖑᐊᑦ (ᖁᑏᓂ) ᑐᕋᖕᕙᕆᔭᖕᕿᑕᑯᒃ ᓴᐅᑎᑦ ᑎᔪᑦ ᐊᒥᔅ ᓲᓂᖏᓐ ᓂᒃ ᐊᕐ ᓇᓪ ᓗᐃᑦ ᐅᑎᖅᐸᒃ ᑐᑦ ᑕᐃᒃ ᑯᓄᖑᕕ ᓴᐃᓐ ᓇᖅ ᓄᕐ ᕆᕙᕆᕚᒃ ᑕᑐᖃᕆᔭᒥ ᓄᑦ ᑭᖑᓕᕇᒃ ᑐᓂ ᐊᕐ ᕋᒍᓂ, ᐊᒻ ᒪᓗ ᑐᑭᔫᐊᒃ ᑐᑦ ᐱᑎᒃ ᓯᖑᐊᑦ ᑕᑯᒃ ᓴᐅᑎᑦ ᑎᓪ ᓗᑎᒃ ᐊᒥᔅ ᓯᓂᖏᓐ ᓂᒃ ᐊᕐ ᓇᓪ ᓗᐃᑦ ᐊᓯᖏᓐ ᓄᑦ ᓴᖑᕚᒃ ᑐᑦ ᓄᕐ ᕆᕙᖕ ᓄᑦ. Bᐅᕍᓐᓯᐃᒃ ᑯᓐ ᓂᒃ -Boulanger et al.. (2019).

2. ᐊᐅᓚᑦ ᑕᐅᓂᖏᓐ ᓂᒃ ᐱᔾ ᔭᑎᖃᖅᑐᑦ ᖃᕐ ᓗᖅᑐᑉ -ᑲᓇᖕ ᓇᖕᓂ ᑐᒃ ᑐᓂᒃ

ᑕᒪ ᐃᓐ ᓂᒃ ᑕᑯᓪ ᓗᒋᑦ ᐊᐅᓚᑕᐅᓂᖏᓐ: ᑕᒪ ᐃᓐ ᓂᒃ ᐊᐅᓚᑎᔾ ᔭᑎᒃ ᓴᐃᑦ ᐸᕐ ᓇᐅᑏᑦ ᑐᒃ ᑐᓂᒃ ᐊᕙᖅᒥ, ᖁᕐ ᓗᖅᑑᑉ -ᐱᖑᖅ ᓇᖕᓂ ᐊᒻ ᒪᓗ ᖁᕐ ᓗᖅᑑᑉ -ᑲᓇᖕ ᓇᖕᓂ ᑐᒃ ᑐᓂᒃ ᓇᐹᖅᑐᖃᖏᓐ ᑐᕐ ᒥᐅᑕᓂᒃ ᑕᐃᔭ ᐅᔪᑦ ᒥᐊᓂᕆᔭ ᐅᑦ ᑎᐊᕐ ᓂᖏᓐ ᑐᒃ ᑐᐃᑦ ᐱᕆ ᐊᖅ ᑎᑕᐅᓕᓚᐅᖅᑐᑦ ᐅᖃᐅᔾ ᔨᕆ ᐊᖅ ᑏᑦ ᑲ ᑎᒪ ᔨ ᕋᓛᖏᓐ ᐱᓕᕆᖃᑎᖏᖕ ᓂᕐ ᒧᑦ ᐆᒪ ᔪ ᓕᕆᓂᕐ ᒥᒃ ᐊᐅᓚᑦ ᑎᓂᖅ ACCWM-ᑯᑦ. ᑖᒃ ᑯᐊ ᐅᖃᐅᔾ ᔨᕆ ᐊᖅ ᑏᑦ ᑲ ᑎᒪ ᔨ ᕋᓛᖏᓐ ᑎᒥ ᖁᑎᕆᔭ ᐅᕗᑦ ᐃᓚᖃᖅ ᓱᑎᒃ ᐆᒪ ᔪ ᓕᕆᓂᕐ ᒧᑦ ᐊᐅᓚᑦ ᑎᔾ ᓄᑦ ᐅᖃᐅᔾ ᔨᕆ ᐊᖅ ᑏᑦ ᑲ ᑎᒪ ᔨ ᕐ ᔭ ᐊᖏᓐ ᓂᒃ ᓄᓇᑦ ᓯ ᐊᕐ ᒥ, ᐊᓪ ᓚᓂᓪ ᓗ ᒍ ᐃᑦ ᓯ ᓐ ᑯᑦ ᓄᓇᒥ ᐅᑕᓕᕆ ᔩᑦ ᑲ ᑎᒪ ᔨ ᖏᓐ ᓂᒃ, ᓄᓇᓕᖕ ᓂᓗ ᐅᑯᓇᖕᒋᑦ (Ɂehdzo Got’ı̨nę Gots’ę́ Nákedı-ᑯᑦ)-ᓴ ᑑᒥ ᐅᓂ ᓄᓇᒥ ᐅᑕᓕᕆ ᔩᑦ ᑲ ᑎᒪ ᔨ ᖏᓐ ᓂᒃ, ᐅᐊᒃ ᑮ ᓯᒃ ᑯᑦ ᓄᓇᒥ ᐅᑕᓕᕆ ᔩᑦ ᑲ ᑎᒪ ᔨ ᖏᓐ ᓂᒃ, ᕿᑎᖅᒥ ᐅᑦ ᐊᕕᒃ ᑐᖅᓯᒪ ᓂᖏᓐ ᓂ ᐊᖑᓇᓱᒃ ᑎᓕᒫᑦ ᑲ ᑎᒪ ᔨ ᖏᓐ ᓂᒃ ᐊᒻ ᒪᓗ ᑐᒃ ᑐᑦ ᓄᕐ ᕋ ᐃᑦ ᑲ ᓇᑕᓕᒦ ᒥ ᒥᕐ ᖑᐃᖅᓯᕐ ᕕᖑᓂ ᐊᐅᓚᑦ ᑎᓈᑦ ᑲ ᑎᒪ ᔨ ᖏᓐ ᓂᒃ. ᑕᒪ ᒃ ᑯᐊ ᐸᕐ ᓇᐅᑎᓕᐊᖏᓐ ᐱᔭ ᓇᖅ ᑕᐅᓚᐅᖅᑐᑦ 2014-ᖑᑎᓪ ᓗᒍ, (ᐅᖃᐅᔾ ᔨᕆ ᐊᖅ ᑏᑦ ᑲ ᑎᒪ ᔨ ᕋᓛᖏᓐ 2014-ᒥ) ᐊᒻ ᒪᓗ ᐊᑐᖅ ᑕᐅᓕᖅ ᓱᑎᒃ ᐱᔨ ᑦ ᑎᕋᐅᑕᐅᕙ ᓂᖅ ᓇᓗᓇᐃᒃ ᑯᑕᐅᓂᕐ ᒧᑦ ᓂᖏᓐ ᓄᑦ ᑕᒪ ᒃ ᑯᐊ ᐱᓯ ᐃᓕᖃᖕᓂᖏᓐ ᑐᒃ ᑐᖃᕐ ᕕᐅᔭ ᑦ, ᓄᓇᑦ ᓯ ᐊᕐ ᒥ.

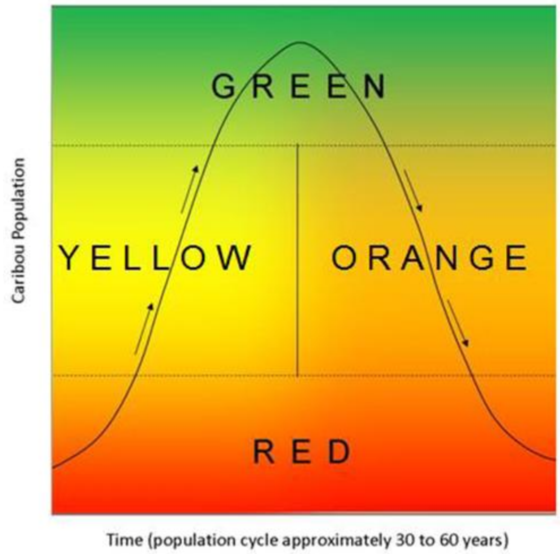
ᐅᖃᐅᔾ ᔨᕆ ᐊᖅ ᑏᑦ ᑲ ᑎᒪ ᔨ ᕋᓛᖏᓐ ᐱᓕᕆᖃᑎᒌᖕ ᓂᕐ ᒧᑦ ᐆᒪ ᔪ ᓕᕆᓂᕐ ᒥᒃ ᐊᐅᓚᑦ ᑎᓂᖅ ACCWM-ᑯᑦ ᐸᕐ ᓇᐅᑎᖏᓐ ᐃᓚᖃᖅᐳᑦ ᑕᒪ ᐃᓐ ᓂᒃ ᖃᓄᐃᓕᖕᙵᒪ ᓂᖏᓐ ᓂᒃ ᐊᐅᓚᑕᐅᓂᖏᓐ ᓄᑦ ᐱᖕᖓᑦ ᑐᒃ ᑐᖃᕐ ᕕᐅᔭ ᑦ ᒪᓕᒃ ᑕᐅᓪ ᓗᑎᒃ ᐊᑐᓕᖅ ᑎᑕᐅᕙᓪ ᓕᐊᔭ ᒪᓂᖏᓐ ᑕᒪ ᐃᓐ ᓂᒃ ᐊᒥ ᓲᓂᖏᓐ ᑐᒃ ᑐᐃᑦ ᓇᓃᓐ ᓂᖏᓐ ᓂ (ᑕᑯᓯᒃ ᓴᓂᒃ 6). ᓯᑕᒪ ᓄᑦ ᐊᕕᒃ ᑐᖅᓯᒪᖕᒪᑕ ᑲᒪᕿᔭᐅᕙᓪ ᓕᐊᔭ ᒪᓂᖏᓐ: ᐃᕕᐅᔭ ᐅᓂᖏᓐ ᐱᔾ ᔭᑎᖃᖅᑐᑦ ᐊᒥᔅ ᓲᓂᖏᓐ ᓂᒃ ᓇᔅ ᓴᐅᑎᑎᒍᑦ, ᖁᖅᓯᖅᑐᑦ ᐊᑯᓐ ᓂᖅᓯᖅᑐᓂᒃ ᓈᓴᐅᓯᕆᕗᑦ ᐊᒻ ᒪᓗ ᐊᒥᓯᕈᖅᐸᓪ ᓕᐊᓂᖏᓐ ᓂᒃ, ᖁᖅᓯᔫᖅᑐᓂᒃ ᑕᖅᓴᓕᑦ ᐊᑯᓐ ᓂᖅᓯᖅᑐᓂᒃ ᓈᓴᐅᓯᕆᕗᑦ ᐊᒻ ᒪᓗ ᐊᒥᔅ ᓲᔭᓐ ᓅᖅᐸᓪ ᓕᐊᓂᖏᓐ ᓂᒃ ᐊᒻ ᒪᓗ ᐊᐅᐸᓗᒃ ᑐᑦ ᐱᔾ ᔭᑎᖃᖅᓯᑎᒃ ᐊᒥᔅ ᓲᖏᓐ ᑐᓂᒃ ᓈᓴᐅᑎᓕᖕ ᓂᒃ. ᖁᕐ ᓗᖅᑑᑉ -ᑲᓇᖕ ᓇᖕᓂ ᑐᒃ ᑐᖏᓐ ᓂᒃ, ᑭᓪ ᓕᖃᕐ ᓂᖏᓐ ᐊᐅᐸᓗᒃ ᑐᒦᒃ ᐊᒥᓲᓂᖃᖅᐳᑦ 20,000-ᓂᒃ ᐊᑖᓃᓗᓐ ᓃᑦ ᐊᒻ ᒪᓗ ᑭᓪ ᓕᖃᖅᑎᑕᐅᓪ ᓗᑎᒃ ᐃᕕᐅᔭ ᐅᓂᖏᓐ ᓂᒃ ᐊᒥᓯᓂᖃᕈᑎᒃ 60,000-ᓂᒃ ᐅᖅᓚᑖᓂᓗᓐ ᓃᑦ. ᐊᑐᓕᕐᑯᔭ ᐅᓂᖏᓐ ᖃᓄᐃᓕᐅᕈᑎᒃ ᓴᐃᑦ ᑐᒃ ᑐᓯ ᐅᕐ ᕕᐅᔭ ᓐ ᓇᕐ ᓂᖏᓐ ᓄᑦ, ᐆᒪ ᔭ ᕐ ᓄᑦ ᑐᒃ ᑐᓯ ᐅᕐ ᕕᐅᕙᓐ ᓂᖏᓐ ᓂᒃ, ᓄᓇᐃᑦ ᐊᑐᖅ ᑕᐅᕙᓐ ᓂᖏᓐ ᓂᒃ, ᓇᔪᒐᕆᕙᒃ ᑕᖏᓐ ᓂᒃ ᓴᐳᓐ ᓂᐊᕈᑕᐅᓂᖏᓐ ᐊᒻ ᒪᓗ ᐃᓕᓐ ᓂᐊᕈᑎᒃ ᓴᐅᓂᖏᓐ ᐊᑕᕗᑦ ᑕᖅᓴᖃᕐ ᓂᖏᓐ ᓄᑦ ᐊᒥᓲᓂᒃ, ᑕᐃᒃ ᑯᐊᓗ ᐱᒻ ᒪᕆᐅᓂᖅᐸᖑᔭ ᓂᒃ ᖃᓄᐃᓕᐅᕈᑕᐅᔭ ᕆᐊᖃᕐ ᓂᖏᓐ ᑐᒃ ᑐᐃᑦ ᑕᒫ ᓃᑉ ᓱᑎᒃ ᐊᐅᐸᓗᖕ ᓂᖏᓐ ᓂ (ᐊᑦ ᑎᒃ ᑐᓂ ᓈᓴ ᐅᑎᓕᖕ ᓂ) ᐱᓕᕆᐊᖑᔪ ᓂ.


The

CAPE BATHURST, BLUENOSE-WEST, AND BLUENOSE-EAST BARREN-GROUND CARIBOU HERDS MANAGEMENT PLAN

Advisory Committee for Cooperation on Wildlife Management

November 3, 2014

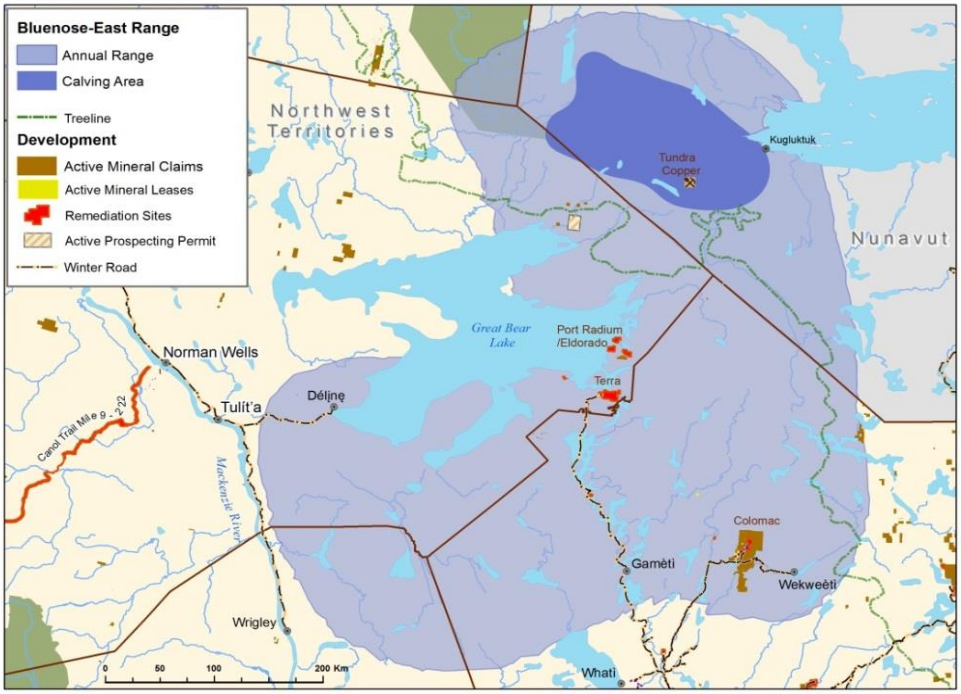


ᑕᑯᔭᒃᓴᖅ 6. ᐅᖃᐅᔾᔨᒋᐊᖅᑎᑦ ᑲᑎᒪᔨᕋᓛᖕᒥᑦ ᑐᒃᑐᓂᒃ ᐊᐅᓚᑦᑎᓂᕐᒧᑦ ᐸᕐᓇᐅᑎᖕᒥ ᑕᐃᔭᐅᔪᑦ *ᒥᐊᓂᕆᔭᐅᑦᑎᐊᕐᓂᖕᒥ ᑐᒃᑐᐃᑦ* (ᑕᑯᒃᓴᐅᔪᑦ ᓴᐅᒥᐊᓂ) ᐊᒻᒪᓗ ᑕᖅᓴᖄᕐᓂᖓᓂᒃ ᒪᓕᒃᑐᑦ ᑕᑯᔭᒃᓴᐃᑦ ᑐᒃᑐᐃᑦ ᐊᒥᓲᓂᖓᓂᒃ ᖃᓄᐃᓕᖓᖕᖓᓂᓪᓗ. ᐱᔭᐅᔪᑦ ᐅᖃᐅᔾᔨᒋᐊᖅᑎᑦ ᑲᑎᒪᔨᕋᓛᖕᖓᓂᒃ (2014).

ᐅᖃᐅᔾᔨᒋᐊᖅᑎᑦ ᑲᑎᒪᔨᕋᓛᖕᒥᑦ ᐊᕐᕌᒍᑕᒫᖅ ᖃᓄᐃᓕᖓᓂᖓᓂᒃ ᑲᑎᒪᐅᑎᖃᓚᐅᖅᑐᑦ ᑕᒫᓂ ᓄᕕᐱᕆᒥ 2017, 2018 ᐊᒻᒪᓗ 2019-ᒥ, ᖃᐅᔨᓴᖅᑕᐅᓪᓗᑎᒃ ᓄᑖᓂᒃ ᖃᐅᔨᒪᔾᔭᑎᒃᓴᐃᑦ ᐊᑐᓂ ᑕᒪᐃᓐᓂᒃ ᑐᒃᑐᖃᕐᕕᐅᔪᓂᒃ ᐱᖕᖑᓂᒃ ᑕᒪᒃᑯᓇᖕᖏᑦ ᖃᐅᔨᓴᖅᑎᓂᒃ ᓄᓇᓕᖕᒥᐅᑕᐅᔪᓂᓪᓗ, ᑎᒃᑯᐊᖅᑕᐅᖃᑦᑕᖅᓯᑎᒃ ᑕᖅᓴᕆᓂᐊᖅᑕᖓᓂᒃ ᖃᓄᐃᓕᖓᓂᖓ ᐊᒻᒪᓗ ᐊᑐᓕᖅᑯᔭᐅᔪᓂᒃ ᖃᓄᐃᓕᐅᕈᑎᒃᓴᓂᒃ ᐸᕐᓇᐅᑎᓂᒃ ᐊᑐᓂ ᑐᒃᑐᓕᕆᓂᖓᓂᒃ. ᖁᕐᓗᖅᑑᑉ-ᑲᓇᖕᓇᖕᓂ ᑐᒃᑐᖕᒥ ᐃᓕᔭᐅᓚᐅᖅᑐᑦ ᐊᐅᐸᓗᒃᑐᒥ ᑐᓄᑦ, ᑕᒪᓂ ᓄᕕᐱᕆ 2018-ᒥᓗ 2019-ᒥᓗ.

<u>ᓄᓇᐃᑦ ᐊᑐᖅᑕᐅᕙᖕᓂᖕᒥ ᐊᒻᒪᓗ ᐊᕙᑎᓕᕆᓂᕐᒥᒃ ᖃᐅᔨᓴᖃᑕᕐᓂᖅ</u>: ᒫᓐᓇᐅᔪᖅ ᐱᓕᕆᕕᐅᔪᖅᑲᖕᓕᖅ ᐅᔭᕋᖕᓂᐊᕐᕕᖕᓄᑦ ᖁᕐᓗᖅᑑᑉ-ᑲᓇᖕᓇᖕᓂ ᑐᒃᑐᖅᕙᐅᓂᕐᒥ ᓄᓇᑦᓯᐊᕐᒥ ᐊᒻᒪᓗ ᓄᓇᕗᒻᒥ (ᑕᑯᔭᒃᓴᖅ 7), ᐊᔾᔨᒋᒻᒪᕆᑦ ᕿᓐᖑᐅᒻᒥ ᑐᒃᑐᖅᑲᕐᕕᐅᔪᓂ ᑲᓇᖕᓇᖕᓂ, ᐱᖕᖑᓂᖕᒪᑕ ᐱᓕᕆᕙᐅᔪᑦ ᐊᓕᒎᔭᓂᒃ ᓯᑎᓂᖅᐹᓂᒃ ᐅᔭᕋᖕᓂᐊᕐᕕᐅᔪᓂᒃ ᐊᒻᒪᓗ ᐊᒥᓱᒐᓴᐅᓪᓗᑎᒃ ᐊᕐᕌᒍᓕᒫᖅ ᐊᑐᖅᑕᐅᔪᓐᓇᖅᑐᑦ ᐊᖅᑯᑏᑯᑦᑕᑦ ᐊᒻᒪᓗ ᐅᑭᐅᒃᑯᐃᓇᖅ ᐊᖅᑯᑏᑦ. ᑕᐃᒃᑯᐊ Tundra Copper-ᑯᑦ ᐅᔭᕋᓂᐊᓚᒃᓴᖅᓯᐅᖅᕙᖃᓚᐅᖅᑐᑦ ᓄᕐᖃᕙᖕᖏᓂ ᖁᕐᓗᖅᑑᑉ-ᑲᓇᖕᓇᖕᓂ ᐊᕐᕌᒍᓂ 2014-ᒥᓗ 2015-ᒥᓗ, ᑭᓯᐊᓂ ᑕᐃᒪᖕᖓᓂᒃ ᐱᓕᕆᕙᐅᑲᓐᓂᓚᐅᕈᓃᓚᐅᖅᑐᑦ. ᓄᓇᑦᓯᐊᑉ ᒐᕙᒪᐃᑦ ᐊᒥᓱᒐᓴᐃᓪᓗ ᓄᓇᑦᓯᐊᕐᒥ ᑎᒥᖁᑎᒋᔭᐅᔪᑦ ᓴᕿᑎᑦᑎᖃᑦᑕᖅᓯᒪᖕᒪᑕ ᐃᓱᒪᓘᑕᐅᓂᖕᖓᓂᒃ ᐱᕙᓪᓕᐊᕝᕕᐅᓯᒪᓂᖕᖓᓂ ᓄᕐᓇᕚᑦ ᐊᒃᑐᖅᑕᐅᓯᒪᔪᓐᓇᕐᓂᖕᖓᓄᑦ ᐊᕐᓇᓪᓗᐃᑦ ᓄᕐᕋᖅᑐᑦ ᐊᒃᑐᖅᑕᐅᓴᕿᐃᑦ ᑐᓪᒪᕆᐊᓗᖕᒦᓐᓂᖓᓂ ᐊᕐᕌᒍᒥ.

ᒐᕙᒪᒃᑯᑦ ᐊᕙᑎᓕᕆᔨᒃᑯᖕᒥ ᓄᓇᒥᐅᑕᓕᕆᔨᖕᖑᓗ ᐃᓚᐅᓚᐅᖅᑐᑦ ᑕᒪᐃᓐᓂᒃ ᒫᓇᓴᖅ ᐊᕙᑎᓕᕆᓂᕐᒥᒃ ᖃᐅᔨᓴᖅᑕᐅᓂᖕᖓᓂᒃ ᓄᓇᑦᓯᐊᕐᒥ, ᐊᒃᑐᐃᓂᖅᑯᓐᓇᖅᑐᓂᒃ ᓇᐹᖅᑐᖅᑕᖕᒥ ᑐᕐᒥᐅᑦ ᑐᒃᑐᖕᒥ ᐃᓕᔭᐅᓂᖕᖓᓂᒃ. ᐊᕙᑎᓕᕆᔨᒃᑯᑦ ᓄᓇᒥᐅᑕᓕᕆᔨᒃᑯᓪᓗ ᐃᓚᐅᖅᑲᑦᑕᓇᕐᑦ ᓄᓇᕗᒻᒥ ᐱᓕᕆᕙᐅᓂᐊᖅᑐᓂᒃ ᐊᒃᑐᖅᑕᐅᓯᒪᔭᐃᓐᓇᕐᓂᖕᖓᓂ ᑭᒡᓕᖅᑲᖅᕙᖕᖏᓐᓃᑦᑐᑦ ᖁᕐᓗᖅᑑᑉ-ᑲᓇᖕᓇᖕᓂ ᑐᒃᑐᐃᑦ ᓄᕐᕋᕙᖕᖑᑦ ᐊᒻᒪᓗ ᐊᐅᔭᕐᕕᒋᕙᒃᑕᖕᒥ (ᓃᕐᓗ ᑕᐃᒃᑯᓂᖕᖓ Tundra Copper-ᑯᑦ ᐅᔭᕋᓂᐊᓚᒃᓴᖅᓯᐅᖅᑎᖕᖓᓂᒃ). ᐊᒥᓱᒐᓴᐃᑦ ᓄᓇᓕᑐᖃᐃᑦ ᒐᕙᒪᖕᒥ ᐊᓯᖕᖑ ᑎᒥᖁᑎᖏᔭᐅᔪᑦ ᐃᓚᐅᖃᑦᑕᖅᓯᒪᓕᕐᒪᑦ ᐊᕙᑎᓕᕆᓂᕐᒥᒃ ᖃᐅᔨᓴᕐᓂᖕᖓᓂᒃ ᓄᓇᑦᓯᐊᕐᒥᓗ, ᓄᓇᕗᒻᒥᓗ. ᐊᕙᑎᓕᕆᔨᒃᑯᑦ ᓄᓇᒥᐅᑕᓕᕆᔨᒃᑯᓪᓗ ᒐᕙᒪᒃᑯᖕᓂ ᐃᓚᐅᖃᑦᑕᖅᓯᒪᓕᕐᒪᑕ ᐊᒥᓱᒐᓴᖕᓂᒃ ᐃᓕᓐᓂᐊᖅᑎᑕᐅᔪᓂᒃ ᑲᑎᒪᑎᑦᑎᓪᓗᑎᒃ ᓄᓇᕗᒻᒥ ᐱᔾᔪᑎᖃᖅᑐᓂᒃ ᓴᐳᓐᓂᐊᖅᑕᐅᖁᔨᓂᖅ ᑐᒃᑐᓄᑦ ᓇᔪᓕᓇᔭᐅᕙᒃᑐᓂᒃ.

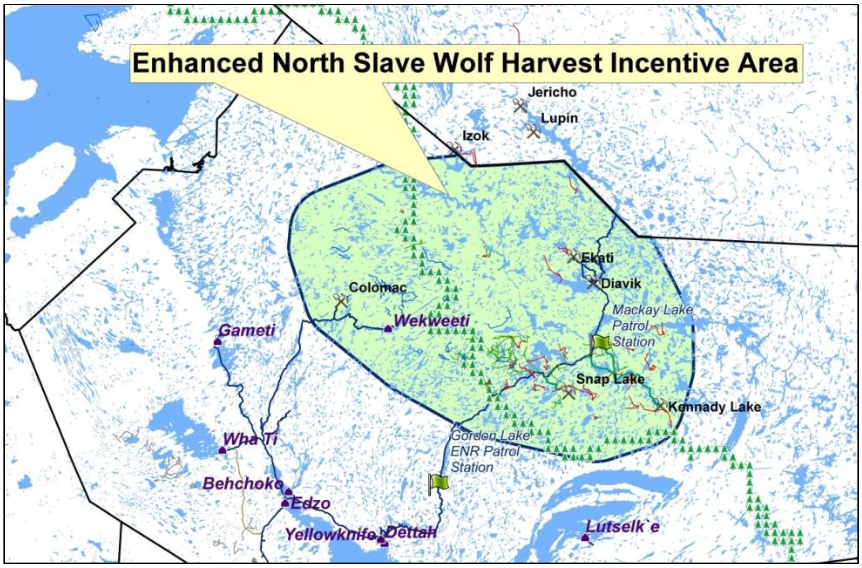


ᑕᑯᔭᒃᓴᖅ 7. ᐊᕐᕋᒍᑕᒫᖅ ᓇᔪᖅᑕᐅᕙᓂᖏᑦ ᓄᓇᖏᑦ ᐊᒻᒪ ᓄᕐᓇᕕᐅᕙᓂᖏᑦ ᖁᓗᖅᑑᑉ-ᑲᓇᖕᓇᖕᓂ ᓇᐹᖅᑐᖃᖕᓂᑦ ᑐᕐᒥᐅᑦ ᑐᒃᑐᖏᓄᑦ ᓄᓇᑦᓯᐊᕐᒥ ᐊᒻᒪ ᓄᓇᕗᒻᒥ ᐊᒻᒪ ᒫᓇᓴᕐᔪᒪᔭᖅ ᐱᕚᓪᓕᐊᓂᕐᒍᑦ ᐃᓕᓐᓂᐊᕐᔪᒪᓂᖏᑦ.

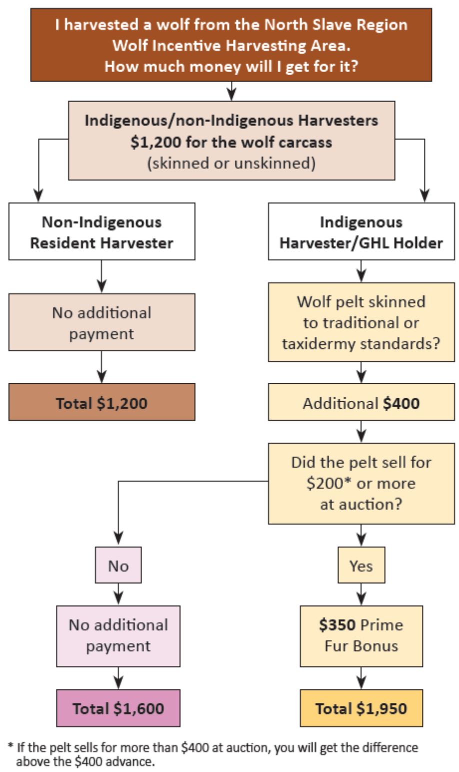
<u>ᐆᒪᔪᐃᑦ ᑐᒃᑐᓯᐅᖅᐸᒃᑐᑦ ᐊᐅᓚᑕᐅᓂᖏᑦ</u>: ᐱᔾᔪᑕᐅᓪᓗᑎᒃ ᐊᒥᓲᔫᓐᓃᖅᐸᓪᓕᐊᔪᐊᓂᖏᑦ ᑐᒃᑐᖏᑦ ᖁᓗᖅᑑᑉ-ᑲᓇᖕᓇᖕᓂ ᐊᒻᒪ ᖀᒻᕿᐅᓪᒥ, ᓄᓇᑦᓯᐊᑉ ᒐᕙᒪᒃᑯᖏᑦ ᓯᕗᓕᐅᖅᑎᐅᖃᑕᖅᓯᒪᓕᖅᑐᑦ ᐃᑲᔪᖅᓱᐃᔾᔨᐅᓗᑎᒡ ᓘᓐᓃᑦ ᐊᒥᓱᒐᓴᖕᓂᒃ ᖃᓄᐃᓕᐅᕈᑕᐅᔪᒥᓂᐊᖅᑐᓂᒃ ᐊᒻᒪᕈᐃᑦ ᐊᒻᒪᕈᖅᓯᐅᖅᑕᐅᖃᑦᑕᖁᓪᓗᒋᑦ ᐊᒥᓲᓂᖅᓴᐅᓕᕈᑕᐅᔭᓐᓇᖁᓪᓗᒋᑦ ᑐᒃᑐᐃᑦ ᐱᕈᐊᓂᒍᓐᓇᕐᓂᖏᓄᑦ ᐊᒻᒪ ᓄᕐᕋᐃᑦ ᐆᒪᑯᑖᒍᓐᓇᕐᓂᐊᕐᒪᑕ. ᑕᒪᒃᑯᐊ ᖃᓄᐃᓕᐅᕈᑎᒃᓴᓂᒃ ᒪᑯᓂᖓᐊᑐᒐᒃᓴᖅᐸᑦ.

ᑕᒪᐃᓐᓄᑦ ᑲᑦᔾᔭᖃᑎᒌᒍᑕᐅᔪᓂᒃ ᐊᑐᖅᑕᐅᔪᓐᓇᕐᓂᖕᓂᒃ ᐊᔪᕐᓇᕋᔭᖕᒪᖕᒋᑕ ᑕᒪᒃ ᑭᖅᑐᓂᒃ ᑐᑭᓯᓂᐊᕈᑕᐅᓚᐅᖅᑐᑦ ᐊᒪᕈᖅᓯᐅᕈᑕᐅᔪᓐᓇᖅᑐᓂᒃ ᐊᑐᕐᑕᐅᓯᕈᓐᓇᖅᑐᓂᒃ, ᑲᒪᒋᔭᐅᓚᐅᖅᑐᑦ 2016-2017-ᒥ, ᐃᓱᒪᒃᓴᖅᓯᐅᕈᑕᐅᓂᖕᒋ ᓄᑦ ᐊᑐᕐᖅᑎᑕᐅᔪᓐᓇᕐᓂᖏᑦ, ᐊᒻᒪ ᐊᑭᖃᕐᓂᖏᑦ, ᐊᑑᑎᖃᕈᓐᓇᕐᓂᖏᓗ ᐊᔾᔨᖏᑦ ᑑᑎᐅᔪᓂᒃ ᐊᒪᕈᓯᓂᒃ ᐊᒥᑦ ᓲᔪᓐᓇᕈᑕᐅᔪᓐᓇᕐᓂᖏᑦ ᒧᑦ ᐊᒪᕈᕐᓄᑦ ᐊᑐᖅᑕᐅᔪᓐᓇᕐᓂᖏᑦ. ᐅᐊᑭᓯᒥ ᓄᓇᒥ ᐅᑕᓕᖓᔾᑦ ᑲᑎᒪᔾᔪᑦ, ᑕᐃᒃ ᑯᐊᓗᒃ ᓅᑦᓱᖅ ᒐᕙᒪᐃᑦ, ᐊᒻᒪᓗ ᒐᕙᒪᒃ ᑯᑦ ᐊᕙᑎᓕᕆᔾᔪᒃ ᑯᖏᑦ ᓯᕗᓕᐅᖅᑎᐅᓚᐅᖅᑐᑦ ᖃᐅᔾᔭᖅᑕᐅᓂᖏᓂᒃ ᐊᔪᕐᓇᕋᔭᖕᒪᖕᒋᑕ ᐊᑐᓕᖅᑎᑕᐅᔪᓐᓇᕐᓂᖅ. ᐱᓗᐊᖅᑐᒥᒃ ᐃᓱᒪᒋᔭᐅᓚᐅᖅᑐᑦ ᖀᒻᕿᐅᓪᒥ ᑐᒃᑐᐃᑦ, ᑭᓯᐊᓂ ᐊᑐᖅᑕᐅᔪᓐᓇᑎᓗᑎᒃ ᐊᓯᖏᓄᑦ ᑐᒃᑐᓕᕆᓂᕐᒧᑦ.

2019-ᖑᑎᓪᓗᒍ, ᓄᓇᑦᓯᐊᑉ ᒐᕙᒪᒃᑯᖏᑦ ᐱᔪᒥᓇᕈᑎᒃᓴᓂᒃ ᓯᒪᓚᐅᖅᑐᑦ ᐊᒪᕈᖅᓯᐅᕈᑎᒃᓴᐅᔪᓐᓇᖅᑐᓂᒃ ᓄᓇᒥ ᑐᒃᑐᓄᑦ ᐅᑭᐅᕐᕕᐅᕙᓂᖏᓐᓂ ᐱᓗᐊᖅᑐᒥᒃ ᖁᓗᖅᑑᑉ-ᑲᓇᖕᓇᖕᓂ ᐊᒻᒪ ᖀᒻᕿᐅᓪᒥ ᓇᐹᖅᑐᖃᖕᓂᑦ ᑐᕐᒥᐅᑕᓂ ᑐᒃᑐᖃᕐᕕᐅᓂᖏᓐᓂᒃ, ᐱᖕᒍᐃᓕᖅᑲᖕᓂᒃ ᐊᑐᓚᒃᓴᓂᒃ ᑕᐅᓪᓗᑎᒃ (ᑕᑯᔭᒃᓴᖅ 8a). ᑕᒪᒃᑯᐊ ᐃᓚᖃᓕᐅᖅᐸᑦ ᐊᑐᖅᑕᐅᖕᒍᕈᓐᓇᕐᓂᖏᓐᓂᒃ ᐊᖕᒍᓇᓱᒃᑎᑦ ᑮᓇᐅᔭᓕᐅᕈᓐᓇᕐᓂᖏᓐᓂᒃ $900-ᓂᒃ, ᐊᒦᔭᖅᓯᒪᓂᕆᑐᓂᒃ, ᐃᓗᐃᑲᐅᔪᓂᒃ ᐊᒪᕈᕐᓂᒃ, ᐊᒻᒪ ᐱᔾᔨᒥᓇᕈᑎᒃᓴᖅᑐᓂᒃ ᑮᓇᐅᔭᖅᑕᒃ ᑲᓐᓂᕈᓐᓇᕐᓂᖅ $400-ᓂᒃ ᐊᒪᕈᕐᓄᑦ ᐊᒦᔭᖅᑕᐅᓯᒪᔪᓂᒃ ᐃᓄᐃᑦ /ᐊᓛᓚᐃᑦ ᐱᐅᓯᑐᖃᖏᓐᓂᒃ ᐊᑐᕐᓗᑎᒃ ᐊᒥᓕᕆᔭᐅᓗᑎᒃ ᐊᒻᒪ ᓱᓕᒃ ᑲᓐᓂᖅ ᐊᑭᓕᖅᑕᐅᔪᓐᓇᕐᓂᖅ $350-ᓂᒃ ᐱᐅᔪᓂᒃ ᐊᒦᔭᖅᑕᐅᓯᒪᑦ ᑎᐊᖅᑐᓂᒃ ᒪᓕᒡᓗᑎᒃ ᐊᒦᔭ ᐃᔨᐅᕙᒃᑐᑦ ᖃᓄᓈᑦ ᓄᓇᖕᓂ ᒪᓕᒐᕆᕙᒃ ᑕᖕᒋᓂᒃ ᒪᓕᒡᓗᑎᒃ. ᖃᓂᒋᔭᖕᒋᓂ 60-ᓂᒃ ᐊᒪᕈᖅᑐᖃᓚᐅᖅᑐᑦ ᐅᑭᐅᒃᑯᑦ 2018-2019-ᒥ ᐱᐅᓯᕆᐊᖅᑕᐅᓯᒪᔪᑦ ᓯᓚᐃᕕᐅᑉ ᐅᐊᖕ ᓇᖕᓂ ᓄᓇᖁᑎᖕᒋᓂ ᐊᒪᕈᖅᓯᐅᕈᑎᒃᓴᖕᒋᓂ ᑕᒪᒃᑯᐊ ᐱᔫᒥᓴᐅᑏᑦ ᑲᔪᓯᓂᐊᖅᑐᑦ ᐅᑭᐅᒃᑯᑦ 2019-2020-ᒥ, ᐊᑭᑦ ᑐᓇᐊᖅᑕᐅᓂᐊᖅᓯᑎᒃ ᐱᔫᒥᓴᐅᑎᒃᓴᐃᑦ (ᑕᑯᔭᒃᓴᖅ 8b).



ᑕᑯᔭᒃ ᓴᖅ 8a. ᐱᐅᓯᑎᐊᖅᑕᐅᓯᒪᔪᑦ ᓯᓚᐃᕕᐅᑉ ᐅᐊᖕᓇᖕᓂ ᓄᓇᕐᑯᑎᖕᖏᓂ ᐊᒪᕈᖅᓯᐅᕈᑎᒃᓴᐃᑦ, ᕿᑎᐊᓃᑦ ᑐᑦ ᕐᑯᖕᖓᕈᑦ ᑎᖅᑕᐅᓯᒪᔪᓂᒃ ᑐᒃ ᑐᓂᒃ ᖃᐅᔨᒪᔭᐅᓂᖕᖏ ᕿᓐᖕᐅᒻᒥ ᐊᒻ ᒪᑐ ᕐᑯᕐ ᓘᖅᑑᑉ -ᑲᓇᖕᓇᖕᓂ ᑐᒃ ᑐᓂᒃ ᐅᑮᕕᖕᖏᓂ 2018-2019-ᒥ, ᐱᐅᓯᑎᐊᖅᑕᐅᓯᒪᔪᓂᒃ ᐱᔫᒥᓴᐅᑎᓂᒃ ᐊᑐᓚᒃ ᓴᖅᑲᖅᑎᑕᐅᓕᖅᑐᑦ ᐊᒪᕈᖅᓯᐅᕐᑲᑕᕐ ᓂᕐ ᒍᑦ.



ᑕᑯᔭᒃ ᓴᑎᖅ 8b. ᐱᔫᒥᓴᐅᑏᑦ ᐊᒪᕈᐃᑦ ᐊᒥᖕᖏᓂᒃ ᐱᔪᒪᓂᕐᒥᒃ ᐃᑲᔫᑎᒃᓴᐃᑦ ᐊᑐᐃᓐᓇᐅᓕᖅᑐᑦ ᐊᒪᕈᖅᓯᐅᖅᐸᒃ ᑐᓄᑦ ᐊᑐᕈᓐᓇᕐ ᒪᑕ ᐱᐅᓯᑎᐊᖅᑕᐅᓯᒪᔪᓂᒃ ᓯᓚᐃᕕᐅᑉ ᐅᐊᖕᓇᖕᓂ ᓄᓇᕐᑯᑎᖕᖏᓂ ᐊᒪᕈᖅᓯᐅᕈᑎᒃᓴᓂᒃ ᓄᓇᑦᓯᐊᕐᒥ, ᐅᑭᐅᒃ ᑯᑦ 2019/2020-ᒥ.

ᑲᕙᒪᒃ ᑯᑦ ᐊᕙᑎᓕᕆᔨᖕᖏᑕᐅᖅ ᐱᓕᕆᕐᑲᑎᒃᑲᖅᓯᒪᔪᑦ ᕐᑯᕐ ᓘᖅᑑᑉ ᐊᖕᒍᓇᓯᒃ ᑖᑦ ᑲᑐᔾ ᔨᕐᑲᑏᖕᖏᓂᒃ ᐊᒻ ᒪᑐ ᓄᓇᕗᑦ ᑲᕙᒪᒃ ᑯᖕᖏᓂᒃ ᐆᒪᔪᓕᕆᔨᓂᒃ ᕐᑯᕐ ᓘᖅᑑᕐ ᒥ ᐃᑲᔪᖅᓱᖅᑕᐅᓂᖕᖏ ᓄᑦ ᕐᑯᕐ ᓘᖅᑑᕐ ᒥ ᐊᒪᕈᖅᓯᐅᕈᑏᑦ

ᐊᒪᕈᖅᓯ ᐅᕈᓐᓇᕐ ᓂᖏᓐᓂᒃ ᓄᓇᕗᑦ/ᓄᓇᑦᓯᐊᑉ ᑭᒡ ᓕᖅᑲᖕ ᖃᖏᓐᓂ ᓄᓇᒥ, ᐃᓗᐊᓃᑦ ᑐᓂ ᓄᓇᖓᑕ ᑭᒡ ᓕᖅᑲᖕ ᖃᖏᓐ ᐃᓚᖅᑲᒪᑕ ᐃᓚᖏᓐᓂᒃ ᓄᓇᑦᓯᐊᑉ ᓄᓇᖁᑎᖏᓐᓂ.

ᐊᒻ ᒪᑕᐅᖅ ᓯᓕ, ᒃᓛᑦᓵᑉ ᒐᕙᒪᑯᖕ ᐃᑲᔪᖅᓯᖅᑕᐅᓪ ᓗᑎᒃ ᓄᓇᑦᓯᐊᑉ ᒐᕙᒪᒃᑯᖏᓐ ᓄᑦ ᐱᒋ ᐊᖅᑎᑦ ᑎᓚᐅᖅᑐᑦ ᓯᕗᓪ ᓕᕆᔭ ᐅᔪᓂᒃ ᓄᓇᓕᖕᓄᑦ-ᐊᐅᓚᑕᐅᔪᓂᒃ ᐊᒪᕈᖅᓯ ᐅᖅᑎᑦ ᑎᓂᕐ ᒥᒃ ᐊᑐᖅᑕᐅᔪᓂᒃ ᓄᓇᓕᖕᓐᓂ ᒃᓛᑦᓵᒥ ᐅᑦ, ᐃᓚᖅᑲᕐ ᓂᐊᖅᑐᓂᒃ ᐊᔪᕈᓐ ᓃᖅᓴ ᐃᕙᖕ ᓂᕐ ᒥᒃ ᐊᒻ ᒪᓗ ᐃᑲᔪᖅᓯ ᐃᕙᖕ ᓂᕐ ᒥᒃ ᐊᒪᕈᖅᓯ ᐅᕈᓐᓇᕐ ᓂᕐ ᒥᒃ ᐅᑮᕙᐅᕙᖕ ᓂᖏᓐᓂᒃ ᕿᓐ ᖑᐅᒻ ᒥ ᑐᒃ ᑐᓄᑦ, ᒪᓪ ᓗᑎᒃ ᐊᓪ ᓚᐃᑦ ᐃᓪᖅᑯᓯ ᑐᖃᖏᓐᓂᒃ ᓈᒻ ᒪᕆᔭ ᐅᔪᓂᒃ. ᐅᑭ ᐅᒃ ᑯᑦ ᓄᓇᒦᕝ ᖃᒃ ᓴᖕ ᐊᒪᕈᖅᓯ ᐅᖅᑎᓄᑦ ᐋᕿᐅᒪᔭ ᐅᓂᐊᖅᑐᑦ 2020-ᒥ ᐃᑲᔫᑕᐅᓗᑎᒃ ᐊᑐᖅᑕᐅᔪᓐᓇᕐ ᓂᖕ ᑕᒪᒃ ᑯᐊ.

3. ᐊᐅᓚᑕᐅᓂᖕ ᖁᕐ ᓘᖅᑑᑉ-ᑳ ᓇᖕ ᓇᖕᓂ ᓇᒃᖅᑐᖅᑲᖕ ᑐᕐ ᒥᐅᑦ ᑐᒃ ᑐᓯ ᐅᕐ ᖃᐅᔪᓐᓇᕐ ᓂᖕ ᓄᓇᑦᓯᐊᕐ ᒥ 2016-2019-ᒥ

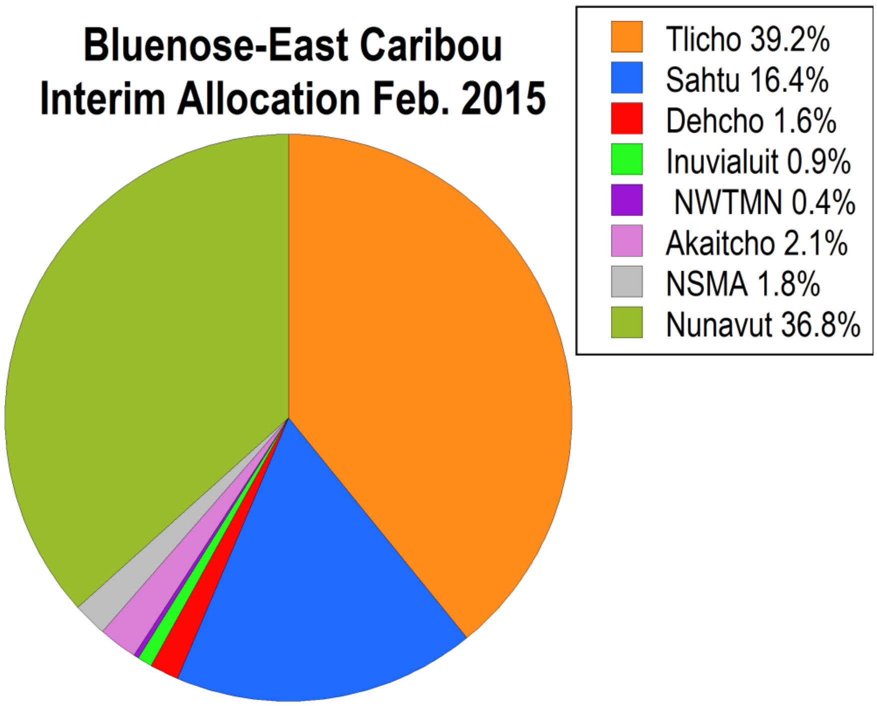
ᑖᓂ ᐊᕐ ᕆᒍᒥ 2016, ᐅᐊᑭᓯᒃ ᑯᑦ ᓄᓇᒥ ᐅᑕᓕᓇᐂᑦ ᑲᑎᒪᔨᖕ (WRRB) ᐃᓅᖁᑎᒥᓂᒃ ᑐᓴᕐ ᖃᖅᑲᓇᐊᖅᑐᓚᐅᖅᑐᑦ ᐊᐅᓚᑕᐅᕙᖕ ᓂᖏᓐᓂᒃ ᖁᕐ ᓘᖅᑑᑉ-ᑳ ᓇᖕ ᓇᖕᓂ ᑐᒃ ᑐᐃᑦ ᐊᒻ ᒪᓗ ᑐᑭ ᓕᐅᖅᑕᐅᖁᔭ ᐅᓂᖏᓐ ᓄᑦ ᑕᒪ ᐃᓐ ᓂᒃ ᑲᑎᓪ ᓗᒋᑦ ᑐᒃ ᑐᕝ ᖃᐅᔪᓐᓇᕐ ᓂᖕ ᑖᓂᓐ ᓂᐊᖅᑐᓂᒃ 750-ᓂᒃ (ᑕᒪᕐ ᒥᒃ ᐸᖕ ᓃᑦ) ᓄᓇᓕᑐᖅᑲᕐ ᓄᑦ ᑐᒃ ᑐᓯ ᐅᖅᐸᒃ ᑐᓂᒃ ᖁᕐ ᓘᖅᑑᑉ-ᑳ ᓇᖕ ᓇᖕᓂ ᓇᒃᖅᑐᖅᑲᖕ ᑐᕐ ᒥᐅᑕᓂᒃ ᑐᒃ ᑐᓂᒃ ᑕᒪ ᐃᓐ ᓂᒃ ᑕᒪ ᐃᓐ ᓂᒃ ᓇᓂᑐᐃᓐ ᓇᖅ ᑐᒃ ᑐᖅᑲᕐ ᖃᐅᔪᓂᒃ ᑕᒪᒃ ᑯᓂᖕ, ᐃᓕᑕᕆᔭ ᐅᓯᒪᓗᑎᓪ ᓗ ᑲᑎᒫ ᑐᐊᑦ ᑎᐊᑦ ᐊᐅᓚᑦ ᑎᔾ ᐅᔪᓐᓇᕐ ᓂᖕ ᑖᓂ ᐅᐊᑭᓯᒥ. (ᐅᐊᑭᓯᒥ ᑲᑎᒪᔨᖕ 2016). ᓄᓇᑦᓯᐊᕐ ᒥ, ᐃᓅᖕ ᓄᑦ ᓂᕿᒃ ᓴᓂᒃ ᐊᒻ ᒪᓗ ᑮ ᓇᐅᔭ ᓕᐅᕈᑕᐅᓂᐊᖅᑐᓂᒃ ᑐᒃ ᑐᓯ ᐅᕐ ᖃᐅᔪᓐᓇᕐ ᓂᖕ ᓄᖅᑲᖅᑎᑕᐅᓚᐅᕐ ᒪᑕ ᓯᕗᓂᐊᒍᑦ ᐊᕐ ᕆᒍᒥ 2010-ᒥ. ᐅᐊᑭᓯᒃ ᑯᑦ ᑲᑎᒪᔨᖕ ᐃᓅᖁᑎᖏᓐᓂᒃ ᑐᓴᕐ ᖃᖅᑲᓇᐊᖅᑐᒃ ᑳ ᓂᓚᐅᖅᑐᑦ 2019-ᒥ ᑕᒪᒃ ᑯᐊ ᖁᕐ ᓘᖅᑑᑉ-ᑳ ᓇᖕ ᓇᖕᓂ ᑐᒃ ᑐᓂᒃ ᐊᒻ ᒪᓗ ᑐᑭ ᓕᐅᓚᐅᕐ ᖃᐅᓚᐅᖅᓯᑎᒃ ᑕᒪᕐ ᒥᒃ ᑲᑎᓪ ᓗᒋᑦ ᑐᒃ ᑐᑕᐅᓯᒪᔪᓐᓇᕐ ᓂᖕ ᑕᒪ ᐃᓐ ᓂᒃ ᑐᒃ ᑐᖅᑲᕐ ᖃᓕᒫᖏᓐᓂᒃ ᑖᓂᓐ ᓂᐊᖅᑐᓂᒃ 193-ᓂᒃ ᐸᖕ ᓃᓐ ᓇᐅᔪᓂᒃ, ᐊᖏᓃᖅᑲᖅᑐᓂᒃ 1% ᐳᓴᓐ ᑎᖏᓐᓂᒃ ᓇᓚᐅᑖᖅᑕᐅᓯᒪᓂᖏᓐᓂᒃ ᑐᒃ ᑐᐃᑦ ᐊᒥᓲᓂᖏᓐᓂᒃ ᑖᓂ ᐊᕐ ᕆᒍᒥ 2018-ᒥ (ᐅᐊᑭᓯᒃ ᑯᑦ ᑲᑎᒪᔨᖕ 2019).

ᓵᑐᒥ ᐅᑦ ᐊᓪ ᓚᐃᑦ ᓄᓇᒥ ᐅᑕᓕᓇᐂᑦ ᑲᑎᒪᔨᖕ ᑕᐅᖅ ᐃᓅᖁᑎᖏᓐᓂᒃ ᑐᓴᕐ ᖃᖅᑲᓇᐊᖅᑐᖅᓯᒪᓚᐅᖅᑐᑦ ᑕᒪᓂ 2016-ᒥ, ᐊᑐᓕᖁᔭ ᓕᐅᓚᐅᓇᓪ ᓗᑎᒃ ᑐᒃ ᑐᓯ ᐅᑎᖏᓐᓂᒃ ᑕᐃᓕᓇᐃᒥ ᐅᑕᓂᒃ ᖁᕐ ᓘᖅᑑᑉ-ᑳ ᓇᖕ ᓇᖕᓂ ᑐᒃ ᑐᓂᒃ ᒪᓕᖁᔭ ᐅᓪ ᓗᑎᒃ ᓄᓇᓕᖕ ᓄᑦ-ᐊᐅᓚᑕᐅᔪᓂᒃ ᐊᐅᓚᑦ ᑎᕝ ᔪᑎᒃ ᓴᓂᒃ ᐸᕐ ᓇᐅᑎᓕᐊᓇᔭ ᐅᓯᒪᔪᓂᒃ ᓄᓇᖕᒍᓂ ᑕᐃᓕᓇᐃᒥᒃ (ᑕᐃᓕᓇᐃ 2016) ᑐᒃ ᑐᑕᐅᔪᓐᓇᕐ ᓗᑎᒃ ᐃᓱᖅᑲᕐ ᓂᐊᖅᑐᑦ 150-ᓂᒃ, ᐱᕐᖁᔭ ᐅᓪ ᓗᑎᒃ ᐱᕈᐊᓂᓵᖅᓯᒪᓂᖕ ᐸᖕ ᓃᑦ (ᓵᑐᒥ ᐅᑦ ᓄᓇᒥ ᐅᑕᓕᓇᐂᖕ 2016). ᐊᕐ ᕆᒍᒥ 2019-ᒥ, ᑎᑎᕋᖅᑕᐅᓵᖅᓯᒪᔭᑦ ᐋᕿᑭ ᐊᖅᑕᐅᓯᒪᓕᖅᑐᑦ ᐸᕐ ᓇᐅᑎᒃ ᓴ ᐃᑦ ᑕᐃᓕᓇᐃᒥ ᖕᖑᖅᑐᑦ ᐃᓚᖅᑲᓕᓚᐅᖅᑐᑦ ᑐᒃ ᑐᑕᐅᔪᓐᓇᕐ ᓂᖏᓐᓂᒃ ᐃᓱᖅᑲᖅᑎᑦ ᑎᔪᓂᒃ ᑖᓂ ᐊᒥᑦ ᓲᓂᓕᖕ ᓂᒃ 30-ᓂᒃ ᐱᕐᖁᔭ ᐅᓪ ᓗᑎᒃ ᐱᕈᐊᓂᓵᖅᓯᒪᓂᖕ ᐸᖕ ᓃᑦ, ᖁᕐ ᓘᖅᑑᑉ-ᑳ ᓇᖕ ᓇᖕᓂ ᑐᒃ ᑐᖏᓐᓂᒃ.

ᐱᒋ ᐊᓕᓵᕐ ᓂᖕᓂ 2015 ᐅᖅᑲᐅᑉ ᓯᒋ ᐊᖅᑏᑦ ᑲᑎᒪᔨᕋᖖᖏ ACCWM-ᑯᑦ ᐊᑐᓕᖁᔨ ᓚᐅᖅᐳᑦ, ᐊᖏᕈ ᑕᐅᓚᐅᖅᑐᓂᒃ ᒐᕙᒪᒃ ᑯᑦ ᐊᕙᑎᓕᕆᔨᖏᓐ ᓄᑦ ᓄᓇᒥ ᐅᑕᓕᕆᔨᖏᓐ ᓄᓪ ᓗ, ᑐᒃ ᑐᓯ ᐅᕐ ᖃᐅᔪᓐᓇᕐ ᓂᖏᓐᓂᒃ ᓄᓇᑦᓯᐊᕐ ᒥ ᓄᓇᓕᑐᖃᐃᑦ ᐊᖑᓇᓯᒃ ᑎᖏᓄᑦ ᑕᒪ ᐃᓐ ᓂᒃ ᑖᓂᓐ ᓂᐊᖅᑐᓂᒃ 1,800 ᖁᕐ ᓘᖅᑑᑉ-ᑳ ᓇᖕ ᓇᖕᓂ ᓇᒃᖅᑐᖅᑲᖕ ᑐᕐ ᒥᐅᑕᓂᒃ ᑐᒃ ᑐᓂᒃ, ᑖᓂᖁᔭ ᐅᓪ ᓗᑎ ᐊᒥᓲᓂᖅᑲᕐ ᓗᑎᒃ 80% ᐳᓴᓐ ᑎᖏᓐᓂᑦ ᑐᓂᒃ ᐸᖕ ᓂᐅᓗᑎᒃ ᐅᖓᑖᓂᓗᓐ ᓃᑦ, ᐅᑭ ᐅᑉ ᐊᒥ ᐊᒃ ᑯᖕᓂ ᐊᕐ ᕆᒍᒥ 2014-2015. ᑕᐃᒃ ᑯᐊ ᓄᓇᕗᒻ ᒥ ᑐᒃ ᑐᓯᒪᓂᖕ ᖁᕐ ᓘᖅᑐᑉ-ᑳ ᓇᖕ ᓇᖕᓂ ᑐᒃ ᑐᖏᓐᓂᒃ ᑎᑎᖅᑲᖁᑎᖅᑲᑦ ᑎᐊᖅᑲ ᓗᐊᖅ ᑎᓪ ᓗᒋᑦ, ᓇᓚᐅᑖᖅᑕᐅᓯᒪᓚᐅᖅᐳᑦ ᓄᓇᕗᑦ ᒐᕙᒪᒃ ᑯᖏᓐ ᓄᑦ ᐆᒪᔾ ᔪᓕᓇᐂᖏᓐ ᓄᑦ ᐃᖃᓇᐃᔭᖅᑎᓄᑦ ᑖᓃᓐ ᓇᓯᕆᔭ ᐅᓂᖅ 1,000-ᓂᒃ/ᐊᕐ ᕆᒍᑖᖅ. ᐃᓱᖅᑲᖅᑎᑕᐅᓕᕐ ᒪᑕ ᑐᒃ ᑐᓯ ᐅᕐ ᖃᐅᔪᓐᓇᕐ ᓂᖕ ᓄᓇᓕᑐᖃᕐ ᓄᑦ ᐊᖑᓇᓯᒃ ᑎᓄᑦ ᓄᓇᑦᓯᐊᕐ ᒥᓗ ᓄᓇᕗᒻ ᒥᓗ ᐊᕐ ᕆᒍᒥ 2015-2016-ᒥ, ᓴᓂᕐ ᕚᐃᖃᐅᓚᖕᓂᖏᓐᓂᒃ ᑐᑭ ᓕᐅᕆᐊᖃᓕᓚᐅᖅᐳᑦ ᐊᒥᑦ ᓯᓂᖏᓐᓂᒃ ᓄᓇᓕᑐᖃᐃᑦ ᑎᒥᖁᑎᖏᓐ ᓗ ᑐᒃ ᑐᓯᒪᓚᐅᕐ ᓂᖏᓐᓂᒃ ᓄᓇᑦᓯᐊᕐ ᒥ ᐊᒻ ᒪᓗ ᖁᕐ ᓘᖅᑐᕐ ᒥ ᐊᖑᓇᓯ ᑎᓄᑦ ᓄᓇᕗᒻ ᒥ. ᑭᖑᓂᐊᖑᑦ ᑐᓴ ᐃᕙᐅᕆ ᐊᓚᐅᖅᓯᑎᒃ ᓈᓴᐅᑎᖃᓇᐊᖅᑲᕐ ᓂᖏᓐᓂᒃ ᓄᓇᑦᓯᐊᕐ ᒥᐅᓂᒃ ᓄᓇᓕᑐᖃᑦ ᐊᑐᖅᐸᖕ ᓂᖏᓐᓂᒃ ᐊᐅᓚᑦ ᑎᔾ ᐅᖅᑲᖅᑕᐅᔪᓂᒃ ᑲᑎᒪᔨᓂᒃ, ᓄᓇᑦᓯᐊᕐ ᒥ ᐊᕙᑎᓕᕆᔨᒃ ᑯᑦ ᓄᓇᒥ ᐅᑕᓕᓇᐂᓪ ᓗ ᑐᑭ ᓕᐅᓕᓚᐅᖅᐳᑦ ᓴᓂᕐ ᕚᐃᖃᐅᓯᒪᓚᖕᓂᖏᓐᓂᒃ ᑐᒃ ᑐᑕᐅᓇᖅᑐᓂᒃ ᓄᓇᑦᓯᐊᕐ ᒥ. ᒫᓐ ᓇᓴᖑᓚᐅᖅᑐᖅ ᑎᑎᖅᑲᖁᑎᖏᓐᓂᒃ ᑐᒃ ᑐᑕᐅᖃᑦ ᑕᖅᓯᒪᓂᖏᓐᓂᒃ ᐊᑐᓕᓚᐅᖅᑐᑦ ᑖᒃ ᑯᓇᖓ ᑐᒃ ᑐᖏᓐᓂᒃ ᐊᒻ ᒪᓗ ᐊᓯᖏᓐᓂᒃ ᑕᐅᖅ ᐊᑐᓚᐅᓇᓪ ᓗᑎᒃ, ᐊᒥᓯᒐᓴᖕ ᓂᒃ ᒪᓕᒐᖅᐳᑕᐅᓕᓚᐅᖅᑐᓂᒃ, ᐃᓚᖅᑲᓚᐅᕐ ᒥᔪᓂᒃ ᐊᓯᖏᓐᓂᒃ ᐆᒪᔪᖅᓯᐅᖅᑲᑦ ᑕᕈᓐᓇᕐ ᓂᖏᓐᓂ.

ᓄᓇᑦᓯᐊᕐ ᒥ-ᓄᓇᕗᒻ ᒥᓗ ᐊᖃᒃ ᑕᐅᓂᖕ ᒪᓕᓚᐅᖅᑐᑦ ᑐᒃ ᑐᐃᑦ ᐊᒥᓲᖁᔭ ᐅᓂᖏᓐᓂᒃ 1,800-ᖏᓐᓇ ᓂᐊᖅᑐᓂᒃ ᐱᒋ ᐊᖅᑎᑕᐅᖁᔭ ᖏᓐᓂᒃ ᓄᓇᑦᓯᐊᕐ ᒥᐅᓄᑦ ᑕᐃᒃ ᑯᓇᖓ ᐅᖅᑲᐅᑉ ᓯᒋ ᐊᖅᑏᑦ ᑲᑎᒪᔨᕋᖖᖏ ACCWM-ᑯᓂᒃ ᑖᓂ 2015-ᒥ ᐊᒻ ᒪᓗ ᐊᒥᓯᓇᓯᕆᔭ ᐅᓚᐅᕐ ᓂᖏᓐᓂᒃ 1,000-ᖏᑐᓂᒃ ᓄᓇᕗᒻ ᒥ ᐊᖑᓇᓯᒃ ᑎᖏᓐ ᓄᑦ

ᐱᔭ ᐅᓯᒪᓂᖕᖏᓂᒃ ᓄᓇᕗᑦ ᒐᕙᒪᐃᑦ ᐃᖃᓇᐃᔭᖅᑎᖕᖏᓂᒃ ᐃᓱᒪᒋᔭᐅᓚᐅᖅᑐᓂᒃ 2015-ᒥ (ᑕᑯᔭᒃᓴᖅ 9), ᑐᒃᑐᓯ ᐅᕈᓐᓇᕐᓂᖕᖏ ᓄᑦ ᐊᕕᑦ ᑎᓗᑕᐅᓕᓚᐅᖅᑐᑦ ᐊᐃᑦ ᑐᖅᑕᐅᓪ ᓗᑎᒃ ᐃᒪ ᐃᓕᖕᒐᖅᑐᓂᒃ: ᒃᓛᑦ ᓃᒥᐅ 39.2%, ᓵᑑᒥ 16.4%, ᑎᑦᓃᒥ 1.6%, ᐃᓄᕕᐊᓗᒃᓂ 0.9%, ᓄᓇᑦᐊᑉ ᐊᓪᓚᖕᖁᐃᑦ ᑲᑐᔾ ᔨᖃᑎᒌᖕᖏ 0.4%, ᐊᑮᑦᓱᒥᐅᓂ 2.1%, ᐊᒻᒪᓗ ᓯᓚᐃᕕᐅᑉ ᐅᐊᖕᓇᖕᒐ ᐊᓪᓚᖕᖑᐃᑦ ᑲᑐᔾ ᔨᖃᑎᒌᖕᖏᓂ 1.8% ᐳᓴᓐᑎᓂᓕᖕᓂᒃ. ᓄᓇᕗᒻᒥᐅᑦ ᑐᒃᑐᓯ ᐅᕈᓐᓇᕐᓂᖕᖏ ᐊᑐᕐ ᓗᒋᑦ ᑖᒃ ᑯᐊ ᐋᕿᐅᒪᔭᐅᓂᖕᖏ ᐃᒪ ᐃᓕᖕᒐᐅᖅᑐᑦ 36.8% ᐳᓴᓐᑎᑦ, ᐃᓕᑕᕆᔭᐅᓪ ᓗᑎᒃ ᑐᒃᑐᓯ ᐅᕐ ᕕᐅᔪᓐᓇᕐᓂᖕᖏᓂ ᐃᓱᖃᖅᑎᑕᐅᓂᖕᖏ ᓄᓇᕗᒻᒥ ᑐᑭᓕᐅᖅᑕᐅᔭ ᕆᐊᖃᕐ ᓂᐊᖅᑐᑦ ᓄᓇᕗᒻᒥᐅᑕᓄᑦ, ᑕᐃᒃ ᑯᓄᖕᒐᓄᓇᕗᒻᒥ ᐆᒪᔪᓕᕆᔨᕐ ᔪᐊᖕᖏ ᓄᑦ ᐊᒻᒪᓗ ᓄᓇᕗᑦ ᒐᕙᒪᒃ ᑯᖕᖏ ᓄᑦ.



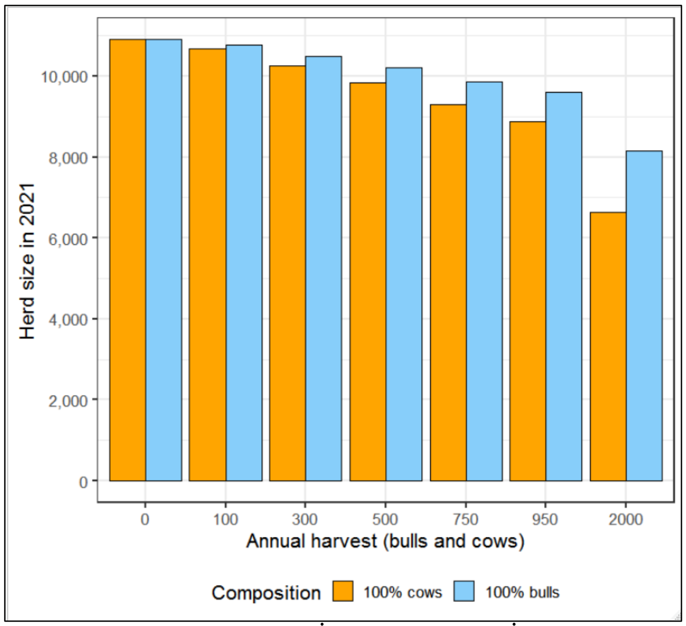
ᑕᑯᔭᒃᓴᖅ 9. ᐊᑐᖅᑕᐅᑲᐃᓐᓇᕐᓂᐊᖅᑐᓂᒃ ᓴᓂᕐ ᕙᐃᕖᐅᓂᖕᖏ ᑕᐃᒃ ᑯᓇᖕᒋ ᑐᒃᑐᑕᐅᔪᓐᓇᕐᓂᖕᖏᓂᒃ ᖁᕐ ᓗᖅᑑᑉ-ᑲᓇᖕᓇᖕᒍ ᓇᐹᖅᑐᖃᖕᖏ ᑐᒥ ᑐᒃᑐᖕᖏᓂᒃ ᐊᐃᑦ ᑐᖅᑕᐅᓯᒪᕗᑦ 7-ᖕᒍᔪ ᓄᑦ ᓄᓇᓕᑐᖃᐃᑦ ᑎᒥ ᖁᑎᖕᖏ ᓄᑦ ᓄᓇᑦᓯᐊᕐᒥ, ᑕᒫ ᖕᒋ ᐱᒋ ᐊᓚᐅᖅᑐᓂᒃ 2015-ᒥ. ᑕᐃᒃ ᑯᐊ ᓴᓂᕐ ᕙᐃᕖᐅᓂᖕᖏ ᐊᐃᑦ ᑐᐃᕝ ᕖᐅᓗᑎᒃ ᐊᕐ ᕋᒍᒥ 2015- ᑐᕋᖕᙳᐃᓐ ᓇᓚᐅᖅᑐᑦ ᓄᓇᑦᓯᐊᕐ ᒥᑕᓄᑦ, ᓄᓇᕗᒻᒥᐅᑕᐅᖕᙳᓐ ᓄᑦ. ᓄᓇᕗᒻᒥᐅᑦ ᐃᓚᒋᔭᐅᔪᑦ ᐅᖃᐅᓯᐅᓂᖕᖏ ᓂ ᑖᒡ ᕚᓂ ᑐᑭᓯ ᐅᒪᔭ ᐅᖁᔨ ᓂᕐ ᒎᑦ (ᐃᓱᒪᒋᔭᐅᑐᐃᓐ ᓇᕐ ᒪᑕ ᐃᒪᓐ ᓇᐃᓂᐊᕐ ᓂᖕᖏ 1,800 ᓄᓇᑦᓯᐊᕐ ᒥᐅᓂ ᐊᒻᒪᓗ 1,000 ᓄᓇᕗᒻᒥ), ᐃᓕᑕᕆᔭ ᐅᓪ ᓗᑎ ᑐᒃᑐᓯ ᐅᕐ ᕕᐅᔪᓐᓇᕐ ᓂᖕᖏ ᓂ ᐃᓱᖃᖅᑎᑕᐅᔪᓐᓇᕐ ᓂᖕᖏ ᓄᓇᕗᒻᒥᐅᓂ ᑐᑭᓕᐅᖅᑕᐅᔪᓐᓇᕐ ᓂᐊᖅᑐᑦ ᓄᓇᕗᒻᒥᐅᑕᐃᑦ ᐱᐅᓯᕆᕚᒃ ᑕᖕᖏ ᓂᒃ ᐊᑐᕐ ᓗᑎᒃ.

ᖃᓄᐃᓕᖕᒋ ᓚᕆᖕ ᓂᖕᖏ ᖁᕐ ᓗᖅᑑᑉ-ᑲᓇᖕᓇᖕᒐ ᑐᒃ ᑐᖕᖏ ᓂ ᑐᒃ ᑐᓯ ᐅᕐ ᕕᐅᖃᑕᖅ ᓂᖕᖏ ᓄᓇᑦᓯᐊᕐ ᒥ ᑕᐃᒪ ᖕᒋ 2016-ᒥ ᐊᒥᓱ ᐊᑑᓯ ᒪᖕᕆᓚᑦ. ᑕᐃᓕᓇᐃᒥᐅᑦ ᐊᖕᒍᓇᓱ ᑎᖕᖏ ᐅᖃᐅᓯ ᖃᖅ ᓯᒪᔪᑦ ᑐᒃ ᑐᑐᖃᖅ ᓯᒪᓂᖅ 126-ᓂᒃ (94-ᓂᒃ ᐸᖕ ᓂᕐ ᓂᒃ, 33-ᓂᒃ ᐊᕐ ᓇᓪ ᓗᕐ ᓂᒃ) ᐅᑭᐅᒃ ᑯᑦ ᑕᒫ ᓂ 2016-2017, ᑐᒃ ᑐᓯ ᐅᕐ ᕕᐅᓚᖕᖏ ᑎᐊᖅᓱᑎᒃ ᑕᒫ ᓂ 2017-2018 ᐊᒻᒪᓗ 2018-2019-ᒥ, ᑐᒃ ᑐᐃᑦ ᐅᑮ ᓚᐅᕐ ᓂᖕᖏ ᓄᑦ ᑎᑭ ᑕᐅᓴ ᕋᐃᖕᖏ ᑐᓂ, ᐅᖕᒍᒃ ᑐᒥᒃ ᓄᓇᖕᖏ ᓂ. ᐊᓯ ᖕᖏ ᓄᓇᓕᑐᖃᐃᑦ ᓄᓇᑦᓯᐊᕐ ᑐᒃ ᑐᓯ ᐅᖃᑦ ᑕᓚᐅᕐ ᓂᖕᖏ ᐊᒥᔅ ᓃᓚᐅᖕᖏ ᒥᔪᑦ ᐅᑭᐅᕐ ᒥ 2016-2017-ᒥ (ᓇᓚᐅᑖᖅ ᑕᐅᓯᒪᓪ ᓗᑎ 15 ᐸᕐ ᓃᑦ), 2017-2018-ᒥ (ᓇᓚᐅᑖᖅ ᑕᐅᓯᒪᓪ ᓗᑎ ᖁᓕᑦ 10 ᐸᖕ ᓃᑦ), ᐊᒻᒪᓗ ᑕᒫ ᓂ 2018-2019-ᒥ (ᓇᓚᐅᑖᖅ ᑕᐅᓯᒪᓪ ᓗᑎ 100 ᐸᕐ ᓃᑦ*). ᑕᐃᒪ ᓚᐅᖅ ᑐᑦ ᐃᓚᖕᖓᑦ ᐱᔾ ᔪᑕᐅᓂᕐ ᒎᑦ ᑐᒃ ᑐᐃᑦ ᐃᑮ ᓚᐅᕐ ᓂᖕᖏ ᑎᑭ ᑕᐅᓴ ᕋᐃᖕᖑᒻ ᒪᕆᖕ ᓅᓚᐅᕐ ᓂᖕᖏ, ᐱᔭᕐ ᓂᖅ ᑑᖕᖏ ᓂᕐ ᒥ. ᐊᒻᒪᑕᐅᖅ, ᓄᓇᓕᑐᖃᐃᑦ ᐊᖕᒍᓇᓱᒃ ᑏᑦ ᐊᕕᒃ ᑐᖅ ᓯᒪᓂᖕᖏ ᓂ ᐊᖕᒍᓇᓱᖕ ᓂᖅ ᓴᐅᕙᓚᐅᖅᑐᑦ ᕿᖕᒑᒻ ᒥ ᑐᒃ ᑐᓂᒃ ᐅᑭᐅᒃ ᑯᑦ ᐊᖅ ᑯᑎᒃ ᑯᑦ ᑕᐅᕝᖕᒑᐅᕝ ᕕᖕ ᓂ ᐊᓕᒍᔭ ᕐ ᓂᒃ ᓯᑎᓂᖅ ᐹᖅᓯ ᐅᕐ ᕕᖕ ᓄᑦ ᐅᔭᕋᖕ ᓂᐊᕐ ᕕᖕ ᓄᑦ, ᑲᓇᖕ ᓇᖅᐸᓯ ᐅᓂᖕᒐ ᓄᓇᑦᓯᐊᑉ ᑕᐃᒃ ᑯᐊ ᓱᓕ ᑕᐅᕙᓂ ᑐᒃ ᑐᓯ ᐅᕐ ᕕᐅᔪᓐ ᓇᕐ ᓂᖕᖏ ᓂᒃ ᓄᓇᓕᑐᖃᕐ ᓄᑦ ᐊᔪᕈᑎᖃᖅ ᑎᑕᐅᖕᖏ ᓂᖕᖏ ᓂᒃ.
(*ᓱᓕ ᐅᑕᖅᑭᔪᑦ ᓇᓗᓇᐃᖅ ᑕᐅᓂᐊᖅ ᑐᓂᒃ ᒃᓛᑦ ᓃᒃ ᑯᑦ ᒐᕙᒪᒃ ᑯᖕᖏ ᓂᒃ).

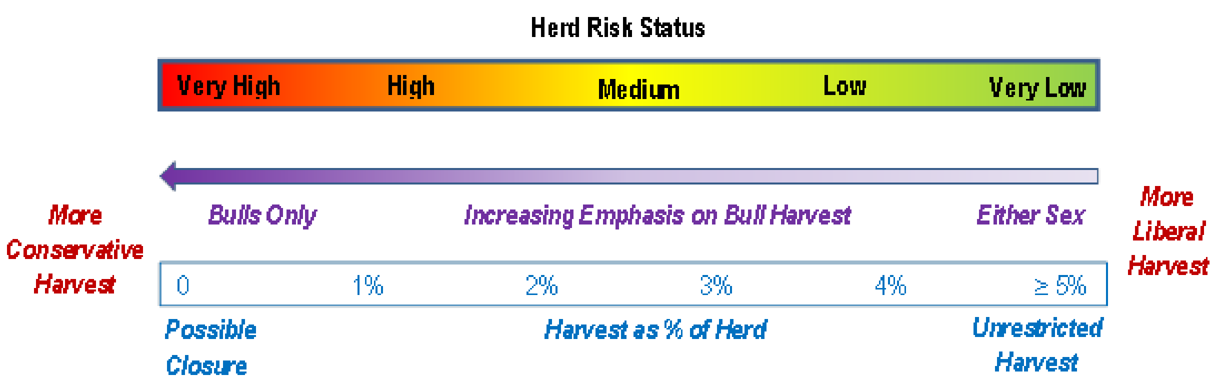
4. ᐊᐅᓚᑕᐅᓂᖕᖏ ᖁᕐ ᓗᖅᑑᑉ-ᑲᓇᖕᓇᖕᒐ ᑐᒃ ᑐᓂᒃ ᐊᕐ ᕋᒍᒥ 2019-2020

ᐃᑲᔪᕆᐊᕐ ᓂᕐ ᒎᑦ ᐃᓱᒪᒃ ᓴᖅᓯ ᐅᕈᑕᐅᓂᖕᖏ ᓂᒃ ᑐᒃ ᑐᓯ ᐅᕐ ᕕᐅᔪᓐ ᓇᕐ ᓂᖕᖏ ᓂᒃ ᐊᑐᓕᖁᔭ ᓕᐊᖕᒍᓂᐊᖅ ᑐᓂᒃ ᖁᕐ ᓗᖅᑑᑉ-ᑲᓇᖕᓇᖕᒐ ᑐᒃ ᑐᓂᒃ ᑭᖕᒍᓂᐊᒍᑦ 2018-ᒥ ᐊᒥᓲ ᓂᖕᖏ ᓂᒃ ᑐᒃ ᑐᐃᑦ ᓇᓚᐅᑖᖅ ᑕᐅᓯᒪ ᓂᖕᖏ ᓂ, ᐊᒥᓱ ᓂᖕᖏ ᓂᒃ ᐃᔾ ᔪᐊᖅᓯᔾ ᔪᑎᑦ ᐊᑐᖅ ᑕᐅᓚᐅᖅ ᑐᑦ ᖃᐅᔨᓴᕐ ᓂᕐ ᒎᑦ ᐊᒥᓲ ᓂᖕᖏ ᓂᒃ

ᖃᓄᐃᓕᕙᓪ ᓕᐊᔪᔮᕐ ᓂᖏᓂᒃ 2018-ᒥᒃ 2021-ᒧᑦ ᓇᓚᐅᑦ ᑖᕐ ᓗᒋᑦ ᓄᓇᒦ ᖃᑖᕐ ᓂᖏᓂᒃ ᒪᓕᒃ ᓯᒪᓗᑎᒃ ᓇᓗᓇᐃᑯᑕᐅᓂᕐ ᒧᑦ ᐊᒻᒪᓗ ᐊᒥᓲ ᓂᖏᓂᒃ ᑐᒃ ᑐᓯ ᐅᕐ ᕿᐅᖃᑦ ᑕᖅᓯᒪᓂᖏᓂᒃ ᐸᓐ ᓂᐅᔪ ᓂᒃ ᐊᕐ ᓇᓪ ᓗᕐ ᓂᓪ ᓗ ᐱᑦ ᔪᑎᖃᕐ ᒥᔪᓂᒃ. ᑕᐃᒃ ᑯᐊ ᓴᕿᑎᑕᐅᓚᐅᖅᑐᑦ ᐅᖃᐅᓯ ᐅᓯᒪᔪᑦ ᐅᓂᒃ ᑳᖅᑕᐅᓯᒪᕗᑦ Bᐅᓛᓐᔭᐃᒃ ᑯᓐ ᓄᑦ-Boulanger et al. (2019). ᑐᑭᓯᔭᐅᓯᒪᔪᒐᓴᐃᑦ ᑕᑯᒃ ᓴᐅᕗᑦ ᑕᑯᔭᒃ ᓴᓂᒃ 10-ᒥ, ᑐᒃ ᑐᓯ ᐅᕐ ᕿᐅᒍᑎᒃ 0-ᒥᒃ 2,000-ᓂᒃ ᐊᒻᒪᓗ ᑕᒪᕐ ᒥᒃ ᐸᓐᓂᐅᒍᑎᒃ ᐅᕝᕙᓗᓐ ᓂᑦ ᑕᒪᕐ ᒥᒃ ᐊᕐ ᓇᓪ ᓘᒍᑎᒃ. ᑐᒃ ᑐᓯ ᐅᕐ ᕿᐅᓯᒪᓐᖏ ᑯᑎᒃ, ᑐᒃ ᑐᐃᑦ ᐊᒥᓲᓂᐊᕋᓱᓯᒋᔭᐅᕗᑦ ᖃᓂᒋᔭᖏᓐᓂ 11,000 ᐊᕐ ᕋᒍᒥ 2021-ᒥ. ᐊᒥᓱᕈᓇᐊᖅᑕᐅᓂᖏᓐ ᑐᒃ ᑐᑕᐅᔪᓐ ᓇᕐ ᓂᖏᓐ ᐱᕙᓪ ᓕᐊᔪᒥᒃ ᑐᒃ ᑐᓄᑦ ᐊᒥᒃ ᓲᔪᓐ ᓅᕈ ᑕᐅᓂᐊᕋᓱᓯᒋᔭᐃᑦ 2021-ᒥ. ᐊᒃ ᑐᖅ ᑕᐅᔪᓐ ᓇᕐ ᒪᑕ ᐊᕐ ᓗᕐ ᓂᒃ ᑐᒃ ᑐᕖᐅᖃᑦ ᓂᖏᓄᑦ ᓴᓂᐊᓂ ᐸᖕ ᓂᕐ ᓂᒃ ᑐᒃ ᑐᒃ ᐸᒃ ᑯᑎᒃ ᓇᓗᓇᕈ ᓅᖃᑦ ᒪᑕ ᐊᒥᓯ ᓂᖅ ᓴ ᐅᓕᕆᖕ ᖑᒥᒃ ᑐᒃ ᑐᑕᐅᖃᑕᕈᓐ ᓇᕐ ᓂᖏᓐ.



ᑕᑯᔭᒃ ᓴᖅ 10. ᓇᓚᐅᑖᖅ ᑕᐅᓯᒪᓂᖏᓐ ᑐᒃ ᑐᐃᑦ ᐊᒥᓲ ᓂᖏᓐ ᓂ ᖃᕐ ᓗᖅ ᑑᑉ -ᑲ ᓇᖕ ᓇᖕᓂ ᑕᓖ ᓂ 2021-ᒥ, ᐊᑐᕈᑎᒃ ᐊᔾ ᔾᒌ ᖏᓐ ᑑᑎᐅᔪ ᓂᒃ ᑐᒃ ᑐᓯ ᒪᕝ ᕿᐅᔪ ᓇᕐ ᓂᖏ ᓂᒃ, ᐊᒥᓯ ᓂᖃᖅ ᑐᓂᒃ 100% ᐳᓴ ᑎᖏ ᓂᒃ ᐸᖕ ᓂᐅᔪ ᓂᒃ ᐊᒻᒪᓗ 100% ᐳᓴ ᑎᖏ ᓂᒃ ᐊᕐ ᓇᓪ ᓗᕐ ᓂᒃ. ᐱᓪ ᓗᐊᑕᐃᑦ ᐃᓱᒪᒋᔭᐅᓯᒪᓂᖏᓐ: ᐊᕐ ᓇᓪ ᓗᐃᑦ ᐅᒪ ᐃᓐ ᓇᕈ ᓇᕐ ᓂᖏᓐ ᐊᒥᓲ ᓂᖃᕋᔭᖅ ᑐᑦ 0.716-ᒥᑦ ᑐᓂᒃ ᐊᒻᒪᓗ ᐃᒪ ᓇᐃᓕᖕᙳᔪ ᒍ ᓇᕐ ᓂᖏᓐ ᓄᕐ ᓇᕙᓪ ᓕᐊᖃᑕᕈ ᓇᕐ ᓂᖏᓐ 0.301. ᐅᖃᐅᓯ ᐅᓯᒪᔪᑦ ᐅᓂᒃ ᑳᖅᑕᐅᓯᒪᕗᑦ Bᐅᓛᓐᔭᐃᒃ ᑯᓐ ᓄᑦ -Boulanger et al. (2019).



ᑕᑯᔭᒃ ᓴᖅ 11. ᐊᑐᓕᕐᑯᔭ ᓕᐊᑦ ᑐᒃ ᑐᓯ ᐅᕐ ᕿᐅᔪ ᓇᕐ ᓂᖏᓐ ᓂᒃ ᕐᑯᕐ ᓗᖅ ᑑᑉ -ᑲ ᓇᖕ ᓇᖕᓂ ᑐᒃ ᑐᖏᓐ ᓂᒃ ᒪᓕᓪ ᓗᑎᒃ ᑐᒃ ᑐᐃᑦ ᐊᒥᓯ ᓂᖏᓐ ᓂᒃ ᐊᒻᒪᓗ ᖃᓄᐃᓕᕙᓪ ᓕᐊᓂᖏᓐ ᓂᒃ ᑐᖕᖅ ᖃᖅ ᑐᓂᒃ ᐊᖑᓇᓯᒃ ᑕᐅᖃᑦ ᓂᖏᓐ ᓂᒃ ᐃᑦ ᔪᐊᖅ ᓯᓯᒪᔪᓂᒃ ᓴᓇᔭ ᐅᓚᐅᖅ ᑐᓂ Bᐅᓛᓐᔭ ᐃᒧᑦ -Boulanger ᐊᒻᒪᓗ ᐋᑕᒻ ᔫᔅ ᑭᒧᑦ -Adamczewski (2016). ᑐᒃ ᑐᐃᑦ ᐊᒥᔅ ᓲᖑᓂᖏᓐ ᓂ ᐊᒻᒪᓗ ᓱᒃ ᑲᓕᔪ ᐊᓗᖕ ᒥᒃ ᐊᒥᔅ ᓲᔪ ᓅᖅ ᐸᓪ ᓕᐊᔪ ᓇᕐ ᓂᖏᓐ ᓄᑦ ᖃᓄᐃᓕᕙᓪ ᓕᐊᓂᖏᓐ ᓂ ᐱᒻ ᒪᕆᐅᓂᖅ ᐹᖑᔪᒥᒃ ᐊᒃ ᑐᖅ ᑕᐅᓯᒪᔪ ᓇᖅ ᐳᑦ ᑐᒃ ᑐᓯ ᐅᕐ ᕿᐅᖃᑦ ᓂᖏᓐ ᓄᑦ.

ᐊᒻᒪᑕᐅᖅ ᓱᓕ, ᓂᕈᑐᓂᖅᓴᓂᒃ ᑐᒃᑐᔪᐅᕐᕕᐅᖃᑕᕐᓂᖕᒋᓂᒃ ᐃᔾᔪᐊᖅᑕᐅᓯᒪᔪᓐᓇᕐᓂᖕᒥ ᑐᑭᓯᓂᐊᕈᑕᐅᓚᐅᖅᐳᑦ ᐅᓂᒃᑳᓕᐊᖕᒋᓂ Bᐅᓚᖓᔦᐃᑉ-Boulanger ᐊᒻᒪᓗ ᐋᑕᒻᔫᔅᑭᐅᑉ-Adamczewski (2016-ᒥ). ᑕᐃᒃᑯᐊ ᐃᓚᖃᓚᐅᖅᑐᑦ ᐃᓱᒪᕆᔭᐅᓂᖕᒋᓂᒃ ᑐᒃᑐᐃᑦ ᐊᒥᔅᓱᕈᓇᐊᕐᓂᖕᒋᓂᒃ, ᐊᒥᔅᓲᔭᓐᓅᕐᓂᖕᒋᓂᒃ, ᐅᙶᕿᓗᓐᓅᑦ ᖃᓄᐃᙱᓐᖏᓂᒃ, ᐊᒥᓲᓪᓗᑎᒃ ᐊᔾᔨᒑᖕᒌᑐᑎᐅᔭᓐᓇᕐᓂᖕᒥ ᑐᒃᑐᔪᐅᕐᕕᐅᔭᓐᓇᕐᓂᖕᒥ ᐊᒻᒪᓗ ᐊᕐᓇᓪᓘᓂᖕᒥ ᐊᖑᓯᓪᓘᓂᖕᒋ ᓗᓐᓅᑦ. ᒪᓕᒐᖅᐳᑦ ᑎᑎᕋᐅᔭᖅᑕᐅᓚᐅᖅᑐᓂᒃ ᑕᐃᒃᑯᓂᖓ ᐊᑐᓚᐅᖅᑐᓂᒃ ᐃᔾᔪᐊᖅᓯᓯᒪᓚᐅᖅᑐᓂᒃ, ᑕᑯᔭᒃᓴᐅᔪᓂ 11-ᒥ. ᑕᒪᐃᓐᓂ ᑕᑯᓪᓗᒋᑦ, ᐊᒥᓲᓂᖅᓴᐃᑦ ᑐᒃᑐᐃᑦ ᐊᒥᓱᕈᖅᐸᓪᓕᐊᓂᖕᒋᓂ ᐊᒥᔅᓲᓂᖅᓴᐅᔪᓂᒃ ᑐᒃᑐᔪᐅᕕᐅᔭᓐᓇᕋᔭᖅᐳᑦ, ᑐᒃᑐᐃᓪᓗ ᐊᒥᔅᓲᖕᒥᑐᑦ ᐊᒻᒪᓗ ᐊᒥᔅᓲᔭᓐᓅᖅᐸᓪᓕᐊᔪᑦ ᐊᒥᔅᓱᓂᒃ ᑐᒃᑐᔪᐅᕐᕕᐅᑦᑎᐊᕋᔭᖕᒥᑐᑦ. ᑕᐃᒪ ᐃᓂᖕᖏᓐᓄᑦ, ᐊᑐᓕᕐᑭᔮᑦ ᑐᒃᑐᔪᐅᕐᕕᐅᔭᓐᓇᕐᓂᖕᒋᓂᒃ ᐊᒥᔅᓲᕐᑭᖕᒋᓂᖅ (% ᐳᓴᓐᑎᕆᔭᐅᔭᒦᓪᓗᑎᒃ ᑐᒃᑐᖕᒋᓂᒃ) ᐊᒻᒪᓗ ᐃᓱᒪᕆᔭᐅᓂᖅᐹᖑᓗᑎᒃ ᑐᒃᑐᔪᐅᕈᓐᓇᕐᓂᖕᒥ ᐊᖑᓯᓪᓗᕐᓂᒃ ᐸᖕᓂᕐᓂᒃ ᑐᒃᑐᓂᒃ ᐊᒥᔅᓲᖕᒋᓂᖕᒋᓂᒃ ᐊᒻᒪᓗ ᐊᒥᔅᓲᔭᓐᓂᖅᐸᓪᓕᐊᔪᓂᒃ.

2019-ᒥ, ᐅᐊᑮᓯᒃ ᑯᑦ ᓄᓇᒥ ᐅᑕᓕᖕᓃᑦ ᑲᑎᒪᔨᖕᒋ ᑐᑭᓕᐅᓚᐅᖅᑐᑦ ᑐᒃᑐᖕᒋᓂᒃ ᑕᒪᐃᓐᓂᒃ ᖁᓗᖅᑐᑉ-ᑲᓇᖕᓇᖕᓂ ᑕᒪᕐᒥᒃ ᑲᑎᓪᓗᒋᑦ ᑐᒃᑐᕕᐅᔭᓐᓇᖅᑰᓪᓗᑎᒃ 193-ᓂᒃ ᐊᖑᓯᓪᓗᕐᓂᒃ ᐸᖕᓂᐅᔭᓂᒃ ᑕᒪᐃᓐᓂ ᓄᓇᓕᑐᖃᐃᑦ ᑐᒃᑐᔪᐅᖅᐸᖕᓂᖕᒋᓂᒃ ᑖᒃ ᑯᓇᖕᒍᑦ, ᐃᓕᑕᕆᔭᐅᔭᓐᓇᕐᓗᑎᒃ ᑲᑎᒪᔨᖕᒥ ᐊᐅᓚᑦ ᑎᔨ ᐅᕕᖃᖓ ᖕᒋᖕᒥ ᓯᓚᑖᓂᒃ ᓄᓇᑖᕐ ᕕᕆᓯᒪᔭᖕᓂ ᐊᑐᖅᑕᐅᔭᓐᓇᖅᑐᓂᒃ (ᐅᐊᑮᓯᑯᑦ ᑲᑎᒪᔨᖕᒥ 2019). ᑖᒃ ᑯᐊ ᓇᓴᐅᑎᖕᒥ ᑭᒡᒐᖅᑐᐃᕙᑦ 1% ᐳᓴᓐᑎᖕᒋᓐᓂᑦ ᑐᓂᒃ ᑐᐃᑦ ᐊᒥᓱᓂᖕᒋᓂᒃ ᑕᓖᓂ ᐊᕐᕌᒍᒥ 2018. This is a reduction of ᐊᒥᔅᓲᔭᓐᓂᓇᐊᖅᑕᐅᕙᑦ ᐃᒪᓐᓇᑎᒋ 74% ᐳᓴᓐᑎᓂᒃ ᑕᐃᒃ ᑯᓇᖕᒍᑦ ᑕᒪᕐᒥᒃ ᑲᑎᓪᓗᒋᑦ ᑐᒃᑐᔪᐅᕐᕕᐅᔭᓐᓇᓚᐅᕐᓂᖕᒋᓂᒃ 750-ᓂᒃ ᐊᖑᓯᓪᓗᕐᓂᒃ ᐸᖕᓂᕐᓂᒃ ᐅᐊᑮᓯᒃ ᑯᑦ ᓄᓇᒥ ᐅᑕᓕᖕᓃᑦ ᒪᓕᒐ ᓕᐊᓇᓚᐅᖅᑕᖕᒋᓂᒃ ᑕᓖᓂ 2016-ᒥ (ᐅᐊᑮᓯᒃ ᑯᑦ ᑲᑎᒪᔨᖕᒥ 2016).

2019-ᒥ ᐊᑐᓕᕐᑯᔭ ᓕᐅᓚᐅᖅᐳᑦ ᑐᒃᑐᔪᐅᕕᐅᕐᑭᔨᓂᖅ ᖁᕐᓗᖅᑑᑉ-ᑲᓇᖕᓇᖕᓂ ᑐᒃᑐᖕᒋᓂᒃ, ᑕᐃᒃ ᑯᓇᓂ ᑎᑎᕋᖅᑕᐅᓵᓚᐅᖅᑐᓂᒃ ᓄᑖᕈᓇᐊᖅᑕᐅᓯᒪᔪᓂ ᑕᐃᓕᓇᐃᒥᐅᑦ ᓄᓇᖕᓂ ᑐᒃᑐᓂᒃ ᐊᐅᓚᑦ ᑎᓂᕐ ᒍᑦ ᐸᕐ ᓇᐅᓯ ᐊᖕᒋᓂ, ᑕᓖᓂᖅᑭᔨᓪᓗᑎᒃ 30-ᖕᒋᓐᓂᑦ ᑐᓂᒃ ᓇᐹᖅᑐᖃᖅᑐᕐ ᒥᐅᑕᓂ ᑐᒃ ᑐᓂᒃ, ᐊᒥᔅᓲᖕᒋᓂᖅᓴᐅᓂᐊᓕᖅᑐᓂᒃ ᐃᒪᓐᓇᑎᒋ 80% ᐳᓴᓐᑎᓂᒃ ᑐᒃᑐᔪᐅᕐᕕᐅᔭᓐᓇᓚᐅᕐᓂᖕᒋᓂᒃ ᐊᕐᕌᒍᒥ 2016-ᒥ ᑕᐃᒃ ᑯᓇᖕᒍᑦ ᑕᐃᓕᓇᐃᒥᐅᑦ ᐸᕐᓇᐅᑎᕆᓚᐅᖅᑕᖕᒋᓂᒃ ᑐᒃᑐᔪᐅᕐᕕᐅᔭᓐᓇᓚᐅᖅᑐᓂᒃ 150-ᓂᒃ ᓇᐹᖅᑐᖃᖅᑐᕐᒥᐅᑕᐅᔪᓂᒃ ᑐᒃᑐᓂᒃ, ᐱᔭᐅᖃᑦᑯᔭᐅᓪᓗᑎᒃ ᐱᕈᐊᓂᕌᖅᓯᒪᓂᖕᒥ ᐊᖑᓯᓪᓗᐃᑦ (ᓴᑑᒥᐅᑦ ᓄᓇᒥ ᐅᑕᓕᖕᓃᑦ ᑲᑎᒪᔨᖕᒥ 2016).

ᓄᓇᕘᒥᓕ, ᓄᓇᕗᑦ ᒐᕙᒪᖕᒥ ᐊᑐᓕᕐᑭᔾᕙᑦ ᑕᒪᐃᓐᓂᒃ ᑲᑎᓪᓗᒋᑦ ᑐᒃᑐᔪᐅᕕᐅᕐᑭᔨᓂᖅ 107-ᓂᒃ ᐊᖑᓯᓪᓗᕐᓂᒃ ᐸᖕᓅᓐ ᓇᐅᔭᓂᒃ, ᑕᐃᒃ ᑯᓄᖓ ᐊᑐᓕᖅᑎᑕᐅᕐᑯᓪ ᓗᓂᒋᑦ ᓄᓇᕘᒥ ᐆᒪᔪᓕᕆᔨᕐᔭᐊᒃ ᑯᑦ ᑲᑎᒪᔨᖕᒋᓄᑦ ᐊᕐᕌᒍᒥ 2020-ᒥ. ᑕᒪᓐᓇ ᐊᒥᔅᓲᔭᓐᓃᕈᑕᐅᓂᐊᖅᑐᖅ ᐃᒪᓐᓇᑎᒋᑦ 71% ᐳᓴᓐᑎᓂᒃ ᑐᒃᑐᔪᐅᕐᕕᐅᔭᓐᓇᓚᐅᕐᓂᖕᒋᓂᒃ ᐊᕐᕌᒍᒥ 2016-ᒥ 340-ᓂᒃ ᓇᐹᖅᑐᖃᖅᑐᕐᒥᐅᑦ ᑐᒃᑐᔪᐅᕕᐅᖃᓚᐅᕐᓂᖕᒋᓂᒃ (ᐊᕐᓇᓪᓗᐃᓪᓗᓐᓂᖕᒥ ᐸᖕᓂᐅᓂᖕᒋᓗᓐᓂᑦ ᓇᓗᓇᐃᖅᑕᐅᓯᒪᓪᓚᑎᒃ). ᒪᓕᒃ ᑕᐅᓗᑎᒃ ᖁᕐᓗᖅᑑᑉ ᓄᓇᓕᖕᓂᒃ ᐊᐅᓚᑕᐅᓂᖕᒋᓂᒃ ᓇᐹᖅᑐᖃᖅᑐᕐᒥᐅᑦ ᑐᒃᑐᐃᑦ ᐸᕐᓇᐅᑎᖕᒥ, ᐊᑐᖅᑕᐅᖃᑦᑕ ᐊᐅᓚᑕᐅᖃᑦᑕ ᑐᒃᑐᔪᐅᕐᕕᐅᔭᓐᓇᕐᓂᖕᒋ ᓄᑦ ᐃᓱᖅᑎᑦ ᑎᔾ ᔪᑎᖕᒋᓂᒃ.

ᓄᓇᑦᓯᐊᑉ ᒐᕙᒪᐃᑦ ᐃᑲᔪᖅᓱᐃᕙᑦ ᑕᒪᕐᒥᒃ ᑲᑎᓪᓗᒋᑦ ᑐᒃᑐᔪᐅᕐᕕᐅᔭᓐᓇᕐᓂᖕᒋᓂ ᐊᒥᓱᓂᒃ ᓴᖕᒋᓂᒃ ᐱᕆᐊᖅᑎᑕᐅᕐᑯᔭᖕᒋᓂᒃ ᓄᓇᕗᑦ ᒐᕙᒪᐃᑦ ᑕᐃᒃ ᑯᓂᖓ ᖁᕐᓗᖅᑑᑉ-ᑲᓇᖕᓇᖕᓂ ᓇᐹᖅᑐᖃᖅᑐᕐᒥᐅᑕᓂᒃ ᑐᒃᑐᓂᒃ ''
ᓄᓇᕘᒥ ᐊᒥᔅᓲᕐᑭᓂᖕᒋᓂ 107-ᓂᒃ ᐸᖕᓂᖅᓯᐅᕐᕕᐅᔭᓐᓇᖅᑐᓂᒃ. ᐊᒥᔅᓲᔭᓐᓃᖅᑎᑕᐅᓂᖕᒥ ᑐᒃᑐᑕᐅᔭᓐᓇᕐᓂᖕᒥ ᐱᕆᐊᖅᑎᑕᐅᕐᑯᔭᖕᒥ ᓄᓇᕗᑦ ᒐᕙᒪᐃᑦ ᒪᓕᑦ ᑎᐊᕐᒪᑕ ᐊᒥᔅᓲᔭᓐᓃᖅᑎᑕᐅᓂᖕᒋᓂᒃ ᑐᒃᑐᑕᐅᔭᓐᓇᕐᓂᖕᒥ ᓵᑑᒥᐅᓂ ᓄᓇᖁᑎᖕᒋᓂ ᐊᒻᒪᓗᒃ ᓚᑦ ᓵᒥᐅᑦ ᓄᓇᖁᑎᖕᒋᓂ ᓄᓇᑦᓯᐊᕐᒥ, 2019-ᖑᑎᓪᓗᒍ, ᒪᓕᑦ ᑎᐊᓇᓪᓗᑎᒃ ᑕᒪᐃᓐᓂᒃ ᐊᐅᓚᑕᐅᓂᖕᒋ ᓄᑦ ᐸᕐᓇᐅᑎᓂᒃ ᑖᒃ ᑯᓂᖓ ᑐᒃ ᑐᓂᒃ. (*ᒥᐊᓂᕆᔭᐅᑦᑎᐊᕐ ᓂᖕᒥ ᑐᒃ ᑐᐃᑦ, ᐅᖃᐅᔾ ᔨᑎ ᐊᖅ ᑏᑦ ᑲᑎᒪᔨᑲᖕᒥ* ACCWM 2014).

ᑐᑭᓯᓂᐊᕐᕕᐅᓯᒪᔪᑦ:

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ᐅᐊᕿᓯᒃᑯᑦ ᓄᓇᒥ ᐅᑕᓕᓂᐋᑦ ᑲᑎᒪᔨᖏᓐ. 2016. ᐅᓂᒃᑳᑦ ᐃᓄᓕᒫᓂᒃ ᑐᓴᕝᕕᖃᓐᓇᐊᖅᑐᓚᐅᖅᓂᖏᓐᓂᒃ ᐅᐊᕿᓯᒃᑯᑦ ᓄᓇᒥ ᐅᑕᓕᓂᐋᑦ ᑲᑎᒪᔨᖏᓐ ᑕᒫᓂ 6-8 ᐋᐳ 2016-ᒥ, Bᐋᑦᓯᒨᒥ, ᓄᓇᑦᓯᐊᖅᒥ ᐱᔾᔪᑎᖃᖅᑐᓂᖏᓐᓗ ᐃᓱᒪᓕᐅᕆᐊᖃᖅᑕᐅᓚᐅᖅᓂᖏᓐᓄᑦ ᑕᒪᐃᓐᓂᖕᒎᖅᑐᓂᒃ ᑐᒃᓯᕋᐅᑎᓂᒃ ᐊᐅᓚᑕᐅᓂᖏᓐᓄᑦ ᖁᕐᔪᖅᑑᑉ-ᑲᓇᖕᓇᖕᓂ ᑐᒃᑐᖏᓐ ᓇᒃᐹᖅᑐᖃᖏᑦ ᑐᕐᒥᐅᑦ. ᐃᓚᖏᓐᓂ A. ᔩᓐ 13, 2016. www.wrrb.ca/public-information/public registry?f%5B0%5D=field_proceeding%3A8289&f%5B1%5D=field_category%3A23

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ᓄᓇᕗᒻᒥ ᐆᒪᔪᓕᕆᓂᕐᔪᐊᒃᑯᑦ ᖁᕐᓗᖅᑑᑉ-ᑲᓇᖕᓇᖓᓂ ᑐᒃᑐᓂᒃ ᑐᓴᕐᕕᓇᐊᕐᓂᐊᖅᑐᑦ ᒫᔾᔨ 2 & 3, 2020, ᖁᕐᓗᖅᑐᖅᒥ

ᐅᓂᒃᑳᓕᐊᖏᑦ ᓄᓇᕐᓯᐊᑉ ᒐᕙᒪᐃᑦ ᐊᕙᑎᓕᕆᓂᕐᒧᑦ ᓄᓇᒥᐅᑕᓕᕆᓂᕐᓪᓗ

Government of
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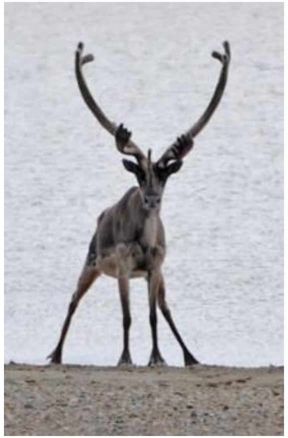
ᐅᓂᒃᑳᓕᐊᖏᑦ ᓄᓇᕐᓯᐊᑉ ᒐᕙᒪᐃᑦ ᐊᕙᑎᓕᕆᔨᒃᑯᖏᑦ
ᓄᓇᒥᐅᑕᓕᕆᔩᓪᓗ

ᖁᕐᓗᖅᑑᑉ-ᑲᓇᖕᓇᖕᒐᓂ ᑐᒃᑐᓂᒃ ᐅᓂᒃᑳᕐᓂᕐᒧᑦ ᐋᕿᐅᒪᓂᖏᑦ

1. ᖁᕐᓗᖅᑑ2-ᑲᓇᖕᓇᖕᒐᓂ ᑐᒃᑐᐃᑦ ᖃᓄᐃᓕᖕᒐᓂᖏᑦ
2. ᐊᐅᓚᑕᐅᓂᖏᓐᓂᒃ ᐱᔾᔪᑎᖃᖅᑐᑦ
3. ᒫᓐᓇᓵᖅ ᑐᒃᑐᑕᐅᕙᖕᓂᖏᑦ ᐊᐅᓚᑕᐅᓂᖏᓪᓗ ᓄᓇᕐᓯᐊᕐᒥ
4. ᐊᑐᓕᕐᑯᔭᓕᐊᑦ ᑐᒃᑐᑦᑕᐅᖃᑕᕈᓐᓇᕐᓂᖏᓐᓂᒃ ᓄᓇᕗᒻᒥ



ᐊᔾᔨᓕᐊᖓ J. Adamczewski ᐊᕙᑎᓕᕆᔨᒃᑯᑦ

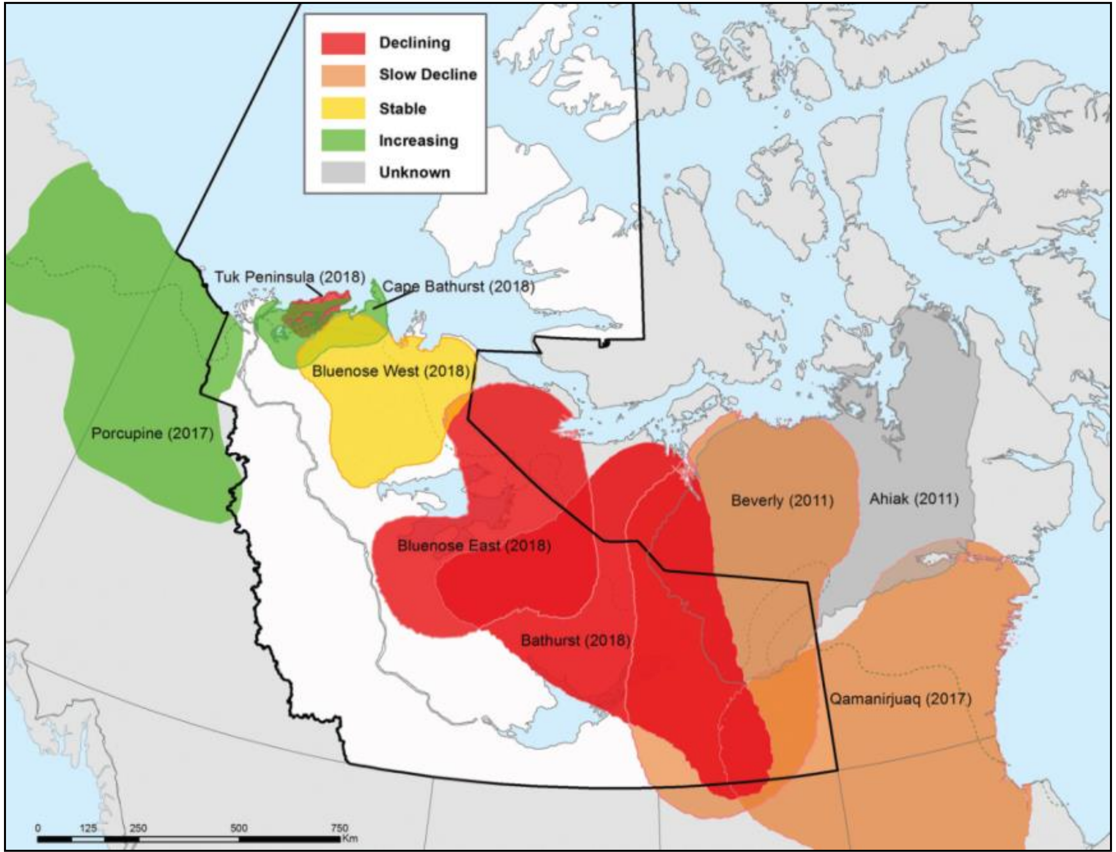
ᓇᐹᖅᑐᖃᖏᑐᕐᒥᐅᑦ ᑐᒃᑐᖃᕐᕕᐅᓂᖏᑦ ᓄᓇᑦᓯᐊᕐᒥ:

9-ᖑᔪᑦ ᑐᒃᑐᖃᕐᕕᐅᓂᖏᑦ

ᓯᑕᒪᓂᒃ 4 ᓄᓇᑖᕈᑎᖃᖅᑐᓂ

ᓄᓇᖑᐊᖅ B, Fournier ᐊᕙᑎᓕᕆᔨᒃᑯᑦ

ᓇᐹᖅᑐᖃᖕᑎᑐᕐᒥᐅᑦ ᑐᒃᑐᖃᕐᕕᐅᓂᖏᑦ ᓄᓇᑦᓯᐊᕐᒥ: ᖃᓄᐃᓕᖏᓕᐊᓚᐅᕐᓂᖏᑦ ᐊᕐᕋᒍᒥ 2018



ᓄᓇᖑᐊᖅ B, Fournier ᐊᖏᑎᓕᕆᔨᒃᑯᑦ

ᓇᐹᖅᑐᖃᖏᑦᑐᕐᒥᐅᑦ ᑐᒃᑐᐃᑦ ᐊᒥᕐᓃᖏᓗᐊᓕᕐᓂᖏᓐᓄᑦ ᖃᓄᐃᓕᐅᕈᑕᐅᓲᖑᖏᑦ

COSEWIC = ᑲᓇᑕᒥ ᑲᑎᒪᔩᑦ
ᖃᓄᐃᓕᖓᓂᖏᓐᓄᑦ ᐊᒥᕐᓃᖏᓗᐊᕐᓂᖏᓐᓄᑦ
ᐆᒪᔪᐃᑦ
SARA = ᐆᒪᔪᐃᑦ ᐊᒥᕐᓃᖏᓗᐊᓕᕐᓂᖏᓄᑦ
ᒪᓕᒐᐃᑦ (ᑲᓇᑕᒥ)
SARC = ᐆᒪᔪᐃᑦ ᐊᒥᕐᓃᖏᓗᐊᓕᕐᓂᖏᓐᓄᑦ
ᑲᑎᒪᔩᑦ (ᓄᓇᑦᓯᐊᕐᒥ)
CMA = (ᓄᓇᑦᓯᐊᕐᒥ) ᑲᑎᒪᔨᖏᑦ
ᐊᐅᓚᑦᑎᔨᐅᖃᑕᐅᔪᑦ

- **ᑲᓇᑕᒥ**
  COSEWIC-ᑯᑦ ᑲᑎᒪᔩᑦ ᑲᑎᒪᔩᖏᑦ (2016):
  ᐅᓗᕆᐊᓇᖅᑐᒦᓐᓂᕋᐃᔪᑦ

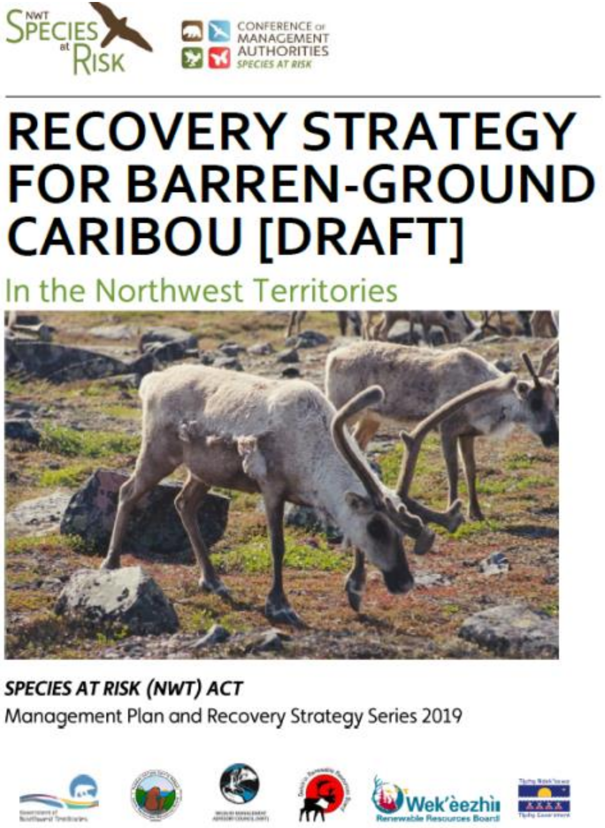
  SARA - ᐆᒪᔪᐃᑦ
  ᐊᒥᕐᓃᖏᓗᐊᓕᕐᓂᖏᓐᓄᑦ ᒪᓕᒐᐃᑦ (ᓱᓕ
  ᑐᑭᓕᐅᖅᑕᐅᓯᒪᖏᑐᑦ)

- **ᓄᓇᑦᓯᐊᕐᒥ**
  SARC-ᑯᑦ ᑲᑎᒪᔩᖏᑦ (2017):
  ᐅᓗᕆᐊᓇᖅᑐᒦᓐᓂᕋᐃᔪᑦ

  CMA-ᑯᑦ (2018): ᐅᓗᕆᐊᓇᖅᑐᒦᓐᓂᕋᐃᔪᑦ

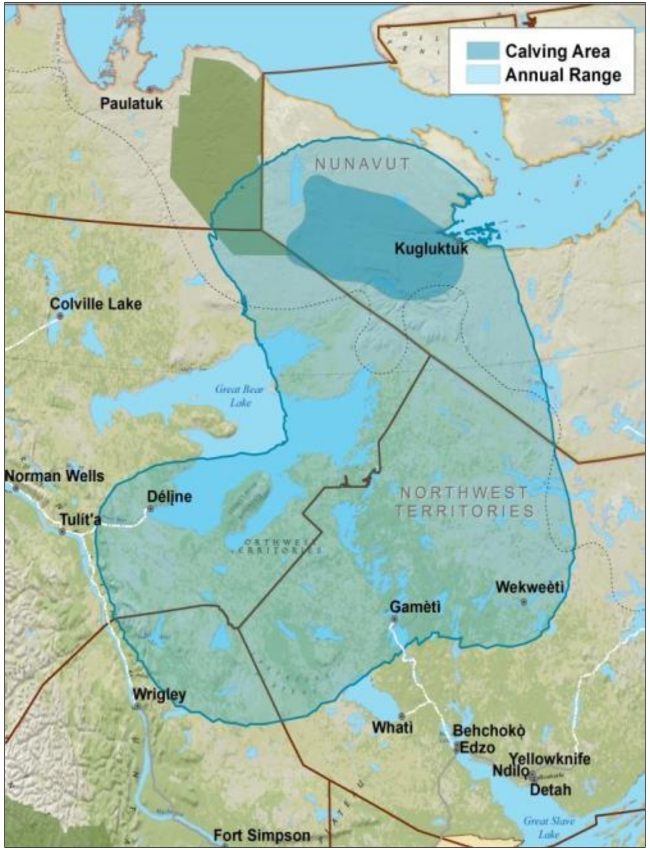
(ᑎᑎᕋᖅᑕᐅᕙᓪᓕᐊᓂᖏᑦ)
ᐊᒥᓱᕈᖅᓰᓂᕐᒧᑦ ᖃᓄᐃᓕᐅᕈᑎᒃᓴᐃᑦ
ᓇᐹᖅᑐᖃᙱᑦᑐᕐᒥᐅᑦ ᑐᒃᑐᙱᓐᓂᒃ
ᓄᓇᑦᓯᐊᕐᒥ 2020

ᑕᒪᐃᓐᓂᒃ ᖃᓄᐃᓕᐅᕈᑎᒃᓴᐃᑦ
ᑕᒪᐃᓐᓂᒃ ᑐᕐᑐᖃᕐᕕᐅᓂᖏᓐᓂ

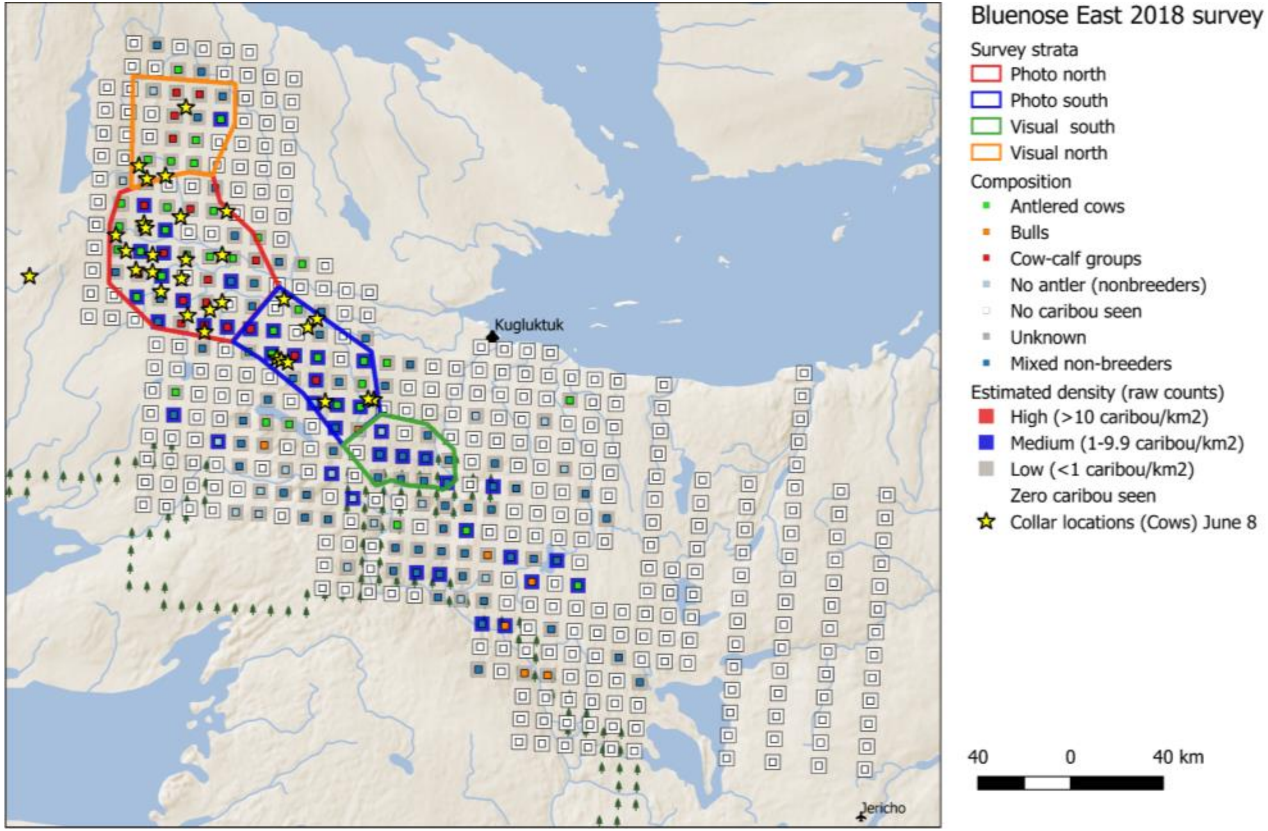


ᖁᕐᓗᖅᑐᑉ-ᑲᓇᖕᓇᖓᓂ ᑐᒃᑐᖃᕐᕕᖏᑦ ᐊᒻᒪᓗ ᓄᕐᕆᕕᖏᑦ ᓄᓇᕗᒻᒥ ᓄᓇᑦᓯᐊᕐᒥᓗ

ᐊᔾᔨᓕᐊᖓ J. Adamczewski ᐊᕙᑎᓕᕆᔨᒃᑯᑦ



ᖁᕐᓗᖅᑐᑉ-ᑲᓇᓐᓇᖓᓂ ᓄᕐᑕᕖᕐᒋᑦ ᖃᐅᔨᓴᖅᑕᐅᓗᐅᖅᑐᑦ ᑕᒫᓂ ᓰᓐ 2018-ᒥ



Government of
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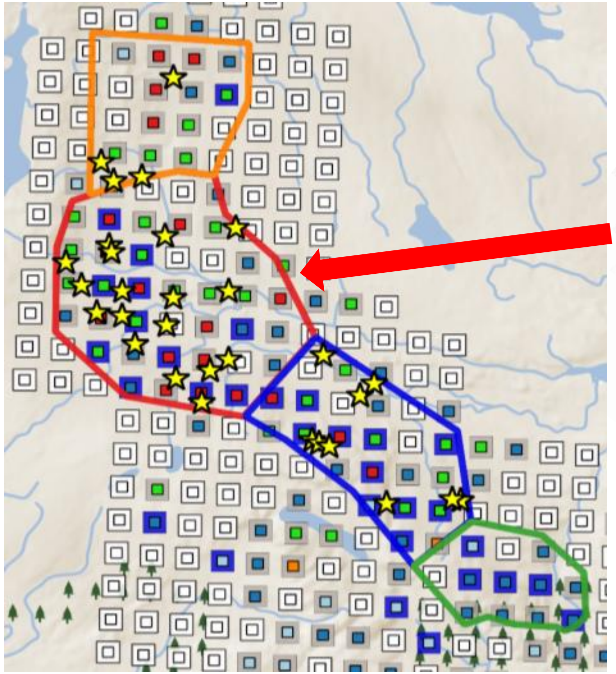
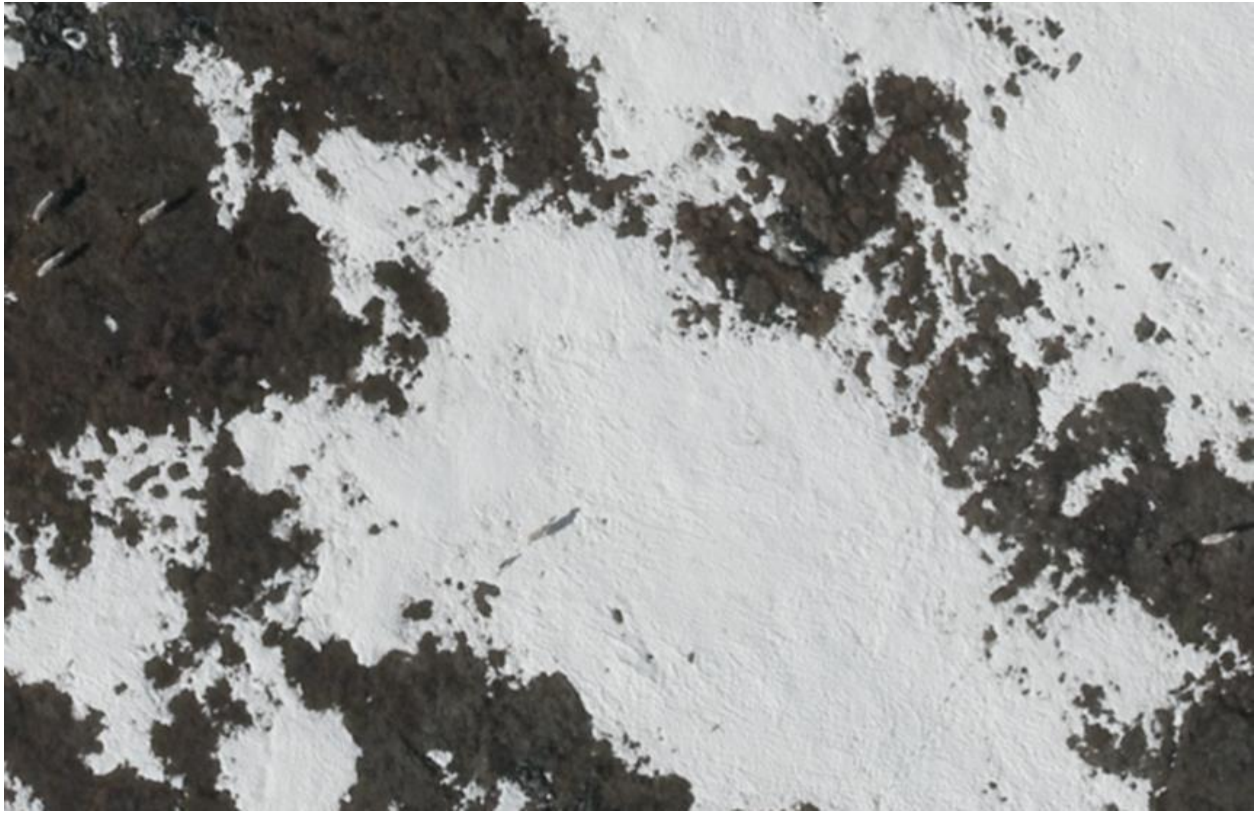
ᖁᕐᓗᖅᑐᑉ-ᑲᓇᖕᓇᖕᒐᓂ
ᓄᕐᕆᐊᖕᒋᑦ
ᖃᐅᔨᓴᖅᑕᐅᓚᐅᖅᑐᑦ
ᑕᒫᓂ 2018-ᒥ:
ᐊᔾᔨᒌᖕᒋᑦᑑᑎᑦ
ᑲᑎᑕᐅᔨᒪᓗᑎᒃ
ᐊᔾᔨᓕᐅᖅᑕᐅᔪᑦ
ᑎᖕᒥᔫᕐᒥᒃ

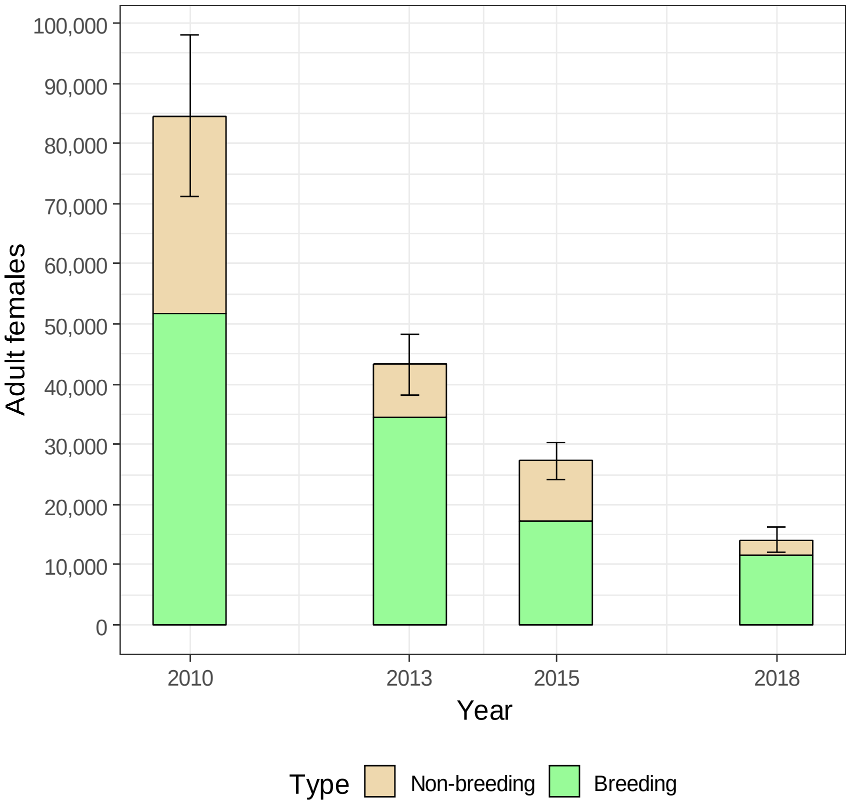


ᖁᕐᓗᖅᑑᑉ- ᑲᓇᖕᓇᖕᒐᓂ ᑐᒃᑐᐃᑦ ᓄᕐᕆᕕᖏᑦ ᖃᐅᔨᓴᖅᑕᐅᓚᐅᖅᑐᑦ 2018-ᒥ: ᐆᒃᑑᑎᒋᔭᐅᓪᓗᑎᒃ ᑎᖕᒥᔫᕐᒥᒃ ᐊᔾᔨᓕᐅᖅᑕᐅᔪᑦ



ᖁᕐᓗᖅᑑᑉ-ᑲᓇᖕᓇᖕᒐᓂ ᑐᒃᑐᐃᑦ ᓇᓚᐅᑖᖅᑕᐅᓯᒪᓂᖏᑦ ᐊᕐᓇᓪᓗᐃᑦ ᐊᒥᔅᓰᓂᖏᑦ ᐊᕐᕋᒍᓂᒃ 2009-ᒥᒃ 2018-ᒧᑦ

ᐊᔾᔨᓕᐊᖓ J. Adamczewski ᐊᕙᑎᓕᕆᔨᒃᑯᑦ



ᑐᒃᑐᐃᑦ ᐊᒥᕐᔫᓂᖏᑦ: ᐊᕐᓇᓪᓗᐃᑦ ᐸᖕᓃᓪᓗ

- ᓄᕐᖃᕖᑦ ᓄᓇᒥ ᖃᐅᔨᓴᖅᑕᐅᓂᖏᑦ: ᐊᒥᕐᔫᓂᖏᑦ ᐊᕐᓇᓪᓗᐃᑦ

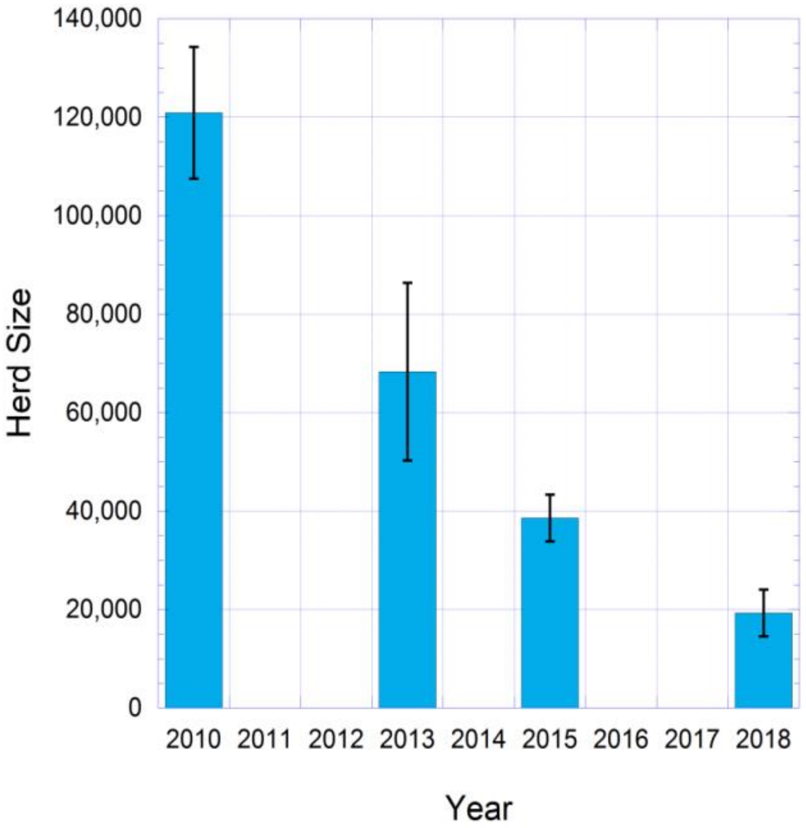
  ᐸᖕᓃᑦ ᓄᕐᖃᕕᖕᓃᓐᖏᑦᑐᑦ
- ᐅᑭᐊᒃᓴᒃᑯᑦ ᖃᐅᔨᓴᖅᑕᐅᒐᒥᒃ (ᐊᒃᑑᐱᖅᒥ) ᐊᕐᓇᓪᓗᐃᑦ: ᐸᖕᓃᓪᓗ ᐊᒥᕐᔫᓂᖏᑦ ᐊᑐᓂ

ᐃᓚᔭᐅᒍᑎᒃ ᐸᖕᓃᑦ ᐊᕐᓇᓪᓗᕐᓄᑦ: ᑐᒃᑐᐃᑦ ᐊᒥᕐᔫᓂᖏᑦ ᓇᓚᐅᑖᖅᑕᐅᔪᑦ

ᐊᔾᔨᓕᐊᖓ J. Adamczewski ᐊᕙᑎᓕᕆᔨᒃᑯᑦ

ᖁᕐᓗᖅᑑᑉ-ᑲᓇᖕᓇᖕᒐᓂ ᑐᒃᑐᐃᑦ ᓇᓚᐅᑖᖅᑕᐅᓯᒪᔪᑦ ᐊᒥᓲᓂᖕᒋᑦ ᐊᕐᕋᒍᓂ 2010-ᒥᒃ 2018-ᒧᑦ

ᐊᔾᔨᓕᐊᖓ J. Adamczewski ᐊᕙᑎᓕᕆᔨᒃᑯᑦ



ᕐᑯᕐᓗᖅᑑᑉ-
ᑲᓇᖕᓇᖕᒐᓂ
ᑐᒃᑐᖏᑦ:
ᐆᒪᕙᖕᓂᖏᑦ 2015-
2018-ᒧᑦ

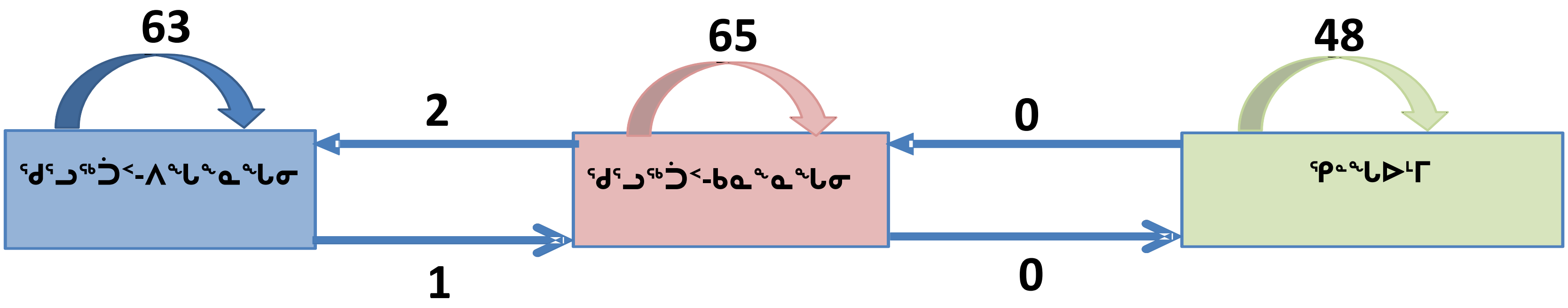
1. ᐊᕐᓇᒡᓗᐃᑦ ᐆᒪᕙᖕᓂᖏᑦ: 84-90% ᐳᓴᓐᑎᓂᒃ ᖃᓄᐃᖏᓂᖏᑦ ᑐᒃᑐᐃᑦ
   ᓇᓚᐅᑖᖅᑕᐅᓂᖏᑦ: 71-79% ᐳᓴᓐᑎᓂᒃ 2015-ᒥᒃ 2018-ᒧᑦ

2. ᓄᕐᕋᐃᑦ ᐆᒪᕙᖕᓂᖏᑦ: 30-50:100-ᖏᓂᑦᑐᑦ ᖃᓄᐃᖏᓂᖏᑦ ᑐᒃᑐᐃᑦ *ᖃᓄᐃᓕᖕᒐᒐᔪᖕᓂᖏᑦ 30:100 2014-ᒥᒃ - 2018-ᒧᑦ*

3. ᐃᑉᓚᐅᓖᑦ: ᑕᒫᓃᑉᐸᑕᓗᓐᓃᑦ 80% ᐳᓴᓐᑎᓂᒃ ᖃᓄᐃᖏᓂᖏᑦ ᑐᒃᑐᐃᑦ *ᓇᓚᐅᑖᖅᑕᐅᓯᒪᔪᑦ 64% ᐳᓴᓐᑎᓂᒃ,2015-ᒥ, 83% ᐳᓴᓐᑎᓂᒃ 2018-ᒥ, 87.5% ᐳᓴᓐᑎᓂᒃ 2019-ᒥ*

ᖁᕐᓗᖅᑑᑉ-ᑲᓇᖕᓇᖕᒪᓂ ᑐᒃᑐᐃᑦ ᐊᓯᐊᓄᑦ ᓅᓯᒪᓐᖏᑦᑐᑦ

ᖁᖕᒪᓯᕈᕐᑎᖅᑕᐅᓯᒪᔪᑦ ᐅᔭᒥᓈᑦ ᐊᕐᓇᑦᓗᐃᑦ 2015-ᒥᒃ 2018-ᒧᑦ



179 ᒪᖂᖅᑲᑦᑕᓚᐅᖅᑑᒃ ᑭᖑᓕᕇᒃᓯᑎᒃ ᔫᓐᓂᒥ ᑕᑯᔭᐅᕙᓚᐅᖅᑐᑦ:
176 ᐅᑎᖅᐸᓚᐅᖅᑐᑦ ᑕᐃᒃᑯᓄᖕᒪᑦᓴᐃᓐᓇᖅ ᓄᕐᓇᕕᖕᑐᖃᒥᓄᑦ
3 ᑭᐴᑎᔪᑦ ᐊᓯᐊᓄᐊᖅᓯᑎᒃ
98.3% ᐳᓴᓐᑏᑦ ᑕᐃᑯᖕᒪᐅᖏᓐᓇᖅᑐᑦ ᓄᕐᓇᕕᑐᖃᒥᓄᑦ

ᖁᕐᓗᖅᑑᑉ-ᑲᓇᖕᓇᖕᒐᓂ ᑐᒃᑐᐃᑦ ᐊᐅᓚᑕᐅᓂᖏᓐᓂᒃ ᐱᔾᔪᑎᖃᖅᑐᑦ

ᓄᓇᑦᓯᐊᑉ ᒐᕙᒪᐃᑦ
(GNWT)
ᒃᑖᑦᓖᑉ ᒐᕙᒪᐃᑦ (TG)
ᐅᐊᑮᓯᒥᐅᑦ
ᓄᓇᒥᐅᑕᓕᕆᔩᑦ
ᑲᑎᒪᔩᖏᑦ - WRRB
ᓵᑑᒥᐅᑦ
ᓄᓇᒥᐅᑕᓕᕆᔩᑦ
ᑲᑎᒪᔩᖏᑦ - SRRB

ᓄᓇᕗᑦ ᒐᕙᒪᐃᑦ -
(GN)
ᓄᓇᕗᒻᒥ
ᐆᒪᔪᓕᕆᔨᕐᔪᐊᒃᑯᑦ
ᑲᑎᒪᔩᖏᑦ - NWMB

ᖁᕐᓗᖅᑑᑉ-ᑲᓇᖕᓇᖓᓂ ᑐᒃᑐᓂᒃ ᐊᐅᓚᑦᑎᓂᕐᒧᑦ ᐸᕐᓇᐅᑏᑦ

ᑕᒪᐃᓐᓂᒃ ᐊᐅᓚᑦᑎᓂᕐᒧᑦ ᐸᕐᓇᐅᑏᑦ (ᑲᑎᒪᔨᓂᒃ)


Taking Care of Caribou

The
CAPE BATHURST, BLUENOSE-WEST,
AND BLUENOSE-EAST BARREN-GROUND
CARIBOU HERDS MANAGEMENT PLAN

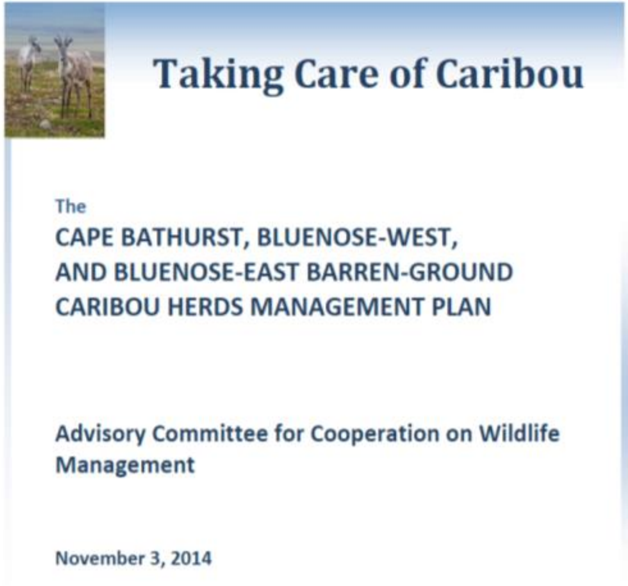
Advisory Committee for Cooperation on Wildlife Management

ᖁᕐᓗᖅᑑᕐᒥ ᑐᒃᑐᓕᕆᓂᕐᒧᑦ ᐸᕐᓇᐅᑎᖏᑦ

ᑕᐃᓕᓐᓈᐃᒥ ᑐᒃᑐᓕᕆᓂᕐᒧᑦ ᐸᕐᓇᐅᑎᖏᑦ

A Délı̨nę Got'ı̨nę Plan of Action

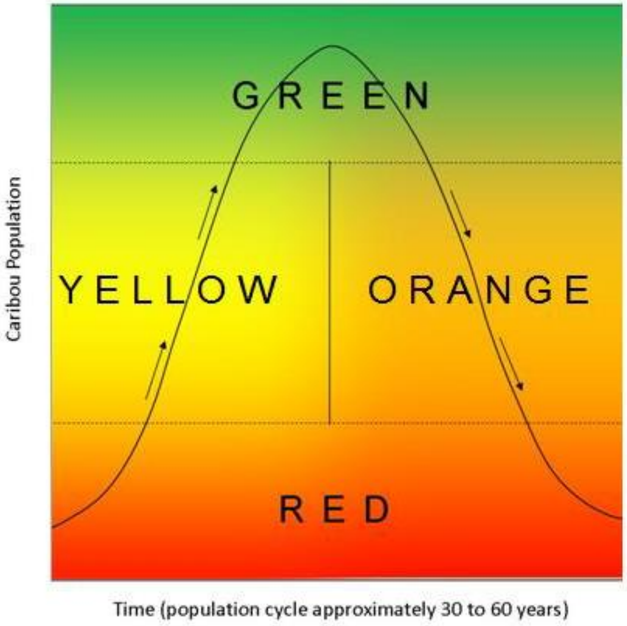
ᖁᕐᓗᖅᑑᑉ-
ᑲᓇᖕᓇᖕᒪᓂ ᑐᒃᑐᖕᒋᑦ:
ᒥᐊᓂᕆᑦᑎᐊᕐᓂᕐᒧᑦ
ᑐᒃᑐᓂᒃ ᐸᕐᓇᐅᑎᖕᒋᑦ
2014
(3 ᐱᖕᒐᓱᑦ
ᑐᒃᑐᖃᕐᕕᐅᓯᑫ)


Taking Care of Caribou

The
CAPE BATHURST, BLUENOSE-WEST,
AND BLUENOSE-EAST BARREN-GROUND
CARIBOU HERDS MANAGEMENT PLAN

Advisory Committee for Cooperation on Wildlife Management

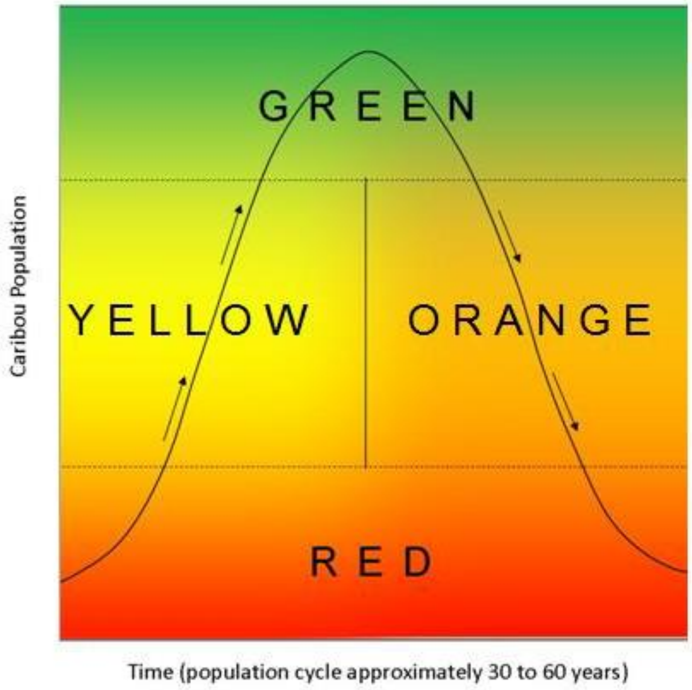
November 3, 2014



Government of
Northwest Territories

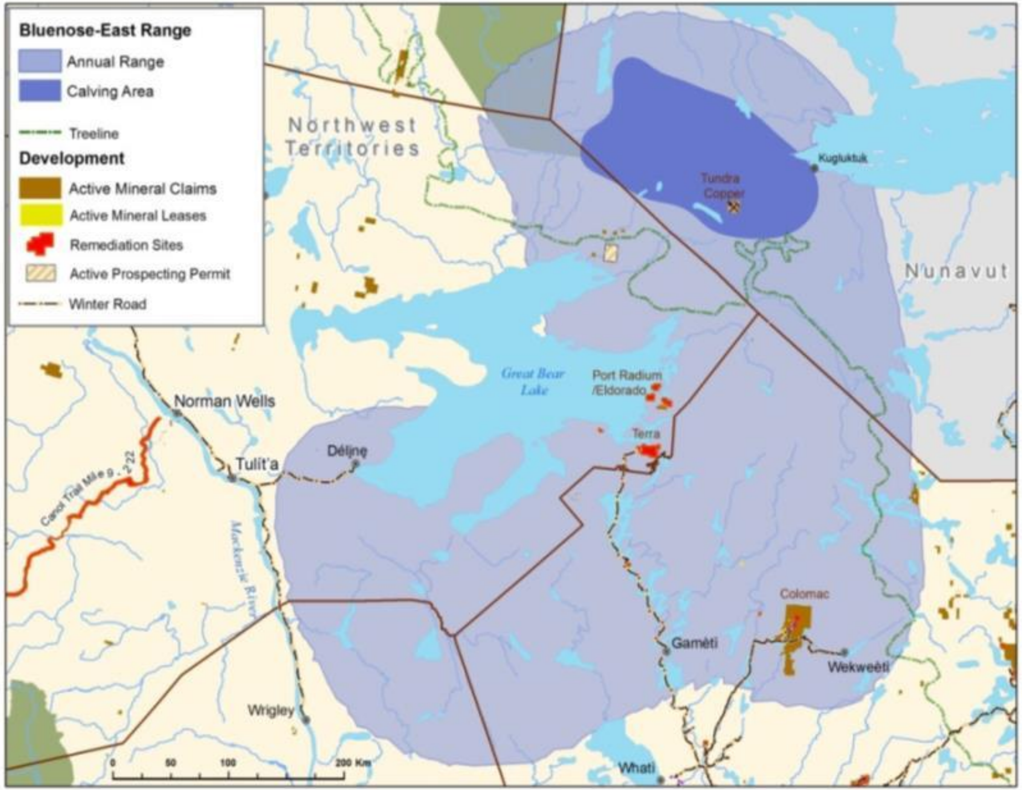
ᖁᕐᓗᖅᑑᑉ-ᑲᓇᖕᓇᖕᒐᓂ ᑐᒃᑐᖕᒋᑦ:

ᐅᖃᐅᔾᔨᕆᐊᖅᑏᑦ ᑲᑎᒪᔩᕋᓛᖕᒋᑦ
ᑲᑐᔾᔭᖃᑎᒌᖕᓂᖅ ᐆᒪᔪᓕᕆᓂᕐᒥᒃ
ᐊᐅᓚᑦᑎᓂᕐᒧᑦ
(ᑲᑎᒪᔩᖕᒋᑦ - ACCWM-ᑯᑦ)
ᖃᓄᐃᓕᖕᒐᓂᖕᒋᑦ
2018-ᒥᓗ & 2019-ᒥᓗ
ᐊᐅᐸᓗᒃᑐᖅ



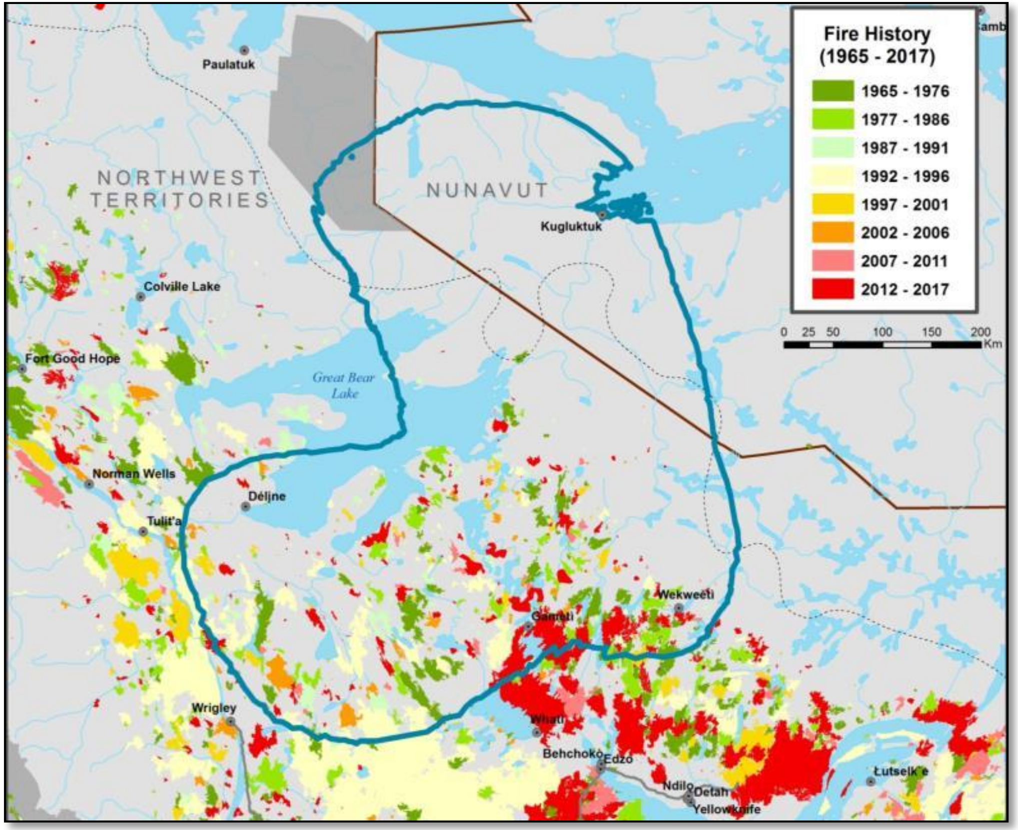
ᖁᕐᓗᖅᑑᑉ-ᑲᓇᓐᓇᖓᓂ ᑐᒃᑐᖏᑦ:

ᓄᓇᐃᑦ ᐊᑐᖅᑕᐅᓂᖏᑦ & ᐱᕙᓕᐊᑎᑕᐅᓂᖏᑦ 2019



ᖁᕐᓗᖅᑑᑉ- ᑲᓇᖕᓇᖕᒐᓂ ᑐᒃᑐᖕᒋᑦ:

ᓄᓇᐃᑦ ᐃᑯᐊᓪᓚᖃᑕᕐᓂᖕᒋᑦ ᐅᐹᕕᒋᔭᒃᑕᖕᒋᓐᓂ

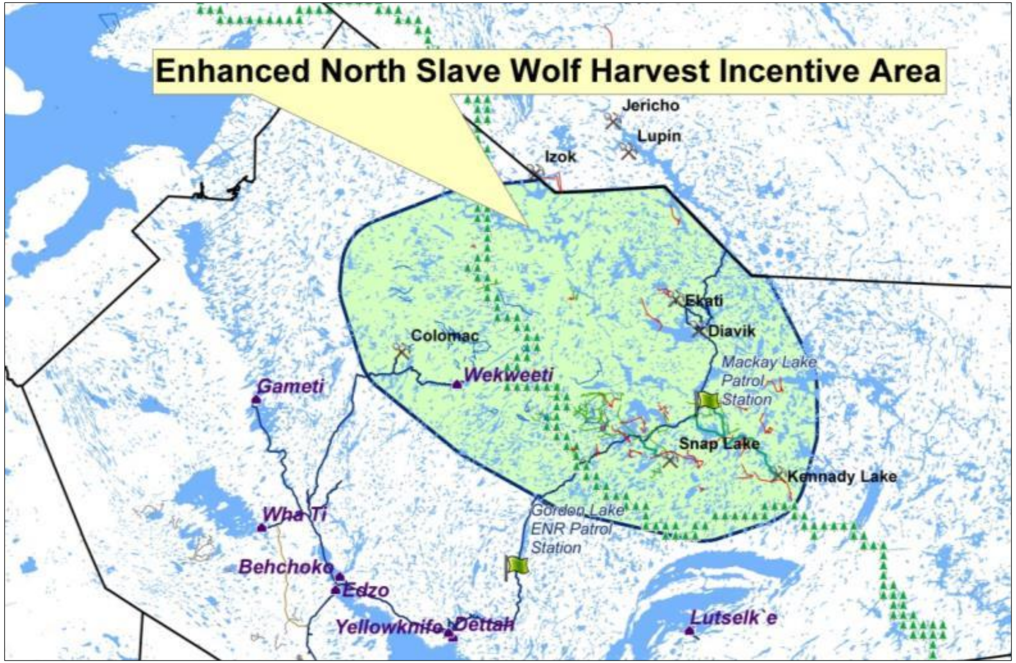


ᖁᕐᓗᖅᑑᑉ-ᑲᓇᖕᓇᖕᒐᓂ ᑐᑦᑐᖃᕐᕕᖕᓂ: ᐊᒪᕈᐃᑦ ᐊᐅᓚᑕᐅᓂᖏᑦ

- ᑲᑐᔾᔨᖃᑎᒌᒃᖢᑎᒃ ᐊᒪᕈᓕᕆᓂᕐᒥᒃ ᖃᓄᐃᓕᐅᕈᑎᒃᓴᐃᑦ ᐊᔪᕐᓇᖏᓂᖏᓐᓂᒃ ᖃᐅᔨᓴᕐᓂᖅ 2017
- ᐊᒥᔅᓱᕈᕆᐊᖅᑕᐅᓂᖏᑦ ᐱᔾᔨᒥᓴᐅᑏᑦ ᐊᒪᕈᖅᓯᐅᕈᓐᓇᕐᓂᕐᒧᑦ 2019-2020
- ᑲᓂᑦᓯᒥ ᐊᒪᕈᖅᓯᐅᑏᑦ ᐅᑭᐅᑯᑦ ᓄᓇᖏᑦ 2020
- ᐱᓕᕆᖃᑎᖃᕐᓂᖅ ᖁᕐᓗᖅᑑᕐᒥ ᐊᒪᕈᖅᓯᐅᖅᑏᑦ ᐊᖑᓇᓱᒃᑎᖏᓐᓂᒃ 2019-2020

ᐱᐅᓯᕆᐊᖅᑕᐅᓂᖏᑦ ᓄᓇᑦᓯᐊᑉ ᒐᕙᒪᒃᑯᖏᑦ ᓯᓚᐃᕕᐅᑉ ᐅᐊᖕᓇᖓᓂ ᐊᒪᕈᖅᓯᐅᕈᑎᒃᓴᐃᑦ (2019

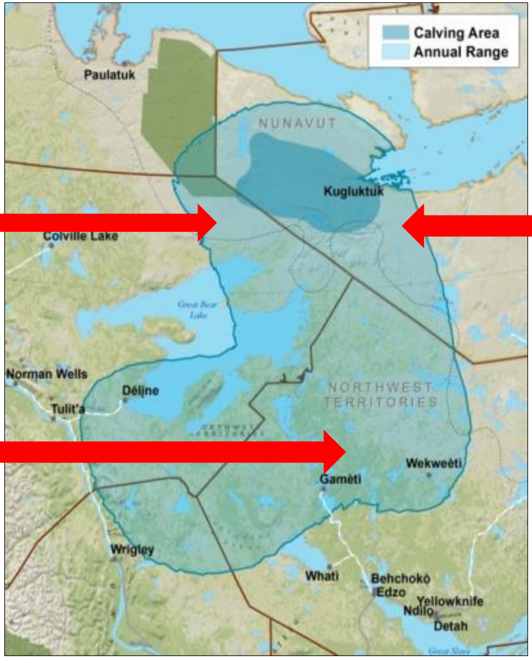
ᐊᒪᕈᖅᓯᐅᕐᕕᐅᕐᑯᔨᓂᕐᒧᑦ ᐱᔪᒥᓇᕈᑎᖃᖅᑐᑦ ᕐᑯᕐᓗᖅᑑᑉ-ᑲᓇᖕᓇᖓᓂ ᐊᒻᒪᓗ ᕿᓐᖓᐅᒻᒥ ᑐᒃᑐᓄᑦ ᐅᕿᕕᐅᕙᒃᑐᓂ



ᖁᕐᓗᖅᑑᑉ-ᑲᓇᖕᓇᖕᒐᓂ ᑐᒃᑐᑕᐅᕝᕕᐅᔪᓐᓇᕐᓂᖏᓐᓂᒃ ᐊᐅᓚᑦᑎᓂᖅ: 3 ᐱᖕᒐᓱᓂᒃ ᓄᓇᑖᕐᕕᐅᓯᒪᔪᑦ, ᐱᖕᒐᓲᓪᓗᑎᒃ 3 ᑲᑎᒪᔨᖏᑦ

ᓵᑑᒥ ᓄᓇᑖᕐᕕᐅᓂᖏᓐᓂ
ᓵᑑᒥᐅᓂ ᓄᓇᒥᐅᑕᓕᕆᔩᑦ
ᑲᑎᒪᔨᖏᑦ

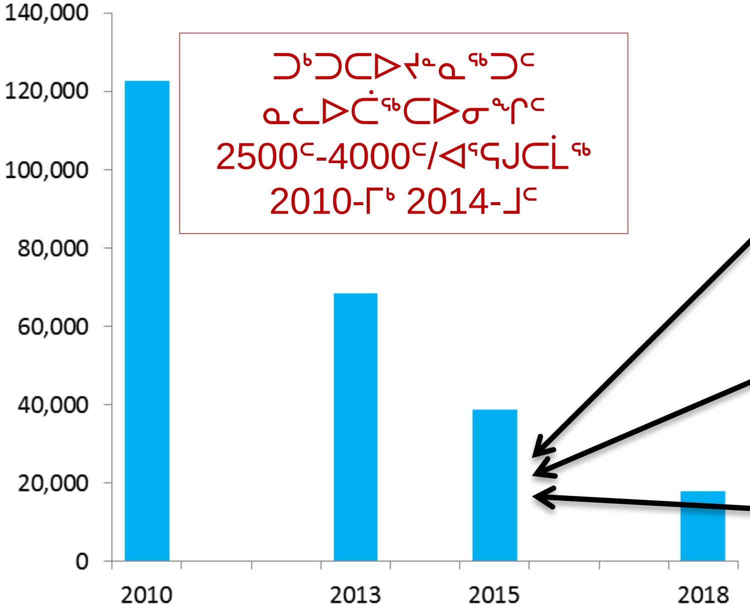
ᐅᐊᑮᓯᒥ
ᐅᐊᑮᓯᒥᐅᑦ
ᓄᓇᒥᐅᑕᓕᕆᔩᑦ ᑲᑎᒪᔨᖏᑦ



ᓄᓇᕗᑦ
ᓄᓇᕗᒻᒥ ᐆᒪᔪᓕᕆᔨᕐᔪᐊᒃᑯᑦ
ᑲᑎᒪᔨᖏᑦ

ᖁᕐᓗᖅᑑᑉ-ᑲᓇᖕᓇᖕᒐᓂ ᑐᒃᑐᓯᐅᕝᕕᐅᔪᓐᓇᕐᓂᖏᓐᓂᒃ ᐊᐅᓚᑦᑎᓂᖅ 2016-ᒥ:

ᐱᖓᓱᓂᒃ 3 ᑲᑎᒪᔨᖏᑦ ᑐᓴᕐᕕᖃᕆᐊᖅᑐᖅᐸᒃᑐᑦ, ᐱᖓᓱᓂᒃ 3 ᑐᒃᑐᓯᐅᕐᕕᐅᔪᓐᓇᕐᓂᖏᓐᓂᒃ ᐃᓱᓕᑦᑎᕕᖃᖅᑐᑦ



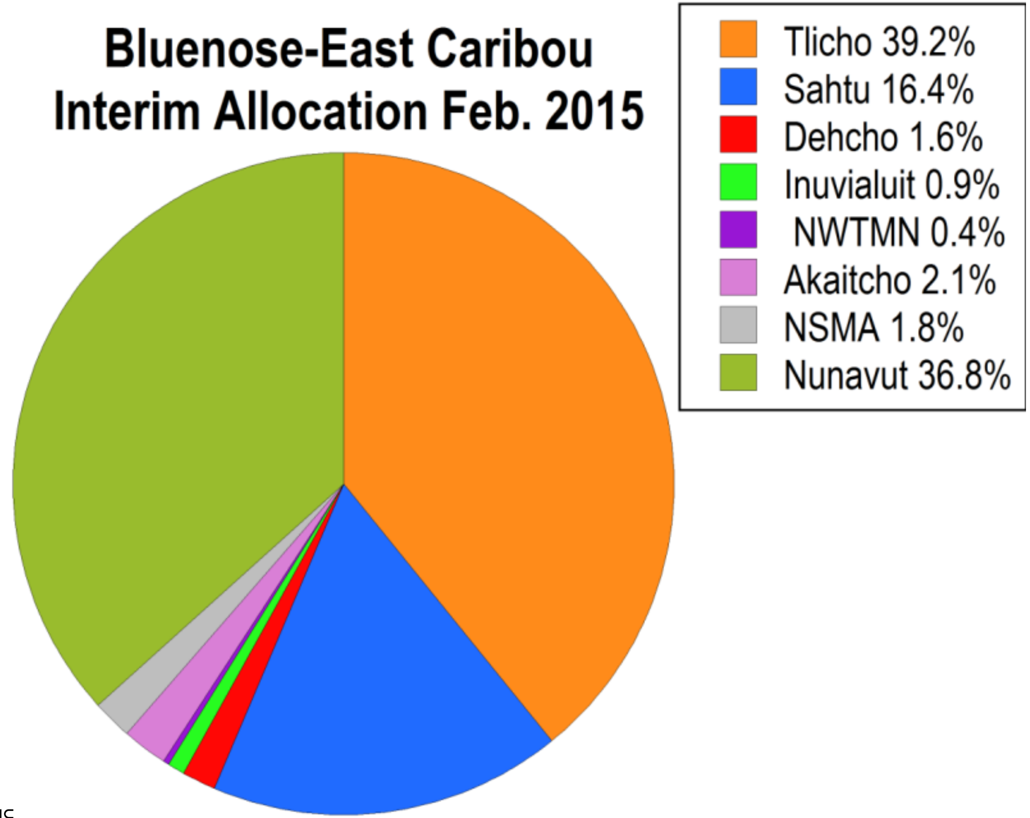
ᓄᓇᕗᒻᒥ ᐆᒪᔪᓕᕆᔨᕐᔪᐊᒃᑯᑦ/ᖁᕐᓗᖅᑑᕐᒥ:
- 340 ᑐᒃᑐᓂᒃ

ᓴᑑᒥᐅᑦ ᓄᓇᒥᐅᑕᓕᕆᔨᖏᑦ-ᑕᐃᓕᓐᓈᐃᒥᐅᑦ
- 150 ᑐᒃᑐᓂᒃ (80% ᐳᓯᓐᑎᖏᓐᓃᓗᑎᒃ ᐸᖕᓃᕐ)

ᐅᐊᑮᓯᒥᐅᑦ ᓄᓇᒥᐅᑕᓕᕆᔩᖏᑦ:
- 750 ᐸᖕᓃ (ᑕᒪᐃᓐᓂᒃ ᑐᒃᑐᓂᒃ)

ᖁᕐᓗᖅᑑᑉ-ᑲᓇᖕᓇᖕᒐᓂ
ᑐᒃᑐᑕᐅᓯᒪᑲᐃᓐᓇᕈᓇᕐᓂᖕᒋᑦ
2015-ᒥ

ᐊᔾᔨᓕᐊᖓ J. Adamczewski ᐊᕙᑎᓕᕆᔨᒃᑯᑦ



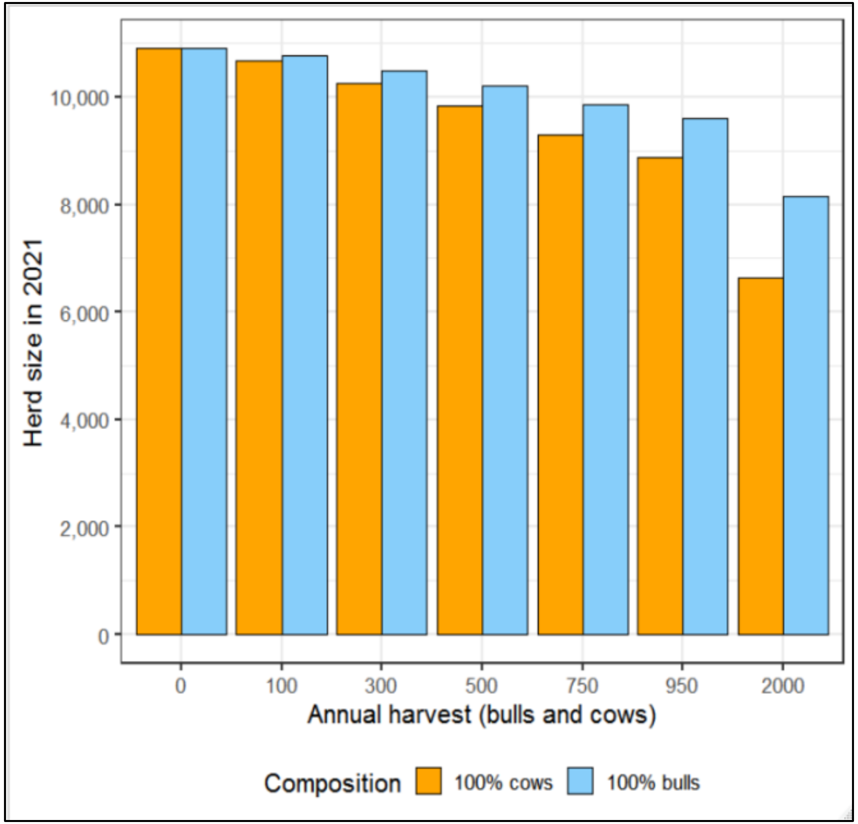
ᖁᕐᓗᖅᑑᑉ-ᑲᓇᖕᓇᖕᒐᓂ ᓇᓚᐅᑖᖅᑕᐅᓂᖏᑦ ᐅᓂᑳᖅᑕᐅᓚᐅᖅᑐᑦ ᓄᓇᑦᓯᐊᕐᒥ ᑐᒃᑐᑕᐅᓚᐅᖅᑐᓂᒃ 2016-ᒥ 2019-ᒧᑦ

ᑐᒃᑐᓯᐅᕐᕕᖕᓂ	ᓯᓚᐃᕕᒥᐅᑦ ᐅᐊᖕᓇᖕᒐᓂ, ᓄᓇᑦᓯᐊᖅ	ᑕᐃᓕᓐᓈᐃᒥᐅᑦ, ᓄᓇᑦᓯᐊᖅ	ᑕᒪᕐᒥᒃ ᑲᑎᒡᓗᒋᑦ ᓄᓇᑦᓯᐊᕐᒥ ᑐᒃᑐᑕᐃᑦ
2016-2017	15 ᐸᖕᓃᑦ	93 ᐸᖕᓃᑦ, 33 ᐊᕐᓇᒡᓗᐃᑦ	108 ᐸᖕᓃᑦ, 33 ᐊᕐᓇᒡᓗᐃᑦ
2017-2018	10 ᐸᖕᓃᑦ	0	10 ᐸᖕᓃᑦ
2018-2019	100 ᐸᖕᓃᑦ*	0	100 ᐸᖕᓃᑦ

*ᐅᒡᓗᕆᐊᖑᐊᓖᑦ ᓱᓕ ᐅᑕᖅᑭᔭᐅᔪᑦ ᓇᓗᓇᐃᖅᑕᐅᑦᑎᐊᕆᐊᖃᕐᓂᖅ ᒃᓛᑦᓵᒥᐅᑦ ᒐᕙᒪᖏᓐᓄᑦ

ᖁᕐᓗᖅᑑᑉ-ᑲᓇᖕᓇᖕᒐᓂ
ᐊᒥᔅᓲᓂᖕᒋᑦ ᓂᕆᐅᒋᔭᐅᔪᑦ
ᑐᒃᑐᐃᑦ ᑕᒫᓂ 2021:
ᑐᒃᑐᑕᐅᓯᒪᕝᕕᐅᔪᓐᓇᖅᓂᖕᒋᑦ
ᐊᒃᑐᖅᑕᐅᓯᒪᔪᓐᓇᖅᑐᑦ

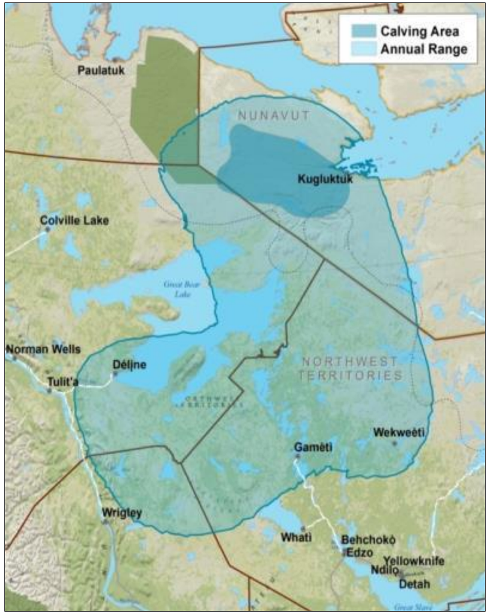
(ᐊᕐᓇᓪᓗᐃᑦ ᑐᒃᑐᐃᑦ ᐆᒪᐃᓐᓇᕈᓐᓇᕈᑎᒃ
71.6% ᐳᓴᓐᑎᖕᒋᓐᓃᑐᒥᒃ
ᓄᕐᕋᖅᑖᖅᐸᓪᓕᐊᓂᖕᒋᓐᓂᓗ 0.301-ᒥᒃᑯᑎᒃ



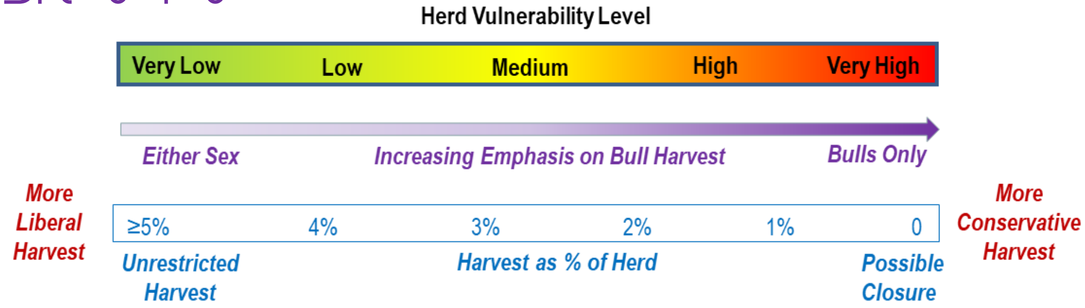
ᖁᕐᓗᖅᑑᑉ-ᑲᓇᖕᓇᖕᒐᓂ ᑐᒃᑐᓂᒃ ᐊᖑᓇᓱᒃᑕᐅᔪᓐᓇᒪᐅᖅᑐᑦ ᐃᓱᖃᖅᑎᑦᑕᐅᓗᑎᒃ 2016-ᒥᓗ 2019-ᒥᓗ

ᑲᑎᒪᔩᑦ/ ᐊᕕᒃᑐᖅᓯᒪᓂᖕᒋᑦ	ᑐᒃᑐᑕᐅᔪᓇᕐᓂᖕᒋ ᐃᓱᖃᖅᑎᑕᐅᔪᑦ 2016 -ᒥ	ᑐᒃᑐᑕᐅᔪᓇᖅᑐᑦ ᐃᓱᖃᖅᑎᑕᐅᖁᔭᐃᑦ 2019/2020-ᒥ	ᐊᒥᓲᔪᓐᓃᖅᑎᑕᐅᓂᖕᒋᑦ ᑐᒃᑐᑕᐅᔪᓇᕐᓂᖕᒋᑦ ᐊᕋᒍᓂ 2016-ᒥᒃ 2019/2020-ᒧᑦ
ᓄᓇᕗᒻᒥ ᐆᒪᔪᓕᕆᔩᖁᔪᐊᑦ ᖁᕐᓗᖅᑐᖅᒥ	340 ᑐᒃᑐᐃᑦ (ᑐᑭᓕᐅᑕᐅᓯᒪᖕᒋᑐᑦ ᐊᕐᓇᐃᓪᓗᓐᓃᑦ ᐸᖕᓃᓗᓐᓃᑦ)	(ᓄᓇᑦᓯᐊᑉ ᒐᕙᒪᐃᑦ): 107 ᐸᖕᓃᑦ	71 % ᐳᓴᓐᑏᑦ
ᓴᕉᒥᐅᑦ ᑲᑎᒪᔩᖕᒋᑦ ᑕᐃᓕᓇᐃᒥᐅᑦ	150 ᑐᒃᑐᐃᑦ (80% ᐳᓴᓐᑎᖕᒋᓐᓗᑎᒃ ᐸᖕᓃᑦ)	30 ᐸᖕᓃᑦ	80% ᐳᓴᓐᑏᑦ
ᐅᐊᑮᓯᒥᐅᑦ ᑲᑎᒪᔩᖕᒋᑦ ᐅᐊᑮᓯᒥ	750 ᐸᖕᓃᑦ (ᑕᒪᐃᓐᓂ ᑐᒃᑐᑕᐅᔪᓇᕐᓂᖕᒋᓂ)	193 ᐸᖕᓃᑦ (ᑕᒪᐃᓐᓂ ᑐᒃᑕᐅᔪᓇᕐᓂᖕᒋᓂ)	74% ᐳᓴᓐᑏᑦ

ᓄᓇᑦᓯᐊᑉ ᒐᕙᒪᐃᑦ ᐃᑲᔪᖅᓱᐃᔪᑦ ᑐᒃᓯᕋᐅᑎᓂᒃ ᐱᒋᐊᖅᑎᑕᐅᖁᔭᐅᔪᓂᒃ ᓄᓇᕗᒻᒥ ᑕᒪᐃᓐᓂᒃ ᑲᑎᒻᒧᒋᑦ ᑐᒃᑐᑕᐅᔪᓐᓇᕐᓂᖏᓐᓂᒃ ᖁᕐᓗᖅᑑᑉ-ᑲᓇᖕᓇᖕᒐᓂ ᑐᒃᑐᓂᒃ (107-ᓂᒃ ᐸᖕᓂᕐᓂᒃ)



- ᒪᓕᑦᑎᐊᕐᒪᑕ ᒥᐊᓂᕆᔭᐅᑦᑎᐊᕈᒪᓂᖏᓄᑦ ᑐᒃᑐᐃᑦ ᐸᕐᓇᐅᑎᖏᓐᓂᒃ
- ᐃᒃᐱᒍᓱᑦᑎᐊᖅᑐᑦ ᑐᒃᑐᐃᑦ ᐊᒥခᔫᓐᓂᕆᐊᒃᑳᓂᕐᓂᖏᓐᓂᒃ ᐊᕐᕋᒍᓂᒃ 2015-ᒥᒃ 2018-ᒧᑦ
- ᒪᓕᑦᑎᐊᕐᒪᑕ ᐊᒥခᔫᓐᖅᑎᑕᐅᖁᔭᐅᓂᖏᓐᓂᒃ ᑐᒃᑐᑕᐅᔪᓐᓇᕐᓂᖏᑦ ᓇᓅᓂᖏᓐᓂ ᑕᒪᐃᓐᓂ
- ᐃᒃᐱᒍᓱᑦᑎᐊᖅᑐᑦ ᓄᓇᑦᓯᐊᑉ ᖃᐅᔨᒪᔾᔪᑎᖏᓐᓂᒃ ᑐᖕᒐᕝᕙᐅᔪᓂᒃ ᑐᒃᑐᐃᑦ ᐅᓗᕆᐊᓇᖅᑐᒦᓕᕐᓂᖏᓐᓂᒃ

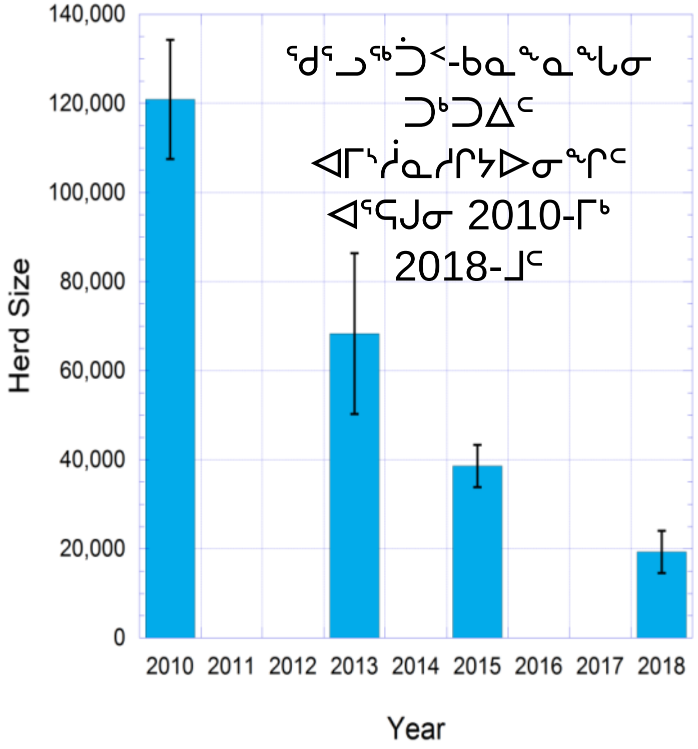


ᖁᕐᓗᖅᑑᑉ-ᑲᓇᖕᓇᖕᒐᓂ ᑐᒃᑐᓕᕆᓂᕐᒥᒃ ᓄᓇᑦᓯᐊᑉ ᒐᕙᒪᐃᑦ ᑲᑎᒪᖃᑎᖃᕐᓂᖏᓐᓄ ᑐᑭᓯᓂᐊᕐᕕᖃᕐᓂᖏᓐᓄ 2018-2019: ᑕᒪᕐᒥᒃ ᑕᑯᒋᐊᕐᓗᒋᑦ

- ᐅᖃᐅᔾᔨᒋᐊᖅᑏᑦ ᑲᑎᒪᔨᕋᓛᖏᑦ ᑲᑐᔾᔨᖃᑎᒌᖕᓂᖅ ᐆᒪᔪᓕᕆᓂᕐᒥᒃ ᐊᐅᓚᑦᑎᓂᕐᒧᑦ ACCWM-ᑯᑦ ᐊᐅᓚᑦᑎᐅᖃᑕᐅᔪᑦ ᑲᑎᒪᔨᖏᑦ: ᖁᕐᓗᖅᑑᑉ-ᑲᓇᖕᓇᖕᒐᓂ ᖃᓄᐃᓕᖕᒐᓂᖏᑦ, ᓄᕕᐱᕆ 21, 2018 & ᓄᕕᐱᕆ 17, 2019
- ᑕᐃᓕᓇᐃᒥᐅᑦ ᓄᓇᒥᐅᑕᓕᕆᔩᑦ ᑲᑎᒪᔨᖏᑦ, ᑎᓯᐱᕆ. 11 & 12, 2018
- ᐅᐊᒃᐅᐊᑏᒥᓗ ᒐᒥᑏᒥᓗ ᔭᓄᐊᕆ 21, 2019-ᒥ, ᐅᐊᑏᒥ ᔭᓄᐊᕆ 22, 2019 Bᐋᑦᓱᑰ, ᔭᓄᐊᕆ 23, 2019
- ᔭᓗᓇᐃᕝ ᐊᓪᓚᐃᑦ ᓄᓇᖅᑲᖅᑐᑐᖃᐃᑦ ᐊᖕᒐᔪᖄᖕᒋᓪᓗ ᐃᓐᓇᑐᖃᐃᓪᓗ ᑲᑎᒪᔨᖏᑦ, ᔭᓄᐊᕆ 24, 2019
- ᑰᖕᒥᐅᑕᐃᑦ ᓄᓇᓕᑐᖃᐃᑦ, ᕗᐊᑦ ᓯᒥᑦᒥ ᐊᓪᓚᖕᒐᔪᐃᑦ ᑲᑎᒪᔨᖏᑦ, ᓯᒥᑦᒥ ᓄᓇᓕᑐᖃᐃᑦ, ᔭᓄᐊᕆ 29, 2019
- ᑐᐂᑕᒥ ᓄᓇᒥᐅᑕᓕᕆᔨᑦ ᑲᑎᒪᔨᖏᑦ ᐊᒻᒪᓗ ᓵᑑᒥᐅᑦ ᓄᓇᒥᐅᑕᓕᕆᔩᑦ ᑲᑎᒪᔨᖏᑦ, ᔭᓄᐊᕆ 30, 2019
- ᓘᑦᓱᓪ ᑮᒥ ᓄᓇᓕᑐᖃᐃᑦ, ᕕᕗᐊᕆ 6, 2019
- ᓯᓚᑉᐃᕖᐅᑉ ᐅᐊᖕᓇᖕᒐᓂ ᐊᓪᓚᖕᒐᔪᐃᑦ ᑲᑐᔾᔨᖃᑎᒌᓪᔪᐊᖕᒋᑦ, ᕗᕕᐊᕆ 18, 2019
- ᖁᕐᓗᖅᑑᕐᒥ ᐊᖑᓇᓱᒃᑏᑦ ᑲᑐᔾᔨᖃᑎᒌᖕᒋᑦ, ᕕᕗᐊᕆ. 20, 2019
- ᓄᓇᑦᓯᐊᑉ ᒐᕙᒪᐃᑦ ᐊᒻᒪᓗ ᓄᓇᕗᑦ ᒐᕙᒪᐃᑦ ᒥᓂᔅᑕᖏᑦ ᑲᑎᒪᓂᖏᑦ, ᖁᕐᓗᖅᑑᖅ, ᒫᐳ 15 & 16, 2019
- ᐅᐊᑮᓯᒥᐅᑦ ᓄᓇᒥᐅᑕᓕᕆᔩᑦ ᑲᑎᒪᔨᖏᑦ ᑐᓴᕐᕕᖃᕆᐊᖅᑐᓚᐅᖅᑐᑦ ᖁᕐᓗᖅᑑᑉ-ᑲᓇᖕᓇᖕᒐᑕ ᑐᒃᑐᖏᓐᓂᒃ ᐱᔪᓂᒃ ᒫᐳ 9-11, 2019-ᒥ

ᖁᓯᓐᓇᒦᒃ. ᐊᐱᖁᑎᒃᓴᐃᑦ?

ᐊᔾᔨᓕᐊᖓ J. Adamczewski, ᐊᕙᑎᓕᕆᔨᒃᑯᑦ



A Délı̨nę Got'ı̨nę Plan of Action

Approved in principle by community resolution, November 4, 2015
First edition – January 8, 2016 edition
With updated Pronunciation Guide (Appendix A) February 25, 2016

Belarewíle Gots'ę́ ʔekwę́

Caribou for All Time

A Délı̨nę Got'ı̨nę Plan of Action

November 4, 2015 version

Contents

Máhsı cho!

This ʔekwę́ Conservation Plan is based on Délı̨nę Got'ı̨nę godí (stories) and ɂeɂa (laws and principles) passed down to us by our ɂehtséokə (grandparents). The Plan was first drafted by a group of invited Délı̨nę Got'ı̨nę leaders and experts during a meeting on July 14-16. The meeting was co-hosted by the Délı̨nę ʔehdzo Got'ı̨nę (Renewable Resources Council), Délı̨nę First Nation and Délı̨nę Land Corporation, and sponsored by the Species At Risk Stewardship Fund. The facilitation team was Michael Neyelle, Walter Bayha and Deborah Simmons. Jane Modeste assisted in ensuring that Dene concepts were properly spelled and as technically correct as possible when combined with a primarily English text.

The Conservation Coaches Network (CCNet) partnered with NWT Environment and Natural Resources (ENR) to offer a course in using the Opening Standards for the Practice of Conservation in Yellowknife in March 2105, which Michael Neyelle and Walter Bayha used in guiding plan development. Stuart Cowell, a CCNet instructor from Australia with considerable experience working with aboriginal peoples there, kindly agreed to mentor the facilitation team.

Máhsı cho to the meeting participants for their dedication to developing a community-driven plan. The support of the community leaders is crucial to the success of the plan. Even more important is the support and involvement of the community in joining forces to take action in ɂekwę́ conservation.

Délı̨nę ʔekwę́ Working Group Members

Michael Neyelle, Chief Leonard Kenny, Alfred Taniton, Dora Blondin, George Baton, Jimmy Dillon, Raymond Tutcho, Walter Bayha

Technical and Coordination Support

Deborah Simmons (facilitator and technical writer), Dennis Kenny (illustrator), Ed Reeves (coordination), Jane Modeste (language specialist), Janet Winbourne (technical writer), Lorraine Land (legal counsel), Micheline Manseau (caribou ecologist), Stuart Cowell (indigenous conservation planning specialist), Ted Mackeinzo (youth advisor and coordination)

Signatories to Belarewíle Gots'ę́ ʔekwę́
the Délı̨nę ʔekwę́ Conservation Plan

This ʔekwę́ Conservation Plan was approved in principle by a resolution moved by Wilfred Kenny and seconded by Chris Yukon during a Délı̨nę Public Meeting held at Dene Náoweré Kǫ́ (the Cultural Centre), Délı̨nę, Northwest Territories, 2:00-5:00 pm, November 6, 2015. The decision was by a unanimous show of hands.

Present at the meeting were ʔekwę́ Working Group members, Délı̨nę First Nation Chief and Councillors, Délı̨nę Land Corporation President and Directors, Délı̨nę ʔehdzo Got'ı̨nę (Renewable Resources Council President and Councillors, elders, youth, ɂehdzo got'ı̨nę (hunters), and other interested community members.

In recognition of the November 6 community resolution, the heads of the three main Délı̨nę governance organisations are signatories to this plan.

Délı̨nę First Nation

Leonard Kenny, Chief, Délı̨nę First Nation

Jimmy Dillon

Jimmy Dillon, Vice-President, Délı̨nę ʔehdzo Got'ı̨nę

Gina Dolphus

Gina Dolphus, President, Délı̨nę Land Corporation

Délı̨nę Belarewíle Gots'ę́ ʔekwę́ Planning Participants

Délı̨nę ʔekwę́ Working Group Members

Michael Neyelle, Chief Leonard Kenny, Alfred Taniton, Dora Blondin, George Baton, Jimmy Dillon, Raymond Tutcho, Walter Bayha

Délı̨nę Got'ı̨nę Community Members

A total of 53 people participated in one or all of the following events: July 16 presentation, November 4 public meeting, December 7 public meeting.

Alfred Betsidea, Alfred Taniton, Alphonse Takazo, Andre Blondin, Andrew John Kenny, Arsenne Ayha, Bernice Neyelle, Bobby Modeste, Bruce Kenny, Cecilia Tutcho, Chris Yukon, Christine Wenman, Clarence Tutcho, Danny Gaudet, Danny McNeely, Dave Taniton, David Tetso, Dolphus Baton, Dolphus Tutcho, Douglas Taniton, Earl Mackeinzo, Ethan Baton, Freddie Vital, Fredrick Kenny, Gary Elemie, George Baptiste, George Kenny, Gerald Tutcho, Gina Dolphus, Gordon Taniton, Hughie Ferdinand, James Takazo, Jimmy Tutcho, Joe Blondin Jr., John Tutcho, Jonas Modeste, Leon Modeste, Leon Takazo, Louie Nitsiza, Mary Rose Yukon, Morris Neyelle, Nathan Modeste, Neil Mackeinzo, Paul Modeste, Raymond Taniton, Ron Cleary, Russell Kenny, Sidney Tutcho, Stanley Ferdinand, Stella Mackeinzo, Tahti Bayha, Tommy Betsidea, Wilfred Kenny

Technical and Coordination Support

Deborah Simmons (facilitator and technical writer), Dennis Kenny (illustrator), Ed Reeves (coordination), Jane Modeste (language specialist), Janet Winbourne (technical writer), Lorraine Land (legal counsel), Micheline Manseau (caribou ecologist), Stuart Cowell (indigenous conservation planning specialist), Ted Mackeinzo (youth advisor and coordination), Heather Sayine-Crawford (wildlife manager/biologist)

ʔekwę́ ʔeɔa –Law of the Caribou

Story told by Charlie Neyelle

This story was told to me by se ɔı̨tá, my father. ʔı̨tá used to say, "Make sure you take good care of this story and what it says. Learn this ɔeɔa, this law for ɔekwę́. In the future, when you kill ɔekwę́, this is how you must work on ɔekwę́ in the future. You must work this way on ɔekwę́ until the day you die.

A long time ago there was a Dene couple who had a baby. This baby would cry and cry. The baby cried so much, the parents became exhausted. They finally fell asleep because they were so tired. When they woke up in the morning, the baby was gone. They could see his tracks in the snow, so they followed his trail. The baby's footprints turned into ɔekwę́ footprints, walking across the lake to join the other ɔekwę́. Then the parents understood why the baby was crying. He wanted to join ɔekwę́.

The following year, there were really lots of ɔekwę́ arriving. There in the middle of the herd was the little boy who had turned into a yárégo (young male ɔekwę́). The little ɔekwę́ could see his parents. He said to benǫ (his mother), "ʔénę (mother), don't worry about me. You can use the sinew and the babiche from my body for your sewing."

And he said to ęnę hə́ ɔı̨tá hə́, "My skin can be your clothing and your bedding, you can use it for your sleeping mat. So, you two, do not worry about me."

Finally ɔekwę́ said, "ʔı̨tá, when you work on me, when you cut my head off, place it in front gently. For the rest of the body parts, you cut and place them behind gently. Don't throw the meat behind. Make sure you carry it and place it gently behind the head."

This is how the yárégo wanted to be treated kanáts'ezé (when he was hunted). He was making a law for himself.

Délı̨nę Got'ı̨nęk'ə Gokədə́ Glossary

"Our Dene kədə́ (language) is very important to us. Dene kədə́ must be part of our ʔekwę́ Conservation Plan so that it will be really meaningful for us." – Alfred Taniton

Note that Dene kədə́ has its own meaning and Dene terms do not directly correspond to English terms. There was a lot of discussion about Dene concepts among the ʔekwę́ Working Group members in developing this Conservation Plan. This glossary is a work in progress, and gives approximate and summary descriptions of the meanings in English.

For a Dene kədə́ alphabet and pronunciation key, see Appendix A.

Dene	English
ɂededáhk'ə́	habitat, where people and animals can find good food
ɂedets'ę́ k'áots'erewe	governance; we are our own bosses, but we have to follow the law
ɂehdzo got'ı̨nę	hunters, harvesters, trappers
ʔehdzo Got'ı̨nę Gotsę́ Nákedı	Sahtú Renewable Resources Board (helper of the ɂehdzo got'ı̨nę)
ɂehtsə́ə kə	grandparents
ɂekwę́	ɂekwę́
ɂekwę́ gha máhsı ts'ı̨nı̨we	ceremonial harvest (we thank the creator for ɂekwę́)
ɂekwę́ nı̨ɂah	caribou make a thundering sound when the populations return
ɂénę	mother
ɂeɂa	law, principles, policy
ɂı̨tá	father
Areyǫnę́ ełóot'ı̨nę ats'ı̨t'e.	We are all one family.
ası̨́ı̨ kats'ını̨wę	harvesting all things
bedzıo	adult male caribou (big)
belarewíle gots'ę́ ɂekwę́	caribou for all time
Délı̨nę ʔehdzo Got'ı̨nę	Délı̨nę Renewable Resources Council
Dene béré	traditional Dene foods
Dene béré kats'ı̨nı̨we	alternative harvest (we hunt and gather all kinds of different Dene foods) – linked to the totality of the Sahtú Needs Level
Dene kədə́	Dene language
Dene náoweré	Dene knowledge
Dene Ts'ı̨lı̨	the whole concept of what Being Dene (being who we are) means to our grandparents
Denecho kə gok'ə́tá náts'ezé.	We have to hunt like our grandparents did. The
díga	wolf
gogha horíla	in danger, at risk
Goɂǫ́ beghǫ gots'edé nı̨dé dzá ǫt'e.	When people talk about ɂekwę́ too much, it's not good.

Dene	English
goreghǫ	shrubs
hə́	and, with
Ekáa k'énį́t'é ewílát'á kút'a.	You've harvested the quota, so that's it – shutting down the harvest.
máhsı cho	thank you very much; welcome; hello
mǫ́la	outsider
nátsezé, kanátsezé	hunting, hunting something
nę́nę́	land, habitat
Sahtú	In this document, mainly refers to Great Bear Lake (in other contexts refers to the Sahtú Region defined by the Sahtú Dene and Métis Comprehensive Land Claim Agreement)
Sahtú Got'ınę	Dene of Great Bear Lake
tsıa	young caribou
tsída	female caribou
yárégo	young male (smaller)

List of Acronyms

DGG	Délınę Got'ınę Government
DLC	Délınę Land Corporation
DRRC	Délınę ʔehdzo Got'ınę (Renewable Resources Council)
ENR	NWT Environment and Natural Resources
SMART	Specific, Measurable, Actionable, Realistic, Time-bound
SRRB	ʔehdzo Got'ınę Gotsę́ Nákedı (Sahtú Renewable Resources Board)
TTIBRSC	Tsá Túé International Biosphere Reserve Steering Committee

Introduction

> *"In the past we were told, take only what you need. Now things are changing. This is the first time we're trying to make a plan like this. If we make one, we need to abide by it. Maybe it could work." – Dora Blondin*

Sahtúgot'ı̨nę (the people of Great Bear Lake) are extremely concerned about news that ɂekwę́ (caribou) populations are declining. The Sahtúgot'ı̨nę prophets have said that ɂekwę́ will remain with us as long as we take good care of them. This means that that we must make wise decisions gogha horíla (when they're in danger). The Délı̨nę Ɂehdzo Got'ı̨nę (Renewable Resources Council) is working with our community to make changes so that ɂekwę́ will decide to come back. Following the words of Dene ɂehtséokə (our grandparents), we believe that it is necessary to follow ɂekwę́ ɂeɂa (caribou law) and not people's law in our action plans.

At the present time, our role in ɂekwę́ stewardship, and the co-management system set up in the land claim, are being challenged. We are determined to take action ourselves, whatever happens, so that ɂekwę́ will come live with us again. If we strengthen our stewardship practices, we will be better able to work with our co-management partners in conservation. This document is a starting point for discussion about how we can best follow ɂekwę́ ɂeɂa at this time.

How This Plan was Made

> *"This plan has to be worked on, put together and then go back to the community and say, "this is what we want." There have to be future consultations. If we don't do it right, we are going to start arguing again in the future about the plan. To avoid that let's make sure that what we put into the plan is going to be accepted by the community. The plan must be good. There is hardly any opposition to it. Everybody must be in agreement with it." – Andrew John Kenny*

This plan took a lot of work to prepare, with the help of a technical group, a Working Group, and the community. The technical group met to do homework before and after Working Group meetings. The Working Group met to provide guidance to the technical group and prepare for public meetings. The plan is a living document, and it is expected that it will continue to be revised and updated over time.

The following have been key events in the planning process during 2015-2016:

July 14-16	Délı̨nę ʔekwę́ Working Group meeting to prepare the first draft
November 2 and 4	Délı̨nę ʔekwę́ Working Group meetings to review and revise the draft and prepare for public presentation
November 4	Délı̨nę Public meeting – plan approval-in-principle
November 23	Délı̨nę ʔekwę́ Working Group meeting to plan for Harvest Policy implementation with ENR staff (Heather Sayine-Crawford and Leeroy Andre)
December 7	Public meeting to discuss Harvest Policy implementation
January 6-7	Délı̨nę ʔekwę́ Working Group meeting to review plan implementation and

Ten Year Vision

The ten year vision is a picture of the future that Délı̨nę Got'ı̨nę keep in mind as they take action so that ɂekwę́ will come live with us again.

> *"What we're putting in this plan is for our future." – Raymond Tutcho*

> *"We should talk about what vision our elders had in the past. ʔekwę́ are free to roam wherever they want. As Dene, we're also free to roam wherever we want, just like ɂekwę́, and there is a relationship between us. We want to continue that good relationship to take care of each other. If we know that ɂekwę́ are declining, how are we going to fix the problems?" – Walter Bayha*

***Ten Year Vision**: Dene and ɂekwę́ are free to maintain their relationships through their own ɂeɂa.*

ʔeɔa

When the earth was created, díga (wolf) and ɔekwę́ held a big meeting around the Aklavik area. Díga said to ɔekwę́, "ʔekwę́ should not be on earth any longer." ʔekwę́ responded, "As long as we've been here, we've been good and we've eaten well. We've done nothing to you. We have not destroyed your food. You have lived well off us. So what's wrong with us?"

Díga said, "That's right. There's nothing wrong with ɔekwę́. They don't get in anybody's way. So we shouldn't tell them what to do. Let them graze, and feed, and wander around. Let's not destroy them completely, because in the future we will need them."

*from ʔekwę́ Gulí (The Fate of ʔekwę́), told by William Sewi (*Sahtú Atlas*, 2005)*

Here are some ɂeɂa (laws or principles) that guide how this plan is designed.

1. **Goɂǫ́ beghǫ gots'edé nįdé dzá ǫt'e (when people talk about caribou too much, it's not good).** The talk disturbs ɂekwę́ and they don't like it. This is true for all animals. When ɂekwę́ move away, this is a sign that they want to be left alone. Ɂekwę́ make their own decisions – we're not the boss of them. We need to give them a rest for as long as it takes for them to recover. Dene ɂehtséokǝ say that when they decide to return, ɂekwę́ nįɂah, they make a thundering sound.
2. **Dene ts'įlį (who we are, the whole concept of what being Dene meant to our grandparents)** and our way of life includes Dene béré kats'įnįwe (harvesting a wide variety of country foods), including fish, moose, beaver, muskrat, small game, game birds, and berries during specific times of the year and depending upon what is most abundant.
3. **Areyǫné ełóot'įnę ats'įt'e (we are all one family).** Dene ts'įlį also involves maintaining strong sharing relationships within our community and with other communities and regions. Ɂekwę́ are our relatives.
4. **Denecho kǝ gok'ǝ́tá náts'ezé (we have to hunt like our grandparents did).** This means that the knowledge of respectful practices needs to be taught, learned and practiced by women and men. The rule that ɂekwę́ must be treated humanely (for example, they must not be hit with a stick), needs to be fully understood. Strong leadership is needed to ensure that nátsezé (hunting) decisions are respected.

Dene hǝ́ ɂekwę́ hǝ́

What makes people and ɂekwę́ healthy?

- Sharing relationships (Dene Ts'įlį)
- Ɂedets'ę́ k'áots'erewe (governance)
- Travelling freely
- Living with ekwę́
- Population cycles to keep the balance (coming and going)
- Keeping the land healthy
- Asį́į kats'ınįwę (harvesting many different foods) for survival.

Scope

In preparing this plan, Délįnę Got'įnę seek to achieve these three things:

1. Build consensus on the community's vision for the people and ɂekwę́ in the future.
2. Develop a plan of action that is realistic and supports the vision.
3. Build support for a Délįnę Got'įnę approach to ɂekwę́ conservation within the community, the region, the NWT, and beyond.

Our Plan in the Big Picture

Ɂekwę́ planning must by law involve aboriginal peoples, since they must be "consulted and accommodated." Délı̨nę needs to have its own plan defining the community's role in stewardship. We can also be part of larger planning processes that involve other regions that ɂekwę́ travel through. These include:

- The Bluenose Caribou Management Plan (2014) and Action Plans (now being drafted)
- Federal and NWT Species At Risk Assessments and Listings for barren-ground ɂekwę́
- Sahtú regional ɂekwę́ planning, involving Ɂehdzo Got'ı̨nę Gotsę́ Nákedı (Sahtú Renewable Resources Board)

Taking Care of Ɂekwę́ - The Cape Bathurst, Bluenose-West, and Bluenose-East Barren-ground Ɂekwę́ Herds Management Plan

During 2007-2013, there was a lot of discussion with communities across the NWT about what a plan for the "Bluenose caribou" herds should look like. The Advisory Committee for Cooperation on Wildlife Management (ACCWM), created to share information and coordinate wildlife management among wildlife management boards in the different regions, took on the role of developing a Management Plan for the Bluenose herds through a collaborative process involving 17 communities and 6 land claim areas.

Who Sits on the ACCWM?

The ACCWM was founded through a Memorandum of Understanding for Cooperation on Wildlife Management signed in 2008 by the Gwich'in Renewable Resources Board, the Tuktut Nogait National Park Management Board, the Wek'eezhii Renewable Resources Board, the Ɂehdzo Got'ı̨nę Gotsę́ Nákedı (Sahtú Renewable Resources Board), the Wildlife Management Advisory Council-NWT, the Kitikmeot Regional Wildlife Board, and the Nunavut Wildlife Management Board.

The *Taking Care of Caribou* Management Plan for the Bluenose herds, often referred to as the Bluenose Caribou Management Plan (BCMP), was approved by consensus of the participating wildlife management authorities in November 2014. It sets out the reason for the plan and the goals that the Plan hopes to achieve, as follows:

> While the immediate need for the plan was in response to reported declines in the herds, the intent is for the plan to address caribou management and stewardship over the long term. The ultimate goal is to ensure that there are caribou today and for future generations. The management goals are to maintain herds within the known natural range of variation, conserve and manage caribou habitat, and ensure that harvesting is respectful and sustainable.

The BCMP is a framework for collaborative ɂekwę́ management, laying the foundation for development of Action Plans. It is based on regional inputs by ACCWM members, as well as information provided in two companion documents: the community engagement document "*We have been living with the caribou all our lives…*" and a science-based technical report.

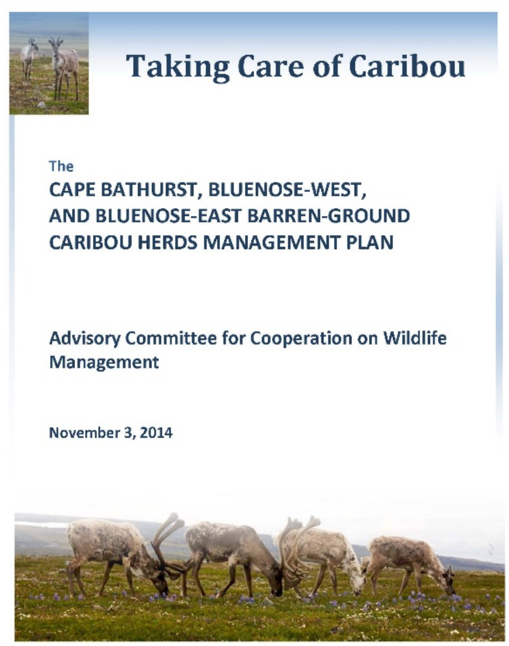
On July 2, 2015, the Minister of ENR announced that the Government of the NWT would take the BCMP as "primary guidance on monitoring and management of the Cape Bathurst, Bluenose West and Bluenose East caribou herds." The ACCWM has started developing Action Plans providing more details on how management actions can be undertaken.

The Délı̨nę Plan builds on the BCMP and supports cross-regional Action Planning by providing specific guidance on what ɂekwę́ management looks like from a community perspective. It offers a community vision, community perspectives on the key problems to be addressed, and actions that the community can help to lead, with support from its co-management partners. It is important that community plans and accomplishments are shared with other regions and decision-makers so that there can be recognition of the role that Délı̨nę has to play in conservation.

Federal and NWT Species At Risk Assessments and Listings

Since 2003 the Government of Canada has had a *Species at Risk Act*. A Government of the Northwest Territories *Species at Risk (NWT) Act* was passed in 2009. The Acts are designed to work in a complementary way with other legislation and cooperatively with aboriginal people.

In April 2015, the NWT Species at Risk Committee (SARC) released the draft '*Species Status Report for Barren-Ground Caribou (Rangifer tarandus groenlandicus) in the NWT'* for review. The species status report compiles and analyzes the best available scientific, community and traditional knowledge on the biological status of ɂekwę́, as well as existing and potential threats and positive influences. It includes up-to-date information on the following herds: Porcupine, Tuktoyaktuk Peninsula, Cape Bathurst, Bluenose West, Bluenose East, Bathurst, Ahiak, Beverly (North and South), and Qamanirjuaq.



The report identifies many, varied threats currently having negative impacts on ɂekwę́. The threats are complex, difficult to predict, and many are expected to increase in the future, such as climate change. The importance of ɂededáhk'ə́ (habitat), and of retaining sufficient good ɂededáhk'ə́ for ɂekwę́ to survive, were stressed throughout the report. Ɂekwe are scheduled to be assessed under the NWT Species At Risk Act.

As soon as a species has been assessed as a species at risk, the Conference of Management Authorities can develop consensus agreements on actions to protect the species or its ɂededáhk'ə́. Before reaching an agreement, each Management Authority does the consultation they are required to do.

If a species is listed as Special Concern, Threatened or Endangered on the NWT List of Species at Risk, a management plan or recovery strategy must be done. A management plan recommends objectives for the management of the species. A recovery strategy recommends objectives for the conservation and recovery of the species. Both types also recommend approaches to achieve those objectives.

Sahtú Regional Strategy

Already there has been a lot of discussion among the communities of the Sahtú Region about how people can work together in stewardship of ɂekwę́. In addition to all the community inputs for the BCMP, there was a lot of discussion at the Bluenose West Ɂekwę́ Management Hearing convened by Ɂehdzo Got'ı̨nę Gotsę́ Nákedı in 2007. More recently, Délı̨nę was the host of *Ɂekwę́ ghǫ Łə́nats'edə́ – A Gathering for the Caribou* on January 27-29, 2015. A regional leadership meeting on caribou stewardship was hosted by Colville Lake on April 21-22. During these meetings, there were a number of consensus resolutions that have helped to inform Délı̨nę's ɂekwę́ conservation plan.

Approach

> *"We need a Deline plan, made by the people of Deline. If it comes from government, people will never agree to it. Everyone will support it if it comes from Deline." – Chief Leonard Kenny*
>
> *"We have to come up with a plan. If we don't come up with a plan we are going to continue arguing with each other, the governments and the people." – Jimmy Dillon*

This plan is developed based on an *Open Standards for the Practice of Conservation* approach, keeping in mind that it's helpful to:

- Trust the process.
- Change the process when it needs changing.
- Own the concepts and language of the process, make it our own.
- The facilitator helps the planners move through the process; leaders who are knowledgeable about the process and topic have a distinct role in guiding plan development.

Michael Neyelle and Walter Bayha have taken a course in the Open Standards, and have benefitted from mentorship by Stuart Cowell, who works with aboriginal peoples in Australia. Michael's and Walter's leadership is important in adapting the *Open Standards* to fit Délı̨nę's needs.

Program Areas

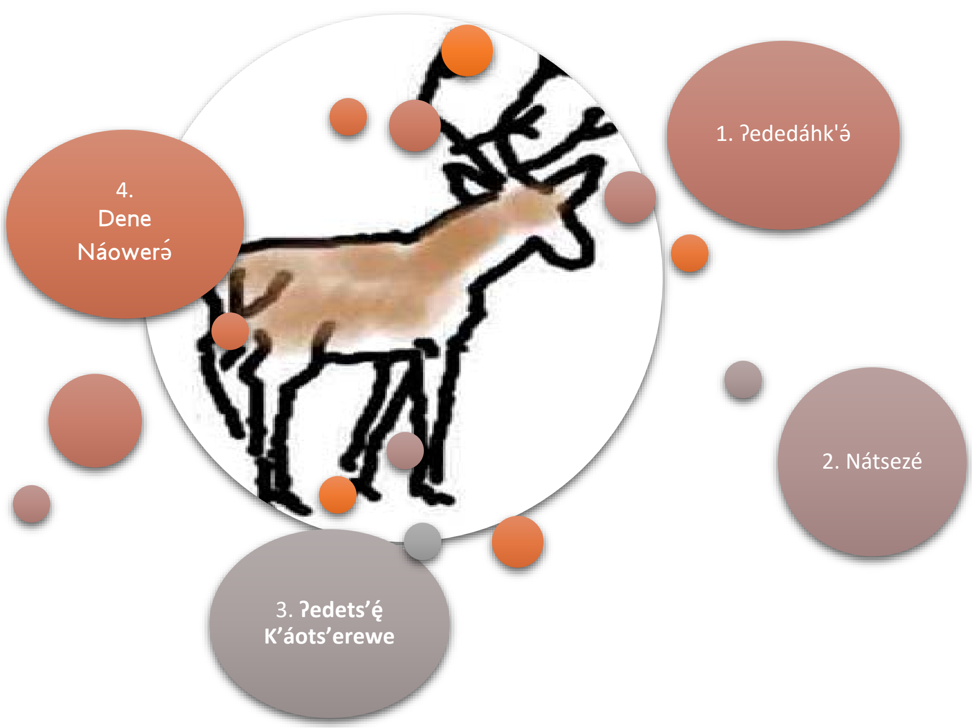
Four program areas developed for this plan are drawn from a review of the five program areas identified in the Bluenose Caribou Management Plan (BCMP 2014).

1. **ʔededáhk'ə́** – the areas of ɂededáhk'ə́ and land use are combined, since they are linked in terms of the ways in which they affect ɂekwę́.

2. **Nátsezé** – we can't do much about predators because they need to achieve their own balance, but it's important that everyone agrees on a way of supporting good nátsezé practices.

3. **ʔedets'ę́ K'áots'erewe (Governance)** – We are our own bosses, but we have to follow Dene ɂeɂa. This is not listed as a program area in the BCMP, but is considered to be an important issue affecting ɂekwę́ stewardship across the regions.

4. **Dene Náowérə́ (Knowledge)** – includes research, education, advocacy and communication.



Steps in the Process

Following the *Open Standards* approach, a structured process is developed here for each program area. The process looks like this. We have already gone through the process more than once, and a lot has been learned (see the History section below).

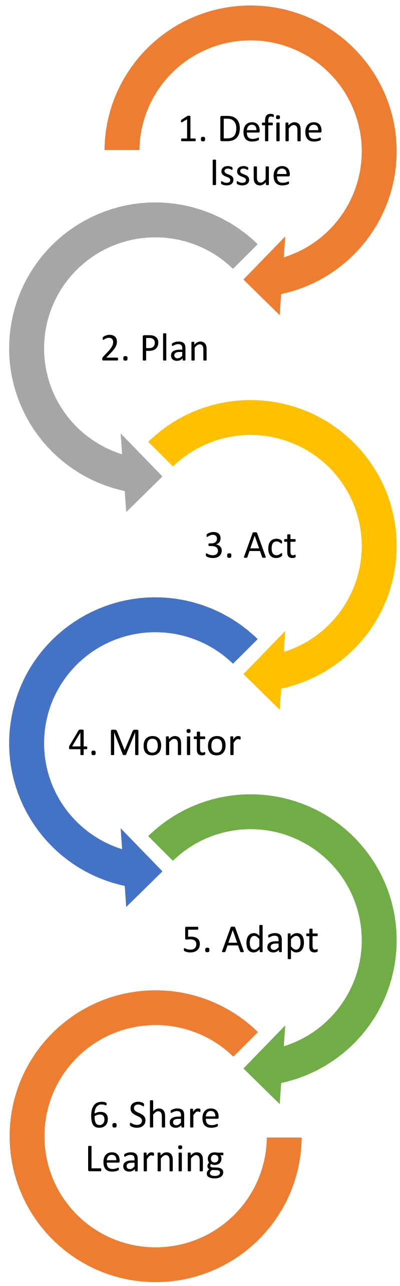


Figure 1: Six Steps in the Process

History

An important part of planning is looking back to see what worked and didn't work. There are four main periods in the history of Délı̨nę Got'ı̨nę that we can learn from.

1. Old time Dene way of life - ʔekwę́ hə́ Díga hə́ had a meetıng.
2. Government comes – nátsezé restrictions, starvation and resistance.
3. Land claim agreement – co-management, management plan, and learning across cultures.
4. Self-government –Délı̨nę Got'ı̨nę learning to be who they are in changing times.

Stories

Délı̨nę Got'ı̨nę have stories that carry the knowledge and lessons learned across the generations. A series of *keystone stories* can be told and included in the plan in order to make it more meaningful.

Problems We Face

The key problems that we identified for each program area give us an idea of the work that needs to be done.

Ɂededáhk'ə

> *"If we can take care of this earth, this land, then there's a good chance ɂekwę́ can survive a bit longer. The caribou and the Dene people live together. The reason they live together is because they don't want the caribou to disappear." – Alfred Taniton*

- The land is drier.
- There is more risk of fire.
- There are more goreghǫ (shrubs) on the tundra.
- Development is happening in other areas that ɂekwę́ travel through.
- There is less ɂededáhk'ə́ (good home, habitat) for ɂekwę́ to survive in.
- Ɂehtséo Ayha predicted that ecological and cultural integrity would be at risk in the future.

Nátsezé

"We rely too much on ɂekwę́; we should be looking at alternatives" - Freddie Vital

"Our nátsezé practices have changed during the years. Way back, ɂekwę́ were close. These days we have to go hundreds of miles to get ɂekwę́, so the distance alone is becoming a factor. We should get together and come up with a community nátsezé, rather than people going individually" – Raymond Tutcho

"Monitoring nátsezé is very important. We need to have a plan for both nátsezé and monitoring – both could be done through a community nátsezé." – Michael Neyelle

- The tag system brings back memories of the colonial days.
- Nátsezé restrictions can lead to an erosion of people's way of life and relationships with ɂekwę́.
- The ɂekwę́ migration is being disrupted by increased presence of ɂehdzo got'ı̨nę in the Délı̨nę District and in other regions.
- Nátsezé practices have changed with airplanes and skidoos, so there's more nátsezé of tsída (female caribou) in spring.
- In other regions, ɂekwę́ nátsezé is being restricted.
- A culture shift is needed to address changes in ɂekwę́ populations and maintain good relationships with our neighbours.
- Nátsezé monitoring is needed to keep track of our relationship with ɂekwę́.

Ɂedets'ę́ K'áots'erewe

"People need to come together and then decide what to do; we need to fix this problem in the community. We need to get people to work together." – Michael Neyelle

"Now we're having problems. And if we want to deal with it, we need to do it together. We need to come together as one because as aboriginal people we all depend on ɂekwę́." – Morris Neyelle

"Government has to support our plan. They should listen to us. We shouldn't always be the ones who are accepting their ideas. They have to accept some of our ideas, as people who have lived in this area since the beginning of time. If, as the case may be, there is a decline in the caribou herd, as responsible parents, elders, we can tell our young people not to harvest that many. All of us can agree to this plan. I agree that it should be us, the community, that makes the decision, not the mǫ́la government." – Alfred Taniton

- There is confusion about governance processes at various scales (family, community, region, territory, federal).
- A crisis management approach has led to top-down decisions by ENR.
- The allocation system has led to a cross-regional competition for ɂekwę́ quota.
- Families are competing for ɂekwę́ quota.

- There is a lack of trust and confidence to work with decision-makers.
- There is a lack of consensus among community leaders.
- Sahtú communities are not working together.

Dene Náowérə́

> *"We should learn the ways of ɂekwę́, study ɂekwę́." – Raymond Tutcho*
>
> *"We know science is good, but elders don't feel comfortable with the way scientists do their research. To fix that, elders need to know exactly what kind of information the scientists are gathering …. Our knowledge comes from the wildlife and the land." – Jimmy Dillon*
>
> *"What we are doing here is making a plan for the chief to go by, so the responsibility would be to communicate this plan. That's where the chief would come in when he travels around, for people that are interested in this plan that we are putting together for this caribou. Once we put this plan together we can share it." – Raymond Tutcho*

- People need to gain a better understanding of the changing environment.
- The old systems for passing on traditional knowledge and skills are not as strong as they used to be.
- We're worried about our young people and whether they'll be able to hunt in the future. Will there be caribou for them to hunt? Will they have the skills they need?
- There is a lack of understanding of the Déline̜ approach in other regions.

A Message from the Youth

by Ted Mackeinzo, Délı̨nę ʔehdzo Got'ı̨nę Intern

When on a hunting trip or just going out on the land, you should involve youth. Describe the land, the names and the importance of the area. Please describe it in both Dene language and English so the youth can better understand and gain knowledge and wisdom.

The youth don't mind if they don't get paid. They just want to be given chances to go on the land. Most youth don't own any survival gear. So please help our youth by providing rides, a place to sleep, and meals for the trip.

Taking our youth on the land to hunt, trap, fish and monitor will support the ʔekwę́ conservation plan because it will teach the youth how we take care of our land, ensuring our culture and traditions are preserved. That's how we can make sure the caribou will come back.

Workplanning: A Path to Conservation

"We also have to think about how to take good care of ɂekwę́. If we waste what we kill, ɂekwę́ will know and next time he will never come back." – Charlie Neyelle

"The plan has to be powerful to make sure that ɂekwę́. don't disappear. This is what we care about – that it's going to be there in the future." – Morris Neyelle

"It's so important that we come up with a strong conservation plan for ɂekwę́. As Dene people we've always respected ɂekwę́ …. For the future we need to cooperate and work together and we need to communicate with as many people as we can." – Alfred Taniton

We need to have a clear path for putting our ʔekwę́ Conservation Plan into action. There are a lot of challenges that face the community in achieving its vision for the people and ɂekwę́. In each of the four program areas we need to decide what we want to achieve. The goals and strategies we identify need to be SMART.

Specific – be clear what the goal is about
Measurable – you can measure progress
Actionable- it's a thing you can do
Realistic- it is actually possible
Time-bound – you know when it will be done

A good workplan answers the following questions:

1. What are the priority actions (things that are easy to do, or most urgent)?
2. How can the objectives and strategies be achieved?
3. Who should lead the work, who should be involved
4. When can the actions take place?
5. What are the funding supports and constraints?
6. How should the process be monitored, adapted, shared?

The Workplan is a living document that will develop over time as priority actions are accomplished and new priorities emerge, or as opportunities arise. Some activities are already underway through other processes, so don't need to be prioritized as new initiatives.

In this version of the Conservation Plan, the Délı̨nę community is prioritizing new program initiatives related to the Nátsezé program area, since this is a time-sensitive and especially challenging issue that requires strong governance. Appendix B, "ʔekwę́ Nátsezé ʔeɂa" is Délı̨nę's harvesting policy. Appendix C, "Délı̨nę ʔekwę́ Code" summarizes the policy so it can more easily be applied in practice. Appendix D, "Practicing our ʔekwę́ Nátsezé ʔeɂa" documents some of the work that was done to refine and add more detail the first version of the policy in response to questions from ENR.

Note: A list of acronyms used in the following workplan is provided on page vii.

Health – Dene, Ɂekwę́, Nę́nę́

Objective	Strategy	Lead(s)
1. DGG achieves International Biosphere Reserve status for Sahtú watershed by 2020 to take care of ɂekwę́ and nę́nę́.	• Secure funding to support staffing capacity (complete, from Pew Foundation). • Lobby territorial and federal governments and UNESCO.	TTIBRSC
2. DGG's Destination Délı̨nę ecotourism program self-sustaining by 2020.	• Business plan • Expansion to muskox nátsezé • Training for guides • Marketing	Destination Délı̨nę/ DLC
3. DRRC identifies critical ɂededáhk'ə́ for ɂekwę́ to be submitted to Sahtú Land Use Planning Board for inclusion in the Five Year Review, by 2018.	• Critical ɂededáhk'ə́ mapping.	ENR/ DRRC

Nátsezé

Objective	Strategy	Lead(s)
1. DRRC establishes level and protocol for ɂekwę́ gha máhsı ts'ı̨nı̨we and sharing by fall 2016. *For details on progress in this program area since the Belarewíle Gots'ę́ Ɂekwę́ plan was first drafted in July 2015, see Appendices B-D.*	• Calculate Minimum Needs Level (DRRC and SRRB). • Define ɂekwę́ gha máhsı ts'ı̨nı̨we target, and sharing protocol. • Develop policy for distributing CHAP funding to ɂehdzo got'ı̨nę. • Develop policy for visiting ɂehdzo got'ı̨nę.	DRRC/ SRRB
2. DRRC has established robust plan for ası́ı̨ (all species) kanátsezé monitoring by fall 2016.	• Meeting with SRRB and ENR to develop monitoring plan, including lessons learned from past experience (Sahtú Harvest Study completion project, *already funded*). • Establish health monitoring program as a means of monitoring nátsezé.	DRRC/ SRRB
3. DRRC develops and implements protocol for on-the-land	• Promote work toward certification of environmental monitor trainees.	DRRC/ENR

Objective	Strategy	Lead(s)
monitoring of ɂekwę́ herds by 2016, in partnership with ENR.	• Include design for note taking and reporting, and interpreting/drawing conclusions from observations.	
4. DRRC hosts asį́į kats'ınįwę gathering and awards ceremony by June 2016 to monitor plan implementation and review the plan, combined with a celebration of people's relationships with ɂekwę́.	• Funding proposal to ENR.	DRRC
5. DLC continues moosehide and ɂekwę́ hide tanning program, promotion of alternate country foods, and muskox nátsezé.	• DRRC continues hide collection program. • Muskox outfitting and subsistence nátsezé. • Country food security program.	DLC/DRRC/ Destination Deline/ DLC

Governance

Having a strong approach to governance will help to structure positive relationships within the community, with other Sahtú Region communities, with the SRRB and ENR, and with aboriginal user groups outside the region. Délįnę has its own strengths in governance to build on, and can also use co-management processes (such as the ACCWM/Bluenose Caribou Management Plan), and *Species At Risk Act* as mechanisms for achieving governance objectives.

Objective	Strategy	Lead(s)
1. DRRC finish, validate, and build support for Délįnę's Ɂekwę́ Plan by fall 2015.	• July 14-16 Working Group meeting and public presentation. • Review by DFN, DLC and DRRC through presentations by Walter and Mike. • Review by SRRB, SSI and ENR.	DRRC
2. Review ACCWM Action Plan relevant to BNE ɂekwę́ by December 2015.	• Assess how Action Plan might affect the Délįnę plan; provide comments to SRRB.	DRRC /SRRB
3. Review Species At Risk Barrenground Ɂekwę́ Assessment Report by December 2015.	• Assess how Assessment Report might affect the Délįnę plan, whether/how ɂekwę́ should be listed; provide comments to SRRB.	DRRC /SRRB

Dene Náowérə

Objective	Strategy	Lead(s)
1. By fall 2015, DRRC has reviewed results of ENR ɂekwę́ census.	• Letter by ACCWM requesting photo census results as soon as possible (*preliminary results show more decline*).	DRRC/ SRRB
2. By 2017, the DRRC and SRRB are leading a research and education program to learn about ɂekwę́ ecology in partnership with Dr. Micheline Manseau (Parks Canada and University of Manitoba).	• Develop research questions and objectives. • Prepare a Letter of Intent for the Cumulative Impact Monitoring Program (SRRB with DRRC) – fall 2016. • Prepare a Letter of Intent for the SSHRC Partnership Fund (SRRB with DRRC) – winter 2016. • Consider submitting proposals to NSERC (SRRB).	DRRC/ SRRB
3. By 2017, the DRRC has hosted an environmental leadership training course in partnership with Canadian Boreal Initiative.	• Meet with Canadian Boreal Initiative to develop training plan (SRRB and DRRC). • Submit funding proposal.	DRRC/ CBI
4. By 2016, DRRC has hosted a hunter skills course in partnership with ENR.	• Meet with ENR to develop training including Sight Your Rifle event (SRRB and DRRC).	DRRC/ ENR
5. By 2016, DRRC has completed Food Security research project in partnership with the SRRB and Wilfrid Laurier University, and developed country foods and sharing promotional materials. *Funding already secured.*	• Meet with Andrew Spring to plan the research timing, questions, objectives and methods. *(Andrew is back from vacation on July 20.)*	DRRC/ SRRB

Learning as We Go

How are we going to check whether our plan is working, and follow up on lessons learned by making changes to the plan? We know that there will be problems, and we'll learn a lot along the way. In order to move forward, we need to trust each other and work together on solutions for each problem that comes up.

It's important to review the plan often to see what's working, what's not working, how we are progressing on our objectives, and plan our next steps. We started working on this plan in July 2015, so our first six month review was planned for January 2016. Also, according to our Nátsezé ʔeɂa, we've planned a meeting when we think that Bluenose East nátsezé has reached 100 in order to discuss harvesting the final portion of the allocation, and ekáa k'énį́t'é ewílát'á kút'a (you've harvested the quota, so that's it – shutting down the harvest).

Every meeting of the ʔekwę́ Working Group, there has been a chance to look back on progress and challenges in implementing the plan. Every Working Group and public meeting since July 2015 has addressed new problems and questions that have arisen in the planning and implementation process. Solutions have been developed for problems, and more details have been provided. The plan is truly a living document that is regularly being revised and updated.

During meetings of the Working Group and ʔehdzo Got'įnę on January 6-7, it was recognized that there were major obstacles to implementing some of the objectives outlined in the ʔekwę́ Nátsezé ʔeɂa and Délįnę ʔekwę́ Code (Appendices B and C) during the first year of the plan. In particular, it will take time to build capacity and skills in certain areas, including with younger hunters and with respect to the community's efforts to include caribou health samples as part of the hunting process. The Working Group emphasized that a lot of advance planning and collaborative effort is needed to make more progress during the 2016-2017 harvest season, drawing upon lessons learned this year.

APPENDIX A: Délı̨nę Got'ı̨nęk'ə Gokədə́ Alphabet and Pronunciation Key

Note: This summary is a work in progress, and will be refined in collaboration with community and university linguists. Thanks to Keren Rice, Ingeborg Fink and Maida Percival for their assistance. For more information about Délı̨nę Got'ı̨nęk'ə gokədə́, see http://dobes.mpi.nl/projects/deline/language/.

Délı̨nę Got'ı̨nę kədə́ (language) is a dialect in the Athapaskan or Dene language family known to linguists as "North Slavey." Within the community, there is variation in how people speak, since the different families have historically travelled from different places – but people understand each other very well.

In the Northwest Territories, an effort to standardize spelling systems in Dene kədə́ was initiated in 1987, and a report was completed in 1990[1]. Although many elders had learned to write in the syllabics system introduced by missionaries, language specialists agreed to use a transfer from English spelling system that would more precisely represent the sounds in Dene kədə́ as a tool for keeping the language alive.

The best way to learn the pronunciations is to listen to fluent speakers. Although the Dene alphabet looks somewhat similar to the Roman alphabet that we use for English, the pronunciation often sounds different than English. We thank Dr. Keren Rice and the authors of the Dogrib Dictionary[2] for their contributions to this pronunciation key.

The Alphabet

The Dene kədə́ is missing some of the regular English alphabet, and some are added. There is a silent letter called a "glottal" or "click" ɂ which comes first in the alphabet, along with nasalized vowels, a "shwa" ə, a "crazy" or voiceless ł, and several "double consonants" and "glottalized consonants."

ɂ (glottal) a ą b ch ch' d dl dz e ę g gh gw h ı ı̨ j k k' kw kw' l ł m n o ǫ p r s sh t t' tł tł' ts ts' u ų w wh x y z zh

[1] NWT Education, Culture and Communications, 1990. *Reports of the Dene Standardization Project.* Yellowknife, NWT: Government of the NWT.

[2] Tłı̨chǫ Community Services Agency. 2007. *Reading and Writing in Tłı̨chǫ Yatıı̀: Tłı̨chǫ K'ę̀ę̀ Ets'eetł'èe xè Enı̨htł'è K'e Yats'ehtıı.* tlicho.ling.uvic.ca.

Pronouncing the vowels

a Dene words: Sahtú, ı̨tá ‘father’; English words: ‘father’

e Dene words: bedzıo ‘adult male caribou’; English words: bet

ə Dene words: kədə́ ‘language’; English words: bay

o Dene words: denecho ‘grandparents’; English words: toe

u Dene words: tu ‘water’; English words: boo!

Nasalized vowels are made through the nose, and they sound like you have a cold. They are written with a little hook under the vowel. English does not have nasalized vowels that are like the Dene ones.

gots’ę	‘from a place’
gots’ę́	‘to a place’

You also need to write ‘tone.’ This tells you if your voice must go up or down. It is written with a slanted line above the vowel that is used if your voice is higher on the vowel. English does not have tones.

jih	‘mitts’	jíh	‘hook’

Pronouncing the consonants

Many of the consonants are pronounced very much like they are in English. Listen to the Dene words to hear what the consonants sound like. An English word with a similar sound is also given if there is one, but some of the sounds are not found in English.

ʔ	ʔah ‘snowshoes’, seʔáá ‘my snowshoes’	uh-uh
b	bə ‘knife, bekwí ‘his, her, its head’	**b**oy
ch	chǫ ‘rain’; necha ‘it is big’	**ch**op
ch’	ch’oh ‘porcupine’, bech’a ‘away from it’	no English sound
d	də ‘river’, sedá ‘my eye’	**d**ay
dl	dlǫ ‘mouse’	no English sound
dz	dzene ‘day’, sedzee ‘his, her heart’	be**ds**
g	gah ‘rabbit’, begóné ‘his, her arm’	**g**o
gh	seghú ‘my tooth’	no English sound
h	hehjį ‘I sing’	**h**i
j	jíe ‘berries’	**j**ar
k	kǫ́ ‘fire’, ʔehkə ‘boy’	**c**at
k’	k’oh ‘cloud’, sek’oh ‘my neck’	no English sound
kw	kwə ‘rock’, ʔekwę́ ‘caribou’	**qu**een

kw’	kw’i ‘mosquito’, sekw’ené ‘my bone’	no English sound
l	selá ‘my hand’	**l**ine
ł	łue ‘fish’	no English sound
m	máhsi ‘thank you’, ʔamá ‘mother’	**m**ake
n	nę ‘land’	**n**et
r	sets’aré ‘my hat’	no English sound
s	sah ‘bear’	**s**ing
sh	shíh ‘mountain’	**sh**ip
t	tę ‘ice’, setá ‘my father’	**t**oe
t’	t’o ‘paddle’, ʔįt’ǫ ‘leaf’	no English sound
tł	tłe ‘lard, oil’	no English sound
tł’	tł’uh ‘rope’	no English sound
ts	tsá ‘beaver’, tse ‘wood’, ʔįts’é ‘moose’	ca**ts**
ts’	ts’a ‘hat’	no English sound
w	sewé ‘my liver’	**w**ind
wh	whę́ ‘star’	no English sound
x	xah ‘goose’	no English sound
y	ya ‘louse’, seya ‘my son’	**y**es
z	sįzi ‘my name’	**z**ip
zh	zha ‘louse’	bei**g**e

Consonants with no English sound

For the new/unusual sounds, “gh,” “zh,” “crazy l,” glottals, and double consonants, it’s helpful to describe how these sounds are made in the mouth and throat.

Crazy l

The crazy l or “ł” is one of several consonants in Dene kədə́ that are made by the flow of air in the mouth. The crazy l is pronounced like a “breathy l” with air pushed out while the tongue is in the position for pronouncing the l sound. It’s like a “sh” sound and l squished together, as in the Yiddish word “schlmozzle.”

Glottalized consonants, “clicks,” or ejectives[3]

Altogether, about 17% of the world’s languages have glottalized consonants or consonants with “clicks” like in Dene kədə́, but not English. There are a variety of kinds of glottalized consonants, and the kind that are used in the Dene kədə́ are called “ejectives” by linguists. This is when there is a stoppage in the voice box. The glottalized consonants in Sahtú Got’ınę́k’ə gokədə́ are:

[3] Thanks to Maida Percival, whose research comparing Délınę Got’ınę and Oromo glottalized consonants as described in Sahtú Gotıch'ádíı - Wildlife of the Sahtú Region Facebook posts on May 2, 2014, October 24, 2014 and February 18, 2015 was used for this section. www.facebook.com/SahtúWildlife.

ch’ k’ kw’ t’ tł’ ts’

In order to practice making an ejective sound, start by holding your breath. Now, while you're still holding your breath, try to make a "k" sound. Make the sound as loudly as you can, so that somebody sitting next to you can hear it. Now relax and breathe again. Congratulations! You've just made an ejective k’[4]. Practice the same thing with a “t” sound, and you can pronounce “got’ı̨nęk’ə.”

English speakers often over-pronounce ejectives, and Dene kədə́ speakers often pronounce them very subtly. So sometimes English speakers can’t hear Dene people pronouncing ejectives, and often Dene speakers smile when they hear English people trying to pronounce them.

Here are diagrams of Dora Blondin pronouncing the words té and t’é, “ashes, charcoal.” There is a burst, followed by a very short silence for the ejective t’.

Double consonants

The following double consonants are part of the Dene kədə́ language:

ch dl dz dz gh gw kw sh tł ts wh zh

Most of the double consonants are easy to figure out how to pronounce because they’re similar to English. One of them, “tł,” has a crazy l which is described above. There are also two double consonants, “gh” and “zh,” that don’t have equivalent sounds in English, but are similar in kind to other English consonants with an “h,” including “ch,” “sh,” and “wh” (linguists call this kind of sound a “fricative”).

The “gh” sound is a “breathy g” pronounced with the back part of the tongue touching the back part of the roof of the mouth similar to making the sound for “g” but more lightly, and air pushed through to make a soft sound, almost like a gurgle.

The “zh” sound is an “breathy z” pronounced with the tip of the tongue touching the front of the mouth behind the teeth similar to making the sound for “z” or “j” but more lightly, and air pushed through to make a soft sound, like treasure.

[4] Source: Karen Steffen Chung citing Peter Ladefoged, http://homepage.ntu.edu.tw/~karchung/Phonetics%20II%20page%20four.htm.

APPENDIX B: Ɂekwę́ Nátsezé Ɂeɔa – Harvest Policy

Belarewíle Gots'ę Ɂekwę́ – Caribou for All Time

Approved in principle by Délı̨nę Got'ı̨nę public meeting, November 4, 2015. Reviewed and updated based on discussions at December 8 public meeting.

Preamble

> *"We don't just go out for nátsezé – we go out because we love our Dene nę́nę́"*
>
> *– Alfred Taniton*

Whereas ɔekwę́ populations have been rapidly declining and Délı̨nę Got'ı̨nę are preparing a community conservation plan for ɔekwę́, and the Délı̨nę Ɂehdzo Got'ı̨nę is responsible for leading implementation of the plan under Chapter 13 of the Sahtú Dene and Métis Comprehensive Land Claim Agreement, the Délı̨nę Ɂehdzo Got'ı̨nę is hereby exercising its power to establish a Ɂekwę́ Nátsezé Ɂeɔa (Caribou Harvest Policy) as one mechanism for implementing the plan.

In order to ensure consistency with the land claim agreement, the ɔeɔa is structured according to the clauses describing Ɂehdzo Got'ı̨nę powers under 13.9.4, with the addition of clauses regarding the provision of funding support from the Community Harvest Assistance Program (CHAP).

This ɔeɔa is complemented by the Délı̨nę Ɂekwę́ Code (Appendix C), which summarizes the policy so it can more easily be applied in practice.

The Délı̨nę Ɂehdzo Got'ı̨nę recognizes that although it is the lead community organisation for nátsezé management, the success of this ɔeɔa will depend on support from other community leadership organisations, elders, ɔehdzo got'ı̨nę and women, youth, and ENR. This ɔeɔa needs to be combined with a strong Dene Náowerə́ program, including research, communication, and education.

Objectives

The land claim establishes the Ɂehdzo Got'ı̨nę "to encourage and promote local involvement in conservation, nátsezé studies, research and wildlife management in the community" (13.9.1). This is supported by the larger objectives of Chapter 13 in wildlife conservation and nátsezé (13.1), and the overarching land claim objective listed in Chapter 1 to "to recognize and encourage the way of life of the Sahtú Dene and Metis which is based on the cultural and economic relationship between them and the land" (1.1.1c). For this reason, the Ɂekwę́ Nátsezé Ɂeɔa addresses both conservation measures to reduce negative impacts on ɔekwę́ populations, but also ways of supporting the vitality of Dene béré kats'ı̨nı̨we (alternative subsistence harvest).

ʔeɂa

Nátsezé is not a cause of decline, but Délı̨nę Got'ı̨nę have always managed nátsezé to sustain populations for the future. This policy is founded on four main ɂeɂa (laws or principles) based on the teachings of ʔehtsə́ə (Grandparent) Bayha.

5. **Goɂǫ́ beghǫ gots'edé nı̨dé dzá ǫt'e (when people talk about ɂekwę́ too much, it's not good).** The talk disturbs ɂekwę́ and they don't like it. The problem is with the people, not ɂekwę́. When ɂekwę́ move away, this is a sign that they want to be left alone. We need to give them a rest for as long as it takes for them to recover. Dene ɂehtsə́ə kə say that when the populations return, ɂekwę́ nı̨ɂah, they make a thundering sound.
6. **Dene ts'ı̨lı̨ (who we are, the whole concept of what being Dene meant to our grandparents)** and our way of life includes Dene béré kats'ı̨nı̨we (harvesting a wide variety of country foods), including fish, moose, beaver, muskrat, small game, game birds, and berries during specific times of the year and depending upon what is most abundant.
7. **Areyǫnę́ ełóot'ı̨nę ats'ı̨t'e (we are all one family).** Dene ts'ı̨lı̨ also involves maintaining strong sharing relationships within our community and with other communities and regions.
8. **Denecho kə gok'ə́tá náts'ezé (we have to hunt like our grandparents did).** This means that the knowledge of respectful practices needs to be taught, learned and practiced by women and men.

Approach

> *"To restrict ourselves, to say we can't harvest what our needs are, that needs to be talked about. We need to talk about about a way to do it. We have to be fair. We can't be unilateral in making rules. We have to do it together." – Alfred Taniton*

The approach guiding this ɂeɂa is twofold:

1. Maintenance of a limited ɂekwę́ gha máhsı ts'ı̨nı̨we to maintain Dene ʔeɂa and spiritual and teaching relationships with ɂekwę́.
2. Support for Dene béré kats'ı̨nı̨we (alternative harvest) and sharing in order to maintain and strengthen Dene Ts'ı̨lı̨ (Being Dene) and social relationships.

ʔeɂa Topics

The following ɂeɂa topics are included in this document:

1. ʔekwę́ gha máhsı ts'ı̨nı̨we hə́ Dene béré kats'ı̨nı̨we hə́ (ceremonial harvest and Sahtú Needs/alternative harvest)
2. ʔekwę́ Nátsezé Methods

3. Season and Location of ʔekwę́ Nátsezé
4. Nátsezé Monitoring and Enforcement

ʔeɂa 1: ʔekwę́ gha máhsı ts’ı̨nı̨we hə́ Dene béré ts’ı̨nı̨we hə́ (ceremonial harvest and Sahtú Needs/alternative harvest)

The Délı̨nę ʔehdzo Got’ı̨nę recognizes that the land claim agreement provides a mechanism for protecting Dene and Métis nátsezé rights through a formula that establishes the Sahtú Minimum Needs Level. However, the community wishes to ensure that ɂekwę́ are there for future generations, and for this reason supports a reduced and coordinated ɂekwę́ gha máhsı ts’ı̨nı̨we (ceremonial harvest) instead of subsistence nátsezé to serve “minimum needs.” Dene béré kats’ı̨nı̨we to compensate for this shift is supported.

1.1 The only ɂekwę́ nátsezé supported by Délı̨nę Got'ı̨nę for the next two years will be ɂekwę́ gha máhsı ts’ı̨nı̨we; there will be no subsistence ɂekwę́ nátsezé, pending review of new ɂekwę́ status data.

1.2 ʔekwę́ gha máhsı ts’ı̨nı̨we is supported for a maximum of 150 Bluenose East ɂekwę́ and 50 Bluenose West ɂekwę́ according to specified methods, seasons, and locations as outlined below. ʔekwę́ gha máhsı ts’ı̨nı̨we will be planned with elders, will be led by experienced ɂehdzo got’ı̨nę, and will involve youth. A nátsezé meeting will be held with elders to discuss the success of the hunt, the health of the herd, and the teaching of traditional skills and knowledge. *The total CHAP budget for ɂekwę́ gha máhsı ts’ı̨nı̨we will be $10,000.*

1.3 Dene béré kats’ı̨nı̨we is supported with a focus on fish, moose, muskoxen, furbearers, waterfowl, game birds, as well as wild berries and plants and community garden produce. Organised seasonal nátsezé trips including youth and elders will be conducted linked to the whitefish runs and geese and duck seasons. Traditional food preservation methods and sharing practices will be part of the Dene béré kats’ı̨nı̨we program. *The total CHAP budget for organised seasonal nátsezés is $14,000. Where possible, supplementary funds will be sought.*

1.4 A Dene Ts’ı̨lı̨ awards program is established for families, ɂehdzo got’ı̨nę or ɂehtsə́ə kə that demonstrate excellence in practicing Dene ʔeɂa and conservationist nátsezé traditions. *The total CHAP budget for the Dene Ts’ı̨lı̨ awards program is $5,000.*

1.5 Muskoxen, moose, and tǫdzı full health sample kits are compensated $150. Muskox hides are purchased for a maximum of $200 for large and high quality hides.

ʔeɂa 2: ʔekwę́ gha Máhsı Ts'ı̨nı̨we Methods

"People had their own system of sharing before any mǫ́la came around. Someone would go around with a packsack full of fish, or a load of wood." – Alfred Taniton

2.1 ʔehdzo got'ı̨nę should travel with snowshoes to make it possible to pursue and kill wounded animals; the Délı̨nę ʔehdzo Got'ı̨nę will distribute snowshoes to ɂekwę́ ɂehdzo got'ı̨nę. *The total initial CHAP budget for snowshoes is $2,000 for 10 sets of high quality traditional snowshoes and harnesses. The Délı̨nę Land Corporation and First Nation will plan a training workshop in snowshoe making.*

2.2 ʔehdzo got'ı̨nę should travel safely and well prepared, at minimum with the following equipment: a sleeping bag, an ax, matches, and a packsack with first aid kit, extra clothing, and food.

2.3 No wastage is permitted. ʔehdzo got'ı̨nę should bring back and share as appropriate all usable parts of ɂekwę́ as our ancestors did, including hides. An incentive program for hide purchase will be established.

2.4 ʔehdzo got'ı̨nę should not stress ɂekwę́ by chasing them, since this affects meat quality, leads to vulnerability to predators, and can lead to earlier death.

2.5 There will be no nátsezé of the larger bedzıo that are important for taking care of the herd. Only smaller yárégo nátsezé is permitted.

2.6 Traditional protocols for respectful behaviour around ɂekwę́ should be practiced, as taught by elders, including:

- Do not hit ɂekwę́ with a stick.
- Women do not step over blood.
- Thank the ancestors and ɂekwę́ for a successful nátsezé.
- Do not leave gut piles on lakes.
- Dispose of bones respectfully in the bush, under a tree – bones should not be put in the garbage, on roads, or in the garbage dump.

2.7 The shift to ɂekwę́ gha máhsı ts'ı̨nı̨we means that traditional sharing practices must be renewed, since ɂekwę́ is no longer the major subsistence food. Family elders should have responsibility for ensuring that nátsezé is properly processed and shared according to tradition.

2.8 A mentoring or "buddy" system will be used. This way, less experienced ɂehdzo got'ı̨nę are properly taught and monitored to ensure that our nátsezé ɂeɂa is respected.

Ɂeɂa 3: Season and Location of Ɂekwę́ Nátsezé

3.1 Ɂekwę́ gha máhsı ts'ı̨nı̨we will take place during the fall/winter to for only yárégo (smaller males).

3.2 Nátsezé will be focused at Ɂehdaı̨la and Neregha/Enakə Túé areas. Ɂekwę́ when they are in the Tekacho and Į̨tséré Túé areas will be allowed to rest and renew their health for travel to the calving grounds. *Allocations of gas to ɂehdzo got'ı̨nę for ɂekwę́ gha máhsı ts'ı̨nı̨we will accommodate the additional distance required to reach the Ɂehdaı̨la and Neregha/Arakə Túé areas*.

Ɂeɂa 4: Nátsezé Monitoring and Enforcement

4.1 Nátsezé numbers, sex and location will be reported to the Délı̨nę Ɂehdzo Got'ı̨nę and in turn, nátsezé will be reported to the Délı̨nęgot'ı̨nę Government and Ɂehdzo Got'ı̨nę Gotsę́ Nákedı.

4.2 A community self-regulation approach will be used, in which the community will stop nátsezé once the limit is reached.

4.3 A strong education program will be developed to ensure that people understand and respect Délı̨nę's self-regulated nátsezé limit.

4.4 When the community has reached a threshold of nátsezé 100 Bluenose East ɂekwę́, a community meeting will be called to plan for harvestıng the final portion of the ɂekwę́ allocation, and closure of nátsezé once this is reached.

4.5 Ɂehdzo got'ı̨nę are required by the community to bring back health sample kits, including documentation. An award of $50 will be provided for return of health sample kits.

4.6 Ɂehdzo got'ı̨nę who violate this ɂeɂa may be denied future CHAP funding support. The community will consider traditional restorative means of supporting respect for the community ɂekwę́ nátsezé ɂeɂa. Referral to ENR will be a last resort.

APPENDIX C: Délı̨nę Ɂekwę́ Code

A. Preamble

Whereas…

I. The people of Délı̨nę, Délı̨nę Got’ı̨nę, have a deep understanding of the land, the water and the animals. With this understanding comes a tremendous respect for the food that nature provides.

II. Délı̨nę Got’ı̨nę have for centuries managed their relationship with the land, water and animals by way of the community’s own laws that reflect their respect for the food that nature provides.

III. Section 1.1.1(c) of the *Sahtú Dene and Métis Comprehensive Land Claim Agreement* provides that an objective the Land Claim Agreement is to recognize and encourage the way of life of the Sahtú Dene and Metis, which is based on the cultural and economic relationship between them and the land.

IV. If one thing could be singled out that binds Délı̨nę Got’ı̨nę most strongly to their land and heritage, it would be their relationship with ɂekwę́ (caribou).

V. Délı̨nę Got’ı̨nę are extremely concerned about news that ɂekwę́ populations are declining.

VI. Section 13.9.1 of the *Sahtú Dene and Métis Comprehensive Land Claim Agreement* provides that there shall be a Renewable Resources Council in each Sahtú community to encourage and promote local involvement in conservation, harvesting studies, research and wildlife management in the community.

VII. Section 13.9.4 of the *Sahtú Dene and Métis Comprehensive Land Claim Agreement* provides that a Renewable Resources Council has the authority to manage the local exercise of Participants’ harvesting rights, including the methods, seasons and location of ɂekwę́ harvests.

VIII. Section 13.9.6 of the *Sahtú Dene and Métis Comprehensive Land Claim Agreement* provides that local Renewable Resources Councils shall participate in the collection and provision, to government and the Sahtú Renewable Resources Board, of local harvesting data and other locally available data respecting wildlife and wildlife habitat.

Therefore the Délı̨nę Ɂehdzo Got’ı̨nę sets forth here a Délı̨nę Ɂekwę́ Code for 2015-2017 (“the Code”).

B. Definitions and Interpretation

1. In this Code,

"ʔeɂa" means Dene law or policy.

"ʔehdzo Got'ı̨nę Gotsę́ Nákedı" means the Sahtú Renewable Resources Board for the purpose of this Code and means the Renewable Resources Board as described in 13.8 of the *Sahtú Dene and Métis Comprehensive Land Claim Agreement*.

"ʔekwę́" means barren-ground caribou.

"ʔekwę́ gha Máhsı Ts'ı̨nı̨we" has the same meaning as "Ceremonial Harvest" for the purpose of this Code and means the harvest of ɂekwę́ where, as distinct from subsistence harvests, the sole purpose of the harvest is to maintain the relationship of Délı̨nę Got'ı̨nę with ɂekwę́, and where the methods, seasons and locations of said harvest are outlined in this Code.

"Alternative Harvest" has the same meaning as "Dene Béré Kats'ı̨nı̨we" for the purpose of this Code and means the harvest of fish, moose, muskoxen, furbearers, waterfowl, game birds, wild berries, plants, and other community garden produce, and is linked to the totality of the Sahtú Needs Level;

"Bedzıo" means an adult male caribou.

"Bluenose East Area" means the Caribou Management Zone S/BC/03, as set forth in the Big Game Hunting Regulations, NWT Reg 019-92 under the *Wildlife Act*, SNWT 2014, c 3.

"Bluenose West Area" means the Caribou Management Zone S/BC/01, as set forth in the Big Game Hunting Regulations, NWT Reg 019-92 under the *Wildlife Act*, SNWT 2014, c 3.

"Ceremonial Harvest" has the same meaning as "ʔekwę́ Gha Máhsı Ts'ı̨nı̨we" for the purpose of this Code, and means the harvest of ɂekwę́ where, as distinct from subsistence harvests, the sole purpose of the harvest is to maintain the relationship of Délı̨nę Got'ı̨nę with ɂekwę́, and where the methods, seasons and locations of said harvest are outlined in this Code.

"Délı̨nę ʔehdzo Got'ı̨nę" has the same meaning as "Délı̨nę Renewable Resources Council" for the purpose of this Code and means the Renewable Resources Council established by Section 13.9 of the *Sahtú Dene and Métis Comprehensive Land Claim Agreement*.

"Délı̨nę Got'ı̨nę" has the same meaning as Délı̨nę Participant(s) under the Sahtú Dene and Métis Comprehensive Land Claim Agreement for the purpose of this code.

"Délı̨nę Renewable Resources Council" has the same meaning as "Délı̨nę ʔehdzo Got'ı̨nę" for the purpose of this Code and means the Renewable Resources Council established by Section 13.9 of the *Sahtú Dene and Métis Comprehensive Land Claim Agreement*.

“Dene Béré Kats’ı̨nı̨we” has the same meaning as “Alternative Harvest” for the purpose of this Code and means the harvest of fish, moose, muskoxen, furbearers, waterfowl, game birds, wild berries, plants, and other community garden produce, and is linked to the totality of the Sahtú Needs Level.

“Dene Ts’ı̨lı̨ Awards Program” means a program established to recognize families, hunters, harvesters, trappers, elders and others who demonstrate excellence in practicing Dene law and/or conservationist hunting or harvesting traditions.

“Harvest” means hunting in accordance with the *Sahtú Dene and Métis Comprehensive Land Claim Agreement*.

“Health Sample Kit” means a package containing a data sheet plus materials for the collection of a backfat measurement, fecal sample, blood sample, and skin sample from ɂekwę́.

“Participants” means persons enrolled in the Enrolment Register pursuant to chapter 4 of the *Sahtú Dene and Métis Comprehensive Land Claim Agreement*, and “Participant” means any one of them.

“Renewable Resources Council”, or “RRC”, means a Renewable Resources Council as described in 13.9 of the *Sahtú Dene and Métis Comprehensive Land Claim Agreement* and more specifically means the Délı̨nę Ɂehdzo Got’ı̨nę for the purposes of this Code.

“Sahtú Needs Level” means a Sahtú Needs Level as described in 13.5.3 of the *Sahtú Dene and Métis Comprehensive Land Claim Agreement*.

“Sahtú Renewable Resources Board” has the same meaning as “Ɂehdzo Got’ı̨nę Gotsę́ Nákedı” for the purpose of this Code and means the Renewable Resources Board as described in 13.8 of the *Sahtú Dene and Métis Comprehensive Land Claim Agreement*.

“Tsída” means an female caribou.

“Yárégo” means a young male caribou.

C. Vision and Objectives

2. The ten year vision that guides this code is that Dene and ɂekwę́ are free to maintain their relationships through their own ɂeɂa.

3. The objectives of this code are to:

   a) address the long term management and stewardship of ɂekwę́ populations by establishing rules and guidelines for Ɂekwę́ Gha Máhsı Ts’ı̨nı̨we.
   b) maintain the relationship of Délı̨nę Got’ı̨nę with ɂekwę́.
   c) ensure the presence of ɂekwę́ populations now and into the future.
   d) encourage and promote local involvement in the conservation and management of ɂekwę́ populations.

e) ensure that any harvest of ɂekwę́ is conducted in a respectful and sustainable manner, consistent with traditional Délı̨nę harvesting practices.
f) ensure maintenance of and support for the Dene Béré Kats'ı̨nı̨we.

D. Application

4. This Code applies

   a) in respect of Délı̨nę Got'ı̨nę harvesting ɂekwę́ in
      i. the Bluenose East Area.
      ii. the Bluenose West Area.

   b) in respect of Sahtú Participants from outside Délı̨nę who harvest:
      i. ɂekwę́ in the Bluenose East Area.
      ii. ɂekwę́ in locations where Délı̨nę Got'ı̨nę have traditionally harvested in the Bluenose West Area.

   c) in respect of Délı̨nę Got'ı̨nę participating in the Dene Béré Kats'ı̨nı̨we.

E. Ɂekwę́ gha Máhsi Ts'ı̨nı̨we (Ceremonial Harvest)

5. The only ɂekwę́ harvest that shall take place during the calendar years 2015, 2016 and 2017, respectively, shall be Ɂekwę́ Gha Máhsı Ts'ı̨nı̨we. Any Ɂekwę́ Gha Máhsı Ts'ı̨nı̨we shall be conducted in accordance with the methods, seasons and locations outlined in this Code.

6. The purpose of Ɂekwę́ Gha Máhsı Ts'ı̨nı̨we is to maintain the relationship between the Délı̨nę Got'ı̨nę and ɂekwę́, and to honour our grandparents.

7. For Ɂekwę́ Gha Máhsı Ts'ı̨nı̨we for each of 2015, 2016, and 2017 harvests, Délı̨nę Got'ı̨nę shall harvest a maximum of:

   a) 150 Bluenose East ɂekwę́.
   b) 50 Bluenose West ɂekwę́.

8. Ɂekwę́ Gha Máhsı Ts'ı̨nı̨we shall be organized by the Délı̨nę Ɂehdzo Got'ı̨nę, and shall include the following requirements:

   a) consultation with elders who shall plan the hunt.
   b) a written agreement between hunters and the Délı̨nę Ɂehdzo Got'ı̨nę regarding hunting protocols to be observed.
   c) involvement of experienced Délı̨nę hunters who shall lead the hunt.
   d) involvement of youth.

e) a meeting to discuss:

    i. the success of the hunt.
    ii. the health of the herd.
    iii. the teaching of traditional skills and knowledge.

9. The total annual budget for ʔekwę́ Gha Máhsı Ts'ı̨nı̨we shall be $10 000.

10. The Délı̨nę ʔehdzo Got'ı̨nę may, in its discretion and after review of any new information regarding the status of the Bluenose East and Bluenose West ɂekwę́ herds, determine that Délı̨nę Got'ı̨nę may harvest in excess of the level set out in Section 7.

11. The Délı̨nę ʔehdzo Got'ı̨nę shall develop an education program to inform Délı̨nę Got'ı̨nę about the Délı̨nę ʔekwę́ Gha Máhsı Ts'ı̨nı̨we.

F. Dene Béré Kats'ı̨nı̨we (Alternative Harvest)

12. Dene Béré Kats'ı̨nı̨we shall include the harvest of fish, moose, muskoxen, furbearers, waterfowl, game birds, as well as berries, plants and other community garden produce.

13. Both youth and elders may participate in Dene Béré Kats'ı̨nı̨we.

14. Dene Béré Kats'ı̨nı̨we shall be organized by the Délı̨nę ʔehdzo Got'ı̨nę, and shall be based on traditional Délı̨nę food preservation methods and sharing practices.

15. Dene Béré Kats'ı̨nı̨we shall take place seasonally, occurring in accordance with the whitefish runs and geese and duck seasons.

16. The total annual budget for Dene Béré Kats'ı̨nı̨we shall be $14,000.

17. Délı̨nę Got'ı̨nę shall receive compensation for the following:

    a) $50 for a Health Sample Kit submitted for each muskoxen, moose or boreal woodland ɂekwę́.
    b) Up to a maximum of $200 for each muskoxen hide, with the price depending on the size and quality of the hide.

G. The Dene Ts'ı̨lı̨ Award Program

18. The Dene Ts'ı̨lı̨ Award Program shall be established to recognize families, hunters, harvesters, trappers, or grandparents who demonstrate excellence in practicing Délı̨nę law and conservationist hunting traditions.

19. The Délı̨nę ʔehdzo Got'ı̨nę shall meet at least once per year to determine which Participant(s) will receive the Dene Ts'ı̨lı̨ Awards.

20. The total annual budget for the Dene Ts'ı̨lı̨ Award Program shall be $5,000.

H. Harvest Methods

Equipment

21. Délı̨nę Got'ı̨nę shall carry the following equipment when participating in any harvest of ɂekwę́:

   a) snowshoes.
   b) a sleeping bag.
   c) an ax.
   d) matches.
   e) a packsack.
   f) a first aid kit.
   g) extra clothing.
   h) food.

22. The Délı̨nę Ɂehdzo Got'ı̨nę may distribute snowshoes to Délı̨nę Got'ı̨nę harvesting ɂekwę́.

23. The total annual budget for the snowshoe distribution under Section 21 shall be $2,000.

24. The Délı̨nę Land Corporation shall fund and organize one snowshoe making training workshop in each calendar year.

Protocols

25. Délı̨nę Got'ı̨nę who participate in any harvest of ɂekwę́ shall not:

   a) hunt tsída.
   b) hunt the large bedzıo.
   c) chase ɂekwę́.
   d) treat ɂekwę́ in a way that is not humane.

26. Délı̨nę Got'ı̨nę who harvests ɂekwę́ during a harvest shall:

   a) preserve and return from the harvest all usable ɂekwę́ parts, including the hide, and share those parts in accordance with Délı̨nę traditional practices.
   b) observe respectful practices for women and men in the vicinity of and handling ɂekwę́.
   c) dispose of ɂekwę́ bones in the bush or under a tree.
   d) thank the ancestors and ɂekwę́ for a successful hunt.

27. No Délı̨nę Got'ı̨nę shall dispose of ɂekwę́ bones in the garbage, on roads, or in the garbage dump.

28. No Délı̨nę Got'ı̨nę shall dispose of ɂekwę́ guts in or near any lakes.

29. The Délı̨nę ʔehdzo Got'ı̨nę shall establish an incentive program for the purchase of ɂekwę́ hides.

I. Season and Location of ʔekwę́ gha Máhsi Ts'ı̨nı̨we

30. ʔekwę́ gha Máhsı Ts'ı̨nı̨we shall take place during the fall and winter seasons, so as to ensure that all ɂekwę́ harvested are yárégo.

31. ʔekwę́ gha Máhsı Ts'ı̨nı̨we shall be restricted to the Bluenose East Area and the Bluenose West Area, as defined in this Code.

32. The Délı̨nę ʔehdzo Got'ı̨nę shall allocate to any Délı̨nę Got'ı̨nę who participates in a ʔekwę́ Gha Máhsı Ts'ı̨nı̨we the amount of gas that is required to travel the additional distance to reach the Bluenose East and Bluenose West Areas.

J. Monitoring

33. Délı̨nę Got'ı̨nę who participate in harvest of ɂekwę́ and who harvest ɂekwę́ in that harvest shall, as soon as possible after ɂekwę́ is killed, provide an ɂekwę́ Health Sample Kit to the Délı̨nę ʔehdzo Got'ı̨nę.

34. Délı̨nę Got'ı̨nę shall be compensated $50 for each ɂekwę́ Health Sample Kit provided.

35. If Délı̨nę Got'ı̨nę do not provide an ɂekwę́ Health Sample Kit in accordance with Section 33, that person shall provide the following information to the Délı̨nę ʔehdzo Got'ı̨nę:

    a) the number of ɂekwę́ harvested.
    b) whether ɂekwę́ harvested were yárégo or tsída.
    c) where ɂekwę́ were harvested.
    d) any other information required by a person designated by the Délı̨nę ʔehdzo Got'ı̨nę.

36. When, as determined by the Délı̨nę ʔehdzo Got'ı̨nę or the ʔehdzo Got'ı̨nę Gotsę́ Nákedı, the number of harvested Bluenose East ɂekwę́ reported reaches 100, the Délı̨nę ʔehdzo Got'ı̨nę shall call a community meeting to plan for the harvest of the remainder of ɂekwę́ as described in Section 6 of this Code, and closure of ʔekwę́ Gha Máhsı Ts'ı̨nı̨we once that level is reached.

37. The Délı̨nę ʔehdzo Got'ı̨nę shall prepare, for any community meeting convened under Section 36, the following information:

    a) a proposal for public discussion of ʔekwę́ gha Máhsı Ts'ı̨nı̨we.
    b) information regarding the Dene Ts'ı̨lı̨ award.
    c) a proposal for Dene Béré Kats'ı̨nı̨we for the remainder of the year.
    d) a proposal for the process for determining the allocation of the remaining 50 ɂekwę́ for the year.

e) a review of the percentage of yárégo and tsída ɂekwę́ harvested to date for the year.
f) suggested measures to be undertaken by the Délı̨nę Ɂehdzo Got'ı̨nę and other wildlife management authorities if someone harvests ɂekwę́ after the total Ɂekwę́ Gha Máhsı Ts'ı̨nı̨we level of 150 ɂekwę́ is reached.

38. The Délı̨nę Ɂehdzo Got'ı̨nę shall keep a record of the number of ɂekwę́ harvested and reported under Sections 33 and 35 as well as other known information about ɂekwę́ harvested but not reported under Sections 33 and 35.

39. The Manager of the Délı̨nę Ɂehdzo Got'ı̨nę shall meet at least once each month with the Chief of Délı̨nę First Nation, NWT Environment and Natural Resources staff and Ɂehdzo Got'ı̨nę Gotsę́ Nákedı staff to report on the record under Sections 33 and 35 of ɂekwę́ harvested in the previous month and to confirm the total monthly Délı̨nę harvest numbers for that month.

40. The Délı̨nę Ɂehdzo Got'ı̨nę shall report the final numbers for each month to the Ɂehdzo Got'ı̨nę Gotsę́ Nákedı following the confirmation of the total monthly Délı̨nę harvest under Section 39.

41. A representative of each of the Délı̨nę Ɂehdzo Got'ı̨nę, the Ɂehdzo Got'ı̨nę Gotsę́ Nákedı and the Department of Environment and Natural Resources shall meet together at least once each calendar year to evaluate the record of ɂekwę́ harvested and determine the final total Délı̨nę ɂekwę́ harvest number to be provided to other wildlife authorities.

K. Enforcement

42. In the event that a Participant under the Sahtú Dene and Metis Land Claims Agreement harvests ɂekwę́ does not comply with this Code, the Délı̨nę Ɂehdzo Got'ı̨nę shall convene a Sentencing Circle to determine an appropriate response.

43. A Sentencing Circle convened under Section 42 shall include the following people:

a) the person who allegedly has not complied with this Code.
b) two representatives of the Délı̨nę Ɂehdzo Got'ı̨nę.
c) at least two Délı̨nę elders named by the Délı̨nę Ɂehdzo Got'ı̨nę in consultation with the Délı̨nę Got'ı̨nę Government.
d) one representative of the Ministry of Environment and Natural Resources.
e) family members of the person who has allegedly not complied with the Code and who can be named by that person or by the Délı̨nę Ɂehdzo Got'ı̨nę or the Délı̨nę Got'ı̨nę Government.

44. The people involved in the Sentencing Circle convened under Section 42 shall discuss:

a) the allegations that the Participant identified in Section 42 did not comply with this Code.

b) the impacts of that non-compliance with the Code on the relationship between Délı̨nę Got'ı̨nę and ɂekwę́.
c) what steps should be taken to address the Participant's alleged non-compliance with the Code.

45. In the event that a Participant:

a) does not comply with this Code and does not participate in a Sentencing Circle; or
b) does not comply with this Code and does not complete the steps identified by a Sentencing Circle in Section 44(c);

then the Délı̨nę ʔehdzo Got'ı̨nę shall refer the matter to the Department of Environment and Natural Resources for enforcement pursuant to the provisions of the *Wildlife Act*, SNWT 2014.

APPENDIX D: Practicing Our ʔekwę́ Nátsezé ʔeɂa

Updated following December 8, 2015 public meeting

This is a living document, and will be revised as questions about how to put ʔekwę́ Nátsezé ʔeɂa *into action are addressed by the Délı̨nę ʔekwę́ Working Group and ʔehdzo Got'ı̨nę.*

Once the ɂekwę́ conservation plan was complete, the ʔekwę́ Working Group realized that it would be important to work together with ENR to implement the plan. There was a big focus on ʔekwę́ Nátsezé ʔeɂa, since this is the area where there's been an agreement to support the community approach.

During a meeting on November 23, the Working Group worked on six questions about how the ʔekwę́ Nátsezé ʔeɂa could work in practice, and more work was done during a public meeting on December 7[5]. There is further planning required to put a number of the items into action.

Questions

1. How is the harvest going to be monitored?
2. What steps till be taken if hunters don't report their harvest?
3. Who is responsible for harvest monitoring?
4. How is it being communicated with the public?
5. When we reach 100 and 150 caribou harvested, what happens to close down the hunt?
6. How will the harvest of tsída be minimized?
7. How should the funding be dealt with?
8. Are visitors allowed to harvest?
9. How are Délı̨nę Got'ı̨nę going to be authorized to harvest?
10. How will health sample kits be organised?

Question 1: How is the harvest going to be monitored?

This is required under land claim Section 13.9.6 – ʔehdzo Got'ı̨nę must provide harvest data to the SRRB and GNWT.

NUMBER ONE RULE: *harvesters have to report to the Délı̨nę ʔehdzo Got'ı̨nę.*

[5] Participants at the December 7 meeting included: Technical team members: Michael Neyelle, Délı̨nę ʔehdzo Got'ı̨nę President and Jimmy Dillon, Vice President; Ed Reeves and Ted Mackeinzo, Délı̨nę ʔehdzo Got'ı̨nę staff; Walter Bayha (Délı̨nę Land Corporation staff and Délı̨nę First Nation Special Advisor); Raymond Tutcho (Délı̨nę Self-Government staff); Deborah Simmons and Joe Hanlon, ʔehdzo Got'ı̨nę Gotsę́ Nákedı (Sahtú Renewable Resources Board) staff; Heather Sayine Crawford. ENR staff. Délı̨nę ʔehdzo Got'ı̨nę Council members: Mitchell Naedzo, Russell Kenny. Community members: Alfred Taniton, Andrew John Kenny, Dolphus Baton, Joe Blondin Junior, Louie Nitsiza, Mary Rose Yukon.

Steps

1. Health sample requirement for Délı̨nę Got'ı̨nę hunters (the health sample gives numbers and sex of harvested animals).
2. If 1 doesn't happen, harvesters have to report to the DRRC.
3. If 2 doesn't happen, the DRRC documents harvest anyway. Check point to be established on the winter road between Bennett Field and the Porcupine River during the period when caribou are in the Délı̨nę District – including two big signs.
4. Need to have one harvest number, and it's best for the Chief, Délı̨nę ʔehdzo Got'ı̨nę President, and ENR to agree on the number that is given to the SRRB and ENR.

Question 2: What steps till be taken if hunters don't report their harvest?

- The Délı̨nę ʔekwę́ Code states that hunters "shall" (must) report their harvest, including location, date, sex, and other observations as desired.
- There is a three step process outlined in the plan to support harvest reporting:
    - Agreement with harvester
    - Sentencing circle
    - ENR enforcement
- This is extremely important to follow through on because we want to show that the plan works.

Question 3: Who is responsible?

- The Délı̨nę ʔehdzo Got'ı̨nę Manager will check with the Chief to ensure that the ʔehdzo Got'ı̨nę and First Nation are in agreement on the harvest number, and will deliver the agreed-upon number to ENR and ʔehdzo Got'ı̨nę Gotsę́ Nákedı (Sahtú Renewable Resources Board – the Board) on the first working day of each month.
- The Délı̨nę ʔehdzo Got'ı̨nę Manager will be the main contact person for the Board on harvest numbers.
- Following delivery of report during the first week of every month, the technical team will assess harvest monitoring policy implementation, and recommend actions to fix any problems (learning by doing).

Question 4: How is the plan being communicated with the public?

- A door-to-door campaign with brochure with every hunter.
- Radio broadcast
- Public meeting with door prizes
- Harvest management policy as posters
- Dene Ts'ı̨lı̨ award

- Regarding wastage prevention: Workshop at the school with elders on caribou anatomy atlas (to be put on Susan Kutz's atlas webpage and linked to the Board/Délı̨nę ʔehdzo Got'ı̨nę pages), combined with education about harvest management policy.
- Regarding wounding loss prevention: Sight your rifle training, combined with education about harvest management policy.
- The Board will communicate with other communities that Délı̨nę is the lead and the Délı̨nę ʔehdzo Got'ı̨nę is the contact for visiting harvesters.

Question 5a: What happens when we reach harvest of 100?

- Délı̨nę ʔekwę́ Working Group has a meeting to prepare for a public meeting, and prepare a proposal for public discussion, including Dene Ts'ı̨lı̨ award, alternative harvest, and harvest of last 50 caribou. The meeting should also review the percentages of bedzıo or yárégo and tsída harvested.
- Public meeting to review and approve Working Group proposal.
- The proposal will include a list of measures to take if someone refuses to stop hunting caribou when the 150 is reached, such as letting the community deal with these issues the way they did in the past.
- Délı̨nę ENR officer will still play a role. He still has to monitor – ensuring nothing wasted.

Question 5b: What happens when we reach 150?

- No more funding to support caribou harvest
- What if somebody refuses to stop hunting? As they used to do in the past, a talking circle of elders and leaders to confront the problem and come up with a solution within the community (restorative justice approach). ENR enforcement will be called for as a last resort.

Question 6: How will the harvest of tsída be minimized?

It was noted that other aboriginal governments have agreed to a tsída-only harvest.

- The number of tsída harvested is reduced to a minimum because the harvest season is focused on fall and winter, and community members are banned from harvesting at Tehk'aecho and Įts'éré Túé.
- The harvest monitoring needs to include how many tsída and how many yárégo harvested, and how many pregnant tsída and how many tsıa (young caribou) - see Question 4a answers.

Question 7: How should the funding be dealt with?

Sub-questions: What funding is needed? What is ENR going to get in return? What money is Délı̨nę ʔehdzo Got'ı̨nę putting into this?

- Community Harvester Assistance Program (CHAP) funds are specifically allocated to support our Nátsezé ʔeɂa.
- The Délı̨nę ʔehdzo Got'ı̨nę needs to submit a funding proposal to ENR for the funding required to support our Nátsezé ʔeɂa. We can put costs of all the meetings needed to monitor and further develop the plan in the funding proposal, along with funding required for harvest monitoring/health sample kits, and staff time to do the monitoring, and to have a check point.

Question 8: Are visitors allowed to harvest?

- You can't restrict people from hunting. But a protocol is needed for visitors to check in with the ʔehdzo Got'ı̨nę.
- Non-Sahtú beneficiaries will have an authorization card - but will still need to check in with the ʔehdzo Got'ı̨nę.
- Other Sahtú harvesters can have an allocation of caribou (to be discussed). They will need to check in with the ʔehdzo Got'ı̨nę and report their harvest - the Sahtú Renewable Resources Board and ENR need to figure out how to deal with this.
- In reviewing the harvest study map, it was noted that Fort Good Hope, Norman Wells and Tulít'a participants were harvesting Bluenose East ɂekwę́ during the period 1998-2005, and may request an allocation.

Question 9: How are Délı̨nę Got'ı̨nę going to be authorized to harvest?

- It's straightforward - we said that we were going to keep to the harvest of 150, it's in the plan.
- The ʔehdzo Got'ı̨nę can have a written and signed agreement with individual hunters that they agree to respect Délı̨nę Nátsezé ʔeɂa. The name of the person and the form will be kept confidential. This is a new idea, but the Délı̨nę ʔehdzo Got'ı̨nę can explain that this is the means for them to put the policy into action.
- There can be a blacklist for people who don't respect the plan and won't be eligible for ʔehdzo Got'ı̨nę support (gas, groceries, etc).

Question 10: How will health sample kits be organised?

- 100 health sample kits have been prepared so far.
- ʔehdzo Got'ı̨nę staff will be in charge of administering kits, including documentation, with support from SRRB and ENR staff.

- A workshop on health sample kits will be held, and technical resources people will join a hunt with experienced hunters and youth to develop knowledge about the how the kits can work.

Taking Care of Caribou

The

CAPE BATHURST, BLUENOSE-WEST, AND BLUENOSE-EAST BARREN-GROUND CARIBOU HERDS MANAGEMENT PLAN

Advisory Committee for Cooperation on Wildlife Management

November 3, 2014

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About the ACCWM
The Advisory Committee for Cooperation on Wildlife Management was established to exchange information, help develop cooperation and consensus, and make recommendations regarding wildlife and wildlife habitat issues that cross land claim and treaty boundaries. The committee consists of Chairpersons (or alternate appointees) of the Wildlife Management Advisory Council (NWT), Gwich'in Renewable Resources Board, Ɂehdzo Got'ı̨nę Gots'ę́ Nákedı (Sahtú Renewable Resources Board), Wek'èezhìi Renewable Resources Board, Kitikmeot Regional Wildlife Board, and Tuktut Nogait National Park Management Board.

About this plan
The ACCWM decided to develop a plan for the Cape Bathurst, Bluenose-West, and Bluenose-East barren-ground caribou herds. While the immediate need for the plan was in response to reported declines in the herds, the intent is for the plan to address caribou management and stewardship over the long term. This plan was developed in consultation with most of the communities that harvest from the three herds. The ultimate goal is to ensure that there are caribou today and for future generations. The management goals are to maintain herds within the known natural range of variation, conserve and manage caribou habitat, and ensure that harvesting is respectful and sustainable. This Management Plan is a working document used in developing specific management tools such as Action Plans for Cape Bathurst, Bluenose-West, and Bluenose-East barren-ground caribou. Both the Management Plan and following Action Plans will be updated and revised as new information becomes available.

Photo credits: Cover: Bluenose-West caribou, Dave Stewart, Inuvialuit Communication Society; p. 1: Woman cutting caribou – Deborah Simmons, SRRB; p.4: Meeting in Gamètì – Jody Snortland-Pellissey, WRRB; p. 9: Harvesters meeting in Kugluktuk – Mathieu Dumond, GN, p. 12: Watching caribou – Deborah Simmons, SRRB; p. 14: Bull caribou, Richard Popko, ENR, GNWT; p. 18: Learning to field dress caribou – GNWT (Aklavik); p. 20: Cape Bathurst caribou – Kristen Callaghan, GRRB; p. 27: Counting cow:calf ratios – Dave Stewart, Inuvialuit Communication Society; p. 39: Data clerk and harvester, NWMB; p. 53: Community member speaking at engagement in Whatì, Jody Snortland-Pellissey, WRRB; p. 55: Caribou at twilight, Danny Allaire ENR, GWNT.

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1.0 Preamble

This plan is called *Taking Care of Caribou*. People of the Northwest Territories and Nunavut have an interest in wildlife as a natural resource and a responsibility for stewardship of wildlife and habitat. For as long as Aboriginal people have harvested caribou, they have felt a responsibility to take care of the caribou as related in many oral histories.[1] Barren-ground caribou and the Aboriginal people of the North have a complex and ancient history – the abundance and health of the caribou have profoundly influenced the distribution, health and well-being of the people. Harvesting continues to be fundamental to the cultural, social, spiritual and economic well-being of many of the communities of the NWT and Nunavut.

"It's very hard for elders to express their feelings when they are asked about caribou. I have feelings for the caribou. We really take care of the caribou...." (Délįnę)

Traditional harvesting practices that show respect for caribou help to keep a balance between harvesters and caribou. These traditional practices are a way of taking care of the caribou. However, elders recall times when caribou were scarce and people searched out other species – for some regions it was moose and for others it was fish. Their knowledge indicates that caribou populations have natural cycles.

"It would be great to have elders advising decisions on the future of the caribou. We still rely on caribou because our ancestors really survived on it. Our ancestors had travelled all the way to the barren lands to harvest caribou for clothing". (Behchokǫ̀)

Communities in the range of these three herds – the Cape Bathurst, the Bluenose-West, and the Bluenose-East – have been engaged for their input and knowledge. During community engagement meetings, many participants expressed concern about how historical events, modern practices, and changing cultures have affected the relationship between Aboriginal people and caribou. In the past, as now, taking care of caribou has been about managing human actions to sustain healthy caribou populations. The challenge is to create a plan that respects Aboriginal rights and finds a balance between the resources we use today and the resources we leave for future generations. A further challenge will be funding the implementation of the plan. As always, actions are limited by available funds and capacity.

[1] In this document the term 'Aboriginal' is intended to be inclusive of First Nations, Inuit and Métis people. This is in accordance with the definition used in the Constitution of Canada.

For decades, Aboriginal people have worked hard to settle their comprehensive land claims so they would have greater control over their land and their lives. The treaties and land claim agreements provide for certain rights for both the ability and the responsibility to manage wildlife. These land claim agreements also provide for ways that non-Aboriginal Canadians can participate in stewarding public resources such as caribou through co-management boards and public input into management decision making.

The results of scientific studies and observations by some caribou harvesters and elders indicate that barren-ground caribou herds in the western arctic declined in the early 2000s. Although there is no consensus on the extent or cause of the decline, all agree that caribou are an essential resource and central to the social, economic, cultural, and spiritual well-being of the local people. Considering what is at stake, it is important to have a plan to sustain these herds so we may have caribou for future generations.

The Advisory Committee for Cooperation on Wildlife Management (ACCWM), made up of six wildlife management boards, was established in 2008.[2] It decided, as a matter of priority, to form the Bluenose Caribou Management Plan Working Group (BCMPWG or the Working Group) to develop a plan for the three caribou herds. This plan was developed with involvement by the 17 communities, in six land claim areas, that harvest these caribou.

During the planning process, the Working Group heard many different voices and perspectives on caribou and the issues facing caribou herds and harvesters today. Throughout this plan there has been an effort to respectfully acknowledge, understand, and include these perspectives, in order to make the best decisions for the caribou. Because there was an interest to keep the written plan as concise as possible, two supporting documents are also available:

- An Environment and Natural Resources (Government of the Northwest Territories) companion document ("Technical Report on the Cape Bathurst, Bluenose-West, and Bluenose-East Barren-Ground Caribou Herds") that provides more detail on herd status and scientific research (referred to here as the '***Scientific Report***'); and
- A summary of information recorded during the community engagements (referred to here as the '***Community Report***').

[2] Throughout the Plan ACCWM member boards are referred to as "wildlife management boards". The term "wildlife managers" is inclusive of: Aboriginal, territorial and federal governments, land and resource management boards, wildlife management boards, Renewable Resources Boards, Renewable Resources Councils, Hunters and Trappers Committees and Organizations, and Regional Wildlife Organizations.

Each of the companion reports provides more detailed information on many of the topics discussed here. While it would be desirable to include more sources of traditional and local knowledge in the supporting materials, the community summary only includes information that was documented during the community engagement sessions, and does not represent a formal traditional knowledge study. This is work that remains to be done in all regions.

2.0 Background to this Plan

"Call all groups together…so we can work together. It need not involve a hundred people but we need to start talking." (Inuvik)

"It hurts to see less caribou because we need them for so much. We here have caribou as food – we just take what we need. We talk among the community and discuss what's needed."(Délı̨nę)

"It's a hard issue to think about or deal with. Harvesting caribou is a tradition. I hunt for my family and people in other communities, and share my hunt." (Kugluktuk)

2.1 Introducing the Plan

This plan describes:

- Principles and goals for taking care of the Cape Bathurst, Bluenose-West, and Bluenose-East caribou herds;
- The need for a plan and the importance of working together;
- Current population estimates and trends;
- Roles and responsibilities of the wildlife management boards;
- Information required to effectively take care of the herds;
- How to make management decisions that can impact herds;
- A framework for determining what management actions should be taken; and
- How to communicate with communities, harvesters, youth, and others.

In the interest of keeping the plan itself concise, a series of appendices – providing further information – are included at the end of this document. In addition, separate Action Plans implementing this Management Plan will also be available for each of the herds.

Overall, the Management Plan is conceived and written using a flexible approach, meaning that as new information becomes available, it may change which management decisions are made and implemented. The document is structured to provide both community and scientific perspectives throughout – including both scientific references and comments recorded during community engagements. Comments included here are not necessarily representative of a group or community, but only represent the view of individuals who spoke during engagements. After each quotation, the community in which the comment was recorded is given.

Some of the topics are controversial and finding agreement between different perspectives can be challenging. In these cases, we have summarized the differing points of view in a 'Hot Topic Box', and indicated how the ACCWM decided to move ahead while attempting to take into account these perspectives.

2.2 Working Together Now and Into the Future

Communities in many areas of the NWT and Nunavut have long-considered themselves stewards of the caribou. Today, responsibilities for the management of wildlife stem from settled land claims. Modern treaties give Aboriginal groups a significant say in land and resource management. They also clarify how parties will work together when making decisions related to resources. They rely on co-management – an approach in which Aboriginal, territorial federal, and public governments share authority and decision-making in the management and stewardship of resources.

In the NWT, wildlife management boards act as the regional authority for wildlife management when defined in settled land claims agreements. Membership of these organizations is typically comprised of members nominated by the federal, territorial and regional Aboriginal government and appointed by the federal government; appointments to the Wek'èezhìi Renewable Resources Board (WRRB) are made by each party in consultation with the other parties. In the Inuvialuit Settlement Region (ISR), this co-management role is fulfilled by the Wildlife Management Advisory Council (NWT). This Council and the Gwich'in, Sahtú and Wek'èezhìi Renewable Resources Boards act in the public interest to manage wildlife in their respective regions. They typically work closely with local councils which represent Aboriginal and local community interests in wildlife management. In the Gwich'in and Sahtú regions, the Boards work with local Renewable Resources Councils (RRCs). In the ISR, community Hunter and Trapper Committees (HTCs) and the Inuvialuit Game Council help fulfil this role. The Tłįchǫ Agreement provides the Wek'èezhìi Renewable Resources Board with authority to consult with Tłįchǫ communities as well as the Tłįchǫ Government, other governments and the public.

Tuktut Nogait National Park is located within the ISR and Sahtú Settlement Area (SSA), in the northeast corner of mainland NWT and was created primarily to protect the Bluenose Caribou herd(s) and their calving and post-calving habitat. The Tuktut Nogait National Park Management Board advises on all aspects of park planning, operations and management and makes decisions by consensus. The board includes appointees from the federal and territorial governments, four Inuvialuit authorities, and from the Délįnę Land Corporation.

In other areas of the NWT without settled land claims Aboriginal governments may have or may share responsibility for wildlife management through arrangements with the various territorial governments.

In Nunavut, the Nunavut Land Claims Agreement also resulted in lands and resources co-management bodies. The Nunavut Wildlife Management Board (NWMB) is the wildlife management board that is the main regulator of access to wildlife resources and manages the way wildlife is used by Inuit and other residents in the Nunavut Settlement Area. The NWMB consists of nine members who are appointed according to region, as well as appointees from the federal and territorial governments. The NWMB works closely with Nunavut's three Regional Wildlife Organizations (RWOs) and the territory's 27 local Hunters and Trappers Organizations (HTOs). The Kitikmeot Regional Wildlife Board is the RWO that is responsible for the regulation of harvesting practices among the seven HTOs of the Kitikmeot Region.

The ACCWM was established to "exchange information, help develop cooperation and consensus and make recommendations regarding wildlife and wildlife habitat issues that cross land claim and treaty boundaries." The ACCWM[3] consists of the Chairpersons (or alternate appointees) of:

- Wildlife Management Advisory Council (NWT) (WMAC (NWT));
- Gwich'in Renewable Resources Board (GRRB);
- ʔehdzo Got'ı̨nę Gots'ę́ Nákedı (Sahtú Renewable Resources Board (SRRB));
- Wek'èezhìi Renewable Resources Board (WRRB);
- Kitikmeot Regional Wildlife Board (KRWB); and
- Tuktut Nogait National Park Management Board (TNNPMB).

The ACCWM decided to develop a plan for the Cape Bathurst, Bluenose-West, and Bluenose-East barren-ground caribou herds.[4] While the immediate need for the plan was in response to reported declines in the herds, the intent is for the plan to address caribou management and stewardship over the long term. The ACCWM identified the need to:

- Develop a cooperative approach to managing for the herds;
- Protect the habitat in the herds' range; and
- Make decisions on the shared harvests in an open and fair manner.

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[3] The Dehcho First Nations organization is part of the Working Group. There is an outstanding invitation for them to join the ACCWM. The Nunavut Wildlife Management Board was a member of the ACCWM from 2008-2014 but withdrew as a member before completion of the Management Plan.

[4] There is a Memorandum of Understanding for Cooperation on Wildlife Management that outlines the mandate and process for cooperation among ACCWM parties. It is available from ACCWM members.

A previous co-management plan for the 'Bluenose caribou herd' was prepared in 2000. It also had extensive community and co-management board involvement from NWT and Nunavut, as well as the territorial governments. However, while it was used as a guiding document by ENR, the plan was never fully endorsed or implemented. The previous plan also distinguished between the Cape Bathurst, Bluenose-West and Bluenose-East caribou herds within one management plan. That plan was based on a management cooperation agreement for the three herds signed in 2000 by WMAC (NWT), GRRB, SRRB, TNNPMB and acknowledged by the GNWT and Parks Canada. This agreement was followed by a decision in 2005 by these parties to continue to manage as three herds based on information current at that time, while also recognizing that there may be a need to review the decision in future based on new information or considerations. These agreements and decisions helped to lay the foundation for the management framework of this plan, under the direction of the ACCWM.

As was clearly heard in community engagement meetings, people expect government and the wildlife management boards to work together, and with the communities, to ensure that there are caribou for future generations.

The ACCWM established a Working Group to:

- Prepare a draft plan for the Cape Bathurst, Bluenose-West, and Bluenose-East caribou herds and their habitat for recommendation to the ACCWM;
- Recommend an approach with respect to the shared responsibility for implementing the plan; and
- Promote and strengthen communication and sharing of information among all groups interested in, or responsible for, the management for these herds and their habitat.

The Bluenose Caribou Management Plan Working Group consists of representatives of:

- Wildlife Management Advisory Council (NWT);
- Gwich'in Renewable Resources Board;
- Ɂehdzo Got'ı̨nę Gots'ę́ Nákedı (Sahtú Renewable Resources Board (SRRB));
- Wek'èezhìi Renewable Resources Board;
- Kitikmeot Regional Wildlife Board;
- Kugluktuk Hunters and Trappers Association;
- Dehcho First Nations;
- Tuktut Nogait National Park Management Board;
- Tłı̨chǫ Government;
- Environment and Natural Resources (ENR), GNWT;
- Department of the Environment, Government of Nunavut;

- Nunavut Wildlife Management Board (NWMB); and
- Parks Canada.

The original Terms of Reference set up to guide the actions of the Working Group are outlined in **Appendix B**; a revised Terms of Reference is being developed for future Working Group work on Action Plans and Management Plan revisions. The mandates and website addresses for each of the Working Group members are included in **Appendix C**, along with a list of relevant land claim chapters or articles that refer to land and resource management responsibilities. Once the Working Group had finalized the Management Plan, it was submitted to the ACCWM for review. After this assessment, each co-management board of the ACCWM then followed their individual procedures as laid out in their respective land claim for review and approval of the final plan. After consideration and acceptance by the Ministers, the approved plan is to be implemented by the signatories to the plan and responsible governments.

3.0 How the Plan Was Put Together

This plan was developed in consultation with most of the communities that harvest from the three herds. Because these herds are shared across jurisdictions and among many communities, it is very important that everyone works together. It was necessary to seek the experience, input, and advice of all regions and communities. **Round 1** engagements were held in communities in the Inuvialuit, Gwich'in, Sahtú, and Kitikmeot regions in 2009 and 2010. These engagements were intended to:

- Share the best available information on the status of the herds, including scientific information, traditional knowledge, and harvester observations.
- Identify the key issues and concerns for each community, e.g. what do you think is happening to the herds? Why?
- Discuss possible solutions: What can we do to address these issues and concerns? How can we include this in a plan?
- Outline the next steps in developing a plan.

In **Round 2** engagements (2011), the draft plan was taken back to the communities for review, and attention was brought to management actions and thresholds for review and comment. There were no Round 1 engagements in the Tłı̨chǫ communities at the request of the Tłı̨chǫ Government, as the communities were undergoing a consultation on the Bathurst caribou at that time. Instead, Round 2 engagements included information that was discussed with other regions in Round 1, as well as presenting the information in the draft plan. No Round 1 or Round 2 engagements occurred in the Dehcho Region. While it was hoped that organizations and the public would be able to participate in the process, it was not possible to arrange the necessary meetings and presentations with the Dehcho First Nations.

During the review process of the second or revised draft plan (**Round 3**), members of the public were invited to comment on the draft (2011-2013). Major phases of developing the Management Plan are shown in **Figure 1**.

"Use traditional knowledge [to develop the management plan] – it's very important to our way of hunting." (Fort McPherson)

"It is great with the help of elders and communities, with agencies – we probably could revive the herd in no time." (Whatì)

"Local knowledge should be included with TK and science [in this plan]." (NWT Wildlife Federation)

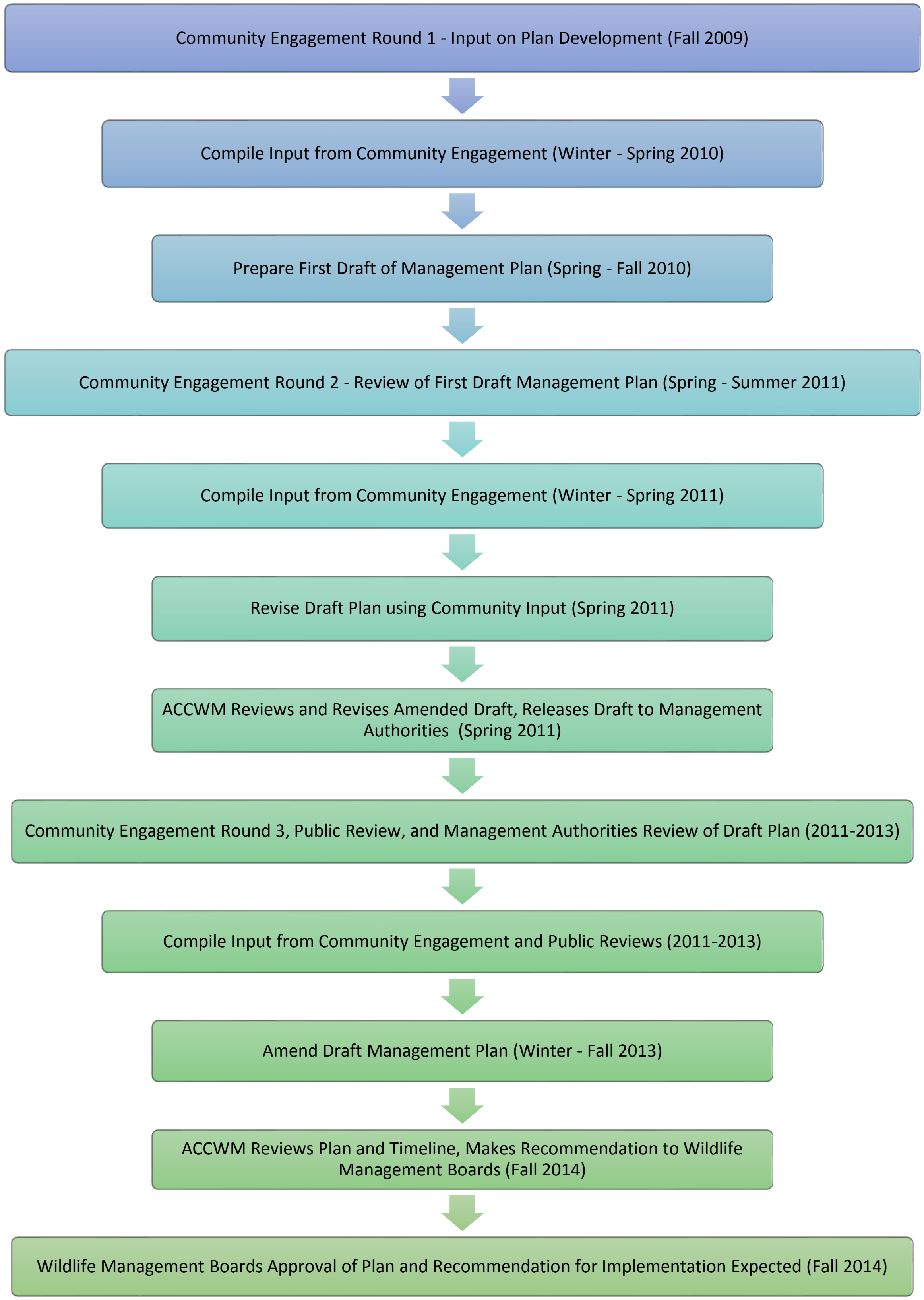

Figure 1: Flow chart showing major steps in developing the Management Plan.

In addition to the communities and regions engaged in Rounds 1 and 2, **Round 3** engagements included two meetings in the Dehcho Region; in January 2012 meetings were held with Pehdzeh Ki First Nation in Wrigley and the Liidlii Kue First Nation Harvester's Committee (Denedeh Resources Committee) in Fort Simpson to review the draft plan.

In addition, public meetings were held to invite comments on earlier drafts. Other groups that use or have interest in the Cape Bathurst, Bluenose-West, and Bluenose-East caribou herds and their habitat were also invited to comment on the Management Plan at various stages during its development and the draft was made available to the public on the ENR website in June 2011. During the public review phase of the plan, ENR distributed the draft plan to more than 100 organizations (see **Appendix D)**. Written input from the regional Renewable Resource Councils, the North Slave Métis Alliance, the Northwest Territories Métis Nation, and the Northwest Territories Wildlife Federation also helped to shape this plan. An inclusive, consensus-based approach was used throughout the process.

It was the responsibility of the individual ACCWM members to seek input from communities and regional organizations. As a result, the process differed somewhat between different areas and led to some overlaps in the timeline showing the major steps in developing the plan (**Figure 1**). In addition, ENR conducted public engagement sessions to receive input on the draft plan. Further details on the engagement and review process are available in **Appendix D**, as well as the companion ***Community Report***.

4.0 What We Are Trying To Do With the Plan

"You know we all settled our land claims so we could make decisions rather than government. We have responsibilities that government had in the past. Now we may need to make some difficult decisions, as part of the management plan."
(Inuvik)

"When I was chief in the past the herd was quite healthy. If we don't try to revive the herd, who's going to do it? We have to make a strong stand so we can be able to have good harvesting and monitoring."
(Behchokǫ̀)

The ultimate goal of this plan is to ensure that there are caribou for today and for future generations. The management goals are to:

- Maintain herds within the known natural range of variation;
- Conserve and manage caribou habitat; and
- Ensure that harvesting is respectful and sustainable.

The ACCWM believes in the protection and promotion of values and practices that respect wildlife and traditional lands. Respectful practices include traditional harvesting practices such as taking only the amount needed, using all parts of the caribou, sharing harvests with others, caring for the land and water that is shared with the caribou, and passing on traditional methods and beliefs to the next generation. The plan reflects the following principles:

- Management decisions will respect treaties and land claim agreements and Aboriginal harvesting rights in areas both with and without a land claim agreement;
- Management decisions will reflect the wise use of the herds in a sustainable and acceptable manner;
- Adequate habitat (quantity and quality) is fundamental to the welfare of the herds;
- Management decisions will be based on the best available information – including science, as well as traditional and local knowledge – and will not be postponed in the absence of complete information;
- Effective management requires participation, openness and cooperation among all users and agencies responsible for the stewardship of the herds and their habitat. Shared use requires shared responsibility;
- Harvests will be allocated in a manner which respects Aboriginal harvesting rights and the sustainable harvesting limit, if any, of each herd;
- The impacts to caribou herds and their habitat must be anticipated and minimized;
- Harvesting is fundamental to the cultural, social, spiritual and economic well-being of the communities of the Northwest Territories and Nunavut.

Measures of success will include the implementation of appropriate management actions, having herds fall within the known natural range of variation, and all users being able to harvest within sustainable limits. Objectives will be achieved by monitoring and then implementing management actions that are appropriate for given population sizes and trends. These measures will provide direction to Government and other funders, and will help inform the GNWT Caribou Management Strategy for 2015-2020.

5.0 What Caribou Are We Talking About

Barren-ground caribou occupying a large part of northern mainland NWT and western Nunavut are named by Inuit, Inuvialuit, Gwich'in, Dene and Métis peoples in their languages as a single kind of animal.[5] Brief descriptions of the relationships between the people and the caribou of these regions can be found in the ***Community Report***, as well as further details on how these understandings influence perceptions of management today.

As the federal government established a presence in the North and the number of newcomers increased, a new system of wildlife management was introduced. Scientific studies began to inform management decisions. From the 1960s to the 1990s scientists considered these barren-ground caribou a single herd and referred to them as the 'Bluenose caribou herd'. This name was based on a known calving ground near Bluenose Lake, located in the Kitikmeot Region of Nunavut near the NWT border. This lake is shown in **Figure 2**.

Since the mid-1990s, new scientific information and analyses have identified three distinct subpopulations, now known as the Cape Bathurst Herd, the Bluenose-West Herd, and Bluenose-East Herd within the range of the historical 'Bluenose' herd. The three herds were named after the traditional calving areas that they use in June. Information on distinct calving grounds, migration patterns, habitat use patterns, and affiliations of individuals help biologists and managers understand how caribou herds are structured. Further information about perceptions and definitions of caribou populations is included in a "Hot Topic Box" later in this section.

Figure 2 shows the annual ranges of these herds, including their respective calving areas.

Names for barren-ground caribou in the range of the Cape Bathurst, Bluenose-West and Bluenose-East herds include:

tuktut *(Inuvialuktun and Inuit)*

vadzaih *(Teetł'it and Gwichya Gwich'in)*

ʔekwę́/ʔepe/ʔedə *(Dene of the Sahtú Region)*

ekwǫ̀ *(Tłįchǫ)*

etthén *(Dënesųłiné)*

nódi/nodi *(South Slave Dene)*

[5] While barren-ground caribou are named as one herd, there are also complex naming systems within that concept that demonstrate knowledge of social relationships within herds (e.g., words for bull, young bull, pregnant female, barren female, etc.)

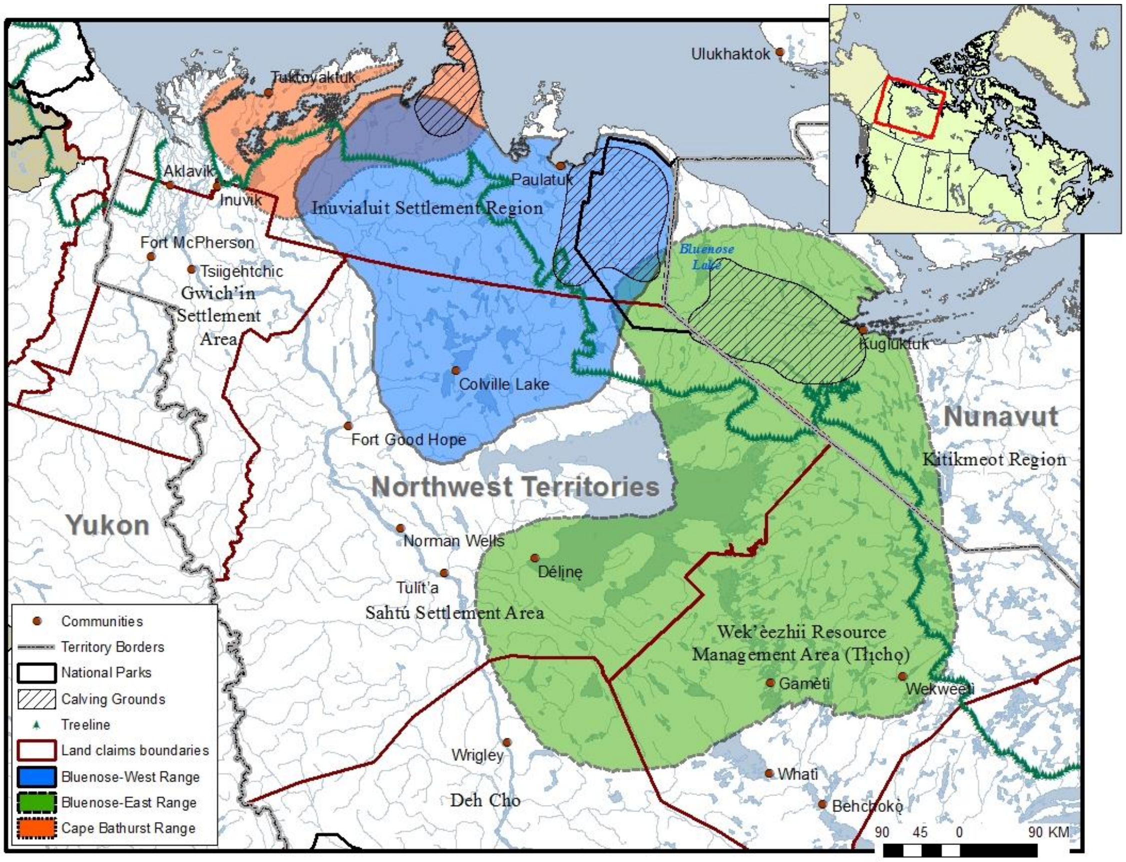

Figure 2: Overlapping annual herd ranges, based on data from collared cows between 1996 and 2008. Cross-hatched areas indicate calving grounds.[6]

After calving the caribou migrate southward, but each herd has a different pattern:

- Cape Bathurst: Cape Bathurst caribou calve on the Cape Bathurst Peninsula. After calving, they rut and winter inland on the tundra. They rut east of Husky Lakes, and winter in the Parson's Lake – Husky Lakes area and to the south.
- Bluenose-West: Bluenose-West caribou calve west of Bluenose Lake in Tuktut Nogait National Park and adjacent areas to the west. Collaring studies have shown that they migrate towards the treeline for the rut in October, and winter in the Anderson River and Colville Lake area.
- Bluenose-East: The Bluenose-East caribou calve east of Bluenose Lake in the headwaters of the Rae and Richardson rivers. Collaring studies have shown that like the Bluenose-West, these caribou also migrate towards the treeline for the rut in October, however they rut northeast of Great Bear Lake, and winter north, east, and south of Great Bear Lake.

[6] Nagy, J., D. Johnson, N. Larter, M. Campbell, A. Derocher, A. Kelly, M. Dumond, D. Allaire, and B.Croft. 2011. Subpopulation structure of caribou (Rangifer tarandus L.) in Arctic and sub-Arctic Canada. Ecological Applications 21(6), 2011: 2334-2348.

The population size and distribution of herds change over decades. The herd ranges shown in **Figure 2** are based on twelve years of tracking collared caribou cows within each herd. Bulls have also been collared, and early analyses of these data also show that collared bulls in a herd tend to use the same herd range year after year. Collaring programs provide more detailed information on caribou distribution than was available in the past. Although the three herds have distinct calving grounds, their ranges during other times of the year may partially overlap. Data from satellite-collared cow caribou show how these herds may overlap at times (**Figure 3**).

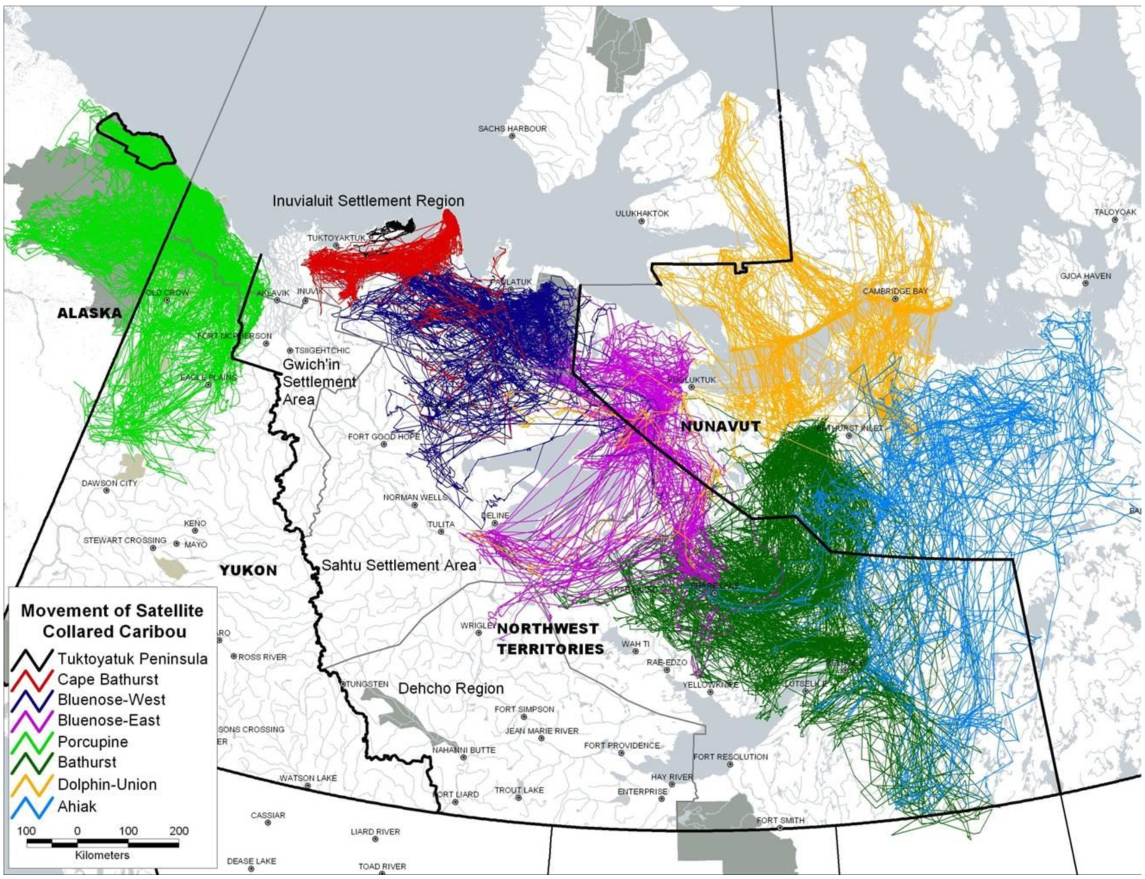

Figure 3: Movements of satellite-collared cow caribou in the Northwest Territories and portions of Nunavut, based on data collected between 1985 and 2007 (ENR-GNWT).[7]

Caribou of different herds may use the same land at the same time (e.g., Bluenose-East and Dolphin-Union herds may be found together in winter) or may use the same land at different

[7] Figure 3 shows lines connecting point data from collars. The years and numbers of collared animals were as follows: Porcupine Herd – 1985 to 2001 (57 individuals); Tuktoyaktuk Peninsula Herd – 2006 to 2007 (6 individuals); Cape Bathurst Herd – 1995 to 2007 (32 individuals); Bluenose-West Herd – 1995 to 2007 (45 Individuals); Bluenose-East Herd – 1995 to 2007 (29 individuals); Bathurst Herd – 1996 to 2006 (68 individuals); Dolphin-union Herd – 1999 to 2004 (23 individuals); Ahiak Herd – 2001 to 2006 (28 individuals).

times (e.g., Bluenose-West herd uses an area south of Tuktut Nogait National Park during spring migration, while Bluenose-East herd uses that area after calving). In some areas herd ranges overlap with boreal woodland caribou and reindeer. The amount of overlap can also change from year to year in both these cases. Seasonal overlap in herd ranges creates challenges in allocating appropriate harvest levels for each herd. As the overlap between herds can change from year to year, several communities harvest from more than one herd. Because of this, and because different land owners and wildlife management regimes have responsibilities for these herd ranges, a coordinated approach to management is required.

Hot Topic: Defining Caribou Herds

There are some differences in perspective about how best to define caribou herds for management purposes. Some Aboriginal harvesters and elders in community engagement sessions have made the case that ‘caribou are caribou’, and there are no real differences between some barren-ground caribou herds. On the other hand, based on recent scientific studies, wildlife managers in the NWT and Nunavut now recognize three distinct herds within the Bluenose range.

For the purposes of co-operative caribou management, the members of the ACCWM agreed to write one Management Plan that addresses the entire area of the three herds. Three associated Action Plans that provide specific management directives – for the Cape Bathurst, Bluenose-West, and Bluenose-East herds – are also being developed.

The ACCWM feels that considering the status of each of the herds, and considering current best practices in science-based management, this is the course of action that will best uphold principles of conservation, such as the precautionary principle. Scientific research about relationships among caribou herds is ongoing, and in combination with traditional knowledge may eventually give rise to new management approaches. Both science and TK recognize that throughout the evolutionary history of these caribou large scale shifts of ranges and calving grounds have occurred. Further research into genetic variation and into how herds use the land over time will help us understand how populations are defined and how they interact. There is more information on these topics in the ***Scientific Report*** and the ***Community Report***.

6.0 Who Harvests These Caribou

"My grandfather says that we were once caribou and caribou were once people. We switched when there was starvation. There are a lot of stories. In the past, not too long ago, some years there was no caribou, no meat." (Colville Lake)

"I was raised on the land and grew up with the caribou. I was taught how to look after my hunting and take what I have to. I was taught on the land. The caribou is a really sensitive animal and we do respect it." (Behchokǫ̀)

Due to their large range, these caribou cross through many cultural and political areas over the course of the year and are commonly harvested by Aboriginal and non-Aboriginal harvesters in the NWT and Nunavut. There are longstanding relationships among these peoples that have formed the basis for sustainable harvesting protocols. Some additional information on traditional and community knowledge of caribou, including ways of respecting and supporting caribou, can be found in the ***Community Report***. The herds harvested by each community in the Northwest Territories and Nunavut are summarized below.

The Cape Bathurst herd usually migrates through two settlement areas/regions and is typically harvested by four communities in the course of its annual cycle (**Figure 2**): Aklavik, Inuvik, Tsiigehtchic and Tuktoyaktuk.

The Bluenose-West herd usually migrates through three settlement areas/regions and is typically harvested by 13 communities (**Figure 2**): Aklavik, Fort McPherson, Tsiigehtchic, Inuvik, Tuktoyaktuk, Paulatuk, Colville Lake, Fort Good Hope, Norman Wells, Tulít'a, Délı̨nę, Sachs Harbour, and Ulukhaktok.[8]

The Bluenose-East herd usually migrates through four settlement areas/regions in the Northwest Territories and into the western portion of the Kitikmeot Region, Nunavut. The herd is typically harvested by nine communities (**Figure 2**): Wrigley, Norman Wells, Tulít'a, Délı̨nę, Whatì, Gamètì, Behchokǫ̀, Paulatuk, and Kugluktuk.

These caribou may also be harvested by people from other communities with rights or privileges to access the herds. For example, residents of Yellowknife historically harvested Bluenose-East caribou, and hunters may travel north from Fort Simpson, Łutselk'e, and other communities in the South Slave. Some herds have also been harvested by outfitters at times.

[8] Harvesters from Ulukhaktok and Sachs Harbour were not engaged as part of this Management Plan. While these communities are provided tags, any remaining tags are usually reallocated by the Inuvialuit Game Council.

The locations and movements of the herds changes over time. Many long-term harvesters describe how herds that were once traditionally available for harvesting now migrate too far from the community to be accessible and harvested economically.

Since the introduction of government regulations, there have been four categories of harvesting recognized in NWT and NU for each of the three herds – subsistence, resident, non-resident (i.e., outfitted), and commercial. However, after a series of community meetings in 2005/06, WMAC (NWT), the GRRB, and the SRRB recommended harvest restrictions to the ENR Minister. All resident, non-resident, and commercial harvesting stopped in March 2006 in the ISR and in October 2006 in both the GSA and the SSA. Resident and non-resident hunting last occurred in the Wek'èezhìi (Tłı̨chǫ Region) in 2009.

7.0 How Well Are the Herds Doing

"Caribou have cycles like rabbit and foxes." (Norman Wells)

"Not sure if it is a natural cycle or other reasons but I guess our job is to try to manage the best we can." (Tsiigehtchic)

"Caribou are now going to places where they shouldn't go. The changes may not necessarily be man-made; effects from industry may be part of the answer but we really don't know. Do you think it may have something to do with climate change?" (Fort Good Hope)

"[We are] concerned about the health of caribou." (North Slave Métis Alliance)

Understanding changes in caribou populations can be difficult. However, traditional and scientific knowledge agree that caribou numbers generally fluctuate over decades – which is defined as a population cycle. The length of the phases varies, particularly the length of time that a population stays at a low level. Scientific evidence, the journals of missionaries and trading post managers, and traditional knowledge all suggest that barren-ground caribou populations go through cycles that are 30-60 years long.

The cycle itself is not 'neat and tidy', nor is the cycle the same each time or easily predicted. The causes for these past or current population cycles in caribou are not well understood, but likely result from several factors such as habitat quality and quantity, predator populations, climate, parasites and disease. Different management actions may be called for depending on the phase of the cycle.

7.1 Scientific Survey Results

Aerial surveys from 1992 to 2006 indicated a long-term decline in the Cape Bathurst and Bluenose-West herds. The 2009 and 2012 surveys showed the two herds to be stable but still low in relation to historic high numbers. The Bluenose-East herd declined from 2000 to 2006 but the 2010 survey showed the herd appeared to be increasing, however the 2013 results show the herd declining again. Between 2008 and 2011, recruitment in the three herds was good (above 30 calves per 100 cows) and health and condition as assessed by harvesters was better in the 2010/2011 season than in the previous three years. However, the recruitment rates for the Bluenose-East herd were low in 2012 and low for Cape Bathurst in 2013; recruitment rates for the Bluenose-West herd were not assessed in 2012 and 2013.

Most estimated population sizes reported in this plan were based on surveys of non-calf cows and bulls when they are found together after calving. Surveys done this way rely on a tool called the "Lincoln-Peterson method" which uses the survey data to calculate the population size.

Using the same survey and estimation method from year to year allows for a better comparison of trends across herds and years. However, the Lincoln-Peterson method is just one tool that can be used to calculate population size and may tend to underestimate herd numbers compared to some other methods. Better ways of estimating herd numbers that do not have this bias are being investigated for use. In 2010 ENR (GNWT) used three different methods of estimating the Bluenose-East herd population size: a calving ground survey was done for the Bluenose-East herd, and the total population size was estimated from the breeding females counted on the calving ground; and the results of a post-calving survey were analyzed using the "Rivest estimator" in addition to the Lincoln-Peterson method. This allowed for a comparison of the three survey methods.

Details on the status of each of the herds follow; further information can be found in the ***Scientific Report*** as well as the ***Community Report***. The thresholds in the plan are currently based on historical highs and lows and many organizations, including ENR, requested clarity on how the thresholds were set. In order to address these comments, the Working Group required clarity from ENR about the pre-2000 estimates, and requested that ENR provide a statement that notes ENR's confidence level in the pre-2000 population estimates for the three herds. ENR's response to that request is in **Appendix E**.

Cape Bathurst Herd

The Cape Bathurst herd declined from an estimated high of approximately 20,000 non-calf caribou in 1992 to about 2,000 in 2005 and 2006 (**Figure 4**). The 2009 estimate showed the herd to be stable since 2006, but still low in relation to historic high numbers. The 2012 survey data indicated an estimated population size of 2,427 animals. This estimate is significantly higher than the 2009 estimate of 1,534 plus or minus 349 animals. Because all 24 collared Cape Bathurst caribou were found and photographed in 2012, the 95% confidence intervals for 2012 are equal to zero.

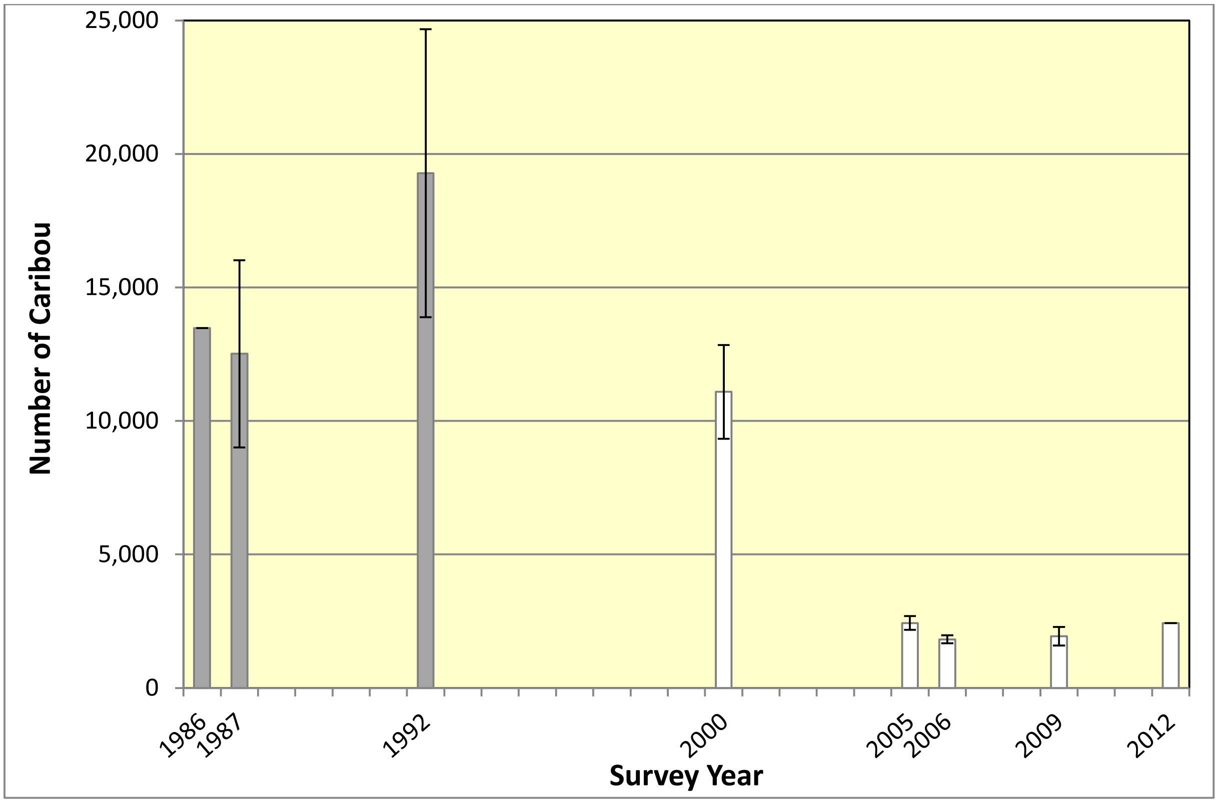

Figure 4: Cape Bathurst estimates, 1986-2012.

Note: There are two shades of colours used for the bars: prior to 2000 the three herds were surveyed as part of a single 'Bluenose Herd'; and that data was later reanalysed and separated into three specific herds. The reanalyzed data are shown in the gray bars in Figure 5 for the Cape Bathurst herd. From 2000 onward herd specific counts have been done; these data are represented by the white bars in the graph. All estimates were calculated with the Lincoln-Peterson method based on post-calving ground surveys and are shown with 95% confidence intervals.

Bluenose-West Herd

The Bluenose-West herd declined from an estimated high of over 110,000 non-calf caribou in 1992 to about 18,000 in 2005 and 2006 (**Figure 5**). The 2009 estimate showed the herd to be stable since 2006, but still low in relation to historic high numbers. In 2012, survey data for the Bluenose-West herd indicated an estimated population size of 20,465 plus or minus 3,490 animals (95% confidence intervals). The 2012 population estimate is not significantly different than the 2009 estimate.

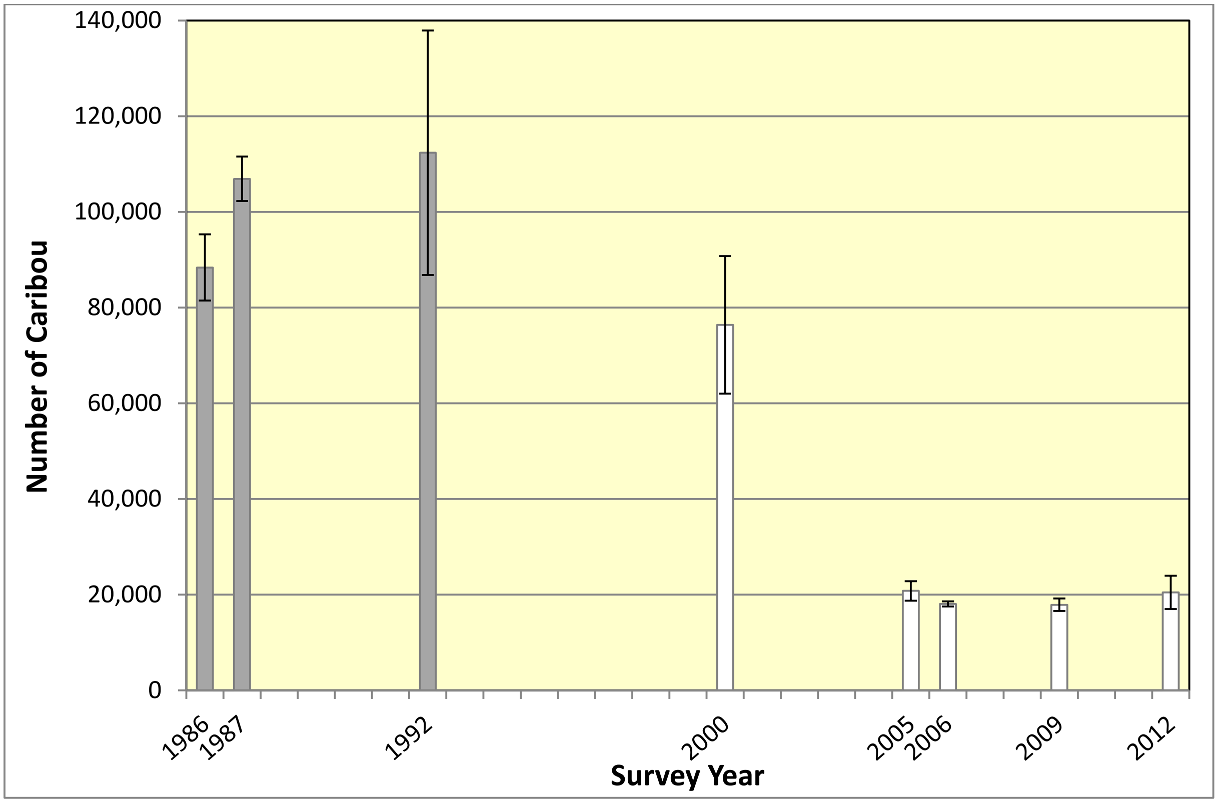

Figure 5: Bluenose-West estimates, 1986-2012.

Note: There are two shades of colours used for the bars: prior to 2000 the three herds were surveyed as part of a single 'Bluenose Herd'; and that data was later reanalysed and separated into three specific herds. The reanalyzed data are shown in the gray bars in Figure 5 *for the Bluenose-West herd. From 2000 onward herd specific counts have been done; these data are represented by the white bars in the graph. All estimates were calculated with the Lincoln-Peterson method based on post-calving ground surveys and are shown with 95% confidence intervals.*

Bluenose-East Herd

The **Bluenose-East Herd** varied from an estimated herd size of about 120,000 non-calf caribou in 2000 to about 67,000 in 2006. The herd size increased by 2010 when it was estimated to be 122,697 plus or minus 31,756 animals (95% confidence intervals). This estimate was calculated using the Rivest method and is preferred for the 2010 post-calving survey and for 2010 overall by the survey authors rather than the Lincoln-Peterson estimate calculation of 98,646 plus or minus 7,125 (95% confidence intervals) that is shown in **Figure 6**. The 2012 post-calving survey for the Bluenose-East herd was unsuccessful due to poor weather. Survey results from June 2013 based on a calving ground survey indicated a decline in herd size to an estimated 68,295 caribou plus or minus 18,040 (95% confidence intervals).

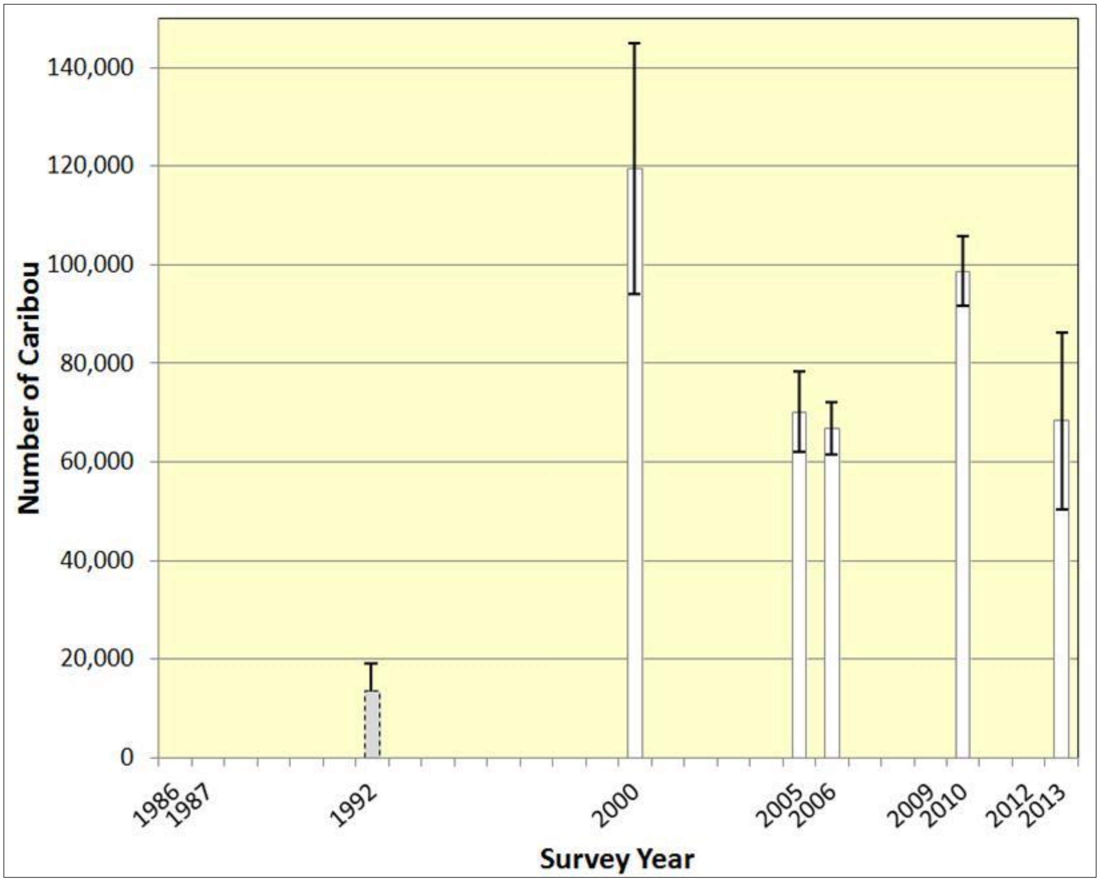

Figure 6: Bluenose-East estimates, 1986-2010.

Note: Prior to 2000 the three herds were surveyed as part of a single 'Bluenose Herd'; and that data was later reanalysed and separated into three specific herds. Of all caribou collared and areas surveyed, only six caribou were radio-collared in 1992 for the Bluenose-East herd; only five of those collared caribou were photographed and the Bluenose-East post-calving area was not extensively flown. This was insufficient to get a reliable estimate of the size of that herd, which is why the bar is dotted (data from the 2000 draft management plan). From 2000 onward herd specific counts have been done; these data are represented by the white bars in the graph. All estimates shown in Figures 4 through 6, except 2013 in this figure, are from post-calving ground surveys using the Lincoln-Peterson estimate calculation. The population estimate from 2013 is from a calving ground survey, which is a different method that extrapolates from the number of breeding cows found on the calving ground, unlike the post-calving ground survey that photographs both cows and bulls in post-calving aggregations.

Further information on herd estimates can be found in the ***Scientific Report***.

7.2 Community Observations

During the community engagements (2007-2013) observations about caribou population and distribution differed in different regions. While declines were reported in Fort Good Hope and

Kugluktuk, caribou were being seen more and more around Paulatuk, and people in Gamètì said that the population there had stabilized or was increasing. In Behchokǫ̀, there was possible indication of a large decline – elders said that a migration that used to take ten days took only two days in more recent years. For some communities the caribou had moved away and people were not seeing them as much. As a result, they couldn't say whether there had been a change in abundance. This was heard in parts of the Inuvialuit Settlement Region, the Gwich'in Settlement Area, the Sahtú Settlement Area and in Kugluktuk, Nunavut. In Wek' èezhìi (Tłı̨chǫ Region) there were differing perspectives about whether caribou numbers had declined. No information was recorded on these topics for the Dehcho Region, as there were fewer opportunities for community engagement there.

Caribou harvesters and elders indicated that caribou do cycle in abundance and change where they go from time to time. Because these cycles occur over several decades, it is difficult for short-term scientific studies to see them. It is also difficult for surveys to see large scale changes in migrations. This means that it can sometimes look like there is a decline, but it is actually part of what are considered natural cycles and changes in movement patterns. It is natural for caribou to 'go away' for some time and then come back again. Generally, people observed that while caribou populations may go down at times, in the past, they have recovered on their own. A "Hot Topic Box" on the following page provides more information about exchange or movement between caribou herds.

Changes in population, distribution and migration can be driven by things like changes in habitat, human activities or weather patterns. In many places, people said that weather had become unpredictable, increased activity out on the land had affected caribou migrations, the timing of migrations had changed, and sometimes caribou were seen calving in unusual areas. However, it was also noted in several communities that in areas where human disturbance had decreased, caribou had moved back into those areas.

Since the 1970s, a change in distribution has happened around Paulatuk – caribou now stay around the community more in the fall and winter than they used to. They were reported to be there year-round during the time of the ISR community engagements (2009-2013). In the ISR, there were also observations that caribou were spending more time in the treeline and less time out on the tundra. Other distribution changes were noted, like in the Sahtú, where caribou were not seen in some of the places they used to be in the past, and recently they have been found further north and east than before. Délı̨nę participants said that the timing of the migration had shifted to two weeks later in the fall. In Behchokǫ̀, migration timing may now also be one month later in the fall. In more than one region caribou were seen in smaller groups than in the past.

In most communities, people reported that fewer caribou were being harvested than in the past, whether due to harvest regulations, difficulty of the harvest, or changing traditions. However, though there is a possibility that harvest may be having less of an impact on caribou, other changes on the land – such as fire, mining exploration and development – had increased and could be impacting caribou more than before. There is further information on these topics, as well as many other observations about changes in caribou, caribou habitat and harvesting, in the ***Community Report***.

Hot Topic: Exchange or Movement between Caribou Herds

Traditional knowledge holders have suggested that large numbers of animals may be moving from one caribou herd to another. There is some scientific evidence that there is a degree of herd exchange or 'inter-herd movement' that can occur – for example, a cow may calve in a non-traditional or new calving area at times, and bulls have been known to wander long distances.

There is no current scientific evidence that herd exchange is widespread, occurs at high rates, or occurs when population levels are low or in decline. To date all scientific research indicates that this is a relatively rare event that only tends to occur when a herd is expanding its range. It is impossible to scientifically answer whether animals moved from the Bluenose-West to Bluenose-East herds between 1992 and 2000 because it was not possible to get an estimate of the Bluenose-East herd in 1992, and surveys were not conducted over most of what is now recognized as Bluenose-East range. Collared cows seem to trade calving grounds at a rate of about 3% (see further details in the ***Scientific Report***).

An independent analysis of the available information found that "... no data support the competing hypothesis that all caribou should be treated as one herd, nor that mass movements between herds have demonstrably occurred." (Fischer et al. 2009: 18).* It went on to point out the following:

> The precautionary principle requires that caribou management decisions should be based on the existing evidence suggesting a decline, until such time that more and better data are available to make definitive conclusions regarding barren-ground caribou populations. (Fischer et al. 2009:35)

While there are factors which make precise estimates of herd population levels difficult, the ACCWM is using the results of the aerial surveys among other available evidence as indicative of the changing status of these herds in recent years for the purposes of this Management Plan. The large changes in population levels of these herds are generally consistent with the trends of other circumpolar caribou. Managing land use and human activities on the basis of a decline in these herds is the wisest approach based on existing data and the precautionary principle. The ACCWM members acknowledge that this remains an unresolved issue at the present time, and that further research – especially genetic studies – can provide insight into relationships among caribou populations.

* Fischer, J.T., L.D. Roy, M. Hiltz. 2009. Barren-ground caribou management in the Northwest Territories: an independent peer review. Report prepared by the Alberta Research Council, Vegreville, AB. 53pp.

8.0 What and How We Monitor

Caribou herds can vary over time, with periods of abundance and periods of scarcity. The size of a herd and the health of its animals are influenced by factors that can work in combination, such that the total or cumulative impact may be different from that which occurs from each factor on its own. These impacts may be either positive or negative. Through carefully designed and research question-driven monitoring programs, communities and scientists can collect information about changes in the herds, and in ecological factors that affect caribou numbers and health. It is important to involve scientists, communities and industry to include the perspectives of both science and traditional knowledge in monitoring.

Monitoring is not a new concept to Aboriginal people, who have traditionally monitored both herds and socio-cultural practices related to harvesting. Some of the ways that communities monitor are through experience on the land and sharing those experiences. When hunting, people observe both caribou and harvesting practices, according to a number of criteria based on their traditional law. New information is interpreted in the context of stories and knowledge passed down through generations and shared within and across communities. From a community perspective, monitoring includes not just observations of caribou, but other discussions about what is taking place on the land, such as harvesting and sharing practices.

Scientific monitoring methods use representative samples of data to make inferences about populations. For example, collecting back fat measurements from individual animals can indicate herd health, and a systematic collection of photographs from a photo survey can help estimate herd numbers. Scientific methods also rely on ways of 'testing' or estimating the reliability of the information. Repeated estimates made from monitoring can help gauge the status of the population and of trends to inform management decisions. Timing of monitoring efforts may differ, depending on which questions are being asked, and other factors such as how well the herd is doing. Communities and scientists can cooperatively monitor caribou health and herds in many ways.

"Count caribou when they are migrating at traditional water crossing sites. We need a specific management plan for each area and within these plans we need accurate harvest reporting." (Tuktoyaktuk)

"There are other ways that the caribou are seeming to disappear. Late freeze-up causes deaths by falling through the ice. Are you monitoring these things?" (Gamètì)

"…it would be useful to have something that encourages hunter feedback about where caribou are, and what condition they are in." (Fort Simpson)

People who are regularly on the land can provide specific information, such as observations of caribou movement patterns and health, as well as assist with sample collection, surveys, and detailed mapping information. Today, there are programs in parts of the NWT and Nunavut that rely on information collected by community members. For example, community members participate by presenting information and taking part in discussions, as well as other types of knowledge exchanges. Currently, this takes place during annual meetings of the Porcupine Caribou Management Board to determine herd status; through information gathered by the Arctic Borderlands Ecological Knowledge Co-op; and during community caribou monitoring programs as well as harvest monitoring programs, such as the Inuvialuit Settlement Region – Community-Based Monitoring Program and caribou-related projects supported by the NWT Cumulative Impacts Monitoring Program. New technology is also helping to further bridge the gap between scientific methods and traditional methods of monitoring. In the Nunavut Wildlife Management Board Community-Based Monitoring Network, traditional land users use hand-held devices to record harvests and observations while on the land. As a result, they can provide data in a format that can be used for decision-making and wildlife management.

Monitoring information, frequency, and ways of collecting information are described here, and summarized in **Table 1** at the end of section **8.0**.

8.1 Assessing Herd Status

At both the herd and individual caribou level, specific information is critical in assessing how well the herds are doing. This includes such factors as population size and trend, recruitment, bull-to-cow ratios, body condition and health. Beyond information on caribou at the individual and herd level, there is important ecosystem-level information that should also be considered. This can include factors such as predation, habitat quality and quantity, and disturbance due to human activity that may limit the herd's access to parts of its range. Long-term research and monitoring of these factors will allow management actions to be more proactive.

The topics presented here are based on scientific knowledge and traditional knowledge, and were developed and shared by participants during community engagement meetings used to develop this Management Plan.

8.1.1 Population Size – Number of Animals

A major factor used to assess how well the herds are doing, and a key consideration when recommending the harvest for a herd, is the estimated number of animals in a herd (population size). Biologists conduct aerial surveys of these herds by taking photographs either during or soon after the calving period when the caribou are found close together or "aggregated". The number of caribou in the photographs is determined and this is used to estimate the total number of adult caribou in the herd. Calves less than one year old are not included in the estimate of population size because of their high death rate experienced over the first year of life and due to difficulty counting them accurately from the photos. **Figure 7** includes an example of how scientists use aerial photos to count caribou. While photo surveys are commonly used, there are also other methods of counting caribou. Ways of counting using remote sensing are also currently being explored. Some issues around caribou collaring are described in a "Hot Topic Box" on the following page.

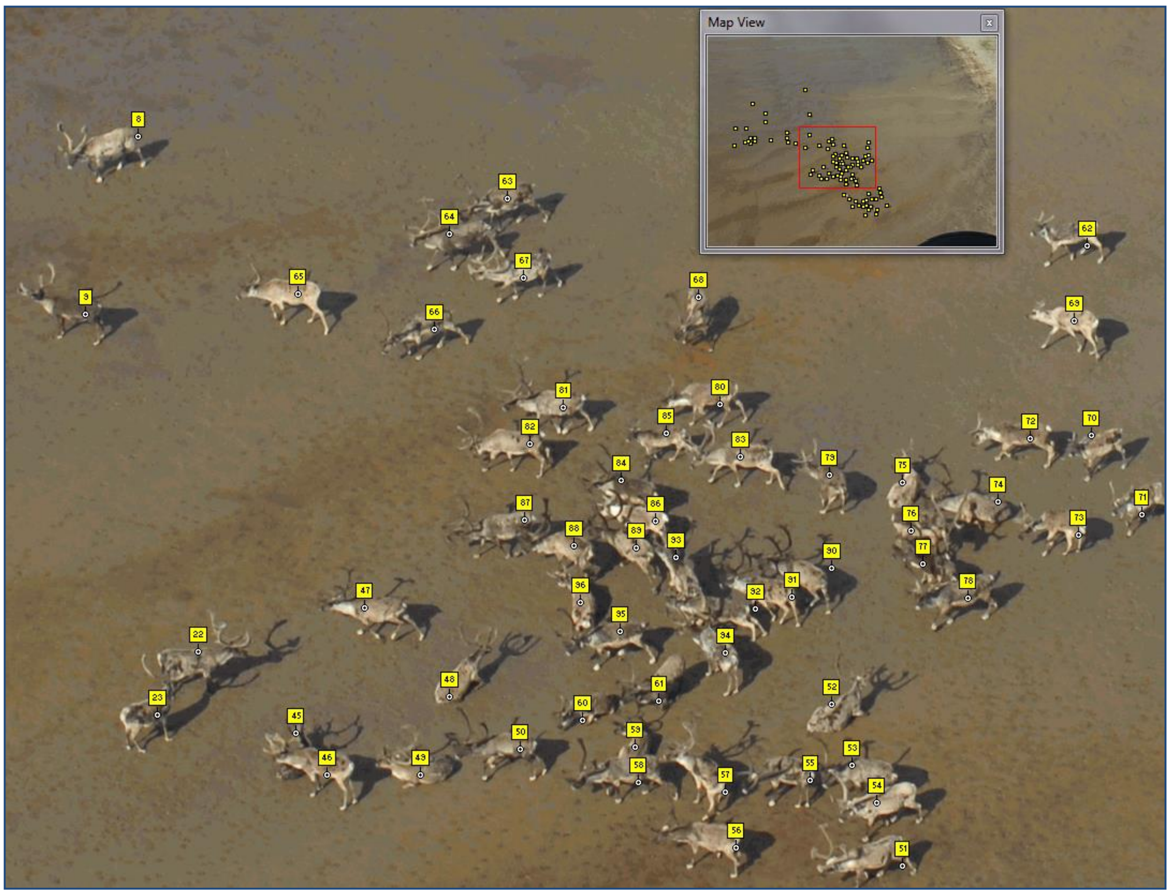

Figure 7: Picture showing how scientists may count caribou on aerial photographs. Groups of caribou are photographed and each group's location is recorded. Afterwards, individual caribou in each located group are counted by marking every caribou in each photograph (yellow markers).

Community members and harvesters provide important information on herd size through observations and experiences with caribou on the land. These observations are often relative – comparing year-to-year and across the caribou's range, through sharing information with other communities – for example, to understand if they are seeing changes in distribution or seeing a herd expanding or contracting its range.

Hot Topic: Caribou Collaring

Putting radio collars on animals like caribou can provide information that is currently impossible to get in other ways. Scientists have learned a lot about large scale caribou movements and ecology from this information.

Some of the criticisms of collaring are that it is stressful for the animals; it provides detailed information, but only from a small number of caribou in a herd; and it costs a lot of money. Communities suggest that it is important to limit the stress related to capture and wearing collars, particularly in the spring, when females are carrying calves. There may also be opportunities to collect supporting data through less invasive methods, like surveying caribou during their migrations at traditional water crossing sites.

For the management recommendations in this plan, the ACCWM acknowledges that there needs to be a balance between getting good scientific information and not overly stressing animals; that collaring caribou is just one way of gathering information; and that local knowledge can be incorporated in research methods to improve information while minimizing herd disruption.

8.1.2 Population Trend and Rate of Change

The trend or the rate of increase or decrease (decline) is also a key indicator of herd status. Trend can be determined by comparing herd size estimates over many years. When a population estimate is not possible, we can look at other data to help determine the trend, such as recruitment, body condition and health, and bull-to-cow ratio. Information on the trend of a caribou herd over the long term can be provided by traditional knowledge as observations of changes in abundance and distribution, which are often linked. For example, when caribou are at low numbers they often don't occupy all of the same areas as when they are abundant.

Female survival estimates can also help determine the trend and are important in interpreting recruitment and bull-to-cow ratios. This is discussed in more detail in the ***Scientific Report***.

8.1.3 Productivity and Recruitment – How Calves are Doing

'Productivity' is the number of calves that are born. Scientists can look at the numbers of calves on calving grounds using aerial or ground-based surveys. They can also collect information on pregnancy rates from blood samples either taken by hunters or during capture work that is part of collaring.

'Recruitment' refers to the number of calves that survive to one-year of age and is evaluated in the spring based on the number of these calves per 100 cows. These ratios, while informative, are often difficult to interpret as they are influenced by changes in cow mortality (death rates) from year to year. Therefore it is important to have estimates of annual cow harvest in order to interpret recruitment rates as accurately as possible. Typically, recruitment rates are low before the number of animals in a herd begins to decline, whereas high recruitment rates, particularly several years in a row, may indicate an increase in herd size. Monitoring can be done by scientists and by harvesters who can provide information on the number of calves observed in relation to the number of cows.

Harvesters or other community members on the land can make observations of relative numbers of young caribou seen as compared to other years in the spring. They also notice the occurrence of twin foetuses or dry cows. These observations are another helpful way to gauge changing proportions of young caribou to adult caribou from year to year, especially when such information is shared across the distribution of the caribou's range.

8.1.4 Adult Composition – How Bulls and Cows are Doing

Part of monitoring overall herd structure is by looking at adult composition, or the number of bulls and cows. This helps determine if there are enough bulls to impregnate cows. It is important to establish a baseline and monitor when the herd is low and if a bull-dominated harvest is implemented. The natural death rate for male caribou is higher than that for females, so even in non-harvested herds there are usually fewer bulls than cows (see ***Scientific Report***). This is not usually a concern, as bulls can mate with many cows within the same season.

Scientists do aerial and ground-based surveys during the rut to collect information on the numbers of bulls and cows. Harvesters or other community members make observations of relative numbers of bull and cow caribou seen as compared to other years, mostly during the fall.

8.1.5 Body Condition and Health

The health and condition of individual caribou can affect productivity and survival of calves and adults. The CircumArctic Rangifer Monitoring and Assessment Network (CARMA) has developed protocols for measuring body condition and health of caribou. The least intensive (Level 1) measurements can be easily done. Sample kits may be provided to harvesters to measure or collect: pregnancy information (presence of foetus), back fat thickness, left kidney and fat to assess contaminant levels and condition, body condition score, lower front teeth for age determination, and location, date and sex of the animal harvested. It is most useful to collect Level 1 measurements on an annual basis. Harvesters may also submit samples for disease and parasite testing at any time to the responsible government agency. More intensive measurements (Level 2 or 3 protocols) of body condition and health, including disease and parasites, should be done by scientists and harvesters during a community hunt but on a less frequent basis (every three or five years).

Community members typically have an overall impression of the condition of caribou through harvesting, field dressing (skinning, gutting, etc.) and preparing or fixing the meat. Body condition information collected by community members, harvesters and scientists provides information about caribou health, which can be used as supporting evidence when predicting or confirming changes to the herd size and trend.

8.1.6 Harvest Levels and Practices

Harvesting has a direct impact on caribou numbers and accurate information on the harvest levels of all user groups is very important for making decisions and justifying management actions. Estimating how many animals are being taken out of a herd (e.g., through harvest and predation), is as critical as understanding how many animals are coming into a herd (e.g., through recruitment). In addition to knowing the total number harvested, it is also important to know the proportions of animals harvested – how many cows, calves or bulls are taken. Harvest information can be straightforward to collect compared to something like wounding loss (animals that are wounded but not retrieved). While this is also important, it is very difficult to measure. Because there may be differing perspectives on harvesting and harvest monitoring, we have included a “Hot Topic Box” on the following page.

There is a strong desire amongst wildlife managers, as well as the harvesters who attended the community engagement sessions, to have continued harvest monitoring programs and to establish (or re-establish) programs in each region. Efforts to make these programs as effective as possible in addressing the needs of both communities and managers are ongoing. Further details about harvest monitoring programs to estimate resident, non-resident, commercial, and subsistence caribou harvests are included in the ***Community Report*** and the ***Scientific Report*** that accompany this Management Plan.

During the community engagement meetings, it was very clear that communicating, teaching, and practising traditional, respectful ways of harvesting is a priority for many people. In addition to monitoring harvest levels, communities could report on how well they’re doing in regards to respectful harvesting practices at annual meetings. It is important that there is continuous, reliable, long-term information on harvesting to better understand how it can influence herds. Harvesting is also an important way of sustaining relationships with the caribou and through that, providing opportunities to obtain knowledge and data. An effective overall monitoring program will require good communication and sharing of information between regions and wildlife managers. Analyses of both population data and harvest data can then be used to develop sustainable harvest recommendations.

Hot Topic: Perspectives on Harvesting and Harvest Monitoring

Differences in perspectives of harvesting in Aboriginal and scientific communities can lead to sensitivity about approaches to harvest monitoring. The relationship of Aboriginal harvesters to animals like caribou is complex – rooted in traditional culture and spirituality. Harvesting can be seen as having both direct and indirect effects on populations. In the opinion of many hunters, they have always played a positive role as managers of the herds by harvesting them according to specific rules of use, and maintaining caribou numbers within the carrying capacity of the habitat. Traditional monitoring methods still strongly inform decisions about where, when and how much to harvest. At times when caribou are absent or in low numbers, harvesters switch to other food sources, helping herds recover. In many cases, traditional knowledge teaches that harvesters and other predators "keep the herds healthy" by hunting, and in the absence of respectful harvesting, the populations may go away, hence hunting restrictions are seen to jeopardize the relationship of hunting and healthy herds. These and other factors can make people reluctant to report their harvests.

To make informed management decisions, it is helpful to know how and why caribou populations are changing in number, what factors increase numbers and what decrease numbers. Therefore, harvest data are an important part of understanding caribou because they increase understandings of caribou mortality rates. Management goals are usually to maintain caribou numbers so they can support harvesting and ensure that caribou herds will be sustained over the long term. This may include goals of keeping herds stable, or to increase or decrease their numbers, depending on herd status and how they are relating to their environment. Because harvesting is done by people, it can be more easily understood and controlled than other natural factors that affect caribou mortality (e.g., weather and climate impacts, habitat conditions, predation rates, etc.). Monitoring and regulating harvest are some of the important tools used to understand caribou and their mortality rates and to help accomplish management goals.

This plan attempts to reflect a number of shared perspectives about harvesting, such as:

- Harvesting can be beneficial to caribou herds even though it directly reduces herd numbers.
- Understanding the relationship between habitat and caribou numbers is a crucial part of monitoring programs.
- Respectful harvesting has a role in management that may not be fully understand or agreed upon.
- There are different approaches to monitoring caribou and harvesting – from informal systems developed by communities over generations of living with caribou, to more formalized harvest data collection programs as required by land claims agreements.

In all situations, there is an important role for community organizations, including Renewable Resources Councils and Hunters and Trappers Organizations where they exist, in order to develop a strong approach to monitoring.

8.1.7 Predator Populations

Predators affect caribou behaviour and mortality. Some predators take caribou only during the calving period (e.g., eagles) and some only during the spring to fall period (e.g., grizzly and black bears). Wolves prey on all age classes of caribou and the rates may vary by season.

Predator numbers decline as herds decline but usually there is a delay of one or two years; if other prey species are available, predator numbers may not decline at all. When caribou numbers begin to decline, the impact of predation may become proportionately greater. This was reported from several communities.

Caribou users have requested increased monitoring of predator populations, measurements of predation, and assessments of the impact of that predation on the herds. Predator condition may be monitored in the NWT and Nunavut through carcass collection programs, and predator abundance and predation rates can be monitored through community and/or scientific research programs.

8.1.8 Caribou Range and Movement Patterns

Barren-ground caribou use different geographic areas to meet their seasonal requirements. These are referred to as 'seasonal ranges'. In winter, the preferred habitat of the Bluenose-West and Bluenose-East herds is boreal forest, where snow packs are not as deep and lichen is easier to get at. The forest also provides some protection from predators and wind. The Cape Bathurst herd winters near the treeline, with many animals staying on the tundra all winter, pawing through snow to find lichen.

In spring, all caribou migrate towards their calving grounds. These are typically open areas of tundra, where cows can see predators approaching and where there is abundant feed for young calves. Bulls, and cows that aren't calving, also go to open areas of tundra at this time of year, but might not make it all the way to the calving grounds. In the summer, caribou are influenced greatly by insects, seeking windy, cooler places as insect relief. Later in the summer, caribou begin to migrate back towards the winter range. Some other factors that influence habitat selection are insects, fire and human disturbance. More information on caribou habitat is included in the ***Scientific Report***.

Monitoring where caribou are present and absent as well as how and when they move across their range will help to make linkages between habitat conditions and what kind of habitat caribou require. Additionally, such information will be helpful to better understand how caribou herds interact over time, filling in gaps in understanding relating to exchange rates between herds, for example. Communities may report throughout the year where and when they are seeing caribou, as well as when and where they are absent. Use of collar data as well as observations made during scientific studies, such as surveys, will also contribute to this understanding.

8.1.9 Environment and Habitat Conditions

The term 'cumulative effects' refers to changes to the environment that are caused by an action in combination with other past, present and potential future human actions. Cumulative effects are usually greater than the sum of what each individual effect would be on its own. Long-term research on habitat quality and quantity and impacts of human activities can give us a better understanding of cumulative effects at the ecosystem level. Weather data and environmental observations are documented and shared amongst harvesters, scientists and industry. Co-management agencies can continue to call for and support such long-term research and monitoring. It is also important that these activities, as well as land use planning activities, are coordinated across the range of the herds. Some work is already underway in the range of these caribou – in the NWT, ENR is leading development of a multi-scale cumulative effects monitoring framework in collaboration with its management partners, and the Cumulative Impact Monitoring Program has a "Caribou Monitoring Blueprint" that outlines specific monitoring gaps that need to be filled to understand the cumulative impacts of human activities on caribou. In addition, with improved understanding there is a better opportunity to use regulatory management tools to limit disturbance on caribou. For example, in the NWT, Section 95 of the new Wildlife Act allows that a developer may be required to provide and adhere to a wildlife management and monitoring plan if the proposed development is likely to have a significant effect on wildlife or habitat.[9]

Community members have observed changes in the climate and on the land that may have a positive or negative effect on caribou movements and condition. These observations are generally consistent with scientists' predictions of increased variations in temperatures, more rain and snow, and more severe weather events as a result of climate change. During the summer, shifts in temperatures and precipitation can lead to changes (either greater or lesser) in insect harassment of caribou or the timing of "green-up". During the winter, variation in temperature or precipitation can affect caribou energy use through changes in access to food or vulnerability to predation (see also the ***Scientific Report*** and the ***Community Report***).

Changes in habitat conditions (e.g., fires on winter range, levels of rain or snowfall, icing events, shifts in vegetation composition and/or other species presence) can provide insight into the stresses impacting caribou and the availability of habitat to caribou. For example, we know that

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[9] The NWT Wildlife Act is available online at: http://www.enr.gov.nt.ca/_live/documents/content/Wildlife_Act.pdf

increases in predators can impact caribou. There are also reports from some communities that as muskox distribution shifts habitat may become less attractive to caribou.

In order to assess habitat conditions for each herd, seasonal range use of each herd should be defined (as in **8.1.8**), weather and climate trends should be monitored, and past and present fire activity tracked. Key habitat indicators should be developed to help determine habitat quality and quantity using remote sensing and ground surveys. Identification and long-term protection of key herd habitat – such as calving grounds – will help to ensure that there are caribou for future generations.

8.1.10 Human Disturbance

Disturbance of caribou from human activities such as resource exploration and development, aircraft over-flights, and recreational activities can influence caribou behaviour and energy use, which in turn can affect condition and health. Indirect effects can also include a reduction in quality and quantity of habitat or access to quality habitat. Particularly when caribou numbers are low, human activities have the potential to alter the rate and extent of the decline or how long it takes the herd to recover.

The range of the three herds extends over lands that are protected from development and lands where exploration and development are occurring. Concern about the impacts of non-renewable resource development grew in the 2000s with a renewed surge in potential developments such as the proposed Mackenzie Gas Project (MGP) natural gas pipeline and associated exploration and development, the proposed Mackenzie Valley Highway extension north of Wrigley, and the Bathurst Inlet Port and Road which could have indirect impacts on these caribou.

Current developments can impact caribou during their active phase and through cumulative effects. The Inuvik-Tuktoyaktuk all-weather road passes through Cape Bathurst herd winter range. Discovery of diamonds and other valuable minerals in the NWT and Nunavut also led to increased mining activities throughout the range of the Bluenose-West and Bluenose-East caribou. In addition, there is extensive shale oil exploration currently taking place in the Central Mackenzie Valley (Sahtú and Gwich'in regions) – which is historic Bluenose-West and possibly Bluenose-East caribou range.

Multiple sources of disturbance, and disturbance over a long period of time, can have cumulative effects on herd health. Because of this, the GNWT's current Barren-ground Caribou Management Strategy has identified a need to develop models to assess cumulative effects and to identify, monitor and mitigate impacts of exploration and development activities and improve understanding of mechanisms of impacts.[10] There are proposed projects in Nunavut aiming to address the industrial development in the Bathurst Inlet area and how these activities affect caribou. Threshold levels of disturbance are unknown for barren-ground caribou. Quantifying levels of disturbance to caribou could help establish how disturbance changes over time and how it influences caribou movements and behaviour. Location and levels of disturbances could then be related to habitat availability and accessibility.

8.2 Approaches to Monitoring

Because it is necessary to have up-to-date information for decision making, an appropriate frequency of research, monitoring, and community engagement effort is very important. Likewise, it is necessary to have a well-planned strategy to ensure that traditional ways of monitoring are maintained. Certain monitoring will take place every year – for example, the ACCWM recommends that harvest information is collected annually no matter the status of the herd. These annual sources of information can then be compiled to help look at year to year trends. The frequency and intensity of other types of monitoring will most often vary in response to herd status. Further details on monitoring timing and effort can be found in the ***Scientific Report***.

Some of these indicators of herd status can be difficult or expensive to measure. Depending on the type of monitoring, either scientific information or traditional knowledge may provide the most helpful insights or may shed light on different aspects of caribou herds and health. For example, traditional knowledge provides especially valuable insights about long-term trends and both localized and landscape-level changes in caribou and their habitat. Because these two streams of knowledge have different strengths and occur over different time scales, they sometimes differ in their findings. Nonetheless, they also can complement each other and provide useful information for comparisons. Timely collection and analysis of the information from both processes is essential to help inform the decision-making process.

On the following page, all the monitoring processes that were described in the previous section have been summarized in **Table 1**. This table shows how scientific and community knowledge can work together to measure the different variables, and how often each type of monitoring should occur.

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[10] Government of the NWT. 2011 (August). Caribou Forever – Our Heritage, Our Responsibility: A Barren-Ground Caribou Strategy for the Northwest Territories 2011-2015. http://www.enr.gov.nt.ca/_live/documents/content/2011-2015_Barren-ground_Caribou_Management_Strategy.pdf

Table 1: What and how we monitor: criteria used to assess herd status.

	Community-Based		Scientific[11]	
Information	**Measure**	**How often**	**Measure**	**How often**
Population size	High, medium, low, critical	Throughout the year	High (Green) Medium (Yellow/Orange) Low (Red)	Green: every 4-5 years Yellow: every 3-4 years Orange and Red: every 3 years
Population trend and rate of change[12]	Observations: increasing, stable, decreasing	Throughout the year	Increasing, stable, decreasing	Annually
Productivity and recruitment	Observations: many or few calves	In summer, fall, and winter	Number of calves per 100 cows	Every winter (except years population estimate is done)
Adult composition	Observations: many or few bulls (and bull health)	Throughout the year	Number of bulls per 100 cows	Following population estimates or every 3-5 years
Body condition and health	Observations: good, fair, poor, abnormal	Throughout the year, especially during harvest	Fat indices, pregnancy rate, parasite and disease level	Level 1 annually; more intensive Level 2/3 every 5 years
Harvest levels	Harvest reporting	Monthly	Calculate total harvest and sex ratio from community data	Annually
Predator populations[13]	Observations: high, medium, low	Throughout the year	Carcass collection (reproduction, health, etc.)	Green and Yellow: every 5 years Orange and Red: every year
Range and movement patterns	Locations of caribou absence/presence	Throughout the year	Range use, movement patterns	Annually (based on collar data and observations throughout year)
Environment and habitat	Observations of food quality and availability, extent of burns, weather, snow depth, etc.	Throughout the year	Seasonal range use, fire, changes in plant productivity, green-up, climate, etc.	Annually to establish baseline and then to be determined thereafter
Human disturbance	Observations: high, medium, low	Throughout the year	Track land uses and disturbance levels	Annually, and then to be determined thereafter

[11] More information on scientific indices and their interpretation is available in the companion Scientific Report.
[12] While trend cannot be determined annually (trends can only be observed across or between years) the information needed for a trend analysis is collected annually.
[13] There is a need for further research and discussion about how these factors, such as predator levels, can affect these three caribou herd populations.

9.0 Making Decisions and Taking Action

The following is an overview of the process, guiding documents, and schedule to be followed by the ACCWM to determine herd status and management actions. More detailed aspects on the decision-making process and implementation will be developed by the ACCWM.

9.1 How We Make Decisions – ACCWM Meetings

Accurate and timely information is necessary for making good decisions that will help the caribou herds. Because the herds are shared among communities and regions, it is also important that information is collected and shared amongst harvesters and managers. The ACCWM and its working group meets annually (normally in early fall) to review any new information on the herds and implementation of the Action Plans. This is an opportunity for the ACCWM to invite authorized representatives of the management agencies (e.g., ENR, Parks Canada, Government of Nunavut), community members, the public and scientists to get together and discuss the best available information about these herds.

Herd status will be determined based on information including:

- Estimate of the overall size of the herd;
- Population trend (increasing, decreasing, or stable); and
- Additional monitoring indicators (as in **Table 1**) to supplement the interpretation.

In addition to the information coming from monitoring, there may be other information available through research programs or traditional knowledge. All of this information will be considered by wildlife managers and harvesters. The ACCWM sees this as a collaborative decision-making process and will be done according to the requirements of regional legislation and land claims agreements.

9.1.1 Action Plans

"We need a consistent approach and law for all regions that share the same population of caribou. If we don't apply the same rules the population will decline and the most we will be able to say is, 'What happened?'" (Fort Good Hope)

"A majority bull harvest implies big bulls which is not good. Majority bull harvest would be okay if it was stipulated that it was young bulls – not the big breeders, teachers and leaders of the migration." (Wrigley)

This Management Plan is supported by an Action Plan for each herd which outlines the actions to be taken and how they will be put in place. The ACCWM is responsible for determining herd status and developing the Action Plans. Action Plans are intended to be in place three to five years. When the ACCWM determines status each year, Action Plans will also be reviewed. If herd status changes, the Action Plans may need to be updated before the three to five year period has expired. This allows for the adjustment of actions as new information becomes available. Although normally revised only following population estimations, the herd status or Action Plans may be revised more often if, for example, there has been some unexpected and extreme change since the most recent estimate. Based in large part on the herd status, each Action Plan will outline specific management actions and how they will be put in place, by whom, and within what timeframe. Funding for the management action will be discussed by the ACCWM with other management partners.

Implementation of Action Plans is cooperative, and ongoing community input and support will help to develop and implement management actions. Each wildlife management board will be responsible for approving Action Plans for implementation within its region. Once the plan is approved, the plan is submitted to the appropriate governments for implementation.

9.2 When Do We Take Action

Our actions to help the caribou herds will be determined in part by the herd size, and whether it is increasing or decreasing. Management decisions will also be influenced by other information from harvesters and scientists such as recruitment, bull-to-cow ratio, body condition and health.

In this Management Plan there are four levels of herd status and management actions. These are colour-coded yellow, green, orange, and red.[14] Management actions are based on defined phases of the population cycle. The herd status provides a trigger for specific management actions.

Yellow: The population level is intermediate and increasing

Green: The population level is high

[14] The colour zones or "traffic light" approach used here is a way of indicating relative risk that was adapted from other regional management programs, such as the Porcupine Caribou Harvest Management Plan (2010) and NWT Fire Management (ENR).

Orange: The population level is intermediate and decreasing

Red: The population level is low

A representation of these thresholds is provided with corresponding colours in **Figure 8.**

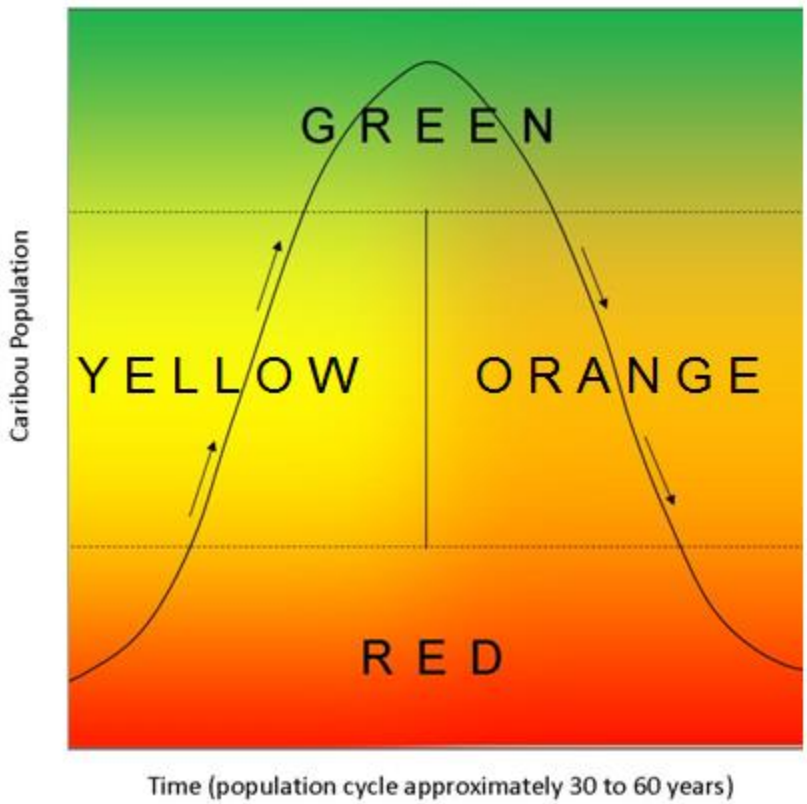

Figure 8: Caribou population status as colour zones.

Thresholds to help guide management actions were determined with input received from community and technical experts in a consensus-based process (**Table 2**). ACCWM members combined available science (historical high and low populations) with traditional knowledge and experience. Slight differences in thresholds between herds reflect the results from community engagements. The historic high, as measured by surveys, for each of the three herds, and the change over time, are shown in **Figures 4-6** of this report and described in more detail in the ***Scientific Report***. Sufficient information was not available from results of modelling simulations to help set thresholds. However, this could be a helpful tool to provide further evaluation or adjustments in future planning. In addition, ENR has recently developed a “Rule of Thumb Approach” that describes a framework for barren-ground caribou harvest recommendations based on herd risk status. This approach relies on indicators – such as population size and trend – to help estimate the potential risk to a herd under different management scenarios; it is included with the ***Scientific Report***.

The thresholds in **Table 2** are approximate and will be used to help guide management decisions and actions based on herd status. As explained earlier, estimated herd size is not the only indicator used to set a herd status into one of the four colour zones. Herd status decisions will use estimates of the overall number of caribou, whether a herd is growing in size or is declining (trend), and other monitoring indicators to assist in interpretation. In practise this means that although an estimate for a herd may cross or be very near a threshold, the determination of herd status will take into account all available information – it is not only the threshold value that is used to determine the colour zone. For example, a recommendation could be made to set a herd in a colour zone before a population estimate reaches a threshold value, or a decision could be made to keep a herd in a colour zone despite an estimate placing it just outside the threshold, if this is the best action based on all indicators considered together and according to the principles stated in this Management Plan.

Table 2: Thresholds for the status of the Cape Bathurst, Bluenose-West, and Bluenose-East Caribou Herds.

HERD	Historic High As measured by surveys	Threshold Between green & yellow/orange	Threshold Between red & yellow/orange
Cape Bathurst Herd	19,000	12,000	4,000
Bluenose West Herd	112,000	56,000	15,000
Bluenose East Herd	120,000	60,000	20,000

9.3 What Actions Do We Take

The wildlife management boards that make up the ACCWM have authority through their land claim agreements to make recommendations and decisions on wildlife management issues. Under their mandates, the Boards have responsibility for wildlife and wildlife habitat management. The ACCWM can make consensus-based recommendations to governments, land use regulators, and respective Boards on the general types of management actions that are described below. ACCWM recommendations do not prohibit individual boards from providing additional recommendations, nor are individual boards bound by ACCWM recommendations. Communities may also choose to voluntarily restrict harvest.

The type of action and the degree of intervention will vary depending on the status of the herd. Generally, more management actions are recommended for times when herds are at low levels or decreasing (red and orange zones) than when populations are high or increasing (green or yellow zones). In addition to these management actions, monitoring activities are also taking place. Some of the specific management actions or changes in the frequencies of actions that can be triggered by a herd's status are described below and summarized in a table at the end of this section.

9.3.1 Education

The need for increased education about how to take care of caribou and use caribou respectfully was a very strong message heard during the community engagement sessions (see ***Community Report***). Many of the important educational themes center on traditional harvesting practices, but some also focus on hunter safety and shooting techniques. Some ideas include:

- Promoting total use of harvested caribou;
- Proper butchering and storage methods;
- Limiting wounding loss;
- Letting the leaders pass;
- Promoting community hunts with experienced hunters;
- Caribou diseases and human health risks;
- Use of alternate species; and
- Increased sharing of traditional foods.

Educational programs developed by the ACCWM in partnership with government, communities and researchers can involve elders, harvesters, and youth in dialogue and activities on the land. Section 46 of the new NWT Wildlife Act outlines ways in which harvester training courses will be developed and delivered with the input of local harvesting committees, councils, Renewable Resources Boards, and/or other organizations. They will be developed and recommended no matter the status of the herds, however, the content and emphasis on these programs may vary with changing caribou status. It is important that educational programs reach all members of a community. More details on educational programs are outlined in the Action Plans. Ways of monitoring and regulating harvest are outlined later in this section (**9.3.5**).

9.3.2 Habitat

The ACCWM can recommend increased research and monitoring related to seasonal range use, key habitat indicators, or trends in climate and weather. It can also identify important habitat – such as calving areas, key winter range, etc. – and recommend it for special management and/or other types of protection (according to mandates of ACCWM member organizations). This can include other sensitive areas and habitats, such as river crossings and migration corridors. In addition, the ACCWM can support individual board's recommendations of protected areas, and habitat recommendations through land use plans or other means.

A recent innovative initiative by GNWT-ENR to undertake a range plan for the Bathurst caribou herd might be applicable to the range of the Cape Bathurst, Bluenose-West and Bluenose-East caribou. The scope of the range plan is still being developed, but it is expected to provide guidance wildlife managers on how to monitor, assess and manage cumulative effects of human and natural disturbance on the Bathurst range. The planning process involves all organizations with a stake in land management on the Bathurst caribou range, from the NWT and Nunavut, including a range of government departments, Aboriginal Governments, land claims organizations, wildlife management boards, regulators, industry and others. The plan development process is in its early stages, so it is not yet possible to evaluate a final product or resulting outcomes. **Appendix F, Appendix G** and the ***Scientific Report*** include more details on caribou habitat and protected areas.

Management Actions include:

- Identify and recommend protection for key habitat areas;
- Review results of monitoring, including cumulative effects, to ensure enough habitat is available and caribou are able to move between areas of good habitat;
- Recommend important habitat as a 'value at risk' for forest fire management.[15]

9.3.3 Land Use Activities

The ACCWM members can provide recommendations to regulators (i.e., Land Use Planning, Environmental Assessment and Land and Water Boards) to help reduce the effects of land use activities on caribou herds. These can include hydrocarbon and/or mineral exploration and development, transportation and road development, and changes in recreational activities. Advice can be given to avoid key habitats and to mitigate disturbance from noise and access among other possible advice. For example, co-management boards, Renewable Resource Councils, and Hunters and Trappers Organizations and Committees comment on land use permits about how to mitigate impacts to caribou. Other agencies have the authority to regulate land use. The ACCWM is limited to making recommendations; management actions that could change land use activities are put in place by regulators. This is why it is so important to coordinate land use planning and activities across the entire annual range of herds. This is the best way of ensuring that habitat is conserved for caribou. Monitoring cumulative effects is one way of doing this. This requires a strong collaborative process. The annual ACCWM meeting is an opportunity to share information and coordinate management actions across regions and agencies. **Appendix F** includes more details on relevant land use planning processes and protected areas that are relevant to these caribou.

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[15] The NWT forest fire management policy defines "Values-at-risk" as "human life and the specific or collective set of natural or cultural resources and improvements/developments that have measurable or intrinsic worth and that could or may be destroyed or otherwise altered by fire in any given area." http://www.enr.gov.nt.ca/_live/documents/content/53_04_forest%20_fire_management_policy.pdf

Yellow: The population level is intermediate and increasing

Management actions include:

- Review results of cumulative effects monitoring programs;
- Provide advice on mitigation of industrial impacts to proponents and regulators;

Green: The population level is high

Management actions include:

- Review results of cumulative effects monitoring programs;
- Provide advice on mitigation of the impacts of exploration and development activities to proponents and regulators;

Orange: The population level is intermediate and decreasing

Management actions include:

- Review results of cumulative effects monitoring programs;
- Provide advice on mitigation of industrial impacts to proponents and regulators;
- Provide active and accessible communication and recommend education programs for all including proponents and airlines;
- Recommend increased enforcement of land use regulations, including community monitors;

Red: The population level is low

Management Actions include:

- Work directly with proponents and regulators of exploration and development activities to advise on mitigation measures;
- Review results of cumulative effects monitoring programs;
- Provide active and accessible communication and recommend education programs for all including proponents and airlines;
- Recommend increased enforcement of land use regulations, including community monitors.

9.3.4 Predators

The ACCWM can recommend increased research on predators, including distribution and abundance and the impact of predation on caribou herds. It can also recommend means of predator control including incentives for harvest of predators. Because this can be a controversial topic, a “Hot Topic Box” is included later in this section.

Experience in Alaska, Yukon, NWT and Nunavut in the 1960s, have shown that predator control can be a tool for short term recovery in caribou populations in some situations. However, there is little evidence of wolf control programs being effective over the long term. It is suggested that prior to the design and implementation of any predator management approach, an open discussion of this topic be held among wildlife managers, scientists, and harvesters (see the ***Scientific Report*** and the ***Community Report*** for more discussion of this subject).

Yellow: The population level is intermediate and increasing

Management actions include:

- Continue research programs to monitor predator condition (e.g., carcass collection and community monitoring programs);

Green: The population level is high

Management actions include:

- Continue research programs to monitor predator condition (e.g., carcass collection and community monitoring programs);

Orange: The population level is intermediate and decreasing

Management actions include:

- Review results of research programs that monitor predator abundance and predation rates;
- Consider recommending options for predator management;

Red: The population level is low

Management Actions include:

- Review results of research programs that monitor predator abundance and predation rates;
- Consider recommending options for predator management.

Hot Topic: Predator Control Programs

Many people in communities across the NWT report that they are seeing more caribou predators in recent years, including wolves, wolverines, grizzly bears, and eagles. While predators have a natural role in ecosystems, there are concerns that when they are at high levels, they can have a negative impact on prey like caribou – especially when those animals are already in decline.

Today, in some regions, fewer people may trap or hunt species like wolves compared to in the past, and the question of whether to 'manage' or control predator populations in order to benefit caribou can be a sensitive one. Science is beginning to show that this is not a straight-forward issue – sometimes the populations do not respond as expected. Amongst the public, there is both support and opposition to the idea. Because the issue is so complex, there is currently no formal wolf control program in the NWT or Nunavut.

For the management recommendations in this plan, the ACCWM acknowledges that predators are integral components of northern ecosystems; predator populations can cycle up and down and have varying impacts on their prey populations; predator control programs are controversial; it is important to have good information on predator populations, rates of predation, impacts on prey populations like caribou, and the effectiveness of control programs before informed management decisions can be made – this should include information from both science and traditional knowledge.

9.3.5 Harvest

As mentioned earlier, in many Aboriginal societies respectful harvesting is seen to help sustain the balance between caribou, humans and the landscape. They see that traditional practices can maintain proper relationships, keep herds healthy and within their carrying capacity, and promote cultural continuity by passing lessons from generation to generation. Education about ways of harvesting respectfully is crucial, and was identified by many communities as a key to taking care of caribou.

Because harvesting itself is a management tool, regulations around harvesting are also a tool. The effects of harvesting on a population are not just dependent on the total number of caribou taken, but also on whether a herd is increasing or decreasing, the cumulative effects impacting the landscape, and several other factors. Each factor should be weighed in order to make recommendations that will be best for the caribou.

Priorities for harvest allocation are explained in a "Hot Topic Box" below. The ACCWM can make recommendations to the appropriate Ministers with respect to limits on harvest as established through land claim agreements, with non-commercial harvesting having priority over commercial harvesting. With respect to non-commercial harvesting, Land Claim beneficiaries and Aboriginal people have a priority right to harvest over other NWT residents who in turn have priority over non-residents. In areas of Nunavut and the NWT that have land claims agreements, when strict conservation measures are needed, a Total Allowable Harvest is established. Harvest studies assist in establishing Total Allowable Harvests and inform basic needs levels which constitute the first demand on harvesting. Formal harvest studies are available from the Inuvialuit, Gwich'in, Sahtú, and Nunavut settlement areas. Groups without formal harvest studies will need to find a way to determine harvest levels.

Hot Topic: Priorities for Harvest Allocation

In the NWT, land claim agreements establish priorities for allocation of harvest when it must be limited for conservation purposes. For areas without settled land claim agreements, the new Wildlife Act includes the following priorities for allocation of harvest:

- First – subsistence and cultural harvest for those with Aboriginal harvesting rights in the NWT;
- Second – resident hunters;
- Third – outfitted hunts;
- Fourth – other commercial purposes.*

The Nunavut land claim states that the basic needs levels shall constitute the first demand on the total allowable harvest. If the total allowable harvest is equal to or less then the basic needs level, Inuit shall have the right to the entire total allowable harvest. Section 5.6.31 speaks to the surplus and states that the allocation of the surplus shall be determined in the following order and priority:

- To provide for personal consumption by other residents;
- To provide for the continuation of existing sports and other commercial operations;
- To provide for economic ventures sponsored by Hunters and Trappers organizations and Regional Wildlife Organizations;
- To provide for other uses including commercial, commercial sport and recreation.†

*See http://www.enr.gov.nt.ca/_live/documents/content/Aboriginal_Harvesters.pdf

†From: Agreement between the Inuit of the Nunavut Settlement Area and Her Majesty The Queen in Right of Canada Land Claims Agreement. Article 5 Sections 5.6.20 and 5.6.31. Amended on January 29, 2009.

With the exception of the TNNPMB, each ACCWM member may, if circumstances require, set a Total Allowable Harvest (TAH) for their region and then allocation is done within the region according to what is outlined in individual land claims. Communities may also choose to voluntarily restrict harvest – for example, a regional council such as an HTO may set community by-laws that affect harvesting. The ACCWM recognizes that it is important to work collaboratively when discussing a TAH for shared herds – this was one of the underlying reasons behind the creation of the ACCWM. Discussions about allocations will be based on harvest levels and according to the requirements of regional legislation and of land claims agreements (see **Appendix C)**.

The ACCWM can also make recommendations on seasonal harvesting restrictions and/or harvest composition (e.g., bulls vs. cows). This can be a controversial topic, so there is more information in the "Hot Topic Box" below. Harvest recommendations are based on the best understandings from both science and traditional knowledge – this could include an analysis of how different harvest scenarios affect the herds. Harvest recommendations can be contentious amongst the different user groups, as they may have cultural or economic impacts. Harvest regulations will not work without a program which may include education and enforcement. Regional and community authorities can cooperatively develop a compliance program that fits present and future needs.

Hot Topic: Cow vs. Bull Harvests

Many Aboriginal harvesters take a mix of bulls and cows throughout the year, according to the seasons and the condition of the caribou. Traditionally, people hunt bulls early in the fall, because after the rut they are skinny and the meat is not as good. Cows are in prime condition in the winter and are harvested in November and December a lot. Bulls start to get fat again in spring, so both sexes are hunted after that point. Some elders say that it is never a good idea to harvest mature bulls, as they are the leaders and breeders in the herd.

Science suggests that a reduction in the number of cows harvested from a herd can help the population increase through increased birth rates. Cows give birth, and even dry cows can produce calves in following years. In addition, bulls can breed with many cows. This leads scientists to suggest that switching the harvest away from cows can help barren-ground caribou herds grow by protecting reproduction in the current year and future years.

Communities are concerned that a bull-dominated harvest could lead to the removal of too many of the 'prime' or strongest males from the population and weaken the herd over the long run. For the management recommendations in this plan, the ACCWM acknowledges that everyone agrees it's important to keep a good balance in the ratio of bulls to cows in a herd; that good information and monitoring can help choose the best balance of males and females to harvest; and that harvesting should not target just the largest bulls, as they are important to the herd.

The ACCWM can recommend programs to encourage the harvest of alternate species and increased sharing, trade and barter of traditional foods. Some management actions related to these topics are covered in greater detail in the sections on Education and Communication; there is also further information, including suggestions on appropriate strategies, in the ***Community Report***. The ACCWM can also make recommendations on things like consideration of community monitors and the design and nature of harvesting studies. Specific recommendations for harvest survey protocols will be developed in the Action Plans.

Yellow: The population level is intermediate and increasing

Management actions include:
- Recommend easing limits on subsistence and then resident harvests ;
- Consider recommending outfitter and commercial harvests at discretion of the ACCWM;

Green: The population level is high

Management actions include:
- Support harvest by beneficiaries of a Land Claim and members of an Aboriginal people, with rights to harvest wildlife in the Region;
- Recommend that if subsistence needs are met resident harvest should be permitted (with limits);
- Potentially recommend resident (non-beneficiary), non-resident, sport hunts, and/or commercial harvests;

Orange: The population level is intermediate and decreasing

Management actions include:
- Recommend a mandatory limit on subsistence harvest based on a TAH accepted by the ACCWM;
- Prioritize the collection of harvest information;
- Recommend no resident, outfitter or commercial harvest;
- Recommend a majority-bulls harvest, emphasizing younger and smaller bulls and not the large breeders and leaders;
- Recommend harvest of alternate species and encourage increased sharing, trade and barter of traditional foods, such as the use of community freezers;
- Recommend increased enforcement including community monitors;

Red: The population level is low

Management actions include:
- Recommend harvest of alternate species and meat replacement programs, and encourage increased sharing, trade and barter of traditional foods;
- Prioritize the collection of harvest information;
- Review of mandatory limit for subsistence harvest for further reduction;
- Recommend increased enforcement including community monitors;
- Resident, commercial, or outfitter harvest remain closed.

Table 3: Summary of management actions.[16]

<table>
<tr><th colspan="5">Management Actions Based on Herd Status/Colour Zone</th></tr>
<tr><th>Management Action</th><th>The population level is intermediate and increasing</th><th>The population level is high</th><th>The population level is intermediate and decreasing</th><th>The population level is low</th></tr>
<tr><td>Education</td><td colspan="4">Recommend education programs for all status levels. Ideas for educational themes include:
• Promoting total use of harvested caribou, and proper butchering and storage methods;
• Limiting wounding loss;
• Letting the leaders pass;
• Promoting community hunts with experienced hunters;
• Use of alternate species; and
• Increased sharing of traditional foods.</td></tr>
<tr><td>Habitat</td><td colspan="4">• Identify and recommend protection for key habitat areas;
• Review results of monitoring, including cumulative effects, to ensure enough habitat is available and caribou are able to move between areas of good habitat;
• Recommend important habitat as a 'value at risk' for forest fire management.</td></tr>
<tr><td>Land use activities</td><td>• Review results of cumulative effects monitoring programs;
• Provide advice on mitigation of industrial impacts to proponents and regulators.</td><td>• Review results of cumulative effects monitoring programs;
• Provide advice on mitigation of the impacts of exploration and development activities to proponents and regulators.</td><td>• Review results of cumulative effects monitoring programs;
• Provide advice on mitigation of industrial impacts to proponents and regulators;
• Provide active and accessible communication and recommend education programs for all including proponents and airlines;
• Recommend increased enforcement of land use regulations, including community monitors.</td><td>• Work directly with proponents and regulators of exploration and development activities to advise on mitigation measures;
• Review results of cumulative effects monitoring programs;
• Provide active and accessible communication and recommend education programs for all including proponents and airlines;
• Recommend increased enforcement of land use regulations, including community monitors.</td></tr>
</table>

[16] These management actions are in addition to the research and monitoring actions described in section 8.0 and summarized in Table 1.

Management Actions Based on Herd Status/Colour Zone				
Management Action	**The population level is intermediate and increasing**	**The population level is high**	**The population level is intermediate and decreasing**	**The population level is low**
Predators	• Continue research programs to monitor predator condition (e.g., carcass collection and community monitoring programs).	• Continue research programs to monitor predator condition (e.g., carcass collection and community monitoring programs).	• Review results of research programs that monitor predator abundance and predation rates; • Consider recommending options for predator management.	• Review results of research programs that monitor predator abundance and predation rates; • Consider recommending options for predator management.
Harvest	• Recommend easing limits on subsistence and then resident harvests ; • Consider recommending outfitter and commercial harvests at discretion of the ACCWM.	• Support harvest by beneficiaries of a Land Claim and members of an Aboriginal people, with rights to harvest wildlife in the Region; • Recommend that if subsistence needs are met resident harvest should be permitted (with limits); • Potentially recommend resident (non-beneficiary), non-resident, sport hunts, and/or commercial harvests.	• Recommend a mandatory limit on subsistence harvest based on a TAH accepted by the ACCWM; • Prioritize the collection of harvest information; • Recommend no resident, outfitter or commercial harvest; • Recommend a majority-bulls harvest, emphasizing younger and smaller bulls and not the large breeders and leaders; • Recommend harvest of alternate species and encourage increased sharing, trade and barter of traditional foods, such as the use of community freezers; • Recommend increased enforcement including community monitors.	• Recommend harvest of alternate species and meat replacement programs, and encourage increased sharing, trade and barter of traditional foods; • Prioritize the collection of harvest information; • Review of mandatory limit for subsistence harvest for further reduction; • Recommend increased enforcement including community monitors; • Resident, commercial, or outfitter harvest remain closed.

10.0 How We Communicate

It is critical to the success of the Management Plan to have clear principles and methods in place for communication. This helps to ensure that:

- All groups can effectively participate in sharing knowledge of the caribou and of the Management Plan;
- Groups will work together to discuss and implement effective management actions; and
- Trust and confidence in management processes will be built.

Communication is the responsibility of all groups engaged in managing the impacts of human activities on caribou and on the land. Knowledge itself is dynamic and powerful and information must flow both ways – between knowledge holders and wildlife managers. As such, communication is most effective when undertaken as a dialogue. Experience shows that there is no substitute for face-to-face discussions and by using methods that are locally adaptive. In many communities, the local Aboriginal language is a crucial medium for effective communication. Community organizations can provide guidance on the best methods of communication in their regions.

It will be important that communication includes sharing results from monitoring programs about herds at annual meetings, and communicating meeting decisions and/or recommendations back to user groups and stakeholders in a timely fashion. The kind of information communicated may also include:

- The colour-coded herd status;
- Any voluntary or regulated limits on harvesting, such as changes to regulations;
- What is being monitored and why;
- Results of monitoring programs;
- Rationale for harvest regulations (e.g., why harvesting mostly bulls rather than cows may be preferable); and
- Educational themes, such as promotion of respectful hunting and butchering practices and information about caribou diseases and human health risks.

"Good communications are important. Use radio stations. Bring translators to the meetings for elders." (Fort McPherson)

"Use the radio as a tool to inform harvesters on thresholds and requirements." (Paulatuk)

"Education is the key to cooperation, respect and compliance." (Aklavik)

"When you mention maintaining caribou habitat that means you have to lobby against the industry that is coming in. They are the major concern. Without them, things will be okay." (Tulít'a)

It can also include work with members of industry including resource proponents and aircraft charter companies, as well as other stakeholders. Members of the ACCWM will work together and with government to provide active and accessible communication programs. Adequate funding needs to be budgeted to ensure that full opportunity is provided for dialogue about the status of herds and management actions being considered.

There are many communication techniques which will be used depending on the message and the intended audience. They may include local radio programs; visits to schools; posters or presentations; briefing of developers and airlines; and on-the-land gatherings. They will occur on an annual basis and not just when the herds are in the Orange or Red zones. Further details on timing and communication methods will be provided in the Action Plans. Information programs including harvesting training, perspectives of harvesters and the economic use of wildlife should be developed so that there is strong understanding of the principles underpinning Action Plans for the three herds. Further suggestions for communication tools and strategies are included in the ***Community Report***.

11.0 Where do we go from here? Implementing the Management Plan

This Management Plan is the result of a five year planning process. It represents a significant amount of work, and attempts to accommodate the input and interests of people from seventeen communities in six land claim areas, as well as all levels of government. The ACCWM firmly believes that the time taken to undertake full community engagement in the regions, gather the best available research, and collaboratively work to address contentious issues has resulted in a plan that is robust and will be considered valid by the people who are managers and stewards of the caribou. This plan initiates a new era in the management of these caribou, one that recognizes the broadly shared responsibility for stewardship of the herds, and the need for coordination and cooperation to sustain caribou for future generations. This plan is also a starting point – a foundation for future work that sets out agreed-upon principles and objectives that will guide other processes. This plan is a living document, so continual follow-up needs to be done to ensure the plan remains current and that Action Plans are implemented.

"Be positive and put some recommendations in the plan. Have some confidence and be optimistic. Have some faith in the system. We have to work together to make things happen. We are all in this together." (Inuvik)

11.1 Implementation of the Plan

The success of this Management Plan depends upon continued cooperation and participation of all the signatories. Some of the key steps are:

- Annual meetings to share information, determine herd status, and decide on appropriate management actions;
- The development of Action Plans that lay out annual priorities for each herd;
- Adequate funding, organizational capacity and commitment from signatories and partners to carry out prioritized management actions;
- Acquiring information identified throughout the plan, including research and monitoring to expand our knowledge and understanding;
- Continued communication between different regions and levels of government, as well as ongoing dialogue with communities and the broader public.

"The quicker you work on it and have a timeframe to have it done… after you do the initial one [there are] always ways to make it better, but get it done – time is important. … The communities' main interest is to have the herd around for a long time. The quicker you get it together the better." (Aklavik)

11.2 Updating the Plan

This plan for the Cape Bathurst, Bluenose-West, and Bluenose-East barren-ground caribou herds will first be reviewed after five years (i.e., 2019) and at ten-year intervals thereafter.

Any Aboriginal, territorial or federal government, or wildlife management board, or designated Inuit organization may request a review, at any time, through a formal request to the ACCWM. The measures identified in this plan are intended to be effective and well-founded in research and best practises. As new information becomes available it will be incorporated into each scheduled update to ensure the plan continues to be based on the best and most current information. Any lessons learned as the Management Plan and Action Plans are implemented will also be incorporated in future versions of the plan, increasing its reliability and strength.

12.0 Signatories to the Plan

Below are the members of the ACCWM and signatories to *Taking Care of Caribou: The Cape Bathurst, Bluenose-West and Bluenose-East Barren-ground Caribou Herds Management Plan*. In recognition of the importance of the Bluenose Caribou Herds and their habitat, the decision of one Party not to accept the Management Plan will not preclude the remaining Parties from continuing with development and implementation of the plan.

Wildlife Management Advisory Council –NWT (WMAC-NWT)

Gwich'in Renewable Resources Board (GRRB)

Ɂehdzo Got'ı̨nę Gots'ę́ Nákedı (Sahtú Renewable Resources Board (SRRB))

Wek'èezhìi Renewable Resources Board (WRRB)

Kitikmeot Regional Wildlife Board (KRWB)

Tuktut Nogait National Park Management Board (TNNPMB)

APPENDICES

Appendix A: Acronyms and Terms used in this Plan

List of Acronyms

AANDC	Aboriginal Affairs and Northern Development Canada
ACCWM	Advisory Committee for Cooperation on Wildlife Management
EISC	Environmental Impact Screening Committee
ENR	Department of Environment and Natural Resources, GNWT
GN	Government of Nunavut
GNWT	Government of the Northwest Territories
GRRB	Gwich'in Renewable Resources Board
GSA	Gwich'in Settlement Area
GTC	Gwich'in Tribal Council
HTO	Hunters and Trappers Organization
IGC	Inuvialuit Game Council
INAC	Indian and Northern Affairs Canada
ISR	Inuvialuit Settlement Region
KRWB	Kitikmeot Regional Wildlife Board
NLCA	Nunavut Land Claims Agreement
NPC	Nunavut Planning Commission
NWT	Northwest Territories
NWMB	Nunavut Wildlife Management Board
SRRB	Sahtú Renewable Resource Board
SSA	Sahtú Settlement Area
TAH	Total Allowable Harvest
TNNPMB	Tuktut Nogait National Park Management Board
WRRB	Wek' èezhìi Renewable Resource Board
WMAC	Wildlife Management Advisory Council (NWT)

Appendix B: Bluenose Caribou Herds Management Plan Working Group Draft Terms of Reference

21 April 2009

WHEREAS it is recognized that the barren-ground caribou that occupy the northern portion of the Northwest Territories and western Nunavut (historically referred to as the "Bluenose Herd") is considered to have three different calving grounds;

AND WHEREAS these herds move among the Inuvialuit, Gwich'in, Sahtú Tli Cho and Dehcho settlement areas and between the Northwest Territories and Nunavut;

AND WHEREAS the continued well-being of these herds and the maintenance of their habitat requires coordinated and collaborative management, goodwill, and cooperation among the management agencies and the stakeholders;

AND WHEREAS the Advisory Committee for Cooperation on Wildlife Management (ACCWM), has decided to prepare the Bluenose Caribou Herds Management Plan;

THEREFORE the ACCWM hereby establishes a Working Group to prepare the Bluenose Caribou Herds Management Plan in accordance with these Terms of Reference (TOR).

A. Guiding Principles

The Working Group shall be guided by:

1. The principles of conservation which are:

    - The maintenance of the natural balance of ecological systems;
    - The protection of wildlife habitat; and
    - The maintenance of vital, healthy wildlife populations capable of sustaining lawful harvesting needs.

2. The rights of aboriginal users will be recognized and protected while recognizing the needs of other lawful harvesters and non-consumptive users;

3. The Precautionary Principle which is: in the absence of complete information and where there are threats of serious or irreparable damage, lack of complete certainty shall not be a reason for postponing reasonable conservation measures;

4. The best available scientific and traditional knowledge;

5. The differences and similarities in approach to traditional knowledge and scientific data collection and analysis;

6. The interconnection of the caribou with other components of the physical, biological and cultural environment; and

7. The past, present and future experience, knowledge and values of northern peoples.

B. Objectives

1) To prepare a draft Management Plan (hereinafter referred to as “the Plan”) for the Cape-Bathurst, Bluenose-West and Bluenose-East caribou herds and their habitat for recommendation to the ACCWM.

2) To recommend an approach with respect to the shared responsibility for implementing the Plan.

3) To promote and strengthen communication and sharing of information among all groups interested in or responsible for the management of the Bluenose herds and their habitat.

C. Membership

1) The Working Group will comprise one representative from each of the following:

- Wildlife Management Advisory Council (NWT)
- Gwich’in Renewable Resource Board
- Sahtu Renewable Resource Board
- Tuktut Nogait National Park Management Board
- Nunavut Wildlife Management Board
- Wek’eezhii Renewable Resource Board
- Kitikmeot Regional Wildlife Board
- GNWT Department of Environment and Natural Resources – Inuvik Region
- GNWT Department of Environment and Natural Resources – Sahtu Region
- GN Department of Environment
- Parks Canada
- Dehcho
- Nunavut Tunngavik Inc.

2) Each representative may choose an alternate to participate when the representative is not available.

3) Representatives and alternates shall be knowledgeable, willing and able to bring forward the interests and opinions of their constituents and, in turn, provide information and feedback from the Working Group to their constituents.

D) Responsibilities

The Working Group shall provide to the ACCWM, the following:

1) A draft TOR for the Working Group;

2) A draft Work Plan for the preparation of the Bluenose Caribou Herds Management Plan, including but not restricted to:

- A detailed table of contents;
- A detailed task list;
- A schedule for completing the tasks;
- A schedule for community engagement;
- A budget; and
- A proposed communication plan (to be implemented by the ACCWM).

3) A draft Management Plan, based on both traditional and scientific knowledge that shall address, but is not limited to the following:

- Historical Perspective
- Management goals;
- Current status of the herds;
- Management strategies under various population scenarios;
- Criteria for assessing the status of the herds and their habitat;
- Habitat management and conservation;
- Monitoring and research requirements;
- Standardized data collection and presentation;
- Coordination and implementation of the plan; and
- Review and revision of the plan.

(A summary report on the status of the herds will be prepared by ENR as a separate document)

E. Operating Procedures

1. The Working Group will establish, from time to time, rules and procedures including:

- Decisions of the Working Group will be made by consensus;

- Where consensus cannot be reached, the dissenting view will be included with the majority view and presented to the ACCWM for decision;

- The Working Group will keep minutes and records of all its meetings and circulate them amongst its members and provide them to the ACCWM.

- A contractor may be hired to facilitate meetings and community engagement, provide a secretariat and to prepare the draft management plan

2. Any disputes regarding the interpretation or implementation of the TOR shall be referred to, and resolved by, the ACCWM.

F. Operating Funds

1. All parties will be responsible for expenses of their representatives on the Working Group.

2. ENR will provide funding for the initial meeting of the Working Group.

3. Government funds will be sought; based on the budget developed by the Working Group.

G. General

1. All reports, summaries or other documents prepared under these TOR will become the property of the members of the ACCWM.

2. The Working Group will be terminated once the plan has been recommended to the ACCWM for approval and implementation.

3. The Working Group may be extended and these TOR may be amended at the discretion of the ACCWM.

Appendix C: Mandates and Websites of Management Agencies

The many organizations which share responsibility for managing the herds include:

Wildlife Management Advisory Council (NWT)
The Wildlife Management Advisory Council (WMAC) provides advice to the relevant Ministers, ENR and the Inuvialuit Game Council (IGC) on all significant wildlife matters in the Inuvialuit Settlement Region (ISR) including management policies, regulations and harvesting quotas. Rights and responsibilities for stewarding land and resources are outlined in Chapter 14 of the ***Inuvialuit Final Agreement*** (1984).

Wildlife Management Advisory Council (NWT): www.jointsecretariat.ca

Gwich'in Renewable Resources Board
The Gwich'in Renewable Resources Board (GRRB) is considered to be the main instrument of wildlife and forestry management within the Gwich'in Settlement Area (GSA). It is responsible for establishing harvest levels, approving management plans, approving regulations proposed by government and reviewing any wildlife management matter referred to it by government. GRRB decisions are referred to the appropriate Minister who may accept, vary or set aside the decision, with reasons. Rights and responsibilities for stewarding wildlife and wildlife habitat are outlined in Chapter 12 of the ***Gwich'in Comprehensive Land Claim Agreement*** (1992).

Gwich'in Renewable Resources Board: www.grrb.nt.ca

ʔehdzo Got'ı̨nę Gots'ę́ Nákedı (Sahtú Renewable Resources Board)
The Dene name means "helpers of the ʔehdzo Got'ı̨nę, the Trap People." The Board works together with ʔehdzo Got'ı̨nę and the public in the five communities of the Sahtú Region to maintain Dene and Métis harvesting traditions, and keep the land and animals healthy for future generations. Board decisions about management plans, regulations and other issues related to wildlife management are referred to the appropriate Minister who may accept, vary or set aside the decision, with reasons. Rights and responsibilities for stewarding land and resources are outlined in Chapter 13 of the ***Sahtú Dene and Métis Comprehensive Land Claim Agreement, Vol. 1*** (1993).

ʔehdzo Got'ı̨nę Gots'ę́ Nákedı (Sahtú Renewable Resources Board): www.srrb.nt.ca

Wek'èezhìı Renewable Resources Board
The Wek'èezhìi Renewable Resource Board (WRRB) is the wildlife and habitat co-management authority for the Tłı̨chǫ Settlement Area. It is responsible for approving harvest levels, management plans, research plans, and any other wildlife management matter referred to it by government. It also makes recommendations on its own initiative.

WRRB decisions are referred to the appropriate government which may accept, vary or set aside the decision, with reasons, except for determination of total allowable harvest of wildlife, where the board's decision is final. Rights and responsibilities for stewarding land and resources are outlined in Chapter 12 of the Tłįchǫ Land Claims and Self-Government Agreement (20035).

Wek’èezhìı Renewable Resources Board: www.wrrb.ca

Nunavut Wildlife Management Board

The Nunavut Wildlife Management Board (NWMB) is the main instrument of wildlife management in Nunavut. Rights and responsibilities for stewarding land and resources are outlined in Article 5 of the ***Nunavut Land Claims Agreement*** (amended 2009). The NWMB is responsible for establishing Total Allowable Harvests and Basic Needs Levels; participating in research; establishing, modifying or removing non-quota limitations (e.g. sex or age specific harvests); approving the establishment, disestablishment, and changes to boundaries of conservation areas related to the protection of wildlife and wildlife habitat; and other duties assigned to it though the Nunavut Land Claims Agreement (refer to NLCA s. 5.2.33, 5.2.34). NWMB decisions are required to be submitted to the appropriate Minister and follow processes and requirements outlined in Part 3 of Article 5 of the NLCA.

Nunavut Wildlife Management Board: www.nwmb.com

Kitikmeot Regional Wildlife Board

The Kitikmeot Regional Wildlife Board (KRRB) is a Regional Wildlife Organization (RWO) under the Nunavut Land Claims Agreement (NLCA). As such, the KRWB is responsible for the allocation and enforcement of the regional BNL among the HTOs in the Region and the regulation of harvesting practices among the members of the HTOs.

Kitikmeot Regional Wildlife Board: www.niws.ca

Tuktut Nogait National Park Management Board

The Tuktut Nogait National Park Management Board (TNNPMB) is responsible, subject to the jurisdiction of the co-management boards within the ISR, for advising the Minister, or other ministers as appropriate, on all aspects of park planning, operation and management, and research.

Tuktut Nogait National Park Management Board: http://www.pc.gc.ca/eng/pn-np/nt/tuktutnogait/index.aspx

Parks Canada Agency

Parks Canada Agency protects Tuktut Nogait National Park and and the Saoyú-ʔehdacho National Historic Site to ensure the ecological and commemorative integrity of these places for present and future generations. Tuktut Nogait National Park was established to protect and maintain the Bluenose-West caribou herd and its calving and post-calving habitat. Parks Canada Agency works cooperatively with co-management boards and the GNWT to manage and monitor the herd and its habitat in the Park and in the greater Park ecosystem.

Parks Canada: www.pc.gc.ca/eng/pn-np/nt/tuktutnogait

Government of the Northwest Territories

The Department of Environment and Natural Resources (ENR) has ultimate responsibility for the management of caribou under the GNWT *Wildlife Act.* The Minister is empowered to establish harvest seasons, quotas and other conditions that may be required for the conservation of caribou within NWT.

Environment and Natural Resources, Government of Northwest Territories: www.enr.gov.nt.ca

Government of Nunavut

The Department of Environment (DoE) has ultimate responsibility for the management of caribou under the GN *Wildlife Act.* The Minister is empowered to set harvest seasons, quotas and other conditions that may be required for the conservation of caribou within Nunavut.

Department of Environment, Government of Nunavut: www.gov.nu.ca/env

Kugluktuk Angoniatit Association Hunters and Trappers Organization

The objects of the Association are to constitute an open and accountable forum, organized in a fair and democratic way, to protect and promote the rights and interests of those Inuit in the Kugluktuk area who are involved in hunting and trapping. As a Hunters and Trappers Organization the Kugluktuk Angoniatit Association is responsible for the management of harvesting among members, including the regulation of harvesting practices and techniques and the allocation and enforcement of community basic needs levels and adjusted basic needs levels (refer to NLCA s. 5.7.3).

Email address: kugluktukhto@qiniq.com

Nunavut Tunngavik Incorporated

The NLCA (Article 39) establishes authority to Nunavut Tunngavik Incorporated (NTI) as the primary Designated Inuit Organization under the Agreement. It is responsible for ensuring that Inuit rights and obligations under the land claim are implemented, including the wildlife management provisions (Article 5) of the NLCA.
Nunavut Tunngavik Incorporated: http://www.tunngavik.com/

Appendix D: Summary Table for Management Plan Engagement and Review Process

Date	Region	Community (#participants)	Engagement Round, Meeting Type or Objective	Outcome or Products
Feb. 28 – Mar. 22, 2007	Western Kitikmeot Region, NU	Kugluktuk (12)	Workshop intended to provide an opportunity for participants to share knowledge of caribou herds, as well as proposing several actions that could promote the recovery of the caribou herds and help the community during this period of low caribou availability.	Workshop focused on Bluenose East and Dolphin-Union herds. Report produced (Dumond 2007).
ROUND 1			**COMMUNITY INPUT AND ENGAGEMENT**	**WORKING GROUP AND CONSULTANT HOLD COMMUNITY MEETINGS**
Oct. 20 – Nov. 3, 2009	ISR	Aklavik (23), Inuvik (14), Paulatuk (11), Tuktokyaktuk (17)	Community engagements to review status of herds; hear concerns and opinions as to what's happening with BGC in the region; discuss solutions and what to include in a management plan. Also did school tours in communities.	Summary report produced for ISR. Inuvik and Aklavik meetings were shared with GSA participants; comments from these community members were not sorted into Gwich'in or Inuvialuit but only by community.
Oct. 21 – Dec. 18, 2009	GSA, ISR	Aklavik (23), Fort McPherson (11), Inuvik (14), Tsiigehtchic (8)	Community engagements to review status of herds; hear concerns and opinions as to what's happening with BGC in the region; discuss solutions and what to include in a management plan; RRCs invited to provide comments at meeting and formally afterwards if desired. Also did school tours in communities.	Summary report produced for GSA. Inuvik and Aklavik meetings were shared with ISR participants; comments from these community members were not sorted into Gwich'in or Inuvialuit but only by community.
Dec. 1 – 18, 2009	SSA	Colville Lake (17), Deline (11), Fort Good Hope (15), Norman Wells (5), Tulit'a (14)	Community engagements to review status of herds; hear concerns and opinions as to what's happening with BGC in the region; discuss solutions and what to include in a management plan. Also did school tours in communities.	Summary report produced for SSA.
Feb. 17, 2010	Western Kitikmeot	Kugluktuk (12-15)	Community engagements to review status of herds; hear concerns and	Summary report produced for Nunavut.

	Region, NU		opinions as to what's happening with BGC in the region; discuss solutions and what to include in a management plan	
ROUND 2			**COMMUNITY FEEDBACK ON FIRST REPORT DRAFT**	**ACCWM MEMBERS CONSULT IN THEIR RESPECTIVE REGIONS.**
Jan. – Feb. 2011	ISR	Inuvik (6), Aklavik (5), Tuktoyaktuk (12), Paulatuk (13)	Community meetings to review first draft of Management Plan	Meeting recorded in notes.
Feb. 14-Feb. 16, 2011	GSA	Aklavik(5), Inuvik (7), Fort McPherson(10), Tsiigehtchic(10)	GRRB Public meetings with Gwich'in RRCs to review first draft of the Management Plan to get input on the draft plan, the management actions and thresholds for actions; ENR WG member invited to help present plan with GRRB staff; RRCs invited to provide comments at meeting and formally afterwards	Summary report of all GSA consultations; summary does not include GTC comments. Themes identified to help review comments. Additional comments received from Gwich'in Tribal Council in March, 2011 on Dec 2010 version of draft plan.
Feb. 22 – 24, 2011	WRMA (Tłįchǫ)	Bechoko (40), Gameti (5), Whati (25)	In this region, Round 2 engagements included information conveyed to other regions during Round 1, as well as presenting information in the Draft Plan.	Notes produced for each community.
Mar. 2011	SSA	Deline (6)	Public meeting to develop a Management Plan for the Cape Bathurst, Bluenose-West and Bluenose-East caribou herds	Meeting notes provided, but no translation of discussions in North Slavey.
Aug. 2-4, 2011	Western Kitikmeot Region, NU	Kugluktuk HTO	Community consultations on draft Management Plan	Meeting notes provided.
ROUND 3			**CONSULTATION ON SECOND DRAFT**	**ACCWM MEMBERS CONSULT IN THEIR REGIONS. ENR RELEASES DRAFT FOR PUBLIC REVIEW AND COMMENT.**
Jun. 2011			Draft plan posted on ENR website for public review, sent to key audiences*, and provided at following assemblies: Dehcho FN	Written comments provided to ACCWM.

			(Wrigley), Akaitcho Territory Government (Lutsel K'e), Tłı̨chǫ (Whati), Dene Nation (Fort Providence), Gwich'in (Tsiigehtchic), Sahtú (Colville Lake).	
Aug. 9 2011	GSA, ISR	Inuvik (10)	ENR public review meeting on the draft Cape Bathurst, Bluenose-West, and Bluenose-East Caribou Herds Management Plan.	Summary notes provided.
Aug. 2- Aug. 18, 2011 & Dec. 7, 2011	GSA	Aklavik (8), Fort McPherson (5+8), Inuvik(6), Tsiigehtchic(3)	GRRB community consultations on draft Management Plan with RRCS and open to the public.	Community notes include list of participants and affiliation
Aug. – Oct., 2011	SSA	Tulit'a (11), Colville Lake (9), Deline (13), Fort Good Hope (16), Norman Wells (7)	ENR public review meetings on the draft Cape Bathurst, Bluenose-West, and Bluenose-East Caribou Herds Management Plan.	Summary notes provided.
Nov. 2011	WRMA (Tłı̨chǫ)	Bechoko, Whati	Information session on draft plan.	No information available.
Nov. 2011	NWT MN	(unknown)	ENR meeting with NWT MN for comments on draft Bluenose Management Plan	Summary notes provided.
Nov. 2011	NSMA	(unknown)	ENR meeting with NWT MN for comments on draft Bluenose Management Plan	Summary notes provided.
Jan. 2012	Dehcho	Wrigley (5), Fort Simpson (7)	ENR public review meeting on the draft Cape Bathurst, Bluenose-West, and Bluenose-East Caribou Herds Management Plan	Summary notes provided.
Apr. – Jun., 2013	ISR	Paulatuk (9), Aklavik (7), Inuvik (6), Tuktoyaktuk (24)	WMAC presentation and meetings to review draft plan and address IGC concerns with plan	Summary notes provided.

*In addition to the meetings and presentations conducted as part of the engagement process, ENR solicited public input on the draft Management Plan by posting it online (June 2011 – present). No broader distribution occurred in Nunavut. The draft plan was sent to the NWT organizations listed on the following pages for review and comment:

Aklavik Hunters' and Trappers' Committee
Aklavik Métis Local #56
Arctic Safaris
Association of Mackenzie Mountain Outfitters
Aurora Caribou Camp
Ayoni Keh Land and Dugha Financial Corporation
Barren Ground Caribou Outfitters Association
Behdzi Ahda First Nation Band Council
Behdzi Ahda First Nation Economic Development Corporation
Behdzi Ahda Renewable Resources Council
Beverly and Qamanirjuaq Caribou Management Board
Canadian Arctic Resources Committee
Canadian Association of Petroleum Producers
Caribou Pass Outfitters Ltd.
Charter Community of Arctic Red River
Charter Community of Déline
City of Yellowknife
Community Government of Behchokǫ̀, Tłı̨chǫ Government
Community Government of Gamètì, Tłı̨chǫ Government
Community Government of Wekweètì, Tłı̨chǫ Government
Community Government of Whatì, Tłı̨chǫ Government
CPAWS Northwest Territories
Deh Gah Gotie Dene Council
Dehcho First Nations
Dehcho Land Use Planning Committee
Délı̨nę First Nation
Délı̨nę Land and Financial Corporation
Délı̨nę Renewable Resources Council
Denehdeh National Office
Deton' Cho Corporation
Ecology North
Ehdiitat Gwich'in Council
Ehdiitat Renewable Resource Council
Enodah Wilderness Travel Ltd.
Environmental Impact Review Board Joint Secretariat – Inuvialuit Renewable Resource Committees
Fort Norman Métis Land/Financial Corporation
Fort Providence Métis Local #57
Fort Providence Resource Management Board
Fort Simpson Métis Local #52
Fort Smith Métis Council
Gwich'in Land and Water Board
Gwich'in Land Use Planning Board
Gwich'in Renewable Resources Board
Gwich'in Tribal Council
Gwichya Gwich'in Renewable Resource Council
Hay River Aboriginal Métis
Hay River Fish and Game Association
Hay River Métis Council
Inuvialuit Game Council
Inuvialuit Joint Secretariat
Inuvialuit Land Administration
Inuvialuit Regional Corporation
Inuvik Métis Local #62
J. Group (Peterson's Point Lake Lodge)
Jean Marie River First Nations
Joint Review Panel Manager
Ka'a'gee Tu first Nation
K'ahsho Got'ine Charter Community Council
K'atlodeeche First Nation
Liidlii Kue First Nations
Mackenzie Gas Project (Regional offices)
Mackenzie Valley Environmental Impact Review Board
Mackenzie Valley Land and Water Board
MLAs
Nahanni Butte Dene Band
Nihtat Gwich'in Renewable Resource Council
Norman Wells Land Corporation
Norman Wells Renewable Resources Council
North Slave Métis Alliance
Northern Gas Project Secretariat (Yellowknife and Norman Wells)
Northwest Territory Métis Nation
NWT and Nunavut Chamber of Mines
NWT Tourism Association
NWT Wildlife Federation
Paulatuk Hunters' and Trappers' Committee
Pehdzeh Ki First Nation
Qaivvik Ltd.
Rabesca's Resources Ltd.
Resident hunters
Sachs Harbour Hunters' and Trappers' Committee
Sahtú Land and Water Board

Sahtú Land Use Planning Board
Sahtú Renewable Resources Board
Sahtú Secretariat Incorporated
Sambaa K'e Dene Band
Tetlit Gwich'in Council
Tetlit Gwich'in Renewable Resource Council
Tłı̨chǫ Renewable Resources Committee
True North Safaris Ltd.
Tuktoyaktuk Hunters' and Trappers' Committee
Tulít'a Dene Band
Tulít'a Land and Financial Corporation
Tulít'a Renewable Resources Council
Wek'èezhìi Land and Water Board
Wek'èezhìi Renewable Resources Board
West Point First Nation
Wildlife Management Advisory Council (NWT)
Yellowknife Shooting Club
Yellowknives Dene First Nation (Dettah)
Yellowknives Dene First Nation (N'Dilo)
Yellowknives Dene First Nation

Appendix E: ENR Response Regarding Confidence in Caribou Population Estimates

"Prior to 2000, the Cape Bathurst, Bluenose-West and Bluenose-East barren-ground caribou herds were considered to be one herd and so were surveyed as such using post-calving surveys in 1986, 1987 and 1992. Since 2000, these herds have been surveyed individually based on ENR's understanding that the Cape Bathurst, Bluenose-West and Bluenose-East herds are three separate herds.

Pre-2000 survey data was reanalyzed in an attempt to provide earlier population estimates for each of the three herds. This reanalysis was based on 1) minimum counts; 2) where photographed groups of caribou were found and counted; and 3) which of the three herds the collared caribou and the groups they were associated with were assigned to. Any reconstructed results should be treated with caution because the original survey design was intended to get population estimates for one herd, not three individual herds. As a consequence, the number of collars used to estimate individual herd size was often too low pre-2000 to provide precise estimates – or in some instances – any estimates of herd size.

ENR's minimum counts and reconstructed estimates of pre-2000 survey results are as follows:

- The Cape Bathurst herd likely ranged, at minimum, between 13,000-16,000 caribou between 1986 and 1992 but may have exceeded 20,000 caribou at its peak size.
- The Bluenose-West herd likely ranged, at minimum, between 90,000-110,000 between 1986 and 1992.
- There were too few collars and associated groups of caribou during any of the pre-2000 surveys to derive credible population estimates for the Bluenose East herd.

ENR continues to pursue more accurate ways of collecting and analyzing survey data so that our management actions are based on the best information possible. ENR is currently undertaking a review of all of its population estimates for the Cape Bathurst, Bluenose-West, and Bluenose-East herds in light of a more recent population estimator that yields more precise estimates of herd size (the Rivest estimator). This estimator has, in recent years, been adopted by Alaskan biologists for their post-calving caribou surveys. After this review is complete, ENR will provide an updated series of population estimates for the three herds for the ACCWM to review. It is not anticipated that this review will change ENR's current understanding of herd trends since the 1980s." (Email correspondence, Aug. 1, 2013).

Appendix F: Land Use Planning Processes and Protected Areas in the Range of the Cape Bathurst, Bluenose-West, and Bluenose-East Barren-Ground Caribou Herds

Protected areas and land use plans are intended to control where certain activities can take place. They therefore help determine what the human impacts on the landscape will be. They are important tools for carrying out stewardship activities such as conserving biodiversity, wildlife habitats, species at risk, ecological processes, cultures and traditional lifestyles.

Since 1999, the NWT has had a Protected Areas Strategy – a partnership among communities, governments, environmental non-governmental organizations and industry – working together to establish protected areas across the NWT. The goals of the NWT Protected Areas Strategy are to protect:

- Special natural and cultural areas of the NWT, and
- Core representative areas within each ecoregion of the NWT, in which resource based development will not be permitted.

Land Use Plans[17]

Settled land claims increase capacity and clarify the process for local decision-making, and therefore can facilitate local stewardship. In some areas in the NWT with settled land claims, regional land use plans have been or are being prepared. These regional land use plans specify which land use activities are allowed in a given area.

The Inuvialuit Final Agreement does not provide for a Land Use Planning Board to develop a plan for the Region. However, the WMAC (NWT) produces community conservation plans. These plans reflect community concerns and expectations about the acceptable level of impacts on various landscapes. Updated versions were released in 2008.

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[17] See http://www.enr.gov.nt.ca/_live/pages/wpPages/soe_protected_areas_land_use_plans.aspx

The Gwich'in, Sahtú and Nunavut agreements provide for land use planning which is undertaken by claim-specific Institutions of Public Government (IPG). In these instances, the land use plans may declare zones in the settlement lands for various purposes. This can include restrictions on land use activities and land management agencies must respect the conditions established through the land use plans.

The Gwich'in Land Use Plan was approved by the Gwich'in Tribal Council (GTC) and the Federal Government in 2003. The plan classified the Gwich'in Settlement Area (GSA) into three zones: General Use Zones (57% of GSA), Special Management Zones (33% of GSA), and Conservation Zones which includes Heritage Conservation Zones (10% of GSA). All licenses, permits or other authorizations relating to the use of land and water must conform to the Land Use Plan. A review of the Gwich'in Land Use Plan is under way.

The Sahtú Land Use Planning Board has prepared a comprehensive land use plan for the SSA that guides how the land and its resources are used. This was approved in 2013. It designates three categories of land: conservations zones where no development is permitted; special management zones where development respecting identified values is permitted; and general use zones where development is permitted subject to general conformity requirements. There is a general conformity requirement for Fish and Wildlife that takes into account the importance of caribou to Sahtú communities. In addition, the SLUP maps caribou ranges and provides information on zones of with important caribou habitat.

The Tłı̨chǫ Agreement provides for the Parties to agree to establish a mechanism for land use planning in Wek' èezhìi (Tłı̨chǫ Region), or for government to do so for lands other than Tłı̨chǫ lands. Currently there is no land use planning body or mechanism for Wek' èezhìi. The Tłı̨chǫ Agreement also empowers the Tłı̨chǫ Government to enact laws on Tłı̨chǫ Lands, including land use plans. On April 29, 2013 the Tłı̨chǫ Government enacted the Tłı̨chǫ Land Use Plan Law, which came into effect on June 1, 2013. The Tłı̨chǫ Land Use Plan establishes five zones: a land exclusion zone where no development will be considered, a habitat management zone, a traditional use zone, a cultural heritage zone and an enhanced management zone. Each zone has a stated goal and objectives, and a list of land uses that will be considered. The plan also includes several Land Protection Directives that are:

- Development proposals are to have minimal impact on wildlife and habitat,

- The Tłı̨chǫ Government will develop a strategy to minimize impacts to caribou and habitat that takes into account seasonal ranges, best management practices, herd status and cumulative disturbance on the range,
- The Tłı̨chǫ Government will develop an approach that supports long-term conservation and resilience of migratory caribou
- Limits on the number of projects to address cumulative effects on wildlife.

There is a land use planning process underway in the Dehcho Territory also.

In Nunavut several Institutes of Public Government work together to control the exploration and development of land. The Nunavut Planning Commission (NPC) is responsible for land use planning; the Nunavut Impact Review Board (NIRB) plays a vital role in conducting Environmental Impact Assessments; while the Nunavut Water Board (NWB) is responsible for the licensing and permitting of any water use. The Nunavut Wildlife Management Board (NWMB) provides recommendations to the other Institutes of Public Government with respect to the management of wildlife. Through its Habitat Management and Protection Program the NMWB will maintain the necessary role of ensuring the sound management and protection of Nunavut's terrestrial and marine wildlife habitats. The NPC has developed a Draft Nunavut Land Use Plan (DNLUP) to guide and direct resource use within the Nunavut Settlement Area. Goals of the Plan include preserving the integrity of the natural environment and avoiding the disruption of ecosystems. The DNLUP includes Land Use Designations that identify prohibited uses, and Land Use Recommendations that advise proponents on issues to consider when working in particular areas. More information on the DNLUP can be found on the NPC's website (www.nunavut.ca).

Approved land use plans are legally binding on all parties. However, legislation requires land use plans be reviewed every five years and they can be changed at that time.

Protected Areas

Herd ranges encompass established and proposed protected areas. Tuktut Nogait National Park protects calving and post-calving habitat of the Bluenose-West herd in the ISR and SSA. Discussions of a new park in Nunavut adjacent to Tuktut Nogait are ongoing with Kugluktuk, Kitikmeot Inuit Association, and the Nunavut Planning Commission.

Edaíį́lɑ is a prominent peninsula on the east shore of Great Bear Lake which is an important area culturally and for the Bluenose-East caribou. Edaíį́lɑ has been proposed for formal protection by the Déljne Land Corporation, and is identified as a conservation zone in the draft Sahtú Land Use Plan. Sɑoyú-ʔehdɑcho National Historic Site of Canada protects the two westernmost peninsulas on Great Bear Lake. The land is co-managed by the Sɑoyú-ʔehdɑcho Cooperative Management Board and Parks Canada.

Ezǫdzìtì is an area protected through the Tłı̨chǫ Final Agreement for its historical and cultural importance. The area, which encompasses approximately 1,374 km^2 of settlement land, is protected from non-renewable resource development.

Further information on parks and protected areas within the range of these caribou is available in the ***Scientific Report***, as well as online sources such as:

- Northwest Territories Protected Areas Strategy: http://www.nwtpas.ca/
- ENR's Protected Areas and Land Use Plans: http://www.enr.gov.nt.ca/_live/pages/wpPages/soe_protected_areas_land_use_plans.aspx
- Inuvialuit Community Conservation Plans: http://www.jointsecretariat.ca/documents.html
- Gwich'in Land Use Planning Board: http://glwb.com/
- Sahtú Land Use Plan: http://www.sahtulanduseplan.org
- Tłı̨chǫ Land Use Plan: http://tlicho.ca/sites/default/files/105-LandUsePlan_FINAL%20VERSION%5B2%5D_0.pdf
- Nunavut Parks: http://nunavutparks.ca/
- Parks Canada: http://www.pc.gc.ca/eng/progs/pn-np/index.aspx

Appendix G: Advice Regarding Protection of Caribou Herds and Habitat within the Range of the Cape Bathurst, Bluenose-West, and Bluenose-East Caribou

Traditional knowledge in the range of these caribou indicates that caribou have their own ways of looking after themselves – for example, they adapt to changes in food availability or quality by shifting their migration routes. There is evidence both in oral histories and from scientific studies that caribou numbers can go through very big cycles over time, and that caribou have recovered or come back after declines or moving away numerous times.

Nonetheless, caribou today face changes in the landscape that they have never experienced before. Human activities are having an increasing impact in the north that includes new developments as well as the cumulative effects of many decades of development. No one yet knows how well the caribou will be able to weather these changing environments and conditions.

There are some things people can do to minimize negative impacts of development on caribou; these occur at several levels, spanning community, regional, and federal responsibilities and authority. On the next pages we have summarized some of the types of advice and recommendations that are often provided as a means of 'taking care of caribou'. Three tables follow:

1. **Government Standard Advice for Wildlife Disturbance and Harassment and/or Barriers to Wildlife Movement**
2. **Advice from ACCWM Wildlife Management Boards for Protecting Caribou and Caribou Habitat**
3. **Advice from Communities for Protecting Caribou and Caribou Habitat**

It is important to note that this is not a comprehensive list of all the types of advice and recommendations that may be provided in the NWT and Nunavut; these are just some summarized examples provided by several organizations and agencies. We have also included any advice or recommendations that was provided by community members during the public engagement process.

Currently, new regulations are being developed as a result of the new NWT Wildlife Act that may have additional advice or requirements for reference. These are not included in the table, nor are items from the Government of Nunavut Wildlife Act and Nunavut Land Claim Agreement.

1. Government Standard Advice for Wildlife Disturbance and Harassment Potential Effect or Issue Category			
Government Agency	**Potential Effect or Issue**	**Source**	**Mitigation Measure**
Environment and Natural Resources, NWT	Wildlife Disturbance and Harassment; Barriers to Wildlife Movement	GNWT-ENR Standard Recommend-ations provided to Land and Water Boards and Developers for Land Use Permit and Water Licence Applications	**General –** Section 56 of the Wildlife Act indicates that no person shall, without a permit or license, engage in an activity that is likely to result in a significant disturbance to big game or other prescribed wildlife; or chase, fatigue, disturb, torment or otherwise harass wildlife. If caribou groups > 50 are encountered during development the proponent should shut down operations if they approach within 500m. Suspended activities include drilling, aircraft over flights (<300m), and vehicle, ATV or snowmobile use outside the vicinity of the camp. When caribou are further than 500m away operations may resume. All activities must yield to caribou on rights-of-way.The proponent is required to contact ENR, local elders and active harvesters familiar with the area on possible water crossings or other ecologically sensitive caribou habitat. The proponent is required to determine when caribou migration activities occur in the vicinity of the project area based on the most recent data supported by caribou collar data and photo census. If the project falls within caribou migration ranges development activities must cease when caribou are present. **Caribou Calving –** The Permittee is encouraged to contact and verify with ENR to determine the distribution of pregnant females and calves prior to the commencement of the operations (approx. March 15 - May 25). **Water Crossings – General** No development can occur within 1km of known caribou water crossing from May 15th till Oct 15th. Where there are known traditional caribou water crossings, development activity should not occur within 1 km during the season when the crossing is likely to be used. Construction of infrastructure should avoid these sites within a distance of 1 km. **Water Crossings – Seismic or Blasting**

			No blasting or seismic activity can be conducted within 10km of recognized caribou water crossing from May 15th till Oct 15th. **Water Crossings – Mineral Exploration, Diamond Drilling** No diamond drilling activity can be conducted within 5 km of recognized caribou water crossing from May 15th till Oct 15th. **Vehicle/Equipment Use –** Caribou must not be harassed by vehicles. Snowmobiles and other vehicles must not approach within 250m of caribou. **Aircraft –** Maintain minimum altitudes of no less than 300m at all times other than landing or taking off. Wildlife cannot be approached closer than 500m, chased or harassed by aircraft or other motorized vehicles.
Aboriginal Affairs and Northern Development Canada (AANDC)	Caribou calving - Caribou Protection Areas	Department of Indian Affairs and Northern Development Caribou Protection Measures (CPM)	1. (a) The Permittee shall not, without approval, conduct any activity between May 15 and July 15 within the Caribou Protection Areas depicted on the map certified by the Engineer as the "Caribou Protection Map" and annexed to this Land Use Permit. (b) A Permittee may, upon approval by the Land Use Inspector, operate within the said Caribou Protection Areas beyond the May 15 deadline set out in 1(a), provided that, when monitoring information indicates that caribou cows are approaching the area of operation, the Permittee will implement 1(c). (c) On cessation of activities pursuant to 1(a) or 1(b), the Permittee will remove from the zone all personnel who are not required for the maintenance and protection of the camp facilities and equipment, unless otherwise directed by the Land Use Inspector. (d) The Permittee may commence or resume activities prior to July 15 within those parts of the Caribou Protection Areas released by the Land Use Inspector for the reason that caribou cows are not expected to use those parts for calving or post-calving (note 1). 2. (a) In the event that caribou cows calve outside of the Caribou Protection Areas, the Permittee shall suspend operations within the area(s) occupied by cows and/or calves between May 15 and July 15. (b) In the event that caribou cows and calves are present, the permittee shall suspend: (i) blasting; (ii) overflights by aircraft at any altitude of less that 300 meters above ground level; and (iii) the use of snowmobiles and ATVs (all-terrain vehicles) outside the immediate vicinity of the camp.

			• The Land Use Inspector’s decision will be based on the existing caribou information. • Concentrations of caribou should be avoided by low-level aircraft at all times. 3. (a) During migration of caribou, the Permittee shall not locate any operation so as to block or cause substantial diversion to migration. (b) The Permittee shall cease activities that may interfere with migration, such as airborne geophysics surveys or movement of equipment, until the migrating caribou have passed. 4. (a) The Permittee shall not, between May 15 and September 1, construct any camp, cache any fuel, or conduct any blasting within 10 kilometres of any “Designated Crossing” as outlined on the map certified by the Engineer as the “Caribou Protection Map” and annexed to this Land Use Permit. (b) The Permittee shall not, between May 15 and September 1, conduct any diamond drilling operation within 5 kilometres of any “Designated Crossing” as outlined on the map certified by the Engineer as the “Caribou Protection Map” and annexed to this Land Use Permit.

2. Advice from ACCWM Member Boards for Protecting Caribou and Caribou Habitat		
Wildlife Management Board	**Source**	**Suggested Mitigation Measures**
Wildlife Management Advisory Council (NWT)	Community Conservation Plans for Aklavik, Inuvik, Tuktoyaktuk	**Caribou/Tuktu Conservation Measures –** Identify and protect important habitats from disruptive land uses. Avoid shooting mature bulls during the rut. Do not harvest more than is needed. Convey and promote traditional means of using all of each animal harvested, discourage waste of meat. Develop cooperative management relationship between the co-management boards of each relevant land claim group. Harvest on sustainable basis, and in manner consistent with recommendations of the management plans and HTC bylaws. Support the Barren-ground Caribou Management Strategy **General and Tourism Guidelines that Apply to Caribou –** Discourage the use of aircraft for low level (<610 m) (<2,000 ft.) wildlife spotting at any time unless being done in conjunction with authorized research in order to avoid unnecessary disturbance or harassment of wildlife (see also Section 6.3(c)). The total number of tourist operators and/or tourists should be restricted in certain areas at certain times of the year (e.g. nesting and moulting areas for migratory birds, calving areas, denning areas.) Tourists and tourist operators should not handle or harass wildlife. **Example of Land Use Category Applications Relevant to Caribou –** **Category C** Lands and waters where cultural or renewable resources are of particular significance and sensitivity during specific times of the year. These lands and waters shall be managed so as to eliminate, to the greatest extent possible, potential damage and disruption. (e.g. applies to spring, summer, fall, and winter caribou harvesting areas)

		Category D Lands and waters where cultural or renewable resources are of particular significance and sensitivity throughout the year. As with Category C, these areas shall be managed so as to eliminate, to the greatest extent possible, potential damage and disruption. (e.g. applies to Bluenose-West calving grounds, Cape Bathurst calving and post-calving grounds) **Category E** Lands and waters where cultural or renewable resources are of extreme significance and sensitivity. There shall be no development on these areas. These lands and waters shall be managed to eliminate, to the greatest extent possible, potential damage and disruption. This category recommends the highest degree of protection in this document. (e.g. applies to Bluenose-West winter range)
Gwich'in Renewable Resources Board	Comments and recommendations given on research or development permit applications to proponents and/or to regulatory bodies in response to permit applications	**Wildlife/Fish/Plants** – Report wildlife observations and wildlife encounters during project activities to the GRRB. Report wildlife mortalities to the GRRB and ENR Recommend to suspend operations temporarily if caribou, are spotted within 500m of any work/camp site and to resume once the animal(s) have left the area. Consult with the GNWT Dept of Environment & Natural Resources for advice on seasonal caribou movements to ensure fieldwork does not interfere with migration or use of critical habitat, such as calving grounds. Caribou calving grounds and water crossings should be avoided whenever possible. Adhere to GWNT regulations regarding wildlife harassment Obtain all required appropriate permits and licences (i.e. Wildlife Research Permit, etc.); Do not remove or harm any Species at Risk and to adhere to SARA regulations (assessing adverse effects of the project on listed wildlife species and critical habitat, taking measures to lessen or avoid those effects and to monitor those effects. GRRB also recommends treating species not listed but which are on other schedules of SARA and under consideration for listing on SARA, including those designated as at risk by COSEWIC be considered during an assessment in a similar manner as above.) Do not feed wildlife. Ensure that all employees and visitors are also aware, and do not, feed wildlife. Vegetation around project areas should be documented before work begins.

		Transportation – Adhere to Environmental Impact Screening Committee's guidelines for minimum altitude of aircraft near wildlife species. GRRB recommends maintaining a minimum flight altitude of at least 650m in order to reduce disturbance to wildlife. Adhere to GWNT regulations regarding wildlife harassment. The GRRB advises that low level flights may harass wildlife. If animals run or alter their behaviour in response to aircraft presence, aircraft should alter course away from the wildlife and/or move to a higher altitude (650m as above, or higher). Give wildlife right of way whenever possible and avoid large congregations. If wildlife are present at landing location, use another location. Recommend not to alter travel path in order to approach animals. Restrict ATV use to existing roads or trails. If snowmobile use is required, contact GNWT ENR to ensure enough snow pack is present to minimize habitat damage and avoid disturbance to organic layers and degradation of permafrost. Stop overland travel of vehicles at first sign of ground rutting or gouging. Ensure the project includes and follows plans to remove fuel drums from re-fueling locations at project conclusion. Ensure fuel storage and containment regulations are followed. In mitigation or reclamation measures or protocols requiring re-seeding, ensure that native seed mixes appropriate for the location and habitat are used. Ensure mixes are weed free to reduce contamination by invasive species. **Equipment –** Clean all equipment prior to initial use in field to prevent the spread of invasive vegetation species. Remove all equipment prior to the end of the field season each year. **Monitors –** Local environmental monitors from the communities are encouraged to assist with fieldwork. **Spills –** Ensure spill kits are available at all sites and report any spills that occur to GRRB in addition to permit requirements to report to regulators. Ensure spill kits are available at fuel storage and re-fueling locations.

		Conflict – Avoid collecting specimens in areas of long-term or on-going fieldwork by other parties without the permission from those conducting the fieldwork. **Camping –** Acquire all necessary camping permits.
Sahtú Renewable Resources Board		No standardized advice or measures currently available for inclusion.
Wek'èezhìi Renewable Resources Board		No standardized advice or measures currently available for inclusion.
Tuktut Nogait National Park Management Board		**Reducing disturbance to caribou in Tuktut Nogait National Park (PCA) –** Researchers wanting to work within Tuktut Nogait National Park must apply for a Research and Collection Permit. Permit applications go through an internal review process, and require exemption or approval from the Inuvialuit Environmental Impact Screening Committee (EISC). Support from the Paulatuk Hunters and Trappers Committee is also recommended. During the permit review period, Parks Canada provides advice to researchers to reduces impact and disturbance to caribou during their project. Recommendations can include: • All flying within park boundaries must adhere to EISC Flight Guidelines (see below) • A landing permit is required and landing locations needed to be communicated in advance. Permit conditions may include minimum landing distances to wildlife. • Access to the park may be restricted at particular times of the year. ○ Based on recommendations from the Tuktut Nogait National Park Management Board and the community of Paulatuk, aircraft access to the park was restricted during June and July in 2009 to reduce potential disturbance to calving and post-calving Bluenose West caribou. ○ Since 2009, Parks Canada has continued to make every effort to minimize in-Park flights during calving and post-calving during internal operations and works closely with researchers and other operators to minimize aircraft activity during this period of the year, where possible. All businesses, including aircraft companies and tourism outfitters require a business licence to operate in Tuktut Nogait National Park. All licensed operators agree to comply with the mitigations listed within the Replacement Class Screening Report for Aircraft Landings in the Northern National Parks of Canada (2011), as follows:

		Operators shall: • Minimize use of fuel and emissions by reducing the time the aircraft runs on the ground, minimizing the number of flights, and minimizing the amount of time circling before landing. • Ensure certification of noise compliance, if applicable, is current. • Educate visitors about current and appropriate behaviour of aircraft to wildlife. • Never circle, chase, hover over, dive bomb, pursue or in any other way harass wildlife. Aircraft landing permits are not to be used for wildlife viewing or photography. Do not alter the flight path to approach wildlife, avoid flying directly over animals. For passengers requesting photographic opportunities, pilots should explain that disturbance of wildlife could result in loss of business licence or charges under the CNPA. • Avoid congregations of animals. • Maintain a normal flying altitude of 2000 ft when in the air space over the park except for approach to land, take-off or for safety reasons. • Minimize the number of flights whenever possible. • Use small aircraft rather than large aircraft whenever possible. • Use fixed-wing aircraft rather than helicopters whenever possible. • Hovering or circling may greatly increase disturbance and must be avoided. • Caribou calving grounds should be avoided whenever possible. • Animals reactions will depend on a variety of situations including aircraft type, noise levels, speed of travel, over flight frequency, and animal activity (e.g., loafing, feeding, traveling) and its surroundings (water depth and clarity, substrate). Further guidance on flying altitudes for the Inuvialuit region are provided by the Inuvialuit Environmental Impact Screening Committee Flight Guidelines - avoid flying over calving grounds when possible. No aeromagnetic surveys in or near calving and post-calving areas from May 25 to July 15. Minimum 610m. Minimize flights when possible. Use fixed wing rather than rotary, and small aircraft rather than large. Avoid hovering over caribou. Avoid flying over areas known to have large groups of caribou.
Kitikmeot Regional Wildlife Board		No standardized advice or measures currently available for inclusion.

3. Advice from Communities for Protecting Caribou and Caribou Habitat	
Topic	**Suggested Mitigation Measures and/or Management Actions**
Land Use Activities	• Improve collaboration between levels of government to review and comment on land use applications; • Improve community consultations for land use application reviews; • Improve communication flow and ensure a fair time to review land use applications; • Increase resources of regional organizations so they can efficiently review land use applications; • Limit disturbance by exploration activity and aircraft on calving grounds and migration routes; • Increase minimum flying altitude; • Involve the public in reporting aircraft flying low or harassing wildlife (communicate rules and actions to take); • Fence tailing ponds and monitoring of contaminants for at least 15—20 years after mines close (contamination of caribou food). Request money up front; • Protect from pollution on the land and in the water; • Make sure that companies reduce dust emission by exploration, mines, roads and trucks; • Promote a stepped development, such as a limited number of mines at any time (e.g. two to three mines only at a time); • Ensure that road impacts on water and habitat are addressed; • Water quality: community should be informed and mine should be monitored by independent organizations; • Education to reduce garbage on the land, sea and in the community; • Promote a protected area strategy to protect some hunting areas or important wildlife areas from development; • There should be a moratorium on industrial activity on or near calving grounds at any herd status; • Recommend caribou habitat as a "value at risk" for forest fire management, and for land use permits should occur at all caribou population levels.
Predators	• Need to monitor wolf condition and amount of caribou that wolves are consuming; • Need to understand predation rates on caribou to consider predator control; • Have monitors on calving grounds to protect calves from predators at this sensitive time; • Exclude predators from important calving areas.

Habitat	• Need to protect the areas that are important for caribou feeding; • Limit access to critical or sensitive areas of habitat (e.g. feeding areas); • Promote a protected area strategy to protect some hunting areas or important wildlife areas from development; • Support leaders' action to encourage the USA and Canada to address climate change issues.
Subsistence Harvest Regulations, Practices, Monitoring and Enforcement	• Encourage traditional harvesting practices that incorporate respect, no waste, limit wounding loss, letting the leaders pass, etc.; • Limit harvesting when necessary, especially if waste is evident; • Promote community hunts with experienced hunters to reduce wounding loss and wastage of meat; • Balance harvest based on age class and sex of animals, season and use, and traditional knowledge; • Community would rather see something like a ratio of bulls to cows around 80:20 as opposed to bulls only in the orange zone; • Avoid shooting pregnant cows during the spring; • Avoid harvesting cows accompanies by a calf or yearling; select for lone cows; • Hunt in different areas each year; spread hunting out so that areas are not over-hunted; • Get additional funds for harvesters to go elsewhere to hunt; • Provide compensation for limits on caribou harvest in red zone; • Have open season for barren-ground caribou only in March-April when both the bulls and the cows are fat; • Regional organizations like HTOs and RRCs need to consult with their communities about how to limit their harvests – do at a community level so that it can be changed again when the herds rebound; • Recommending a bulls-only or bulls-majority harvest will weaken the herd. The recommendation should be to take the weaker or older individuals, both male and female, to leave the strongest bulls to protect the herd and pass on their strong genes; • Develop new or re-instate former harvest studies in each region; • Develop budgets to hire people to conduct harvest surveys in communities; • Need continuous, accurate harvest reporting in each area, done at least seasonally (e.g. fall and spring); • Accurate records of harvests should be mandatory. RRCs should collect the data, but need boards to coordinate. RRCs need to have public meetings to let people know what they are trying to do by collecting the information; • Should be mandatory harvest reporting or at least ask hunters to volunteer their information about where they went, what they harvested and for whom; • Issue books or calendars for harvesters to record their information, which would be useful to both traditional knowledge and science;

	• Need better harvest monitoring and enforcement at all times; • Have monitors on the highway – RRC members and people from the community watching to make sure hunting is proper, safe, and people are taking only what they need; • Park Rangers keep a log of hunters and fish taken – do this where possible; • Need to develop way to patrol or enforce harvesting restrictions when/where caribou are very accessible to communities; • Need to develop a way to penalize poaching; • Need plan to address enforcement requirements for compliance with caribou harvest regulations; • Develop a quota system to allow the herds to increase; • Abandon zone system in favour of quotas; • Communities close to calving grounds especially need a tag system in place.
Non-Subsistence Harvesting	• Need to address what are seen as inequities in how harvest restrictions have been applied; • Need to address when harvests should be considered commercial and/or allowed; people are harvesting and selling caribou in some places; • Need to restrict sport hunt and commercial hunts; • Quotas need to be determined based on the number of people in each community; • Harvesting restrictions need to be consistent for conservation purposes and for fairness; • Consider reallocation of tags, within season, depending on whether quotas are being met; • For the sports hunt, they target the largest, strongest bulls, but they are important and should be left in the herd to pass on their genes (yellow or green status); • Need consistent sport hunting regulations across the range of the herds to protect them effectively (e.g. hunters will Cross the border to hunt in Nunavut when regulations differ from NWT); • Regional organizations need to pass motion to stop sports hunting in areas where too many bulls are being removed From the population; • Manage harvest composition for commercial harvest (meat sale, sport hunt); • Commercial harvest is easier to monitor and regulate and if necessary, the composition of the harvest (sex and age classes) can be regulated.

Food Replacement and Sharing	• Arrange alternate food/meat packages (e.g. from Stantons) in red zone; • People should switch to buffalo, reindeer and/or muskox where possible to take some pressure off caribou; • Look into possibility of increasing reindeer herd to provide alternate meat source; • Harvest of alternate species will have to be monitored, as Dall's sheep, Porcupine caribou, woodland caribou, and moose harvests may increase if Bluenose herds harvesting decreases; • Elders say that if it is hard to get caribou, people should go to lakes to get fish; • Develop community-based programs that subsidize resources (e.g. gas) to enable people to get meat for elders; this Would save money and help know how much is being hunted; • Compensate with fish; • The ACCWM should look into selling caribou among settlement areas. The Dene practice is to share meat with elders and other people in the community, including non-Aboriginal people; • Share meat from outfitters and send to other communities; • Need to have more meat sharing among people, including where non-Aboriginal people hunt with Aboriginal people; • Having a community freezer can help keep the harvest constant. • Barter or trade between community members or between communities is against the principles of traditional knowledge – it should be sharing between people who have access to the resources and those who do not; • It is a good idea to share meat between communities when it is available in one area and not another, but to send enough to help the people in another community is extremely expensive, even with the reduced shipping rate on country foods; • The concept of community freezers should be revisited. People who need the meat can go there and get some, it promotes sharing, and older hunters can meet others there to help show them how to prepare and preserve the meat properly.
Communication and Education	• Need to coordinate land use planning and activities across the entire annual range of herds to ensure that habitat is conserved for caribou; • Co-management and cooperation between parties is key to the success of a plan like this. Discussions should occur regularly between managers and resources users from different jurisdictions if they are going to effectively co-manage the same resources/herds; • Co-management boards need to improve communication with community members, for community members to be able to make informed decisions and participate in the management process; • Communicate with regional organizations (e.g. HTO) and communities on important topics such as protecting calving grounds, and take messages to higher levels of government;

	• Overall, improved communication is needed between higher levels of government, regional organizations and communities regarding wildlife information, research results and management consultation; • Need to have public meetings about the caribou situation; • All user groups need to be at the meetings; • Some elders and community members are not receiving information about the Management Plan; • A good communication strategy is important (e.g. use radio and television stations; bring translators to meetings for elders; get signs on the winter road to remind people to respect caribou; • It is important to keep the community updated on research results and management decisions. There has to be emphasis on maintaining constant contact with the communities; • More people need to come to meetings to share their knowledge and get education about what is going on with caribou; • More effort should be made to get more people out to participate; • Use community hunts to teach un-experienced hunters how to select, harvest and butcher caribou; • Teach good harvesting practices using elders and traditional knowledge, both in the class room and through on the land experience; • Need to educate people regarding: safety while hunting, which rifles to use and how to use them, accurate targeting, how to sight rifles, how to properly track animals, kill them efficiently, and skin them, prepare the meat, reduce waste, proper use and storage of meat, sharing, avoiding meat wastage and wounding; this should include when to harvest what types of caribou (for example, the meat from males is not good in the fall during the rut); • This education should include school visits starting in kindergarten, but there is also a need to reach those that are older and have finished school. It was recognized that the education is largely a community responsibility – it should be learned from parents and grandparents, but it was suggested that sponsors of the Management Plan could assist with some of the costs of these educational sessions and workshops as part of their community involvement / education; • It is also important to educate industry on how to avoid harassment and to properly monitor and record wildlife observations. These records should be shared with the local HTO and RRC offices; • Make hunter safety and training part of the school curriculum; • Create educational video and distribute; • Create hunter education programs that focus on young hunters and new residents, but also provide training for others (e.g. evening classes); • Need to also teach about safety when hunting;

	• Get people to understand their responsibility towards wildlife; • Promote their active participation in developing and implementing management actions; • Request leadership from community elders; • Conservation education should be emphasized in the plan at all stages, not just when the herd is declining.

November 2014

ᐅᐊᑮᓯᒥ ᓄᓇᒥᐅᑕᓕᕆᔩᑦ ᑲᑎᒪᔩᑦ ᐱᐳᔪᑎᑦᓯᒪᔭᕆᑦ ᐃᓱᒪᓕᐅᕈᑎᖃᓚᐅᕐᓂᕆᓐᓄᑦ ᑭᖑᓪᓕᕐᒥᒃ ᐅᓂᒃᑲᓕᐊᕆᑦ - ᓴᐅᒥ ᑑᑐᓕᕆᓂᕐᒧᑦ ᖁᕐᓗᖅᑑᑉ ᓄᓇᖅᐱᖕᒪᑕ ᑲᓇᖕᓇᖕᒐᓂ ᑑᑐᓂᒃ

ᐅᐊᑮᓯᑉ ᓄᓇᒥ ᐅᑕᓕᕆᔩᑦ ᑲᑎᒪᔨᖕᕕ ᐋᒐᓯ 1, 2019-ᒥ

1.0. ᐊᐅᓚᑦ ᑎᔨ ᓄᑦ ᑐᕌᖕᖔᑦ ᓇᐃᓈᖅᑕᐅᓯᒪᓪ ᓗᑎᒃ

ᐅᐊᑮᓯᒥᐅᑦ ᓄᓇᖕᒐ ᐊᓪ ᓚᖕᕕ ᓄᓇᒥ ᐅᑕᓕᕆᔨᒃ ᑯᑦ ᑲᑎᒪᔨᖕᕕ ᑲᒪᔨ ᐅᕝᕙᑦ ᐆᒪᔪ ᓕᕆᓂᕐ ᒥᒃ ᐊᐅᓚᑦ ᑎᔨ ᐅᓂᖅ ᓄᓇᖕᑳ ᓂ ᑕᐃᔭ ᖕᒐ ᐅᐊᑮᓯᒥ ᐊᒻ ᒪ ᓗ ᑎᒍᒥ ᐊᖅᑎᐅᖃᑕᐅᓪ ᓗᑎᒃ ᐊᐅᓚᑕᐅᓂᖕᖏ ᓂᒃ ᐊᒻ ᒪ ᓗ ᓇᐅᑦ ᑎᖅᑐᖅᑕᐅᕚᓪ ᓕᐊᖕᖏ ᓇᕐ ᓂᖕᖏ ᓂᒃ ᖁᕐ ᓗᖅᑑᑉ ᓄᓇᖅᐱᖕᒪᑲ ᓇᖕ ᓇᖕᒐ ᑐᑦ ᑐᓂᒃ . ᑕᒫ ᓂ ᓄᕕᐱᓇ 2018-ᒥ , ᒐᕙᒪᒃ ᑯᑦ ᐊᕙᑎᓕᕆᔨᒃ ᑯᖕᒥ ᓄᓇᒥ ᐅᑕᑐᖃᓕᕆᔩᑉ ᓗ, ᓄᓇᑦ ᓯ ᐊᕐ ᒥ ᐅᓂᒃ ᑳ ᓕᐅᓚᐅᖅᑐᑦ , ᐃᓱᒪᕆᔭ ᖕᖏ ᓂ, ᖁᕐ ᓗᖅᑑᑉ ᓄᓇᖅᐱᖕᒪᑲ ᓇᖕ ᓇᖕᒐ ᑐᒃ ᑐᐃᑦ ᐊᒥᔅ ᓰᔭ ᓐ ᓃᓇᐊᖅᓯᒪ ᓂᖕᖏ ᓂᒃ ᐱᓪ ᒪᓇᐅᔭᒥᒃ ᐊᒻ ᒪ ᓗ ᐊᐅᓚᑕᐅᓂᖕᖏ ᓂᒃ ᖃᓄᐃᓕᐅᕈᑕᐅᒃ ᑲ ᓐ ᓂᓇᐊᖅᑲᕐ ᓂᖕᖏ ᓂᒃ .

ᑕᒫ ᓂ ᔭ ᓄᐊᕆ 2019-ᒥ ᑕᐃᒃ ᑯᐊᒃ ᓰᑦ ᓰᒥᐅᑕᐃᑦ ᒐᕙᒪ ᐃᑦ ᐊᓪ ᓚᖕᕕ ᐊᒻ ᒪ ᓗ ᓄᓇᑦ ᓯ ᐊᑉ ᒐᕙᒪᒃ ᑯᖕᕕ ᑐᓂᓯ ᓚᐅᖅᑐᑦ *ᑕᒪ ᐃᓐ ᓂᖕᖁᖅᑐᓂᒃ ᑐᒃ ᓯᕋᐅᑎᖕᖏ ᓂᒃ ᐊᐅᓚᑦ ᑎᓂᕐ ᒧᑦ ᖁᕐ ᓗᖅᑑᑉ ᓄᓇᖕᒪᑲ ᓇᖕ ᓇᒐ ᓂᒃ ᑐᒃ ᑐᖕᖏ ᓂᒃ , ᐊᕐ ᕋᒍᓂᒃ 2019-2021-ᒧᑦ* ᑲᑎᒪᔨᖕᖏ ᓄᑦ ᐅᐊᑮᓯ ᑯᑦ , ᐅᓂᒃ ᑳ ᖅᑐᓂᒃ ᐊᑐᓕᖁᔭ ᖕᖏ ᓂᒃ ᐊᐅᓚᑦ ᑎᓂᕐ ᒧᑦ ᖃᓄᐃᓕᐅᖁᔭ ᖕᖏ ᓂᒃ ᖁᕐ ᓗᖅᑑᑉ ᓄᓇᖅᐱᖕᒪᑲ ᓇᖕ ᓇᖕᒐ ᑐᒃ ᑐᖕᖏ ᓂᒃ ᐱᔾ ᔪᑎᖃᖅᑐᓂᒃ ᓄᓇᖕᖏ ᓂ ᐅᐊ'ᑮᓯᒥ ᓲᖑᓂᖕᖏ ᓂ. ᐊᐅᓚᑦ ᑎᓂᕐ ᒧᑦ ᖃᓄᐃᓕᐅᕈᑎᒃ ᓴ ᐃᑦ ᐱᑎ ᐊᖅᑎᑕᐅᔪᒪ ᓂᖕᖏ ᒃ ᓰᑦ ᓰᒥᐅᑦ ᒐᕙᒪ ᖕᖏ ᓄᑦ ᓄᓇᑦ ᓯ ᐊᑉ ᒐᕙᒪᒃ ᑯᖕᕆᓄᓪ ᓗ ᑕᒪ ᐃᓐ ᓂᖕᖁᖅᑐᑦ ᑐᒃ ᓯᕋᐅᑎᓕᐊᖅᓯᒪᔭᖕᖏ ᑲᑎᑕᐅᓚᐅᖅᐳᑦ ᑖᓕᒪ ᓂᒃ ᐱᔾ ᔪᑎᖃᑦ ᓂᖕᖏ ᓂᒃ ᐊᕕᒃ ᑐᖅᓯᒪᔪ ᓂᒃ ᒪᑯ ᓂᖕᖒ ᑐᒃ ᑐᓯ ᐅᑦ ᕕᐅᕙᖕ ᓂᖕᖏ ᓂᒃ , ᐊᓯ ᖕᖏ ᑐᒃ ᑐᓯ ᐅᖅᐸᒃ ᑐᑦ ᐆᒪᔪ ᐃᑦ , ᓇᔪᒐᕙᒃ ᑖᕐᖕ ᐊᒻ ᒪ ᓗ ᓄᓇᐃᑦ ᐊᑐᖅᐸᒃ ᑖᕐᖕ , ᐊᒻ ᒪ ᓗ ᐃᓕᓐ ᓂᐊᖅᑐᓕᕆᓂᕐ ᒥᒃ ᐊᒻ ᒪ ᓗ ᖃᐅᔨ ᓴ ᖃᑦᕐ ᓂᕐ ᒥᒃ , ᓇᐅᑦ ᑎᖅᑐᐃᕙᖕ ᓂᕐ ᒥᒡ ᓗ. ᐱᓗᐊᖅᑐᒥᒃ , ᒃ ᓕᑦ ᓰᑉ ᒐᕙᒪ ᐃᑦ ᐊᒻ ᒪ ᓗ ᓄᓇᑦ ᓯ ᐊᑉ ᒐᕙᒪᒃ ᑯᑦ ᐊᕙᑎᓕᕆᔨ ᖕᖏ ᓄᓇᒥ ᐅᑕᑐᖅᑲᓕᕆᔨ ᖕᖏ ᓗ ᐱᑎ ᐊᖅᑎᑦ ᑎᔪᒪᕗᑦ ᑲᔪᓯ ᔪᒥᒃ ᑐᒃ ᑐᓂᒃ ᑕᒪ ᐃᓐ ᓂᒃ ᑲᑎᓪ ᓗᒋ ᑦ ᑐᒃ ᑐᑕᐅᓯᒪ ᔪᓐ ᓇᕐ ᓂᖕᖏ ᓂᒃ ᐋᕿᒃ ᐅᒪ ᖁᔨ ᓪ ᓗᑎᒃ 300-ᓃᑐᐃᓐ ᓇᕐ ᓂᐊᖅᑐᓂᒃ ᐸᖕ ᓂᖕ ᓂᒃ ᓴᐅᒥ ᑐᒃ ᑐᖃᕐ ᕕᐅᕙᖕ ᓂᖕᖏ ᓂᒃ . ᐅᐊᑮᓯᒃ ᑯᑦ ᓄᓇᒥ ᐅᑕᓕᕆᔩᑦ ᑲᑎᒪᔨᖕᕕ ᑐᑭ ᓕᐅᖅᓯᒪᓕᖅᑐᑦ ᖃᓄᑐᐃᓐ ᓇᖅ ᓇᓴ ᐅᑎᑎᒍᑦ ᐅᖕᒐᑕᐅᑦ ᔨ ᑕᐃᓕᒪᑦ ᔪᑎᑦ ᑐᒃ ᑐᓐ ᓇᕐ ᓂᕐ ᒥᒃ ᐊᖑᓇᓯ ᒍᓐ ᓇᕐ ᓂᕐ ᒦ ᓗᓐ ᓃᑦ ᒪᓕᒐ ᓕᐅᕈᑕᐅᕙᒃ ᑐᑦ ᑕᒪ ᐃᓐ ᓂᒃ ᑲᑎᓪ ᓗᒋ ᑦ ᑐᒃ ᑐᑕᐅᔪᓐ ᓇᕐ ᓂᐊᖅᑐᓂᒃ . ᑐᒃ ᓯᕋᐅᓯ ᐅᖅᓯᒪᓂᖅ ᑕᒪ ᐃᓐ ᓂᒃ ᑲᑎᓪ ᓗᒋ ᑦ ᑐᒃ ᑐᑕᐅᔪᓐ ᓇᕐ ᓂᖕᖏ ᓂᒃ ᓴ ᓇᔭ ᐅᔪᓐ ᓇᖅᑐᑦ ᑭᓯ ᐊᓂ ᐃᓄᖁᑎᒋᔭ ᐅᔪᓂᒃ ᑐᑭ ᓯ ᓂᐊᕐ ᕕᖃᓚᐅᕐ ᓗᑎᒃ ᓈᓚᒋ ᐊᖅᑐᓯᒪ ᓗᑎᒃ , ᒪᓕᒡ ᓗᑎᒃ ᐃᓗᓕᖕᖏ ᓂᒃ 12.3.10-ᖏᓐᑦ ᑐᓂᒃ ᒃ ᓰᑦ ᓰᒥᐅᑕᐃᑦ ᓄᓇᑖᕈᑎᖕᖏ ᓂᒃ ᐊᖏᕈᑎᖕᖏ ᓂᒃ . ᐅᐊᑮᓯᒃ ᑯᑦ ᓄᓇᒥ ᐅᑕᓕᕆᔩᑦ ᑲᑎᒪᔨᖕᕕ ᐃᓄᓕᒫ ᓂᒃ ᑲᑎᒪᑎᑦ ᑎᓗᑎᒃ ᓈᓚᒋ ᐊᖅᑐᖅᓯᒪᓚᐅᖅᑐᑦ ᓄᓇᓕᖕ ᓂ Bᐋᑦ ᓱᑯᒥ , ᓄᓇᑦ ᓯ ᐊᕐ , ᑕᒫ ᓂ ᐋᐳ 9-ᒥᒃ 11-ᒧᑦ , 2019-ᖑᑎᓪ ᓗᒍ .

ᐅᐊᑭ ᓰᒥ ᓄᓇᒥ ᐅᑕᓕᕆᔩᑦ ᑲᑎᒪᔨᖕᕕ ᐃᓱ ᓕᑦ ᑎᓕᓚᐅᖅᐳᑦ ᐱᔭ ᕇᕉᑎᕆᔭ ᒥ ᓂᒃ , ᒪᓕᒃ ᓱ ᑎᒃ ᑐᖕᕕᖅᑲᖅᑐᓂᒃ ᑕᒪ ᐃᓐ ᓂᒃ ᐊᑐᐃᓇᐅᔪ ᐃᓐ ᓇᕐ ᓂᕐ ᒥᒃ ᓄᓇᖅᖅᑐᑐᖅᐃᑦ ᐊᒻ ᒪ ᓗ ᖃᐅᔨ ᓴ ᖅ ᑎᑦ ᖃᐅᔨ ᒪᔭ ᖕᖏ ᓂᒃ , ᐱᓪ ᒪᓇᐅᔭ ᓂᒃ ᓱ ᓕ ᓴ ᐳᓐ ᓂᐊᖅᑕᐅᓯᒪᔭ ᓇᐊᖅᑲᕐ ᓂᖕᖏ ᐃᓱᒪ ᔫᑕᐅᖕᒪ ᑕ ᑐᒃ ᑐᐃᑦ ᑖᒃ ᑯᐊ ᐊᒻ ᒪ ᓗ ᐊᓯ ᑕᖃᒃ ᑲᓐ ᓂᓇᐊᖅᑲᖅᓱᑎᒃ ᖃᓄᐃᓕᐅᕈᑎᒃ ᓴ ᓂᒃ ᐊᒥ ᓱᕈᖅᓯ ᐊᓇᔭ ᐅᓗᑎᒃ ᑐᒃ ᑐᐃᑦ . ᐃᓱᒪ ᓕᐅᕈᑕᐅᓂᖕᖏ ᓂ ᑐᒃ ᑐᑕᐅᔪᓐ ᓇᕐ ᓂᖕᖏ ᓂᒃ ᐃᓱ ᖅᑎᑕᐅᓂᐊᖅᑐᑦ , ᐅᐊᑮᓯᒃ ᑯᑦ ᑲᑎᒪᔨᖕᕕ ᐃᓱᒪᒃ ᓴ ᖅᓯ ᐅᕈᑎᖃᓚᐅᖅᐳᑦ ᐅᓗᕆᐊᓇᕐ ᓂᖕᖏ ᓂᒃ ᑐᒃ ᑐᓄᑦ ᒫ ᓐ ᓇᓵ ᖅ ᐊᒥ ᓰᔭ ᓐ ᓃᕆᐊᒃ ᑲ ᓐ ᓂᓚᐅᕐ ᓂᖕᖏ ᓂᒃ , ᓇᓗᓇᕐ ᓂᖕᖏ ᓄᓪ ᓗ ᐱᔾ ᔪᑕᐅᕙᒃ ᑐᑦ ᐊᒥ ᓰᔭ ᓐ ᓃᕈᑕᐅᕙᓪ ᓕᐊᓂᖕᖏ ᓄᑦ ᐊᒻ ᒪ ᓗ ᐱᓪ ᒪᓇᐅᓂᖕᖏ ᓄᑦ ᑐᒃ ᑐᐃᑦ ᒃ ᓰᑦ ᓰᒥᐅᑦ ᐃᓄᖁᑎᖕᖏ ᓄᑦ ᐱᑕᖃᐃᓐ ᓇᓇᐊᖅᑲᖅ ᖕᖏ ᓄᑦ - ᑎᒥ ᖕᖏ ᓄᑦ , ᐅᒃ ᐱᓇᔭ ᑐᖃᖕᖏ ᓄᑦ ᐊᒻ ᒪ ᓗ ᐃᓕᖅᑯᓯ ᑐᖃᖕᖏ ᓄᑦ .

ᐅᐊᑮᓯᒥᐅᑦ ᑲᑎᒪᔨᖕᕕ ᑐᑭ ᓕᐅᓚᐅᖅᑐᑦ ᑕᐃᒃ ᑯᓂᖕᒐᑕᒪ ᐃᓐ ᓂᒃ ᑲᑎᓪ ᓗᒋ ᑦ ᑐᒃ ᑐᑕᐅᔪᓐ ᓇᓚᖕᒐᖕᖏ ᓂᒃ ᑭᓯ ᐊᓂ 193 ᐸᖕ ᓃᑦ , ᐊᑐᖅ ᑕᐅᓚᖕᖑ ᓗᑎᒃ ᑕᒪ ᐃᓐ ᓂᒃ ᑐᒃ ᑐᓯ ᐅᖅᐸᒃ ᑐᓄᑦ ᑕᒪ ᓂ ᐃᓗᐊᓂ ᐅᐊᑮᓯᒥᐅᑦ ᓄᓇᖕᖏ ᓂ ᑕᒫ ᓂ ᐊᕐ ᕋᒍᒥ 2019/20 ᐊᒻ ᒪ ᓗ ᐊᕐ ᕋᒍᒥ 2020/21 ᑐᒃ ᑐᓯ ᐅᕐ ᕕᐅᕙᖕ ᓂᕐ ᒥ .ᐊᒻ ᒪᑦ ᑕᐅᖅ ᓱᓕ, ᑲᑎᒪᔩᑦ ᑐᑭ ᓕᐅᓚᐅᖅᑐᑦ ᑕᐃᒃ ᑯᐊ ᐃᓚᖕᖏ ᓂᒃ ᑐᒃ ᑐᑕᐅᔪᓐ ᓇᕐ ᓂᖕᖏ ᑕᐃᒃ ᑯᓇ ᑕᒪ ᐃᓐ ᓂᒃ ᑲᑎᓪ ᓗᒋ ᑦ ᑐᒃ ᑐᑕᐅᕕᒃ ᓴ ᓂᒃ ᑐᒃ ᑐᓂᒃ ᑕᒫ ᓂ ᐊᕐ ᕋᒍᒥ 2019/20-ᒥ ᐊᒻ ᒪ ᓗ ᐊᕐ ᕋᒍᒥ 20/2021-ᒥ ᑐᒃ ᑐᓯ ᐅᕐ ᕕᐅᔭ ᓐ ᓇᕐ ᓂᖕᖏ ᓂᒃ ᐃᒪ ᓐ ᓇ ᐋᕿᒃ ᐅᒪᔭ ᐅᓂᐊᖅᐳᑦ : ᒃ ᓰᑦ ᓱᒥᐅᑦ ᐃᓄᖁᑎᖕᖏ ᑦ – 39.29% ᐳᓴ ᓐ ᑎᖏᓐᒃ , ᐊᒻ ᒪ ᓗ ᖃᓪ ᓗᓈ ᖑᖕᖏ ᑐᑦ ᓄᓇᖅᖅᑐᑐᖅᐅᔭ ᑦ , ᑐᒃ ᑐᓯ ᐅᖅᐸᒃ ᑐᓂᒃ ᑕᒫ ᖕᖒ ᑐᒃ ᑐᖅᑲᖅ ᕕᖕ ᒥᒃ (ᓄᓇᕗᒻ ᒥᐅᓪ ᓗ ᐱᖅᑕᐅᓪ ᓗᑎᒃ) ᑕᒪ ᓃᓐ ᓂᐊᖅᑐᑦ ᐊᒥ ᓱᓂᖕᖏ – 60.71% ᐳᓴ ᓐ ᑎᒥ ᒃ .

ᖃᐅᔨ ᓴ ᖅᑕᐅᓂᖕᖏ ᓂ ᓇᐅᑦ ᑎᖅᑐᖅᑕᐅᓗᑎᒃ ᓵ ᐅᒥ ᑐᒃ ᑐᖕᕕ ᐊᑐᓇᐊᖅᑲᓪ ᒪᓇᒃ ᐳᑦ ᐊᐅᓚᑦ ᑎᓂᕐ ᒧᑦ ᐃᓱᒪ ᓕᐅᕈᑕᐅᓯᒪ ᓂᕐ ᒧᑦ , ᑕᐃᒪ ᐃᓂᖕᒪᓄᓪ ᓗ ᑲᑎᒪᔩᑦ ᐊᑐᓕᖁᔨ ᕗᑦ ᑕᐃᒃ ᑯᐊᒃ ᓰᑦ ᓰᑉ ᒐᕙᒪ ᖕᖏ ᐊᒻ ᒪ ᓗ

ᐊᕙᑎᓕᕆᔨᒃᑯᑦ ᓄᓇᒥ ᐅᑕᐅᖃᕆᔨᒃᑯᓪᓗ ᐋᖅᑭᒋ ᐊᓇᖁᓪᓗᒋᑦ ᖃᓄᐃᓕᖓᑕᖏᑦ ᑐᒃ ᑐᓯᐅᖅᑕᐅᖃᑦᑕᖏᓐᓂᒃ ᓇᐅᑦᑎᖅᑐᕈᑎᖏᓐᓂᒃ ᐊᕐᕌᒍᓂᒃ ᑐᒃ ᑐᓯᐅᕐᕕᐅᕙᓐᓂᖏᓐᓂᒃ 2019/20-ᒥ ᐊᒻᒪ 2020/21-ᒥ, ᐃᓚᖃᕐᓗᑎᒃ ᑲᑎᖦᓱᐃᖃᑦᑕᕐᓂᕐᒥᒃ ᓄᓇᒥ ᓇᓃᓐᓂᖏᓐᓂᒃ ᖃᐅᔨᒪᔭᐅᔭᓇᐊᖅᖢᓂᒃ ᐊᒻᒪᓗ ᖃᓄᐃᓐᖑᓂᖏᓐᓂᒃ ᑐᒃ ᑐᐃᑦ ᐊᒻᒪᓗ ᐱᓕᕆᔨᑖᒃ ᑲᓐᓂᕐᑯᔭᐅᓪᓗᑎᒃ ᐊᓯᒃ ᑲᓐᓂᖏᓐᓂᒃ ᓯᓕ ᓄᓇᓕᓐᓂ ᓇᐅᑦᑎᖅᑐᐃᔭ ᐅᖃᑕᓂᐊᖅᑐᓂᒃ.

ᐅᐊᑭᓯᒥ ᓄᓇᒥ ᐅᑕᓕᓇᐄᑦ ᑲᑎᒪᔨᖏᑦ ᐊᑐᓕᖁᔨᕚᑦ ᑕᐃᒃ ᑯᓂᖓᓄᓇᑦ ᓯᐊᕐ ᒐᕙᒪᒃ ᑯᖏᓐᓂᒃ ᑐᒃ ᑐᑕᐅᖃᑦᑕᖏᓐᓂᒃ ᖃᐅᔨᒪᔾᔪᑎᒃ ᓴᓂᒃ ᑐᓂᓯ ᖃᑦᑕᖁᔭᐅᓪᓗᑎᒃ ᑕᐃᒃ ᑯᓂᖓᐱᐅᓯᒋᐊᕈᑎᑦ ᓄᐊᑦ ᔅᓚᐃᕝᒥ ᓄᓇᖏᓐᓂ ᐊᒪᕈᖅᓯᐅᕈᑎᑦ ᐊᑐᖅᑕᐅᕙᒃ ᑐᑦ ᑕᐃᒪᒃ ᑲᑎᒪᔩᑦ ᑐᑭᓯᐅᒪᔪᓐᓇᕐᓂᐊᕐᒪᑕ ᑲᔪᓯᑦᑎᐊᕐᓂᖏᓐᓂᒃ ᐊᑐᖅᑕᐅᕙᓕᖅᑐᑦ. ᐊᒻᒪ ᑕᐅᖅ ᓯᓚ, ᑲᑎᒪᔨᖏᑦ ᐊᑐᓕᖁᔨᒋᕗᑦ ᓄᓇᑦ ᓯᐊᕐ ᒐᕙᒪᒃ ᑯᖏᓐᓂᒃ ᐊᒻᒪᓗᒃ ᓅᑦᓃᑉ ᒐᕙᒪᒃ ᑯᖏᓐᓂᒃ ᑐᖕᕕᓕᐅᖁᔪᓗᑎᑦ ᖃᐅᔨᓴᕐᕕᐅᓂᐊᖅᑐᓂᒃ ᐊᑑᑎᖃᕐᓂᖏᓐᓂᒃ ᐊᒥᐊᒃ ᑯᓯᒪᓕᕐᒪᑕ ᓄᓇᑦ ᓯᐊᕐᒐᕙᒪᒃ ᑯᖏᓐᓂᒃ ᐃᑲᔪᕐᑎᓂᒃ, ᐊᑑᑎᖃᕐᓂᖏᓐᓂᒃ ᐊᒥᐊᒃ ᑯᓯᒪᓕᕐᒪᑕ ᑐᒃ ᑐᓂᒃ ᑐᕋᖓᔪᓂᒃ ᐅᔪᓂᒃ.
ᐅᐊᑭᓯᒃ ᑯᑦ ᓄᓇᒥ ᐅᑕᓕᓇᐄᑦ ᑲᑎᒪᔨᖏᑦ ᑕᐅᖅ ᓯᓚ ᐊᑐᓕᖁᔨᒋᕗᑦ ᓄᓇᑦ ᓯᐊᕐ ᒐᕙᒪᒃ ᑯᖏᓐᓂᒃ ᐊᒻᒪᓗ ᒃᓈᑦᓈᑉᒥᐅᑦ ᓇᐅᑦᑎᖅᑐᐃᔨᖏᓐᓂᒃ ᖃᕝᕙᖕᓂᒃ ᐊᒥᓈᖏᓐᓂᒃ ᑕᒪᓂ ᓄᓇᖏᓐᓂ ᐅᐊᑭᓯᐅᑉ ᐊᒻᒪᓗ ᐱᓕᕆᖃᑎᒋᔪᓂᒋᑦ ᓄᓇᕗᑦ ᒐᕙᒪᖏᑦ ᓴᐳᔾᔨᓂᐊᖅᑕᐅᓂᖏᓐᓄᑦ ᓄᕐ ᓇᕕᑦ ᑐᒃ ᑐᓄᑦ, ᑐᒃ ᑐᓯᐅᖅᐸᒃ ᑐᓂᒃ ᐅᒪᔪᓂᒃ.

ᐅᐊᑭᓯᒃ ᑯᑦ ᓄᓇᒥ ᐅᑕᓕᓇᐄᑦ ᑲᑎᒪᔨᖏᑦ ᐊᑐᓕᖁᔨᕚᑦ ᓯᕚᓕᖅᐹᑦ ᑎᐊᒻᒪᕆᐅᖁᔨᐅᓂᖏᓐᓂᒃ ᓇᔪᖅᑕᐅᕙᒃ ᑐᑦ ᓄᓇᐃᑦ ᓴᐳᓂᐊᖅᑕᐅᔪᕆᐊᖃᕐᑐᖏᓐᓂᒃ ᑐᒃ ᑐᓄᑦ, ᐃᓕᑕᕆᔪ ᐅᓗᑎᒃ ᐊᒻᒪᓗ ᒪᓕᒐᖅᑎᒍᑦ ᓴᐳᓂᐊᕈᑎᒃ ᓴᐃᑦ ᐊᑐᓕᖅᑎᑕᐅᓗᑎᒃ. ᑕᒪ ᐅᖑᖅᐸᓕᐊᓂᖏᓐᓂ, ᑕᐃᒃ ᑯᐊ ᑐᒃ ᑐᐃᑦ ᓇᔪᒐᕆᕙᒃ ᑕᖏᓐᓂᒃ ᓴᐳᓂᐊᕈᑏᑦ ᐊᑐᓕᖅᑎᑕᐅᓯᒪᓂᐊᖅᑐᑦ. ᐊᒻᒪ ᑕᐅᖅ ᓯᓚ, ᑲᑎᒪᔩᑦ ᐊᑐᓕᖁᔨᒋᕗᑦ ᒃᓈᑦᓈᒥᐅᑦ ᒐᕙᒪᖏᑦ ᓂᐊᕐᓂᒃ ᐊᒻᒪᓗ ᓄᓇᑦ ᓯᐊᕐ ᒐᕙᒪᒃ ᑯᖏᓐᓂᒃ ᐱᔫᒥᓴ ᐃᖁᓪᓗᑎᑦ ᒃᓈᑦᓈᒥᐅᑦ ᐃᓄᖁᑎᖏᑦ ᐊᓯᖕᖑᖏᓐᓂᒃ ᓂᕿᒃ ᓴᓂᖃᑦ ᑕᖁᔭᐅᓂᖏᓐᓂᒃ ᓄᓇᒥ ᖑᒐᒥᔪᓂᒃ.

ᑲᑎᒪᔩᑦ ᐊᑐᓕᖁᔨᒋᕗᑦ ᒃᓈᑦᓈᒥᐅᑦ ᐊᒻᒪᓗ ᓄᓇᑦ ᓯᐊᕐ ᒐᕙᒪᒃ ᑯᖏᑦ ᐱᓕᕆᖃᑎᖃᕐᓇᐊᖅᑕᖏᓐᓂᒃ ᐅᐊᑭᓯᒃ ᑯᑦ ᑲᑎᒪᔨᖏᓐᓂᒃ ᓴᓇᔭᐅᓂᖏᓐᓄᑦ ᑐᒃ ᑐᖃᑦ ᕕᐅᕙᓐᓄᑦ ᑐᕋᖕᖓᓇᒃ ᑐᓂᒃ ᐋᕿᒋᐊᖅᑕᐅᓯᒪᔪᓂᒃ ᐊᐅᓚᑦᑎᓂᕐ ᒧᑦ ᑐᖕᕕᒃ ᓴᐅᔪᓂᒃ, ᑭᒡ ᓕᖅᑎᑕᐅᓂᖏᓐᓂᓪ ᓗ ᐊᐅᓚᑕᐅᓂᖏᓐᓄᑦ ᖃᓄᐃᓕᐅᕈᑕᐅᓂᐊᓕᖅᑐᑦ; ᖃᐅᔨᓴᖅᑕᐅᓪᓗ ᓗ ᑐᒃ ᑐᐃᑦ ᐊᒥᓲᓂᖏᓐᓂᒃ ᒪᕐ ᕈᑕᓖᒃ ᐊᕐ ᕋᒎᒃ ᓈᔅ ᕌᖕᒎᒃ; ᐊᑐᓕᖅᑎᑦ ᑎᑐᑎᒃ ᖃᐅᔨᓴᕈᑕᐅᕙᒃ ᑐᓂᒃ ᐃᒡ ᓕᐊᖃᓕᕈᓐ ᓇᕐ ᓂᖏᓐᓂᒃ ᖃᐅᔨᒪᔾᔪᑎᒃ ᓴᓂᒃ ᑐᑐᓂᒃ ᑲᑎᖦᓱᖅᑕᐅᖃᑦᑕᕐᓗᑎᒃ ᐊᓇᖕᖏᑦ ᐅᑭᐅᒃ ᑯᑦ ᑕᕿᐅᔭᓂ; ᐊᕐ ᕋᒍᑕᒫᖅ ᑎᖕᒥᔫᒃ ᑯᑦ ᓈᓴᖅᑕᐅᖃᑕᐅᓂᕐ ᑐᑎᒃ; ᐊᒻᒪᓗ ᐊᒥᓱᓇᐊᖅᑕᐅᓪᓗᑎᒃ ᖁᖓᔦᑦ ᑎᖅᑕᐅᓯᒪᓂᖏᓐᓂᒃ 50-ᖑᔪᓂᒃ 70-ᓄᑦ. ᐊᒻᒪ ᑕᐅᖅ ᓯᓚ, ᑲᑎᒪᔩᑦ ᐊᑐᓕᖁᔨᒋᕗᑦ ᐅᓂᒃ ᑲᖅᓯᒪᑦ ᑎᐊᕐᑐᓂᒃ ᐱᔾ ᔭᑎᖃᕐ ᓂᕐᒥᓂᒃ ᐅᓂᒃ ᑳᓕᐅᖃᑕᕐᑐᑎᒃ ᐊᒥᓱᕈᓇᐊᖅᑕᐅᖁᔨᓂᖏᓐᓂᒃ ᖁᖓᔦᑦ ᑎᖅᑕᐅᓯᒪᕙᓐᓂᖏᑦ ᑐᑭᐅᑦ.

ᐅᐊᑭᓯᒃ ᑯᑦ ᓄᓇᒥ ᐅᑕᓕᓇᐄᑦ ᑲᑎᒪᔩᑦ ᐊᑐᓕᖁᔨᒋᕗᑦ ᒃᓈᑦᓈᒥ ᑐᒃ ᑐᓕᕆᓂᕐ ᒧᑦ ᐱᓕᕆᐊᖑᔪᑦ ᐅᖓᕙᕆᐊᖅᑕᐅᖁᔨᓂᖏᓐᓂᒃ ᑕᐃᒃ ᑯᐊ ᐃᓚᔮᐅᓗᑎᒃ ᓄᕐ ᓇᕕᐅᕙᒃ ᑐᑦ ᐊᒻᒪᓗ ᐊᐅᔮᒃ ᑯᑦ ᑐᒃ ᑐᖃᑦ ᕕᐅᕙᒃ ᑐᑦ, ᑲᑎᖦᓱᐃᕕᐅᓗᑎᒃ ᓄᓇᒦᓐᓂᖏᓐᓂᒃ ᓯᓚᐅᑉ ᐊᓯᔾ ᔨᖅᐸᓕᐊᓂᖕᖑᓂᒃ. ᑭᖑᓪᓕᖅᒥᓗ, ᑲᑎᒪᔩᑦ ᐊᑐᓕᖁᔨᒋᕗᑦ ᒃᓈᑦᓈᑭᒥ ᐅᑕᓂᒃ ᖃᐅᔨᓴᖅᑎᖏᓐᓂᒃ ᐊᒻᒪᓗ ᓇᐅᑦᑎᖅᑐᐃᔨᖏᑦ ᓄᑦ ᐱᓕᕆᐊᖑᔪᑦ ᐊᑐᓕᖅᑎᑦᑎᔭᕆᐊᖃᕐᑐᓂᒃ ᑐᑦ ᑐᖃᑦ ᕕᐅᕙᒃ ᑐᓂᒃ ᓄᓇᓂᒃ ᖃᐅᔨᓴᕐᑎᑦ ᐊᒻᒪᓗ ᐱᓚᕆᐅᓂᖏᓐᓂᒃ ᑐᑕᐅᓯᒪᔪᑦ ᓈᓴᐅᑎᓯᕆᔪᑦ ᑎᑎᕋᖅᑕᐅᑦ ᑎᐊᖅᑕᐅᒃ ᑕᕐ ᓗᑎᒃ, ᐃᒃ ᐱᕆᔭᐅᑦ ᑎᐊᕐ ᓗᑎᒃ ᐱᐅᓯ ᑐᖃᕆᔭᐅᔪᑦ ᐊᑐᖅᑕᐅᑦ ᑎᐊᕆᐊᖃᕐᓂᖏᓐᓂᒃ ᐊᑐᖃᑕᕐᓗᑎᒃ.

Wek'èezhìı Renewable Resources Board

August 1, 2019

Hon. Robert C. McLeod, Minister
Environment and Natural Resources
Government of the Northwest Territories
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Via Email
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Grand Chief George Mackenzie
Tłı̨chǫ Government
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Email: georgemackenzie@tlicho.com

Re: WRRB Reasons for Decision Final Report – Sahtì Ekwǫ̀ Bluenose-East Caribou Herd

Dear Minister McLeod & Grand Chief Mackenzie:

The Wek'èezhìı Renewable Resources Board is providing notification of an oversight that the Board recently discovered pertaining to the *"Report on a Public Hearing Held by the Wek'èezhìı Renewable Resources Board 9-11 April 2019 Behchokǫ̀, NT & Reasons for Decisions Related to a Joint Proposal for the Management of the Sahtì Ekwǫ̀ (Bluenose-East Caribou) Herd"*, submitted on June 16, 2019. The document has an incorrect version of the Appendix I. As such, please find attached the Reasons for Decision final report with the correct version of Appendix I, which will be posted to the public registry.

Our apologies for any inconveniences this error may have caused. If you have any questions, please contact our office at (867) 873-5740 or jpellissey@wrrb.ca.

Sincerely,

Joseph Judas
Chair

Cc Dr. Joe Dragon, Deputy Minister, ENR-GNWT
Rita Mueller, Assistant Deputy Minister, Operations, ENR-GNWT
Bruno Croft, Superintendent, North Slave Region, ENR-GNWT
Laura Duncan, Tłı̨chǫ Executive Officer, TG
Tammy Steinwand-Deschambeault, Director, Culture and Lands Protection, TG
Michael Birlea, Manager, Culture and Lands Protection, TG

Report on a Public Hearing
Held by the
Wek’èezhìı Renewable Resources Board
9-11 April 2019
Behchokǫ̀, NT

&

Reasons for Decisions Related to a
Joint Proposal for the Management of
the Sahtì Ekwǫ̀
(Bluenose-East Caribou) Herd

Wek’èezhìı
Renewable Resources Board

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LIST OF ACRONYMS

ACCWM	Advisory Committee for Cooperation on Wildlife Management
BGCTWG	Barren-ground Caribou Technical Working Group
CARC	Canadian Arctic Resources Committee
CIRNAC	Crown-Indigenous Relations and Northern Affairs Canada
DGG	Délı̨nę Got'ı̨nę Government
ENR	Environment & Natural Resources
GNWT	Government of the Northwest Territories
INAC	Indigenous and Northern Affairs Canada
IR	Information Request
NSMA	North Slave Métis Alliance
NT	Northwest Territories
SRRB	Ɂehdzo Got'ı̨nę Gots'ę́ Nákedı/Sahtú Renewable Resources Board
TAH	Total Allowable Harvest
TG	Tłı̨chǫ Government
TK	Tłı̨chǫ Knowledge; traditional knowledge
WRRB	Wek'èezhìı Renewable Resources Board
YKDFN	Yellowknives Dene First Nation

LIST OF TŁĮCHQ̨ TERMS

dè	includes everything with whom Tłı̨chǫ have a relationship and that is responsive to their attention, action, and behaviour as everything has spirit. It is often translated as 'land', but it means much more than the English word land can convey. For Tłı̨chǫ elders, becoming knowledgeable and understanding the dè are about reaching outward while learning more, not about limiting thinking and understanding to a bounded area. Dè is about interconnectedness.
Dene béré	alternative harvest; hunting and gathering all kinds of different Dene foods
det'ǫcho	golden eagle
dìga	wolf
Ɂek'wahtı̨dǝ́	highest honest leader (Délı̨nę Got'ı̨nę dialect)
ɂekwǫ̀	barren-ground caribou
Kǫk'èetì	Contwoyto Lake
Kǫk'èetì Ekwǫ̀	Bathurst caribou
Mǫwhì Gogha Dè Nı̨ı̨tłèè	traditional area of the Tłı̨chǫ, described by Chief Monfwi during the signing of Treaty 11 in 1921
nǫ̀gha	wolverine
nǫɂokè	water crossings
sahcho	grizzly bear
Sahtì Ekwǫ̀	Bluenose-East caribou
tataa	corridors between bodies of water; land bridges
wedzıh	biggest male ɂekwǫ̀
Wek'èezhìı	management area; within the boundaries of
yaagoa	younger bull; third year male ɂekwǫ̀

1.0. Executive Summary

The Wek’èezhìı Renewable Resources Board (WRRB) is responsible for wildlife management in Wek’èezhìı and shares responsibility for managing and monitoring the *Sahtì Ekwǫ̀* (Bluenose-East Caribou) herd. In November 2018, the Department of Environment and Natural Resources (ENR), Government of the Northwest Territories (GNWT) reported that, in their view, the Sahtì ekwǫ̀ herd had continued to decline significantly and that further management actions were required.

In January 2019, the Tłı̨chǫ Government (TG) and GNWT submitted the *Joint Proposal on Management Actions for the Bluenose-East ʔekwǫ̀ (Barren-ground caribou) Herd 2019-2021* to the Board, outlining proposed management actions for the Sahtì ekwǫ̀ herd in Wek’èezhìı. The management actions proposed by TG and GNWT in the Joint Proposal were grouped under the five categories: harvest, predators, habitat and land use, and education as well as research and monitoring. More specifically, TG and ENR proposed implementing a herd-wide total allowable harvest of 300 bulls only for the Sahtì ekwǫ̀ herd. The WRRB has determined that any specific numerical restriction of a harvest or a component of harvest constitutes a total allowable harvest (TAH). A proposal for a TAH requires a public hearing under Section 12.3.10 of the Tłı̨chǫ Agreement. The WRRB held a public hearing in Behchokǫ̀, NT on April 9-11, 2019.

The WRRB concluded, based on all available Indigenous and scientific evidence, that a serious conservation concern exists for the Sahtì ekwǫ̀ herd and that additional management actions are vital for herd recovery. In making its decision about harvest limitations, the WRRB considered the risks to the herd from a recent high rate of decline, uncertainties about the underlying mechanisms for the decline and the importance of *ʔekwǫ̀* (barren-ground caribou) for Tłı̨chǫ citizens to thrive – physically, spiritually, and culturally.

The WRRB determined that a TAH of 193 bulls only shall be implemented for all users of the Sahtì ekwǫ̀ herd within Wek’èezhìı for the 2019/20 and 2020/21 harvest seasons. Further, the Board determined that that the proportional allocation of the TAH of the Sahtì ekwǫ̀ herd for the 2019/20 and 20/2021 harvest seasons shall be as follows: Tłı̨chǫ Citizens – 39.29%, and Members of an Indigenous people who traditionally harvest Sahtì ekwǫ̀ (including Nunavut) – 60.71%.

As monitoring of the Sahtì ekwǫ̀ harvest is crucial for management decisions, the Board recommended that TG and ENR revise their approach to harvest monitoring for the 2019/20 and 2020/21 harvest seasons, including collecting demographic and health information and hiring additional community monitors.

The WRRB recommended 0that GNWT provide harvest information from its Enhanced North Slave *Dìga* (wolf) Harvest Incentive Program to allow the Board to determine the success of the program. Further, the Board recommended that GNWT and TG develop a framework to evaluate the effectiveness of the Enhanced North Slave Dìga Harvest Incentive Program in achieving ʔekwǫ̀ conservation goals. The WRRB also recommended that GNWT and TG monitor *Nǫ̀gha* (wolverine) populations in Wek'èezhìı and work cooperatively with the Government of Nunavut to protect the calving grounds of the Sahtì ekwǫ̀ from predators.

The WRRB recommended that high priority habitat for protection of the Sahtì ekwǫ̀ herd should be identified and legal protection measures should be implemented. In the interim, Mobile Caribou Conservation Measures should be implemented. Additionally, the Board recommended that TG and GNWT encourage Tłı̨chǫ citizens to harvest alternative country foods.

The Board recommended that TG and GNWT collaborate with the WRRB to develop a herd-specific adaptive management framework with thresholds linked to specific management actions. The WRRB also recommended the following monitoring actions for the Sahtì ekwǫ̀ herd: conduct population surveys every two years; implement pregnancy monitoring through fecal pellet collection in the winter months; cease annual reconnaissance surveys; and increase the number of collars from 50 to 70. Furthermore, the Board recommended that a detail rationale for the collar increase be provided.

The WRRB recommended that TG's Ekwǫ̀ Nàxoède K'è program should be expanded to the post-calving and summer ranges of Sahtì ekwǫ̀ to collect on-the-ground climate change observations. Finally, the Board recommended the Tłı̨chǫ Research and Monitoring Program should be implemented to ensure that both ʔekwǫ̀ and ʔekwǫ̀ habitat monitoring and realistic harvesting numbers are recorded in a culturally appropriate manner.

2.0. Introduction

The Sahtì ekwǫ̀ herd has declined at approximately 21% per year since 2010. This means the herd is shrinking by about 50% every 3 years and has declined from 103,000 in 2010 to about 19,300 in June 2018. In the WRRB's public hearing in Behchokǫ̀ on April 9-11, 2019, Chief Daniels called this a *"serious situation"* and a *"critical issue"*.[1] During the closing session, Grand Chief Mackenzie called the situation a *"crisis"*.[2]

[1] PR (BNE 2019): 173 – Transcript – April 9, 2019 (DAY 1) - 2019 Bluenose-East Caribou Herd Public Hearing. p 8.
[2] PR (BNE 2019): 175 – Transcript – April 11, 2019 (DAY 3) – 2019 Bluenose-East Caribou Herd Public Hearing. p. 136.

Superintendent Bruno Croft noted that *"the Bluenose-East herd is in a serious predicament"* and *"continues to decline at alarming rates"*.[3]
The extent of the decline, as of June 2018, is reported in the 2019 Joint Proposal, entitled *"Joint Proposal on Management Actions for the Bluenose-East ʔekwǫ̀ (Barren-ground caribou) Herd 2019-2021"* (the "Joint Proposal") (Appendix A). TG and GNWT submitted the Joint Proposal on January 14, 2019 and the WRRB implemented its review procedures, which lead to a public hearing in early April 2019.

The short-term goal of the Joint Proposal's proposed management actions is to slow the herd's decline and promote recovery over the period of 2019 to 2021. The recovery of the herd to a level where sustainable harvesting is once again possible within Mǫwhì Gogha Dè Nı̨ı̨tłèè and meets community needs is the long-term goal of the Joint Proposal.

In Board proceedings during 2010 and 2016, the WRRB made decisions about harvest and, then, subsequently a TAH, as well as recommendations to urge government actions to halt the Sahtì ekwǫ̀ herd's decline.[4] The 2010 and 2016 determinations and recommendations that were implemented were focused on harvest reductions to increase survival of adult ʔekwǫ̀ as well as predator and habitat management. Unfortunately, the herd's decline has continued. Restrictions on harvest have not been enough despite the hardships borne by harvesters. The WRRB is both conscious of and troubled by the rate of the herd's decline and finds that there is a clear need for an urgent response to this decline. Each year's delay in effective management action is predicted to result in a further 20% decline.

This report describes the WRRB's assessment of the evidence on the record. This assessment is the basis for the Board's determinations and recommendations. The specific management actions proposed by the TG and GNWT will, by the words in the Joint Proposal itself, not halt the decline.[5] This puts the herd in a perilous position. The WRRB notes that the governments acceptance and implementation of previous Board recommendations has been limited. Additionally, the WRRB is troubled by the time it has taken governments to implement approved Board recommendations given that the Sahtì ekwǫ̀ herd has been declining by half every 3 years since 2010.

[3] PR (BNE 2019): 175 – Transcript – April 11, 2019 (DAY 3) – 2019 Bluenose-East Caribou Herd Public Hearing. p. 176.
[4] PR (BNE 2019): 073 – Report on a Public Hearing Held by the Wek'èezhìı Renewable Resources Board, 22-26 March & 5-6 August 2010, Behchoko, NT; and PR (BNE 2019): 149 - 2016 Reasons for Decision Related to a Joint Proposal for the Management of the Bluenose-East ʔekwǫ̀ (Barren-ground Caribou) Herd - Part A.
[5] PR (BNE 2019): 001 - Joint Proposal on Management Actions for the Bluenose-East ʔekwǫ̀ (Barren-ground caribou) Herd: 2019 – 2021.

Based on a review of past proceedings by the Board, 60 recommendations were submitted in 2010 to TG and GNWT.[6] In 2016, the WRRB submitted 24 recommendations and two determinations to the two governments.[7] It appears to the Board that to date only the determinations and 20 of the recommendations have been fully implemented. Consequently, the WRRB is of the view that an adaptive management framework is required to fully capitalize on the collective efforts of the Board and governments. Adaptive approaches are common in other resource management settings, such as in land and water management. Given the urgency of decisive management action for the Sahtì ekwǫ̀ herd, it is the Board's opinion that adaptive management would lead to more timely and effective management actions, which will be essential to address the herd's decline.

3.0. The Board and Its Authorities

The WRRB is responsible for the wildlife management functions set out in the Tłı̨chǫ Agreement in Wek'èezhìı [8] and shares responsibility for the management and monitoring of the Sahtì ekwǫ̀ herd. The WRRB is a co-management tribunal established by the Tłı̨chǫ Agreement to exercise advisory and decision-making responsibilities related to wildlife, forest, plant and protected areas management in Wek'èezhìı (Figure 1). The Board's legal authorities came into effect at the time the Tłı̨chǫ Agreement was ratified by Parliament.[9] The WRRB's major authorities and responsibilities in relation to wildlife are set out in Chapter 12 of the Tłı̨chǫ Agreement.

[6] PR (BNE 2019): 073 – Report on a Public Hearing Held by the Wek'èezhìı Renewable Resources Board, 22-26 March & 5-6 August 2010, Behchoko, NT.
[7] PR (BNE 2019): 149 - 2016 Reasons for Decision Related to a Joint Proposal for the Management of the Bluenose-East ʔekwǫ̀ (Barren-ground Caribou) Herd - Part A.
[8] Section 12.1.2 of the Land Claims and Self-Government Agreement Among the Tłı̨chǫ and the Government of the Northwest Territories and the Government of Canada, Indian Affairs and Northern Development, Ottawa, 2003 (hereinafter the "Tłı̨chǫ Agreement").
[9] Tłı̨chǫ *Land Claims and Self-Government Act*, S.C. 2005, c.1. Royal assent February 15, 2005. See s.12.1.2 of the Tłı̨chǫ Agreement.

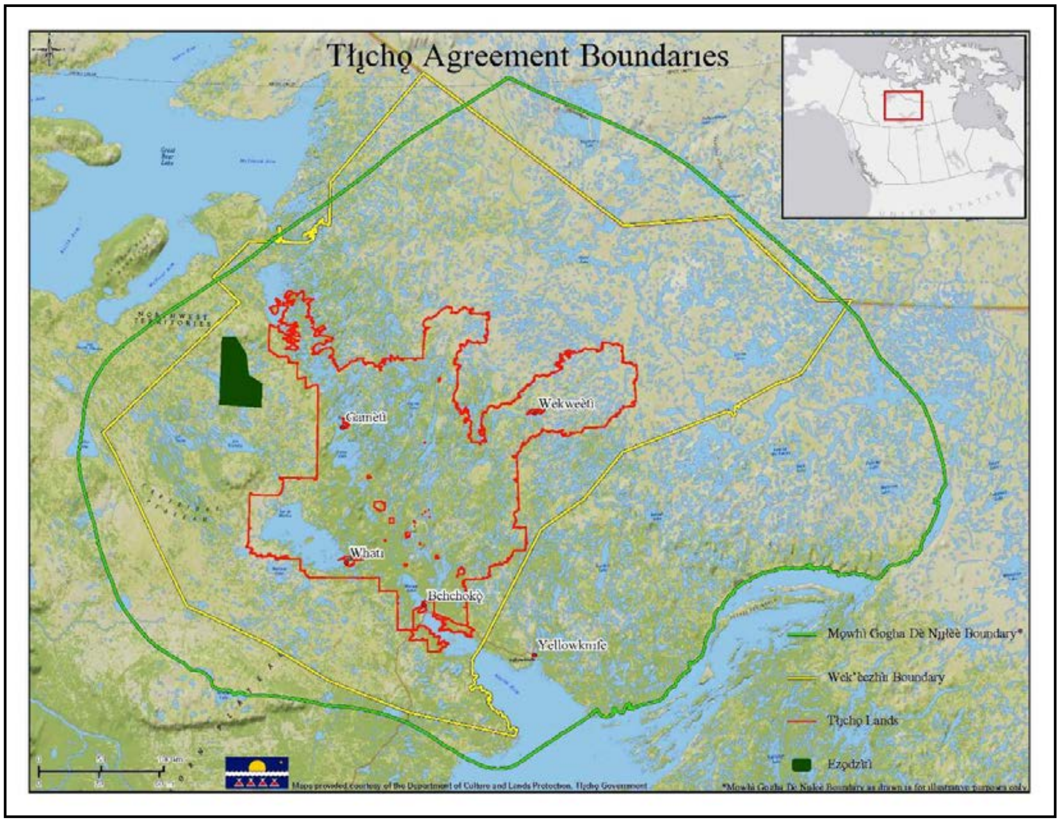

Figure 1. Wek'èezhìı Management Area.[10]

As required by Sections 12.5.1 and 12.5.4 of the Tłı̨chǫ Agreement, any Party[11] proposing a wildlife management action in Wek'èezhìı must submit a management proposal to the WRRB for review. This includes the establishment or adjustment of a total allowable harvest (TAH). Prior to making a determination or recommendation, the WRRB must consult with any body that has authority over that wildlife species both inside and outside of Wek'èezhìı. Under Section 12.5.5 of the Agreement, the WRRB has sole responsibility for making a final determination with respect to a total allowable harvest for Wek'èezhìı.

> ***12.5.5*** *The Wek'èezhìı Renewable Resources Board shall*
>
> > *(a) make a final determination, in accordance with 12.6 or 12.7, in relation to a proposal*
> >
> > > *(i) regarding a total allowable harvest level for Wek'èezhìı, except for fish,*

[10] Department of Culture & Lands Protection, Tłı̨chǫ Government. 2014.
[11] As defined in the Tłı̨chǫ Agreement, "Parties" mean the Parties to the Agreement, namely the Tłı̨chǫ, as represented by the Tłı̨chǫ Government, the Government of the Northwest Territories and the Government of Canada.

(ii) regarding the allocation of portions of any total allowable harvest levels for Wek'èezhìı to groups of persons or for specified purposes, or

(iii) submitted under 12.11.2 for the management of the Bathurst caribou herd with respect to its application in Wek'èezhìı; and

(b) in relation to any other proposal, including a proposal for a total allowable harvest level for a population or stock of fish, with respect to its application in Wek'èezhìı recommend implementation of the proposal as submitted or recommend revisions to it, or recommend it not be implemented.

The WRRB acts in the public interest. It is an institution of public government, which makes its decisions on the basis of consensus. The WRRB works closely with Tłı̨chǫ communities, TG, and GNWT. The Board also collaborates with other territorial government departments, such as Lands and Industry, Tourism and Investment, and federal government departments, such as Environment and Climate Change Canada, Fisheries and Oceans Canada, and Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC). In addition, the WRRB works with other wildlife management authorities, Indigenous organizations and stakeholders.

Wildlife management is a central and vital component of the Tłı̨chǫ Agreement.[12] The rights of Tłı̨chǫ citizens to use wildlife for sustenance, cultural, and spiritual purposes are protected by the Tłı̨chǫ Agreement and the Constitution[13], subject to the management framework set out in Chapter 12. The most important provisions in relation to the WRRB's role in the limitation of Tłı̨chǫ citizens harvesting are set out in the Tłı̨chǫ Agreement as follows:

12.6.1 *Subject to chapters 15 and 16, a total allowable harvest level for Wek'èezhìı or Mǫwhì Gogha Dè Nı̨ı̨tłèè (NWT) shall be determined for conservation purposes only and only to the extent required for such purposes.*

12.6.2 *Subject to 12.6.1 and chapters 15 and 16, limits may not be prescribed under legislation*

(a) on the exercise of rights under 10.1.1 or 10.2.1 except for the purposes of conservation, public health or public safety; or

(b) on the right of access under 10.5.1 except for the purposes of safety.

12.6.3 *Any limits referred to in 12.6.2 shall be no greater than necessary to achieve the objective for which they are prescribed, and may not be prescribed*

[12] See Section.12.1.1 of the Tłı̨chǫ Agreement.
[13] *Constitution Act.* 1982. Section 35.

where there is any other measure by which that objective could reasonably be achieved if that other measure would involve a lesser limitation on the exercise of the rights.

***12.6.5** In exercising its powers in relation to limits on harvesting, the Wek'èezhìı Renewable Resources Board shall give priority to*

(a) non-commercial harvesting over commercial harvesting; and
(b) with respect to non-commercial harvesting,
(i) Tłı̨chǫ Citizens and members of an Aboriginal people, with rights to harvest wildlife in Wek'èezhìı, over other persons, and
(ii) residents of the Northwest Territories over non-residents of the Northwest Territories other than persons described in (i).

The WRRB is bound by the Tłı̨chǫ Agreement if it is contemplating any limitation to Tłı̨chǫ citizens' harvesting, including any limitation to the harvesting of Sahtì ekwǫ̀. More specifically, Section 12.6.1 (see above) specifies that a total allowable harvest level shall be determined for conservation purposes only and only to the extent required for such purposes. The Tłı̨chǫ Agreement defines conservation as follows:

"conservation" means
(a) the maintenance of the integrity of ecosystems by measures such as the protection and reclamation of wildlife habitat and, where necessary, restoration of wildlife habitat; and
(b) the maintenance of vital, healthy wildlife populations capable of sustaining harvesting under the Agreement.

In addition to the substantive legal protection for Tłı̨chǫ citizens' harvesting rights set out in the Tłı̨chǫ Agreement, the WRRB is also bound by the requirements of fairness. Section 12.3.10 gives the Board the authority to order a hearing on a wildlife management proposal and makes it mandatory for the WRRB to hold a public hearing when it intends to consider establishing a TAH in respect of a species or a population such as the Sahtì ekwǫ̀ herd.

3.1. Advisory Committee for Cooperation on Wildlife Management

ʔekwǫ̀, including the Sahtì ekwǫ̀ herd, cross jurisdictional boundaries during their seasonal migrations. This inter-jurisdictional distribution is well-recognized and the Advisory Committee for Cooperation on Wildlife Management (ACCWM) was established in 2008 to exchange information, help develop cooperation and consensus, and make recommendations regarding wildlife and wildlife habitat issues that cross land claim and treaty boundaries. The committee is made up of the Chairpersons of the

Wildlife Management Advisory Council (NWT), Gwich'in Renewable Resources Board, Ɂehdzo Got'ı̨nę Gots'ę́ Nákedı/Sahtú Renewable Resources Board, WRRB, Kitikmeot Regional Wildlife Board, and Tuktut Nogait National Park Management Board.

These wildlife management boards have authority through their land claims or legislation to make recommendations and decisions on wildlife management issues. The ACCWM can make consensus-based recommendations to governments, land use regulators, and respective Boards on wildlife management actions. ACCWM recommendations are not binding on individual boards and do not prevent them from providing additional recommendations to governments.

The ACCWM developed a management plan for the Cape Bathurst, Bluenose-West, and Sahtì ekwǫ̀ herds, entitled *"Taking Care of Caribou – The Cape Bathurst, Bluenose-West, and Bluenose-East Barren Ground Caribou Herds Management Plan"*.[14] While the immediate need for the management plan was in response to reported declines in the herds, the intent is to address ɂekwǫ̀ management and stewardship over the long term. The management goals are to maintain herds within the known natural range of variation, conserve and manage ɂekwǫ̀ habitat, and ensure that harvesting is respectful and sustainable. The plan provides a framework for monitoring the herds, making decisions, and taking action. Five different categories of management actions are outlined in the plan, including Education, Habitat, Land Use Activities, Predators, and Harvest Management. The WRRB determinations and recommendations in this report are consistent with the ACCWM plan and follows the same categories of management actions.

4.0. Previous WRRB Ɂekwǫ̀ Determinations & Recommendations

Part 12.1 of the Tłı̨chǫ Agreement requires the coordination of the functions of governments (authorities whose responsibilities include wildlife management among other functions).[15] Section 12.1.5 of the Agreement also requires the Parties[16] to manage wildlife based on the principles of conservation, on an ecosystemic basis and in an adaptive fashion.[17] Chapter 12 of the Agreement sets out a comprehensive framework for wildlife management. WRRB determinations are final but recommendations made by the Board may be accepted, rejected or varied by the Party with the jurisdiction affected by the recommendation. However, once a recommendation is accepted, that Party doing so must implement it *"to the extent of its power under*

[14] PR (BNE 2019): 069 - Taking Care of Caribou: the Cape Bathurst, Bluenose-West, and Bluenose-East Barren-Ground Caribou Herds Management Plan. ACCWM. 2014.
[15] See Section.12.1.4 of the Tłı̨chǫ Agreement.
[16] This includes the Tłı̨chǫ Government, the Government of the Northwest Territories and the Government of Canada.
[17] See Section 12.1.5 paragraphs (a) and (d) of the Tłı̨chǫ Agreement.

legislation".**[18]** This framework and these relationships are central to effective wildlife management in Wek'èezhìı.

4.1. 2010 Proceeding

In June 2009, GNWT conducted a calving ground photographic survey and estimated the Sahtì ekwǫ̀ herd size was about 103,000 ɂekwǫ̀. On November 5, 2009, TG and GNWT submitted a *Joint Proposal on Caribou Management Actions in Wek'èezhìı*, which proposed nine management actions and eleven monitoring actions, including harvest limitations, for the Kǫ̀k'èetì, Sahtì and Beverly/Ahiak ɂekwǫ̀ herds. While TG and GNWT agreed on the majority of actions set out in the proposal, there was no agreement reached on the proposed levels of Indigenous harvesting.

Upon review of the proposal, the WRRB held that any restriction of harvest or component of harvest to a specific number of animals would constitute a TAH. Thus, the Board ruled that it was required to hold a public hearing. Registered Parties were notified on November 30, 2009 of the Board's decision to limit the scope of the public hearing to Actions 1 through 5 of the Joint Proposal, which prescribed limitations on harvest. All other proposed actions were addressed through written submissions to the Board. Originally scheduled for January 11-13, 2010, the public hearing took place March 22-26, 2010 in Behchokǫ̀, NT. Once the evidentiary phase of the proceeding was completed, TG requested the WRRB adjourn the hearing in order to give TG and GNWT time to work collaboratively to complete the joint management proposal.

On May 31, 2010, TG and GNWT submitted the *Revised Joint Proposal on Caribou Management Actions in Wek'èezhìı*. This revised proposal changed the original management and monitoring actions and incorporated an adaptive co-management framework and rules-based approach to harvesting. TG and GNWT were able to reach an agreement on Indigenous harvesting. Therefore, the WRRB reconvened its public hearing on August 5-6, 2010 in Behchokǫ̀, NT, where final presentations, questions and closing arguments were made.

On October 8, 2010, the WRRB submitted its final recommendations and reasons for decision report to TG and GNWT.[19] Many of the recommendations were related to the Kǫ̀k'èetì ekwǫ̀ herd and relevant management actions vital for herd recovery, including harvest restrictions. The Board also made harvest recommendations for the Beverly/Ahiak ɂekwǫ̀ herd.

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[18] See Sections 12.5.11 and 12.5.12 of the Tłįchǫ Agreement.
[19] PR (BNE 2019): 073 - Report on a Public Hearing Held by the Wek'èezhìı Renewable Resources Board 22-26 March 2010 & 5-6 August 2010 Behchokǫ̀, NT.

The Board recommended a harvest target of 2800 (+ 10%) Sahtì ekwǫ̀ per year for harvest seasons 2010/11, 2011/12, and 2012/13 in Wek’èezhìı. Further, the Board recommended that the ratio of bulls harvested to cows should be 85:15. Although the evidence suggested that the Sahtì ekwǫ̀ herd had not continued to decline, the Board concluded that a limited harvest of 2520-3080 Sahtì ekwǫ̀ with 420 or fewer cows was a cautious management approach based on the herd size and trend at the time. Additionally, the WRRB recommended that all commercial, outfitted and resident harvesting of the Sahtì ekwǫ̀ herd in Wek’èezhìı be set to zero.

The WRRB made additional ʔekwǫ̀ management and monitoring recommendations to TG and GNWT, specifically implementation of detailed scientific and Tłı̨chǫ knowledge monitoring actions and implementation of an adaptive co-management framework.

The WRRB also recommended to the Minister of CIRNAC (formerly Indian and Northern Affairs Canada) and GNWT to collaboratively develop best practices for mitigating effects on ʔekwǫ̀ during calving and post-calving, including the consideration of implementing mobile ʔekwǫ̀ protection measures, and for monitoring landscape changes, including fires, industrial exploration, and development, to assess potential impacts to ʔekwǫ̀ habitat.

The Board recommended that the harvest of dìga should be increased through incentives but that focused dìga control not be implemented. The Board understood if TG and GNWT were to plan for focused dìga control in the future, a management proposal would be required for WRRB consideration.

Of the 57 recommendations made in 2010 and accepted or varied by TG and GNWT, the Board has evidence that only 18 have been fully implemented. Specifically, the closure of commercial, outfitted and resident harvesting for the Kǫ̀k’èetì, Sahtì and Beverly/Ahiak ʔekwǫ̀ herds; the establishment and allocation of a harvest target for the Kǫ̀k’èetì ekwǫ̀ herd; the implementation of monitoring the density of cows on the calving grounds; the development and implementation of a scientific conservation education program; the establishment of the Barren-ground Caribou Technical Working Group; the ongoing discussions with the Government of Nunavut to identify opportunities for calving ground protection; the collaborative work to meet the obligations of Section 12.11 of the Tłı̨chǫ Agreement; the hiring of a TG Wildlife Coordinator to increase capacity to ensure full participation in monitoring and management of caribou; the removal of GNWT’s Emergency Interim Measures following the implementation of recommendations by January 1, 2011; the consultation with Tlicho communities about Board recommendations prior to January 1, 2011; the development of a detailed implementation and consultation plan; and the development and implementation of an effective enforcement and compliance program.

Implementation of the remaining accepted recommendations appears to the WRRB to be incomplete, including the development of a government position regarding reinstatement of outfitting and resident harvesting in Wek’èezhìı; the negotiation of harvesting overlap agreements with the Sahtú and Nunavut; the implementation of the *Special Project, Using Tłı̨chǫ Knowledge to Monitor Barren Ground Caribou* of the overall Tłı̨chǫ Research and Monitoring Program; the implementation of TK and scientific caribou monitoring actions; the development of criteria to evaluate when management actions are to be revised; and the development of a land use plan for Wek’èezhìı.

Additional details of the 2010 proceeding can be found in Appendix B and a review of the 2010 WRRB Recommendations is found in Appendix C.

4.2. 2016 Proceeding

In June 2015, GNWT conducted a calving ground photographic survey and estimated the Sahtì ekwǫ̀ herd had declined to 38,600 ʔekwǫ̀. On December 15, 2015, TG and GNWT submitted the “*Joint Proposal on Management Actions for Bluenose-East Caribou 2016-2019”* to the Board outlining proposed management actions for the Sahtì ekwǫ̀ herd in Wek’èezhìı, including new restrictions on hunter harvest, predator management, and ongoing monitoring. More specifically, TG and GNWT proposed implementing a herd-wide total allowable harvest of 950 bulls only, allocation for the Sahtì ekwǫ̀ herd, and conducting a feasibility assessment of a full range of dìga management actions. The WRRB considered the proposed restriction of harvest as the establishment of a TAH and, therefore, was required to hold a public hearing. The public hearing took place April 6-8, 2016 in Behchokǫ̀, NT.

In anticipation of the proposal, the Ɂehdzo Got’ı̨nę Gots’ę́ Nákedı/Sahtú Renewable Resources Board (SRRB) and the WRRB signed a *“Memorandum of Understanding Regarding Collaborative Efforts for the Management of the Bluenose-East Caribou Herd”* in October 2015 to ensure management of proceedings related to the Sahtì ekwǫ̀ herd would be as effective as possible. Each Board conducted its own proceeding, including public hearings in both the Sahtú and Wek’èezhìı areas. Each Board submitted its own Reasons for Decision report.

In order to allow careful consideration of all the evidence on the record and to meet legislated timelines, the WRRB decided to prepare two separate reports to respond to the proposed management actions in the joint management proposal. The first report, Part A, dealt with the proposed harvest management actions that required regulation changes in order for new regulations to be in place for the start of the 2016/17 harvest season, as well as the proposed dìga feasibility assessment. The second report, Part B, dealt with additional predator management actions, biological and environmental monitoring, and cumulative effects.

On June 10, 2016, the WRRB submitted its final determinations and recommendations and Part A Reasons for Decision Report to TG and GNWT.[20] The WRRB determined that a TAH of 750 bulls only should be implemented for all users of the Bluenose-East ɂekwǫ̀ herd within Wek'èezhìı for the 2016/17, 2017/18, 2018/19 harvest seasons. Further, the Board determined that the proportional allocation of the TAH of the Sahtì ekwǫ̀ herd for the 2016/17, 2017/18, 2018/19 harvest seasons should be as follows: Tłı̨chǫ Citizens – 39.29%, and Members of an Indigenous people who traditionally harvest Sahtì ekwǫ̀ (including Nunavut) – 60.71%.

The Board recommended that TG and GNWT agree on an approach for designating zones for aerial and ground-based surveillance throughout the fall and winter harvest seasons from 2016 to 2019. Additionally, the WRRB recommended weekly communication updates, timely implementation of hunter education programs for all harvesters of the Sahtì ekwǫ̀ herd, and development of harvesting overlap agreements with the Sahtú and Nunavut.

The WRRB recommended that the dìga feasibility assessment set out in the proposal be led by the Board with input and support from TG and ENR. As well, if deemed successful, the Community-based Dìga Harvesting Project would be extended in 2016-2017 to the Sahtì ekwǫ̀ herd and incorporated into an adaptive wolf management approach.

On October 3, 2016, the WRRB submitted its final recommendations and Part B Reasons for Decision Report to TG and GNWT.[21] The WRRB recommended consultations with Tłı̨chǫ communities to determine a path forward for implementation of Tłı̨chǫ laws to continue the Tłı̨chǫ way of life and maintain their cultural and spiritual connection with ɂekwǫ̀.

In addition, the WRRB recommended several Tłı̨chǫ Knowledge (TK) research and monitoring programs focusing on dìga, *Sahcho* (grizzly bear), stress and other impacts on ɂekwǫ̀ from collars and aircraft over-flights, and an assessment of quality and quantity of both summer and winter forage.

The Board recommended a biological assessment of sahcho as well as requesting that the Barren-ground Caribou Technical Working Group (BGCTWG) prioritize biological monitoring indicators and develop thresholds under which management actions can be

[20] PR (BNE 2019): 149 - 2016 Reasons for Decision Related to a Joint Proposal for the Management of the Bluenose-East Ɂekwǫ̀ (Barren-ground Caribou) Herd - Part A.
[21] PR (BNE 2019): 075 - Reasons for Decisions Related to a Joint Proposal for the Management of the Bluenose-East Ɂekwǫ̀ (Barren-ground caribou) Herd - Part B. 2016.

taken and evaluated. All scientific and TK monitoring data will be provided to BGCTWG annually to ensure ongoing adaptive management.

The WRRB recommended the implementation of Tłı̨chǫ Land Use Plan Directives as well as completing a Land Use Plan for the remainder of Wek'èezhìı. The Board also recommended the development of criteria to protect key ɂekwǫ̀ habitat, including *Nǫɂokè* (water crossings) and *Tataa* (corridors between bodies of water), using the Conservation Area approach in the NWT's *Wildlife Act*, offsets and value-at risks in a fire management plan. Additionally, the WRRB recommended the development of monitoring thresholds for climate indicators.

Of the two determinations made by the Board and 24 recommendations accepted or varied by TG and GNWT, only the determinations and five recommendations have been fully implemented. Specifically, the establishment and allocation of a harvest target for the Sahtì ekwǫ̀ herd; the establishment and implementation of the Mobile Core Bathurst Caribou Conservation Area; the regular provision of updates on aerial and ground-based compliance surveillance of the Sahtì ekwǫ̀ herd; the implementation of the GNWT's Hunter Education Program; and the completion of a collaborative feasibility assessment of options for dìga management.

The remaining accepted recommendations appear to the Board to be incomplete, including providing regular harvest updates; negotiating harvesting overlap agreements with the Sahtú and Nunavut; conducting TK research on sahcho predation on ɂekwǫ̀, and their relationship with ɂekwǫ̀, other wildlife and people; conducting a collaborative sahcho biological assessment; conducting TK research about stress and impacts on ɂekwǫ̀ and people related to collars and aircraft over-flights; prioritizing biological monitoring indicators in order of need for effective management and developing thresholds under which management actions can be taken and evaluated; developing a land use plan for Wek'èezhìı; investigating the potential use of offsets for ɂekwǫ̀ recovery; conducting a TK monitoring project with elders to document how climate conditions have affected preferred summer forage and impacted ɂekwǫ́ fitness; and developing monitoring thresholds for climate indicators.

Additional details of the 2016 proceeding can be found in Appendix D and a review of the 2010 WRRB Recommendations are in Appendix E.

5.0. Summary of 2019 Wildlife Management Proposal and Board Process

5.1. Receipt of 2019 Joint Proposal

On January 14, 2019, the TG and GNWT submitted the *"Joint Proposal on Management Actions for the Bluenose-East Ɂekwǫ̀ (Barren-ground caribou) Herd 2019-2021"* to the

Board outlining proposed management actions for the Sahtì ekwǫ̀ herd in Wek'èezhìı. The management actions proposed by TG and GNWT in the Joint Proposal were grouped under the five categories defined in the ACCWM's *Taking Care of Caribou Management Plan*: harvest, predators, habitat and land use, and education as well as research and monitoring.[22]

More specifically, TG and GNWT proposed the following:

- Harvest: implementing a reduced herd-wide total allowable harvest of 300 bulls only and allocation for the Sahtì ekwǫ̀ herd; exploring ways of supporting harvesting of other wildlife; increasing on-the-land activities and cultural practices;
- Predators: increasing incentives for dìga harvesters in an area centered on the collar locations of wintering Sahtì ekwǫ̀; continuing to develop a program to train dìga harvesters using culturally acceptable methods on the winter range; submitting a separate TG-GNWT joint management proposal on reduction of *dìga* numbers on the Sahtì and Kǫ̀k'èetì ekwǫ̀ herd ranges;
- Habitat & Land Use: promoting the protection of the Sahtì ekwǫ̀ herd's calving grounds in Nunavut; participating in any environmental assessment and land use planning in the NWT and Nunavut; supporting ongoing TK and scientific research focused on identifying key ʔekwǫ̀ habitats, minimizing disturbance to key ʔekwǫ̀ habitats, and ensuring conservation of these habitats; supporting research on climate factors that may affect herd trend and studies of how a changing climate may be affecting vegetation and foraging conditions for ʔekwǫ̀;
- Education: continuing education initiatives such as sight-in-your-rifle, minimizing waste, and respecting traditional ways of harvesting; continuing annual visits to the four Tłı̨chǫ communities; and,
- Research & Monitoring: increasing biological monitoring of the Sahtì ekwǫ̀ herd, including conducting population surveys carried out at two-year intervals, increasing radio collars to 70, suspending June calving reconnaissance surveys in years between photo survey years, conducting annual composition surveys in June, October and March/April to assess productivity and mortality rates; continuing accurate harvest reporting and improving body condition assessment of harvested ʔekwǫ̀; supporting the expansion of the Tłı̨chǫ Ekwǫ̀ Nàxoède K'è (formerly the Boots on the Ground) program onto the Sahtì ekwǫ̀ range; supporting continued research into factors contributing to ʔekwǫ̀ declines.

The WRRB considered the proposed restriction of harvest as a proposal for the establishment of a TAH and, therefore, was required to hold a public hearing.

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[22] PR (BNE 2019): 069 - Taking Care of Caribou: the Cape Bathurst, Bluenose-West, and Bluenose-East Barren-Ground Caribou Herds Management Plan. ACCWM. 2014.

The Board initiated its 2019 Bluenose-East Caribou Herd Proceeding on January 30, 2019 and established an online public registry: http://www.wrrb.ca/public-information/public-registry. On February 4, 2019, public notice of the WRRB decision to open a proceeding and conduct a public hearing concerning the possible setting of a reduced TAH for the Sahtì ekwǫ̀ herd was provided to potentially interested organizations in and out of Wek'èezhìı via email, WRRB website, social media and radio. Notifications of the revised proceeding schedules were posted publicly on February 12, March 4, 11 and 19, 2019.

The proceeding and hearing were conducted in accordance with the WRRB's *Rules of Procedures, June 14, 2017*.[23]

5.2. Registered Intervenors

Interested organizations or individuals were required to register as intervenors via the Board's website or to notify the WRRB in writing via email by February 15, 2019. Four organizations registered by the deadline date: the Canadian Arctic Resources Committee (CARC), the Délı̨nę Got'ı̨nę Government (DGG), the North Slave Métis Alliance (NSMA) and the Yellowknives Dene First Nation (YKDFN). Full intervenor status was granted to CARC, DGG, NSMA and YKDFN on February 15, 2019.

5.3. Information Requests

In order to obtain the information necessary for the WRRB to consider as part of the record of this proceeding, a series of Information Requests (IRs) were issued to the registered Parties. The IRs and responses are all available on the online public registry.

The first round of IRs was issued February 8, 2019, requesting that TG and GNWT provide additional Tłı̨chǫ knowledge and scientific information and rationale on the proposed management and monitoring actions. GNWT and TG provided their responses on February 18, 2019. On March 6, 2019, the Board requested consent from all Parties to post supporting documentation referenced by TG and GNWT in their management proposal and IR No.1 responses to the public registry. No concerns were raised, and documents were posted on March 12, 2019.

The second round of IRs was issued February 25, 2019, requesting all Registered Parties provide additional information related to range planning and bull harvest. Additionally, NSMA submitted five IRs for response by GNWT related to harvest, predator management, and habitat and land use. All Parties provided their responses on March 6, 2019.

[23] https://wrrb.ca/sites/default/files/WRRB%20Rules%20of%20Procedure%2014jun2017_1.pdf

5.4. WRRB Public Hearing, April 9-11, 2019

To ensure that procedural, legal and administrative items were addressed prior to the public hearing, the Board held a pre-hearing conference on March 18, 2019 in Yellowknife, NT. The WRRB issued public hearing instructions to the registered Parties as required and, further to recommendations made by Parties during the pre-hearing conference, a revised set of instructions was issued on March 19, 2019. The instructions also included the requirements for Party closing statements and final written arguments.

Hearing presentations from intervenors were requested for March 29, 2019; presentations from TG and GNWT were requested for April 1, 2019. All written submissions, hearing presentations and speaking notes were posted to the public registry.

During the April 9-11, 2019 hearing in Behchokǫ̀, NT, the registered Parties gave oral presentations and asked questions of the other Parties. The registered general public were also given a daily opportunity to address the WRRB in the hearing. A list of registered Parties and general public is in Appendix F. A full written transcript of each day's session was produced and is available on the public registry.[24] Recommendations provided by the Intervenors were summarized by Board staff (Appendix G).

The WRRB adjourned the hearing on April 11, 2019. Final written arguments were submitted by registered intervenors on April 24, 2019, and by TG and GNWT on April 26, 2019. It should be noted that CARC did not provide any written submissions or presentations nor did they attend the public hearing.

The public record was closed on April 26, 2019 and the WRRB's deliberations followed.

6.0. Is there a Conservation Concern for the Sahtì Ekwǫ̀ Herd?

Based on the WRRB's review of Sections 12.6.1 and 12.6.2 of the Tłı̨chǫ Agreement, the first question which must be answered is whether there is a conservation concern with respect to the Sahtì ekwǫ̀ herd. If the WRRB is not convinced that there is a Sahtì ekwǫ̀ management problem, it does not have the authority to recommend harvest limitations on Tłı̨chǫ citizens.

[24] http://wrrb.ca/public-information/public-registry

6.1. Evidence Presented

6.1.1. Evidence from Indigenous Parties

In his opening remarks, Chief Clifford Daniels highlighted the severity of the decline of the Sahtì ekwǫ̀ herd:

"*The decline of the herd is a serious situation. You will hear about the impacts of the herd on our well-being, our way of life, and land-based economy"* and *"This decline has separated us from the caribou. We want to be part of the caribou again"*.[25]

In their closing remarks, NSMA stated that they *"remain deeply concerned that the rate of decline of the BNE herd has not slowed down since the implementation of the last management proposal (2016-2018)"*.[26] YKDFN acknowledged the *"dire reality of the caribou decline"*.[27]

A main message from harvesters and elders was the need to sustain – care for and protect – ʔekwǫ̀, and to be careful how much you talk about them, especially in a negative way, which is disrespectful. Elder Alfred Taniton emphasized this:

> "*And so, when we speak of it [ʔeksǫ̀], we -- and the Elders used to say, And all the animals on this land is to be used by the people. It is not to be talked about. …Treat it well. Do not talk about it*".[28]

Elder Taniton went on to say the situation may worsen unless better solutions are found,

> *"And so, to this day -- to this day, the caribou still do exactly what it [story] says. It goes in its migration -- migratory route to the calving grounds, and this is the importance of what we are talking about today. He [prophet] said that when it disappear, it's going to be very -- very difficult for all of us. That may be true, but as an Elder from Délı̨nę, from a prophet Ayha who spoke -- and who spoke about the future, and he spoke about what was going to take place in the future. So, there's some people in here that probably know about the -- the words of our -- our prophet Ayha. And in the future, this is what is going to take place, he said. There is going to become a time when famine is going to be on this land. And what we are walking towards is really, really drastic -- will be very, very drastic. And -- and grandpa, this is how he showed the importance of what he was*

[25] PR (BNE 2019): 173 – Transcript – April 9, 2019 (DAY 1) - 2019 Bluenose-East Caribou Herd Public Hearing. p 8.
[26] PR (BNE 2019): 186 - North Slave Métis Alliance Final Written Argument.
[27] PR (BNE 2019): 189 - Yellowknives Dene First Nation Final Written Argument.
[28] PR (BNE 2019): 173 – Transcript – April 9, 2019 (DAY 1) - 2019 Bluenose-East Caribou Herd Public Hearing. p.144.

saying. And he said that when -- no food -- there is going to be no food on our land. It's going to become really, really drastic. The water will also disappear. … I wanted to -- I wanted to tell you about my comments about what I thought about the comment -- the presentations this morning. And our Elders killed as many caribou as they needed to survive. And -- and since -- and so we are the ones that are -- live on the -- on the people that live in the cold land, that decision should be up to us".[29]

Elders and harvesters know the rules associated with caring for the ʔekwǫ̀ and maintaining their relatedness with the animals. As is the Dene way, the most knowledgeable are listened to as well as listen to others. The most knowledgeable find solutions when ʔekwǫ̀ become scarce.[30] Elder Phillip Dryneck exemplifies this in his statement:

"*That's the reason why we, as Elders, always make a strong statement regarding the -- how we should protect our animals at the -- but as an Elder, I feel that maybe we are the ones that we should be the -- the people that most -- people -- main spokesperson for regarding those wildlife such as caribou but nonetheless to date I guess we pretty well have to depend only on our leaders* [who have chosen to limit our harvest]".[31]

6.1.2. Scientific Evidence

Herd Estimates and Vital Rates

A June 2018 calving ground photographic survey of the Sahtì ekwǫ̀ herd, conducted by the GNWT, resulted in a total estimate of 11,675 breeding cows (95% CI = 9971 – 13,670), which indicated that abundance of breeding females had decreased by about 32.9 % since the June 2015 estimate of 17,396 (95% CI = 12,780-22,012) (Figure 2).[32] The estimate of adult females in the survey area was 13,988 (95% CI=12,042-16,249). The proportion of adult females classified as breeding was higher in 2018 (83%) than in 2015 (63%).[33] The overall decline between 2015 and 2018 is 50% based on the total population estimate, which fell from 38,592 (95% CI = 33,859-43,325) in 2015 to 19,294 (95% CI = 16,527- 22,524) in 2018 (Figure 3).[34]

[29] PR (BNE 2019): 173 – Transcript – April 9, 2019 (DAY 1) - 2019 Bluenose-East Caribou Herd Public Hearing. p.147-148.
[30] PR (BNE 2019): 061 - Caribou migration and the state of their habitat. Legat et al. 2001.
[31] PR (BNE 2019): 174 - Transcript, April 10, 2019 (DAY 2) - 2019 Bluenose-East Caribou Herd Public Hearing. p.180.
[32] PR (BNE 2019): 201 – Undertaking #1, Part B, ENR to WRRB, 2019 Bluenose-East Caribou Herd Public Hearing
[33] Ibid.
[34] Ibid.

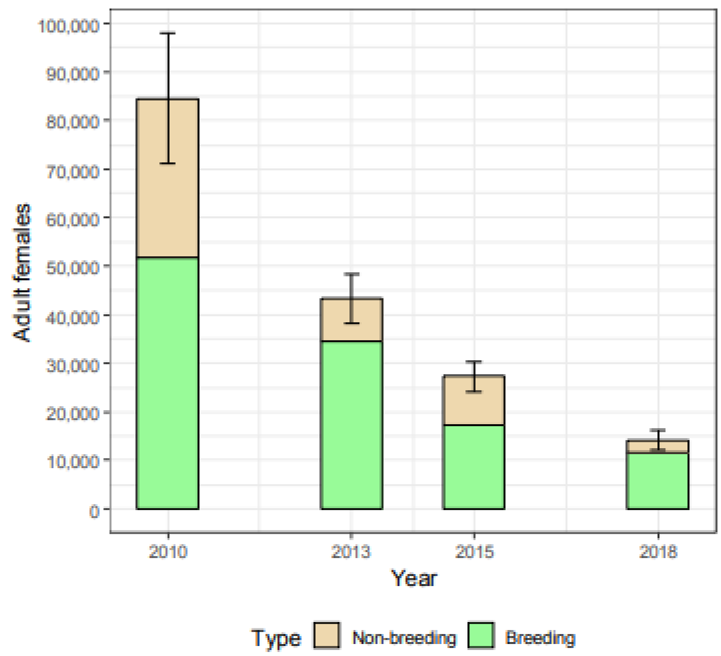


Figure 2. Sahtì ekwǫ̀ herd breeding cow estimates (± 95% CI), 2010-2018.[35]

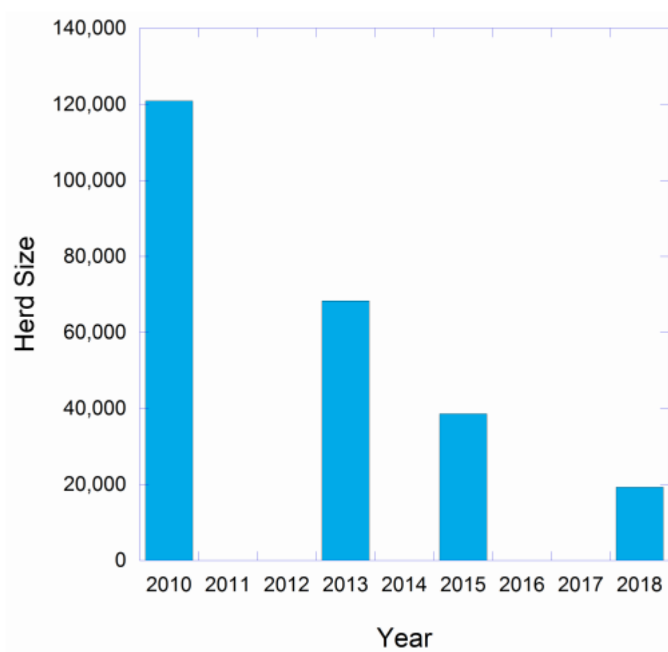


Figure 3. Sahtì ekwǫ̀ herd population estimates, (± 95% CI) (2010-2015).[36]

[35] PR (BNE 2019): 001 – Joint Management Proposal on Management Actions for the Bluenose-East Ekwǫ̀ (Barren-ground caribou) Herd: 2019-2021.
[36] PR (BNE 2019): 164 - ENR Public Hearing Presentation.

"A rapid and continuing decline"[37] is how TG and GNWT characterized the 2019 Sahtì ekwǫ̀ herd's status. Based on the survey results, the herd has declined annually by about 20% from about 103,000 in 2010 to 19,300 in 2018. This equates to a total decline of 81%.[38]

The herd may be declining due to the low annual survival of cows (averaging 79%, 2010-2018, based on Table 1) and calves (averaging 36%, 2010-2018, based on Table 2).[39]The survival rate for adult cows needs to be at least 84-92% for a stable herd.[40] Calf survival rates, the ratio of calves to 100 cows, should be about 35-45 calves: 100 cows in a stable herd in October. In October 2018, the Sahtì ekwǫ̀ herd had a ratio of 25 calves: 100 cows.[41]

Table 1. Collar-based annual survival estimates of Sahtì ekwǫ̀ cows from 2010-2011 to 2017-2018. A caribou year begins in June and ends at the end of May.[42]

Caribou year	Survival	SE	95% Confidence Interval	
2010	0.67	0.16	0.33	0.89
2011	0.97	0.03	0.84	1.00
2012	0.60	0.08	0.45	0.74
2013	0.74	0.09	0.54	0.88
2014	0.79	0.08	0.60	0.90
2015	0.93	0.04	0.77	0.98
2016	0.84	0.07	0.67	0.93
2017	0.75	0.08	0.55	0.88

[37] PR (BNE 2019): 001 - Joint Proposal on Management Actions for the Bluenose-East ʔekwǫ̀ (Barren-ground caribou) Herd: 2019 – 2021.
[38] PR (BNE 2019): 201 – Undertaking #1, Part B, ENR to WRRB, 2019 Bluenose-East Caribou Herd Public Hearing.
[39] Ibid.
[40] Ibid.
[41] PR (BNE 2019): 165 - ENR Public Hearing Presentation Speaking Notes.
[42] PR (BNE 2019): 009 - TG and ENR Responses to Information Requests Round No.1.

Table 2. Annual Survival Estimates of Sahtì ekwǫ̀ calves from 2009-2018.[43]

Caribou Year	Survival	Standard Error	Lower 95% Confidence Interval	Upper 95% Confidence Interval
2009	0.46	0.017	0.427	0.495
2010				
2011				
2012				
2013	0.36	0.014	0.334	0.388
2014				
2015	0.347	0.015	0.318	0.376
2016	0.434	0.024	0.389	0.481
2017	0.435	0.019	0.401	0.475
2018	0.257	0.257	0.016	0.291

Pregnancy rates, based on testing the cows during collaring, are high. In healthy herds, the breeding-age cows usually have a pregnancy rate of 80% or more.[44] In June 2018, the proportion of breeding females in the BNE herd was 83%, which suggests a healthy pregnancy rate.[45]

Harvest was estimated to be about 1260 ʔekwǫ̀ per year between 1998 and 2005. Harvest rates increased between 2009/10 and 2013/14 (2009/10 – 3,466, 2010/11 – 2,918, 2011/12 – 1,766, 2012/13 – 2,562 and 2013/14 – 3,016). Harvest data from 2014/15 and 2015/16 are not published.[46] Harvest levels decreased dramatically in 2016/17 and 2017/18 to 373 and 323 ʔekwǫ̀, respectively, after a TAH of 750 bulls was implemented in 2016.[47]

In 2016, the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) assessed ʔekwǫ̀ in the NWT and Nunavut as Threatened. The status of ʔekwǫ̀ under federal Species at Risk legislation is currently under review. Within the NWT, ʔekwǫ̀ were assessed by the Species at Risk Committee as Threatened in 2017 and were later listed as Threatened under the NWT *Species at Risk Act* in 2018.

Guidance for the management and monitoring of the Sahtì ekwǫ̀ herd in the NWT is primarily found within the ACCWM's *Taking Care of Caribou Management Plan*. In

[43] PR (BNE 2019): 009 – TG and ENR Responses to Information Requests Round No. 1.
[44] PR (BNE 2019): 164 - ENR Public Hearing Presentation.
[45] Ibid.
[46] Ibid.
[47] Ibid.

2018, the Sahtì ekwǫ̀ herd was assessed by the ACCWM as being in the red zone.[48] A red status is assigned when the population level is low.[49] For the Sahtì ekwǫ̀ herd, a low population is under 20,000 animals.[50]

Movement of Collared ʔekwǫ̀ among Herds

GNWT assessed the movement of collared females between the Sahtì ekwǫ̀ and neighbouring Bluenose-West and Kǫ̀k'èetì ekwǫ̀ calving grounds from 2010-2018 and determined there was minimal movement of cows to or from neighbouring herds.[51] Figure 4 depicts the number of collared animals that have immigrated and emigrated from the Sahtì ekwǫ̀ herd from 2010-2014 and 2016-2018.

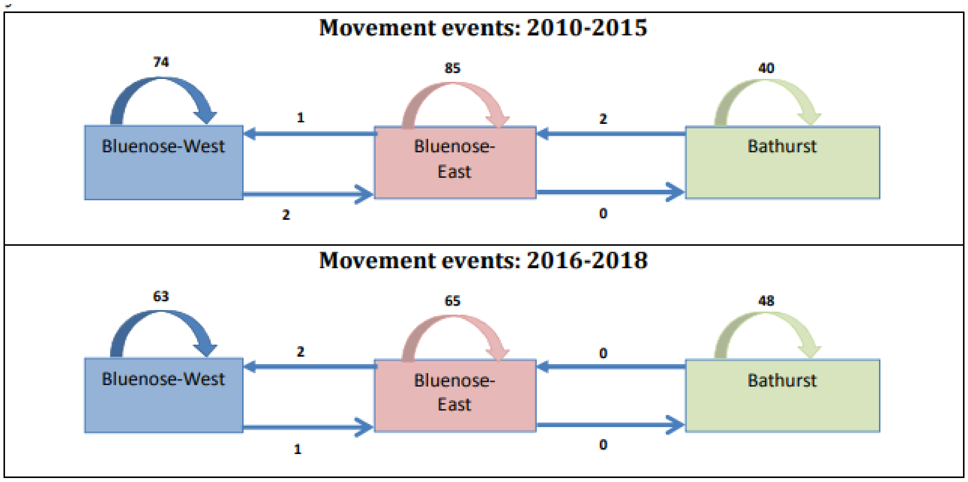


Figure 4. Movement of collared animals in and out of the Sahtì ekwo herd 2010-2015 and 2016-2018.[52]

State of the Habitat

The Joint Proposal stated that while harvest levels likely contributed to the herd's decline between 2010 and 2015, harvest was relatively low between 2015 and 2018 and thus other factors must be at play.[53] The proposal goes on to list predation, disturbance from industry, and adverse environmental conditions as being key to the Sahtì ekwǫ̀ herd's decline.[54]

[48] PR (BNE 2019): 080 - Advisory Committee for Cooperation on Wildlife Management. 2019. Action Plan for the Bluenose East Caribou Herd 2019-2020 – Red Status. Yellowknife, NT.
[49] PR (BNE 2019): 069- Taking Care of Caribou: the Cape Bathurst, Bluenose-West, and Bluenose-East Barren-Ground Caribou Herds Management Plan. ACCWM. 2014.
[50] Ibid.
[51] PR (BNE 2019): 201 – Undertaking #1, Part B, ENR to WRRB, 2019 Bluenose-East Caribou Herd Public Hearing.
[52] Ibid.
[53] PR (BNE 2019): 001 - Joint Proposal on Management Actions for the Bluenose-East ʔekwǫ̀ (Barren-ground caribou) Herd: 2019 – 2021.
[54] Ibid.

Boulanger and Adamczewski found that climate variables including summer warble fly index, summer drought index, and winter climate factors, including snow depth, can help statistically explain cow and calf survival, and pregnancy rates.[55] For example, a drought year in 2014 likely led to poor feeding conditions, poor cow condition and low pregnancy rate in 2014-2015.[56]

The Joint Proposal identified that predation may be a key limiting factor as harvest rates are low.[57] However, without survey information on predators, the effects of predation cannot be evaluated. The WRRB submitted recommendations for predator management to TG and GNWT on February 6, 2019. These recommendations included surveys of predators on the Sahtì ekwǫ̀ range including dìga, sahcho, and *Det'ǫcho* (eagle). The Governments accepted theses recommendations with some variations. This correspondence is in Appendix H.

6.2. Conclusion

The WRRB agrees with TG and GNWT's characterization of the herd's continuing and severe decline based on the aerial photographic calving ground surveys (2010-2018). It remains unclear what the causes of the decline may be. The WRRB notes that with the updated information on adult survival,[58] the average is 79% (2010-2018) and, while this varies annually, it is not as low as the 71% adult survival rate reported by the Joint Proposal.[59] The WRRB is also concerned by the low calf survival, which, while varying between years, is trending down and is lower during the summer than the winter (for the 4 years when it was measured both in the fall and the following late winter).[60] It is uncertain whether the average rate of adult cow and calf survival is sufficient to explain the rate of decline, as measured by the trend from the calving ground survey.

The completeness and reliability of the evidence available to the Board is variable. The calving ground survey, based on the Board's review of the resulting report,[61] was conducted to a high technical standard. The sex and age composition surveys are not reported in detail, but what detail there is, appears reliable. The WRRB does not agree that pregnancy rates are high since the follow-up evidence indicated that rates vary annually.[62] Relying on testing of the collared cows to measure pregnancy adds

[55] PR (BNE 2019): 041 - Analysis of environmental, temporal, and spatial factors affecting demography of the Bathurst and Bluenose-East caribou herds DRAFT June. Boulanger & Adamczewski. 2017.
[56] Ibid.
[57] PR (BNE 2019): 001 - Joint Proposal on Management Actions for the Bluenose-East Ɂekwǫ̀ (Barren-ground caribou) Herd: 2019 – 2021.
[58] PR (BNE 2019): 009 - TG and ENR Responses to Information Requests Round No.1.
[59] PR (BNE 2019): 001 - Joint Proposal on Management Actions for the Bluenose-East Ɂekwǫ̀ (Barren-ground caribou) Herd: 2019 – 2021.
[60] PR (BNE 2019): 009 - TG and ENR Responses to Information Requests Round No.1.
[61] PR (BNE 2019): 201 - Undertaking #1, Part B, ENR to WRRB, 2019 Bluenose-East Caribou Herd Public Hearing.
[62] PR (BNE 2019): 009 - TG and ENR Responses to Information Requests Round No.1.

uncertainty as it overestimates rates compared to fecal sampling or the percentage of breeding cows on the calving ground. The WRRB notes that in 2010 and 2015, the percentage of pregnant breeding cows was 61-63% compared to 80-83% in 2013 and 2018.[63]

The WRRB heard the GNWT express confidence in the reported harvest levels[64] and the department state that reduced harvest levels were a result of changes in winter distribution relative to the communities. There is a gap in the harvest information provided in the Joint Proposal, which only summarizes rates up to 2012/13 (average 2700-4000/year) and then for 2016-2018 (323-373 bulls).[65] The recent numbers constitute an abrupt 10-fold decrease in harvesting, well below the 2016 TAH level. However, GNWT and TG neither analysed winter distribution relative to neighboring herds nor included harvesters' information on location of harvest. This leaves the WRRB uncertain about the reliability of the harvest information.

The WRRB is concerned that TG and GNWT's Joint Proposal has not provided all the available information on predation. For example, the rate of predator sightings during aerial or ground-based surveys is not included. Although the WRRB issued an Information Request for the annual and seasonal rate of collar loss as an indicator of survival, only the annual rate of collar loss was provided.[66] It would have been helpful for the WRRB to know in which season and where the cows were dying to help determine if mortalities were due to predation.

The Joint Proposal did not offer any evidence to help the WRRB understand how the uncertainty and complexity of the effects of climate change can be addressed in halting the decline of the herd.

However, Petter Jacobson, TK Researcher for TG, did state

> *"The first thing we -- was -- that was easily noticeable by the Elders was the impact of climate change on caribou and its habitats. And because of the increasing temperatures and the melting summer snow, caribou are now engaging in new behaviours, like we see them standing in water for long time periods. And the photo on the bottom shows a herd we saw just standing a long time in the water to try to cool down. And last summer we saw for the first time herds running in circles. And the -- they're doing this to try to avoid heat and harassment by insects and they're trying to create wind. And this was the first*

[63] PR (BNE 2019): 009 - TG and ENR Responses to Information Requests Round No.1.
[64] PR (BNE 2019): 174 - Transcript, April 10, 2019 (DAY 2) - 2019 Bluenose-East Caribou Herd Public Hearing. pp. 34-36.
[65] PR (BNE 2019): 001 - Joint Proposal on Management Actions for the Bluenose-East ʔekwǫ̀ (Barren-ground caribou) Herd: 2019 – 2021.
[66] PR (BNE 2019): 009 - TG and ENR Responses to Information Requests Round No.1.

time that the Tłı̨chǫ monitors observed this behaviour and also it's the first time that their Inuit partners who we worked with observed this type of behaviour. … In relation to climate change, industrial development as well as harvesting restriction, the Tłı̨chǫ will often say, And sitting on the land with Elders and harvesters I often hear statements such as, caribou are not here because people are not here. And these type of statements demonstrate our program recommendations to support Indigenous people on the land activities to restore balances in 9 the ecosystem. Okay, so I'm going to move on from our results to some of our plans that we outlined in the management proposal. One (1) purpose of traditional knowledge research is to gather and use the Elders' knowledge, but also create space for that knowledge in decision-making and management". [67]

Nevertheless, the overall evidence available to the Board including that from Indigenous elders, and the trend in ʔekwǫ̀ numbers are clear and compelling. As such, the WRRB concluded that the preponderance of the Indigenous and scientific evidence submitted suggests that there is a serious conservation concern and increased monitoring actions are both warranted and urgently required. In addition to a limited bulls only harvest, additional management and monitoring actions that focus on reducing predation and disturbance to Sahtì ekwǫ̀ and their habitat are required.

7.0. WRRB's Determinations and Recommendations

7.1. Introduction

In developing determinations and recommendations to halt the decline of the Sahtì ekwǫ̀ herd, the WRRB was highly concerned about the need for effective and timely actions. This is in agreement with Dr. John B. Zoe, TG, who stated that:

"So, all I'm saying is that we need to help our Joint Management Proposal more than we have in the past with the Bathurst Joint Management Proposal. We've got to do something different…".[68]

and, the GNWT who stated that:

"Timely conservation-based management actions are needed to help the BNE herd recover so that it can once again provide sustainable harvests that meet the needs of traditional users and communities".[69]

[67] PR (BNE 2019): 173 – Transcript – April 9, 2019 (DAY 1) - 2019 Bluenose-East Caribou Herd Public Hearing. p 82.
[68] Ibid. p 119.
[69] PR (BNE 2019): 196 - ENR Final Written Argument.

Consistent with the requirements of the Tłı̨chǫ Agreement, the WRRB is taking a precautionary approach[70] as well as learning from the experience of the 2016 TAH, which did not on its own achieve the objective of halting the decline. Reducing harvest and predation are the two management actions that most directly and immediately affect ʔekwǫ̀ survival rates.

While the WRRB is most concerned about harvest and predation, the Board also recognizes the importance of a healthy habitat, efficient and effective monitoring that is able to rapidly inform management decisions (adaptive management), and the support and understanding of an informed public. Therefore, in addition to the urgency of actions to halt the decline, the WRRB has recommendations on habitat, adaptive management, and education.

7.2. Total Allowable Harvest

7.2.1. Introduction

In the Tłı̨chǫ Agreement, a TAH level is defined as *"in relation to a population or stock of wildlife, the total amount of that population or stock that may be harvested annually"* (i.e. a TAH is a specific number of ʔekwǫ̀ that can be harvested from a particular herd). As set out in Section 12.5.5(a)(i) of the Tłı̨chǫ Agreement, the WRRB has sole responsibility for making a final determination with respect to a TAH for Wek'èezhìı.

In 2016 the WRRB made a determination to implement a TAH of 750, bulls only for Sahtì ekwǫ̀. This was the first TAH for Sahtì ekwǫ̀ in Wek'èezhìı.

Increasing adult survival by reducing harvest rates is a first and, often, the only direct management action. The effectiveness of harvest reduction as a stand-alone action is dependent on the factors which are driving the decline and whether they have changed during the decline.

7.2.2. Proponent's Evidence

The Joint Proposal indicates that, even with a reduced harvest of 373 Sahtì ekwǫ̀ in 2016/17 and 323 Sahtì ekwǫ̀ in 2017/18, the herd still declined about 20% for each of those two years. GNWT has undertaken computer modeling to project the effectiveness of reducing harvests under different levels of calf and adult survival. GNWT concluded that if adult and calf survival increased to at least >85% and >40%, respectively, a harvest of 300 bulls would not hinder recovery.[71] GNWT's rationale for decreasing the

[70] Section 12.1.5(c) of the Tłı̨chǫ Agreement.
[71] PR (BNE 2019): 009 - TG and ENR Responses to Information Requests Round No.1.

harvest from 1.9% (TAH 750 bulls in 2016) to 1.6% (TAH 300 bulls in 2019) is to have minimal effect on the rate of decline while providing for cultural continuity.[72]

7.2.3. Other Parties' Evidence

NSMA supported the proposed action to lower harvest limits and recommended a variable TAH of up to 300 bulls only Sahtì ekwǫ̀ per season.[73] NSMA further recommended an annual review of the TAH based on cow and calf survival rates, using an adaptive management framework and response plan.[74] YKDFN did not support either the TAH of 300 bulls only Sahtì ekwǫ̀ or the six Sahtì ekwǫ̀ allocated for YKDFN, and they did not propose alternative numbers.[75]

DGG highlighted the continued implementation of their conservation plan *Belare wíle Gots'ę́ ʔekwę́ – Caribou for All Time*, in particular, the policy to increase *Dene Béré* (alternative harvest) traditions, harvesting what the land does provide in abundance. Elder Walter Bezha said

> *"But Délı̨nę is leading the plan. We're implementing, we're harvesting, we have -- we -- we're harvesting more fish, and more moose, and more woodland caribou than we ever have in the last ten (10) years. And we're not going to be harvesting something that's not [there] -- you've seen the -- the information from ENR yesterday about where the caribou have been the last year, the migration pattern"*.[76]

7.2.4. Analysis and Determination

In the preceding Section 6, the WRRB questioned whether monitoring of harvest levels is providing accurate information. The Joint Proposal provides no evidence to determine the effectiveness of the authorization cards compared to, for example, information collected at check stations or through officer patrols. Such a comparison could have supported the TG and GNWT assumption that the harvest levels are accurately measured.

The GNWT reported that recovery would not be hindered by a harvest of 300, if adult and calf survival increased to at least >85% and >40%, respectively.[77] This then, is a

[72] PR (BNE 2019): 001 - Joint Proposal on Management Actions for the Bluenose-East ʔekwǫ̀ (Barren-ground caribou) Herd: 2019 – 2021.
[73] PR (BNE 2019): 186 - North Slave Métis Alliance Final Written Argument.
[74] Ibid.
[75] PR (BNE 2019): 189 - Yellowknives Dene First Nation Final Written Argument.
[76] PR (BNE 2019): 175 – Transcript – April 11, 2019 (DAY 3) – 2019 Bluenose-East Caribou Herd Public Hearing. pp. 53-54.
[77] PR (BNE 2019): 009 - TG and ENR Responses to Information Requests Round No.1.

question of how to increase survival. The WRRB notes that GNWT has not used its population model to explore how the 2016-2018 harvest levels influenced the current annual rate of decline under the measured rates of adult and calf survival.

Additionally, the proposal does not provide evidence to explain how reducing the bull harvest will increase the survival of cows. Increasing the survival rate of cows to between 86 and 90% is considered necessary for herd recovery. In other words, there is little or no evidence to suggest that the reduced harvest of 300 bulls will ensure that the Sahtì ekwǫ̀ herd will stabilize or recover. However, further harvest limitations could reduce any direct and/or indirect sources of mortality to Sahtì ekwǫ̀ cows caused by harvesters.[78]

Emphasis on bull harvest over cow harvest should be greatest in declining herds and/or herds at low numbers.[79] However, as noted by the Tłı̨chǫ elders, it is also important to protect the bulls in order for them to continue guarding the cows from dìga and providing strong genetic material for the future herd.[80] A limited harvest of *yaagoa* (younger bull; third year male ʔekwǫ̀) in the early spring, and *wedzıh* (biggest male ʔekwǫ̀) in the late spring and fall[81] will permit Tłı̨chǫ citizens to continue their relationship with the ʔekwǫ̀, slow the rate of herd decline, and ensure that cows can still be protected by the wedzıh. As Tammy Steinwand-Deschambeault explained:

> *"Our perspective is that with a focus on younger bulls, this total allowable harvest represents a low additive risk for the herd, which has been outlined in GNWT's presentation and modeling work"*.[82]

Harvesting ʔekwǫ̀ is about more than just food security[83] for the Tłı̨chǫ, it is about Tłı̨chǫ harvesters' connections within their culture, language and way of life. Tammy Steinwand-Deschambeault explained *"[*On the table in front of me, there are*] special artifacts carrying the spirit of the caribou. They will help us tell our story"*.[84]

Dr. John B. Zoe sums up the importance of Tłı̨chǫ thriving, when he said harvesting is

> *"… a way of life, in relation to the caribou is described in the Tłı̨chǫ Agreement, which is 12.1.1, which encompasses our livelihood and we try to capture that in our agreement to ensure that we always have a connection to the caribou, the*

[78] PR (BNE 2019): 009 - TG and ENR Responses to Information Requests Round No.1.
[79] Ibid.
[80] PR (BNE 2019): 061 - Caribou migration and the state of their habitat. Legat et al. 2001.
[81] Ibid.
[82] PR (BNE 2019): 173 – Transcript – April 9, 2019 (DAY 1) - 2019 Bluenose-East Caribou Herd Public Hearing. p.74.
[83] Food security is defined as "the state of having reliable access to a sufficient quantity of affordable, nutritious food". https://www.lexico.com/en/definition/food_security.
[84] PR (BNE 2019): 173 – Transcript – April 9, 2019 (DAY 1) - 2019 Bluenose-East Caribou Herd Public Hearing. p.68.

activity around the caribou and the ceremonial games that happen around the -- the caribou and the travel. Everything that we -- that we had was in relation to the caribou".[85]

And near the end of his presentation for TG, Dr. Zoe reiterated the importance of the Tłįchǫ way of life:

"And so the picture I'm trying to paint today is that going as far back as a hundred and fifty (150) years ago, we've been fighting against the current, fighting against a change, and that change is disenfranchising our ability to carry on our way of life, our knowledge that comes with that life, our kinship, our relation to the animals and the fish in the water and to the trees that provide the birch bark to go -- to go to where we're going. All these things that are there that people continue their way of life and kept the information alive until today; we still have it".[86]

Figure 5 shows an approach to how the harvest rate and sex ratio of harvest could be adjusted to the herd's risk status.[87] Indicators of a herd at high risk include low calf recruitment, low cow survival, poor condition as assessed by harvesters, and high dìga numbers. Harvest in high-risk herds is tolerable at 1% or less of the herd and may increase to 2, 3 and 4% of the herd in lower-risk herds. Emphasis on harvest of bulls only or a high percentage of bulls in the harvest would be greatest in high-risk herds. This approach is contingent upon ongoing reliable reporting of harvest by all harvesters, despite the herd's size or trend.

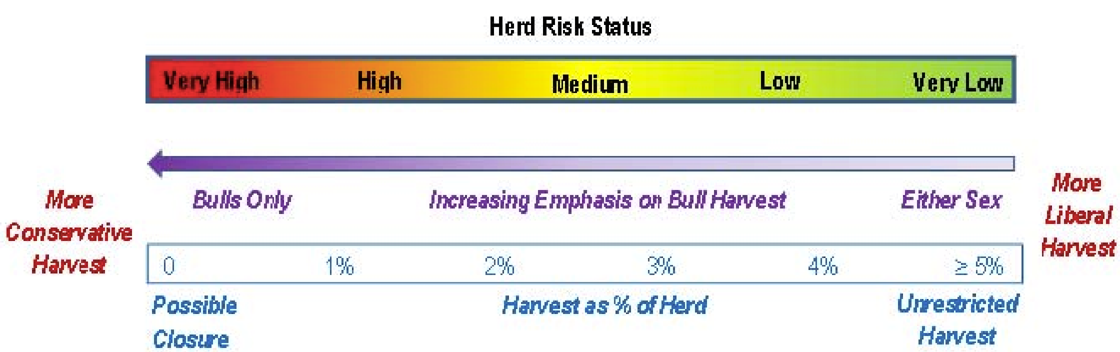


Figure 5. Suggested approach to recommending rate (% of herd) and sex ratio of harvest depending on a herd's risk status.[88]

GNWT and TG reported that in 2016/17 and 2017/18, 373 and 323 Sahtì ekwǫ̀ were harvested, respectively. This equates to a harvest rate of approximately 0.91% per year

[85] PR (BNE 2019): 173 – Transcript – April 9, 2019 (DAY 1) - 2019 Bluenose-East Caribou Herd Public Hearing. p.87.
[86] Ibid. p.109.
[87] PR (BNE 2019): 095 - Harvest recommendations for barren-ground caribou based on herd risk status: A rule of thumb approach. ENR. 2013.
[88] Ibid.

based on the 2015 population estimate of 38,000. However, the Sahtì ekwǫ̀ herd continued to decline by 20% between 2016-2018. The proposed TAH of 300 bulls only Sahtì ekwǫ̀ equates to an annual harvest rate of approximately 1.6% of the 2018 population estimate. Therefore, a TAH of 300 in 2019 results in more harvest pressure on the herd than during 2016-2018. The Board believes that an acceptable harvest would be 1%, i.e.193 Sahtì ekwǫ̀, bulls only.

Furthermore, the 20% rate of decline of Sahtì ekwǫ̀ is similar to rate of decline for the Kǫ̀k'èetì ekwǫ̀. Figure 6 compares the population estimates of the two herds through time.

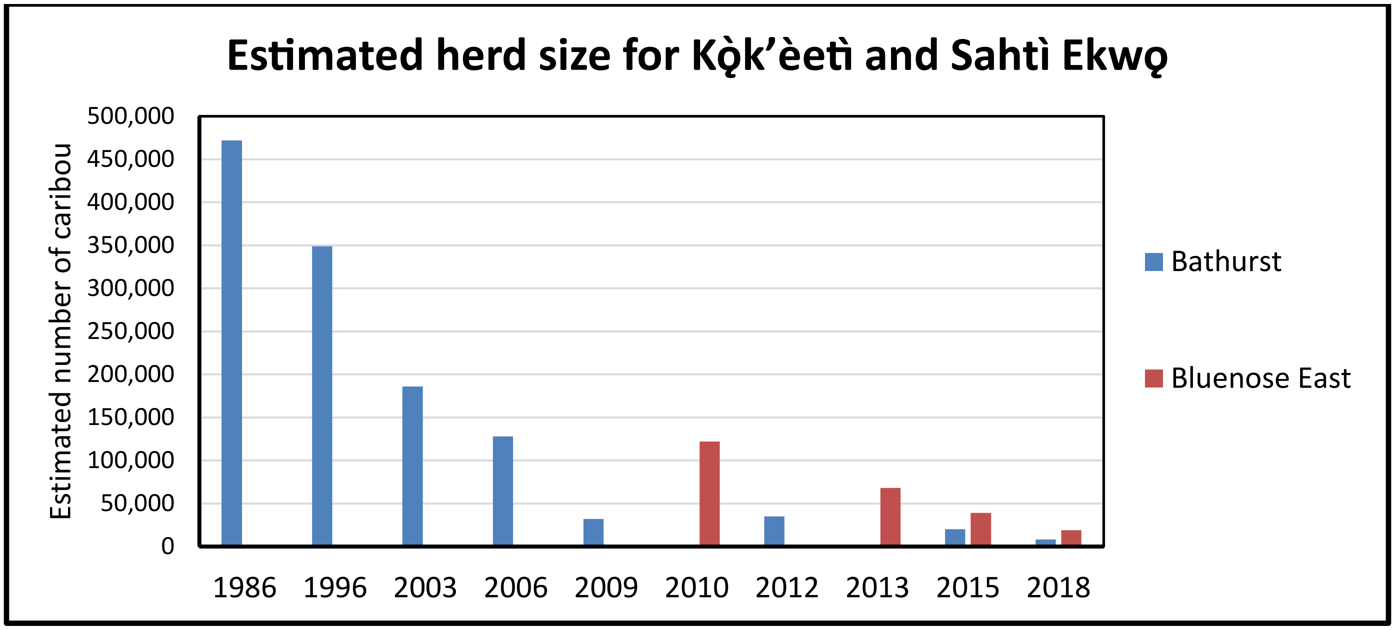


Figure 6. Comparison of Kǫ̀k'èetì ekwǫ̀ and Sahtì ekwǫ̀ estimates.[89]

Table 3 compares the population estimate of Kǫ̀k'èetì ekwǫ̀ and Sahtì ekwǫ̀, and the TAH which was determined at the time. The Board acknowledged the similar rate of decline between the herds in its decision making.

[89] https://www.enr.gov.nt.ca/en/services/barren-ground-caribou.

Table 3. Comparison of Kǫk'èetì ekwǫ̀ and Sahtì ekwǫ̀ population estimates and TAH.[90]

Kǫk'èetì Ekwǫ̀			Sahtì Ekwǫ̀		
Survey Year	Population	TAH (% of population)	Survey Year	Population	TAH (% of population)
2013	35,000	300 (0.86%)	2016	39,000	750 (1.9%)
2016	20,000	0	2018	19,300	193 (1%)
2018	8,200	0*			

* Proposed

As per Section 12.6.3 of the Tłı̨chǫ Agreement, any harvest limit *"shall be no greater than necessary to achieve the objective for which they are prescribed, and may not be prescribed where there is any other measure by which that objective could reasonably be achieved if that other measure would involve a lesser limitation on the exercise of the rights"*.

In making its determination about harvest limitations, the WRRB considered the risks to the herd given the recent high rate of decline, uncertainties about the underlying mechanisms for the decline, the importance of ekwǫ̀ for food security and cultural strength, and the comparison to the rate of decline of Kǫk'èetì ekwǫ̀.

Evidence from the public during the proceeding, as well as from Tłı̨chǫ elders during the 2007 TG workshop, suggest a willingness to restrict harvest, and leave the ʔekwǫ̀ alone.[91] Leaving ʔekwǫ̀ alone, to the elders, includes all activities that stress or bother those remaining. As Elder Leon Modeste summarizes:

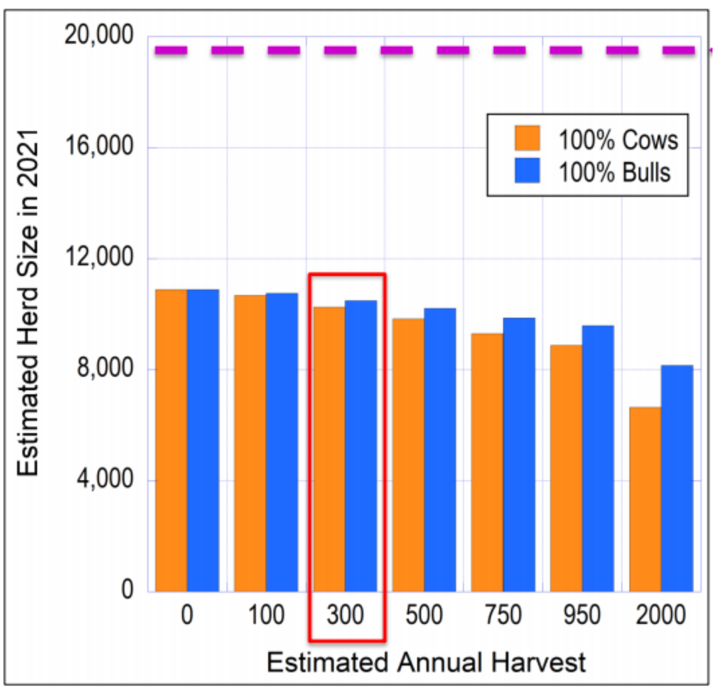
> *"We can -- it's really, really important not to talk about it for a little while and let's not talk about it, let's not follow them on planes, let's not hunt them, let's just leave them alone. I'm telling you what I'm thinking and because it's really, really important and -- and this is what the Walter said earlier, he says that I wonder -- I think my time is up but I'd like to say, like, whether you are non Aboriginal, Aboriginal people, it's really, really important to stand together on this and to have this approach together".*[92]

[90] https://www.enr.gov.nt.ca/en/services/barren-ground-caribou.
[91] PR (BNE 2019): 145 - Transcript, Tłı̨chǫ Government Caribou Workshop, Whatì, NT – Day 2. 2007.
[92] PR (BNE 2019): 175 – Transcript – April 11, 2019 (DAY 3) – 2019 Bluenose-East Caribou Herd Public Hearing. p.31.

To slow the rate of decline, offset the effects of unreported harvest, and reduce the bulls only harvest to ensure the cows are protected, the Board believes a more conservative TAH is required. Therefore, a TAH of 193 Sahtì ekwǫ̀, bulls only, must be implemented without delay.

In making its decision, the WRRB considered Figure 7 provided by GNWT,[93] which models 2021 population estimates for Sahtì ekwǫ̀ with different harvest rates. This figure suggests that even a total harvest of zero would not halt the decline; however, lower harvest rates could *slow* the rate of decline.

Although the Board determined that a TAH of zero was appropriate when Kǫ̀k'èetì ekwǫ̀ was at a similar population level, there were other ʔekwǫ̀ herds, with no harvest restrictions, that could be utilized. The WRRB wishes to balance protection of the herd to encourage recovery with the nutritional and cultural needs of the Tłı̨chǫ, and other Indigenous people who rely on Sahtì ekwǫ̀. Figure 7 and the Joint Proposal suggest that harvest levels of 100-300 per year will likely result in minimal additional declines.[94]



Harvest	All Cows	All Bulls
0	10,898	10,898
100	10,685	10,760
300	10,260	10,486
500	9,834	10,212
750	9,303	9,869
950	8,878	9,595
2000	6,645	8,155

Figure 7. Impacts of harvest on the Sahtì ekwǫ̀ herd in 2021(adult cow survival 71% and average calf survival). The dashed line is the herd size in 2018; 19,300. The bars represent the numbers on the right.[95]

[93] PR (BNE 2019): 176 - Undertaking #2, ENR to WRRB, 2019 Bluenose-East Caribou Herd Public Hearing.
[94] PR (BNE 2019): 001 - Joint Proposal on Management Actions for the Bluenose-East ʔekwǫ̀ (Barren-ground caribou) Herd: 2019 – 2021.
[95] PR (BNE 2019): 176 - Undertaking #2, ENR to WRRB, 2019 Bluenose-East Caribou Herd Public Hearing.

Determination #1-2019 (Sahtì ekwǫ̀): Harvest of Sahtì ekwǫ̀
A total allowable harvest of 193, bulls only, for all users of the Sahtì ekwǫ̀ herd within Wek'èezhìı is to be implemented by the TG and GNWT for the 2019/20 and 2020/21 harvest seasons.

7.3. Harvest Allocation

7.3.1. Introduction

Section 12.5.5(a)(ii) of the Tłı̨chǫ Agreement states that *"the WRRB shall make a final determination about the allocation of portions of any TAH for Wek'èezhìı to groups of persons or for specified purposes"*.

7.3.2. Proponent's Evidence

Based on the 2018 population estimate and GNWT's recommended allocation from the 2014/15 harvest season, TG and GNWT proposed a herd-wide allocation for the Sahtì ekwǫ̀ herd as 300 ʔekwǫ̀, i.e. Tłı̨chǫ 118 (39.29%), Sahtú 52 (17.14%), Dehcho 5 (1.61%), Inuvialuit 2 (0.89%), Northwest Territories Métis Nation 5 (1.43%), Akaitcho 6 (2.14%), North Slave Métis Alliance 5 (1.79%), and Nunavut 107 (35.71%).[96] Although TG and GNWT have no authority over wildlife management in Nunavut, a consistent overall approach for Indigenous harvest of this migratory species is desired.[97]

The proposed allocation was based on the following:

- The results of the 2015 and 2018 calving ground surveys and the reported rate of decline of 20-21%;
- The *Taking Care of Caribou* management plan which places the Sahtì ekwǫ̀ herd in the red low population zone, where a TAH acceptable to ACCWM can be established;
- GNWT's harvest rule-of-thumb and associated modeling of harvest and ʔekwǫ̀ populations;
- The need to consider the Nunavut harvest;
- The WRRB recommendations of 2010 and 2016 for this herd, along with the herd's considerably reduced numbers, and its downward acceleration similar to the Kǫ̀k'èetì ekwǫ̀ herd's most rapid decline between 2006 and 2018.[98]

[96] PR (BNE 2019): 001 - Joint Proposal on Management Actions for the Bluenose-East Ɂekwǫ̀ (Barren-ground caribou) Herd: 2019 – 2021.
[97] Ibid.
[98] PR (BNE 2019): 149 - 2016 Reasons for Decision Related to a Joint Proposal for the Management of the Bluenose-East Ɂekwǫ̀ (Barren-ground Caribou) Herd - Part A.

7.3.3. Other Parties' Evidence

DGG and NSMA did not raise concerns about the ACCWM approach to allocation and that it has been used before by the Board also with no objections.

While YKDFN did acknowledge the *"dire reality of caribou decline and that certain concessions are required"*, they stated they did not accept the allocation due to *"the belief that indigenous rights to harvest, cannot and should not be placed in such absolute terms"*.[99] Further, YKDFN noted concerns about how overlaps in calving areas and ranges between the Sahtì ekwǫ̀ and Kǫ̀k'èetì ekwǫ̀ herds will be addressed. They point out that there could be *"potential conflicts"* between traditional harvesters of the two herds; therefore, the Chiefs of YKDFN do not agree with the six bull per year quota.[100]

7.3.4. Analysis and Determination

As the Board does not have the evidence necessary to make specific allocations in Wek'èezhìı, the WRRB concluded that they would express the allocation proportionately, basing their determination on TG and GNWT's considerations above and its authority within Wek'èezhìı only. Considering the determination for a total allowable harvest of 193, the harvest allocation would thus be: Tłı̨chǫ 76 (39.29%), Sahtú 33 (17.14%), Dehcho 3 (1.61%), Inuvialuit 2 (0.89%), Northwest Territories Métis Nation 3 (1.43%), Akaitcho 4 (2.14%), North Slave Métis Alliance 3 (1.79%) and Nunavut 69 (35.71%).

Determination #2-2019 (Sahtì ekwǫ̀): Sahtì Ekwǫ̀ Harvest Allocation
The proportional allocation of the total allowable harvest of the Sahtì ekwǫ̀ herd for the 2019/20 and 2020/21 harvest seasons shall be as follows: Tłı̨chǫ Citizens: 39.29% (76 animals) Members of an Indigenous people who traditionally harvest Sahtì ekwǫ̀ (includes Nunavut): 60.71% (117 animals) TG should determine distribution of the allocation with Tłı̨chǫ communities, and GNWT should determine distribution of the allocation to members of an Indigenous people who traditionally harvest Sahtì ekwǫ̀ in consultation with those groups.

[99] PR (BNE 2019): 189 – Yellowknives Dene First Nation Final Written Argument.
[100] PR (BNE 2019): 172 - Yellowknives Dene First Nation Public Hearing Presentation.

7.4. Harvest Monitoring

7.4.1. Introduction

Harvest monitoring is critical for ensuring TAH compliance, documenting wounding and wastage, and herd health monitoring. Community monitors, GNWT Renewable Resource Officers, and aerial and ground-based surveys are utilized for harvest monitoring purposes.

7.4.2. Proponent's Evidence

TG and GNWT's Joint Proposal described the monitoring methods for harvest and annual harvest levels.[101] GNWT monitors harvesting activity in Wek'èezhìı through a check station at Gordon Lake and McKay Lake and by Tłı̨chǫ community monitors, hired by TG. The community monitors keep TG and GNWT updated on activities on the land and report any infractions.[102] In addition, aerial reconnaissance flights throughout the fall and winter harvest seasons are conducted to check for any harvesting activity within wildlife management zones and along winter roads.

Previously, in 2015, GNWT and TG stated that officer presence would be increased in the communities if hunting pressure increased, but the primary approach is to work with community harvesters to educate them about the management and conservation measures in place. Education and prevention are the primary tools used in achieving harvest compliance; prosecution will always be a tool of last resort.[103]

7.4.3. Other Parties' Evidence

NSMA was concerned about how *"the proposed 300 bull-only (or 118 for Tłı̨chǫ and 5 for NSMA) harvest opportunity may be for the continuation of traditional practices, as compared to the risk of driving the BNE herd population further downward"* [104] and requested harvest levels for the previous 3 years for neighboring herds. GNWT responded that the Beverly/Ahiak herd's winter distribution influenced its harvests, which were in the North Slave region, 0 (2015-16); 3000 (2016-17); and 500 (2017-18).[105]

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[101] PR (BNE 2019): 001 - Joint Proposal on Management Actions for the Bluenose-East Ɂekwǫ̀ (Barren-ground caribou) Herd: 2019 – 2021.
[102] Ibid.
[103] PR (BNE 2019): 149 - 2016 Reasons for Decision Related to a Joint Proposal for the Management of the Bluenose-East Ɂekwǫ̀ (Barren-ground Caribou) Herd - Part A.
[104] PR (BNE 2019): 018 - TG and ENR Responses to Information Request No. 2.
[105] Ibid.

NSMA was also concerned about how the relative proportion of harvested younger and older bulls could affect the remaining population.[106] While GNWT provided additional information on the possible effects of harvest on the adult sex ratio, they did not have specific information on whether the age structure of the harvested bulls would affect the herd.[107]

YKDFN noted an overlap of Kǫk'èetì and Sahtì ekwǫ̀ ranges and that it is unclear in the Joint Management proposal how the overlap will be treated (i.e. what will the impact of the overlap be on harvesting as generally harvesters do not make herd distinctions?).[108]

DGG noted that their community plan "*Belare wíle Gots'ę́ ʔekwę́ – Caribou for All Time"* sets out how the community will monitor harvest. Mr. Leonard Kenny, Deputy *ʔek'wahtı̨də́* (highest honest leader) said

> *"And so the way we keep track of our own harvesting -- harvesters is that it was, you know, when you actually tried something for the first time, it was kind of difficult, but at the time, the leadership was involved with it. We made sure that RRC -- people that went hunting had to report to RRC, or any of the hunters that are out there. You know, they have to be honest, just like what the proposal said. But at the end of the day, after the hunters went back, the -- the numbers that came -- came in were -- were pretty accurate".*[109]

Mr. Kenny stated further

> *"And it's -- it's done by -- not by ENR themself. If they did it themself, people won't -- won't participate in their -- trying to give them the -- the numbers. It has to come from the – people like … -- from the RRC, and the leadership have to be involved".*[110]

7.4.4. Analysis and Recommendations

TG and GNWT provided annual harvest levels but did not summarize or analyze monitoring effort (number of days at the check station, number of ground and aerial patrols). GNWT relies on the locations of the satellite-collared ʔekwǫ̀ as the basis for assigning harvest to the different herds; however, there has been no analysis completed about how harvest is assigned to which herd. There was no analysis relating harvest

[106] PR (BNE 2019): 018 - TG and ENR Responses to Information Request No. 2.
[107] Ibid.
[108] PR (BNE 2019): 189 – Yellowknives Dene First Nation Final Written Argument.
[109] PR (BNE 2019): 175 – Transcript – April 11, 2019 (DAY 3) – 2019 Bluenose-East Caribou Herd Public Hearing. p.59.
[110] Ibid. pp.60-61.

effort (distances travelled, for example) to winter distribution of Sahtì ekwǫ̀ and its neighboring herds.

The WRRB is concerned about how the communities cope when ʔekwǫ̀ harvests appear to be so annually variable (Figure 8). In the last five years, Sahtì ekwǫ̀ harvests have varied from approximately 323 to 4000 when the winter distribution of the Sahtì ekwǫ̀, Kǫ̀k'èetì ekwǫ̀, and Beverly/Ahiak ʔekwǫ̀ herds are within the NWT.

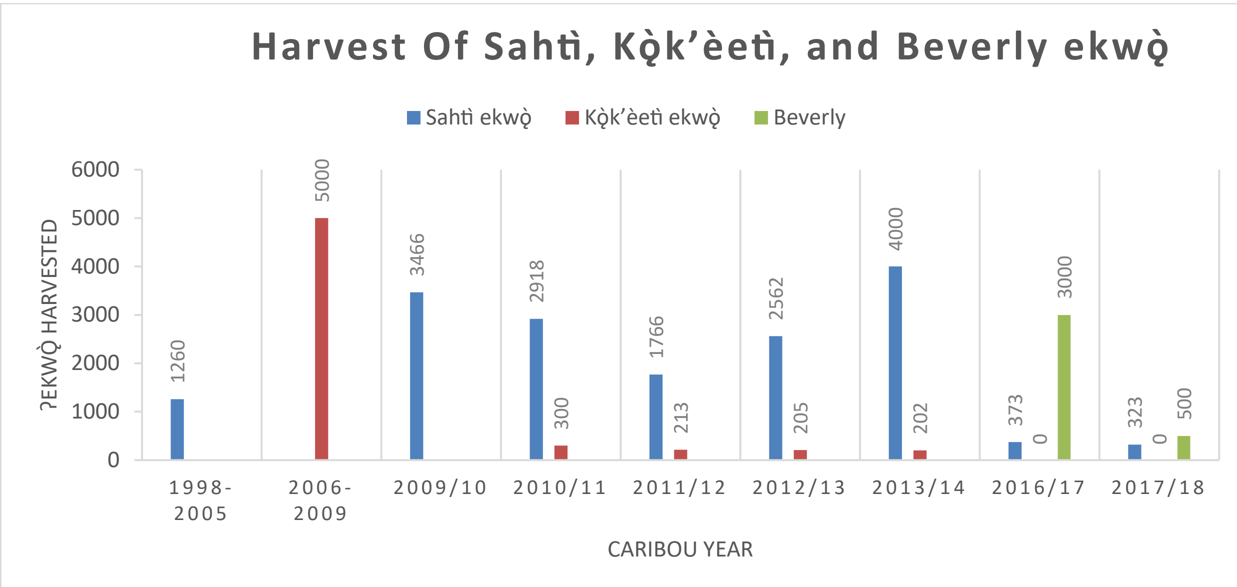

Figure 8. ʔekwǫ̀ harvested from the Sahtì ekwǫ̀, Kǫ̀k'èetì ekwǫ̀ and Beverly/Ahiak ekwǫ̀ herds from 1998 to 2018.[111]

The uncertainty about the harvest levels and why they vary so much annually will not be solved simply by improved reporting and analyses. The reported variability also suggests that a better understanding of harvesting from the community perspective is essential. This can be achieved by an increase in community monitoring and more detailed reporting.

Harvest monitors not only provide critical information on harvest, but they are also a link between communities and responsible governments. Harvest monitors are on the front lines and can collect real-time information from harvesters on the health of the animals, and the herd. However, if ʔekwǫ̀ are abundant around the community, harvest monitors can be overworked, which can be a safety concern.

[111] PR (BNE 2019): 001 - Joint Proposal on Management Actions for the Bluenose-East ʔekwǫ̀ (Barren-ground caribou) Herd: 2019 – 2021; and PR (BNE 2019): 009 - TG and ENR Responses to Information Requests Round No.1.

Recommendation #1-2019 (Sahtì Ekwǫ̀): Sahtì Ekwǫ̀ Harvest Monitoring
To ensure that the total allowable harvest is being adhered to, and to utilize the expertise of harvesters, TG is to revise their approach to Sahtì ekwǫ̀ harvest monitoring for the 2019/20, and 2020/21 harvest seasons to include: • Data collected from harvesters which, at minimum, should include the number and location of ʔekwǫ̀ harvested, sex, health, and body condition of the animals, and distance travelled by the harvesters; • Harvest data should be provided weekly by TG to the WRRB, and the annual harvest and monitoring summary reports prepared by GNWT and TG should be made public by June 30 of each year; and • Where necessary because of concentrations of ʔekwǫ̀ near a community, up to four community monitors should be hired to be able to collect, and report on harvest data weekly.

7.5. Predators

7.5.1. Introduction

As previously described, the Sahtì ekwǫ̀ herd decline is a serious conservation concern. Harvest restrictions alone have proven to be ineffective in halting this decline, and the evidence presented suggests that this will continue to be the case. As predators continue to put pressure on the Sahtì ekwǫ̀, predator management could aid in the short-term stabilization and recovery of the herd.

7.5.2. Proponent's Evidence

TG and GNWT's Joint Proposal identified that the Sahtì ekwǫ̀ herd decline continued despite the harvest reduction in 2016, and that low adult cow and calf survival rates suggest that predation may be a *"key limiting factor"*.[112] The Joint Proposal identified that the *Wolf Technical Feasibility Assessment: Options for Managing Wolves on the Range of the Bathurst Barren-ground Caribou Herd* could be applicable to dìga reduction options for the Sahtì ekwǫ̀ range.[113] These possible dìga reduction options will be submitted to the WRRB in a separate proposal. This proposal will recommend ways to ensure that dìga harvest is increased to a level where ʔekwǫ̀ survival rates will be measurably increased. During the public hearing, Dr. Jan Adamczewski suggested that a predator management proposal may be submitted in *"early May [2019]"*.[114] As of

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[112] PR (BNE 2019): 001 - Joint Proposal on Management Actions for the Bluenose-East Ɂekwǫ̀ (Barren-ground caribou) Herd: 2019 – 2021.
[113] Ibid; and PR (BNE 2019): 078 - Wolf Technical Feasibility Assessment: Options for Managing Wolves on the Range of the Bathurst Barren-ground Caribou Herd. 2017.
[114] PR (BNE 2019): 174 – Transcript, April 10, 2019 (DAY 2) – 2019 Bluenose-East caribou Herd Public Hearing. pp.52-53.

the date of publishing this report, the Board has not yet received a predator management proposal.

The Joint Proposal also outlined an Enhanced North Slave Dìga Harvest Incentive Program, which was implemented in the 2018/19 harvest season to reduce predation and promote caribou recovery.[115] This Program increased the incentive of dìga harvested within a specified zone to up to $1650.[116]

7.5.3. Other Parties' Evidence

Elder Alfred Taniton stated

> *"There is a lot of animals that go through the wolf. We can't blame ourselves. We survive by killing by going by harvesting animals. That is how we go by things. And we have to decide on what we're going to do with the wolf. And that's another item that we need to talk about. We know we want to help the caribou. Maybe in a few years if there's a lot more caribou and then we want -- before that, we want to talk about the wolf. We have to really think about it"*.[117]

YKDFN noted that *"we fail to believe that predation is the main contributing factor, there are other factors at play which quite frankly we are yet to understand"*.[118] NSMA was concerned about a focus on predator management and stated that *"Currently, there are more discussions and commitments about predator removals than attempt to understand the predator ecology"*.[119]

NSMA argued that more thorough survey and assessment should precede any aggressive dìga/predator removal measures.[120] They reasoned that understanding the ecology of ʔekwǫ̀'s predators is essential in reinforcing the Sahtì ekwǫ̀ management plan and preventing unforeseen consequences to other ecologically important species.

NSMA also expressed concern that an increase in dìga harvesting could disturb ʔekwǫ̀ if the harvesting was from snow machines. Snow machines can create hard-packed trails that in turn would increase predation rates if dìga prefer the trails.[121]

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[115] PR (BNE 2019): 001 - Joint Proposal on Management Actions for the Bluenose-East Ɂekwǫ̀ (Barren-ground caribou) Herd: 2019 – 2021.
[116] Ibid.
[117] PR (BNE 2019): 175 – Transcript – April 11, 2019 (DAY 3) – 2019 Bluenose-East Caribou Herd Public Hearing. p.184.
[118] PR (BNE 2019): 172 - Yellowknives Dene First Nation Public Hearing Presentation.
[119] PR (BNE 2019): 163 - North Slave Métis Alliance Public Hearing Presentation.
[120] PR (BNE 2019): 186 - North Slave Métis Alliance Final Written Argument.
[121] PR (BNE 2019): 018 - TG and ENR Responses to Information Request No. 2.

YKDFN noted in their closing remarks that dìga should be collared to provide data complimentary to caribou collar data, and traditional knowledge.[122]

7.5.4. Analysis and Recommendations

The Joint Proposal is short on evidence related to predation (e.g. it does not include trends in sighting rates of dìga and sahcho during aerial and ground surveys). This information would be useful in determining whether or not predator sightings are changing. An earlier analysis, which mapped seasonal ɂekwǫ̀ mortality (2010-2016), revealed that most collared ɂekwǫ̀ deaths are on summer and fall ranges and are least on calving ranges. The WRRB is perplexed that GNWT did not include evidence and the analyses that it has previously completed on dìga. The Joint Proposal notes that the Kǫ̀k'èetì Wolf Management Feasibility Assessment 2017 can be applied to Sahtì ekwǫ̀ herd. There is no further indication of how and when such an action might be implemented.

Given that the Joint Proposal states that the limited harvest of bulls is not sufficient to halt the decline and given the low survival of the cows, the WRRB agrees that action is needed to improve cow survival.[123] While the WRRB understands the concerns expressed by NSMA and YKDFN, analysis of the Joint Proposal by the Board, and review of evidence about community concerns, reflects an immediate need for action to reduce predation on the herd. During the 2016 public hearing, the TG-GNWT Ɂekwǫ̀ consultations tours conducted January 21-23, 2019, and the 2019 public hearing, the WRRB has heard from Tłı̨chǫ community members that dìga are continuing to put pressure on ɂekwǫ̀ populations.

Mr. Jimmy Kodzin discussed the number of wolves he's seen on the tundra:

> *"When I think about the wolves, the predator such as the wolfs, we know that for the fact there are a lot of wolves out there. They usually go where the caribou are, and I did something that I have observed, something that I have seen. And one (1) time when I was out in the tundra, out in the -- and also I have seen a lot of wolf. It seems like nobody could be approach those predators such as the wolves. And also, this Elder that was with me, I told him what do we -- I never seen this amount of caribou, one lake I've been -- I have seen over five hundred (500) caribou -- five hundred 500 wolfs, sorry, five hundred (500). I told him -- he asked me what did I do? I didn't do -- and that Elder said, What did you do? I said nothing. Well it's a good thing, that Elder told me that wolf that you think -- you think you're on a snowmobile where there's lots, so it's a good thing you didn't do anything. They could attack you. If you at least killed one, you would have*

[122] PR (BNE 2019): 189 - Yellowknives Dene First Nation Final Written Argument.
[123] PR (BNE 2019): 001 - Joint Proposal on Management Actions for the Bluenose-East Ɂekwǫ̀ (Barren-ground caribou) Herd: 2019 – 2021.

> *not been here today, because they help each other to attack. But still -- but then I want something to be done. And also, I'm pretty sure there are some people that can -- we know for the fact that -- that the predator such as the wolves are killing off a lot of caribou, but we do not think alike. … And also, it's not a small animal, it's not a small – not a small animal".*[124]

The WRRB submitted recommendations for predator management to TG and GNWT on February 6, 2019. The Governments accepted theses recommendations with some variations. This correspondence is in Appendix H. The Board strongly suggests that implementation of predator management actions should be a priority for both governments. Delayed action at this stage would not be in the public interest and would represent a failure in responsible management.

Although a priority for the TG, Tammy Steinwand-Deschambeault explained at the Hearing

> *"It* [dìga culling] *has been focused on Tłı̨chǫ knowledge and based on recommendations from the Elders, and a key aspect of the project is to utilize and follow traditional dìga harvesting laws and to enhance monitoring in partnership with GNWT. This work is ongoing and, as we knew from the outset, it would not be easy".*[125]

In 2018, the GNWT implemented the Enhanced North Slave Dìga Harvest Incentive Program as a pilot program. This program increased the incentive to up to $1650 for a dìga harvested in an area of the North Slave region centered on the collar locations of wintering ʔekwǫ̀. Dìga harvesters were required to check into and out of the dìga harvesting zone at winter road access point. The purpose of the program was to both increase interest in the TG dìga harvester training program and to reduce the number of predators on the ʔekwǫ̀ ranges.

The WRRB is aware that incentive programs can attract criticisms and may not be effective in reducing predation rates.[126] The WRRB wants to be able to see a linkage between the Enhanced North Slave Dìga Harvest Incentive Program and ʔekwǫ̀ conservation efforts.

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[124] PR (BNE 2019): 175 – Transcript – April 11, 2019 (DAY 3) – 2019 Bluenose-East Caribou Herd Public Hearing. pp.117-118.
[125] PR (BNE 2019): 173 – Transcript – April 9, 2019 (DAY 1) - 2019 Bluenose-East Caribou Herd Public Hearing. p.76.
[126] PR (BNE 2019): 190 - Predator Bounties in Western Canada Cause Animal Suffering and Compromise Wildlife Conservation Efforts. Proulx and Rodtka. 2015.

The WRRB supports the accelerated implementation of TG's Dìga Harvester Training Program as described in the Joint Management Proposal as an education tool but the WRRB needs reporting about how many wolves are harvested and where.

Recommendation #2-2019 (Sahtì Ekwǫ̀): Enhanced North Slave Dìga Harvest Incentive Program
To understand the success of the pilot year of the Enhanced North Slave Dìga Harvest Incentive Program, GNWT is to provide the location and number of dìga harvested, as part of the Program, to the WRRB by July 26, 2019.

Recommendation #3-2019 (Sahtì Ekwǫ̀): Enhanced North Slave Dìga Harvest Incentive Program
To determine the future use of the Enhanced North Slave Dìga Harvest Incentive Program in managing Sahtì ekwǫ̀ and other ʔekwǫ̀ herds, GNWT and TG are to develop a framework to evaluate the effectiveness of this Program in achieving ʔekwǫ̀ conservation goals, for review and approval by the WRRB, by September 30, 2019.

Mr. Henry Gon emphasized the impact that predators including dìga, nǫ̀gha, and sahcho can have on ʔekwǫ̀.

> *"…at the same time too, I guess, we have to look at the predators that has a major role in the impact of the caribou decline. It could be the grizzly bear and sometimes they say bald eagle, and then there are some crazy wolves and wolverine. So -- and then the -- this has some problem with the total of the caribou decline and then maybe there are some other things that we shouldn't do that we're doing that cause the caribou decline. That we, as hunters, we as the hunters, we do hunt the caribou a lot for many years and we see the -- a lot of -- lot of wolves travelling around, they take a lot of caribou. One time I came across the caribou migrating across Hottah Lake and then there were a lot of -- a the big pack of wolf were following the caribou. So, the -- so very little has been said about the -- the pack of caribou, that amount of land that they don't take the -- how many -- how many caribou they would take. So if you justify that with the human hunter or hunters that are out on the land with the -- with allocations of the numbers that are allocated for the harvesting, you know, within the area compared to the amount that -- that to wolf in the hundreds and the -- how many caribou they take per day."*[127]

The Joint Proposal did not identify nǫ̀gha as a major ʔekwǫ̀ predator. Although they can take a ʔekwǫ̀, they are mostly known as scavengers. As such, declines in ʔekwǫ̀

[127] PR (BNE 2019): 175 – Transcript – April 11, 2019 (DAY 3) – 2019 Bluenose-East Caribou Herd Public Hearing. pp.107-108.

populations and implementing dìga control may have ecological implications for scavengers such as nǫ̀gha.

Recommendation #4-2019 (Sahtì Ekwǫ̀): Nǫ̀gha (wolverines)
To determine the current population trends and distribution of the Sahtì ekwǫ̀ predator, GNWT and TG are to monitor nǫ̀gha populations in Wek'èezhìı, beginning April 1, 2020. Monitoring information should be shared with the WRRB as available.

TG and GNWT's Joint Proposal included no evidence on predator sighting rates on the calving grounds nor did the 2018 calving ground survey report. But the report did recommend increased support for predator monitoring as well as for on-the-land traditional monitoring programs like the Tłı̨chǫ Ekwǫ̀ Nàxoède K'è (formerly the Boots on the Ground) program. GNWT's recommendation leads the WRRB to recommend monitoring predators on the calving grounds in collaboration with the Government of Nunavut. In an effort to reduce disturbance to ʔekwǫ̀, this work should be done on the ground, and not via aircraft.

Recommendation #5-2019 (Sahtì Ekwǫ̀): Predators on the Calving Grounds
To increase the birth rate of Sahtì ekwǫ̀, GNWT and TG are to work cooperatively with the Department of Environment, Government of Nunavut to protect the calving grounds of Sahtì ekwǫ̀ from dìga, sahcho, det'ǫcho, and nǫ̀gha. Starting in 2020, calving ground protection could take the form of monitors on the perimeter and should begin one week prior to calving.

7.6. Habitat and Land Use

7.6.1. Introduction

The range of Sahtì ekwǫ̀ encompasses land in the NT and Nunavut, which makes management more difficult; however, the herd will require intact habitat for recovery and sustained use.

7.6.2. Proponent's Evidence

TG and GNWT's Joint Proposal offered no evidence about the state of the Sahtì ekwǫ̀ habitat such as the cumulative winter range modified by fire or the total linear length of roads. The Joint Proposal does not describe seasonal distribution or indicate whether it is changing as the herd declines.

During TG's presentation, Tammy Steinwand-Deschambeault stated:

> *"Basically, the rationale for minimizing human cause disturbance to* ekwǫ̀*, caribou, and caribou habitat or dè is to provide the best conditions for caribou so that they may reach their reproductive potential, which is supported by environmental conditions and health of the land…. So, with respect to land use, the key steps in implementing, monitoring and management actions are to understand, identify and conserve important habitats and sensitive areas for* ekwǫ̀*".*[128]

Ms. Steinwand-Deschambeault then explained the importance of considering the relatedness of all that interconnects with ʔekwǫ̀ habitat:

> *" Dè has a broader meaning than land because it refers to a whole ecosystem or environment. However, where the word "ecosystem" is based on the idea that living things exist in association with non-living elements the Dogrib term "dè", it spans the meaning of association to encompass the knowledge that everything in the environment has life and spirit"*.[129]

Ms. Steinwand-Deschambeault further clarified

> *"that dè is not an independent object that's out there existing separate from culture and our daily lives, but rather is an all-encompassing holistic system of which Indigenous cultures is an integral part"*.[130]

One must look at the ecosystem in its entirety – physical, spiritual, cultural – to understand the impacts to ʔekwǫ̀ and its habitat.

In the 1990s, the Tłı̨chǫ elders initiated the research project, *Caribou Migration and the State of their Habitat*.[131] These elders wanted Tłı̨chǫ, in the future, to recognize the importance of understanding ʔekwǫ̀ habitat seasonally, annually and over time. This entailed becoming knowledgeable about various vegetation communities/ habitat-types necessary for ʔekwǫ̀ to remain healthy throughout their range. Between 1999 and 2007, these same elders worked with the research team to design a monitoring program that included not only ʔekwǫ̀ habitat but the dè. The monitoring is to be done by harvesters as they watch and use all that is within the dè. They are then to report this to Tłı̨chǫ researchers who keep track of the state of dè. Dr. John B. Zoe's presentation reflected

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[128] PR (BNE 2019): 173 – Transcript – April 9, 2019 (DAY 1) - 2019 Bluenose-East Caribou Herd Public Hearing. p.77.
[129] Ibid. p.78.
[130] Ibid. p.79.
[131] PR (BNE 2019): 061 - Caribou migration and the state of their habitat. Legat et al. 2001.

the importance of being on the land, watching while using other species, and to demonstrate to ʔekwǫ̀ they are needed for more than just food security.[132]

All Dene who spoke at the public hearing stressed the importance of ʔekwǫ̀ for all aspects of their lives. Tammy Steinwand-Deschambeault said:

> *"I'd like [to] add a couple of things. Masi, for your question, Allice. I believe the short answer is yes. As Tłı̨chǫ people, we believe that we have a big part to play in the -- the whole ecosystem of -- of the North. And part of that in -- in terms of looking at the -- the caribou and, as you mentioned, the -- the belief that they hold their spirit back if they feel they're not needed by not seeing people out on the land"*.[133]

7.6.3. Other Parties' Evidence

Elder Leon Modeste talked about the importance of stories and place names,[134] adding to Dr. Zoe's discussion on the importance of places by constantly watching and walking trails and places, i.e. monitoring all habitat in the Dene way. Elder Modeste emphasized how stories guide Dene to know the dè through time, enabling harvesters to live with the animals by managing one's own behaviour while understanding the places and trails being travelled.[135]

Elder Walter Bezha spoke on habitat during his presentation for Délı̨nę:

> *"You know, there is a lot of -- I think today we probably have a lot of information on the size of habitat. You know, you showed the migration patterns there in that -- one (1) of the slides. It'll be nice -- and I've been to a lot of hearings and we don't spend very much time on -- on the impacts of -- of development. You know, even in the Nunavut area, I think there were some slides where the amount of -- of permits and a lot -- lot of things that are going on that we generally don't -- don't talk about very much, but in this case that's the question, you know, the size of our habitat. I mean, we all know that across Canada, and especially even up here, the habitats are -- are shrinking. We're using more and more land for other things. So that would be the question and then the development impacts."*[136]

[132] PR (BNE 2019): 173 – Transcript – April 9, 2019 (DAY 1) - 2019 Bluenose-East Caribou Herd Public Hearing. pp.99-121.
[133] PR (BNE 2019): 174 - Transcript, April 10, 2019 (DAY 2) - 2019 Bluenose-East Caribou Herd Public Hearing. p.66.
[134] PR (BNE 2019): 175 – Transcript – April 11, 2019 (DAY 3) – 2019 Bluenose-East Caribou Herd Public Hearing. pp.27-32.
[135] Ibid. pp. 27-32.
[136] PR (BNE 2019): 173 – Transcript – April 9, 2019 (DAY 1) - 2019 Bluenose-East Caribou Herd Public Hearing. pp.127-128.

7.6.4. Analysis and Recommendations

Although TG and GNWT state in the Joint Proposal that the recovery of Sahtì ekwǫ̀ will require healthy habitat on the herd's range in Nunavut and the Northwest Territories, they provided no metrics even as a baseline for the WRRB to assess the health of the habitat and the effectiveness of their proposed actions. It is also unclear if ʔekwǫ̀ habitats have been assessed as to their priority for management and conservation.

The WRRB acknowledges that these proposed activities will have no direct impact on herd size in the short term but are essential for the long-term health of the herd and thus measurable outcomes and deadlines should be determined. The WRRB acknowledges that ʔekwǫ̀ need all their habitat. However, habitat used at low population densities should be identified and classified as high priority.

'Important' or high priority habitat for Sahtì ekwǫ̀ are places on the range that caribou use for specific purposes during key times of their annual lifecycle. Calving areas, nǫʔokè, tataa, and key winter ranges are some general examples of important habitat. The concept of important habitat for ʔekwǫ̀ incorporates both specific place-based locations and areas known to Tłı̨chǫ elders, and their understanding of what characteristics and features makes those areas important to ʔekwǫ̀ and why.[137] The concepts of nǫʔokè and tataa reflect the Tłı̨chǫ's knowledge of the locations of key migratory corridors and their deep understanding of the importance of migratory movements and habitat connectivity for ʔekwǫ̀.[138]

Recommendation #6-2019 (Sahtì Ekwǫ̀): High Priority Habitat Identification
To work towards protecting Sahtì ekwǫ̀ habitat, TG should work with communities to identify high priority habitat for protection. High priority habitat should include habitat used by Sahtì ekwǫ̀ at low population densities. Once identified, the high priority habitat should be shared with the WRRB.

Protected areas, conservation areas or habitat designations are legally designated areas that describe restrictions on the types of activities that can occur. These restrictions can range from completely prohibiting human activity to identifying the types and timeframe of restricted activities.[139]

Recently available habitat protection and conservation provisions under the *Wildlife (NWT) Act* and S*pecies at Risk (NWT) Act* offer new tools to provide habitat conservation for identified high priority habitat areas. The specific legislative provisions

[137] PR (BNE 2019): 009 – TG and ENR Responses to Information Requests Round No. 1.
[138] Ibid.
[139] PR (BNE 2019) 048 - Bathurst Caribou Range Plan (Dec 2018 Draft). ENR. 2018.

to be further explored include: conservation area under Section 89 of the *Wildlife Act*; habitat protection under Section 93 of the *Wildlife Act*; habitat conservation under Section 152 of the *Species at Risk Act*; and, habitat designation under Section 80 of the *Species at Risk Act*.[140]

The Bathurst Caribou Range Plan points to Mobile Caribou Conservation Measures (MCCM) as a way of minimizing disturbance to ʔekwǫ̀ in areas of the range where ʔekwǫ̀ are particularly sensitive and at times when the herd is particularly vulnerable.[141] The purpose of developing MCCMs is to guide land use activities and operational practices in order to reduce disturbance of ʔekwǫ̀. MCCMs do not protect habitat from physical disturbance; habitat loss could still occur in areas where only MCCMs are used.

For success, detailed development of systems is required to prescribe how and when land use activity levels should be reduced or halted when wildlife is present or within an identified distance. Community members have called for this type of management response and traditional cultural rules help provide some of the context for guiding land use activity related to ʔekwǫ̀ and ʔekwǫ̀ habitat.[142] While this type of guidance is already implemented on an individual project basis, establishing a consistent approach for managing/restricting the timing and location of human land use activity would establish clearer guidelines for industry and provide a basis for improved habitat management at a range scale. Compliance and enforcement are critical.

Recommendation #7-2019 (Sahtì Ekwǫ̀): Legal Protections
Following identification of high priority habitat for Sahtì ekwǫ̀, and to ensure this habitat remains intact, legally enforceable habitat protection measures should be implemented by GNWT under the *Wildlife Act* or *Species at Risk Act (NWT).* In the interim, Mobile Caribou Conservation Measures should be implemented by GNWT and TG by September 2020.

7.7. Education

7.7.1. Introduction

Communication with and education of harvesters, Tłı̨chǫ citizens, and the public is crucial in the management of Sahtì ekwǫ̀. These initiatives aim to increase compliance, improve hunter practices, and reduce wounding and wastage.

[140] Wildlife Act, SNWT 2014, c 31, http://canlii.ca/t/5315s; and Species at Risk (NWT) Act, SNWT 2009, c 16, http://canlii.ca/t/5315r.
[141] PR (BNE 2019) 048 - Bathurst Caribou Range Plan (Dec 2018 Draft). ENR. 2018.
[142] Ibid.

Mrs. Lucy Lafferty, Tłı̨chǫ Language Culture Coordinator, Tłı̨chǫ Community Services Agency, stated

> *"We want the students in the school to be able to learn about the caribou, to be able to live with the caribou, to be able to hunt and eat the caribou if they want, but if other people are not making the right decision or proper decision, then how -- what are the students going to -- to do? They see people over-hunting, because the Dene laws that we're teaching the kids in the school, we're teaching them to share. We're teaching them to have respect. We're teaching them to only take what they need".*[143]

7.7.2. Proponent's Evidence

TG and GNWT's Joint Proposal offered no evidence about the frequency and effectiveness of education activities since the 2010 and 2016 proposals. The proposal did include a table listing proposed educational activities including annual and possible meetings, GNWT website updates, posters, and radio interviews. No firm plans were provided to the Board.

Both Dr. Zoe and Ms. Steinwand-Deschambeault talked about the importance of education if they are to monitor and manage the land to ensure the Tłı̨chǫ keep their voice. Dr. Zoe expressed the need to stop being *"herded [*like they've been] *for the last hundred and fifty years (150)".*[144] Tammy Steinwand-Deschambeault provided a solution, one that is reflected in the Tłı̨chǫ monitoring program designed by elders and researchers during the early 2000s. This program uses both story-telling and experiential knowledge of the land.

> *"We need to go back to the land ourselves with the Elders and with researchers who are trained to just write down what people see and what they hear, so that it's recorded and we can start using it for our own management because we have a say now, but how far -- how -- how do we exercise it in a way that -- that it helps the recovery. And one (1) of the things that we know is that we need to train 15 young people."*[145]

[143] PR (BNE 2019): 174 - Transcript, April 10, 2019 (DAY 2) - 2019 Bluenose-East Caribou Herd Public Hearing. p178.
[144] PR (BNE 2019): 173 – Transcript – April 9, 2019 (DAY 1) - 2019 Bluenose-East Caribou Herd Public Hearing. pp.111-112.
[145] Ibid. p.112.

7.7.3. Other Parties' Evidence

Elder Walter Bezha focused on Délı̨nę's plan, *Belare wíle Gots'ę́ ʔekwę́ – Caribou for All Time*, discussing the interconnectedness of all things and how a restricted harvest of ʔekwǫ̀ fits into this plan. He noted that DGG and the Délı̨nę Renewable Resources Council have started training people, working with them to understand the Plan.[146]

NSMA and YKDFN did not raise concerns about the proposed communication and education initiatives as presented in the Joint Proposal.

7.7.4. Analysis and Recommendations

Continuing efforts to increase awareness among Tłı̨chǫ communities and the public about the status of NWT ʔekwǫ̀ herds, the need for conservation actions and how harvesters can contribute to conservation, such as harvesting alternative species, is essential to promote recovery of the Sahtì ekwǫ̀ herd.

Tammy Steinwand-Deschambeault commented

> *"To the Tłı̨chǫ people's well-being, way of life and land-based economy with a focus on our people's connection to the caribou, the social and cultural effects of the decline. … Key messages on Tłı̨chǫ nawo (phonetic) or from the Tłı̨chǫ Agreement, Chapter 12.1.1 which is very important and talks about caribou and its habitat. To the Tłı̨chǫ people's well-being, way of life and land-based economy with a focus on our people's connection to the caribou, the social and cultural effects of the decline. And number, we'll finish up our presentation and talking about education and how we want to do better in terms of informing and working with and learning from our Elders and also sharing back information to the people that -- that we serve. How can we better work with the caribou? The traditional caribou laws that we need to continue to abide by, how do we share this knowledge with all?"*[147]

Tammy Steinwand-Deschambeault added to above statement to emphasize the fact that Dene thrive with ʔekwǫ̀.

> *"If our wise, late Tłı̨chǫ Chief's words are ignored and we are subject to a complete ban from harvesting the Sahtì Ekwo, we lose more than the meat [food security]. We lose our traditional way of life. Our identity as an Indigenous people very closely connected to the land is threatened. Mental health and wellness in*

[146] PR: (BNE 2019): 175 – Transcript, April 11, 2019 (DAY 3) – Bluenose-East Caribou Herd Public Hearing, pp.10-27.
[147] PR (BNE 2019): 173 – Transcript – April 9, 2019 (DAY 1) - 2019 Bluenose-East Caribou Herd Public Hearing. p.69.

our Elders will be affected. Our Elders will no longer be able to eat the food they love, the food they grew up on, the food that feeds their soul Mental health and wellness will be affected in our harvesters, who no longer will be able to provide for their family and community. Mental health and wellness will be affected in our women, who will no longer be able to contribute to the family by sharing the teachings of working on hides, making clothing, and preparing the meat for a shared meal. Our youth will be missing out on traditions and teachings that have been passed down for generation after generation. If we have no caribou to harvest, what will fill that void? What can fill that void with something as precious as caribou? There is nothing."[148]

Tłı̨chǫ knowledge systems are well suited for learning, guiding behaviour, remembering past information, comparing past and present in relation to monitoring both human and animal behaviour and the habitat in which they thrive. Indigenous monitoring styles are particularly useful when solutions and decisions are required so actions can take place. The recommendation below came from the presentation made by Dr. John B. Zoe, who emphasized that one way in which to manage human interaction with ʔekwǫ̀ is to encourage Tłı̨chǫ citizens to be on the land harvesting, watching, and experiencing (monitoring) other wildlife resources.[149]

Recommendation #8-2019 (Sahtì Ekwǫ̀): Alternative Wildlife Species
To help people thrive within dè, including having food security, and in light of a limited harvest on Sahtì ekwǫ̀, the WRRB recommends that TG and GNWT encourage Tłı̨chǫ citizens to harvest alternative country foods, starting in September 2019.

7.8. Adaptive Management Framework

7.8.1. Introduction

The WRRB already utilizes adaptive management principles in its operations and decision-making. However, an adaptive management framework with clear thresholds may lead to specific management actions that could lead to timelier implementation of management and monitoring actions.

[148] PR (BNE 2019): 173 – Transcript – April 9, 2019 (DAY 1) - 2019 Bluenose-East Caribou Herd Public Hearing. pp.123-124.
[149] Ibid. p.111.

7.8.2. Proponent's Evidence

Table 4 describes the biological monitoring proposed by TG and GNWT for 2019-2023.[150] These biological indicators all have corresponding adaptive monitoring options. When asked about the possibility of expanding and revising Table 4 to make it more

detailed and responsive, GNWT stated that they would need to discuss with their senior level management and pointed to the *Taking Care of Caribou Management Plan*.[151]

7.8.4. Analysis and Recommendations

The WRRB is concerned about avoiding delays in management actions. TG and GNWT acknowledge the need to speed up management, as in the Joint Proposal, they propose changing reviews of management actions from every three years to annually.[152] However, a mechanism is not proposed. During the public hearings, the WRRB asked GNWT about delays. GNWT stated that they considered the flow of information to the WRRB to be adequate.[153] An adaptive management framework could minimize delay in the implementation of management action and proposals. An adaptive management framework must involve the Board for the reasons set out in Section 12.2 of the Tłı̨chǫ Agreement. Such an approach provides for pre-identified management actions based on thresholds agreed to by management authorities.

Adaptive Management is now a standard part of management although in practice, it has sometimes struggled in the implementation phase.[154] The WRRB is of the view that such a framework can be developed in collaboration with governments. The Joint Proposal has already provided a rationale for specific monitoring thresholds and the management decisions that those thresholds trigger. An adaptive management framework would also be compatible with ACCWM's management plan but with more specific details and actions for the Sahtì ekwǫ̀ herd. The framework should also identify how to integrate ground observations and climate change into management activities. The WRRB is aware of examples integrating observations.[155] The strength of an adaptive management framework is to build it collaboratively, which is the basis of the WRRB recommendation.

[150] PR (BNE 2019): 001 - Joint Proposal on Management Actions for the Bluenose-East ʔekwǫ̀ (Barren-ground caribou) Herd: 2019 – 2021.
[151] PR (BNE 2019): 174 – Transcript, April 10, 2019 (DAY 2) – 2019 Bluenose-East caribou Herd Public Hearing. pp.42
[152] PR (BNE 2019): 001 - Joint Proposal on Management Actions for the Bluenose-East ʔekwǫ̀ (Barren-ground caribou) Herd: 2019 – 2021.
[153] PR (BNE 2019): 174 - Transcript, April 10, 2019 (DAY 2) - 2019 Bluenose-East Caribou Herd Public Hearing. p.37.
[154] PR (BNE 2019): 178 - Adaptive Management in the Courts. Fischman and Ruhl. 2010.
[155] PR (BNE 2019): 179 - Evaluating Success Criteria and Project Monitoring in River Enhancement Within an Adaptive Management Framework. O'Donnell and Galat. 2008; and PR (BNE 2019): 185 - Arctic Borderlands Ecological Knowledge Cooperative: can local knowledge inform caribou management? Russell et al. 2011.

Table 4: Biological Monitoring of Sahtì Ekwǫ̀.[156]

Indicator(s)	Rationale	Desired Trend	Adaptive Management Options	How Often	Notes
1. Estimate of breeding cows and extrapolated herd size from calving ground photo survey	Most reliable estimate for abundance of breeding cows and total number of cows & can be extrapolated to herd size based on sex ratio.	Stable or increasing trend in numbers of breeding cows and herd size in 2023.	If trend in breeding cows increasing, continue as before; if trend stable-negative, re-consider management.	Every 2 years	Last survey 2018, next surveys in 2020 and 2022. Trend in breeding females is most important for herd trend.
2. Cow productivity; composition survey on calving ground in spring (June)	Proportion of breeding females in June at peak of calving establishes initial productivity or approximate pregnancy rate.	Proportion of breeding cows at least 80%.	Low ratio indicates poor fecundity and suggests poor nutrition in previous summer; survey data integrates fecundity & neonatal survival.	Annual	Essential component of calving ground photographic survey. Proposed increase to annual survey to more closely monitor initial productivity and following calf survival
3. Fall sex ratio and calf:cow ratio; composition survey (October)	Tracks bull:cow ratio and fall calf:cow ratio. Fall calf:cow ratio provides an index of calf survival from birth through initial 4.5 months.	Bull:cow ratio above 30:100; calf:cow ratio of more than 40:100.	If bull:cow ratio below target, consider reducing bull harvest. Low fall calf:cow ratios suggest poor calf survival.	Annual	Sex ratio needed for June calving ground extrapolation to herd size.
4. Calf:cow ratio in late winter (March-April); composition survey	Herd can only grow if enough calves are born and survive to one year, i.e., calf recruitment is greater than mortality.	At least 30-40 calves:100 cows on average.	Sustained ratios ≤ 30:100, herd likely declining; may re-assess management.	Annual	Calf productivity & survival vary widely year-to-year, affected by several variables, including weather.
5. Caribou condition assessment from harvested animals	Condition assessment provides overall index of nutrition/environmental conditions and changes over time.	High hunter condition scores (average 2.5-3.5 out of 4); target 70 animals/year.	Sustained poor condition suggests unfavourable environmental conditions and possibly further decline.	Annual	Sample numbers to date limited (2010-2018). TG working to improve program, sampling.
6. Cow survival rate estimated from OLS model and annual survival estimates from collared cows	Cow survival estimated 75-78% in 2013 (from model). Need survival of 83-86% for stable herd. Increased collar number to 50 cows should improve annual estimation.	At least 83-86% by 2022.	If cow survival continues <80%, herd likely to continue declining.	Annual	Population trend highly sensitive to cow survival rate; recovery will depend on increased cow survival.
7. Total harvest from this herd by all users groups (numbers & sex ratio)	Accurate tracking of all harvest is essential to management and to knowing whether management actions are effective.	All harvest reported accurately and within agreed-on limits.	Re-assess recommended harvest annually; if herd continues to decline, re-assess harvest limit.	Annual	Multiple factors other than harvest may contribute to decline but harvest is one of the few factors humans control.
8. Maintain up to 70 satellite/GPS collars on herd (50 on cows, 20 on bulls)	Collar information is key to reliable surveys, tracking seasonal movements and ranges, monitoring survival and herd fidelity.	Additional collars added every March/April to maintain up to 70 collars on herd.		Annual additions to keep total of 70.	Information from collared caribou is essential to monitoring and management of all N. America caribou herds.
9. Wolf Harvest on BNE range	Several Indigenous governments and communities have expressed interest in increasing wolf harvest by hunters and trappers to increase caribou survival.	Increased harvest of wolves	If herd continues to decline, consider increased focus on wolf harvest to slow herd decline and increase likelihood of recovery.	Annual	Herd overlap in winter likely means mixing of wolves associated with those herds and may influence effectiveness of wolf removals.

[156] PR (BNE 2019): 001 - Joint Proposal on management Actions for the Bluenose-East ʔekwǫ̀ (Barren-ground caribou) Herd: 2019 – 2021.

Recommendation #9-2019 (Sahtì Ekwǫ̀): Adaptive Management Framework
WRRB, TG and GNWT to collaborate to develop a herd-specific adaptive management framework with the thresholds linked to specific management actions by January 2020.

7.9. Research and Monitoring

7.9.1. Introduction

Ongoing research and monitoring actions are required to make informed and timely management decisions for the Sahtì ekwǫ̀, including the proposed expansion of Ekwǫ̀ Nàxoède K'è onto the Sahtì ekwǫ̀ range.

7.9.2. Proponent's Evidence

TG and GNWT's Joint Proposal describes (a) biological monitoring; (b) an expansion of TG's Ekwǫ̀ Nàxoède K'è program and (c) support for research on causes of changes in ʔekwǫ̀ abundance.

(a) The biological monitoring included a change to calving ground surveys taking place every two years rather than every three years; an increase from 50 to 70 collars; an increase to annual monitoring of calf survival; continuation of harvest and body condition monitoring and dropping the calving ground reconnaissance surveys. Table 4 summarises the biological monitoring frequency, rationale, and thresholds for management actions.

(b) TG is proposing to extend the Ekwǫ̀ Nàxoède K'è program to include Sahtì ekwǫ̀ herd's summer range. TG is also proposing to monitor the area between the communities and to the barren lands.

> *"And we went there to the barren lands in 2014, I think three (3) of us here and a bunch of Elders and community people, and we didn't see one (1) caribou. We were there for three (3), four (4) days. We walked all over. We didn't see one (1) caribou, and that tell us something. That tells us something that our traditional monitoring of going back to the barren lands in the traditional way has to happen from here all the way to there".*[157] (Dr. John B. Zoe)

[157] PR (BNE 2019): 173 – Transcript – April 9, 2019 (DAY 1) - 2019 Bluenose-East Caribou Herd Public Hearing. p.116.

(c) TG and GNWT recognize the need for research into the complexity of factors driving the declines of ʔekwǫ̀ herds using both traditional knowledge and science as well as university partners.

7.9.3. Other Parties' Evidence

YKDFN is not in favour of the radio collar monitoring program and would like to see a wider discussion around methods available for estimating the population of ʔekwǫ̀. In particular, YKDFN stated that:

> *"This is not how caribou monitoring has been done by Dene peoples. The best way to understand those species is right there on the land. You have to interact with them. You have to watch them daily. Watch what they eat. Watch what they do. Aboriginal people learn by watching the behavior of ekwǫ̀. We don't learn about wildlife remotely. We learn by being in the field, by being with ekwǫ̀ all the time"*.[158]

Additionally, YKDFN noted that there should be a general review of the methods for head counting caribou.

Elder Charlie Neyelle also noted concerns about satellite collars, stating

> *"And he says that to remove all that collar and leave it alone. Leave it alone for two (2) to four (4) years. Leave it alone. And he says that we have fish, moose, and muskox to help us sustain ourselves. He said that that is the only approach we have that would allow the caribou to come back to us..."*.[159]

NSMA supports the proposed increase in collar monitoring and annual composition surveys in June, October, and March/April, which will provide an annual update to cow and calf survival rates. NSMA noted the importance of the cow and calf survival rates in timely adaptive management of the herd.[160]

7.9.4. Analysis and Recommendations

The WRRB's approach to making monitoring and research recommendations is based on three requirements. Firstly, during delays in management actions, the decline in ʔekwǫ̀ numbers continues. This is the basis for the WRRB's recommendation to improve the implementation of adaptive management. Secondly, the WRRB is also concerned as to how traditional knowledge and community experience is used in monitoring and adaptive management. Third, there is the requirement to balance the

[158] PR (BNE 2019): 172 - Yellowknives Dene First Nation Public Hearing Presentation.
[159] PR: (BNE 2019): 177 – Transcript, April 11, 2019 (DAY 3) – Bluenose-East Caribou Herd Public Hearing, p.39.
[160] PR (BNE 2019): 186 - North Slave Métis Alliance Final Written Argument.

perspective of leaving the ʔekwǫ̀ alone against the need for monitoring information for management.

As a rationale for increasing the frequency of the calving ground estimates to every two years, the GNWT cites the rapid decline of the herd and possible dìga management implementation. The Board understands that increasing the frequency of calving ground surveys is potentially a mixed blessing as statistical differences in population numbers may be more difficult to detect. However, the WRRB considers that this possible disadvantage of the increased survey frequency can be reduced by using rates of adult and calf survival to also interpret trends.

Recommendation #10-2019 (Sahtì Ekwǫ̀): Population Surveys
To ensure timely adaptive management, GNWT should conduct population surveys for sahtì ekwǫ̀ every two years. The next population survey should thus take place June 2020.

While GNWT did refer to a change in tracking seasonal calf survival three times a year, they did not mention the need to increase sample size to reliably monitor pregnancy rates which is the first step in monitoring calf survival.[161] Hence, the need for WRRB's recommendation to monitor pregnancy rates through fecal pellet sampling. The WRRB also notes that pregnancy rates are a sensitive indicator to conditions including climate change on the summer ranges and thus can be related to observations from TG's Ekwǫ̀ Nàxoède K'è program.

Recommendation #11-2019 (Sahtì Ekwǫ̀): Pregnancy Monitoring
To better understand the health of the Sahtì ekwǫ̀ herd, GNWT and TG should implement Sahtì ekwǫ̀ pregnancy monitoring through fecal pellet collection in the winter months, starting January 2020. Methodology for this program should include community-based sampling.

Monitoring calf survival in June will require an annual presence of people and aircraft on the calving ground as does WRRB's recommendation to monitor predators. At the same time, however, WRRB acknowledges the sensitivity of calving cows and thus the need to be careful to minimize disturbance. In this context, then, WRRB agrees with GNWT's recommendation to minimize disturbance on the calving grounds by halting the Calving Ground Reconnaissance Surveys (leave the ʔekwǫ̀ alone). The Board understands that by not conducting the calving ground reconnaissance survey, the amount of information on trends in calving densities (ʔekwǫ̀/km^2) is reduced.

[161] PR (BNE 2019): 009 - TG and ENR Responses to Information Requests Round No.1.

Recommendation #12-2019 (Sahtì Ekwǫ̀): Reconnaissance Surveys
In an effort to leave the ɂekwǫ̀ alone, and only cause disturbance that is necessary, GNWT should cease the annual reconnaissance survey for Sahtì ekwǫ̀.

The importance of monitoring calving densities is that there is a potential for cows to shift calving grounds if their densities become too low for 'safety in numbers' to function.[162] GNWT initially provided no evidence on the relationship between declining calving densities and the likelihood of cows shifting calving grounds. GNWT did later release an analysis of calving densities as an undertaking during the public hearing.[163] In 2018, the densities of Sahtì ekwǫ̀ breeding females had declined to about two cows/km^2. This is similar to the Kǫ̀k'èetì ekwǫ̀ where 27% of the collared cows shifted to the Beverly/Ahiak herd's calving ground in 2018.

In the 2016 Sahtì ekwǫ̀ Joint Proposal, TG and GNWT wrote that *"50 collars should be sufficient for most applications of collar data, including population surveys"*.[164] Tłı̨chǫ elders have consistently objected to collars on a basis that they are disrespectful and have identified a need to leave the ɂekwǫ̀ alone.[165]

While the GNWT did not present any evidence to justify the proposed increase of 20 collars (from 50 to 70) on Sahtì ɂekwǫ̀, the WRRB believes that the additional collars will provide information necessary for herd distribution, movement and switching.

Recommendation #13-2019 (Sahtì Ekwǫ̀): Collars
To have a better understanding of herd distribution, movements, and switching, GNWT should increase the number of collars on the sahtì ekwǫ̀ herd from 50 to 70. Additional analysis gathered from the collars should be provided to the WRRB from GNWT annually including but not limited to: 1) Dispersal at calving in relation to historic data; 2) Timing of calving in relation to historic data; 3) Calf:cow ratios; and, 4) Rates of herd switching and rutting locations.

Recommendation #14-2019 (Sahtì Ekwǫ̀): Collars
Relative to the views of elders and to clarify what analyses require a larger sample size, TG and GNWT should present a detailed rationale for the collar increase to the WRRB. This will be completed using the collars on an annual basis as part of adaptive management.

[162] PR (BNE 2019): 045 - Assessing the Impacts of Summer Range on Bathurst Caribou's Productivity and Abundance since 1985. Chen et al. 2014.
[163] PR (BNE 2019): 188 - Undertaking #1, Part A, ENR to WRRB, 2019 Bluenose-East Caribou Herd Public Hearing.
[164] PR (BNE 2019): 149 - 2016 Reasons for Decision Related to a Joint Proposal for the Management of the Bluenose-East Ɂekwǫ̀ (Barren-ground Caribou) Herd - Part A.
[165] PR: (BNE 2019): 177 – Transcript, April 11, 2019 (DAY 3) – Bluenose-East Caribou Herd Public Hearing, p.39.

While the Joint Management Proposal mentioned the effects of climate change, it did not provide any evidence about options for including such information in management decisions. Under questioning, GNWT briefly described trends in climate, including an increase in summer droughts and in weather favorable for warble flies.[166] TG provided direct observations from the Ekwǫ̀ Nàxoède K'è Program (on the Bathurst herd's summer range) about hotter summers stressing ʔekwǫ̀.[167] TG also spoke to the need to incorporate their on-the-ground observations into adaptive management.[168] Throughout TG's presentation, they stressed the importance of having harvesters on the dè, and it is these harvesters that watch the land.[169]

The WRRB is aware that the effects of climate change are already being felt and that the changes on the ekwǫ̀ ranges are measurable. The question now is what can be done about the effects of climate change on ʔekwǫ̀, and their ecological relationships, including people. The WRRB sees this as best answered by having more observers on the ground[170] and then ensuring that their observations are integrated into adaptive management for the herd. An example of community-based monitoring for ʔekwǫ̀ is the Bathurst and Porcupine herds.[171] The WRRB believes that using more people on the ground (as indexed, for example by the number of observer days) is essential for adaptive management.

Recommendation #15-2019 (Sahtì Ekwǫ̀): Climate Change
To collect on-the-ground climate change observations, TG's Ekwǫ̀ Nàxoède K'è program should be expanded to the post-calving and summer ranges of Sahtì ekwǫ̀ by October 1, 2019. Results of the monitoring program should be designed to feed into an adaptive management framework.

Grand Chief Jimmy Bruneau directed the Tłı̨chǫ people to know both Western and Tłı̨chǫ knowledge so each Tłı̨chǫ citizen would be *"strong like two people"*.[172] This philosophy has been noted in oral narratives where Tłı̨chǫ leaders learned the knowledge and experiences of others to better prepare themselves for negotiating at trading posts to ensure the best return for their furs.[173]

[166] PR (BNE 2019): 009 - TG and ENR Responses to Information Requests Round No.1.
[167] PR (BNE 2019): 174 - Transcript, April 10, 2019 (DAY 2) - 2019 Bluenose-East Caribou Herd Public Hearing. p.50.
[168] PR: (BNE 2019): 177 – Transcript, April 11, 2019 (DAY 3) – Bluenose-East Caribou Herd Public Hearing, p.82.
[169] PR (BNE 2019): 061 - Caribou migration and the state of their habitat. Legat et al. 2001; and PR: (BNE 2019): 177 – Transcript, April 11, 2019 (DAY 3) – Bluenose-East Caribou Herd Public Hearing, p.82.
[170] PR: (BNE 2019): 177 – Transcript, April 11, 2019 (DAY 3) – Bluenose-East Caribou Herd Public Hearing, p.93.
[171] PR (BNE 2019): 185 - Arctic Borderlands Ecological Knowledge Cooperative: can local knowledge inform caribou management? Russell et al. 2011.; and PR (BNE 2019): 181 - Calibration of Hunters' Impressions with Female Caribou Body Condition Indices to Predict Probability of Pregnancy. Lyver and Gunn. 2004.
[172] PR (BNE 2019): 073 - Report on a Public Hearing Held by the Wek'èezhìı Renewable Resources Board 22-26 March 20105-6 August 2010 Behchokǫ̀, NT. Appendix F.
[173] Ibid.

Tłı̨chǫ oral narratives stress the importance of understanding a problem, finding a solution and taking action.[174] Their approach to learning and knowing is evident in the manner in which past research projects were approached. The Tłı̨chǫ insist that they take an active part in research and monitoring.[175]

Today, it is vital that the Tłı̨chǫ lead by undertaking their own harvesting and monitoring studies as the impacts of development on Tłı̨chǫ lands and the environment are becoming ever more evident.

Dr Zoe emphasized this in his statement:

> *"All of the evidence in the form of stories and experiences and "the early evidence of how people lived in the landscape is in the place names that describe the … method of harvesting." tell the Tłı̨chǫ … and," they're using all their knowledge from last winter -- .the year – the year before, to try to use all that knowledge as to where they can greet that caribou at that time of the year in the fall time. … Nevertheless, to monitor to use the knowledge properly "It's in the heads of the people here. And we all hold pieces of our history, because it's a collective knowledge. Not everybody knows everything. … [So, to monitor the people must work together to understand what is happening across Wek'èezhìı]. We depend on each other. Not any -- any person can know everything. We rely on each other by telling each other stories."*[176]

Recommendation #16-2019 (Sahtì Ekwǫ̀): Tłı̨chǫ Research & Monitoring Program
To ensure that both ʔekwǫ̀ and ʔekwǫ̀ habitat monitoring and realistic harvesting numbers are recorded in a culturally appropriate manner, the Tłı̨chǫ Research and Monitoring Program should be implemented by TG, starting in September 2019 (See Appendix I).

7.10. Implementation of Recommendations from 2010, 2016 and 2019

As per the WRRB's Rule for Management Proposals,[177] the Board recommends that a summary report be submitted by TG and GNWT within one year of the acceptance or variance of the Board's recommendations on proposed management actions from the

[174] PR (BNE 2019): 073 - Report on a Public Hearing Held by the Wek'èezhìı Renewable Resources Board 22-26 March 20105-6 August 2010 Behchokǫ̀, NT. Appendix F.
[175] Ibid.
[176] PR (BNE 2019): 173 – Transcript – April 9, 2019 (DAY 1) - 2019 Bluenose-East Caribou Herd Public Hearing. pp.102-103.
[177] https://wrrb.ca/sites/default/files/REV%20FINAL%20Rule%20-%20Management%20Proposals%20-%2016oct18.pdf.

2019 Joint Proposal. This report should include an evaluation of the success of implementation of management actions.

While the Board submitted 60 recommendations in 2010 as well as two determinations and 24 recommendations in 2016, in the WRRB's opinion, only the determinations and 20 of the recommendations have been fully implemented (Appendix C and E).

The Board appreciates the information submitted by TG in Undertaking #3 to provide a summary on the progress on specific TK recommendations made in 2010 and 2016.[178] However, the Board notes that continued implementation of the TK recommendations is both mandatory and essential to ensure that the WRRB and other wildlife managers in Wek'èezhìı have appropriate information to make balanced decisions.

The WRRB is unable to comment on the extent of implementation on the remaining recommendations as a detailed report is not available and no measurable levels for implementation have been set. As such, the WRRB requests that TG and GNWT review the 2010 and 2016 recommendations and provide an updated implementation plan and evaluation for all outstanding recommendations.

8.0. Conclusion

With the Sahtì ekwǫ̀ herd in a critical state, there is a real sense of urgency to implement effective management actions to halt the decline as soon as possible. The decisions have been structured to have the least impact on ʔekwǫ̀ users and the greatest benefit to ʔekwǫ̀ that we can provide at this time.

> *"The process today is to try and put forth the best available information on the actions that will lead us into stabilization and recovery of the numbers that have dropped very visibly in the last number of years, but it's not a new story, but an ongoing story but with authorities that will make determinations on what we will do to -- to accommodate a recovery."*[179]
> ~ Dr. John B. Zoe

Users and managers must be willing to act now, in whatever ways possible, to protect the herd so future recovery may be possible.

> *"And one (1) thing we know is that despite all the years of having no say, we know that people survive because they never let the caribou go. They always hang on to it. Like Archie saying, we'll never let it go, because if we let it go, then*

[178] PR (BNE 2019): 200 - Undertaking #3, TG to WRRB, 2019 Bluenose-East Caribou Herd Public Hearing.
[179] PR (BNE 2019): 173 – Transcript – April 9, 2019 (DAY 1) - 2019 Bluenose-East Caribou Herd Public Hearing. p.86.

-- then that's the way it goes, because by not letting it go, we need to strengthen our relationship to the animals by doing things in the traditional way."[180]
~Dr. John B. Zoe

[180] PR (BNE 2019): 173 – Transcript – April 9, 2019 (DAY 1) - 2019 Bluenose-East Caribou Herd Public Hearing. p.115.

APPENDIX A 2019 Joint Proposal

Wek'èezhìi Renewable Resource Board
Management Proposal

1. Applicant Information
Project Title: Government of the Northwest Territories and Tłı̨chǫ Government Joint Proposal on Management Actions for the Bluenose-East ʔekwǫ (Barren-ground caribou) Herd 2019 – 2021
Contact Persons: **Organization Names:** **Addresses:** **Phone/Fax Numbers:** **Email addresses:** Michael Birlea Lands Protection and Renewable Resources Manager Department of Culture and Lands Protection Tłı̨chǫ Government Behchokǫ̀, NT. X0E 0Y0 Phone: 867-392-6381 Ext: 1355 Fax: 867-392-6406 MichaelBirlea@tlicho.com Bruno Croft Regional Superintendent North Slave Region Department of Environment & Natural Resources Government of the Northwest Territories 2nd Floor, ENR Main Building P.O. Box 2668 3803 Bretzlaff Drive Yellowknife, NT. X1A 2P9 Phone: 867-767-9238 Ext: 53234 Fax: 867-873-6260 Bruno_Croft@gov.nt.ca

2. Management Proposal Summary: provide a summary description of your management proposal (350 words or less).	
Start Date: July 1, 2019	**Projected End Date:** July 1, 2021
Length: 2 years	**Project Year:** 1 of 2
A June 2018 calving ground photographic survey of the Bluenose-East (BNE) herd of caribou resulted in estimates of 11,675 ± 2,040 breeding cows and 19,294 ± 4,729 adults, which indicated that the herd's rate of decline has continued at a relatively constant annual 20-21% since 2010. In June 2010 the herd was estimated at about 120,000 caribou, thus the 2018 estimate represents an 84% decline in 8 years. The Bluenose-East herd in 2018 should be considered as being in the red phase of low numbers as defined by the Advisory Committee for Cooperation on Wildlife Management (ACCWM) management plan of 2014 (pending	

confirmation from ACCWM boards). In view of this rapid continuing decline, the Tłı̨chǫ Government (TG) and Government of the Northwest Territories (GNWT) Department of Environment and Natural Resources (ENR) are proposing management actions to slow the herd's decline and promote recovery for a period of 2 years beginning in July 2019 (the start of the harvest season). Management actions should be reviewed annually as further information becomes available. Proposed actions are highlighted here and greater detail is provided in the main text. Actions are grouped under the 5 categories defined in the ACCWM plan: harvest, predators, habitat and land use, and education. In addition, revised monitoring and research are described.

(1) Harvest: TG and ENR propose that resident and commercial harvest from this herd remain at 0 and that Indigenous harvest be limited on a herd-wide basis to 300 bulls/year. This harvest is a substantial reduction from the 750 bulls determined by WRRB in 2016, but provides some continued opportunity for Indigenous harvesting and the maintenance of cultural practices. The allocation among Indigenous groups proposed retains the same proportions as in 2015 (Tłı̨chǫ 39.3%, Sahtú 17.2%, Dehcho 1.6%, Inuvialuit 0.8%, NWT Métis Nation [NWTMN] 1.5%, Akaitcho 2.1%, and North Slave Métis Alliance [NSMA] 1.8%, and Kugluktuk (NU) 35.8%. Although TG and ENR have no authority over wildlife management in NU, the NWMB in 2016 worked with the allocation formula used in NWT proposals of 2015 (340 of 950 or 35.8% for Kugluktuk). For clarity, the percentages and numbers of caribou are listed below.

Table 1. Proposed percent of harvest and numbers of BNE bulls for harvester groups, with allocation formula used as in 2015 and 2016, for harvest of 750 bulls and 300 bulls. WRRB determined herd-wide harvest of 750 bulls in 2016, recognizing that the board has no authority in the Sahtú region or Nunavut.

Harvester Group	% of Harvest	Harvest 750 Bulls	Harvest 300 Bulls
Tłı̨chǫ	39.3	295	118
Sahtú	17.2	129	52
Dehcho	1.6	12	5
Inuvialuit	0.8	6	2
NWTMN	1.5	11	5
Akaitcho	2.1	16	6
NSMA	1.8	13	5
Kugluktuk (NU)	35.8	268	107
Total	100	750	300

TG and ENR recognize that reduced caribou harvesting opportunities have serious implications for Tłı̨chǫ and other Indigenous communities, including expensive groceries replacing caribou harvest. TG and ENR will explore ways of supporting harvesting of other wildlife (e.g. moose, muskox and fish harvesting). In addition, TG and ENR will look for ways to increase on-the-land activities and cultural practices such as upkeep of old cabins, travel routes and trails.

(2) Predators: A separate TG-ENR joint management proposal to WRRB on reduction of wolf numbers on the Bluenose-East and Bathurst caribou ranges is under development. Demographic evaluation of the herd's trend suggests that recent

pregnancy rates have been healthy but survival rates of adults and calves have been low, which may indicate that predation is limiting recovery. Methods will draw on a collaborative wolf reduction feasibility assessment completed in 2017 for the Bathurst herd. To date, GNWT incentives for wolf harvesters since 2010 have not resulted in any substantive increases in numbers of wolves taken in the North Slave region. In 2019, the GNWT is proposing to increase incentives for wolf harvesters in an area centered on the collar locations of wintering Bluenose-East and Bathurst caribou. TG will continue to develop a program of training wolf harvesters using culturally acceptable methods on the winter range.

(3) Land Use and Habitat: Recovery of the Bluenose-East herd will require a healthy habitat on the herd's range in NU and in the NWT. Currently, there are no active mines and overall there has been limited development on the Bluenose-East range. However, proposed actions to support healthy habitat include the following: promotion of protecting the herd's calving grounds in NU, identifying key unburned winter ranges and increasing fire management on these areas, participation in development of the wildlife management plan for the Tibbett-to-Contwoyto winter road, and participation in any environmental assessments and land use planning in NWT and NU that may affect this herd. In addition, TG and ENR support ongoing TK and scientific research focused on identifying key caribou habitats, such as ekwò no'oke (water crossings), tataa (land crossings), important unburned winter habitat, and the herd's core range used at low numbers, and ensuring conservation of these habitats, including minimizing disturbance.

TG and ENR will continue to support research on climate factors that may affect herd trend and studies of how a changing climate, including forest fires, may be affecting vegetation and foraging conditions for caribou.

(4) Education: ENR and TG recognize the importance of continued communication and engagement with communities and harvesters about the status of the caribou herds and about management actions underway, and the importance of accurate harvest reporting by all harvesters. Initiatives such as sight-in-your-rifle, minimizing wastage and respecting traditional ways of harvesting will be continued. Annual visits to the 4 Tłı̨chǫ communities will be continued and enhanced, beginning with visits in January 2019. The ENR On-The-Land unit and North Slave staff will support and promote these efforts. A key area of emphasis will be providing information about caribou and conservation to affected communities.

(5) Monitoring & Research: Biological monitoring of the herd is proposed to increase, particularly to maintain closer monitoring of calf and adult caribou survival rates. Population surveys would be carried out at 2-year intervals. Annual composition surveys would be carried out in June, October, and March/April to assess initial productivity or pregnancy rates and mortality rates of calves to the fall and late-winter periods. Radio-collars would be increased to 70 in total (50 cows and 20 bulls) with annual additions, to increase monitoring of cow survival rates and better define seasonal distribution and herd fidelity to calving grounds. Reconnaissance surveys on the calving grounds in years between population surveys would be suspended as recent results suggest they are not always reliable trend indicators. Accurate monitoring of harvest will continue to be important; TG and ENR will seek to improve condition assessment of harvested caribou.

TG and ENR support expansion of the Traditional Knowledge caribou monitoring program Boots on the Ground. To date this TG program has been focused on Bathurst caribou on their summer range in July and August. TG and ENR will explore ways to expand the program to the Bluenose-East range and to other seasons.

TG and ENR support continuing scientific and TK research into factors contributing to caribou declines. This includes monitoring and research focused on caribou health, parasites and other diseases, and diseases and parasites from the south that may be expanding into the NWT.

Please list all permits required to conduct proposal.

Renewable Resource Boards (WRRB, SRRB and NWMB) may hold public hearings to review proposals involving a Total Allowable Harvest (TAH) for the BNE herd, as included in this proposal.

NWT and NU Wildlife Research Permits will be required annually to conduct monitoring recommended in this proposal.

3. Background (Provide information on the affected wildlife species and management issue)

A. Bluenose-East Caribou Status in 2018

A June 2018 calving ground photographic survey of the Bluenose-East (BNE) herd of caribou resulted in estimates of 11,675 ± 2,040 breeding cows and 19,294 ± 4,729 adults, which indicated that the herd's rate of decline has continued at a relatively constant annual 20-21% since 2010 (Boulanger 2018a). In June 2010 the herd was estimated at about 120,000 caribou (Adamczewski et al. 2017), thus the 2018 estimate represents an 84% decline in 8 years. Both the herd and the estimated number of adult cows have declined by about half since 2015 (Fig. 1, Boulanger et al. 2016).

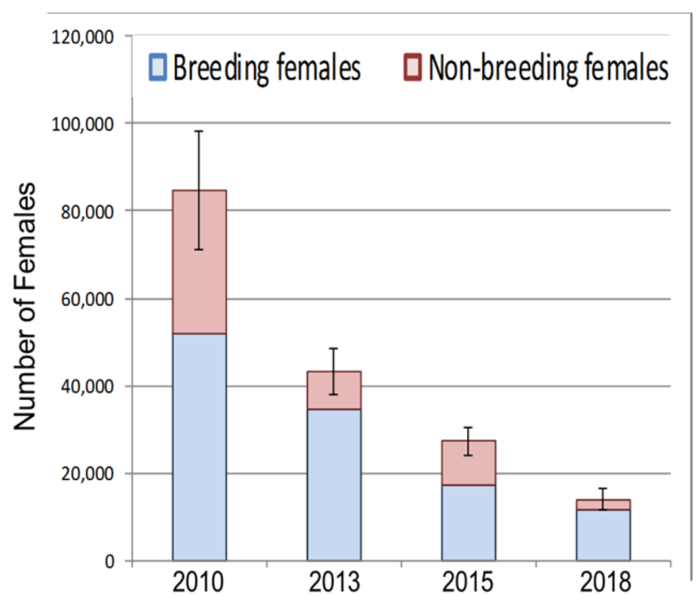

Fig. 1a. Trend of Bluenose-East herd breeding and non-breeding cows 2010-2018 based on photographic calving ground surveys (Means ± 95% Confidence Intervals).

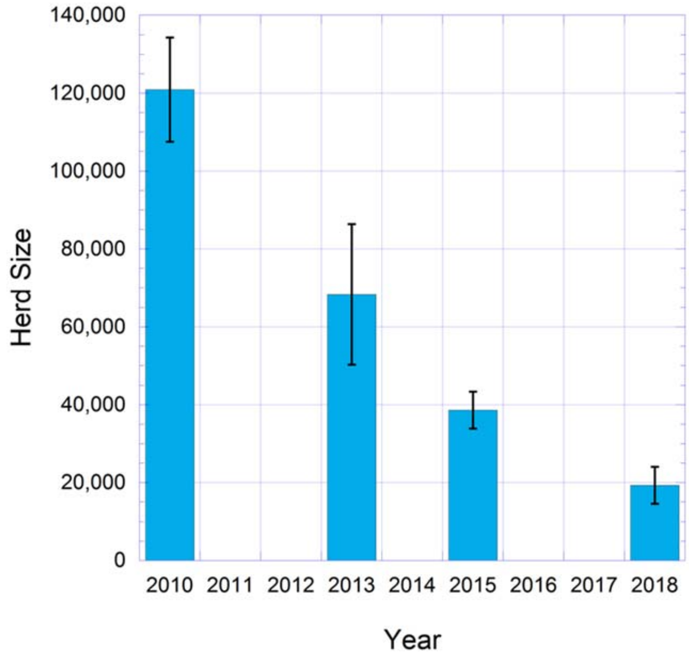

Fig. 1b. Trend of Bluenose-East herd estimates 2010-2018 based on photographic calving ground surveys (Means ± 95% Confidence Intervals).

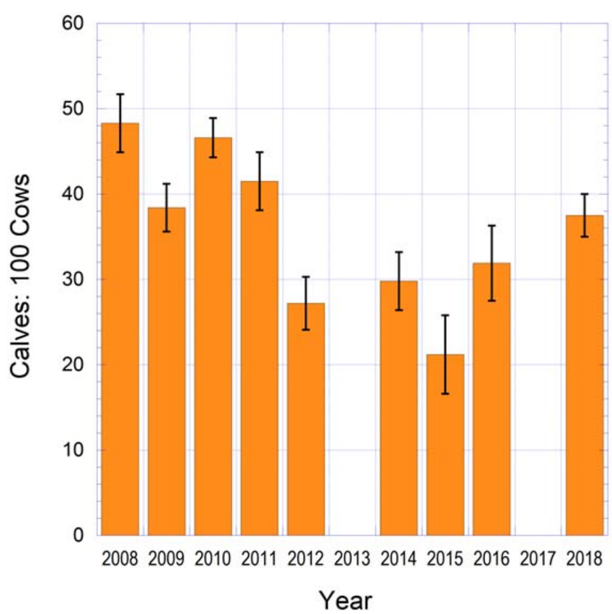

Fig. 2. Bluenose-East caribou late-winter (March/April) calf:cow ratios 2008-2018.

Population trend in caribou herds can in part be understood by examining vital rates like the pregnancy rate and survival rates of calves and adults. Cow survival was estimated 2013-2015 for the BNE herd at 71% (Boulanger et al. 2016), well below the 83-86% needed for a stable herd (Boulanger et al. 2011). An updated cow survival estimate will be generated for 2015-2018, and it will likely be similar to the 71% given that annual rates of change have been relatively constant. The pregnancy rate in 49 cows captured for collar placement 2013-2015 was 94% (46/49) and the proportion of breeding females on the Bluenose-East calving ground in 2018 was 83.4%. These results suggest that pregnancy rates have been healthy for this herd in the last few years. Late-winter calf:cow ratios provide an index of the number of the previous year's calves that survived their first 9-10 months. The last calf:cow ratio for the herd was 37.5 ± 2.5 calves: 100 cows, higher than the 21-31 calves: 100 cows observed 2014-2016. A ratio of 30 calves: 100 cows has been considered a benchmark of a stable herd, however this depends on adult survival rates being healthy (83-86%). If adult survival rates are 71% as in the BNE herd 2013-2015, then these calf:cow ratios are insufficient for a stable herd. Overall, the vital rates for the BNE herd suggest that recent pregnancy rates have been healthy but adult survival rates remain well below those associated with a stable herd and calf survival has not been sufficient for a stable herd.

The average estimated/reported Bluenose-East harvest in winters 2009-2010 to 2012-2013 was about 2700 caribou/year, and likely at least 65% cows (Adamczewski et al. 2016; BGTWG 2014). These estimates are considered minimums; wounding losses were not included, some harvest was un-reported and the true harvest may have been at least 4000/year (Adamczewski et al. 2016).

Reported harvest for the BNE herd has been as follows for 2016-2017 and 2017-2018 (Table 2).

Table 2. Bluenose-East harvest by region for 2016-2017 and 2017-2018. Numbers should be considered preliminary until confirmed with ACCWM status reports. Kugluktuk numbers from Government of NU staff, Délı̨ne harvest as reported by Délı̨ne, Wek'èezhìı harvest as reported by TG and ENR wildlife officers.

Harvest by Region	**2016-2017**	**2017-2018**
Wek'èezhìı	15 bulls	142 bulls
Délı̨ne	93 bulls, 33 cows	7 bulls
Kugluktuk	232 caribou	174 caribou
Total	373 caribou	323 caribou

The overall totals of 373 and 323 caribou were well below the harvest limits established in 2016 and reflect in part limited access to the herd, particularly in winter. These relatively limited harvest numbers likely contributed proportionately little to the herd's most recent decline 2015-2018.

B. Management Context for the Bluenose-East Caribou Herd

Guidance for the management and monitoring of the Bluenose-East herd is primarily found within the ACCWM's management plan for the Cape Bathurst, Bluenose-West and Bluenose-East herds, finalized in November 2014 (ACCWM 2014). In 2017 the ACCWM developed an Action Plan for the Bluenose-East herd and this plan was updated in 2018. The ACCWM held annual status update meetings in November for the three herds in 2016, 2017 and 2018. In 2017 the BNE herd was assessed as being in the orange phase (declining), and in 2018 the herd was assessed as being in the red zone (low numbers and below 20,000 – pending confirmation from ACCWM boards).

As a result of hearings in 2016 of the WRRB, SRRB and NWMB, harvest limits for this herd were established, respectively, as 750 bulls (intended to be herd-wide) under the WRRB, 150 (80% bulls) under the SRRB for Délı̨ne, and 340 caribou (no gender) under the NWMB for Kugluktuk. The allocation among Indigenous harvester groups established in 2015 based primarily on previously documented harvest levels was Tłı̨chǫ 39.3%, Sahtú 17.2%, Dehcho 1.6%, Inuvialuit 0.8%, NWT Métis Nation [NWTMN] 1.5%, Akaitcho 2.1%, and North Slave Métis Alliance [NSMA] 1.8%. This would leave an allocation of 35.8% BNE caribou for Nunavut.

4. Description of Proposed Management Action

Goal of Management Actions

The short-term goal of the management actions proposed is to slow the herd's decline and promote recovery. Over the longer-term, the goal is to enable sustainable caribou harvesting that addresses Indigenous community needs levels across this herd's range. In particular within Wek'èezhìi, the goal is to allow the exercise of Tłı̨chǫ rights to harvest caribou throughout Mǫwhì Gogha Dè Nı̨ı̨tłèè.

1. Harvest management

In view of the continuing rapid decline in the BNE herd and its status assessment in 2018 by the ACCWM as being in the red phase (low numbers and below 20,000, pending confirmation from ACCWM boards), TG and ENR recommend that harvest be reduced further from the limits established in 2016. Resident and commercial harvest from this herd should remain at 0. Aboriginal harvest should be limited on a herd-wide basis to 300 caribou/year with the harvest being 100% bulls.

	Harvest Sex Ratio	
	100% Cows	100% Bulls
Harvest Number	Herd Size	Herd Size
0	9923	9923
100	9702	9731
250	9370	9443
500	8818	8963
750	8266	8484
950	7824	8100
2000	5504	7086

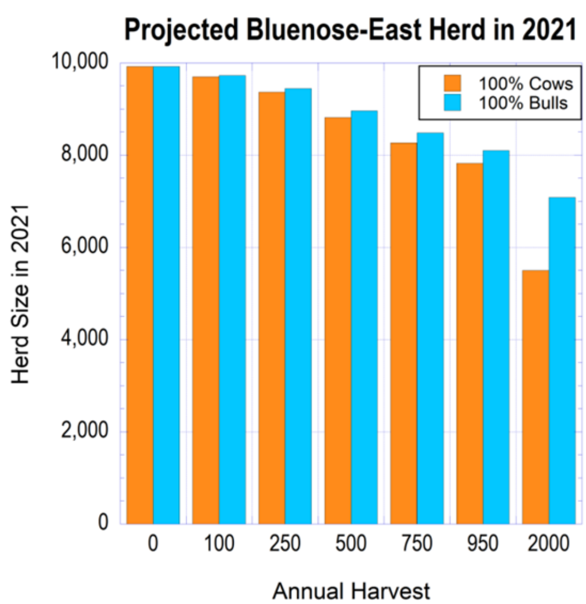

Table 3 and Figure 3. Projected herd size in the Bluenose-East herd in 2021 with various levels of harvest and harvest sex ratio. Key assumptions: Cow survival rate at 71% with no harvest, and average calf recruitment.

Modeling of the herd's likely trend over the next 3 years by J. Boulanger (2018b) suggests that if the 2015-2018 trends continues, the herd will be near or below 10,000 caribou in 2021 (Table 3 and Figure 3). Any harvest would reduce projected herd size further, but harvest levels of 100-300/year would result in limited additional decline. As harvest level increases, the incremental effect on herd decline increases. The effects of cow harvest (compared to bull harvest) are most noticeable at higher harvest levels. A larger range of modeling outcomes and details are provided by Boulanger (2018b). Estimated/reported harvest in the 2016/2017 (373 caribou) and 2017/2018 (323 caribou) seasons was relatively limited and well below the 750 caribou determined by WRRB in 2016, but harvest reduction remains one of the actions that can help support recovery.

The proposed harvest is a substantial reduction from the 750 bulls herd-wide determined by WRRB in 2016, but provides some continued opportunity for Indigenous harvesting and the maintenance of cultural traditions. TG and ENR recognize that the closure of Bathurst caribou harvest greatly reduced Tłı̨chǫ caribou harvesting opportunities, thus allowing for a limited BNE harvest is important for these communities.

Unless a revised allocation formula accepted by all user groups is determined, the proposed allocation among Indigenous groups retains the same proportions as in 2015 (Tłı̨chǫ 39.3%, Sahtú 17.2%, Dehcho 1.6%, Inuvialuit 0.8%, NWT Métis Nation [NWTMN] 1.5%, Akaitcho 2.1%, and North Slave Métis Alliance [NSMA] 1.8%, and 35.8% BNE caribou for Kugluktuk in Nunavut (NU). Although TG and ENR have no authority over wildlife management in NU, the NWMB in 2016 worked with the allocation formula used in NWT proposals (340 of 950 for Kugluktuk, or 35.8%). TG and ENR will continue to work with management authorities in NWT (Sahtú and Wek'èezhìi regions) and NU (Kugluktuk, NWMB and GN) to ensure a consistent approach to harvest management for this herd. For clarity, the percentages and numbers of caribou are listed below for three levels of harvest. The 118 authorization cards (caribou bulls) for Tłı̨chǫ communities are for Tłı̨chǫ harvesters to continue cultural practice on the land and the harvest will be allocated to the elders.

Table 4. Proposed percent of harvest and numbers of BNE bulls for harvester groups, with allocation formula used as in 2015 and 2016, for harvest of 750 bulls and 300 bulls. WRRB determined herd-wide harvest of 750 bulls in 2016, recognizing the board has no authority in Sahtú region or Nunavut (WRRB 2016 a, b).

Harvester Group	% of Harvest	Harvest 750 Bulls	Harvest 300 Bulls
Tłı̨chǫ	39.3	295	118
Sahtú	17.2	129	52
Dehcho	1.6	12	5
Inuvialuit	0.8	6	2
NWTMN	1.5	11	5
Akaitcho	2.1	16	6
NSMA	1.8	13	5
Kugluktuk (NU)	35.8	268	107
Total	100	750	300

ENR will create and print new authorisation cards to harvest Bluenose-East caribou males in July of each year and make them available to all Indigenous groups as per their allocations in August prior to the beginning of the fall hunt.

ENR will consider adding mobile patrol stations at key locations along the winter roads, if there is an increased need for enforcement and compliance resulting from a change in the winter caribou distribution and obvious evidence of potential illegal caribou harvesting, as resources allow.

TG with ENR support will take a lead role in reporting on Bluenose-East caribou harvest by Tłı̨chǫ harvesters, based on authorization cards, and on increasing reporting of caribou condition by harvesters.

Support for harvest of other wildlife and on-the-land activities:

TG and ENR recognize that reduced caribou harvesting opportunities have serious implications for Tłı̨chǫ and other Indigenous communities, and that limitations on hunting have negative impacts on the continuity of Tłı̨chǫ culture, language and way of life. Lack of caribou harvesting opportunities means real hardships in Indigenous communities that have depended on caribou. TG and ENR will explore ways of supporting other harvesting initiatives - for example, moose, muskox and fish harvesting, as well as supporting traditional on-the-land activities that help maintain cultural practices.

The Tłı̨chǫ Government plans to continue and expand programs focused on cultural practices on the land. These programs include: sustain TG-owned hunting and trapping cabins; traditional canoe trails from the communities to cultural and harvesting locations; and winter skidoo trails to caribou hunting areas, along with other programs currently operated by the Tłı̨chǫ Government. The long-term aim is continuation of projects that teach Traditional Knowledge of the land and caribou by bringing elders, youth and community members together on the land. By maintaining traditional trails and TG-owned cabins, community members share knowledge of these important cultural and environmental locations, thus re-visiting and maintaining these sites are important to maintain the Tłı̨chǫ knowledge base. Such activities are important for the practice of the hunting culture, and maintaining cultural identify and continuity as a hunting people, ultimately, to condition people with skills and knowledge of the land, for when caribou return.

ENR's new On-The-Land unit, in collaboration with Wildlife Division and North Slave region, will play an active role working with Tłı̨chǫ Government and Tłı̨chǫ communities to identify appropriate cultural activities and harvest of other wildlife and fish, and sources of support for them.

2. Predators

The continued rapid decline in the BNE and Bathurst herds 2015-2018 occurred despite a very limited harvest of both herds between the NWT and NU. Low adult and calf survival rates in the BNE herds suggest that predation may be a key limiting factor for the BNE herd. A number of actions are proposed for more comprehensive management of predators that may assist with recovery of the Bluenose-East herd.

(a) Bathurst Wolf Management Feasibility Assessment 2017:

A collaborative feasibility assessment of wolf management options for the Bathurst caribou range led by the WRRB, ENR and TG was completed in 2017 (Wolf Feasibility Assessment Technical Working Group 2017). The assessment considered 11 options including lethal and non-lethal methods, their potential effectiveness, costs and humaneness. While this feasibility was focused on the Bathurst range, the assessment can also be applicable to possible wolf reduction options for the Bluenose-East range.

(b) Continued TG program to train wolf harvesters:

A separate proposal to WRRB from TG described the approach that has been initiated to train Tłı̨chǫ wolf hunters from the 4 communities in harvesting wolves using culturally appropriate methods. This program will be continued and will likely form a key component of the larger wolf management proposal being developed.

(c) Increased GNWT incentives for wolf harvesters:

In 2010, GNWT increased incentives for wolf harvesters to reduce predation and promote caribou recovery. The incentives were increased in 2015 and at that time, the incentives included $200 for an intact unskinned wolf, $450 for a wolf pelt skinned to traditional standards and up to $800 for a wolf pelt skinned to taxidermy standards. Overall, wolf harvest levels across the NWT and in the North Slave region showed no real increase in wolf harvest as a result of these incentives. A substantial portion of the wolves that were taken were near community landfills, thus not from caribou winter ranges. Recognizing that the incentives to date have been ineffective, GNWT is proposing to increase them to $900 for an unskinned wolf, $1300 for a wolf pelt skinned to traditional standards and $1650 for a pelt skinned to taxidermy standards (Fig. 4). These higher incentives would apply in an area in the North Slave region centered on the collar locations of wintering BNE and Bathurst caribou. Wolf hunters would be required to check into and out of the wolf harvesting zone with increased incentives at winter road access points. This would ensure that wolves taken under the higher incentives are associated with the two caribou herds. The incentives are proposed in part to help increase interest in the TG program to train wolf harvesters from the Tłı̨chǫ training program described above.

(d) Wolf management proposal for BNE and Bathurst ranges:

In addition to joint management proposals for the two caribou herds (including this document), a separate joint proposal wolf management is currently under development that will include the ranges of both herds. Efforts to date to increase wolf harvest in the North Slave region, including GNWT incentives for wolf harvesters and the TG program to train wolf harvesters in culturally appropriate ways to hunt wolves, have not resulted in a meaningful increase in numbers of wolves taken. The new proposal will recommend ways to ensure that wolf harvest is increased to a level where caribou survival rates will be measurably increased. This will require more intensive wolf removal programs because small-scale wolf removals are generally ineffective at increasing caribou survival rates.

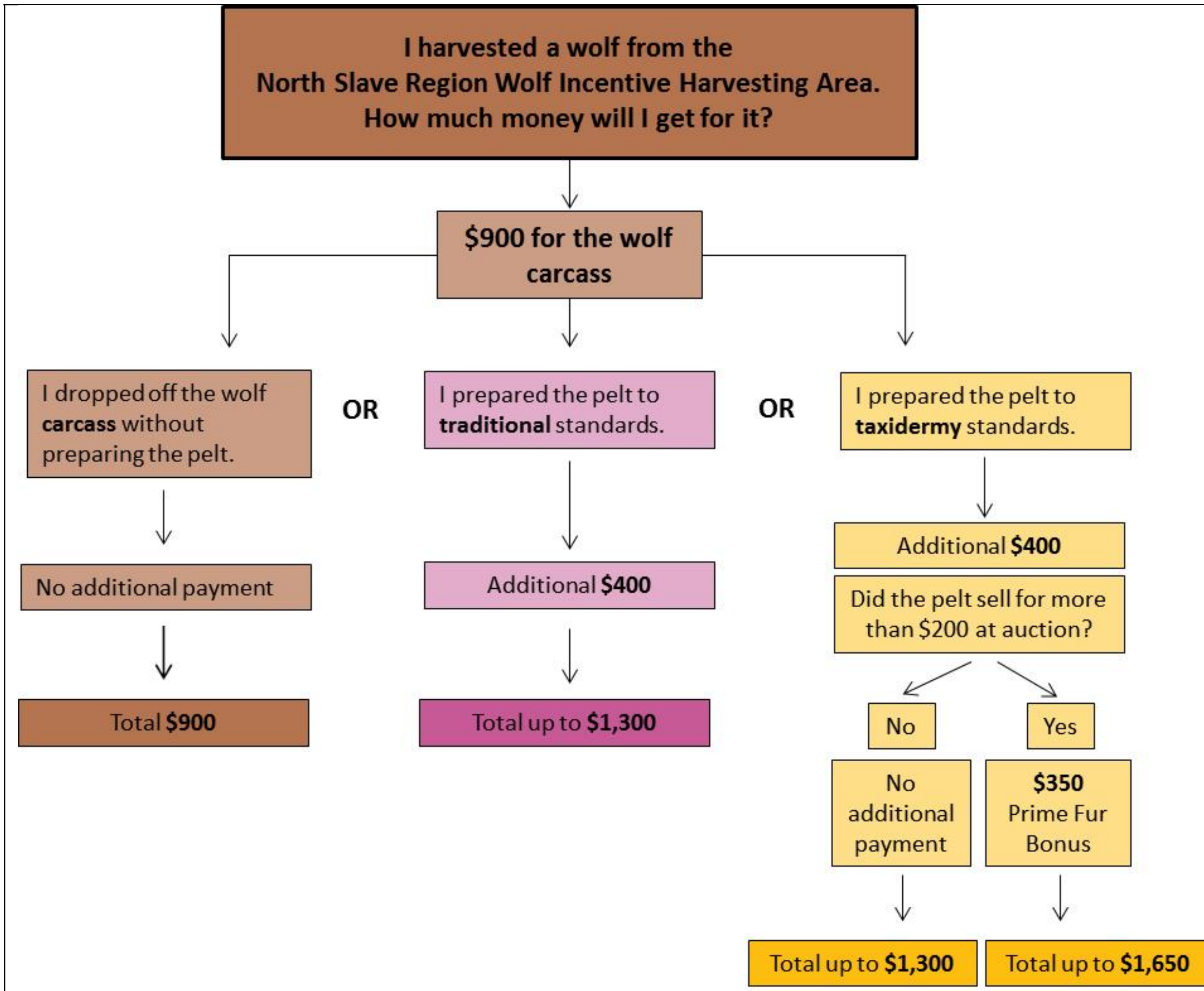

Fig. 4. Proposed new incentives for wolf harvesters in North Slave region in areas with BNE and Bathurst caribou.

(e) Collaboration between NWT and NU managers about predator management:
The calving grounds and a large portion of the summer ranges of the BNE and Bathurst caribou herds are in Nunavut. At these times of year (June-August), the herds are generally well separated and their ranges well-defined spatially. In contrast, winter ranges tend to be larger and more variable from year to year, but they are also more accessible to hunters and trappers. Range overlap of wintering caribou herds has often included extensive overlap between neighbouring herds; for example, the BNE, Bathurst and Beverly/Ahiak collared caribou were well mixed in December 2018. Wolf removals on calving and summer ranges would affect the target caribou herds directly. Wolf removal on the winter range is challenged by the overlap of caribou herds and mixing of the wolves associated with these herds; in this situation the overall number of wolves associated with the caribou herds will be larger and likely require more wolf removals to be effective.

There has been a series of discussions involving GNWT and GN wildlife staff and more senior officials (ministers and deputy ministers) about the potential for collaboration centered on predator reduction on the NU ranges of the BNE and Bathurst herds. As with harvest management or other possible management actions in NU, the GNWT, TG, WRRB and other management organizations in the NWT have no authority in NU and potential predator management would need to respect NU processes and be approved by the NWMB. However, coordinated harvest and wolf management actions across jurisdictional boundaries are key to effectiveness and likelihood for caribou recovery. Harvesters associated with the Kugluktuk Hunters and Trappers Organization have expressed interest in contributing to recovery of the BNE and Bathurst herds by reducing predator numbers. GNWT and TG will pursue these discussions further to develop and implement coordinated predator removals across the BNE and Bathurst herd ranges.

3. Habitat and Land Use

Recovery of the Bluenose-East herd will require a healthy habitat on the herd's range in NU and the NWT. Currently, there are no active mines and overall there has been limited development on the Bluenose-East range. However, proposed actions to support healthy habitat include the following:

- Promotion of protecting the herd's calving grounds in NU;
- Participation in development of the wildlife management plan for road access into herd range, as the Tibbitt-to-Contwoyto winter road (limiting speed limits, traffic and other mitigations for caribou);
- Participation in any environmental assessments and land use planning in NWT and NU that may affect this herd's range;
- Identifying key unburned habitat on the winter range to be included in the Values at Risk hierarchy, and increased fire management activity in these areas during the fire season.
- Continuation of ongoing TK research focused on identifying and conserving key caribou habitat:
    - Ekwò no'oke (water crossings),
    - Tataa (land crossings), and
    - Important unburned winter habitat.

For the Bathurst Caribou Range Plan (BCRP), the TG conducted TK research and identified valuable caribou habitat as Ekwò no'oke (water crossings), tataa (land crossings), migration routes and seasonal ranges. The BCRP process can serve as a model for identifying key habitat for the BNE herd by using scientific data and traditional knowledge to identify the Bluenose-East core range (centre of habitation) and other important areas. This model can be followed to identify key BNE caribou habitat, by combining recent years of collar data and Tłįchǫ traditional knowledge to identify critical habitat. The Bluenose-East fall and winter ranges overlap with the Bathurst herd, thus parts of its range will be included in the habitat protection recommendations in the Bathurst Caribou Range Plan. Continuation of ongoing research can lead to further identification of important habitats for potential protection on the full Bluenose-East range.

4. Education

TG and ENR recognize that continuing effort is needed to increase awareness among harvesters, communities and the public about the status of NWT caribou herds, the need for conservation actions to promote recovery and how people can contribute to conservation. The following actions are proposed to continue and increase public and hunter education:

The following are education/public awareness initiatives to improve hunter practices and reduce wounding and wastage:

- Continue to work with the communities, in particular more closely with schools, on promoting Indigenous laws and respecting wildlife, including how to prevent wastage; and

- Invite elders to work with the youth to teach traditional hunting practices and proper meat preparation.

Posters, pamphlets, media and road signs will be used to better inform the public about respecting wildlife, traditional hunting practices, wastage, poaching and promoting bull harvest. Table 5 below summarizes the TG and ENR objectives for increased public engagement and hunter education.

ENR has promoted sound hunter harvest practices, preventing meat wastage, harvesting bulls instead of cows, and implementing related conservation education in NWT communities for a number of years. In response to community requests, ENR has developed a Hunter Education program that is meant to be tailored to the needs of individual communities and organizations.

An important area to emphasize will be ensuring that information on the status and management of regional caribou herds is provided in appropriate ways and on an on-going basis to harvesters, elders and other community members.

Table 5. Summary of approaches and objectives for increased public engagement and hunter education for caribou in Wek'èezhìi.

General Approach	Description & Objective	Lead (Support)
Public hearings	A (likely) public hearing on wildlife management actions for BNE herd in 2019	WRRB & SRRB (TG, ENR)
Community meetings	1 meeting per year in each Tłı̨chǫ community to discuss and update wildlife management issues and actions	TG and ENR
Radio programs	When needed radio announcements, interviews and/or updates on wildlife management in Tłı̨chǫ language during winter hunting season (annual)	TG & ENR
Sight-in-your-rifle programs	Conduct community-based conservation education programs with an objective of 1 workshop / Tłı̨chǫ community / hunting season (annual)	ENR and TG; need to coordinate with community leaders
Boots on the Ground and other Traditional Knowledge programs	Highlight the programs and their results with Tłı̨chǫ communities and the public (annual)	TG and ENR

Outreach through internet and social media	Regular updates (10 updates per season) on government websites and social media during fall and winter hunting seasons (Facebook & Tłı̨chǫ website)	TG, ENR (WRRB)
Poster campaign	Produce posters for distribution in each Tłı̨chǫ community: posters to be developed annually as needed	TG and ENR

5. Monitoring and Research

Three aspects of monitoring and research are described in this section: (a) biological monitoring mostly led by ENR, (b) expansion of the Tłı̨chǫ Boots on the Ground caribou monitoring from Bathurst range to Bluenose-East range, and (c) support for biological or TK research that helps explain changes in caribou abundance.

(a) Biological monitoring:

Table 6 lists updated biological monitoring of the Bluenose-East herd, mostly led by ENR, proposed for 2019-2023. A key focus of the increased monitoring is to provide annual information on productivity and survival of caribou calves and adult cows, as well as increased surveys to estimate herd size. The increased monitoring in part anticipates more intensive wolf management, for which assessment of effectiveness in improving caribou survival rates will be needed. The table includes a rationale for changes from previous monitoring as in the 2015 joint proposal for this herd. Changes are also described and a brief rationale given for them below.

I. *Population surveys every 2 years*: In recent years, calving photo surveys for the BNE and Bathurst herds have been carried out every 3 years and the new population estimates have been benchmarks for revised management. The continued rapid decline of the two herds and expected increase in wolf management are the main rationale for proposing population surveys every 2 years for the two herds, i.e. in 2020 and 2022.

II. *Collar increase to 70 (50 cows and 20 bulls)*: A technical rationale for increasing the number of collars on the Bathurst herd to 65 (50 cows and 15 bulls) was provided by Adamczewski and Boulanger (2016). Some applications, such as monitoring cow survival rates with good precision, would require 100 collared caribou, while other applications can be addressed reliably with 50 or fewer collars. At this time, increasing the number of collars on cows to 50 would provide more reliable annual estimates of cow survival rates, as well as increasing confidence in defining distribution of caribou throughout the year, assigning harvest to herd reliably, and monitoring of herd fidelity to calving grounds. Range use by bulls shows patterns that vary from those of cows, thus maintaining the 20 bull collars used in recent years will also be important. The collars may also assist in determining where and when predators should be removed as well as in monitoring whether predator management actions are having an effect on the herd.

III. *Annual composition surveys in June, October and March/April*: To date composition surveys have been carried out on a nearly annual basis for the BNE herd in late winter, as an index of calf survival to 9-10 months of age. Composition surveys on the calving grounds have been carried out every 3 years as part of the calving photo surveys and provide a measure of initial productivity. Fall composition surveys have been carried out every 2-3 years to monitor the bull:cow ratio, which is needed to convert the estimate of cows from the June calving photo surveys to an overall herd estimate. Fall composition surveys also provide a calf:cow ratio that gives a measure of how many calves have survived the first 4-5 months. The recommended increase to annual June, October and late-winter composition surveys will provide annual information on initial productivity of young and the survival rates of calves to the fall and late-winter periods. Increased survival of adults and calves are the key changes that need to happen for this herd to stabilize and potentially increase. Increased survival will also be a key indicator of effectiveness of predator management.

IV. *Suspension of June calving reconnaissance surveys in years between photo surveys*: Reconnaissance surveys over the calving grounds have been used for the Bathurst and Bluenose-East herds in years between photographic population surveys as a way of tracking the numbers of cows on the calving grounds. In most years they have tracked trend from the more complete photo surveys well. However, the variance on these surveys has usually been high, which reduces confidence in the estimates. In June 2017 a recon survey of the BNE calving grounds suggested that the decline had ended and the herd had increased from 2015; the June 2018 survey showed that the herd had in fact declined further by about half. In view of the high variance on these surveys and the questionable 2017 results, these surveys are being discontinued.

V. *Harvest monitoring*: Accurate reporting of caribou harvest remains a priority for the Bluenose-East caribou herd. TG and ENR will work together to ensure that all harvest by Tłįchǫ harvesters is reported based on authorization cards and community monitors. ENR will continue overall monitoring of harvest via check-stations at Gordon Lake and McKay Lake, regular patrols by officers on the ground and periodic aerial monitoring. ENR will continue to monitor compliance within the Bathurst mobile no-harvest zone using the check-stations and patrols as in previous winters.

VI. *Condition Assessment and Visual Monitoring:* Limited sample numbers have somewhat constrained the reliability of the assessments of trends in condition of harvested BNE caribou (see Garner 2014). Reliable reporting of caribou condition with adequate sample numbers could improve understanding of the herd's nutritional status and the influence of environmental conditions that are tracked through the drought index, oestrid (warble and bot fly) index and indices of snow conditions on herd condition. Condition sampling in winter from hunter-killed caribou will continue (led by TG with ENR support) with a focus on increasing sample sizes and completeness of monitoring, when and if funding allows. Training will be needed in each community to ensure qualified staff are available.

<u>(b) Expansion of Boots on the Ground TK monitoring to Bluenose-East caribou range:</u>

TG and ENR support expansion of the Traditional Knowledge caribou monitoring program Boots on the Ground, and will explore ways to expand the program to the Bluenose-East range. For three years, this TG program has been focused on Bathurst caribou on their summer range in July and August, by having Tłı̨chǫ monitors for six weeks, in July and August, on the summer range of the herd. The Tłı̨chǫ Government aims to expand the program in both time and space, but this will be dependent on availability of staff, elders and other resources.

The Tłı̨chǫ Government is considering plans to purchase boats to be placed on other larger lakes on the summer and fall range that are used by both herds. By placing boats on several larger lakes, monitoring teams can fly to these lakes, where it is possible to walk in proximity to the herds and monitor caribou. Currently, TG relies on two boats on Contwoyto lake and Fry Inlet. This gives access to a larger area around these two large water bodies. The monitoring has been successful for the Bathurst herd as the herd has remained around these large lakes during the last years. On the summer and fall range of the Bluenose-East herd, there are fewer large lakes where the herd tend to aggregate. Thus, Boots on the Ground monitoring of Bluenose-East caribou is conditional on the herd remaining relatively stable around larger waterbodies, such as Point Lake, and on sufficient resources, including qualified staff. The locations for the boats are not determined yet, and will be based on recent years of collar data and Tłı̨chǫ harvesters' local knowledge. The expansion will be phased in over the next monitoring seasons, as training new monitors and building capacity in the monitoring team is a key to the success of the program. On-the-land monitoring will continue to inform decision makers on herd demographics, behaviour and migration, quality of summer and fall range habitat, and cumulative effects of predators, mining activities, and climate change on caribou.

(c) Research on drivers of change in caribou abundance:

TG and ENR recognize that there are likely multiple factors that have contributed to the BNE herd's decline since 2010. While harvest levels of 3000 or more caribou annually likely contributed to the herd's decline between 2010 and 2015, harvest was relatively low 2015-2018, thus other factors including predation, disturbance like mining camps and roads, and climate factors may have been key to the herd's decline over that period. Adverse environmental conditions may be important in some years to the herd's vital rates. For example, a drought year in 2014 potentially led to poor feeding conditions, poor cow condition and a low pregnancy rate in winter 2014-2015. A study by Chen et al. (2014) suggested that spring calf:cow ratios in the Bathurst herd were correlated with indices of summer range productivity one and a half years earlier; the mechanism proposed was that cows with poor summer feeding conditions were likely to be in poor condition during the fall breeding season, leading to low pregnancy rates and low June calf:cow ratios. An assessment by Boulanger and Adamczewski (2017) of relationships between environmental climate variables from a remote sensing database and demographic rates of the BNE and Bathurst herds demonstrated that climate variables such as the summer warble fly index, summer drought index, and winter climate indicators such as snow depth can help explain trends in cow survival, calf survival and pregnancy rate.

The two governments support increased research into underlying drivers of change in herd abundance by partnership with academic researchers and remote sensing specialists, using both scientific and Traditional Knowledge approaches. There is a need to better understand predation rates and their significance to caribou, environmental factors affecting caribou condition and population trend, and on the effects of climate change on these relationships. A further area of importance is monitoring and research focused on caribou health, parasites and other diseases, and diseases and parasites from the south that may be expanding into the NWT. Research results may lead to expanded monitoring using scientific and TK approaches. Monitoring should focus on methods that involve community members and increase their knowledge and sense of involvement.

Table 6: Biological monitoring of Bluenose-East herd (ENR and/or TG lead)

Indicator(s)	Rationale	Desired Trend	Adaptive Management Options	How Often	Notes
1. Estimate of breeding cows and extrapolated herd size from calving ground photo survey	Most reliable estimate for abundance of breeding cows and total number of cows & can be extrapolated to herd size based on sex ratio.	Stable or increasing trend in numbers of breeding cows and herd size in 2023.	If trend in breeding cows increasing, continue as before; if trend stable-negative, re-consider management.	Every 2 years	Last survey 2018, next surveys in 2020 and 2022. Trend in breeding females is most important for herd trend.
2. Cow productivity; composition survey on calving ground in spring (June)	Proportion of breeding females in June at peak of calving establishes initial productivity or approximate pregnancy rate.	Proportion of breeding cows at least 80%.	Low ratio indicates poor fecundity and suggests poor nutrition in previous summer; survey data integrates fecundity & neonatal survival.	Annual	Essential component of calving ground photographic survey. Proposed increase to annual survey to more closely monitor initial productivity and following calf survival
3. Fall sex ratio and calf:cow ratio; composition survey (October)	Tracks bull:cow ratio and fall calf:cow ratio. Fall calf:cow ratio provides an index of calf survival from birth through initial 4.5 months.	Bull:cow ratio above 30:100; calf:cow ratio of more than 40:100.	If bull:cow ratio below target, consider reducing bull harvest. Low fall calf:cow ratios suggest poor calf survival.	Annual	Sex ratio needed for June calving ground extrapolation to herd size.
4. Calf:cow ratio in late winter (March-April); composition survey	Herd can only grow if enough calves are born and survive to one year, i.e., calf recruitment is greater than mortality.	At least 30-40 calves:100 cows on average.	Sustained ratios ≤ 30:100, herd likely declining; may re-assess management.	Annual	Calf productivity & survival vary widely year-to-year, affected by several variables, including weather.
5. Caribou condition assessment from harvested animals	Condition assessment provides overall index of nutrition/environmental conditions and changes over time.	High hunter condition scores (average 2.5-3.5 out of 4); target 70 animals/year.	Sustained poor condition suggests unfavourable environmental conditions and possibly further decline.	Annual	Sample numbers to date limited (2010-2018). TG working to improve program, sampling.
6. Cow survival rate estimated from OLS model and annual survival estimates from collared cows	Cow survival estimated 75-78% in 2013 (from model). Need survival of 83-86% for stable herd. Increased collar number to 50 cows should improve annual estimation.	At least 83-86% by 2022.	If cow survival continues <80%, herd likely to continue declining.	Annual	Population trend highly sensitive to cow survival rate; recovery will depend on increased cow survival.
7. Total harvest from this herd by all users groups (numbers & sex ratio)	Accurate tracking of all harvest is essential to management and to knowing whether management actions are effective.	All harvest reported accurately and within agreed-on limits.	Re-assess recommended harvest annually; if herd continues to decline, re-assess harvest limit.	Annual	Multiple factors other than harvest may contribute to decline but harvest is one of the few factors humans control.
8. Maintain up to 70 satellite/GPS collars on herd (50 on cows, 20 on bulls)	Collar information is key to reliable surveys, tracking seasonal movements and ranges, monitoring survival and herd fidelity.	Additional collars added every March/April to maintain up to 70 collars on herd.		Annual additions to keep total of 70.	Information from collared caribou is essential to monitoring and management of all N. America caribou herds.
9. Wolf Harvest on BNE range	Several Indigenous governments and communities have expressed interest in increasing wolf harvest by hunters and trappers to increase caribou survival.	Increased harvest of wolves	If herd continues to decline, consider increased focus on wolf harvest to slow herd decline and increase likelihood of recovery.	Annual	Herd overlap in winter likely means mixing of wolves associated with those herds and may influence effectiveness of wolf removals.

5. Consultation
Describe any consultation undertaken in preparation of the management proposal and the results of such consultation. A letter with results of the Bluenose-East and Bathurst June 2018 surveys was sent from ENR by email to Indigenous governments, boards and other key stakeholders on Nov. 20, 2018. In the letter, organizations were invited to speak to the minister or deputy minister of ENR in person or by phone. A letter was also sent to the minister of Environment with the Government of Nunavut on the same day with an offer of further discussion in person or by phone. Senior leadership from the Sahtú region (SSI and other organizations) met with the GNWT premier and other senior officials on Nov. 20 to discuss barren-ground caribou among other matters. A media briefing on the Bluenose-East and Bathurst survey results was also held at the NWT legislature on Nov. 20. ENR officials will present to the GNWT Standing Committee on Economic Development and the Environment (SCEDE) on the status and proposed management of the Bathurst and BNE herds on Jan. 16, 2019 to increase GNWT-wide understanding of the caribou herds' status and management. ENR staff presented on June 2018 survey results and other monitoring of the Bluenose-East herd on Dec. 21, 2018 at the annual ACCWM caribou herd status meeting in Yellowknife. This meeting was attended by representatives from Nunavut, including Kugluktuk, and all the boards making up the ACCWM. Staff from the Government of Nunavut (GN) and observers from Kugluktuk participated in the June 2018 surveys of the BNE and Bathurst herds. Staff from GN and Nunavut Tunngavik Incorporated (NTI) worked with ENR staff at a technical meeting Oct. 16 and 17, 2018 to review results of the GNWT-led surveys of the BNE and Bathurst herds and the GN-led survey of the Beverly herd in the Queen Maud Gulf in June 2018. This meeting was a continuation of collaboration between GN and GNWT staff on trans-border caribou issues. TG and ENR staff began to meet in late November 2018 and continuing into December 2018 and January 2019 to develop joint management proposals for the two caribou herds. Between these meetings, staff met with leaders and more senior staff of the two governments to discuss specific items to include in the management proposals. TG, ENR and WRRB staff met monthly in fall and winter 2018-2019 to talk about status and management of the Bluenose-East, Bathurst and Beverly/Ahiak caribou herds; these 3 groups comprise the Barren-Ground Caribou Technical Working Group. Meetings in the four Tłı̨chǫ communities are planned for January 2019. These will include the Tłı̨chǫ chiefs and senior officials from ENR to talk about the caribou herds and proposed management. ENR staff attended meetings of the Délı̨ne Renewable Resource Council Dec. 10-12, 2018 and Jan. 8, 2019 to participate in discussions of wildlife issues, including the status of the Bluenose-East herd and potential adjustments to the Délı̨ne caribou conservation plan.

6. Communications Plan
Describe the management proposal's communications activities and how the Tłı̨chǫ communities will be informed of the proposal and its results.

TG and GNWT leadership will, together, hold an information session in each of the 4 Tłı̨chǫ communities. Emphasis will be placed on visual aids that are easily understood and on hearing from community members.

Table 5 (listed earlier in this proposal) describes approaches and objectives for increased public engagement and hunter education for caribou in Wek'èezhìi.

7. Relevant Background Supporting Documentation

List or attached separately to the submission all background supporting documentation, including key references, inspection/incident reports and annual project summary reports.

Adamczewski, J., and J. Boulanger. 2016. Technical rationale to increase the number of satellite collars on the Bathurst caribou herd. Department of Environment and Natural Resources, Government of Northwest Territories. Manuscript Report 254.

Adamczewski, J., J. Boulanger, B. Croft, B. Elkin, and H. D. Cluff. 2016. Overview: monitoring of Bathurst and Bluenose-East caribou herds, October 2014. Environment and Natural Resources, Government of the Northwest Territories, Yellowknife, Northwest Territories, Canada. Manuscript Report 263.

Adamczewski, J., J. Boulanger, B. Croft, T. Davison, Heather Sayine-Crawford, and B. Tracz. 2017. A comparison of calving and post-calving photo-surveys of the Bluenose-East herd of barren-ground caribou in northern Canada in 2010. Canadian Wildlife Biology and Management 6(1): 4-30.

Advisory Committee for the Cooperation on Wildlife Management (ACCWM). 2014. Taking Care of Caribou – The Cape Bathurst, Bluenose-West, and Bluenose-East Barren Ground Caribou Herds Management Plan (Final). C/O Wek'èezhìi Renewable Resources Board, 102A, 4504 – 49 Avenue, Yellowknife, NT, X1A 1A7.

Barren-ground Technical Working Group (BGTWG). 2014. Barren-Ground Caribou 2013/14 Harvest & Monitoring Summary. Unpublished Report. Wek'èezhìı Renewable Resource Board, Tłı̨chǫ Government, and Government of the Northwest Territories. Yellowknife, NT. Online [URL]: http://wrrb.ca/sites/default/files/2013-2014%20BGC%20Harvest%20Summary%20Report%20_%20FINAL_Oct15_2015.pdf

Boulanger, J. 2018a. Notes on the analysis of the photo data for the Bluenose-East herd calving ground survey 2018. Draft Nov. 9, 2018. Environment and Natural Resources, Government of the Northwest Territories, Yellowknife, Northwest Territories, Canada. Unpublished draft report.

Boulanger, J. 2018b. Preliminary harvest simulations for the Bluenose-East herd 2018. Draft Jan. 2, 2019. Environment and Natural Resources, Government of the Northwest Territories, Yellowknife, Northwest Territories, Canada. Unpublished draft report.

Boulanger, J., A. Gunn, J. Adamczewski, and B. Croft. 2011. A data-driven demographic model to explore the decline of the Bathurst caribou herd. Journal of Wildlife Management 75:883-896.

Boulanger, J., B. Croft, J. Adamczewski, D. Lee, N. Larter, L.-M. Leclerc. 2016. An estimate of breeding females and analyses of demographics for the Bluenose-East herd of barren-ground caribou: 2015 calving ground photographic survey. Environment and Natural Resources, Government of the Northwest Territories, Yellowknife, Northwest Territories, Canada. Manuscript Report 260.

Boulanger, J., and J. Adamczewski. 2017. Analysis of environmental, temporal, and spatial factors affecting demography of the Bathurst and Bluenose-East caribou herds. Environment and Natural Resources, Government of the Northwest Territories, Yellowknife, Northwest Territories, Canada. Manuscript Report (draft contract report).

Chen, W., L. White, J. Z. Adamczewski, B. Croft, K. Garner, J. S. Pellissey, K. Clark, I. Olthof, R. Latifovic, G. L. Finstad. 2014 Assessing the Impacts of Summer Range on Bathurst Caribou's Productivity and Abundance since 1985. *Natural Resources*, **5**, 130-145. http://dx.doi.org/10.4236/nr.2014.54014

Garner, K. 2014. Tłı̨chǫ Caribou Health and Condition Monitoring Program. Final Report, Department of Culture and Lands Protection, Tłı̨chǫ Government, Behchokǫ̀, NT. 34 pp.

Wolf Feasibility Assessment Technical Working Group. 2017. Wolf Technical Feasibility Assessment: Options for Managing Wolves on the Range of the Bathurst Barren-ground Caribou Herd. Wolf Feasibility Assessment Technical Working Group, Yellowknife, Northwest Territories. C/O Wek'èezhìi Renewable Resources Board, 102A, 4504 – 49 Avenue, Yellowknife, NT, X1A 1A7.

WRRB 2016a. Report on a Public Hearing Held by the Wek'èezhìı Renewable Resources Board 6-8 April 2016 Behchokǫ̀, NT & Reasons for Decisions Related to a Joint Proposal for the Management of the Bluenose-East (Barren-ground caribou) Herd. Part A, June 13, 2016. Wek'èezhìı Renewable Resources Board, 102A, 4504 – 49 Avenue, Yellowknife, NT, X1A 1A7.

WRRB 2016b. Reasons for decisions related to a joint proposal for the management of the Bluenose-East (Barren-ground caribou) Herd. Part B, Oct. 3, 2016. Wek'èezhìı Renewable Resources Board, 102A, 4504 – 49 Avenue, Yellowknife, NT, X1A 1A7.

8. Time Period Requested

Identify the time period requested for the Board to review and make a determination or provide recommendations on your management proposal.

Management actions proposed here would apply from July 1, 2019 (start of the harvest season) until July 1, 2021 with the results of the next calving ground photo surveys of the BNE herd expected in 2020 and 2022. In recent years the term of management proposals was 3 years to match the interval between surveys. TG and ENR suggest that management actions, including the harvest and other actions, be reviewed annually or whenever key additional information is available (e.g. additional survey information or recommendations from ACCWM or boards).

9. Other Relevant Information

If required, this space is provided for inclusion of any other relevant project information that was not captured in other sections.

TG and ENR support efforts by the WRRB and other boards, through recommendations and public hearings, to address the possible multiple causes of the BNE decline and the implementation of the ACCWM management plan.

10. Contact Information

Contact the WRRB office today to discuss your management proposal, to answer your questions, to receive general guidance or to submit your completed management proposal.

Jody Pellissey
Executive Director
Wek'èezhìı Renewable Resources Board
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APPENDIX B Review of 2010 Proceeding & Decisions

B.1. Receipt of 2009 Joint Proposal

On November 5, 2009, TG and GNWT submitted the *Joint Proposal on Caribou Management Actions in Wek'èezhìı*, which proposed nine management actions and eleven monitoring actions, including harvest limitations, for the Bathurst, Bluenose-East and Ahiak ʔekwǫ̀ herds. While there was agreement on the majority of actions proposed, there was no agreement reached on the proposed levels of Indigenous harvesting.

Upon review of the proposal, the WRRB held that any restriction of harvest or component of harvest to a specific number of animals would constitute a TAH. Thus, the Board ruled that it was required to hold a public hearing. Registered Parties were notified on November 30, 2009 of the Board's decision to limit the scope of the public hearing to Actions 1 through 5 of the Joint Proposal, which prescribed limitations on harvest. All other proposed actions were addressed through written submissions to the Board.

On January 1, 2010, GNWT implemented interim emergency measures, which included the closure of ʔekwǫ̀ commercial, outfitted,[181] and resident harvesting in the North Slave regions. In addition, all harvest was closed in a newly established no-hunting conservation zone (Figure B-1). This decision was made by the Minister of GNWT under the authority of Section 12.5.14 of the Tłı̨chǫ Agreement. The Board was informed of the Minister's decisions on December 17, 2009.

[181] Non-residents and non-resident aliens require an outfitter to hunt big game (but not small game). Outfitters provide licenced guides for the hunters they serve. A non-resident is a Canadian citizen or landed immigrant who lives outside the NWT or has not resided in the NWT for 12 months; a non-resident alien is an individual who is neither an NWT resident nor a non-resident. GNWT. 2015. Northwest Territories Summary of Hunting Regulations, July 1, 2015 to June 30, 2016.

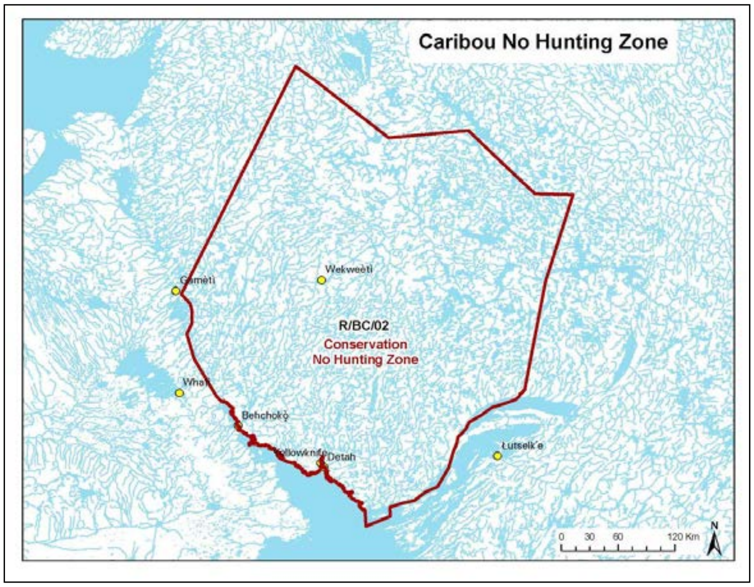

Figure B-1. No-Hunting Conservation Zone, R/BC/02, January 1, 2010 to December 8, 2010.[182]

Originally scheduled for January 11-13, 2010, the public hearing took place March 22-26, 2010 in Behchokǫ̀, NT. Once the evidentiary phase of the proceeding was completed, TG requested the WRRB adjourn the hearing in order to give TG and GNWT time to work collaboratively to complete the joint management proposal. The Board agreed to grant the application for adjournment with the condition that any revised proposal be filed by May 31, 2010 and that such a proposal address both harvest numbers and allocation of harvest for both the Bathurst and Bluenose-East ʔekwǫ̀ herds.

On May 31, 2010, TG and GNWT submitted the *Revised Joint Proposal on Caribou Management Actions in Wek'èezhìı*. This revised proposal changed the original management and monitoring actions and incorporated an adaptive co-management framework and rules-based approach to harvesting. TG and GNWT were able to reach an agreement on Indigenous harvesting. Following review of the information and comments from registered Parties, the WRRB accepted the revised proposal. Therefore, the WRRB reconvened its public hearing on August 5-6, 2010 in Behchokǫ̀, NT, where final presentations, questions and closing arguments were made.

B.2. 2010 Board Decision

On October 8, 2010, the WRRB submitted its final recommendations and Reasons for Decision Report to TG and GNWT. Many of the recommendations were related to the

[182] GNWT-GNWT 2010. http://www.GNWT.gov.nt.ca/_live/documents/content/No-Hunting_Conservation_Zone_Map.pdf

Bathurst ʔekwǫ̀ herd and relevant management actions vital for herd recovery, including harvest restrictions.

The Board recommended a harvest target of 2800 (± 10%) Bluenose-East ʔekwǫ̀ per year for harvest seasons 2010/11, 2011/12, and 2012/13 in Wek'èezhìı. Further, the Board recommended that the ratio of bulls harvested to cows should be 85:15. Although the evidence suggested that the Bluenose-East herd had not continued to decline, the Board concluded that a limited harvest of 2520-3080 ʔekwǫ̀ with 420 or fewer cows was a cautious management approach based on the current herd size and trend.

The Board recommended that all commercial, outfitted and resident harvesting of the Bluenose-East ʔekwǫ̀ herd in Wek'èezhìı be set to zero. The Board also made harvest recommendations for the Ahiak ʔekwǫ̀ herd.

The WRRB made additional ʔekwǫ̀ management and monitoring recommendations to TG and GNWT, specifically implementation of detailed scientific and Tłı̨chǫ knowledge monitoring actions and implementation of an adaptive co-management framework.

The WRRB also recommended to the Minister of CIRNAC (formerly Indian and Northern Affairs Canada (INAC)) and GNWT to collaboratively develop best practices for mitigating effects on ʔekwǫ̀ during calving and post-calving, including the consideration of implementing mobile ʔekwǫ̀ protection measures, and for monitoring landscape changes, including fires and industrial exploration and development, to assess potential impacts to ʔekwǫ̀ habitat.

The Board recommended that the harvest of dìga should be increased through incentives but that focused dìga control not be implemented. The Board understood if TG and GNWT were to plan for focused dìga control in the future, a management proposal would be required for WRRB consideration.

The Minister's emergency interim measures remained in effect until the WRRB's recommendations on ʔekwǫ̀ management in Wek'èezhìı were implemented on December 8, 2010. On January 13, 2011, TG and GNWT responded to the Board's recommendations, accepting 35, varying 22 and rejecting three of the 60 recommendations. TG and GNWT submitted an implementation plan to the WRRB on June 17, 2011, which the Board formally accepted on June 30, 2011.

APPENDIX C Review of 2010 WRRB Recommendations

Review of 2010 WRRB Recommendations				
No.	**WRRB Recommendation**	**TG/GNWT Response**	**Management Objective**	**Status**
1	TG and GNWT report annually on the overall success of the harvest target approach in meeting the objectives of effective collaborative management and the long-term recovery of the Bathurst caribou herd.	Accepted - GNWT and TG will provide a report on the overall success of the harvest target approach in June 2011.	Increase communication among the management authorities. Provide an opportunity to review the efficacy of management actions and make revisions if necessary.	Incomplete; no recommendations provided
2	All commercial harvesting of Bathurst caribou within Wek'èezhìı be set to zero for 2010-2013.	Accepted - As per changes to the Big Game Hunting Regulations made on January 1, 2010.	Reduce harvest of the Bathurst caribou herd and set priority to Aboriginal harvest.	Completed
3	All outfitted harvesting of Bathurst caribou within Wek'èezhìı be set to zero for 2010-2013.	Accepted - As per changes to the Big Game Hunting Regulations made on January 1, 2010.	Reduce harvest of the Bathurst caribou herd and set priority to Aboriginal harvest.	Completed
4	GNWT and TG, prior to the next survey of the Bathurst caribou herd, provide the Board and make public their positions with regard to the reinstatement of outfitting within Wek'èezhìı.	Varied - This will be addressed in the development of a long-term management plan for the Bathurst herd. The target date for the long-term management plan is the end of 2012.	Make criteria for reinstating Outfitted and Resident harvest public.	Incomplete; no criteria developed
5	All resident harvesting of Bathurst caribou within Wek'èezhìı be set to zero for 2010-2013.	Accepted - As per changes to the Big Game Hunting Regulations made on January 1, 2010.	Reduce harvest of the Bathurst caribou herd and set priority to Aboriginal harvest.	Completed
6	GNWT and TG, prior to the next survey of the Bathurst caribou herd, provide the Board and make public their positions with regard to the reinstatement of resident harvesting within Wek'èezhìı. In developing this position, the Governments will review, assess, and implement, where conservation permits, a limited-entry draw system to facilitate the reinstatement of resident harvesting at the earliest opportunity.	Varied - This will be addressed in the development of a long-term management plan for the Bathurst herd. The target date for the long-term management plan is the end of 2012.	Make criteria for reinstating Outfitted and Resident harvest public.	Incomplete; no criteria developed

7	Establishment of a harvest target of 300 Bathurst caribou per year for 2010-2013.	Accepted - This was implemented on December 8, 2010 through a regulation change that established limited harvest zones inside and outside of Wek'èezhìı to reflect the current wintering area for the Bathurst caribou herd.	Set a level of harvest that can be sustained by the Bathurst herd.	Completed
8	Allocating the annual harvest target of Bathurst caribou between Tłı̨chǫ Citizens (225) and members of an Aboriginal people with rights to hunt in Mǫwhì Gogha Dè Nı̨ı̨tłèè (75)	Varied - As per prior agreement with TG to share a limited harvest of Bathurst caribou equally (150 animals for Tłı̨chǫ citizens and 150 caribou outside of Wek'èezhìı)	Establish a sharing of harvest between the Tłı̨chǫ and other Aboriginal hunters that is equitable.	Completed
9	The harvest of Bathurst caribou should target an 85:15 bull/cow ratio, i.e. the annual harvest of Bathurst caribou cows should be less than 45	Varied - GNWT and TG both agree that the harvest should focus on bulls but would prefer to use a target ratio of 80:20 males: females as agreed in revised joint proposal (cow harvest of 60). The modeling projections suggest that small changes in the harvest sex ratio would have negligible impacts on the Bathurst herd's likely trend.	Set a harvest sex ratio that can be sustained by the Bathurst herd.	Incomplete (excludes unknowns); target exceeded in all three years
10	TG and GNWT have information to suggest that the harvest of Bathurst caribou has <u>or will in the near future</u> exceed the harvest target of 300 by 10% or more, then regulations should be put in place to close all harvesting in areas occupied by the Bathurst herd.	Accepted - GNWT and TG will be closely monitoring harvest levels throughout the fall and winter hunting seasons and will keep communities and the WRRB informed.	Closely monitor and report harvest such that if it exceeds the target, actions can be taken to ensure no further harvest occurs	Not required
11	TG and GNWT have information to suggest that the harvest of Bathurst caribou has <u>or will or in the near future</u> materially exceed 45 cows, then regulations should be put in place to close all harvesting in areas occupied by the Bathurst herd.	Varied (as per response #9) - GNWT and the TG will monitor the sex ratio of the harvest and work with hunters to target male caribou, wherever possible.	Closely monitor and report harvest such that if it exceeds the target, actions can be taken to ensure no further harvest occurs	Incomplete; targets exceeded, and no regulations implemented

12	GNWT should, in discussion with TG and other Aboriginal groups, identify and make public, prior to the annual fall hunt, areas within which the harvest will be attributed to the Bathurst caribou herd.	Accepted - There will be ads in the local newspaper to inform the public about the new management zones within which Bathurst caribou harvest is limited. Detailed information on recent locations of radio-collared caribou will not be publicized.	Ensure that the public know where the Bathurst and Bluenose-East caribou herds reside such that requirements for harvest restrictions and reporting are known.	Incomplete; information not consistently provided on time
13	GNWT should, in discussion with TG and other Aboriginal groups, identify and make public, prior to the annual winter hunt, areas within which the harvest will be attributed to the Bathurst caribou herd.	Accepted - There will be ads in local newspaper to inform the public about the new management zones where Bathurst caribou harvest is limited.	Ensure that the public know where the Bathurst and Bluenose-East caribou herds reside such that requirements for harvest restrictions and reporting are known.	Incomplete; information not consistently provided on time
14	All commercial, outfitted and resident harvesting from the Bluenose-East caribou herd within Wek'èezhìı be set to zero for 2010-2013.	Accepted - As per changes to the Big Game Hunting Regulations made on January 1, 2010.	Reduce harvest of the Bluenose-East caribou herd and set priority to Aboriginal harvest.	Completed
15	Establishment of a harvest target of 2800 Bluenose-East caribou per year for 2010-2013, with the annual harvest target and its allocation finalized in discussions between the existing wildlife co-management boards and Aboriginal governments in the Sahtú, Dehcho and Tłı̨chǫ.	Varied - Based on new 2010 estimate of the Bluenose-East herd's size, wildlife co-management boards are reviewing information and the proposed harvest targets recommended by the WRRB. GNWT and TG will be working together to promote harvest of bulls, monitor the harvest closely throughout the winter and keep the communities, as well as WRRB, SRRB and Nunavut informed.	Set a level of harvest that can be sustained by the Bluenose-East herd. Establish as sharing of harvest between the Tłı̨chǫ and other Aboriginal hunters that is equitable.	Incomplete
16	The harvest of Bluenose-East caribou should target an 85:15 bull/cow ratio, i.e. the annual harvest of Bluenose-East caribou cows should be less than 420 – Original recommendation varied to 80:20 bull/cow harvest (cow harvest of 560)	Varied (as per response #9 and #15) - GNWT and TG agree the harvest should focus on bulls but would prefer a target of 80:20 males: females as agreed to in the revised joint proposal.	Set a harvest sex ratio that can be sustained by the Bluenose-East herd.	Incomplete (excludes unknowns); target exceeded in 2 of 3 years

17	TG and GNWT have information to suggest that the harvest of Bluenose-East caribou has or will in the near future exceed the target by 10% or more, then regulations should be put in place to close all harvesting in areas occupied by the Bluenose-East herd.	Varied - Based on new 2010 estimate of the Bluenose-East herd, wildlife co-management boards and Aboriginal governments are reviewing information and the proposed target recommended by the WRRB and plan to develop a strategy which will be shared with affected wildlife co-management boards.	Closely monitor and report harvest such that if it exceeds the target, actions can be taken to ensure no further harvest occurs	Incomplete; targets exceeded, and no regulations implemented
18	TG and GNWT have information to suggest that the harvest of Bluenose-East caribou has or will or in the near future materially exceed 420 cows, then regulations should be put in place to close all harvesting in areas occupied by the Bluenose-East herd.	Varied (as per response #15) - Based on new 2010 estimate of the Bluenose-East herd, wildlife co-management boards are reviewing information and proposed harvest targets recommended by WRRB.	Closely monitor and report harvest such that if it exceeds the target, actions can be taken to ensure no further harvest occurs	Incomplete; targets exceeded, and no regulations implemented
19	GNWT should, in discussion with TG and other Aboriginal groups, identify and make public, prior to the annual fall hunt, areas within which the harvest will be attributed to the Bluenose-East caribou herd.	Accepted (as per response # 12)	Ensure that the public know where the Bathurst and Bluenose-East caribou herds reside such that requirements for harvest restrictions and reporting are known.	Incomplete; information not consistently provided on time
20	GNWT should, in discussion with TG and other Aboriginal groups, identify and make public, prior to the annual winter hunt, areas within which the harvest will be attributed to the Bluenose-East caribou herd.	Accepted (as per response #13)	Ensure that the public know where the Bathurst and Bluenose-East caribou herds reside such that requirements for harvest restrictions and reporting are known.	Incomplete; information not consistently provided on time

21	TG and GNWT do not provide harvester assistance and/or incentives to access the Bluenose-East herd.	Rejected - GNWT and TG agree that conservation measures for the Bluenose-East herd are required. However, GNWT had previously agreed to provide support to construct a winter road to Hottah Lake so that people from Wekweètì could access the Bluenose-East herd as a measure to reduce pressure on Bathurst caribou herd, whose numbers are still very low.	Allow for alternative harvest opportunities while not placing undo pressure on adjacent herds.	Recommendation rejected - CHAP funding provide to assist harvesters for fall hunts to access Bluenose-East caribou.
22	TG consider negotiating caribou harvesting overlap agreements with Nunavut and the Sahtú region to make certain that existing relationships endure.	Varied - TG will consider.	Ensure informal traditional harvest sharing agreements among Aboriginal groups continue to be respected into the future.	Incomplete; no agreements negotiated
23	All commercial, outfitted and resident harvesting from the Ahiak caribou herd within Wek'èezhìı be set to zero in order to prevent incidental	Accepted	Reduce harvest of the Ahiak caribou herd and set priority to Aboriginal harvest. Reduce incidental harvest of Bathurst caribou herd.	Completed

	harvest of Bathurst caribou for 2010-2013.			
24	TG and GNWT do not provide harvester assistance and/or incentives to access the Ahiak herd.	Rejected - GNWT and TG did not provide support for fall caribou harvests in 2010. However, for GNWT, it may be necessary to provide some assistance as part of accommodation for limiting harvest of the Bathurst herd. GNWT is working with harvesters to carefully monitor the harvest of the Ahiak herd.	Allow for alternative harvest opportunities while not placing undo pressure on adjacent herds.	Recommendation rejected - CHAP funding provide to assist harvesters for fall hunts to access Ahiak caribou.
25	TG consider negotiating caribou harvesting overlap agreements with Nunavut and the Akaitcho region to make certain that existing relationships endure.	Varied (as per recommendation # 22 for overlap agreements with Nunavut) - TG currently has a boundary agreement with Akaitcho.	Ensure informal traditional harvest sharing agreements among Aboriginal groups continue to be respected into the future.	Incomplete; no agreement negotiated with Nunavut; overlap agreement in place with Akaitcho.
26	GNWT should, in discussion with TG and other Aboriginal groups, identify and make public, prior to the annual fall hunt, areas within which the harvest will be attributed to the Ahiak caribou herd.	Accepted (as per response #12)	Ensure that the public know where the Ahiak caribou herd resides such that requirements for harvest restrictions and reporting are known.	Incomplete; information not consistently provided on time
27	GNWT should, in discussion with TG and other Aboriginal groups, identify and make public, prior to the annual winter hunt, areas within which the harvest will be attributed to the Ahiak caribou herd.	Accept (as per response #13)	Ensure that the public know where the Ahiak caribou herd resides such that requirements for harvest restrictions and reporting are known.	Incomplete; information not consistently provided on time
28	TG implement the Special Project, Using Tłı̨chǫ Knowledge to Monitor Barren Ground Caribou of the overall TK Research and Monitoring Program.	Varied - TG will be implementing the project based on its obligations and commitments pursuant to the provisions in the Tłı̨chǫ Agreement. Start date of the TK Research and Monitoring Program is anticipated in summer 2011.	Harvest monitoring to be controlled at community level and done in a manner that is consistent with Tłı̨chǫ cultures of sharing information and building knowledge.	Incomplete; not implemented

PREAMBLE: (#29-39) - The Tłı̨chǫ Government agrees with the recommendations 28-42 of the Recommendation Report related to the Revised Joint Proposal on Caribou Management Actions in Wek'èezhìı. We are committed to documenting and reporting on observations and trends observed by caribou harvesters and elders. Implementation of the Tłı̨chǫ Knowledge Research and Monitoring Program: Special Project, Using Tłı̨chǫ Knowledge (to Monitor Barren Ground Caribou' will take approximately eight months. The traditional monitoring system continues among the harvesters and elders. Nevertheless, the logistics of realizing a system that will rigorously and accurately document and report harvesters' observations and trends have yet to be initiated. The program requires trained Tłı̨chǫ researchers, offices, and equipment, all of which requires a realistic annual budget and extensive fundraising with those who will also benefit from Tłı̨chǫ knowledge research and monitoring.				
29	TG and GNWT implement the *spring calf survival* monitoring action as identified for TK and SK.	Scientific: Accepted - GNWT will provide the Board with a power analysis of how frequently spring composition surveys are required. GNWT has not recently used collars to assess cow mortality rate. GNWT would appreciate any suggestions from the Board on alternative methods to estimate cow mortality. Because the existing numbers of radio-collars on the Bathurst herd are insufficient to reliably monitor cow mortality rates, the joint proposal emphasized annual calving reconnaissance surveys to monitor the trend in the herd's numbers of breeding cows. High mortality rates in cows would translate to a declining trend in numbers of cows on the calving ground: low cow mortality rates would translate to increasing numbers of cows on the calving ground. TK – See Preamble	Ensure scientific monitoring of the Bathurst, Bluenose-East and Ahiak herds is conducted on an annual cycle such that management authorities can assess the status of the herd with the best available information at hand. This includes spring composition, calving reconnaissance, calving ground composition and fall composition. Calving or post-calving population surveys are to be completed in spring/summer 2012.	TK - Incomplete; Special Project not implemented SK - Completed

30	TG and GNWT implement the *health and condition* monitoring action as identified for TK and SK.	Scientific: Accepted - GNWT expects that some Bathurst cows will be taken by hunters; therefore, sample kits will be available to all hunters to record basic information on health, condition and pregnancy rates of cows. Details of samples to be collected will be provided to TG community caribou monitors and GNWT staff. Typically, community hunts are an opportune time to take such samples. TK – See Preamble	Monitor the health and condition of Bathurst, Bluenose-East and Ahiak caribou in a way that does not increase the harvest of cows or take away from community harvest of cows.	TK - Incomplete; Special Project not implemented SK -Incomplete; no systematic approach
31	TG and GNWT implement the *birth rate* monitoring action as identified for TK and SK.	Scientific: Varied - Birth rate information will be collected in different ways for different herds. - For example, the size of the Ahiak and Bathurst caribou herds is estimated using the calving ground photo census surveys. Birth rate is estimated from a composition survey that is conducted on the calving ground right after the photo census. - This photo census technique is not usually used for the Bluenose-East herd (rather, herd size is estimated from a post-calving ground photo census survey). Instead, pregnancy rates are based on information collected from harvested Bluenose-East cows, and indirectly from composition surveys that assess the calf:cow ratio. TK – See Preamble	Ensure scientific monitoring of the Bathurst, Bluenose-East and Ahiak herds is conducted on an annual cycle such that management authorities can assess the status of the herd with the best available information at hand. This includes spring composition, calving reconnaissance, calving ground composition and fall composition. Calving or post-calving population surveys are to be completed in spring/summer 2012.	TK - Incomplete; Special Project not completed SK - Completed

32	TG and GNWT implement the *adult sex ratio and fall calf survival* monitoring action as identified for TK and SK.	Scientific: Accepted - The result of the fall composition survey is one of the parameters used to determine a population estimate for the Bathurst and Ahiak herds. Fall adult sex ratio surveys for these herds are planned for 2011 and 2012 prior to photographic survey scheduled for 2011 (Ahiak/Beverly) and 2012 (Bathurst). The next Bluenose-East fall adult sex ratio survey is planned for 2011 to get more basic information on the number of bulls and cows for this herd. TK – See Preamble	Ensure scientific monitoring of the Bathurst, Bluenose-East and Ahiak herds is conducted on an annual cycle such that management authorities can assess the status of the herd with the best available information at hand. This includes spring composition, calving reconnaissance, calving ground composition and fall composition. Calving or post-calving population surveys are to be completed in spring/summer 2012.	TK - Incomplete; Special Project not implemented SK - Incomplete; survey not conducted annually
33	TG and GNWT implement the *estimate of herd size* monitoring action as identified for TK and SK.	Scientific: Accepted - GNWT will work with all partners to undertake the: • Bathurst calving ground photo survey in June 2012. • Ahiak calving ground photo survey in 2011. • Bluenose-East post calving ground survey in 2012 or 2013. TK – See Preamble	Ensure scientific monitoring of the Bathurst, Bluenose-East and Ahiak herds is conducted on an annual cycle such that management authorities can assess the status of the herd with the best available information at hand. This includes spring composition, calving reconnaissance, calving ground composition and fall composition. Calving or post-calving population surveys are to be completed in spring/summer 2012.	TK - Incomplete; Special Project not implemented SK - Completed

34	TG and GNWT implement the *wolf abundance (den occupancy)* monitoring action as identified by TK and SK.	Scientific: Varied - GNWT will continue with current wolf den surveys, which provide an index of wolf abundance. GNWT in consultation with the TG will provide a proposal with potential options and costings that are relevant to wolf monitoring, research, and management. The Parties will continue to explore new options with respect to monitoring and managing wolves. TK – See Preamble	Monitor wolf abundance as well as health and condition as it relates to productivity.	TK - Incomplete; Special Project not implemented SK - Completed
35	TG and GNWT implement the *wolf condition and reproduction* monitoring action as identified by TK and SK.	Scientific: Accepted - Through the Genuine Mackenzie Valley Fur Program the GNWT provides harvesters $200 for each intact wolf carcass and will provide a collection report to the WRRB and TG in June 2011 on the carcass collection. TK – See Preamble	Monitor wolf abundance as well as health and condition as it relates to productivity.	TK - Incomplete; Special Project not implemented SK - Completed, but no report
36	TG and GNWT implement the *wolf harvest* monitoring action as identified by TK and SK.	Scientific: Accepted - GNWT will provide a report to the WRRB and TG in June 2011 on wolf harvest data. TK – See Preamble	Monitor wolf harvest to assess if harvest incentives have led to changes in harvest.	TK - Incomplete; Special Project not implemented SK - Completed
37	TG and GNWT implement the *state of habitat* monitoring action as identified by TK and SK.	Scientific: Varied - GNWT will continue to provide an annual report to the WRRB and TG on fire activity. GNWT expects a number of research projects investigating the impact of fires on caribou habitat to be completed in 2012 and will provide an annual progress report to the WRRB and TG. GNWT will continue to explore new ways to monitor landscape change	Ensure the landscape is managed in such a way that considers the sustainability of the Bathurst, Bluenose-East and Ahiak caribou herds.	TK - Incomplete; Special Project not implemented SK - Incomplete; no report provided

		driven by industrial exploration and development with our partners (e.g., INAC). TK – See Preamble		
38	TG and GNWT implement the *pregnancy rate* monitoring action as identified by TK and SK.	Scientific: Accepted - Note: GNWT will make available, sample kits to hunters so that any Bathurst or Bluenose-East cows that are harvested can be tested to determine pregnancy rates. The community hunts are opportune times to do this work. TK – See Preamble	Monitor the health and condition of Bathurst, Bluenose-East and Ahiak caribou in a way that does not increase the harvest of cows or take away from community harvest of cows.	TK - Incomplete; Special Project not implemented SK -Completed
39	GNWT implement the *density of cows on calving ground* monitoring action as identified.	Scientific: Varied - GNWT will undertake these surveys for the Bluenose-East, Bathurst and Ahiak herd in 2011 and 2012. TK – See Preamble	Ensure scientific monitoring of the Bathurst, Bluenose-East and Ahiak herds is conducted on an annual cycle such that management authorities can assess the status of the herd with the best available information at hand. This includes spring composition, calving reconnaissance, calving ground composition and fall composition. Calving or post-calving population surveys are to be completed in spring/summer 2012.	Completed

40	TG implement the *caribou harvest* monitoring action as identified.	Varied - GNWT and TG will continue to work with harvesters to report harvests. Methods will be based on the last 2 years of harvest monitoring in the Tłįchǫ communities. A community-based program will be developed in the 2010/11 season.	Harvest monitoring to be controlled at community level and done in a manner that is consistent with Tłįchǫ cultures of sharing information and building knowledge.	Incomplete; information not consistently provided
41	TG and GNWT reporting on monitoring results to the WRRB and the general public a minimum of three times per year in April, September and December. April meeting changed to late-May.	Accepted -To make information available to the public, GNWT will also post reports provided to the WRRB on the GNWT website.	Share information in a timely manner with management authorities and the public.	Incomplete; information not consistently provided
42	TG develop and implement a TK conservation education program to support the relationship and respect Tłįchǫ have for caribou.	Accepted - TG has developed a Tłįchǫ Ekwo Working Group (TEWG) which held its orientation workshop on Dec 13-15. This group will assess and make recommendations for the TK conservation education program.	Ensure Tłįchǫ and other Aboriginal harvesters follow traditional practices with respect to appropriate harvest practices. Ensure that harvesters are not wasting or wounding animals that are not retrieved.	Incomplete; not implemented
43	GNWT develop and implement a scientific conservation education program to foster an increased appreciation of the resource.	Accepted - GNWT will undertake this work jointly with TG in Wek’èezhìı and with other Aboriginal groups outside of Wek’èezhìı. GNWT will prepare facts sheets that will be posted on the GNWT website. GNWT has developed an interactive Caribou Educational Program that can be used in schools for youth to learn about scientific management practices.	Ensure Tłįchǫ and other Aboriginal harvesters follow traditional practices with respect to appropriate harvest practices. Ensure that harvesters are not wasting or wounding animals that are not retrieved.	Completed

44	TG and GNWT implement a process of information flow, review and assessment.	Varied - The flow chart from the WRRB recommendation on page 44 suggests that the TK and scientific programs will be developed independently of one another. TG and GNWT would like to see a more integrated strategy between science and TK as discussed in the joint revised proposal.	Establish a process for sharing information in a timely manner among management authorities, to discuss the implementation of management actions and how well they are working. Increase communication among the management authorities. Provide an opportunity to review the efficacy of management actions and make revisions if necessary.	Completed: Barren-ground Caribou Technical Working Group created
46	Criteria be developed by TG and GNWT for assessing success or failure that would indicate when management actions are to be revised, including reinstatement of harvest for residents, outfitters and commercial tags.	Accepted - As per recommendations #4 and #6, these criteria will be developed as part of a long-term management plan.	Establish a process for sharing information in a timely manner among management authorities, to discuss the implementation of management actions and how well they are working. Increase communication among the management authorities. Provide an opportunity to review the efficacy of management actions and make revisions if necessary.	Incomplete; criteria not developed
47	GNWT continue discussions with the Government of Nunavut for identifying opportunities for calving ground protection.	Accepted - Note: This issue is also being raised in Nunavut by the Beverly and Qamanirjuaq Caribou Management Board (BQCMB). INAC is the primary land manager in the NWT and Nunavut. Discussion will need to take place with INAC and Nunavut.	Make progress on opportunities for minimizing impacts of development on the Bathurst, Bluenose-East and Ahiak caribou herds.	Completed; ongoing
48	GNWT and INAC collaboratively develop best practices for mitigating effects on caribou during calving and post-calving, including the	Varied - This can be tied into the long-term management plan. Discussion will be needed	Ensure development on calving and post-calving ranges of the Bathurst, Bluenose-East and Ahiak herds	Incomplete; not implemented

	consideration of implementing mobile caribou protection measures.	to take place with INAC and Nunavut.	does not unduly affect the sustainability of these herds.	
49	TG work towards development and implementation of a land use plan for Wek'èezhìı, including the consideration of thresholds for industrial land use.	Rejected - As per chapter 22.5 of the Tłįchǫ Agreement, it is the responsibility of Canada or GNWT to develop and implement a land use plan for Wek'èezhìı.	Ensure the landscape is managed in such a way that considers the sustainability of the Bathurst, Bluenose-East and Ahiak caribou herds.	Recommendation rejected - GNWT responsibility; Tłįchǫ Land Use Plan completed
50	GNWT and INAC monitor landscape changes, including fires and industrial exploration and development, to assess potential impacts to caribou habitat.	Varied (as per response #37) - GNWT has carried out some cumulative effects modeling to assess effects to date of diamond mines on the Bathurst herd, and will continue to build on this modeling.	Ensure the landscape is managed in such a way that considers the sustainability of the Bathurst, Bluenose-East and Ahiak caribou herds.	Incomplete; Bathurst Caribou Range Plan completed but not implemented
51	TG and GNWT assess the need for forest fire control in areas of important caribou habitat.	Accepted	Ensure the landscape is managed in such a way that considers the sustainability of the Bathurst, Bluenose-East and Ahiak caribou herds.	Incomplete; no assessment completed
52	Harvest of wolves should be increased through the suggested incentives, except for assisting harvesters to access wolves on wintering grounds.	Accepted	Increase harvest of wolves to reduce predation pressure on Bathurst caribou herd.	Incomplete; incentives unsuccessful
53	Focused wolf control should not be implemented. If TG and GNWT believe that focused wolf control is required, a management proposal shall be provided to the WRRB for its consideration.	Accepted	Allow for assessment and review of wolf harvest incentives on an annual basis.	Incomplete; feasibility assessment completed but no management proposal submitted
54	TG and GNWT submit a joint management proposal for wood bison in Wek'èezhìı by the fall of 2011 to substantiate the establishment of zones and quotas made through the Interim Emergency Measure.	Varied - 10-year Wood Bison Management Plans for the Nahanni, Slave River Lowland, and Mackenzie herds are set to be completed by the winter of 2012. Development of these plans will review current interim harvest measures	Allow for harvest of wood bison to offset hardship of reduced Bathurst caribou harvest. Ensure bison harvest is sustainable in the long term through a management planning process.	Incomplete; not submitted

		for Wood Bison in Wek'èezhìı. Draft plan will be provided to WRRB for approval. In December 2010, GNWT completed a regulation change to extend the season to September 1st.		
55	TG and GNWT work collaboratively to meet the obligations of Section 12.11 of the Tłı̨chǫ Agreement with support from WRRB staff as needed and a meeting be convened by January 2011.	Accepted	Develop guidance on managing caribou herds through abundance cycles by undertaking a collaborative management planning process.	Completed; ongoing
56	TG increase their capacity to ensure full participation in monitoring and management of caribou.	Accepted	Provide a forum for discussion of scientific and traditional ways of understanding caribou ecology. Allow for Tłı̨chǫ communities to be partners in management and decision-making.	Completed; Wildlife Coordinator hired
57	GNWT, TG and INAC implement its recommendations no later than January 1, 2011. GNWT's Emergency Interim Measures, put into effect on January 1, 2010, should remain in place until then.	Varied - Will be incorporated as part of the implementation plan.	Ensure timely implementation of management actions and that they are understood by Tłı̨chǫ and other Aboriginal harvesters.	Completed
58	TG and GNWT conduct consultations regarding the Recommendations Report prior to January 1, 2011.	Accepted	Ensure timely implementation of management actions and that they are understood by Tłı̨chǫ and other Aboriginal harvesters.	Completed
59	TG and GNWT develop a detailed implementation and consultation plan incorporating the WRRB's recommendations as soon as possible.	Accepted	Ensure timely implementation of management actions and that they are understood by Tłı̨chǫ and other Aboriginal harvesters.	Completed

60	GNWT develop and implement an effective and continuing enforcement and compliance program.	Accepted - The current protocol for GNWT enforcement and compliance program is effective. However, given the scope of the issues GNWT has enhanced its program to be a partnership with other affected Aboriginal organizations.	Ensure that harvest limits are respected, and that wastage and wounding loss is minimized.	Completed

APPENDIX D Review of 2016 Proceeding & Decisions

D.1. Request for Joint Proposal

On May 31, 2013, the WRRB reviewed and recommended continued implementation of Bathurst ʔekwǫ̀ herd recommendations made in its October 2010 Recommendations Report for the 2013/2014 harvesting season. The Board did not provide harvest recommendations for the Bluenose-East ʔekwǫ̀ herd as a separate management proposal for the herd was expected in the near future.

TG and GNWT submitted the *"Joint Proposal on the Caribou Management Actions in Wek'èezhìı (2014-2019)"* under separate cover on June 30, 2014. In the proposal, it was noted that for Bluenose-East ʔekwǫ̀ herd management, the draft *"Taking Care of Caribou"* management plan provided guidance and, if needed, a management proposal would be submitted separately. On July 16, 2014, the WRRB recommended that TG and GNWT begin developing a joint management response to the sharp decline in the Bluenose-East ʔekwǫ̀ population and number of breeding females.

Following the June 2014 reconnaissance survey of the Bluenose-East ʔekwǫ̀ herd, on August 27, 2014, the Minister of GNWT held a meeting of Indigenous leaders and wildlife management authorities to discuss the results, which suggested a continuing declining trend. The leadership agreed to create a technical working group that was tasked with reducing uncertainties regarding the causes behind the herd declines and developing a corresponding plan of action. Technical meetings were held in Yellowknife, NT on October 9-10, 2014 and October 22-23, 2014. Follow-up leadership meetings were held on November 7, 28 and December 4, 2014 in Yellowknife, NT to discuss the working group's proposed plan of action and reach agreement on implementation.

On November 5, 2014, based on the estimated 2013 herd size, the 2014 reconnaissance survey information and the principles stated in the *Taking Care of Caribou* management plan, the ACCWM proposed the herd status colour zone as orange and recommended NWT-specific orange management actions for the Bluenose-East ʔekwǫ̀ herd, related to education, habitat, land use activities, predators and harvest. Further, on November 19 and December 4, 2014, the ACCWM proposed an interim voluntary harvest target of 2800 Bluenose-East ʔekwǫ̀ per year (NWT overall harvest of 1800 ʔekwǫ̀), with a focus on a majority-bulls harvest, emphasizing younger and smaller bulls and not the large breeders and leaders. The ACCWM stated that if GNWT had evidence to suggest that the harvest target had been exceeded by 10% or more for the 2014/2015 harvesting season, then, after consultation with the ACCWM, regulations should be put in place to close all harvesting in areas occupied by the Bluenose-East ʔekwǫ̀ herd.

GNWT responded to the ACCWM on December 17, 2014 with a commitment to implement the *Taking Care of Caribou* management plan, ensuring that land claim processes are honoured. Further, GNWT requested advice from the ACCWM on a proposed overall approach for Bluenose-East ʔekwǫ̀ herd management, including a reduced harvest target for the NWT, mandatory harvest reporting, an allocation formula, and an increase in the number of satellite collars. On January 9, 2015, the ACCWM responded with its concerns about the proposed short-term management approach for the Bluenose-East ʔekwǫ̀ herd undermining the process set out in the management plan and setting unrealistic timelines for the development, community approval and implementation of a harvest allocation and harvest monitoring and reporting program. The ACCWM requested that GNWT respect the processes set out in the management plan for action planning, implement the previous recommendation of a voluntary harvest target of 2800 Bluenose-East ʔekwǫ̀ per year (NWT overall harvest of 1800 ʔekwǫ̀), and actively enforce a proposed 80:20 bull:cow harvest ratio.

On January 21, 2015, GNWT accepted the ACCWM's recommendation of a limit of 1800 Bluenose-East ʔekwǫ̀ for the NWT for the 2014/15 harvest season, including an 80:20 bull:cow harvest ratio, and proposed regulations to required authorizations to harvest bull-only barren-ground caribou in R/BC/01, R/BC/02 and R/BC/03. On January 26, 2015, the ACCWM supported GNWT's proposal to require bull-only authorization cards for harvest within R/BC/01, R/BC/02 and R/BC/03, with emphasis on younger and smaller bulls and not the large breeders and leaders. While GNWT also requested input on the harvest allocation of the 1800 Bluenose-East ʔekwǫ̀ for the Sahtú and Wek'èezhìı regions, the ACCWM felt that it was inappropriate to make any decisions on harvest allocation without input and approval from all Indigenous harvesters of the Bluenose-East ʔekwǫ̀ herd. Therefore, the ACCWM recommended that a meeting of all Indigenous users be held to determine the allocation of the Bluenose-East ʔekwǫ̀ herd and have clarity on any proposed regulations.

The SRRB sponsored the *Sahtú Gathering for the Caribou* on January 27-29, 2015 in Délı̨nę, NT. The meeting included representatives from the five Sahtú communities, the NWT Wildlife Management Advisory Council, the Inuvialuit Game Council, Kugluktuk Angoniatit Association, TG, and Parks Canada. At the gathering, GNWT requested feedback on the issues to be considered regarding harvest allocations for the Bluenose East ʔekwǫ̀. Following discussion, seven points of consensus were presented: 1) decisions are needed about how to share the caribou; 2) important matters require an in-person meeting of the parties; 3) timelines for discussions and decisions should not be imposed by the Minister; rather, they need to be agreed upon by the parties. Allocations should be arrived at and implemented for the 2015-2016 harvesting season as it is not feasible to accomplish this for the current harvesting season; 4) according to the best available information, the current status of the Bluenose East caribou does not constitute an emergency.; 5) the health of the caribou depends on the health of the

Indigenous peoples, their ability to *Dene Ts'ı̨lı̨* (Be Dene); 6) the full range of actions, as presented by the Indigenous Caucus at the November 28, 2014 meeting with the Minister, and as outlined in the Bluenose Caribou Management Plan, is needed to address declining trends; and, 7) education is needed in the communities to prepare the ground for any decisions that will be made.

A conference call was convened on February 2, 2015 with all affected Indigenous organizations and wildlife management authorities of the Bluenose-East ɂekwǫ̀ herd to discuss a proposed harvest allocation for the remainder of the 2014/2015 harvest season. Unfortunately, many organizations were unable to participate in the call, and those able to call in were uncomfortable with supporting an allocation or criteria for allocation without all traditional users of the herd taking part in the discussion.

Taking into consideration the discussion during the February 2, 2015 conference call and the consensus points provided from the *Sahtú Gathering for the Caribou*, GNWT responded on February 6, 2015 with the following allocation of 1800 authorizations for the Bluenose-East ɂekwǫ̀ herd for the 2014/15 harvest season: Tłı̨chǫ: 1100; Sahtú: 480; Inuvialuit: 25; NWT Métis Nation: 40; Akaitcho Territorial Government: 60; and, NSMA: 50. In addition to caribou harvest measures, GNWT indicated additional approaches to be implemented would include predator management measures, such as increased payments for the wolf incentive program; monitoring actions; compliance and enforcement measures; enhanced education and communication activities; "sight in your rifle" events; and addressing impacts of disturbance on ɂekwǫ̀ herds with land use planners and industry.

On July 9 and September 24, 2015, GNWT provided updates to the WRRB about the Bluenose-East ɂekwǫ̀ herd calving group surveys conducted in June 2015. The results presented indicated a continued decline in the total number of breeding cows since the 2013 calving ground photo survey. The final population estimate would be provided by the end of October, following a composition survey to estimate the sex ratio.

On August 25, 2015 and September 22, 2015, respectively, TG and GNWT provided short-term ɂekwǫ̀ management recommendations for the 2015/16 harvest season. The Board responded to TG and GNWT, on September 25, 2016, with reasons for decisions and a list of recommendations for the 2015/16 harvest season, including agreeing on and implementing a reduction in the number of ɂekwǫ̀ harvested by subsistence users[183] of the Bluenose-East ɂekwǫ̀ herd. In addition, in order to implement determinations and/or recommendations by July 1, 2016, the WRRB requested the submission of a joint management proposal for the Bluenose-East ɂekwǫ̀ herd, for the 2016/17 harvest season and beyond, by no later than November 15, 2015. Due to

[183] Subsistence users include Tłı̨chǫ Citizens and members of an Aboriginal people, with rights to harvest wildlife in Wek'èezhìı, as per Section 12.6.5(b)(i) of the Tłı̨chǫ Agreement.

consultation requirements, TG and GNWT approached the Board on October 15, 2015 requesting an extension of the time for the submission of a joint management proposal for the Bathurst ʔekwǫ̀ herd until December 15, 2015. On October 21, 2015, the Board accepted the extension request despite concerns about future timing issues, including the implementation of management actions in the 2016/2017 harvest season.

On November 27, 2015, TG and GNWT accepted the WRRB's recommendations and came to an agreement to implement, for the 2015/16 harvest season, a harvest target of 950 bulls only for Indigenous harvest of the Bluenose-East ʔekwǫ̀ herd (including Nunavut). Additionally, it was noted that work will continue with authorities in Nunavut towards implementing a consistent approach to harvest of Bluenose-East ʔekwǫ̀ in Nunavut and NWT.

A final update on the status and management of the Bluenose-East ʔekwǫ̀ herd was provided by GNWT on December 2, 2015, including the final population estimate and the suggestion that the Bluenose-East herd is close to the red zone, as per the *Taking Care of the Caribou* management plan.

On January 20, 2016, GNWT and representatives of traditional users and wildlife management authorities met to discuss and come to agreement on a proportional harvest allocation for the Bluenose-East herd for the 2016/17 harvest season and beyond. Meeting participants agreed that the proposed TG and GNWT harvest allocation formula is 'close' and should be seriously considered and consulted on by all groups.

D.2. Receipt of 2015 Joint Proposal

In June 2015, GNWT conducted a calving ground photographic survey and estimated the Sahtì ekwǫ̀ herd had declined to 38,600 ʔekwǫ̀. On December 15, 2015, TG and GNWT submitted the "*Joint Proposal on Management Actions for Bluenose-East Caribou 2016-2019"* to the Board outlining proposed management actions for the Sahtì ekwǫ̀ herd in Wek'èezhìı, including new restrictions on hunter harvest, predator management and ongoing monitoring. More specifically, TG and GNWT proposed implementing a herd-wide total allowable harvest of 950 bulls only and allocation for the Sahtì ekwǫ̀ herd and conducting a feasibility assessment of a full range of dìga management actions. The WRRB considered the proposed restriction of harvest as the establishment of a TAH and, therefore, was required to hold a public hearing. The public hearing took place April 6-8, 2016 in Behchokǫ̀, NT.

In anticipation of the proposal, the SRRB and the WRRB signed a *"Memorandum of Understanding Regarding Collaborative Efforts for the Management of the Bluenose-East Caribou Herd"* in October 2015 to ensure management of proceedings related to the Sahtì ekwǫ̀ herd would be as effective as possible. Each Board conducted its own proceeding, including public hearings in both the Sahtú and Wek'èezhìı areas. Each Board submitted its own Reasons for Decision report.

D.3. 2016 Board Decisions

In order to allow careful consideration of all the evidence on the record and to meet legislated timelines, the WRRB decided to prepare two separate reports to respond to the proposed management actions in the joint management proposal. The first report, Part A, dealt with the proposed harvest management actions that required regulation changes in order for new regulations to be in place for the start of the 2016/17 harvest season, as well as the proposed dìga feasibility assessment. The second report, Part B, dealt with additional predator management actions, biological and environmental monitoring, and cumulative effects.

On June 10, 2016, the WRRB submitted its final determinations and recommendations and Part A Reasons for Decision Report to TG and GNWT. The WRRB determined that a TAH of 750 bulls only should be implemented for all users of the Bluenose-East ʔekwǫ̀ herd within Wek'èezhìı for the 2016/17, 2017/18, 2018/19 harvest seasons. Further, the Board determined that the proportional allocation of the TAH of the Sahtì ekwǫ̀ herd for the 2016/17, 2017/18, 2018/19 harvest seasons should be as follows: Tłı̨chǫ Citizens – 39.29%, and Members of an Indigenous people who traditionally harvest Sahtì ekwǫ̀ (including Nunavut) – 60.71%.

The Board recommended that TG and GNWT agree on an approach to designating zones for aerial and ground-based surveillance throughout the fall and winter harvests seasons from 2016 to 2019. Additionally, the WRRB recommended weekly communication updates, timely implementation of hunter education programs for all harvesters of the Sahtì ekwǫ̀ herd, and development of harvesting overlap agreements with the Sahtú and Nunavut.

The WRRB recommended that the dìga feasibility assessment set out in the proposal be led by the Board with input and support from TG and ENR. As well, if deemed successful, the Community-based Dìga Harvesting Project would be extended in 2016-2017 to the Sahtì ekwǫ̀ herd and incorporated into an adaptive wolf management approach.

On October 3, 2016, the WRRB submitted its final recommendations and Part B Reasons for Decision Report to TG and GNWT. The WRRB recommended consultations with Tłı̨chǫ communities to determine a path forward for implementation of Tłı̨chǫ laws to continue the Tłı̨chǫ way of life and maintain their cultural and spiritual connection with ʔekwǫ̀.

In addition, the WRRB recommended several Tłı̨chǫ Knowledge (TK) research and monitoring programs focusing on dìga, sahcho, stress and other impacts on ʔekwǫ̀ from collars and aircraft over-flights, and an assessment of quality and quantity of both summer and winter forage.

The Board recommended a biological assessment of sahcho as well as requesting that the Barren-ground Caribou Technical Working Group (BGCTWG) prioritize biological monitoring indicators and develop thresholds under which management actions can be taken and evaluated. All scientific and TK monitoring data will be provided to BGCTWG annually to ensure ongoing adaptive management.

The WRRB recommended the implementation of Tłı̨chǫ Land Use Plan Directives as well as completing a Land Use Plan for the remainder of Wek'èezhìı. The Board also recommended the development of criteria to protect key ʔekwǫ̀ habitat, including water crossings and tataa, using the Conservation Area approach in the NWT's *Wildlife Act*, offsets and value-at risks in a fire management plan. Additionally, the WRRB recommended the development of monitoring thresholds for climate indicators.

APPENDIX E Review of 2016 WRRB Determinations and Recommendations

Recommendation #	WRRB Recommendations	TG/GNWT Responses	Status
WWRB Reasons for Decision Part A			
Determination #1-2016	♦ A total allowable harvest of 750 bulls only for all users of the Bluenose-East herd be implemented for the 2016/17, 2017/18, 2018/19 harvest seasons.		♦ Completed
Determination #2-2016	♦ The proportional allocation of TAH of the Bluenose-East herd for the 2016/17, 2017/18, 2018/19 harvest seasons shall be as follows: Tlicho citizens (39.2%); Members of an Aboriginal people who traditionally harvest Bluenose East (includes Nunavut) (60.71%). TG should determine distribution of the allocation within Tlicho communities, and GNWT should determine distribution of the allocation to members of an Aboriginal people who traditionally harvest Bluenose-East in consultation with those groups.		♦ Completed
Recommendation #1-2016	♦ TG and GNWT come to an agreement on the most effective wildlife management zone approach to differentiate herds, and then implement the approach with criteria for managing any overlaps between	♦ Appears to accept. In our response dated June 29, 2016 on WRRB determinations and recommendations for the Bathurst herd, TG and GNWT described a revised version of the Bathurst mobile no-harvest	♦ Completed, Mobile Core Bathurst Caribou Conservation Area implemented

Recommendation #	WRRB Recommendations	TG/GNWT Responses	Status
	herds, for the 2016/17, 2017/18, and 2018/19 harvest seasons.	zone that they had agreed on. Details of that option are set out in Appendix "A". We note that regulations required for the Bathurst mobile zone are already in place and will be modified as quickly as practicable to reflect the updated definition of mobile zone boundaries as listed in Appendix "A". GNWT will amend regulations to reflect the WRRB determination for BNE harvest within Wek'èezhìı as soon as practicable.	
Recommendation #2-2016	♦ TG and GNWT provide weekly harvest updates to the WRRB and the general public for the Bluenose-East herds throughout the fall and winter harvest seasons for the 2016/17, 2017/18, and 2018/19.	♦ Recommendations 2 and 3 – Vary. As noted in the June 29th, 2016 joint response to the WRRB on recommendations for Bathurst caribou, the GNWT is currently going through a period of severe fiscal restraint and budget reduction. It is not possible for GNWT to commit to weekly aerial monitoring of harvesting areas where Bluenose-East caribou are being harvested during winter. As in previous winters areas where Bluenose-East caribou are being harvested will be monitored by a combination of community monitors a game-check station on the winter road to the Tłı̨chǫ communities aerial reconnaissance	♦ Incomplete; inconsistent reporting

Recommendation #	WRRB Recommendations	TG/GNWT Responses	Status
		surveys, and ground patrols on winter roads and trails in Bluenose-East range. Weekly updates on any new monitoring information on harvest and compliance will be provided to the WRRB, and periodic updates can be provided to the general public.	
Recommendation #3-2016	♦ TG and GNWT provide weekly updates to the WRRB and the general public on aerial and ground-based compliance surveillance of the Bluenose-East herd throughout the fall and winter harvest seasons for the 2016/17, 2017/18, and 2018/19.	♦ Recommendations 2 and 3 – Vary. As noted in the June 29th, 2016 joint response to the WRRB on recommendations for Bathurst caribou, the GNWT is currently going through a period of severe fiscal restraint and budget reduction. It is not possible for GNWT to commit to weekly aerial monitoring of harvesting areas where Bluenose-East caribou are being harvested during winter. As in previous winters areas where Bluenose-East caribou are being harvested will be monitored by a combination of community monitors a game-check station on the winter road to the Tłı̨chǫ communities aerial reconnaissance surveys, and ground patrols on winter roads and trails in Bluenose-East range. Weekly updates on any new monitoring information on harvest and compliance will be	♦ Completed

Recommendation #	WRRB Recommendations	TG/GNWT Responses	Status
		provided to the WRRB, and periodic updates can be provided to the general public.	
Recommendation #4-2016	♦ TG and GNWT increase public education efforts and implement GNWT's recently developed Hunter Education program in Tlicho communities. GNWT should also implement the Hunter Education program for Aboriginal people who traditionally harvest Bluenose-East caribou.	♦ Recommendation 4 – Accept	♦ Completed
Recommendation #5-2016	♦ TG negotiate caribou harvesting overlap agreements with Nunavut and the Sahtú region to make certain that existing relationships endure.	♦ Recommendation 5 – This recommendation was addressed in previous discussions with WRRB and the Chief's Executive Council has authorized staff to initiate discussions with Nunavut and Sahtú.	♦ Incomplete; agreements not negotiated
Recommendation #6-2016	♦ If the Community-based wolf Harvesting Project is to be expanded to other Tlicho communities, a management proposal must be submitted to the WRRB for review and approval. Further, if the Project is to be expanded in scope, prior to the submission of a management proposal to the WRRB, an index of	♦ Accept	♦ Not required

Recommendation #	WRRB Recommendations	TG/GNWT Responses	Status
	changing wolf abundance must be available and research on habitat quality and quantity on the Bluenose-East herd range must be conducted.		
Recommendation #7-2016	♦ TG and GNWT support a collaborative feasibility assessment of options for wolf management, led by the Board.	♦ Appears to accept. A working group with representatives of GNWT, WRRB, TG, NSMA and YKDFN has been meeting in summer 2016 to collaboratively develop the wolf management feasibility assessment for the Bathurst range in the NWT. Łutsel K'e Dene First Nation (LKDFN) has been invited to participate in the working group. As noted in the TG and GNWT joint management proposal on the Bluenose-East herd, methods being developed for the feasibility assessment underway for the Bathurst herd could be extended to the Bluenose-East herd's range once the Bathurst assessment is complete. The working group that is developing the feasibility assessment for the Bathurst herd could be re-configured to consider wolf management in the range of the BNE herd.	♦ Completed
WWRB Reasons for Decision Part B			

Recommendation #	WRRB Recommendations	TG/GNWT Responses	Status
Recommendation #1B-2016	♦ TG consult with Tlicho communities by March 2017 to ensure Tlicho laws are implemented with respect to caribou harvesting practices to maintain the Tlicho way of life and the relationship with caribou.	♦ TG vary. TG agrees with recommendation insofar as it concerns consultation with Tlicho communities with respect to caribou harvesting practices and maintaining the Tlicho way of life and relationship with caribou. However, the passage and/or implementation of Tlicho laws is a matter outside the jurisdiction of the Board. This recommendation should be varied to remove that reference.	♦ Incomplete
Recommendation #2B-2016	♦ TG conduct TK research to define, from the Tlicho perspective, types of caribou, their behaviour, and their annual range, and their relationship with caribou and people by March 2017.	♦ TG vary. TG agrees that studies are needed. TG wants to combine Recommendations 2B, 3B, 5B, 15B and 21B into a comprehensive TK student.	♦ Incomplete
Recommendation #3B-2016	♦ TG conduct TK research on sahcho (grizzly bear) predation on caribou and their relationship with caribou, other wildlife and people by June 2017.	♦ TG vary. See recommendation 2B.	♦ Incomplete
Recommendation #4B-2016	♦ TG/GNWT conduct a collaborative grizzly bear biological assessment, following completion of the ongoing wolf feasibility assessment for the Bathurst herd. The assessment should include summarizing available information	♦ TG/GNWT appear to agree. NWT Species at Risk Committee to prepare species status report for grizzly bear in NWT and will address recommendation 4B.	♦ Incomplete

Recommendation #	WRRB Recommendations	TG/GNWT Responses	Status
	on sahcho (grizzly bear) abundance, movement and diet for the Bluenose-East herd's as well as including TK collected in Recommendation #3B-2016.		
Recommendation #5B-2016	♦ TG conduct TK research about stress and impacts on caribou and people related to collars and aircraft over-flights by September 2017, which should be considered in determining numbers of collars deployed in 2018 and beyond.	♦ TG vary. See recommendation 2B.	♦ Incomplete
Recommendation #6B-2016	♦ GNWT determine whether reconnaissance surveys should be conducted during non-photo survey years with renewable resource boards, Aboriginal governments and other affected organizations in the NWT and Nunavut prior to conducting the next reconnaissance survey in June 2017.	♦ GNWT vary. Suggests that Barren Ground Caribou Technical Working Group (BGCTWG) review value of reconnaissance surveys.	♦ Incomplete; no longer required
Recommendation #7B-2016	♦ Recommendation 7B – TG/GNWT provide a summary of scientific and TK monitoring data, including harvest and collar mortalities as soon as available each year, to the BGCTWG.	♦ TG/GNWT accept.	♦ Incomplete

Recommendation #	WRRB Recommendations	TG/GNWT Responses	Status
Recommendation #8B-2016	♦ TG/GNWT work with the BGCTWG to prioritize biological monitoring indicators in order of need for effective management and develop thresholds under which management actions can be taken and evaluated. Additionally, TG and GNWT should work with the BGCTWG to outline the trade-off between concerns about effects on and the collection of statistically credible information for both the number of collars and over-flights on the calving grounds. Implementation of this recommendation should be completed by no later than the end of March 2017.	♦ GNWT/TG vary. Suggest current monitoring of herds to be reviewed with BGCTWG during winter 2016-2017 to assess priorities for monitoring particularly if budget constraints limit resources.	♦ Incomplete
Recommendation #9B-2016	♦ TG refine and implement Tlicho Land Use Plan Directives, under Chapter 6 related to caribou, land use, and cumulative effects by March 2018.	♦ TG acknowledges suggestion and advises the Board that it intends to refine and implement the Tlicho LUP directives related to caribou. TG notes that land use planning in Wek'èezhìı is beyond the jurisdiction of the Board.	♦ Incomplete
Recommendation #10B-2016	♦ TG/GNWT initiate, develop and implement a land use plan for Wek'èezhìı by March 2019.	♦ GNWT vary. Suggests that GNWT work collaboratively with TG, federal government, and other Aboriginal Government Organizations and planning partners to initiate, develop and implement a	♦ Incomplete

Recommendation #	WRRB Recommendations	TG/GNWT Responses	Status
		government-led approach to land use planning for public lands in Wek'èezhìı. GNWT notes that this suggestion goes beyond the authority of the Board (should be a suggestion, not a recommendation). ♦ TG agrees in substance with GNWT.	
Recommendation #11B-2016	♦ TG/GNWT develop criteria under which Conservation Areas in the NWT's Wildlife Act will be used to protect key caribou habitat by March 2018.	♦ TG/GNWT vary. Suggest that TG, GNWT, and partners, through the Bathurst Range Planning Process, develop criteria to determine when to protect key caribou habitat by March 2018. Until the range plan assessment is complete, it is premature to assume that the Conservation Areas will be the best tool to achieve protection objectives. GNWT commits to ensuring that the Conservation Area approach will be considered.	♦ Incomplete; conservation areas noted as tool in Bathurst Caribou Range Plan
Recommendation #12B-2016	♦ TG/GNWT develop criteria to protect caribou water crossings from exploration and development activities in the NWT by 2018 to be included in the Tlicho and Wek'èezhìı Land Use Plans.	♦ TG/GNWT accept.	♦ Incomplete

Recommendation #	WRRB Recommendations	TG/GNWT Responses	Status
Recommendation #13B-2016	♦ TG/GNWT investigate and report to the WRRB and other stakeholders on the potential use of offsets for caribou recovery to compensate for losses caused by exploration and development activities by March 2018. A set of criteria should be developed to assess effectiveness of each type of offset as it is investigated.	♦ TG/GNWT accept.	♦ Incomplete
Recommendation #13B-2016	♦ TG/GNWT complete and implement a fire management plan with criteria identifying under which the key caribou habitat is defined as a value-at-risk by March 2018.	♦ TG/GNWT vary. Suggest recommendation is opportunity to involve community members in identifying important caribou habitat and to explain how fire management decisions are made and how wildland fires play a crucial role in the boreal ecosystem. GNWT is limited in its ability to control all fires on vast NWT landscape and total exclusion of wildland fire would not be ecologically healthy for the environment or wildlife. While caribou habitat is identified as a value at risk, it is lower in priority than the protection of life and property.	♦ Incomplete
Recommendation #16-2016	♦ TG conduct a TK monitoring project with elders to document how climate conditions have affected	♦ Recommendation 15B – TG vary. See response to Recommendation 2B.	♦ Incomplete

Recommendation #	WRRB Recommendations	TG/GNWT Responses	Status
	preferred summer forage and impacted caribou fitness by September 2018.		
Recommendation #16-2016	♦ TG conduct TK monitoring to assess the quality and quality of winter forage by September 2018.	♦ TG vary. See response to Recommendation 2B.	♦ Incomplete
Recommendation #17-2016	♦ TG/GNWT work with the BGCTWG to develop monitoring thresholds for climate indicators by March 2017.	♦ GNWT/TG vary. GNWT/TG are willing to review with the BGCTWG annual information on climate indicators and discuss thresholds for indicators relevant to caribou. GNWT/TG would support research that links climate indicators to caribou demography; at this point, linkage between climate indicators and caribou population trend is not well established. GNWT would request clarification of what WRRB is proposing on thresholds for climate indicators.	♦ Incomplete

APPENDIX F List of Registered Parties

Proponents
Tłı̨chǫ Government
Department of Environment & Natural Resources, Government of the Northwest Territories

Intervenors
Canadian Arctic Resources Committee
Délı̨nę Got'ı̨nę Government
North Slave Métis Alliance
Yellowknives Dene First Nation

Registered General Public
Louis Wedawin
Chief Charlie Football
Lucy Lafferty
Phillip Dryneck
Henry Gon
Jimmy Kodzin
Michel Moosenose
Bobby Pea'a
Pierre Tlokka
Jimmy Arrowmaker
Alphonse Apples
Charlie Apples
Joe Mantla

APPENDIX G Summary Table of Party Recommendations

Total Allowable Harvest		
Intervenor	**Recommendation**	**WRRB Response**
Délı̨nę Got'ı̨nę Government	Follow the Délı̨nę Got'ı̨nę Plan of Action for Caribou Conservation, entitled *"Belare wíle Gots'ę́ ʔekwę́ – Caribou for All Time"*	
North Slave Métis Alliance	Set a variable TAH of up to 300 bull-only BNE caribou per season.	Sec 7.2.4. Determination #1-2019 (Sahtì Ekwǫ̀)
Yellowknives Dene First Nation		
Harvest Allocation		
Party	**Recommendation**	**WRRB Response**
Délı̨nę Got'ı̨nę Government	Follow the Délı̨nę Got'ı̨nę Plan of Action for Caribou Conservation, entitled *"Belare wíle Gots'ę́ ʔekwę́ – Caribou for All Time"*	
North Slave Métis Alliance		
Yellowknives Dene First Nation	Do not agree with the proposed harvest allocation of 6 bulls for YKDFN	Sec 7.3.4., Determination #2-2019 (Sahtì ekwǫ̀)
Harvest Monitoring		
Intervenor	**Recommendation**	**WRRB Response**
Délı̨nę Got'ı̨nę Government	Follow the Délı̨nę Got'ı̨nę Plan of Action for Caribou Conservation, entitled "Belare wíle Gots'ę́ ʔekwę́ – Caribou for All Time"	
North Slave Métis Alliance		
Yellowknives Dene First Nation	TG and ENR need to outline within the management plan how exactly they will deal with the enforcement to ensure adherence.	Sec 7.4.4., Recommendation #1-2019 (Sahtì Ekwǫ̀)
	Consideration should be given to ensuring capacity building in the event thae ENR staff cannot already distinguish among caribou herds by appearance in the field	
Predators		
Party	**Recommendation**	**WRRB Response**
Délı̨nę Got'ı̨nę Government		
North Slave Métis Alliance	The ENR should undertake predator population surveys and collar monitoring programs immediately, starting in 2019. The surveys and monitoring should precede any aggressive programs (e.g., aerial shooting or ground shooting at den sites). At a minimum, the following data must be obtained before aggressive predator (wolf or grizzly) removal programs take place: - Population - Productivity - Pup survival rate - Main prey and its % of the diet - Satellite collar monitoring	Appendix H - WRRB Predator Management Recommendations and Government Response
Yellowknives Dene First Nation	Wolves should be collared to provide a dataset that can be matched against exisiting and future collared caribou data.	Appendix H - WRRB Predator Management Recommendations and Government Response

Habitat and Land Use		
Intervenor	**Recommendation**	**WRRB Response**
Délı̨nę Got'ı̨nę Government		
North Slave Métis Alliance		
Yellowknives Dene First Nation	Further analysis should be done on how caribou behaviour is affected by development and mines.	Sec 7.9 Research & Monitoring, Recommendation #15-2019 (Sahtì E)
Adaptive Management		
Intervenor	**Recommendation**	**WRRB Response**
Délı̨nę Got'ı̨nę Government		
North Slave Métis Alliance	TAH should be annually reviewed based on cow and calf survival rates, using an adaptive management framework and response plan.	Sec 7.8. Adaptive Management
Yellowknives Dene First Nation		
Research and Monitoring		
Intervenor	**Recommendation**	**WRRB Response**
Délı̨nę Got'ı̨nę Government		
North Slave Métis Alliance		
Yellowknives Dene First Nation	Caribou should not be monitored with collars.	Sec 7.9. Research and Monitoring, Recommendation #13-2019 (Sahtì Ekwǫ̀)
	Caribou should be monitored on the land.	Sec 7.9. Research and Monitoring, Recommendation #15-2019 (Sahtì Ekwǫ̀)
Other		
Intervenor	**Recommendation**	**WRRB Response**
Délı̨nę Got'ı̨nę Government		
North Slave Métis Alliance	"The management proposal on reduction of wolf numbers", GNWT should immediately invite the NSMA to the ongoing discussion, without waiting for the completion of the full draft	
	Identifying "appropriate cultural activities and harvest of other wildlife", the GNWT should invite the NSMA to the ongoing discussion or initiate a new bilateral discussion with the NSMA	
	The "monthly" staff meeting on the management of BNE, Bathurst, and Beverly/Ahiak caribou herds, GNWT should immediately invite the NSMA staff to the meetings.	
	"Supporting other harvesting initiatives", GNWT should invite the NSMA to the ongoing discussion or initiate a new bilateral discussion with the NSMA	
Yellowknives Dene First Nation	Management Proposals should be written with input from YKDFN and other Indigenous communities.	

APPENDIX H WRRB Predator Management Recommendations and Government Response

Wek'èezhìı
Renewable Resources Board

February 6, 2019

Hon. Robert C. McLeod, Minister
Environment and Natural Resources
Government of the Northwest Territories
Box 1320
Yellowknife, NT X1A 2L9
Email: Robert_C_McLeod@gov.nt.ca

Via Email
Robert_C_McLeod@gov.nt.ca
georgemackenzie@tlicho.com

Grand Chief George Mackenzie
Tłı̨chǫ Government
Box 412
Behchokǫ̀, NT X1A 1Y0
Email: georgemackenzie@tlicho.com

Re: Section 12.5.6 of the Tłı̨chǫ Agreement – WRRB Predator Management Recommendations

Dear Minister McLeod & Grand Chief Mackenzie:

Background:
The *Kokètì Ekwǫ̀* (Bathurst caribou) and *Sahtì Ekwǫ̀* (Bluenose-East caribou) herds are both in a precipitous decline. The decline of the kokètì ekwǫ̀ herd was first documented in 1996 when the population was estimated at 349,000 animals, down from 420,000 in 1986. Management actions to date have failed to halt the decline and the herd's population was estimated at 8,200 animals in 2018. The decline of the sahtì ekwǫ̀ herd was first documented in 2013 when the herd's population was estimated at 68,000 animals, down from 121,000 in 2010. In 2018, the herd's population was estimated at 19,000 animals.

Range management, harvest restrictions and intensive study are being implemented or are already occurring in Wek'èezhìı for both herds. Previous joint management proposals for the kokètì ekwǫ̀ herd by the Department of Environment & Natural Resources (ENR), Government of the Northwest Territories (GNWT) and Tłı̨chǫ Government (TG) resulted in the Wek'èezhìı Renewable Resources Board (WRRB) holding public hearings in 2010 and again in 2016. A public hearing was also held to address management proposals for the sahtì ekwǫ̀ herd in 2016.

On January 14 and January 22, 2019 respectively, the WRRB received joint management proposals for the sahtì ekwǫ̀ and kokètì ekwǫ̀ herds. These management proposals propose a number of actions. However, despite WRRB recommendations for the implementation of predator control dating as far back as 2010, neither of the current management proposals includes a plan for predator management in either the sahtì ekwǫ̀ or kokètì ekwǫ̀ ranges. Instead your governments have indicated their intention to address the control of predators, more specifically *Dìga* (wolves), in a separate joint management proposal later in the spring of 2019.

<u>The Issue</u>:
The situation for both of these herds is dire. Analysis of the joint management proposals by the Board and its advisors indicates an immediate need for action to reduce predation on the herds. During its 2016 public hearings and most recently in the TG-ENR *Ekwǫ̀* (barren-ground caribou*)* consultation tours, conducted on January 21-23, 2019, the WRRB has heard from the community members that dìga are continuing to put pressure on ekwǫ̀ populations. Community members would like to see action taken now. The Board agrees.

<u>The Authority for WRRB Recommendations</u>:
Section 12.5.6 of the Tłı̨chǫ Agreement states:

> *The Wek'èezhìı Renewable Resources Board may, without waiting for a proposal from a Party, make the following recommendations or determinations, after consulting with any Party or body with powers to manage any aspect of the subject matter of its recommendation or determination:*
> *(a) Recommend actions for management of harvesting in Wek'èezhìı, including*
> *(i) A total allowable harvest level for any population or stock of fish,*
> *(ii) Harvest quotas for wildlife or limits as to location, methods, or seasons of harvesting wildlife, or*
> *(iii) The preparation of a wildlife management plan; …*

The WRRB has chosen not to wait for ENR and TG to submit their predator management proposal to the Board later this spring. The 20% rate of annual decline of the kokètì ekwǫ̀ and sahtì ekwǫ̀ herds is in the Board's opinion so serious that waiting any longer to act will make recovery of the herds even more difficult. The Board is convinced that early action is essential.

In consideration of the updated 2018 sahtì ekwǫ̀ and kokètì ekwǫ̀ herd estimates and recent consultations with Tłı̨chǫ communities the WRRB makes the recommendations set out below to GNWT and the TG:

Recommendation #1-2019 (Predator): The WRRB supports continuing the ENR's dìga harvest incentive program and the TG's Community Based Dìga Harvesting Project as an education tool.

Recommendation #2-2019 (Predator): The WRRB recommends that dìga monitoring be undertaken so that population estimates, or indexes are generated. In addition, as much information as possible, including condition, diet, and reproductive status, should be collected from each harvested dìga.

Recommendation #3-2019 (Predator): The WRRB recommends that dìga management be undertaken in Wek'èezhìı. TG and ENR should review the *"Wolf Technical Feasibility Assessment: Options for Managing Wolves on the Range of the Bathurst Barren-ground Caribou Herd"* submitted in November 2017 to determine the most effective, humane and cost-efficient methods that would have the least impact and disturbance on the ekwǫ̀ herds themselves.

Recommendation #4-2019 (Predator): The WRRB recommends that dìga management should be closely monitored for effectiveness of halting or slowing the decline of the sahtì ekwǫ̀ and kokètì ekwǫ̀ herds in order to provide future harvesting opportunities.

Recommendation #5-2019 (Predator): The WRRB recommends that the GNWT and TG work with the Government of Nunavut to enact predator management actions on the calving grounds of sahtì ekwǫ̀ and kokètì ekwǫ̀ in Nunavut.

Recommendation #6-2019 (Predator): The WRRB commits to striking a working group to begin work on a *sahcho* (grizzly bear) biological assessment by June 2019, specifically on the sahtì ekwǫ̀ and kokètì ekwǫ̀ herds herd ranges. This working group will include at minimum the GNWT, TG and the Government of Nunavut. WRRB staff recommend that sahcho are monitored in order to determine if pressures are increasing on ekwǫ**.**

Recommendation #7-2019 (Predator): WRRB staff recommend that *golden det'ǫcho* (golden eagle) are monitored in order to determine if pressures of golden det'ǫcho are increasing on ekwǫ̀. WRRB staff recommends that TG and the GNWT work with the Government of Nunavut to support golden det'ǫcho monitoring.

In addition, as per Section 12.5.8 of the Tłı̨chǫ Agreement, the Board requests a response to these recommendations by March 6, 2019.

Conclusion:
The WRRB believes that predator management must begin by May 2019 in order to promote recovery of the herds. This action is essential to ensure the potential for a future harvest of sahtì ekwǫ̀ and kokètì ekwǫ̀.

The WRRB will, in accordance with the Tłı̨chǫ Agreement participate in any consultations on these proposals that the ENR or TG decides to undertake.

If there are any questions, please contact our office at (867) 873-5740 or jpellissey@wrrb.ca.

Sincerely,

Joseph Judas, Chair
Wek'èezhìı Renewable Resources Board

Cc Dr. Joe Dragon, Deputy Minister, ENR-GNWT
Rita Mueller, Assistant Deputy Minister, Operations, ENR-GNWT
Bruno Croft, Superintendent, North Slave Region, ENR-GNWT
Laura Duncan, Tłı̨chǫ Executive Officer, TG
Tammy Steinwand-Deschambeault, Director, Culture and Lands Protection, TG
Michael Birlea, Manager, Culture and Lands Protection, TG

Tłįchǫ Ndek'àowo
Tłįchǫ Government

Government of Northwest Territories Gouvernement des Territoires du Nord-Ouest

MAR 07 2019

Mr. Joseph Judas, Chair
Wek'èezhìi Renewable Resources Board
4504 49TH AVENUE
YELLOWKNIFE NT X1A 1A7

Dear Mr. Judas:

Re: Section 12.5.6 of the Tłįchǫ Agreement – WRRB Predator Management Recommendations

Thank you for your letter dated February 6, 2019 providing the Wek'èezhìı Renewable Resources Board's (WRRB) recommendations to the Tłįchǫ Government (TG) and the Department of Environment and Natural Resources (ENR), Government of the Northwest Territories.

TG and ENR are providing the attached joint response to the WRRB's recommendations.

Sincerely,

Grand Chief George Mackenzie
Tłįchǫ Government
Behchokǫ̀, NT

Robert C. McLeod, Minister
Environment and Natural Resources
Yellowknife, NT

Attachment

c. Dr. Joe Dragon, Deputy Minister
Environment and Natural Resources

Ms. Rita Mueller, Assistant Deputy Minister, Operations
Environment and Natural Resources

Dr. Brett Elkin, Director, Wildlife
Environment and Natural Resources

Mr. Bruno Croft, Superintendent, North Slave Region
Environment and Natural Resources

Ms. Laura Duncan, Tłı̨chǫ Executive Officer
Tłı̨chǫ Government

Ms. Tammy Steinwand-Deschambeault, Director, Culture and Lands Protection
Tłı̨chǫ Government

Mr. Michael Birlea, Manager, Culture and Lands Protection
Tłı̨chǫ Government

Ms. Jody Pellissey, Executive Director
Wek'èezhìi Renewable Resources Board

WRRB Predator Management Recommendations

Recommendation #1-2019 (Predator): The WRRB supports continuing the ENR's dìga harvest incentive program and the TG's Community Based Dìga Harvesting Project as an education tool.

Response:

ENR and TG accept this recommendation.

ENR thanks the WRRB for their support of the Enhanced North Slave Wolf Harvest Incentive Program and notes that the program will continue until the prime fur season for wolves ends on May 31.

TG acknowledges and thanks the WRRB for its support of the Tłįchǫ Community-Based Dìga Harvesting Project, which is still under development. Tłįchǫ elders have been key proponents for developing and implementing a training program for Tłįchǫ hunters to become knowledgeable and effective harvesters of dìga. The training program engages Tłįchǫ elders directly so that Tłįchǫ knowledge and practices for hunting dìga are maintained and transmitted to the next generation of hunters. TG staff are working with selected Tłįchǫ hunters to provide them with additional training on harvesting and skinning methods through workshops that will be held in collaboration with ENR.

Recommendation #2-2019 (Predator): The WRRB recommends that dìga monitoring be undertaken so that population estimates, or indexes are generated. In addition, as much information as possible, including condition, diet, and reproductive status, should be collected from each harvested dìga.

Response:

ENR and TG accept this recommendation. ENR and TG agree that important aspects for assessing wolf management actions will be to a) monitor the relative abundance of dìga based on indices as removal actions are undertaken and b) evaluate health and condition of dìga including age, sex, diet, and reproductive status.

ENR and TG will develop and pilot a protocol for monitoring relative abundance of dìga in an adaptive manner to evaluate feasibility of sampling and robustness of results.

For each wolf carcass ENR receives, basic data on age, sex, diet, and reproductive status will be collected.

<u>Recommendation #3-2019 (Predator):</u> The WRRB recommends that dìga management be undertaken in Wek'èezhìı. TG and ENR should review the *"Wolf Technical Feasibility Assessment: Options for Managing Wolves on the Range of the Bathurst Barren-ground Caribou Herd"* submitted in November 2017 to determine the most effective, humane and cost-efficient methods that would have the least impact and disturbance on the ekwǫ̀ herds themselves.

Response:

ENR and TG accept this recommendation, and will use the feasibility assessment to develop the program.

ENR's Enhanced North Slave Wolf Incentive Program encourages harvesters to undertake ground-based shooting and/or snaring on the winter range of the Bluenose-East and Bathurst barren-ground caribou herds. The program is an extension of the previous program and was implemented to address requests from Indigenous hunters for further incentives to harvest wolves. This pilot project includes monitoring; ENR will track the number of dìga harvested and the observations of dìga reported by hunters as well as hunters' feedback on the logistics of harvesting dìga on the winter range. ENR will adaptively manage this program; if it is clear that this program is not resulting in a significant number of harvested dìga, enhancements will be made to the program and/or other options outlined in the feasibility assessment will be considered.

<u>Recommendation #4-2019 (Predator):</u> The WRRB recommends that dìga management should be closely monitored for effectiveness of halting or slowing the decline of the sahtì ekwǫ̀ and kokètì ekwǫ̀ herds in order to provide future harvesting opportunities.

<u>Response:</u>

ENR and TG accept this recommendation. ENR and TG are working together to develop management actions to help recover caribou and developing a joint proposal on dìga management. Monitoring will be included as part of the implementation of any wolf management program. At the same time, ENR and TG have proposed to increase the monitoring of both the sahtì ekwǫ̀ and kokètì ekwǫ̀ herds as outlined in the *Joint Proposal on Management Actions for the Bluenose-East ʔekwǫ̀ (Barren-ground caribou) Herd: 2019-2021* and the *Joint Proposal on Management Actions for the Bathurst ʔekwǫ̀ (Barren-ground caribou) Herd: 2019-2021.*

Recommendation #5-2019 (Predator): The WRRB recommends that the GNWT and TG work with the Government of Nunavut to enact predator management actions on the calving grounds of sahtì ekwǫ̀ and kokètì ekwǫ̀ in Nunavut.

Response:

As neither ENR nor TG have law-making jurisdiction in Nunavut we are unable to accept the recommendation as worded. ENR and TG would like to vary this recommendation, as the GNWT and TG can discuss potential predator management actions on the calving grounds of sahtì ekwǫ̀ and kokètì ekwǫ̀ with the Government of Nunavut.

Recommendation #6-2019 (Predator): The WRRB commits to striking a working group to begin work on a *sahcho* (grizzly bear) biological assessment by June 2019, specifically on the sahtì ekwǫ̀ and kokètì ekwǫ̀ herds herd ranges. This working group will include at minimum the GNWT, TG and the Government of Nunavut. WRRB staff recommend that sahcho are monitored in order to determine if pressures are increasing on ekwǫ**.**

Response:

ENR and TG accept the first half of this recommendation. ENR and TG will participate in a collaborative process to work on a sahcho biological assessment led by WRRB staff. ENR can provide information on sahcho from the Northwest Territories. In April 2017, the Northwest Territories Species at Risk Committee released the "Species Status Report for Grizzly Bear (*Ursus arctos*) in the Northwest Territories", which includes both traditional knowledge and science. This status report provides a thorough biological assessment of sahcho within the NWT and should form a basis for the biological assessment.

As neither ENR nor TG have jurisdiction in Nunavut we are unable accept the second half of this recommendation as worded. Despite this, ENR can discuss potential sahcho monitoring in order to determine if pressures are increasing on ekwǫ with the Government of Nunavut. ENR and TG recognize that sahcho are an important predator on the calving and post-calving grounds of ekwǫ. As the majority of the calving grounds and post-calving ranges of the sahtì ekwǫ̀ and kokètì ekwǫ̀ herds are in Nunavut, monitoring the pressures of sahcho on ekwǫ will occur in Nunavut and be the responsibility of the Government of Nunavut.

The TG Boots on the Ground program is one method of tracking sahcho on the Bathurst range and in the future on the Bluenose-East range. Sahcho have been observed during the TG Boots on the Ground program.

Recommendation #7-2019 (Predator): WRRB staff recommend that *golden det'ǫcho* (golden eagle) are monitored in order to determine if pressures of golden det'ǫcho are increasing on ekwǫ̀. WRRB staff recommends that TG and the GNWT work with the Government of Nunavut to support golden det'ǫcho monitoring.

Response:

As neither ENR nor TG have jurisdiction in Nunavut we are unable accept the recommendation as worded. ENR and TG would like to vary this recommendation, as TG and ENR can discuss potential options for monitoring both golden det'ǫcho and bald eagles with the Government of Nunavut.

ENR and TG recognize that eagles and in particular golden det'ǫcho have been identified as a significant predator of caribou calves in other barren-ground caribou herds.

The TG Boots on the Ground program is one method of tracking eagles on the Bathurst range and in the future on the Bluenose-East range. Bald eagles have been observed during the TG Boots on the Ground program.

APPENDIX I Tłı̨chǫ Research and Monitoring Program

Tłı̨chǫ Research and Monitoring Program

By
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2007

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Tłı̨chǫ Philosophy

Grand Chief Jimmy Bruneau directed the Tłı̨chǫ people to know both Western and Tłı̨chǫ knowledge so each Tłı̨chǫ citizen would be strong like two people. Bruneau's philosophy and direction was not new to the Tłı̨chǫ people, who have always been interested in the ways and knowledge of others. This philosophy has been noted in both their oral narratives and the journals of the trading post factors. Each tells of Tłı̨chǫ leaders learning the knowledge and negotiating techniques of trading post factors to ensure the best return for their people's furs. This philosophy is also evident - in oral narratives telling of activities leading up to discussions with the Federal Commissioner in 1921 when Möwhì signed Treaty 11. The stories explain that Tłı̨chǫ were aware of the European perspective based on information they acquired from the Slavey and Chipewyan further south. Upon learning from the experience of their southern neighbours they were better prepared to deal with the Treaty Party.

Tłı̨chǫ oral narratives stress the importance of understanding a problem, finding a solution and taking action. Their approach to learning, knowing and taking action is evident in most Tłı̨chǫ oral narratives, as well as the manner in which past research projects were approached. The Tłı̨chǫ have rarely allowed others to do research to address a problem they wish to know about themselves. They insist that they take an active part in research and monitoring. Specifically the Tłı̨chǫ:

- Explained to the managers of Rayrock Mine (1950s) that their observations were indicators of serious problems in the environment. They identified problems that they observed with plants and wildlife –such as beaver, marten and fish. These problems were particularly evident to those Tłı̨chǫ who either used the area frequently or worked at the mine.
- Insist research focus on their needs and priorities – take for example the priorities set by the Dogrib Renewable Resources Committee during the early 1990s: where caribou, habitat, water and heritage were of greatest concern.
- Insist on adequate funding to ensure Tłı̨chǫ researchers were employed as permanent, full time employees for the life of research projects – take for example the Traditional Justice and Traditional Medicine project in Whatì (1987-92); the Traditional Governance project in Gamètì (1993-1996); and the caribou and place names projects in all the Tłı̨chǫ communities (1996-2001).
- Use the participatory action research (PAR) method that includes researcher training; an elders – both male and female elders – committee/s; rigorous research methods carried out by Tłı̨chǫ researchers and overseen by the elders' committee; and verification of shared information. The PAR process ensures accurate understanding of the traditional knowledge that is

documented and ensures it leads to positive actions based on the recommendations.

Today, it is vital that the Tłı̨chǫ lead by undertaking their own harvesting and monitoring studies as the impacts of development on Tłı̨chǫ lands and the environment are becoming ever more evident. The Tłı̨chǫ Government and agencies have been given the authority to manage the land in the Tłı̨chǫ Agreement, but to do this effectively requires a system of research and monitoring that will feed into management decisions.

The Tłı̨chǫ Knowledge Research and Monitoring Program, which includes the collection of harvest information, outlined below is based on Tłı̨chǫ philosophy. First, the current issues for which this TK program was designed to solve are discussed, followed by a summary of the discussion with Tłı̨chǫ citizens that helped formulate the solutions. Thirdly, the program structure is described. There are five appendices that outline activities, outputs, and the evaluation questions so the TK Research and Monitoring Program can be improved through time. Appendices are as follows:

- Appendix I consists of the Program Design and Implementation Plan.
- Appendix II outlines the Evaluation Frameworks for both the on-going program activities and for the implementation activities.
- Appendix III is the Tłıcho Research and Monitoring Program Using Tłıcho Knowledge to Monitor Barren-ground Caribou.
- Appendix IV is a draft Tłıcho Knowledge Policy.

It should be noted that evaluation is done to ensure the best possible TK is being documented for future monitoring, education and understanding of the Tłı̨chǫ perspective.

Current Issue

The Tłı̨chǫ Agreement directs Boards, Agencies and the Tłı̨chǫ Government to i)use traditional knowledge, ii) promote cultural perspectives, and iii) select Board members that have knowledge of Tłı̨chǫ way of life. Yet the current systems – most of which are based on Western perspectives and the British legal system – make it difficult for Tłı̨chǫ knowledge (TK) to be used in a manner that is consistent within the Tłı̨chǫ cultural perspective and way of life.

The Agreement states that:

Section 12.1.6

> *In exercising their powers under this chapter, the Parties and the Wek'èezhìi Renewable Resources Board shall take steps to acquire and use traditional knowledge as well as other types of scientific information and expert opinion.*

Section 13.1.5

> *In exercising their powers in relation to forest management, the Government of the Northwest Territories, the Tłı̨chǫ Government and the Wek'èezhìi Renewable Resources Board shall take steps to acquire and use traditional knowledge as well as other types of scientific information and expert opinion.*

Section 14.1.4

> *In exercising their powers in relation to the management of plants, the Government of the Northwest Territories, the Tłı̨chǫ Government and the Wek'èezhìi Renewable Resources Board shall take steps to acquire and use traditional knowledge as well as other types of scientific information and expert opinion.*

Section 22.1.7

> *In exercising their powers, the Mackenzie Valley Environmental Impact Review Board and the Wek'èezhìi Land and Water Board shall consider traditional knowledge as well as other scientific information where such knowledge or information is made available to the Boards.*

Furthermore, Section 12.5.5 of the Tłı̨chǫ Land Claim and Self-government Agreement (the Agreement) states that the Wek'èezhìi Renewable Resources Board (WRRB) shall:

> *(a) Make a final determination, in accordance with 12.6 or 12.7, in relation to a proposal*
>
> *i. Regarding a total allowable harvest level for Wek'èezhìi, except for fish,*

ii. Regarding the allocation of portions of any total allowable harvest levels for Wek'èezhìi to groups of persons or for specified purposes, or

iii. Submitted under 12.11.1 for the management of the Bathurst caribou herd with respect to its application in Wek'èezhìi;

The Tłįchǫ Agreement authorizes the WRRB responsibility for total allowable harvest (TAH) for wildlife, forests and plants and authorizes the Minister of Fisheries and Oceans (DFO) responsibility for fish conservation and the establishment of TAH for fish stocks. Both WRRB and DFO have an obligation under terms of the Agreement to determine TAH through assessment studies and other research.

For WRRB and DFO to have information necessary for sustainable management it is imperative that the Tłįchǫ undertaken their own monitoring by documenting their observations and harvesting information to ensure they contribute to the process. If allocations are to be made among users of the resource it will be necessary to determine basic needs levels of the beneficiaries of the claim. Allocations of fisheries and wildlife resources will be difficult without this basic harvest information from the harvesters themselves.

For the Agreement to be honoured three activities need to occur:

1. Baseline information must be gathered from elders on known trends as harvest, wildlife and vegetation distribution.

2. Information gathered through Tłįchǫ traditional methods of monitoring needs to be documented on an on-going basis.

3. Realistic harvest studies need to be ongoing.

Although scientific information is readily available, most Tłįchǫ knowledge is in the minds of the elders and harvesters. For this reason, a program is needed so Tłįchǫ researchers can work with elders and harvesters to document their knowledge in a manner that does not lose the Tłįchǫ perspective. This is usually detailed knowledge of past conditions that they share with their descendants while sharing their current observations of wildlife and wildlife habitat. And, as is the traditional mode of sharing, numbers of species observed and harvested, are shared with others in the community along with other information such as behaviour of wildlife and the people harvesting. All information available is used to make management decisions.

One of the important features of Tłįchǫ knowledge is that it is acquired, enhanced and communicated on the land while people are engaged in land-based activities. It is also communicated after harvesters return to the community through oral narratives.

Modern harvest studies often ask harvesters to fill out survey forms in English, or to provide limited information that can be taken out of context. These studies may fail because they are not compatible with how Tłı̨chǫ knowledge, including information about harvest, is transmitted through oral narratives.

This project was designed to ensure that both monitoring and realistic harvesting numbers can be recorded in a culturally appropriate manner. This will help alleviate the problem that many respondents choose not to answer correctly harvest study questions posed by non-community members. (see Harvest Study Report, 2009).

Finding a Solution

In 1999-2000, the Tłı̨chǫ Regional Elders' Committee – under the direction of *K'àowo*[1] Jimmy Martin – requested Dogrib Treaty 11 staff who were working with the elders to bring male and female harvesters from each community to discuss a Tłı̨chǫ monitoring program. Funding for this meeting was secured from Cumulative Impacts and Monitoring Program, Environment Canada. The elders and harvesters directed staff to initiate monitoring around the diamond mines – with research/hunting camps located in strategic locations around the mines that would enable harvesters to observe the behaviour of caribou in relation to the mines. They also suggested a camp be located at Gots'ôkàtì and Deèzhàatì so caribou behaviour could be compared with non-mining areas.

In September 2008 the Wek'èezhìi Renewable Resources Board (WRRB) and the Tłı̨chǫ Government started work towards implementing a Tłı̨chǫ monitoring program. Also at that time members of the Wek'èezhìi Forum requested that work be done to develop TK policy.

The TK program design with associated policy guidelines were developed based on discussions held during the household visits made by the Project Team between April 2009 and December 31, 2009. All households in the three fly-in communities of Gamètì, Wekweetì and Whatì were contacted. Behchokö has a significant population therefore only those households with active harvesters and elders were contacted. During these visits Tłı̨chǫ researchers, along with Dr. Allice Legat, explained the importance of Tłı̨chǫ knowledge in the Tłı̨chǫ Agreement and the possibility of establishing a monitoring program as originally laid out by the elders and harvesters in 1999. Two Tłı̨chǫ researchers – Ms. Camilla Nitsiza and Ms. Madelaine Chocolate - did conducted the household visits, although Ms. Mary Adele Wetrade did assist Madelaine Chocolate in

[1] Translated as 'boss'. The role is significantly different than the Western concept for 'chair'.

Gamètì. Household visits took longer than anticipated because i) individuals wished to express their views after hearing the role of the WRRB as it is mandated in the Tłı̨chǫ Agreement; and ii) individuals were delighted to expound on the potential for harvesters and elders working together with Tłı̨chǫ researchers to monitor the land as first set out by the elders in 1999-2000. Their excitement at building on their traditional management practices was clear.

After completing household visits and analyzing Tłı̨chǫ responses, it became clear that it would be culturally appropriate to develop interview guidelines that allowed harvesters to share information in a manner similar to how they normally explain their harvest and observations to one another and to their elders. The Tłı̨chǫ researchers found harvesters would prefer to discuss their activities – both observations (monitoring) and harvesting – in either a home or office setting, but at their own convenience. Finally, they found that harvesters thought if Tłı̨chǫ were doing the documenting and report writing they could then be assured: i) individual harvest numbers would remain confidential; ii) their information would be documented realistically; and iii) their observations would remain in the context within which their observations were made.

Following the household visits, the next step was to hold community meetings, and establish Community Elders' and Harvesters' Committees to assist with the final design of the program and program guidelines.

After the first community meeting in Gamètì, the elders met to select a committee. The Gamètì Committee met four times with the TK staff, Rita Wetrade, and Allice Legat to discuss what had been heard at the household level and to hear more specific views. During the fourth meeting, the Committee recommended a Regional TK Elders/Harvesters Working Group (TK Regional Working Group) be established to complete the work. Gamètì Committee members thought that it would be better if Tłı̨chǫ from all four communities worked together from the start so they could address all issues together. Six (6) members on the TK Regional Working Group had been active on the TK Regional Elders Committee from 1996-2002 while the remaining ten (10) harvesters and elders were named by the Tłı̨chǫ WRRB members. The Working Group meetings were held between January and March 31, 2010: three in Gamètì,[2] one in Wek'weetì, and one in Behchokö.

[2] Under the direction of John B. Zoe, TEO, a TK Office has been established in Gametì. However office furniture and computers have yet to be purchased and staff has yet to be hired.

The following is a summary of how discussions at the household level and at community and TK Regional Working Group meetings have informed key components of the program design.

Species Important to Local Harvesters

Caribou and fish are always cited as the most important. Nevertheless, all Tłįchǫ elders and harvesters explain – as is consistent with members of hunting and gathering societies – that all species are important, including human. They also explained that if one is to understand trends and impacts within Wek'èezhìi, human behaviour should be monitored noting what is being harvested by both male and female harvesters and whether or not all is used or if resources are wasted. [3]

Everyone agreed that all harvested animals should be documented as it would demonstrate a more realistic flow of events and levels during the annual cycle, and a more accurate account of their observations and land use.

Tłįchǫ Citizens to be Interviewed

During conversations at the household level, it became apparent that many younger people felt they did not know enough about the environment to speak with the researchers, but did think that they could report what they had harvested and observed as long as older, more experienced elders and harvesters were present to help them to understand their observations. Specifically younger people thought that if elders and harvesters were present they would gain a better understanding of how their observations were similar or different than the past and how their own knowledge and behaviour impacts on their observations.

During past discussions – prior to this project - elders thought that all individuals should be encouraged to report their observations and harvest – even if observations are made while 'picnicking' or traveling with family members and harvesting is not the main goal.

Most of the elders and harvesters participating in the TK Regional Working Group thought leaders should tell harvesters to report their observations and harvest.

During discussions after the meetings, the Project Team thought that once the Community Elders' Committees are established the elders – specifically the *k'aawo* on those committees - would encourage individuals to visit the Tłįchǫ Knowledge Research and Monitoring office and report their observations and harvest.

[3] Although not discussed during the household visits or during the meetings, most elders and active harvesters suggest that human activities associated with industrial development and exploration should be monitored by stewards of the land.

Researchers documenting the information would be trained to note whether the individual is an experienced or inexperienced harvester, and whether or not they are a full-time or part-time harvester; and whether or not their main activity at the time of sighting resources was harvesting.

Sharing Information

Throughout all discussions it became clear that community members would be more open about sharing their harvesting information as well as their observations if they understood that their oral narratives and their observations - 'raw data' - would remain with and be safeguarded by the Tłı̨chǫ Government, and kept in the Tłı̨chǫ communities.

Several individuals expressed that they feel they are being "checked-up on" when non-Tłı̨chǫ ask questions and are worried that it can be used against them.

Schedule of Discussions wıth Households

Based on the manner in which Dene pass information, it was made abundantly clear during household visits and during the TK Regional Working Group meetings, that oral narratives are the process for sharing detailed information. (see also Basso, Cruikshank, Goulet, and Sharp on the importance of oral narratives among all Dene). For this reason the researchers/interviewers will be trained to use an 'gathering oral narratives guide' while documenting information shared by harvesters.

The TK Regional Working Group thought the office should be open at least five days a week so harvesters could report when convenient and on an ongoing basis so numbers and observations are recorded quickly.

Expectations of Harvesters and Elders

All Tłı̨chǫ citizens with whom the researchers spoke liked the idea that monitoring skills and harvesting information would be given back to the community every few months – by the Tłı̨chǫ researchers. They thought the communities could benefit from hearing this information and verifying the researchers' interpretations so misunderstandings could be clarified.

The TK Regional Working Group thinks that reporting back to the community at public meetings is extremely important. If the researchers share a summary of what they have heard with the community, then harvesters will be more likely to provide their observations and harvest numbers. They reasoned that the harvesters would know they were being heard and that their knowledge and information was being documented accurately. For example,

2. Their observations of the environment about health of animals and state of habitat, etc - are being heard;
3. Harvesters will feel secure that harvesting data is correct and their elders and leaders can use the information for management decisions.

Compensation for Harvesters

This has not been discussed with harvesters during the household visits or at the elders and harvesters meetings. During past discussions with elders, it was thought that harvesters should report on a volunteer basis, but should be compensated when attending the verification and sharing meetings when more information on their observations can be noted. Only those harvesters who participated on a volunteer basis would be compensated at the verification and working group meetings.

It is proposed that this is a decision for the Tłı̨chǫ leadership after being discussed at a Tłı̨chǫ Assembly, recognizing that availability of resources may be a constraint.

Reporting

Since using Tłı̨chǫ knowledge in environmental management is important to Tłı̨chǫ, it is recommended that after the verification meetings with elders and harvesters, report/s – annual or bi-annual - should be written for the Chief Executive Council that would then be released to the public – Boards, agencies, Industry, Federal and Territorial governments.

Duration of Harvest Study within Monitoring Program

During the household visits, the community meeting and the TK Regional Working Group meetings, the vast majority (young people did not speak to this topic) of Tłı̨chǫ citizens thought the harvest study within the monitoring program should be on-going.

Program Structure

The Tłı̨chǫ Knowledge Research and Monitoring Program is designed to capture knowledge in a manner that is compatible with the Tłı̨chǫ cultural perspective. It is also designed to acknowledge the continued importance of oral narratives as the medium with which to share information and the importance of Tłı̨chǫ land-based activities in learning and being able to apply and promote Tłı̨chǫ knowledge.

Program Goals

A Tłı̨chǫ Knowledge Research and Monitoring Program will support goals that assist the Tłı̨chǫ Government, and the boards and agencies under the Tłı̨chǫ Agreement, to fulfill their mandate within the co-management regimes. It will also provide direction to industry and non- Tłı̨chǫ researchers on expectations and costs. This program will support the following program outcomes:

1. Tłı̨chǫ knowledge and perspectives are utilized in management and decision-making.
2. The Tłı̨chǫ Government and its boards and agencies have the information they need to play a strong role in co-managing the environment, and to support programs such as education.
3. The Tłı̨chǫ Government has the information it needs to play a strong role in managing caribou and other wildlife, plants and forests; and has its own information and reports to support bargaining and negotiations.
4. Harvesting maintains its role as a respected and important economic and social endeavour.
5. Tłı̨chǫ knowledge, perspective and language are strengthened through oral narratives and land-based activities.
6. Integrated knowledge transfer is occurring across generations.
7. Tłı̨chǫ place names are documented accurately to express bio-geographical information, and to support the process of acquiring official place name status.

Social Impacts

If the program successfully achieving the above goals, it will help to support broader social impacts such as the following:

- Tłı̨chǫ citizens will fulfil their traditional stewardship responsibilities to care for the land.
- TK is transmitted in a manner that is compatible with Tłı̨chǫ culture and social structure.

- Tłı̨chǫ language is strong and used in daily conversations.
- Tłı̨chǫ citizens are emotionally and spiritually healthy.
- There is a structured process for Tłı̨chǫ youth to learn land-based skills and knowledge.
- Tłı̨chǫ place names become official.

Program Design and Implementation

The establishment of a fully developed, effective Tłı̨chǫ Knowledge Research and Monitoring Program is a necessary but ambitious undertaking. It will require substantial resources and careful planning. It will also require investment in training and in information technology. The program will take approximately two years to implement, and five years to become fully operational. It will take at least two years to develop TK policies, guidelines and directives that are consistent with the Tłı̨chǫ perspective and the Tłı̨chǫ Agreement, and provide direction and clarity for boards, agencies and TG departments that is both practical and respectful of Tłı̨chǫ knowledge. Guidelines and directives developed for boards, agencies and TG departments will reflect Tłı̨chǫ Government policy on access and use of Tłı̨chǫ knowledge.

There are several activities that need immediate attention if the program is going to provide information for caribou management, for the Environmental Assessment of the proposed highway route within Wek'èezhìi, and for Fortune Mineral's mining venture, with respect to impacts on land, wildlife and water.

To ensure harvesters' and elders' observations, knowledge and harvest are documented and used, the following activities will be undertaken within the next two years when initiated in November 2010:

1. Establish a comprehensive database to support the organization and storage of Tłı̨chǫ monitoring and harvest data in a manner that is consistent with oral narrative and protocol;
2. Digitize and enter existing information into the database;
3. Establish operating procedures for the program, including human resource policies and procedures, compensation policies, and development of research methods;
4. Establish training programs for researchers and data entry clerks;
5. Hire and train staff;
6. Undertake promotion and outreach to ensure that communities understand and support the program, and that harvesters participate;
7. Establish community Elders' Committees;

8. Develop a Tłįchǫ Knowledge Policy[4] for approval by the Tłįchǫ Government.

Appendix I contains a more detailed outline of the proposed structure of the program, including a comprehensive list of proposed activities required to implement the program and a comprehensive list of program activities over the longer term, together with anticipated outputs from those activities.

Appendix II contains a draft evaluation framework for implementation evaluations in Year 2, and a more fulsome outcome evaluation in Year 5. These evaluations will help to measure whether the program is on track to achieve the goals/outcomes outlined above.

The Tłįchǫ are faced with two urgent issues that require immediate attention: **i)** the need for caribou monitoring in the face of current concerns about the integrity and health of the Bathhurst caribou herd and harvest numbers; and ii) the Fortune Minerals and all-weather road proposal**s**. It is proposed that program implementation be fast-tracked with specific regard to these two issues. More detail on the activities required for the Special Project: Caribou Monitoring and Harvest Study can be found in Appendix III. Special Project Design for Environmental Assessments TK baseline research associated with Fortune Minerals and the proposed road will be completed in the near future.

In addition, the Tłįchǫ Government requires knowledge of several areas that are being proposed as protected areas.

[4] See Draft policy in Appendix IV.

Tłı̨chǫ Knowledge Research and Monitoring Program
Summary Table of Proposed Structure

SOCIAL IMPACTS

- Tłı̨chǫ citizens will fulfil their traditional stewardship responsibilities to care for the land.
- Tłı̨chǫ knowledge is transmitted in a manner that is compatible with Tłı̨chǫ culture and social structure.
- Tłı̨chǫ language is strong and used in daily conversations.
- Tłı̨chǫ citizens are emotionally and spiritually healthy.
- There is a structured process for Tłı̨chǫ to youth learn land-based skills and knowledge.
- Tłı̨chǫ place names become official

GOALS

- Tâîchô knowledge and perspectives -are utilized in management and decision-making.
- The Tâîchô Government and its boards and agencies have the information they need to play a strong role in co-managing the environment, and to support programs such as education.
- The Tâîchô Government has the information it needs to play a strong role in managing caribou and other wildlife, plants and forests; and has its own information and reports to support bargaining and negotiations.
- Harvesting maintains its role as a respected and important economic and social endeavour.
- Tâîchô knowledge, perspective and language are strengthened through oral narratives and land-based activities.
- Integrated knowledge transfer is occurring across generations.
- Tâîchô place names are documented accurately to express bio-geographical information, and to support the process of acquiring official place name status.

ACTIVITIES

- Establish a comprehensive database to support the organization and storage of Tłı̨chǫ monitoring and harvest data in a manner that is consistent with oral narrative and protocol.
- Digitize and enter existing information into the database.
- Establish operating procedures for the program, including human resource policies and procedures, compensation policies, and development of research methods.
- Hire and train staff – research, data entry, etc.
- Undertake promotion and outreach to ensure that communities understand and support the program, and that harvesters participate.
- Establish an Elders' Committees to guide the programme.
- Develop a Tłı̨chǫ Knowledge Policy[1] for approval by the Tłı̨chǫ Government.
- Evaluate the program to make sure it is achieving the goals.
- Implement culturally appropriate research and monitoring activities.

Appendix I
Program Design and Implementation

By Allice Legat
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Program Design and Implementation
Tłįchǫ Knowledge Research and Monitoring Program

Program Structure: Implementation Phase

	ACTIVITIES *(What needs to be done)*	*OUTPUTS* *(What we hope to achieve)*
Data Base	Design and develop database to compile and retain Tłįchǫ knowledge and to follow oral narrative protocol Copy tapes and photos in digital format. Enter photo information into photo data base	• Comprehensive and functioning database completed and operational • Tapes and photos can be used via computer and internet
Tłįchǫ Knowledge Policy	Comprehensive TK policy approved by TG	• WLWB and WRRB policies can complement TG • Industry knows TG's expectations • TK staff understand role of TK for future
Training	Identify staff training requirements and design training plans	• Staff will have the skills required to make the program a success • Training programs are designed for all aspects of program operations

	ACTIVITIES *(What needs to be done)*	*OUTPUTS* *(What we hope to achieve)*
TK Elders' Committee/s	Elders Committee are established and functioning as per the Terms of Reference	• Terms of reference are established and approved by TG • Elders Committee is operational • Elders are guiding the design and implementation of the program • Elders are working with community residents to know their traditional roles and responsibilities
Promotion and Outreach	Promote and explain the program to Tłįchǫ citizens	• Community residents are aware of the TKRM program • Tłįchǫ citizens support the program
	Describe steps taken to develop program in academic setting	• Tłįchǫ knowledge program gains credibility with a broader audience • Success in external fund-raising
Program Administration	Develop operating procedures for the program Develop comprehensive guidelines for program including issues such as harvester compensation, participation criteria Develop activity outline for pilot projects: Main office established Budget finalized Funding is secured for program start-up and fund-raising plans are developed	• Job descriptions are written and staff are hired • Required policies and procedures are in place • Compensation policy for participating harvesters is implemented • Concept of "harvester" is defined for the purposes of the program • Protocol for community meetings is established • Protocol for producing and distributing reports is established • caribou monitoring and harvest study • Baseline for Fortune minerals and proposed road • Office space secured • Archival section established • Core funding requirements for six years determined • Final budget approved by TG • Effective fund-raising approach results in external funding support (industry, GNWT, DFO, WLWB, WRRB)

	ACTIVITIES *(What needs to be done)*	*OUTPUTS* *(What we hope to achieve)*
Research and Monitoring Methodology	Implement culturally appropriate process for harvesters to share observations and harvest	• Harvesters are comfortable with the process • Tłįchǫ knowledge is transmitted in a culturally appropriate manner
	Describe program development process in academic paper and present at conference	• Papers written • Conference attended

Program Design and Implementation
Tłįchǫ Knowledge Research and Monitoring Program

Program Structure: Ongoing

	ACTIVITIES *(What needs to be done)*	*OUTPUTS* *(What we hope to achieve)*
Data Base	Maintain and update database regularly after each information exchange wıth harvesters and elders. Produce reports regularly and review at community meetings and with Elders' Committee Produce reports in response to requests	• Database is up to date and capable of creating reports upon demand • Baseline information is available for environmental assessments, and environmental management • The store of Tłįchǫ knowledge is expanded as new information is entered into the database
Tłįchǫ Knowledge Policy	The policy and associated directives provide appropriate guidance for TG elected representatives and staff, and external agencies	• The role of Tłįchǫ knowledge is understood • Industry is clear about TG expectations • Boards are clear about TG expectations • Federal and Territorial Governments are Clear on TG expectations
Collaborate with TG Departments	Sharing of information and expertise established through inter-department guidelines	• Process for intra-TG access to data base. • Information on TCSA tapes entered in data base. • Information on TK tapes storied in Land Department entered in data base. • Tłįchǫ language training schedule. • Land Department uses TK information and reports for management of land, wildlife and associated habitat.

	ACTIVITIES *(What needs to be done)*	*OUTPUTS* *(What we hope to achieve)*

<u>Training</u>	On-going training for program staff to ensure they are effective cultural interpreters	• Process for on-going training established.
		• Process for inter-department training to access and use data base to complete land, wildlife and other applications and permits.
		• Trained TK community researchers are available to work with harvester and elders.
		• Database administrator is trained to maintain the database.
		• Staff have the skill to:
		  o Efficiently document interviews.
		  o Use interview guidelines.
		  o Maintain archives and produce reports.
		  o 'Go after' concepts of Tłįchǫ and English terms.
		  o Write Tłįchǫ.
		  o Identify similarities and differences between Tłįchǫ and western management ideals.

<u>TK Elders' Committee/s</u>	Tłįchǫ elders provide on-going guidance to the program	• Elders' Committee is functioning effectively • Elders play a meaningful role in all phases of program • Elders work with Tłįchǫ citizens to know their traditional roles and responsibilities
<u>Promotion and Outreach</u>	Elders and leaders promote and explain the program to Tłįchǫ citizens Community meetings are held to promote program and review information. Establish network with WRRB and WLWB to ensure they have information needed for environmental management decision. Describe program in academic papers and settings.	• Community residents are aware of the program and its importance for Tłįchǫ knowledge • Tłįchǫ citizens support the program • A majority of harvesters participate in the program by providing information • Biannual reports are released publicly • Tłįchǫ knowledge program gains credibility with a broader audience • Success in external fund-raising

	ACTIVITIES *(What needs to be done)*	*OUTPUTS* *(What we hope to achieve)*
Culturally appropriate research, monitoring and harvest study	Implement culturally appropriate process for researchers to interview and receive information from elders and harvesters Establish protocols for providing monitoring and harvesting reports to appropriate agencies Conduct field camps with elders and Tłı̨chǫ researchers (including those in Land Department) to review data, expand database and build skills of researchers Collaborate with TCSA to link youth to the program	• Harvesters and elders are comfortable with the interview process • Tłı̨chǫ knowledge is transmitted in a culturally appropriate manner • Tłı̨chǫ place names are effectively documented • Three field camps are held annually, with 50 participants including youth • Field camps include participation across four generations • Information compiled by researchers is verified and expanded upon • Harvesters are fairly and appropriately compensated for their contribution. • Trends are made available to agencies on a timely basis
Research and Monitoring Methodology	Program operates efficiently and effectively Participatory Action Research method utilized • Interview guidelines utilized • Information organized • Team members understand final goals • On-going training accomplished Program is successful in achieving goals	• Useful information being collected and analyzed • Working within budget • Evaluation frameworks are established • Evaluation reports are completed • Program changes are made as required based on evaluation

Appendix II
Evaluation Frameworks

By

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Evaluation Frameworks
Tłįchǫ Knowledge Research and Monitoring Program

Evaluation Framework: Five-Year Outcome Evaluation

Evaluation Issue	*Evaluation Question*	*How Will we Measure It?*	*What information will be needed and where will we find it?*	*Who will collect this Information for Evaluations and When?*
Goal #1: Tłįchǫ knowledge and perspectives are used in environmental management and decision-making	Is Tłįchǫ knowledge used by the Tłįchǫ Government, Boards, other governments to inform environmental management and decision-making? Is industry aware of Tłįchǫ Government expectations regarding use of Tłįchǫ knowledge? Is this reflected in development proposals? Are harvester observations being used to flag emerging trends and issues for regulatory agencies?	# of reports requested by all government agencies and Boards # of regulatory decisions that incorporate Tłįchǫ knowledge in written decisions # of times Tłįchǫ knowledge is reflected in government plans and policies # of reports requested by industry # of emerging issues flagged through harvester observations	Program files – TKRMP, TG, WRRB, WLWB Information requests will be entered into the database on an on-going basis Information from external agencies, e.g. federal and territorial departments, MVEIRB, MVLWB Database reports	Program management in consultation with other agencies Contractor or Program Management to conduct interviews with external agencies, file research as required

Evaluation Issue	*Evaluation Question*	*How Will we Measure It?*	*What information will be needed and where will we find it?*	*Who will collect this Information for Evaluations and When?*
Goals #2 and #3: **The Tłįchǫ Government and its boards and agencies have the information they need to play a strong role in co-managing the environment and to support programs such as education.** **The Tłįchǫ Government has the information it needs to play a strong role in managing caribou and other wildlife, plants and forests; and has its own information and reports to support bargaining and negotiations**.	Is the level of information available sufficient to meet the needs of government agencies for management decisions? Is the program documenting information on all aspects of harvesting, including harvest data, observations about trends, observations from women's as well as men's processing of products? Is the database working as an effective tool to access information? Have Tłįchǫ government agencies and boards used the information in reports? Are boards and agencies satisfied with the information that has been provided?	# of information requests received # of requests turned down because information not available # of reports produced in response to requests Compliance with established reporting protocols Reflection of information provided in regulatory and environmental decision-making Level of satisfaction with reports provided Incorporation of TKRMP information incorporated into curriculum development	Database Program files Review of regulatory and environmental decisions and reports Consultation with other TG agencies	Archivist and database manager Program management External contractor to conduct file review, consult clients

	Is information being used to inform curriculum development?			
Evaluation Issue	*Evaluation Question*	*How Will we Measure It?*	*What information will be needed and where will we find it?*	*Who will collect this Information for Evaluations and When?*
Goal #4: **Harvesting maintains its role as a respected and important economic and social endeavour**	Is the proportion of Tłı̨chǫ citizens involved in harvesting activities increasing, decreasing or staying stable? What role does harvesting play in providing food to Tłı̨chǫ households? How many Tłı̨chǫ citizens are earning an income from harvesting activities? Are young people requesting time with harvesters so they can learn harvesting skills, including use of resources through production of crafts?	# of residents involved in harvesting and related activities # of harvesters participating in the TKRMP Amount of country food consumed by Tłı̨chǫ citizens Income from trapping Income from production of traditional crafts (including clothing)	Baseline information on participation in harvesting activities Participation and consumption rates from database Income information from census, GNWT	Baseline information - program management to compile as soon as possible Community researchers to enter results of harvester debriefs daily Program management to work with external contractor to compile

Evaluation Issue	*Evaluation Question*	*How Will we Measure It?*	*What information will be needed and where will we find it?*	*Who will collect this Information for Evaluations and When?*
Goal #5: Tłı̨chǫ knowledge, perspective and language are strengthened through oral narratives and land-based activities	Is TKRMP information being shared in a manner that is culturally appropriate? Is the program utilising the expertise of families with knowledge in specific geographical areas? Is the Elders' Committee effective in providing guidance to the program and participating in on-going evaluation? Is the program achieving recognition and credibility outside the Tłı̨chǫ area?	# of citizens participating in TKRMP review meetings, and trends # of participants who are comfortable with the process, and trends # of harvesters visiting the offices or requesting home visits, and participation trends Effectiveness of research methodology in acquiring enhanced Tłı̨chǫ knowledge Role of the Committee in influencing program operations and reports Number of presentations to external agencies or academic conferences External requests for information	Database Program files Interviews with program participants and clients (using appropriate methods) to determine effectiveness Focus groups and file research Elders' Committee evaluation	Community researchers through regular data inputs Program management External contractor

Evaluation Issue	*Evaluation Question*	*How Will we Measure It?*	*What information will be needed and where will we find it?*	*Who will collect this Information for Evaluations and When?*
Goal #6: Integrated knowledge management and transfer is occurring across four generations	Are field camps being held on a regular basis? How effective are the field camps in providing a forum for knowledge and values transfer? Is the knowledge of elders being transmitted successfully to younger generations? Is information from the TKRMP being used to educate youth and inform school curricula?	# and regularity of field camps Field camp participation rates and level of knowledge acquired by participants Satisfaction levels of field camp participants Ability of youth and elders to communicate about Tłı̨chǫ knowledge in the Tłı̨chǫ language Youth awareness of program and understanding of Tłı̨chǫ knowledge Incorporation of TKRMP information and methods into school programs	Program files Field camp pre- and post-tests Field camp evaluation results Explore partnership with TCSA to monitor TCSA program files and staff	Pre- and post-tests to be designed in Year 2 and administered by program staff at all field camps Field camp evaluation format to be designed in Year 1 and administered by program staff at all field camps Program management and external contractor

Goal #7: Information on Tłı̨chǫ place names is documented accurately to express bio-geographical knowledge, and to support the process of official place names	Is place name information being compiled and documented through research process? Are place names translated and spelled correctly to ensure accuracy of meaning? Is information being used to support the process of establishing Tłı̨chǫ names as official place names?	# of place names identified through research methods Review place names for accuracy and satisfaction # of official place names processed based on TKRMP information	Database Researchers and Elders' Committee to conduct regular review. Tłı̨chǫ Government toponymy files?	Community researchers to update database daily Program management to establish process in Year 2 External contractor to compile

Evaluation Frameworks
Tłı̨chǫ Knowledge Research and Monitoring Program

Evaluation Framework: Implementation Evaluation

Evaluation Issue	*Evaluation Question*	*How Will we Measure It?*	*What information will be needed and where will we find it?*	*Who will collect this Information for Evaluations and When?*
Database	Is the database operational and adequate to meet program needs? Have past records been digitized and entered into the database? Have existing photos been digitized and entered into the data base? Are researchers using the database and regularly updating it? Does database follow oral narrative and protocol? Is information accessible on the internet?	# of tapes digitized # of photos digitized # of new entries made per month relative to harvesters' oral narrations and observations Volume of backlogged data entry being accomplished by staff	- Baseline assessment of existing data to be digitized - Data base - Program files - Researchers	Baseline information - program management as soon as possible Program director in consultation with researchers, at end of first and second years

Evaluation Issue	*Evaluation Question*	*How Will we Measure It?*	*What information will be needed and where will we find it?*	*Who will collect this Information for Evaluations and When?*
Tłįchǫ Knowledge Policy	Has the comprehensive TK policy approved by CEC? Has the TK policy been forwarded to Boards and Agencies, GNWT and Federal Departments? Have TG departments and agencies developed associated guidelines and protocols? Is industry aware of Tłįchǫ Government expectations?	Status of policy and guidelines Is policy publicly available on TG web page # of Boards, agencies, Government and business receiving policy TG and agency communications with industry	- TG, WLWB and WRRB records - Web page - TG and agency program files - Discussions with TG and agency program staff	Program management at end of first and second years

Evaluation Issue	*Evaluation Question*	*How Will we Measure It?*	*What information will be needed and where will we find it?*	*Who will collect this Information for Evaluations and When?*
Training	Have training plans been developed? Has schedule for training workshops been set? Have training programs been developed for : - Literacy in two languages - TK concepts and perspectives - Interview techniques - Report writing - Archival skills Is further training required?	# of training workshops designed and delivered # of staff who successfully complete training Degree of staff turnover(link to reason) #of staff with literacy in English and Tłı̨chǫ Staff use of interview techniques (guidelines) when listening to harvesters and elders #of documented material with correct numbering Staff acquisition of the necessary skills	- Training evaluation sheets - Personnel files - Program files - Program management observations	Training providers to ensure evaluations are completed of training sessions Program management, in consultation with trainers, harvesters and Elders' Committee; at end of first and second years

Evaluation Issue	*Evaluation Question*	*How Will we Measure It?*	*What information will be needed and where will we find it?*	*Who will collect this Information for Evaluations and When?*
<u>Operation of Elders' Committee</u>	Is the Committee operating as it was intended? Has the Elders Committee replaced the Working Group? Did Regional working Group develop Terms of Reference for elders' committee? Are the elders satisfied with the research results and interactions of program staff with the community?	Status of Terms of Reference Extent to which committee operations are consistent with TOR # of community meetings held Attendance at meetings Satisfaction of Committee members with process and support	- Program files (attendance and committee minutes) - Survey of Committee members	Program management, at end of first and second years

Evaluation Issue	*Evaluation Question*	*How Will we Measure It?*	*What information will be needed and where will we find it?*	*Who will collect this Information for Evaluations and When?*
Promotion and Outreach	Are elders and leaders encouraging participation? Are harvesters aware of the program? Are harvesters fairly and adequately compensated for their participation?	# of community residents who are aware of program # of introductory meetings held # of home visits Degree of expressed support for the program Degree of participation by harvesters Degree of satisfaction with compensation	Comparative information with household visits 2008-2010 Program files and data base	Baseline information - program management as soon as possible Community researchers to enter results of harvester debriefs daily Program management to compile annually
	Are program goals and achievements being shared with a broader audience?	Number of presentations to external agencies or academic conferences External requests for information	Program files	Program management to compile annually

Evaluation Issue	*Evaluation Question*	*How Will we Measure It?*	*What information will be needed and where will we find it?*	*Who will collect this Information for Evaluations and When?*
<u>Research and Monitoring Methodology</u>	Are harvesters comfortable with the process? Is Tłįchǫ knowledge transmitted in a culturally appropriate way? Has a methodology been established to ensure an effective role for elders in program evaluation?	# of harvesters sharing observations and harvest information through the program Harvester participation rates by category (i.e. women, youth, children) degree of harvester comfort with research methodology rate of participation in community meetings success of discussions at community meetings	- Data base - List of harvesters - Comments to researchers - Elders Committee evaluation	Community researchers to enter results of harvester debriefs daily Elders' Committee to provide input Program management, at end of first and second years

Evaluation Issue	*Evaluation Question*	*How Will we Measure It?*	*What information will be needed and where will we find it?*	*Who will collect this Information for Evaluations and When?*
Program administration	Do all staff have job descriptions? Are required policies and procedures in place? Has a space been secured for TK office? Are training and procedure manuals available for staff? Funding: Has core funding been established Has a funding raising plan been developed Does program have adequate funding	% of job descriptions completed % of policies, procedures, manuals and guidelines completed status of compensation guidelines and number of issues raised by harvesters or program administrators Funding: Status of budget development Availability of funding Success of external fund-raising efforts	Program files TG, WRRB and WLWB program files	Program management, at end of first and second years

Appendix III

Tłı̨chǫ Research and Monitoring Program

Using Tłı̨chǫ Knowledge to Monitor Barren-ground Caribou

Consultation, Verification and Program Design
Allice Legat
Camilla Nitsiza
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August 30, 2010

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Tłı̨chǫ Philosophy

Grand Chief Jimmy Bruneau directed the Tłı̨chǫ people to know both Western and Tłı̨chǫ knowledge so each Tłı̨chǫ citizen would be strong like two people. Bruneau's philosophy and direction was not new to the Tłı̨chǫ people, who have always been interested in the ways and knowledge of others. This philosophy has been noted in both their oral narratives and the journals of the trading post factors. Each tells of Tłı̨chǫ leaders learning the knowledge and negotiating techniques of trading post factors to ensure the best return for their people's furs. This philosophy is also evident - in oral narratives telling of activities leading up to discussions with the Federal Commissioner in 1921 when Möwhì signed Treaty 11. The stories explain that Tłı̨chǫ were aware of the European perspective based on information they acquired from the Slavey and Chipewyan further south. Upon learning from the experience of their southern neighbours they were better prepared to deal with the Treaty Party.

Tłı̨chǫ oral narratives stress the importance of understanding a problem, finding a solution and taking action. This approach to learning, knowing and taking action is evident in most Tłı̨chǫ oral narratives, as well as the manner in which past research projects were approached. The Tłı̨chǫ have rarely allowed others to do research to address a problem they wish to know about themselves. They insist that they take an active part in research and monitoring. Specifically the Tłı̨chǫ:

- Explained to the managers of Rayrock Mine (1950s) that their observations were indicators of serious problems in the environment. They identified problems that they observed with plants and wildlife –such as beaver, marten and fish. These problems were particularly evident to those Tłı̨chǫ who either used the area frequently or worked at the mine.
- Insist research focus on their needs and priorities – take for example the priorities set by the Dogrib Renewable Resources Committee during the early 1990s: where caribou, habitat, water and heritage were of greatest concern.
- Insist on adequate funding to ensure Tłı̨chǫ researchers were employed as permanent, full time employees for the life of research projects – take for example the Traditional Justice and Traditional Medicine project in Whatì (1987-92); the Traditional Governance project in Gametì (1993-1996); and the caribou and place names projects in all the Tłı̨chǫ communities (1996-2001).
- Use the participatory action research (PAR) method that includes researcher training; an elders – both male and female elders – committees; rigorous research methods carried out by Tłı̨chǫ researchers and overseen by the elders' committee; and verification of shared information. The PAR process ensures accurate understanding of the traditional knowledge that is documented and ensures it leads to positive actions based on the recommendations.

Today, it is vital that the Tłı̨chǫ lead by undertaking their own harvesting and monitoring studies as the impacts of development on Tłı̨chǫ lands and the environment are becoming ever more evident. The Tłı̨chǫ Government and co-management boards have been given the authority to manage the land in the Tłı̨chǫ Agreement, but to do this effectively requires a system of Tłı̨chǫ knowledge (TK) research and monitoring that will feed into management decisions.

The *Special Project: Using Tłı̨chǫ Knowledge to Monitor Barren Ground Caribou* described below is based on Tłı̨chǫ philosophy and is part of the Tłı̨chǫ Knowledge Research and Monitoring Program. The description of this project follows the following format: first, the current issues, for which the TK program was designed to solve, are discussed. Second, the program structure, on which the caribou monitoring and collection of harvest information is a part, is described.

It should be noted that evaluation is done to ensure the best possible TK is being documented for future monitoring, education and understanding of the Tłı̨chǫ perspective. The purpose is not to pass judgment but to provide tools to fine tune the program to ensure TK is documented and used.

Current Issue

The Tłı̨chǫ Agreement directs co-management boards, government agencies and the Tłı̨chǫ Government to i) use traditional knowledge, ii) promote cultural perspectives, and iii) select Board members that have knowledge of Tłı̨chǫ way of life. Yet the current systems – most of which are based on Western perspectives and the British legal system – make it difficult for Tłı̨chǫ knowledge (TK) to be used in a manner that is consistent within the Tłı̨chǫ cultural perspective and way of life.

The Wek'èezhìi Renewable Resources Board in collaboration with the Tłı̨chǫ Government decided to develop and implement a program that would be a positive step towards using Tłı̨chǫ knowledge in manner that considers Tłı̨chǫ perspectives.

The Agreement states that:

Section 12.1.6

> *In exercising their powers under this chapter, the Parties and the Wek'èezhìi Renewable Resources Board shall take steps to acquire and use traditional knowledge as well as other types of scientific information and expert opinion.*

Section 13.1.5

> *In exercising their powers in relation to forest management, the Government of the Northwest Territories, the Tłı̨chǫ Government and the Wek'èezhìi Renewable Resources Board shall take steps to acquire and use traditional knowledge as well as other types of scientific information and expert opinion.*

Section 14.1.4

> *In exercising their powers in relation to the management of plants, the Government of the Northwest Territories, the Tłı̨chǫ Government and the Wek'èezhìi Renewable Resources Board shall take steps to acquire and use traditional knowledge as well as other types of scientific information and expert opinion.*

Section 22.1.7

> *In exercising their powers, the Mackenzie Valley Environmental Impact Review Board and the Wek'èezhìi Land and Water Board shall consider traditional knowledge as well as other scientific information where such knowledge or information is made available to the Boards.*

Furthermore, Section 12.5.5 of the Tłı̨chǫ Land Claim and Self-government Agreement (the Agreement) states that the Wek'èezhìi Renewable Resources Board (WRRB) shall:

> *(a) Make a final determination, in accordance with 12.6 or 12.7, in relation to a proposal*
>
> *i. Regarding a total allowable harvest level for Wek'èezhìi, except for fish,*

ii. Regarding the allocation of portions of any total allowable harvest levels for Wek'èezhìi to groups of persons or for specified purposes, or

iii. Submitted under 12.11.1 for the management of the Bathurst caribou herd with respect to its application in Wek'èezhìi;

The Tłı̨chǫ Agreement authorizes the WRRB the responsibility for total allowable harvest (TAH) for wildlife, forests and plants and authorizes the Minister of Fisheries and Oceans (DFO) responsibility for fish conservation and the establishment of TAH for fish stocks. Both WRRB and DFO have an obligation under terms of the Agreement to determine TAH through assessment studies and other research.

For WRRB and DFO to have information necessary for sustainable management it is imperative that the Tłı̨chǫ undertaken their own monitoring by documenting their observations and harvesting information to ensure they contribute to the process. If allocations are to be made among users of the resource it will be necessary to determine basic needs levels of the beneficiaries of the claim. Allocations of fisheries and wildlife resources will be difficult without this basic harvest information from the harvesters themselves.

For the Agreement to be honoured three activities need to occur:

1. Baseline information must be gathered from elders on known trends as harvest, wildlife and vegetation distribution.

2. Information gathered through Tłı̨chǫ traditional methods of monitoring needs to be documented on an on-going basis.

3. Realistic harvest studies need to be ongoing.

4. All collected information must be stored in such a way as to respect the provider of the knowledge.

5. Reports to co-management boards will be sent several times per year to insure it will inform their management decisions.

Although scientific information is readily available, most TK is in the minds of the elders and harvesters. For this reason, a program is needed so Tłı̨chǫ researchers can work with elders and harvesters to document their knowledge in a manner that does not lose the Tłı̨chǫ perspective. This is usually detailed knowledge of past conditions that they share with their descendants while sharing their current observations of wildlife and wildlife habitat. And, as is the traditional mode of sharing, numbers of species observed and harvested, are shared with others in the community along with other information such as behaviour of wildlife and the people harvesting. All information available is used to make management decisions.

One of the important features of Tłı̨chǫ knowledge is that it is acquired, enhanced and communicated on the land while people are engaged in land-based activities. It is also communicated after harvesters return to the community through oral narratives.

Modern harvest studies often ask harvesters to fill out survey forms in English, or to provide limited information that can be taken out of context. These studies may fail because they are not compatible with how Tłı̨chǫ knowledge, including information about harvest, is transmitted through oral narratives.

This project was designed to ensure that both monitoring and realistic harvesting numbers can be recorded in a culturally appropriate manner. This will help alleviate the problem that many respondents choose not to answer correctly the harvest study questions posed by non-community members.

Program Structure

The Tłı̨chǫ Knowledge Research and Monitoring Program is designed to capture knowledge in a manner that is compatible with the Tłı̨chǫ cultural perspective. It is also designed to acknowledge the continued importance of oral narratives as the medium with which to share information and the importance of Tłı̨chǫ land based activities in learning and being able to apply and promote Tłı̨chǫ knowledge.

Program Goals

A Tłı̨chǫ Knowledge Research and Monitoring Program will support goals that assist the Tłı̨chǫ Government, and the boards and agencies under the Tłı̨chǫ Agreement, to fulfill their mandate within the co-management regimes. It will also provide direction to industry and non- Tłı̨chǫ researchers on expectations and costs.   The caribou monitoring and harvest study portion of this program will support the following program outcomes:

1. Tłı̨chǫ knowledge and perspectives are utilized in management and decision-making.
2. The Tłı̨chǫ Government and co-management boards have the information they need to play a strong role in co-managing the environment, and to support programs such as education.
3. The Tłı̨chǫ Government has its own information and reports to provide boards and government and information it needs to play a strong role in managing caribou and other wildlife, plants and forests.
4. Harvesting maintains its role as a respected and important economic and social endeavour.
5. Tłı̨chǫ knowledge, perspective and language are strengthened through oral narratives and land-based activities.
6. Integrated knowledge transfer is occurring across generations.
7. Tłı̨chǫ place names are documented accurately to express bio-geographical information, some of which are associated with caribou harvesting.

Social Impacts

If the program successfully achieving the above goals, it will help to support broader social impacts such as the following:

- Tłı̨chǫ citizens will fulfil their traditional responsibilities to care for the land.
- TK is transmitted in a manner that is compatible with Tłı̨chǫ culture and social structure.
- Tłı̨chǫ language is strong and used in daily conversations.
- Tłı̨chǫ citizens are emotionally and spiritually healthy.
- There is a structured process for Tłı̨chǫ youth to learn land-based skills and knowledge.
- Tłı̨chǫ place names become official.

Program Design and Implementation

The establishment of a fully developed, effective Tłįchǫ Knowledge Research and Monitoring Program is a necessary but ambitious undertaking. It will require substantial resources, careful planning and a long term commitment to allow it to be successful. It will also require investment in training and in information technology.

Using Tłįchǫ Knowledge to Monitor Barren Ground Caribou and document caribou harvest is a constructive first step towards the development of the program.

There are several activities that need immediate attention if the program is going to provide on-going information for caribou monitoring and management.

To ensure harvesters' and elders' observations, knowledge and harvest are documented and used, the following activities will be undertaken immediately when initiated in November 2010:

1. Establish a comprehensive database to support the organization and storage of Tłįchǫ monitoring and harvest data in a manner that is consistent with oral narrative and protocol;
2. Digitize and enter existing information into the database;
3. Establish operating procedures for the program, including human resource policies and procedures, compensation policies, and development of research methods;
4. Establish training programs for researchers and data entry clerks;
5. Hire and train staff;
6. Undertake promotion and outreach to ensure that communities understand and support the program, and that harvesters participate;
7. Establish community TK Elders' Committees;
8. Finalize the Tłįchǫ Knowledge Policy initiated through the Wek'eezhii forum for approval by the Tłįchǫ Government.

Tłı̨chǫ Knowledge Research and Monitoring Program
Summary Table of Proposed Structure

SOCIAL IMPACTS

- Tłı̨chǫ citizens will fulfil their traditional stewardship responsibilities to care for the land.
- Tłı̨chǫ knowledge is transmitted in a manner that is compatible with Tłı̨chǫ culture and social structure.
- Tłı̨chǫ language is strong and used in daily conversations.
- Tłı̨chǫ citizens are emotionally and spiritually healthy.
- There is a structured process for Tłı̨chǫ to youth learn land-based skills and knowledge.
- Tłı̨chǫ place names become official

GOALS

- Tłı̨chǫ knowledge and perspectives are utilized in management and decision-making.
- The boards and agencies mandated under the Tłı̨chǫ Agreement have the information they need to play a strong role in co-managing the environment and to support programs such as education.
- The Tłı̨chǫ Government has the information it needs to play a strong role in managing caribou and other wildlife, plants, forests and protected areas; and has its own information and reports to support bargaining and negotiations.
- Harvesting maintains its role as a respected and important economic and social endeavour.
- Tåîchô knowledge, perspective and language are strengthened through oral narratives and land-based activities.
- Integrated knowledge transfer is occurring across generations.
- Tåîchô place names are documented accurately to express bio-geographical information, and to support the process of acquiring official place name status.

ACTIVITIES

- Establish a comprehensive database to support the organization and storage of Tłı̨chǫ monitoring and harvest data in a manner that is consistent with oral narrative and protocol.
- Digitize and enter existing information into the database.
- Establish operating procedures for the program, including human resource policies and procedures, compensation policies, and development of research methods.
- Hire and train staff – research, data entry, etc.
- Undertake promotion and outreach to ensure that communities understand and support the program, and that harvesters participate.
- Establish an Elders' Committees to guide the programme.
- Develop a Tłı̨chǫ Knowledge Policy for approval by the Tłı̨chǫ Government.
- Evaluate the program to make sure it is achieving the goals.
- Implement culturally appropriate research and monitoring activities.

Caribou Monitoring and Harvest Study[1]

Section 12.5.5 of the Tłı̨chǫ Land Claim and Self-government Agreement (the Agreement) states that the Wek'èezhìi Renewable Resources Board (WRRB) shall:

(a) Make a final determination, in accordance with 12.6 or 12.7, in relation to a proposal

i. Regarding a total allowable harvest level for Wek'èezhìi, except for fish,

ii. Regarding the allocation of portions of any total allowable harvest levels for Wek'èezhìi to groups of persons or for specified purposes, or

iii. Submitted under 12.11.1 for the management of the Bathurst caribou herd with respect to its application in Wek'èezhìi;

Tłı̨chǫ oral narratives tell of the annual cycles in which caribou and fish are key resources. For example, spring camp sites were and continue to be located along known caribou migration routes, good fishing locations and places known to have birch trees. Tłı̨chǫ waited for the caribou during spring migration back to the barrens but if caribou choose a different route, the people had fish while building canoes that were used to travel trails that led to the barrens making them ready to harvest caribou when they once again crossed paths. Even on the barren grounds Tłı̨chǫ camps continue to be located near good fishing locations that are known to be on caribou migration paths. Like traditional harvesting camps, current communities are located on or near fisheries and areas caribou are known to travel if they are in the area. Both resources continue to be important to the well-being of Tłı̨chǫ – psychologically as well as physically.

Tłı̨chǫ elders and harvesters who participated in the West Kitikmeot Slave Study (WKSS) research entitled, '*Caribou Migration and the State of their Habitat'*, (2001) and who originally participated in the design of the TK Monitoring Program in 1999-2000, think it is long past time to monitor barren ground caribou. The oldest Tłı̨chǫ elders know the WKSS researchers – Georgina Chocolate and Bobby Gon - focused on oral narratives from the past that provided baseline information.

They emphasize the importance of continuing to collect the most senior elders' knowledge (baseline) given the hiatus of 10 years (2001-2010). In addition they want the caribou monitoring program to:

1. Document current observations of the harvesters.
2. Research and data input and report writing to be done by adults that use both Tłı̨chǫ and English, and
3. Participation of young people through their school, during the summer and during other school or university breaks.

Elders, harvesters and other members of households – whether young or old – continue to want the Tłı̨chǫ people and their government to maintain their responsibility to watch and care for (monitor and manage) the land, water and resources they use, observe and enjoy. They want

[1] The Caribou Monitoring and Harvest Study Project is a special project within the TK Research and Monitoring Program.

Tłı̨chǫ citizens to use traditional values and rule associated with caribou to manage their resources.

The Tłı̨chǫ Agreement authorizes the WRRB's the responsibility for total allowable harvest (TAH) for wildlife, forests and plants. WRRB has an obligation under terms of the Agreement to determine TAH through assessment studies and other research for caribou. WRRB is recommending caribou harvesting targets rather than a TAH. The success of this approach is dependent on having the information necessary for sustainable management. It is, therefore, imperative that the Tłı̨chǫ undertaken their own monitoring by documenting their observations and harvesting information to ensure they contribute to the process. If the Chiefs use the TK Research and Monitoring Program to oversee the documentation of caribou harvesting among their citizens during this time of low caribou populations it will easier for the Land Protection Department, Tłı̨chǫ Government to maintain the target within a reasonable range and to allocate caribou resources to those in need, and for WRRB to receive reliable up to date information and to evaluate the success of the target approach. Furthermore, when caribou population numbers are higher, and allocations of this resource are more widespread, it will be necessary to determine basic needs levels of the beneficiaries of the claim.

For the Agreement to be honoured five activities need to occur:

1. Baseline information must be gathered from elders on known trends as harvest, wildlife and vegetation distribution. This information should be documented so it can be used to determine trends as well as indicators of change.
2. Information gathered through Tłı̨chǫ traditional methods of monitoring needs to be documented on an on-going basis.
3. Realistic harvest studies need to be ongoing.
4. All collected information must be stored in such a way as to respect the provider of the knowledge.
5. Reports must be provided to co-management boards to insure informed decisions can be made.

Most Tłı̨chǫ knowledge is in the minds of the elders and harvesters. For this reason, a program is needed so Tłı̨chǫ researchers can work with elders and harvesters to document their knowledge in a manner that does not lose the Tłı̨chǫ perspective. The process would include a detailed knowledge of past conditions that are compared to current observations of caribou behaviour, fitness and interactions with predators and pests as well as landscape and vegetation use. And, as is the traditional mode of sharing information, numbers of species observed and harvested, are incorporated into oral narratives that are told in the community. All information available is used to make management decisions and determine the number of caribou to be harvested in the near future.

One of the important features of Tłı̨chǫ knowledge is that it is acquired, enhanced and communicated on the land while people are engaged in land-based activities. It is also communicated after harvesters return to the community through oral narratives.

Modern harvest studies often ask harvesters to fill out survey forms in English, or to provide limited information that can be taken out of context. These studies may fail because they are not compatible with how Tłı̨chǫ knowledge, including information about harvest, is transmitted through oral narratives.

This project was designed to ensure that both monitoring and realistic harvesting numbers can be recorded in a culturally appropriate manner. This will help alleviate the problem that many respondents choose not to answer harvest study questions posed by non-community members.

Finding a Solution

In 1999-2000, the Tłı̨chǫ Regional Elders' Committee – under the direction of *K'àowo*[2] Jimmy Martin – requested Dogrib Treaty 11 staff who were working with the elders to bring male and female harvesters from each community to discuss a Tłı̨chǫ monitoring program. Funding for this meeting was secured from Cumulative Impacts and Monitoring Program, Environment Canada. The elders and harvesters directed staff to initiate monitoring around the diamond mines – with research/hunting camps located in strategic locations around the mines that would enable harvesters to observe the behaviour of caribou in relation to the mines. They also suggested a camp be located at Gots'ôkàtì and Deèzhàatì so caribou behaviour could be compared with non-mining areas.

In September 2008, the Wek'èezhìi Renewable Resources Board (WRRB) and the Tłı̨chǫ Government initiated work towards implementing a Tłı̨chǫ knowledge monitoring program that the Land Protection Department of the Tłı̨chǫ Government and co-management boards mandated under the Tłı̨chǫ Agreement could use in their decision making.

The TK program design with associated policy guidelines were developed based on discussions held during the household visits made by the Project Team between April 2009 and December 31, 2009. All households in the three fly-in communities of Gametì, Wekweetì and Whatì were contacted. Behchokö has a significant population therefore only those households with active harvesters and elders were contacted. During these visits Tłı̨chǫ researchers, under the direction of Allice Legat, explained the importance of Tłı̨chǫ knowledge in the Tłı̨chǫ Agreement and the possibility of establishing a monitoring program as originally laid out by the elders and harvesters in 1999. Two Tłı̨chǫ researchers – Camilla Nitsiza and Madelaine Chocolate - did conducted the household visits, although Mary Adele Wetrade did assist Madelaine Chocolate in Gametì. Household visits took longer than anticipated because i) individuals wished to express their views after hearing the role of the WRRB as it is mandated in the Tłı̨chǫ Agreement; and ii) individuals were delighted to expound on the potential for harvesters and elders working together with Tłı̨chǫ researchers to monitor the land as first set out by the elders in 1999-2000. Their excitement at building on their traditional management practices was clear.

After completing household visits and analyzing Tłı̨chǫ responses, it became clear that it would be culturally appropriate to develop interview guidelines that allowed harvesters to share information in a manner similar to how they normally explain their harvest and observations to

[2] Translated as 'boss'. The role is significantly different than the Western concept for 'chair'.

one another and to their elders. The Tłı̨chǫ researchers found harvesters would prefer to discuss their activities – both observations (monitoring) and harvesting – in either a home or office setting, but at their own convenience. Finally, they found that harvesters thought if Tłı̨chǫ were doing the documenting and report writing they could then be assured: i) individual harvest numbers would remain confidential; ii) their information would be documented realistically; and iii) their observations would remain in the context within which their observations were made.

Following the household visits a Regional TK Elders/Harvesters Working Group (TK Regional Working Group) was established to complete the work.[3] Gametì Committee members thought that it would be better if Tłı̨chǫ from all four communities worked together from the start so they could address all issues together. Six (6) members on the TK Regional Working Group had been active on the TK Regional Elders Committee from 1996-2002 while the remaining ten (10) harvesters and elders were named by the Tłı̨chǫ WRRB members or Chiefs in consultation with elders. The Working Group meetings were held between January and March 31, 2010: three in Gametì, [4] one in Wek'weetì, and one in Behchokö.

The following is a summary of how discussions at the household level and at the TK Regional Working Group meetings have informed key components of the TK caribou monitoring and harvest study approach.

Species Important to Local Harvesters

Caribou and fish are always cited as key species. Nevertheless, all Tłı̨chǫ elders and harvesters explain – as is consistent with members of hunting and gathering societies – that all species are important, including human. They also explained that if one is to understand trends and impacts within Wek'èezhìi, human behaviour should be monitored noting what is being harvested by both male and female harvesters and whether or not all is used. [5]

Tłı̨chǫ Harvesting information to be Documented

During conversations at the household level, it became apparent that many younger people felt they did not know enough about the environment to speak with their local researchers, but did think that they could report what they had harvested and observed as long as older, more experienced elders and harvesters were present to help them to understand their observations. Specifically younger people thought that if elders and harvesters were present they would gain a

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[3] Members of the Regional Working Group are Romie Wetrade, Laiza Mantla, Louis Zoe and Mary Adele Wetrade (with Fred Mantla attending in place of Mary Adele Wetrade) from Gametì; Pierre Beaverhoe, Dora Nitsiza, Robert MacKenzie Sophia Williah, and Francis Simpson from Whatì; and Elizabeth Michel, Robert MacKenzie, Harry Mantla and Eddy Weyellan from Behchokǫ̀; and Jimmy Kodzin, Elizabeth Whane, Rosa P'ea, Elizabeth Arrowmaker. The Working Group members decided that since the working group was short term if someone missed a meeting – for any reason – they would not continue.

[4] Under the direction of John B. Zoe, TEO, a TK Office has been established in Gametì. However office furniture and computers have yet to be purchased and staff has yet to be hired.

[5] Although not discussed during the household visits or during the meetings, most elders and active harvesters suggest that human activities associated with industrial development and exploration should be monitored by stewards of the land.

better understanding of how their observations were similar or different than the past and how their own knowledge and behaviour impacts wildlife, particularly caribou.

Most of the elders and harvesters participating in the TK Regional Working Group thought leaders should tell harvesters to report their observations of caribou (and other wildlife) behaviour, fitness, number of young, etc as well as the number they harvested.

Discussion outside the formal structure of the TK Regional Working Group, the researchers discussed the importance of continuous ‘watching caribou’, and teaching the young about caribou behaviour and rules governing their behaviour around caribou; and, that caribou should be observed whether hunting is taking place or not.

Sharing Information

Throughout all discussions it became clear that community members would be more open about sharing their harvesting information as well as their observations if they understood that their oral narratives and their observations - ‘raw data’ - would remain with and be safeguarded by the Tłı̨chǫ Government, and kept in the Tłı̨chǫ communities.

Several individuals expressed that they feel they are being “checked-up on” when non- Tłı̨chǫ ask questions and are worried that it can be used against them.

Schedule of Interviews

Based on the manner in which Dene pass information, it was made abundantly clear during household visits and during the TK Regional Working Group meetings, that oral narratives are the process for sharing detailed information. (see also Basso, Cruikshank, Goulet, and Sharp on the importance of oral narratives among all Dene). For this reason the researchers will be trained to use an interview guide while documenting information shared by harvesters.

Researchers thought the oral narratives of the harvest and associated observations should be documented within two days of the harvester returning to the community.

Expectations of Harvesters and Elders

All Tłı̨chǫ citizens with whom the researchers spoke liked the idea that monitoring skills and harvesting information would be given back to the community every few months – by the Tłı̨chǫ researchers. They thought the communities could benefit from hearing this information and verifying the researchers’ interpretations so misunderstandings could be clarified.

The TK Regional Working Group thinks that reporting back to the community at public meetings is extremely important. If the researchers share a summary of what they have heard with the community, then harvesters will be more likely to provide their observations and harvest numbers. They reasoned that the harvesters would know they were being heard and that their knowledge and information was being documented accurately. For example,

1. Their observations of the environment – health of caribou, state of the landscape and vegetation caribou use – are being heard and understood.
2. Harvesters will feel secure that harvesting data is correct, and their elders and leaders can use the information for management discussions with WRRB and the GNWT.

Compensation for Harvesters

This has not been discussed with harvesters during the household visits or at the elders and harvesters meetings. During past discussions with elders, it was thought that harvesters should report on a volunteer basis, but should be compensated when attending the verification and sharing meetings when more information on their observations can be noted. Only those harvesters who participated on a volunteer basis would be compensated at the verification and working group meetings.

It is proposed that this is a decision for the Tłįchǫ leadership after being discussed at a Tłįchǫ Assembly, recognizing that availability of resources may be a constraint.

Reporting

Since using Tłįchǫ knowledge in caribou management is important to Tłįchǫ, it is recommended that after the researchers hold verification meetings with elders and harvesters, reports be written for the WRRB as well as for the Chief Executive Council and the Territorial governments.

Reports will be sent to Boards, Governments and Land Protection Department at least three times per year.

Duration of Harvest Study within Monitoring Program

During the household visits and the TK Regional Working Group meetings, the vast majority (young people did not speak to this topic) of Tłįchǫ citizens thought the caribou harvest study within the TK monitoring program should be on-going. They also thought reporting on harvest should be on-going.

Activities Specific to Caribou Monitoring and Caribou Harvest Study

Basically the steps to traditional monitoring and documenting information on caribou are as follows:

- Harvesters have been taught since the time they were young to observe all that is around them and to consider their observations in relation to what they are harvesting, and in relation to all other aspects of their environment. It is these observations as well as information about their harvest that the researchers will document through digital recording and by entering key information into the data base.
- As researchers listen to harvesting accounts of the harvester, they will have an interview guide that they will use to mentally check off information, and as they enter key information into the data base. If necessary the researcher will ask the harvester for additional information, but only after they have shared their observations through a narration of their experience.
- Through hunting and through use of the caribou harvested both male and female harvesters will note the behaviour of caribou in various situations and note texture, smell and taste of meat and characteristics of hides, bones, etc. Researchers are responsible for acquiring and documenting all information of caribou.
- Researchers will mark the location of the harvester's observations and their harvest.
- Researchers will note number of caribou harvested, locations, age, sex, fitness, etc.
- Researchers will note information on wolf numbers associated with caribou as well as numbers harvested and fitness levels.
- Researchers will listen to the digital recording of the account and enter relevant information into the data base. They will also note additional questions for future reference, and, if necessary, they will visit the harvester for clarification.
- Researchers will search the data base for additional caribou information from that location, and begin developing a compilation of the information contained in the oral narratives.
- Harvesters will note and share through their oral narrative the condition of the environment, including landscape, vegetation, moist, snow depth, etc.
- If appropriate will compare their observations with reports available from the YK Dene, Kugluktuk and Lutselk'è who traditionally hunted in the region. Comparisons will be done by academic researcher in conjunction with community researchers.
- Since very few harvesters will be hunting caribou over the next several years the following activities are examples of information documented by researchers:

Autumn Migration

- Active male and female harvesters will travel to known water crossings
  - monitor caribou as they cross,
  - note number of calves, cows and bulls,
  - note direction of migration,
  - note number of wolves and other predators.
- Tłįchǫ citizens – elders, harvesters, researchers and youth – travel to Gotsak'atì to observe caribou
- Active male and female harvesters will travel to Æek'atì (Lac de Gras) area and observe caribou after leaving the Diavik and BHP claim blocks, around Æots'ik'è, Æek'atìtata

Wintering Areas

- Elders will select places to observe caribou behaviour in those areas, and to note additional aspects of fitness if harvesting caribou.
- Harvesters will also observe the state of the winter habitat

Spring Migration

- Active male and female harvesters will travel to places where caribou fences were located to observe the number of caribou (and gender and age) that travel through the area. In addition the harvesters will note fitness level. If caribou are taken, contents of their stomach and vegetation in mouths and in stools will be noted, as well as texture and smell of meat and state of hides, bones, and hair.
- Harvesters will do a visual appraisal for pregnancy and report pregnancy from the cow harvest.
- Harvesters will note number of wolves associated with the herds.
- Harvesters will note behaviour associated with pests.
- Active male and female harvesters should also travel to Gostak'atì, Dezaahtì to observe caribou at that stage of their migration.

Summer: Post Calving Area

- Elders will advise on where active male and female harvesters should travel to observe bull, cows and calf behaviour in their summer habitat assessing abundance at key locations.
- Harvesters also observe predators, insect levels, and other factors impacting caribou distribution, fitness and migration.

Project Structure: Activities and Products

	SPECIAL PROJECT ACTIVITIES ***(What needs to be done)***	***PRODUCTS*** ***(What we hope to achieve)***
<u>**Data Base**</u>	Researchers enter harvest information into database the same day they hear and document it Maintain and update database regularly after each interview Produce reports regularly and review at community meetings and with Elders' Committee Produce reports in response to requests	• Database is up to date and capable of creating reports upon demand • Baseline information is available for environmental assessments, and environmental management • The collections of Tłı̨chǫ knowledge is expanded as new information is entered into the database • Realistic and current Tłı̨chǫ information on caribou and their habitat • Understand annual resource use -when low numbers of caribou • Ability to compare current caribou information with past: -is there a trend? -are caribou being impacted – if so what from what?
<u>Training</u>	On-going training for program staff to ensure they are effective researchers and cultural interpreters	• Trained TK community researchers are available to work with harvester and elders. • Database administrator is trained to maintain the database. • Staff have the skills to: ○ Efficiently document interviews. ○ Use interview guidelines. ○ Maintain archives. ○ Produce reports. ○ Identify similarities and differences between the Tłı̨chǫ and western management concepts and terms.

<table>
<tr><th></th><th>SPECIAL PROJECT ACTIVITIES
(What needs to be done)</th><th>PRODUCTS
(What we hope to achieve)</th></tr>
<tr><td><u>TK Elders' Committee/s</u></td><td>Tłı̨chǫ elders provide on-going guidance to the program</td><td>• Elders' Committee is functioning effectively
• Elders play a meaningful role in all phases of program operations
• Elders work with Tłı̨chǫ citizens to reinstate their traditional roles and responsibilities</td></tr>
<tr><td><u>Culturally Appropriate Research and Monitoring Methodology</u></td><td>Interview and community meeting guidelines
-specific to caribou monitoring , caribou harvest and caribou habitat and loss of habitat due to fires and development

Monitoring by harvesters
• While harvesting
• Specific to water crossings, caribou fence area, visit fire areas
• If not harvesting caribou, then a form of compensation.

Training specific to project
• Caribou terminology
• Laws and rules
• Caribou management plan

Hold caribou meeting once every two months</td><td>• Realistic and current Tłı̨chǫ information on caribou and their habitat.
• Ensure trends are well documented, not hearsay

• Detailed current Tłı̨chǫ information on caribou and their habitat that can be discussed – in Tłı̨chǫ – between elders and harvesters with researchers documenting.

• Ability to work efficiently

• Realistic and current Tłı̨chǫ information on caribou and their habitat
• Information available to write report on caribou observations</td></tr>
</table>

	SPECIAL PROJECT ACTIVITIES ***(What needs to be done)***	***PRODUCTS*** ***(What we hope to achieve)***
Promotion and Outreach	Elders visit households and explain what can be used in lieu of caribou Chiefs sit with Tłı̨chǫ Knowledge Research and Monitoring Elders' Committees to go over restriction on and allocations of caribou harvest Project Directors explains monitoring process to chiefs and council with elders present Academic paper for journal and presented at appropriate conference	• Traditional use of resources due to ebb and flow of environment • Traditional sharing of information • More likely harvesters will visit and report harvest and observations • Elders Committee supports Chiefs' allocation on caribou harvest and their decision to monitor using elders and harvesters • Unique methodology and process is shared • Researchers experience discussions on what they are doing outside their communities

	SPECIAL PROJECT ACTIVITIES *(What needs to be done)*	*PRODUCTS* *(What we hope to achieve)*
Program Administration	**Budget for this project** **Fundraising** **Protocol for sharing reports with WRRB etc,** **Guidelines for verifying information in reports** **Hire researchers**	• **Ability to carry out realistic fundraising** • **Sufficient money to monitor caribou and harvesting** • **Ensure research is rigorous** • • **Ensure results are not hearsay but based on Tłı̨chǫ knowledge and perspective** • **Special project will enhance long term goals of TK programme** • **Ensure use of information from Caribou migration and state of habitat project** • **Ensure data is collected and available to be used**

Appendix IV:

2011

Draft Tłįchǫ Knowledge Policy

Tłįchǫ Government

12/18/2011

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DRAFT

Tłı̨chǫ Government
Tłı̨chǫ Knowledge Policy

Preamble

To 'know something' implies knowing its origin as well as experiencing and observing. The body of Tłı̨chǫ knowledge has been acquired through thriving in a world of constant change. Tłı̨chǫ knowledge is constantly expanding, as the elders of each generation add their observations, experience, their wisdom and insights to what is already known. Tłı̨chǫ knowledge has been, and continues to be, preserved and shared with others through oral narratives.

The Tłı̨chǫ respect, honor and value living within Tłı̨chǫ neek'e – the place where Tłı̨chǫ belong –referred to in the Tłı̨chǫ Agreement as Mǫwhì Gogha Dè Nı̨ı̨tłèè in honor of Mǫwhì who valued Tłı̨chǫ knowledge and traveled Tłı̨chǫ nèèk'è observing all that was taking place and sharing with those who went on to negotiate the Tłı̨chǫ Land Claims and Self-Government Agreement.

Honoring brings with it a responsibility to learn and remember the knowledge that has been passed down while observing and experiencing all that is part of Mǫwhì Gogha Dè Nı̨ı̨tłèè so current and past oral narrative can be shared with other Tłı̨chǫ who will continue to care for the place where they belong.

Statement of Intent

Tłı̨chǫ Knowledge represents the collective intellect of the Tłı̨chǫ, and forms the foundation upon which all Tłı̨chǫ Government programs, services and activities are built. The knowledge and values of our ancestors should inform and influence all aspects of Tłı̨chǫ Government operations.

The Tłı̨chǫ Government will encourage and promote the continued acquisition, use and distribution of Tłı̨chǫ knowledge, and will work to ensure that Tłı̨chǫ knowledge is protected and safeguarded for future generations, in a manner that respects those who have shared their knowledge and to whom the knowledge belongs.

In accordance with the Tłı̨chǫ Agreement, the Tłı̨chǫ Government will encourage Government departments, boards and agencies, and the private sector to take steps to acquire and use Tłı̨chǫ knowledge in exercising their powers in relation to the *dè*, including management of human activities, land and water management, wildlife management, forest management, and management of plants; as well as during the environmental impact and review process.

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Principles

Tłįchǫ Knowledge and values represent the cumulative and collective experience of the Tłįchǫ, and their acquisition and expression cannot be separated from the practice of traditional Tłįchǫ activities and practices associated with the *dè*.

Tłįchǫ communities and harvesters are responsible for the use and preservation of Tłįchǫ Knowledge, in a manner that preserves the context, spirit and intent of oral narratives.

Tłįchǫ Knowledge belongs to the people who share their oral narratives, and all Tłįchǫ Knowledge that is documented will be safeguarded within Tłįchǫ communities.

Tłįchǫ elders are the experts about Tłįchǫ knowledge and values and are best qualified to understand what needs to be acquired, documented, interpreted, and how best to apply this knowledge; they will play a lead role in any initiatives dealing with Tłįchǫ knowledge.

Tłįchǫ Knowledge and values are necessary for management processes dealing effectively with protected areas, land, water, habitat and wildlife.

Tłįchǫ Knowledge and values should be preserved for future generations, and as the foundation for the continued accumulation of knowledge.

Tłįchǫ place names are indicators of valuable information and should be documented and used as an aspect of Tłįchǫ Knowledge.

Documentation of Tłįchǫ Knowledge should not replace the telling of oral narrative and experiencing Tłįchǫ *nèèk'è – Mǫwhì Gogha Dè Nįįtłèè* where knowledge is passed on in culturally appropriate manners.

Tłįchǫ Knowledge and values are best expressed in the Tłįchǫ language, and language enhancement and preservation is a critical component of Tłįchǫ Knowledge initiatives.

Holders of Tłįchǫ Knowledge have a critical role to play in monitoring the cumulative impacts and on-going health and integrity of the Tłįchǫ nèèk'è - *Mǫwhì Gogha Dè Nįįtłèè*.

Definitions

<u>*Dè*</u> – Often translated as 'land' but includes the understanding that all of Creation has spirit.

<u>External Institution</u> – Institutions, agencies and boards both mandated and not mandated under the Tłįchǫ Agreement. This includes but is not restricted to Governments, industry, universities and other educational facilities.

<u>Harvester</u> – Any Tłįchǫ individual who participates in harvesting activities.

<u>Harvesting activities</u> – refers to all activities in which the Tłįchǫ have traditionally participated, including but not limited to: hunting; trapping; fishing; cutting and gathering wood or branches; collecting snow and ice; gathering plants and berries for medicine and food.

Informed consent - a statement of oral agreement that may be recorded in audio or video formats or in writing between a researcher and a Tłįchǫ knowledge holder that explains the nature of the research, and the manner in which the information the knowledge holder is giving, and how it can be used and accessed.

Tłįchǫ Agreement, The Agreement, or the Red Book - refers to the Tłįchǫ Land Claims and Self-Government Agreement among the Tłįchǫ First Nation, the Government of the Northwest Territories and the Government of Canada.

Mǫwhì Gogha Dè Nįįtłèè is the traditional area of the Tłįchǫ described by Chief Mǫwhì during the signing of Treaty 11 in 1921.

Wek'èezhii is the management area of the Agreement.

Tłįchǫ Lands are lands owned by the Tłįchǫ Government under the Agreement.

Tłįchǫ knowledge holders – Individuals recognized by elders as possessing either or both specialized or general knowledge that has been passed on from previous generations who have the ability to integrate their own learning and share this knowledge with others.

Elder – An older person who is at least 75 years of age who follows the Tłįchǫ traditional system and is recognized by their peers as having expertise and are qualified to advise leaders and others.

Tłįchǫ knowledge - knowledge that elders and other community members hold from past intergenerational experience and is passed down to the Tłįchǫ through the generations. It continues to grow and is brought forward through experience, and given to descendants through oral narratives. Tłįchǫ knowledge is not just from the past, but includes knowledge based on present experiences as it intertwines with knowledge of the past.

Scope

This policy applies to all departments and agencies of the Tłįchǫ Government and their staff and representatives. The guidelines attached to this policy provides direction to industry, co-management boards, other governments and agencies conducting operations on Tłįchǫ lands, and within the Wek'èezhìi and Môwhì Gogha Dè Nîîtåèè areas where the Tłįchǫ Agreement provides legislated mandates.

Implementation

It is imperative to have a meaningful role for Tłįchǫ elders in the implementation of this policy. A regional committee will provide broad advice on policy and programming while the community committees will oversee any local projects and staff. There will be an TK elders committee in each community whether the community has TK staff or not. The following sets out in general their roles and responsibilities, detailed Terms of Reference are set out in Appendix I.

Regional Tłı̨chǫ Knowledge Elders' Committee

- Reviews research and monitoring requests and applications. May make recommendations for modifications or conditions to the Chiefs Executive Council.
- Establishes traditional knowledge research and program priorities, and makes recommendations to Chief Executive Council for approval.
- Responsible for overseeing a regional monitoring program and interpreting information collected to identify cumulative impacts and research needs.
- Provides oversight to Tłı̨chǫ knowledge research.
- Proposes and/or reviews proposed revisions to the Policy.
- Assists with solving problems associated with implementing this policy

Community Tłı̨chǫ Knowledge Elders Committee

- Oversees staff in community offices
- Informs community of Tłı̨chǫ Knowledge activities in their areas – by visiting homes and reporting to community meetings
- Updates Chiefs and Council on activities.
- Oversees research and monitoring conducted on traditional lands
- Assists with solving problems associated with implementing this policy

Authority and Accountability

Chief's Executive Council

- Reviews policy recommendations from the Regional Tłı̨chǫ Knowledge Elders' Committee
- Reviews and recommends to Assembly revisions to the Policy.
- Monitors implementation of the Policy.
- Approves priorities for research and monitoring.

Tłı̨chǫ Assembly

- Approves policy
- Approves amendments to policy
- Formally appoints committee members recommended by elders

Grand Chief

- Responsible for overall implementation of the policy.
- The Grand Chief will meet at minimum of twice per year with the Tłįchǫ Knowledge Regıonal Elders Commıttee to report on decisions of the Tłįchǫ Government in relation to Tłįchǫ Knowledge.

Tłįchǫ Knowledge Research & Monitoring

The Tåîchô Agreement directs Boards, Agencies and the Tåîchô Government to i)use traditional knowledge, ii) promote cultural perspectives, and iii) select Board members that have knowledge of Tåîchô way of life. Yet the current systems – most of which are based on Western perspectives and the British legal system – make it difficult for Tåîchô knowledge (TK) to be used in a manner that is consistent within the Tåîchô cultural perspective and way of life.

The Agreement states that:

Section 12.1.6

> In exercising their powers under this chapter, the Parties and the Wek'èezhìi Renewable Resources Board shall take steps to acquire and use traditional knowledge as well as other types of scientific information and expert opinion.

Section 13.1.5

> In exercising their powers in relation to forest management, the Government of the Northwest Territories, the Tåîchô Government and the Wek'èezhìi Renewable Resources Board shall take steps to acquire and use traditional knowledge as well as other types of scientific information and expert opinion.

Section 14.1.4

> In exercising their powers in relation to the management of plants, the Government of the Northwest Territories, the Tåîchô Government and the Wek'èezhìi Renewable Resources Board shall take steps to acquire and use traditional knowledge as well as other types of scientific information and expert opinion.

Section 22.1.7

> In exercising their powers, the Mackenzie Valley Environmental Impact Review Board and the Wek'èezhìi Land and Water Board shall consider traditional knowledge as well as other scientific information where such knowledge or information is made available to the Boards.

Furthermore, Section 12.5.5 of the Tåîchô Land Claim and Self-government Agreement (the Agreement) states that the Wek'èezhìi Renewable Resources Board (WRRB) shall:

(a) Make a final determination, in accordance with 12.6 or 12.7, in relation to a proposal

i. Regarding a total allowable harvest level for Wek'èezhìi, except for fish,

ii. Regarding the allocation of portions of any total allowable harvest levels for Wek'èezhìi to groups of persons or for specified purposes, or

iii. Submitted under 12.11.1 for the management of the Bathurst caribou herd with respect to its application in Wek'èezhìi;

The Tåîchô Agreement authorizes the WRRB responsibility for total allowable harvest (TAH) for wildlife, forests and plants and authorizes the Minister of Fisheries and Oceans (DFO) responsibility for fish conservation and the establishment of TAH for fish stocks. Both WRRB and DFO have an obligation under terms of the Agreement to determine TAH through assessment studies and other research.

For WRRB and DFO to have information necessary for sustainable management it is imperative that the Tåîchô undertake their own research and monitoring by documenting their observations and harvesting information to ensure they contribute to the process. If allocations are to be made among users of the resource it will be necessary to determine basic needs levels of the beneficiaries of the claim. Allocations of fisheries and wildlife resources will be difficult without this basic harvest information from the harvesters themselves.

For the Agreement to be honoured three activities need to occur:

1. Baseline Tłı̨chǫ information must be gathered from elders on known trends on harvest, wildlife and vegetation distribution.

2. Information gathered, through Tåîchô traditional methods of monitoring, needs to be documented on an on-going basis.

3. Culturally appropriate harvest studies need to be ongoing.

Although scientific information is readily available, most Tåîchô knowledge is in the minds of the elders and harvesters. For this reason, a program is needed so Tåîchô researchers can work with elders and harvesters to document their knowledge in a manner that does not lose the Tåîchô perspective. This is usually detailed knowledge of past conditions that they share with their descendants while sharing their current observations of wildlife and wildlife habitat. And, as is the traditional mode of sharing, numbers of species observed and harvested, are shared with others in the community along with other information such as behaviour of wildlife and the people harvesting. One of the important features of Tåîchô knowledge is that it is acquired, enhanced and communicated on the land while people are engaged in land-based activities. It is also communicated after harvesters return to the community through oral narratives.

Modern harvest studies often ask harvesters to fill out survey forms in English, or to provide limited information that can be taken out of context. These studies may fail because they are not compatible with how Tåîchô knowledge, including information about harvest, is transmitted through oral narratives.

A program must be designed to ensure that research will acquire realistic harvesting numbers can be recorded in a culturally appropriate manner. This will help alleviate the problem that many respondents choose not to answer correctly, harvest study questions posed by non-community members.

The Tłįchǫ Government will conduct all of its own research under the guidance of the Tłįchǫ Knowledge Regional Elders Committee and through the establishment of a Tłįchǫ Knowledge Department. All outside researchers interested in conducting research in the Tłįchǫ settlement area are encouraged to contact this department to explore collaboration opportunities. Further guidance is provided in the Appended Guidelines.

Tłįchǫ Knowledge Department

A department of Tłįchǫ Knowledge will be established to facilitate the implementation of this policy and program. The head offices will be located in Gamètì. A Regional Director of Tłįchǫ Knowledge will oversee the program and implementation of the policy. A Research Director will oversee all research and research staff. A Data Base Manager will develop and maintain a data base in both Tłįchǫ and English . Each community will have a staff team of a minimum of two members who will carry out research and data collection and input.

Researchers will work with the Land Protection Department to present research results in a format for ease of use to the Tłįchǫ Government and within the regulatory framework.

Researchers will verify monitoring information with those who provided information – elders and harvesters - at public community meeting prior to making the report public.

In addition to conducting traditional knowledge research, the staff will work with active harvesters and the TK Community Elders' Committees to monitor trends and occurrences on the land. They will employ traditional monitoring practices and good documentation practices that include individual reporting of observations followed by group discussion and analysis.

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Ownership and Confidentiality

Tłı̨chǫ Knowledge belongs to Tłı̨chǫ collectively. Original documents should be turned over to the Tłı̨chǫ government for archival management in the TK head office in Gamètì. High quality copies and wıll also be stored ın storage systems wıth one ın the NWT Archıves untıl an archıves ıs buıld ın Gamètì. Written permission must be obtained from informants and from local TK elders committee for the publication of Tłı̨chǫ *Knowledge.* In addition, researchers will record statements of purpose and permission in audio or video format at the beginning of each interview. See attached guidelines for more information.

Elders want their oral narratives to stay in their own language, and if others wish to listen to the stories of their experience then they should use those middle-aged persons who understand Tłı̨chǫ to tell them the story (after lıstenıng to the dıgıtal recordıng) – rather than translating the recording.

Provisions

- The Department of Tłı̨chǫ Knowledge will establish methodology and research procedures to guide the acquisition of Tłı̨chǫ oral narratives and knowledge.
- The Tłı̨chǫ Knowledge Department will take the lead and work with the Wek'eezhii Forum to establish procedures to guide the use of Tłı̨chǫ knowledge in each of their programs and services. Tłı̨chǫ researchers will work under the collective guidance of Tłı̨chǫ elders through the Regional and Community Committee in the design of research projects and writing reports.
- The Tłı̨chǫ Government will work in collaboration with the Wek'eezhii Land and Water Board and the Wek'èezhìi Renewable Resources Board to ensure that they have access to information about Tłı̨chǫ knowledge that is required to implement their mandates as specified in the Tłı̨chǫ Agreement.
- The Tłı̨chǫ Government will encourage the Wek'eezhii Land and Water Board and the Wek'eezhii Renewable Resources Board to work with the Department of Tłı̨chǫ Knowledge to establish procedures and guidelines for the use and incorporation of traditional knowledge in regulatory and management processes within their mandates.
- External institutions - including other governments, industry, and academia – who wish to conduct research on Tłı̨chǫ Knowledge will be encouraged to do so in accordance with the provisions of this policy and associated guidelines and protocols.
- The Tłı̨chǫ Government will develop regulations to guide the ownership and use of Tłı̨chǫ knowledge , including provisions for ensuring confidentiality when knowledge holders have requested it; recognition of Tłı̨chǫ knowledge holders when appropriate; the storage of Tłı̨chǫ *Knowledge* ; provisions for access; and publication and distribution. These regulations will complement existing research protocols established by the Government of the Northwest Territories, e.g.

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requirements under the NWT *Scientists Act* to acquire research licenses and the attached Guidelines.

- Tłı̨chǫ Knowledge brought forward for consideration in the regulatory processes administered by the WLWB and WRRB must be compiled in accordance with the provisions of this policy and associated directives.

The following Appendices form part of this Policy:

Appendix I:	Terms of Reference - Elders' TK Community and Regional Committees
Appendix II:	Guidelines for Developers
Appendix III:	Sample Protocol Agreement
Appendix IV:	Guıdelınes for Researchers
Appendix V:	Guidelines for Authors and Illustrators

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Appendix I
Tłı̨chǫ Knowledge Regional and Community Elders' Committees

Terms of Reference

Community Tłı̨chǫ Knowledge Elders Committee

- Each community will have an elders' committee overseeing their Tłı̨chǫ knowledge research and monitoring activities and providing advice to staff and researchers. These committees will be known as the Tłı̨chǫ Knowledge Communıty Elders' Committee.
- Informs community of Tłı̨chǫ Knowledge activities in their areas – by vısıtıng homes and reporting to community meetings
- Updates Chiefs and Councıl on activities.
- Oversees research and monitoring conducted on traditional lands
- Assists with solving problems associated with implementing this policy

The community of Wekweètì will have two members on their local committee, Gameti and Whati will have four elders, two female and two male elders representatives, and Behchokǫ̀ wıll have six members to reflect the size of each community. Where possible, one male and one female wıll be the oldest members of the communıty and two wıll be younger, who are chosen by the older elders. In Behchokǫ̀ two male and two females wıll be among the oldest elders , and two males and two females wıll be younger. Representative should be persons known to value Tłı̨chǫ knowledge and persons who know which individuals in their community has knowledge of specific places, events and wildlife, plants, forests and fish.

Tłı̨chǫ Knowledge Regıonal Elders Commıttee

- Reviews research and monitoring requests and applications. May make recommendations for modifications or conditions to the Chiefs Executive Council.
- Establishes traditional knowledge research and program priorities, and makes recommendations to Chief Executive Council for approval.
- Responsible for overseeing a regional monitoring program and interpreting information collected to identify cumulative impacts and research needs.
- Provides oversight to Tłı̨chǫ knowledge research.
- Proposes and/or reviews proposed revisions to the Policy.

- Assists with solving problems associated with implementing this policy

The Tłı̨chǫ Knowledge Regional Elders' Committee will consist of two of the oldest males and females from each community committee.

The elders' committees are participatory action committees who represent the collective interests of the elders and harvesters who continue to use the land and the resources from the land.

The elders on the committee will be chosen by the current committee elders based on skills and land-based knowledge.

Purpose of Committee

The primary purpose of the Elders Committees is to provide Tłı̨chǫ elders with the opportunity to offer the wealth of knowledge and wisdom they have accumulated for the benefit of the current and future generations in the management of the land they know and love.

Elders will be responsible to walk around and visit other members of the community to inform them of their activities and to identify individuals that should be interviewed on specific topics.

During community meetings and at the annual assembly the Committee Members will be responsible for demonstrating the value of their work by working with staff to make presentations relevant to the topics at hand.

Elders will ensure that time will be taken to do the research to their standards and will carry out activities that are aimed at solving problems and addressing challenges important to the communities and region.

To demonstrate the economic, social and cultural values of traditional land use.

Role of Members

a. Participate in local and regional Elders Committees as a way to help formulate, document and pass on traditional cultural knowledge for future generations.
b. Help make explicit and incorporate locally appropriate cultural values in all aspects of life in the community, while recognizing the diversity of opinion that may exist.
c. Make a point to utilize traditional ways of knowing, teaching, listening and learning in passing on cultural knowledge to others in the community.
d. Seek out information on ways to protect knowledge and retain copyright authority over all local knowledge that is being shared with others for documentation purposes.
e. Verify through translators of cultural information that has been written down to insure accuracy.
f. Follow appropriate traditional protocols as much as possible in the interpretation and utilization of cultural knowledge.

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g. Assist willing members of the community to acquire the knowledge and skills needed to assume the role of Elder for future generations.
h. To develop a vision statement that will enable all to understand the future that they wish to foster. To develop a mission statement to guide the work of the Tłįchǫ Knowledge Department

Payment to Elders

Since elders on these committees will act more as advisors the older elders (including the k'àowo) will be paid a consulting fee of $350/day, whereas the younger elders who are continuing to learn from the older elders will be paid $250/day.

Meeting Attendance

If a members misses meetings the k'àowo will speak to the individual and determine the cause, if two meetings are missed they will be replaced by an individual chosen by elders in their community.

If a person has been drinking they will be asked to leave and will not be paid their per diem or their honorarium.

Decision Making

Following Tłįchǫ traditional governance practices only one topic will be discussed until a direction of action is reached. Eldest members will be invited to speak first and last on the topic under discussion.

Members will strive to reach consensus on all matters before them. Every effort will be made to hear and clearly understand any dissenting views.

Staff Support

Decisions of the committee will be recorded by staff. Researchers will support Committee members by insuring that reports are written that reflect traditional information gathered. These reports will support the elders desire to influence decisions that are respectful and caring of all Tłįchǫ citizens, the land and the resources.

Researches will carry out rigorous verification procedures with the Committee and information providers to ensure the integrity of the Tłįchǫ knowledge gathered and analysed.

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Appendix II

Guidelines for Developers

The Tłįchǫ government encourages developers to work with us, and to work to understand ınformatıon that comes from our traditional knowledge.

The Tłįchǫ Agreement states WLWB shall consider traditional knowledge, the Agreement does not specify how this will occur. This policy clarifies the way in which Tłįchǫ knowledge will be considered within the Wek'èezhìi area.

Consıder thıs policy as early as possible in the project planning cycle to avoid problems and conflicts before projects enter the formal regulatory process. This will also provide the Tłįchǫ with the opportunity to make positive contributions and build constructive relationships.

We concur with the following statements set out in the Mackenzie Valley Environmental Impact Review Board Guidelines for incorporating Traditional Knowledge:

- Traditional knowledge shared specifically about the environment and the use and management of the environment is important for establishing baseline conditions, predicting possible impacts and determining appropriate mitigation and monitoring methods. This is particularly beneficial where there is no land use plan, where there are social or cultural concerns or when scientific data is inadequate.
- Early dialogue and relationships between the developer and traditional knowledge holders may result in a sharing of knowledge about environmental phenomena unavailable elsewhere. Such information may allow for necessary project design changes to take place even before the Environmental Impact Assessment (EIA process begins.
- Traditional knowledge can add to the understanding of the critical requirements of and potential threats to valued components.
- Traditional knowledge can assist a preliminary screener in deciding whether a proposed development might have a significant adverse impact or might be a cause for public concern and
- Traditional knowledge is critical in the early stages of the process to help identify issues as part of the EIA scoping and later on at community and formal hearings (if any) to assist the Review Board in determining the significance of potential impacts.

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The Tłįchǫ Land Claim and Self-government Agreement (Tłįchǫ Agreement) clause 22.1.7 gives the Mackenzie Valley Environmental Impact Review Board and the Wek'eezhii Land and Water Board their mandate within Wek*'èezhìı:*

> In exercising their powers, the Mackenzie Valley Environmental Impact Review Board and the Wek*'èezhìı* Land and Water Board shall consider traditional knowledge as well as other scientific information where such knowledge or information is made available to the Boards.

Tłįchǫ traditional knowledge is useful when considering how future development will impact on the environment and the people. Furthermore it can provide a more relevant and meaningful baseline to insure that the environmental effects of any project can be understood in the future. If Tłįchǫ knowledge research is done in a rigorous and methodological manner during the initial stages of a development planning, then it is more likely a development project will have minimal impact on the environmental and communities, especıally ıf socıal ıssues and concerns are also consıdered.

General Principles

No two projects are the same; therefore, a one-size-fits-all approach to considering Tłįchǫ knowledge is not possible. Nevertheless a number of general principles have been identified with respect to the extent to which knowledge should be collected in relation to development proposals. These are presented below.

Where possible, the Tłįchǫ Knowledge Department (TKD) will conduct all traditional knowledge research and provide the proponent with a report. Expectations regarding the extent of the research and type of research varies with the type of development applications, interested parties will identify their needs and explore with TKD staff, the time and budget required to meet these needs.

Prior to research the Tłįchǫ government and the research team will be provided with clear and accurate information about the project proposal and the stage that it is at. If the proposal has already entered the EIA process, the Developer will be asked to share copies of such applications to ensure that the Tłįchǫ government can accurately assess the scope of Tłįchǫ Knowledge required and how it may be incorporated into the EIA process;

Following a review of the information provided by the Developer the Tłįchǫ government will outline a proposal for carrying out traditional knowledge research and ask the Developer to enter into a Protocol Agreement that would enable such research to proceed. A sample of such an agreement is set out in Appendix IV.

Appendix III

Sample Protocol Agreement

Between: (the Proponent, Developer, Federal and Terrıtorıal Government Agencıes) herein referred to as ___________________

and

The Tłįchǫ Government

(hereinafter the "Parties")

WHEREAS the Tłįchǫ Government are the caretakers of Tłįchǫ knowledge that has been and will be documented within Mǫwhì Gogha Dè Nįįtłèè, Wek'èezhii and Tłįchǫ Lands; and

WHEREAS the Tłįchǫ Government wishes to protect Tłįchǫ knowledge from misuse; and

WHEREAS most of this knowledge is woven within the tapestry of the Tłįchǫ oral narratives; and

WHEREAS the Parties wish to respect the wishes of the Tłįchǫ elders, who have shared and will continue to share their knowledge through oral narratives and to ensure that all information taken from the oral narratives remains with Tłįchǫ; and

WHEREAS the Parties would like to ensure Tłįchǫ knowledge is used in manner consistent with section 12.1.6 of the Tłįchǫ Agreement:

NOW THEREFORE THE PARTIES AGREE AS FOLLOWS:

A. INTRODUCTION

The Tłįchǫ oral narratives and traditional knowledge is first, and foremost, for the Tłįchǫ citizens, therefore it should be:

a. Tłįchǫ citizens who carry out research on what Tłįchǫ knowledge about any given topic; and

b. Tłįchǫ elders and active harvesters who will assist with the design of Tłįchǫ knowledge projects, and in the research and in the writing of reports.

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c. With respect for the Tłı̨chǫ Regional Elders' Committee request that their stories not be translated to ensure that:

1. Tłı̨chǫ citizens continue listening to and learning from the oral narratives that came from their ancestors in their own language;
2. Individuals – whether Tłı̨chǫ or non-Tłı̨chǫ – should work with a Tłı̨chǫ speaker, who has spent considerable time listening and experiencing with elders and harvesters the knowledge shared;
3. Their descendents, and those who work with them, understand the knowledge within the context of an occurrence (as it was told and brought to the present), and from the perspective of the Tłı̨chǫ;
4. Non - Tłı̨chǫ who work with Tłı̨chǫ speakers to understand the relevance of the oral narrative, and the knowledge it encompasses, within the context all other variables being discussed by the storytellers;
5. Tłı̨chǫ youth learn the oral narratives as well as to learn how to use these narratives to think with, and use that ability to write related reports.

B. COMMITMENTS OF THE PARTIES:

The Tłı̨chǫ Government Commits To:

1. Decide how, why and when Tłı̨chǫ the information is used.

2. Indicate what information is confidential and what is public.

3. Ensure that the requester of information has the information required to participate effectively in the Regulatory process.

(Proponent. Developer, Government Agency)____
Commits To:

Assist with the costs of research and of entering relevant information into the data base so the oral narratives and information can be managed, and used with Tłı̨chǫ Government GIS system as follows:

(enter budget info)

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C. INTERPRETATION AND IMPLEMENTATION:

Entire Agreement

This Agreement constitutes the entire Agreement between Parties with respect to the subject matters set forth herein. There are no other collateral agreements or undertakings related to the subject matter hereof.

Further Acts

The Parties shall do all acts and execute and deliver all such documents as may from time to time be necessary in order to achieve the purpose and intent of this Agreement.

Applicable Laws

This Agreement shall be governed by and interpreted in accordance with Tłįchǫ laws, the laws of Canada, the Northwest Territories as applicable.

Notices

Any notices or communications required or permitted to be given pursuant to this Agreement shall be in writing and shall be delivered to, or sent by prepaid registered or certified mail, or confirmed facsimile, addressed as follows:

(a) in the case of a notice or communication to the **Proponent, Developer or Government Agency**:

____

Tel:

Fax:

(b) in the case of a notice or communication to the **Tłįchǫ Government**:

The Executive Officer

Tłįchǫ Government

____

Tel: (867) __________

Fax: (867) __________

or to such other address as either Party may notify the other in accordance with this section.

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Assignment

The rights and privileges granted under this Agreement may not be assigned.

Amendment

This Agreement may be amended from time to time by consent of the Parties hereto by an instrument in writing.

Term

This Agreement shall come into effect on the date it is signed.

This Agreement shall be for an initial term of one year and may be renewed by mutual consent of the Parties.

Termination

This Agreement can be terminated upon 30 days notice in writing by either of the Parties.

Dispute Resolution

In the event that a dispute arises, the Parties will exercise all reasonable effort to resolve it amicably.

The Parties may resolve a dispute by mutual agreement at any time, and all such agreements shall be recorded in writing and signed by authorized representatives of the Parties.

Where there is a dispute that cannot be resolved amicably, either Party may give notice of termination of the Agreement.

IN WITNESS WHEREOF the Parties have caused this Agreement to be executed in their respective names by their duly authorized representatives.

Proponent or Developer	**Tłı̨chǫ Government**
per ___________________	**per ______________**

Dated: _____________, 20____

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Appendix IV

Guidelines for Researchers

Researchers are ethically responsible for obtaining informed consent, accurately representing the Tłįchǫ *perspective and protecting the cultural integrity and rights of all participants in a research endeavor.*

Researchers may increase their cultural responsiveness through the following actions:

a. Enter into a Protocol Agreement with the Tłįchǫ Government
b. Effectively identify and utilize the expertise in participating communities to enhance the quality of information gathering as well as the information itself, and use caution in applying external frames of reference in its analysis and interpretation.
c. Explore ways in which to contribute to building local research capacity; all researchers whether the principle investigator or the local researchers should make a commitment to train those researchers with less skill.
d. Insure controlled access for sensitive cultural information that has not been explicitly authorized for general distribution, as determined by members of the local community.
e. Submit research plans as well as results for review by a Community or Regional Elders Committees and abide by its recommendations to the maximum extent possible.
f. Provide full disclosure of funding sources, sponsors, institutional affiliations and reviewers.
g. Include explicit recognition of all research contributors in the final report.

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Appendix V

Guidelines for Authors and Illustrators

Authors and illustrators should take all steps necessary to insure that any representation of cultural content is accurate, contextually appropriate and explicitly acknowledged.

Authors and illustrators may increase their cultural responsiveness through the following actions:

a. Enter into a Protocol Agreement with the Tłı̨chǫ Government
b. Make it a practice to insure that all cultural content has been acquired under informed consent and has been reviewed for accuracy and appropriateness by knowledgeable local people representative of the culture in question.
c. Arrange for copyright authority and royalties to be retained or shared by the person or community from whom the cultural information originated, and follow local protocols for its approval and distribution.
d. Insure controlled access for sensitive cultural information that has not been explicitly authorized for general distribution.
e. Be explicit in describing how all cultural knowledge and material has been acquired, authenticated and utilized, and present any significant differing points of view that may exist.
f. Make explicit the audience(s) for which a cultural document is intended, as well as the point of view of the person(s) preparing the document.
g. Make every effort to utilize traditional names for people, places, and items where applicable, adhering to local conventions for spelling and pronunciation.
h. Identify all primary contributors and secondary sources for a particular document, and share the authorship whenever possible.
i. Acquire extensive first-hand experience in a new cultural context before writing about it.
j. Carefully explain the intent and use when obtaining permission to take photographs or videos, and make it clear in publication whether they have been staged as a re-enactment or represent actual events.
k. When documenting oral narratives, recognize and consider the power of the written word and the implications of putting oral tradition with all its non-verbal connotations down on paper, always striving to convey the original meaning and context as much as possible.

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ᓇᓚᐅᑖᖅᑕᐅᓂᖏᑦ ᓄᓕᐊᕈᓐᓇᕐᓂᖏᑦ ᐊᕐᓇᐃᓪᓗ ᐊᒻᒪᓗ ᐱᕈᐊᓂᒃᓯᒪᖏᑦ ᑐᒃᑐᖏᑦ ᐊᒥᕉᓂᖏᑦ, ᓇᓅᓃᕝᔪᓂᖏᓪᓗ ᓄᓇᒥ ᑕᐃᒃᑯᐊ ᖁᕐᓗᖅᑑᑉ ᓄᓇᖅᐱᖓᑕ ᑲᓇᖕᓇᖓᓂ ᑐᒃᑐᖏᑦ: 2018-ᒥ ᓄᕐᕆᕙᓪᓕᐊᓂᖏᓐᓂᒃ ᐊᔾᔨᓕᐅᖅᑕᐅᓪᓗᑎᒃ ᖃᐅᔨᓴᖅᑕᐅᓂᖏᑦ

ᔫᓐ Bᐅᓛᓐᔨ-John Boulanger, ᔮᓐ ᐋᑕᒻᓭᔅᑭ-Jan Adamczewski, ᔫᓐ ᓂᓯ-John Nishi, Dᐄᓐ ᒃᓚᕝ-Dean Cluff, ᔫᑎ ᐅᐃᓕᔭᒻᔅ-Judy Williams, Hᐃᐊᑐ ᓴᐃᔩᓐ-ᑯᕋᕗᑦ-Heather Sayine-Crawford, ᐊᒻᒪᓗ ᓖᓴ-ᒪᕆ ᓕᒃᓘᒃ-Lisa-Marie Leclerc. 2019-ᒥ. ᓄᓇᑦᓯᐊᑉ ᒐᕙᒪᐃᑦ ᐊᕙᑎᓕᕆᔨᒃᑯᑦ ᓄᓇᒥᐅᑕᑐᖃᓕᕆᔩᓪᓗ, ᑎᑎᖃᕐᑯᑎᖏᓐᓂ ᐅᓂᒃᑳᓕᐊᖏᓐᓂᖓᖅᑐᑦ 278.

ᓇᐃᓈᖅᑕᐅᓯᒪᓪᓗᑎᒃ ᐅᓂᒃᑳᓕᐊᑦ

ᐅᑯᐊ ᐅᓂᒃᑳᓕᐊᑦ ᐅᖃᐅᓯᖃᖅᐳᑦ ᓴᕿᑎᑕᐅᓯᒪᓂᖏᓐᓂᒃ ᓄᕐᕆᕙᖕᓂᒃ ᓄᓇᒥ ᐊᔾᔨᓕᐅᖅᑕᐅᓚᐅᖅᑐᓂᒃ ᖁᕐᓗᖅᑑᑉ ᓄᓇᖅᐱᖓᑕ ᑲᓇᖕᓇᖓᓂ ᑐᒃᑐᓂᒃ ᑕᒫᓂ ᔪᓐ 2018-ᒥ, ᑕᐅᕙᓂ ᐱᖓᖕᓇᖓᓂᒃ ᖁᕐᓗᖅᑑᑉ, ᓄᓇᕗᑦ. ᖃᐅᔨᓴᖅᑕᐅᓂᖏᓐᓄᑦ ᑐᕌᒐᖃᓚᐅᖅᑐᑦ ᓇᓚᐅᑦᑖᕈᒪᓂᖅ ᐊᒥᕐᓱᓂᖏᑦ ᐊᕐᓇᓪᓗᐃᑦ ᓄᓕᐊᕈᓐᓇᖅᑐᑦ ᐊᒻᒪᓗ ᑕᒪᐃᓐᓂᒃ ᑐᒃᑐᐃᑦ ᑲᑎᓪᓗᒋᑦ ᐊᒥᕉᓂᖏᓐᓂᒃ ᖃᐅᔨᔪᒪᓂᕐᒧᑦ ᐊᔾᔨᒌᖏᓐᓂᖏᓐᓂᒃ ᓴᕿᑎᑕᐅᓚᐅᖅᑐᑦ ᓯᕗᓂᐊᒍᑦ ᓄᕐᕆᕙᖕᓂ ᖃᐅᔨᓴᕐᕕᐅᓚᐅᖅᑐᓂᒃ ᑐᒃᑐᐃᑦ ᐊᕐᕋᒍᖏᓐᓂ 2010, 2013 ᐊᒻᒪᓗ 2015.

ᐊᑐᓚᐅᖅᑐᒍᑦ ᖁᖓᓯᕈᑦᑎᖅᑕᐅᓯᒪᔪᑦ ᑐᒃᑐᐃᑦ ᓇᓅᓂᖏᓐᓂᒃ ᒪᓕᒃᓯᑕ ᑎᖕᒥᔫᒃᑯᑦ ᖁᓚᐅᕙᒃᓯᑕ ᓄᓇᐃᑦ ᐊᕕᒃᑐᖅᓯᒪᓂᖏᓐᓂᒃ ᒪᓕᒃᓯᒋᑦ ᖃᐅᔾᔭᓇᓱᕕᐅᓂᐊᖅᑐᓂᒃ ᐅᖓᓯᒋᖕᓂᖃᖅᑐᑦ ᖁᓕᓂᒃ 10 (km) ᑮᓛᒥᑕᓕᖕᓂᒃ ᐊᑯᓐᓂᖅᓱᖅᑐᓂᒃ ᓄᕐᕆᕖᑦ ᓄᓇᖏᓐᓂᒃ ᐊᒻᒪᓗ ᐊᑭᐊᓃᑦᑐᓂᒃ ᓄᓇᓂᒃ ᐊᕐᕋᒍᑕᒫᖅ ᓄᕐᕆᕕᐅᔪᖅᑐᖅᓯᒪᕝᕙᒃᑐᓂᒃ ᐊᒥᓱᓄᑦ ᑐᒃᑐᓄᑦ. ᒪᓕᒃᑕᐅᓪᓗᑎᒃ ᖁᖓᓯᕈᑦᑎᖅᑕᐅᓯᒪᔪᑦ ᓅᑉᐸᓪᓕᐊᕙᖕᓂᖏᑦ ᐊᒻᒪᓗ ᑕᑯᔭᐅᖃᑕᐅᕐᓂᖏᑦ ᓄᕋᐃᑦ, ᑐᑭᓯᓇᖅᑑᔭᐅᓚᐅᖅᑐᑦ ᓄᕋᖅᑖᕐᓂᐊᖅᑑᔾᔪᕐᓂᖏᓐᓂ ᑭᖑᓂᐊᒍᑦ ᔫᓐ 8-ᒥ ᐊᒻᒪᓗ ᐊᔾᔨᓕᐅᖅᑕᐅᕙᓚᐅᖅᓯᑎᒃ ᓯᓚᑦᑎᐊᕚᓗᖕᒥ ᑕᒫᓂ ᐅᓪᓗᖓᓂ ᔫᓐ 8-ᒥ. ᒪᕿᖕᓂᒃ ᐊᖏᔪᐊᓘᖕᓂᒃ ᐊᔾᔨᓕᐅᖅᑕᐅᕝᕕᒃᓴᖃᖅᑎᑦᑎᓚᐅᖅᑐᒍᑦ ᐃᓛᒎᑦ ᐱᔾᔪᑕᐅᓂᕐᒧᑦ ᐊᐱᓯᒪᓂᖓᓄᑦ ᐊᐳᒻᒥᒃ ᑕᑯᔭᒃᓴᐅᑦᑎᐊᖏᑦᑐᓇᕐᓂᖏᓄᑦ ᑐᒃᑐᐃᑦ ᐊᒻᒪᓗ ᐃᓱᒪᒋᔭᐅᓚᐅᕐᒪᑦ ᑎᖕᒥᔫᕐᒥ ᐊᔾᔨᓕᐅᖅᑕᐅᔪᑦ ᑕᑯᒃᓴᐅᑎᐊᕐᓂᖅᓴᐅᓂᐊᕐᒪᑕ ᑕᒻᒪᖅᑕᖅᓯᒪᖏᓐᓂᖅᓴᐅᓗᑎᒃ ᓴᓂᐊᓂᒃ ᐊᓯᖏᓐᓂᒃ ᑕᑯᔭᐅᑐᐃᓐᓇᕐᓂᖏᓐᓂᒃ ᓈᓴᖅᑕᐅᓂᐊᖅᑐᓂᒃ ᑕᒪᐃᓐᓇᐃᑎᓪᓗᒍ ᓄᓇᖓ. ᔫᓐ 8-ᒥ ᐊᓯᖏᓐᓂᒃ ᖃᐅᔨᓴᕐᕕᖃᓚᐅᕐᒥᔪᑦ ᐊᒥᕉᖏᓐᓂᖅᓴᐅᔪᓂᒃ ᓄᓕᐊᖅᑐᓂᒃ ᑐᒃᑐᖃᕐᕕᐅᕙᓚᐅᖅᑐᓂᒃ. ᑕᑯᔭᐅᓯᓚᐅᔪᓂᒃ ᓈᓴᖅᑕᐅᔪᓂᒃ, ᐊᑐᓚᐅᖅᑐᒍᑦ ᒪᕿᕕᓂᒃ ᖃᐅᔨᓴᕈᑏᖕᓂᒃ ᓇᓚᐅᑖᕈᑕᐅᓂᕐᒧᑦ ᐊᒻᒪᓗ ᑕᓪᓕᖅᓯᒪᓕᒌᒃᑯᑕᐅᓂᕐᒧᑦ ᑕᑯᔭᐅᕙᓪᓕᐊᔪᓂᒃ ᑐᒃᑐᓂᒃ ᐊᔾᔨᓕᐅᖅᑕᐅᕙᓪᓕᐊᓂᖏᓐᓂᒃ ᐱᔾᔪᑎᒋᓪᓗᒍ ᐃᓚᖏᑦ ᑐᒃᑐᐃᑦ (ᐊᐳᒦᑦᑐᑦ ᐊᐳᑎᖅᑲᖏᓐᓂᕐᒥᓪᓗᓐᓃᑦ) ᖃᐅᔨᓴᖅᑕᐅᒃᑲᓐᓂᕆᐊᖃᐃᓐᓇᓚᐅᕐᓂᖏᑦ ᐃᓕᑕᕆᔭᐅᓇᓱᖕᓂᕐᒧᑦ.

ᓇᓚᐅᑖᖅᑕᐅᓂᖏᑦ ᐊᑕᐅᓯᕐᒥᒃ 1 ᐅᑭᐅᖃᕐᓂᖏᑦ ᑐᒃᑐᐃᑦ ᓄᕐᕋᕕᖕᓂ ᑕᒪᓃᓚᐅᖅᑐᑦ ᓇᓴᐅᑎᓕᖕᒥᒃ 19,161 (95 ᐳᓴᓐᑎᓂᒃ ᓇᓗᓇᕐᓂᓖᑦ (CI) = 16,512 - 22,233) ᑐᒃᑐᖏᑦ. ᑲᑎᑕᐅᓪᓗᑎᒃ ᑖᒃᑯᐊ ᓈᓴᐅᑎᖏᑦ ᑕᐃᒃᑯᓇᖓ ᑐᑭᓯᔭᐅᓚᐅᖅᑐᓄᑦ ᓴᕿᑕᐅᔪᓂᒃ ᑕᒪᐃᓐᓂᒃ ᐊᒥᕉᓂᖏᓐᓂᒃ, ᓇᓚᐅᑖᖅᑕᐅᓯᒪᓚᐅᖅᑐᑦ ᐊᕐᓇᓪᓗᐃᑦ ᓄᓕᐊᕈᓐᓇᕐᓂᖏᑦ ᐃᒪᓐᓇᐃᓕᖕᒐᓂᖅ ᓇᓴᐅᑎᓂ 11,675 (ᓇᓗᓇᕐᓂᖏᑦ =9,971 - 13,670). ᑕᒪᒃᑯᐊ ᓇᓚᐅᑖᕿᑕᐅᓂᖏᑦ ᓯᓕᔾᕙᖅᐳᑦ (ᐊᔾᔨᒌᖏᓐᓂᖃᕈᓐᓂᑦᑐᑦ) 7.7 ᐳᓴᓐᑎᖏᓐᑐᓂᒃ. ᓇᓚᐅᑖᖅᑕᐅᓂᖏᑦ ᐱᕈᐊᓂᒃᓯᒪᓕᖅᑐᑦ ᐊᕐᓇᓪᓗᐃᑦ ᖃᐅᔨᓴᖅᑕᐅᕝᕕᖕᓂ ᐃᒪᓐᓇᐃᓕᖕᒐᓚᐅᖅᑐᑦ ᓈᓴᐅᑎᖏᑦ 13,988 (ᓇᓗᓇᕐᓂᖃᖅᓯᑎᒃ = 12,042 - 16,249). ᐊᒥᕉᓂᖏᑦ ᐱᕈᐊᓂᒃᓯᒪᔪᑦ ᐊᕐᓇᓪᓗᐃᑦ ᐃᓕᑕᕆᔭᐅᓯᒪᔪᑦ ᓄᓕᐊᕈᓐᓇᕐᓂᕋᖅᑕᐅᓂᖅ ᐊᒥᕉᓂᖅᓴᐅᓚᐅᖅᐳᑦ ᐊᕐᕌᒍᒥ 2018-ᒥ (83 ᐳᓴᓐᑎᓂᒃ) ᓴᓂᐊᓂ ᐊᕐᕋᒎᓚᐅᖅᑐᒥ 2015-ᒥ (63 ᐳᓴᓐᑎᓂᒃ). ᑐᒃᑐᐃᑦ ᐊᒥᕉᓂᖏᑦ ᓇᓚᐅᑖᖅᑕᐅᓚᐅᖅᑐᑦ ᐊᑐᖅᓯᑎᒃ ᓈᓴᐅᑎᖏᓐᓂᒃ ᐱᕈᐊᓂᒃᓯᒪᔪᑦ ᐊᕐᓇᓪᓗᐃᑦ ᖃᐅᔨᓴᖅᑕᐅᓚᐅᖅᑐᓂ ᓄᓇᓂᒃ ᐊᕙᒃᑐᖅᑕᐅᓯᒪᓪᓗᑎᒃ ᐊᒥᕉᓂᖏᓐᓂᒃ ᐃᓚᖏᓐᓂᒃ ᐊᕐᓇᐃᓪᓗᖃᕐᓂᖏᓐᓂᒃ ᑐᑐᓂ 2018-ᖑᓚᐅᖅᑐᖅ ᐅᑭᐊᒃᓵᒃᑯᑦ ᖃᓄᐃᓕᖓᓚᐅᕐᓂᖏᓐᓂᒃ ᒪᓕᒃᓯᑎᒃ. ᓴᕿᑎᑕᐅᓕᓚᐅᖅᐳᑦ ᓇᓚᐅᑖᖅᑕᐅᓂᖏᑦ ᐊᒥᕉᓂᖏᑦ ᖁᕐᓗᖅᑑᑉ ᓄᓇᖅᐱᖓᑕ ᑲᓇᖕᓇᖓᓂ ᑐᒃᑐᐃᑦ ᐊᒥᕉᓂᖏᑦ ᐊᕐᕋᒍᒥ 2018-ᒥ ᑕᒫᓂᓚᐅᖅᑐᑦ ᓈᓴᐅᑎᓕᖓᓂ 19,294 ᑐᒃᑐᐃᑦ ᐊᒥᓯᓂᖏᑦ ᐅᑭᐅᖃᕐᓂᖏᑦ ᒪᕿᕐᓂᒃ 2 ᐅᖓᑖᓄᑦᑐᓂᓪᓗᓐᓃᑦ (ᓇᓗᓇᕐᓂᓖᑦ = 16,527 - 22,524). ᐊᔾᔨᒌᖏᓐᓂᖏᑦ ᐊᕐᕋᒍᓂᒃ 2015-ᖑᓚᐅᖅᑐᖅ ᐊᒻᒪᓗ 2018-ᖑᓚᐅᖅᑐᖅ ᐱᕈᐊᓂᒃᓯᒪᔪᑦ ᐊᕐᓇᓪᓗᐃᑦ ᐊᒥᕐᓱᓂᖏᓐᓂ ᐊᒻᒪᓗ ᑕᒪᐃᓐᓂᒃ ᖃᓄᐃᓕᕙᓪᓕᐊᓂᖏᓐᓂ

ᐊᕐᕋᒍᐅᓴᖅᓂ 2010-2018-ᒥ ᓇᓗᓇᐃᖅᑕᐅᓚᐅᖅᑐᑦ ᐊᕐᕋᒍᑕᒫᖅ ᐊᒥᓲᕝᓅᖅᐸᓪᓕᐊᓂᖏᓂᒃ ᐃᒪᓐᓇᑎᒋ 20 ᐳᓴᓐᑎᓕᖅᓂᒃ (ᓇᓗᓇᕐᓂᓖ =13-27 ᐳᓴᓐᑎᓂᒃ) ᐊᒻᒪᓗ ᑕᒪᐃᓐᓂ ᑐᒃᑐᐃᑦ ᐊᒥᔅᓲᕝᓅᖅᓯᒪᓂᖏᓐᓂ ᑕᒫᓂ ᓈᓴᐅᑎᑎᒍᑦ 50 ᐳᓴᓐᑏᑦᑐᓂᒃ ᐊᑯᓐᓂᖏᓐᓂ ᐊᕐᕋᒍᓂ 2015-ᒥᒃ 2018-ᒧᑦ. ᑕᒪᓐᓇ ᐊᒥᓲᕝᓅᖅᐸᓪᓕᐊᓂᖅ ᐱᔾᕝᑎᖃᕋᔭᖏᑦᑐᖅ ᑕᐃᒃᑯᓇᖓᑦ ᖃᐅᔨᓴᖅᑕᐅᖃᑕᕐᓂᖏᓐᓂᒃ ᐊᒥᓲᓂᖏᓐᓂᒃ ᓇᓚᐅᑖᒐᕐᓂᒃ. ᖃᐅᔨᓴᖅᑕᐅᓚᐅᖅᑐᑦ ᖁᖓᓯᕈᑦᑎᖅᑕᐅᓯᒪᕝᑦ ᐊᕐᓇᓪᓗᐃᑦ ᓅᖃᑕᕐᓂᖏᑦ ᑕᐅᕙᓂ ᖁᕐᓗᖅᑑᑉ ᑲᓇᖕᓇᖕᒐᓂᒃ ᐊᒻᒪᓗ ᑕᐅᕙᓂ ᓴᓂᓕᖅᔭᖏᑦ ᕿᑎᖅᒥᐅᑦ ᐱᖓᖕᓇᖕᒐᓂ ᑐᒃᑐᖏᑦ ᐊᒻᒪᓗ ᕿᖕᒐᐅᑉ ᓄᕐᖃᕕᖏᓐᓂ ᓅᐸᖅᓂᖏᑦ ᐊᕐᕋᒍᓂᒃ 2010-2018-ᒥ ᑕᑯᒃᓴᐅᓚᐅᖅᑐᑦ ᓅᒐᕝᐃᓐᓂᖏᓐᓂᒃ ᐊᕐᓇᐃᓪᓗ ᓄᕐᖃᓯᒪᕗᖅᓂᖏᑦ ᐊᓯᖏᓐᓄᑦ ᓴᓂᓕᖅᔭᖏᓐᓄᑦ ᑐᒃᑐᖃᕐᕕᐅᕙᒃᑐᓄᑦ. ᓄᓇᒥ ᓇᓃᓐᓂᖏᓐᓂᒃ ᖃᐅᔨᓴᖅᑕᐅᒐᒥᒃ ᐊᑐᓚᐅᖅᑐᑦ ᓇᓃᓐᓂᖏᓐᓂᒃ ᐊᒥᓱᓂᖏᓐᓂᒃ, ᖁᖓᓯᕈᑦᑎᖅᑕᐅᓯᒪᓂᖏᓐᓂᒃ ᑐᒃᑐᐃᑦ ᐊᒻᒪᓗ ᖃᐅᔨᓴᖅᑕᐅᓚᐅᖅᑐᓂᒃ ᓇᓚᐅᑖᕈᑎᖃᓚᐅᖅᑐᑦ ᑐᒃᑐᐃᑦ ᐊᕐᓇᓪᓗᐃᑦ ᓄᕐᕋᓖᑦ ᐆᒪᐃᓐᓇᕈᓐᓇᕐᓂᖏᑦ ᐊᑦᑎᒃᑐᒦᓚᐅᕐᓂᖏᓐᓂᒃ ᑕᒫᓂ 2018-ᒥ (0.72, ᓇᓗᓇᕐᓂᓖᑦ = 0.60 - 0.83) ᐊᒻᒪᓗ ᓄᕐᕋᐃᑦ ᐆᒪᐃᓐᓇᕈᓐᓇᕐᓂᖏᑦ ᑲᑕᒃᓯᒪᓚᐅᓇᓪᓗᑎᒃ ᑕᐃᒪᖕᒐᓂᒃ ᐊᕐᕋᒍᒥᒃ 2010-ᒥ. ᐃᓱᒪᒋᔭᐅᖁᔭᕗᑦ ᐊᒥᓲᓂᖏᑦ ᖃᐅᔨᓴᖅᑕᐅᖃᑦᑕᖁᓪᓗᓂᑦ ᒪᕿᑕᒫᒃ ᐊᕐᕋᒎᒃ ᓈᓂᑕᒫᖅ ᐊᒻᒪᓗ ᐊᕐᕋᒍᑕᒫᖅ ᖃᐅᔨᓴᖅᑕᐅᖃᑕᕐᓗᑎᒃ ᐊᕐᓇᐃᓪᓗ ᓄᕐᓇᕙᓪᓕᐊᕙᖕᓂᖏᑦ ᐊᒻᒪᓗ ᓄᕐᕋᐃᑦ ᐆᒪᐃᓐᓇᕈᓐᓇᕐᓂᖏᑦ ᑖᒃᑯᓇᓂ ᑐᒃᑐᖏᓐᓂ ᓯᕗᓂᒃᓴᐅᓂᐊᖅᑐᒥ.

Government of Northwest Territories
Gouvernement des Territoires du Nord-Ouest

ESTIMATES OF BREEDING FEMALES & ADULT HERD SIZE AND ANALYSES OF DEMOGRAPHICS FOR THE BLUENOSE-EAST HERD OF BARREN-GROUND CARIBOU: 2018 CALVING GROUND PHOTOGRAPHIC SURVEY

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ABSTRACT

This report describes the results of a calving ground photo survey of the Bluenose-East caribou herd conducted in June of 2018 west of Kugluktuk, Nunavut (NU). The survey objective was to estimate abundance of breeding females and overall herd size that could be compared to results of previous calving ground surveys done in 2010, 2013 and 2015.

We used collared caribou locations and flew systematic reconnaissance survey transects at 10 kilometer (km) intervals over the calving ground and adjacent areas to delineate the annual concentrated calving area, assess calving status, allocate survey effort to geographic strata of similar caribou density, and time the aerial photography to coincide with the peak of calving. Based on collar movements and observed proportions of calves, it appeared that the peak of calving would occur soon after June 8 and the photo plane survey was flown with excellent field conditions (blue skies) on June 8. We delineated two relatively large photographic strata in the higher density areas, in part because we were concerned that patchy snow would reduce sightability of caribou and we thought that aerial photography would provide better accuracy and precision compared to visual counts under these conditions. On June 8 we also conducted visual surveys of two other strata with lower densities of breeding caribou. For the visual surveys, we used a double observer method to estimate and correct for sightability of caribou. A double observer method was also used to estimate sightability of caribou on the aerial photographs as some caribou (on or on the edges of snow patches) required extra effort to identify.

The estimate of 1+year old caribou on the core calving ground was 19,161 (95 percent Confidence Interval (CI) =16,512-22,233) caribou. Combining these numbers with the results of the composition survey, the estimate of breeding females was 11,675 (CI=9,971-13,670). This estimate was precise with a coefficient of variation (CV) of 7.7 percent. The estimate of adult females in the survey area was 13,988 (CI=12,042-16,249). The proportion of adult females classified as breeding was higher in 2018 (83 percent) than in 2015 (63 percent). Herd size was estimated as the number of adult females on the survey area divided by the proportion of females in the herd from a 2018 fall composition survey. The resulting estimate of Bluenose-East herd size in 2018 was 19,294 caribou at least two years old (CI=16,527-22,524). Comparison of 2015 and 2018 adult female numbers and overall trend 2010-2018 indicated an annual rate of decline of 20 percent (CI=13-27 percent) and a herd reduction of 50 percent between 2015 and 2018. This decline could not be attributed to issues with survey methods. Assessment of movement of collared females between the Bluenose-East and neighbouring Bluenose-West and Bathurst calving grounds from 2010-2018 showed minimal movement of cows to or from neighbouring herds. Demographic modeling that used composition, collared caribou, and survey data estimated that the cow survival rate was low in 2018 (0.72, CI=0.60-0.83) and calf survival has declined

since 2010. We suggest population surveys every two years, and annual monitoring of cow survival, calf productivity and calf survival for this herd in the future.

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INTRODUCTION

This report describes results of a calving ground photo-survey of the Bluenose-East caribou herd conducted during June of 2018. This herd's extent of calving area (Russell et al. 2002) has been found in recent years west of Kugluktuk, and the summer range includes the calving ground as well as areas south and east of it. The winter range is primarily south, southeast and east of Great Bear Lake (Figure 1).

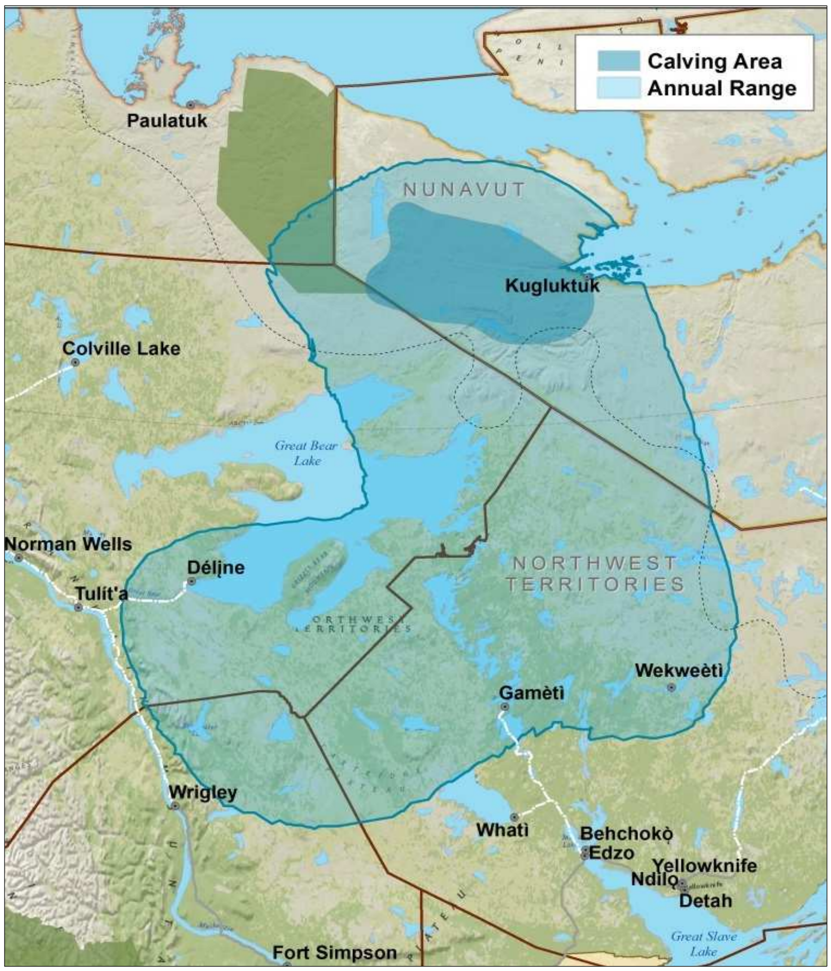

Figure 1: Annual range and extent of calving for the Bluenose-East herd, 1996-2009, based on accumulated radio collar locations of cows (Nagy et al. 2011). The calving area and a portion of the summer range are in Nunavut (NU) and the rest of the range is in the Northwest Territories (NWT).

The Bluenose-East survey was conducted concurrently with a survey of the Bathurst calving ground; results of the Bathurst caribou survey are reported separately. Figure 2 shows paths of collared caribou cows between May 15 and June 8 to the Bluenose-West, Bluenose-East, and Bathurst calving grounds.

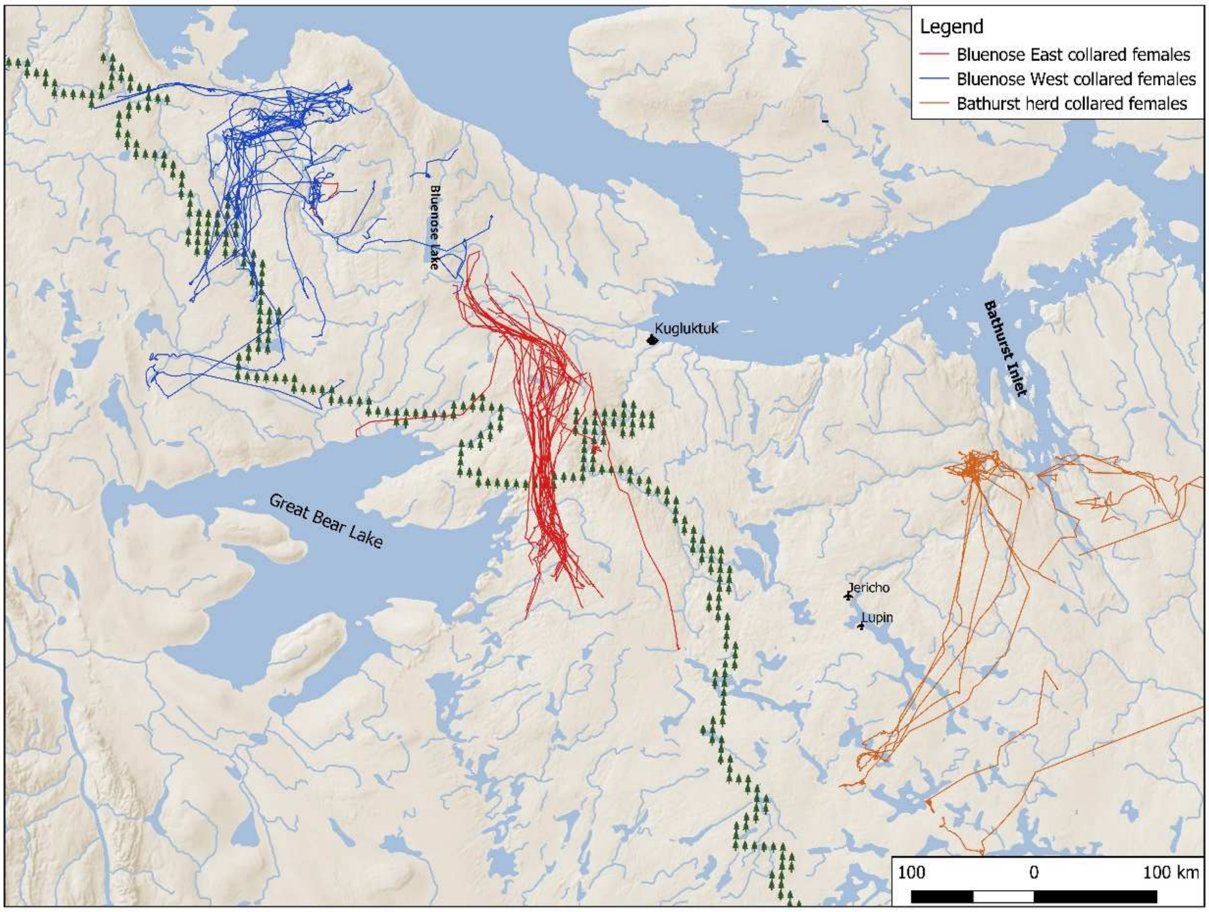

Figure 2: Spring migration paths of satellite collared Bluenose-West (blue), Bluenose-East (red) and Bathurst (orange) cows from May 15 - June 8, 2018.

In earlier years (2000-2010), post-calving surveys were used for this herd (Patterson et al. 2004, Adamczewski et al. 2009) but surveys were challenged by the lack of consistent formation of the tightly packed caribou groups this survey depends on. Since aggregation of caribou into large, compact groups is a behavioural response to reduce harassment by blood-sucking insects, the observed pattern of aggregation varies with insect abundance and environmental conditions. Insect harassment generally increases with temperature and decreases with wind (Patterson et al. 2004). Thus, success of post-calving surveys is contingent on suitable summer weather and aggregation patterns of caribou, which are highly variable within and between post-calving survey windows.

The Bluenose-East herd was surveyed in 2010 using both a calving ground photo-survey and a post-calving survey (Adamczewski et al. 2017, Boulanger et al. 2018). Both the calving and post-calving surveys in 2010 indicated that the herd was over 120,000 adult caribou. Additional calving photo surveys followed in 2013 (Boulanger et al. 2014b) and 2015 (Boulanger et al. 2016). Based on these surveys, the herd was declining at an approximate rate of 20 percent per year 2010-2015, based on adult female estimates (Figure 3).

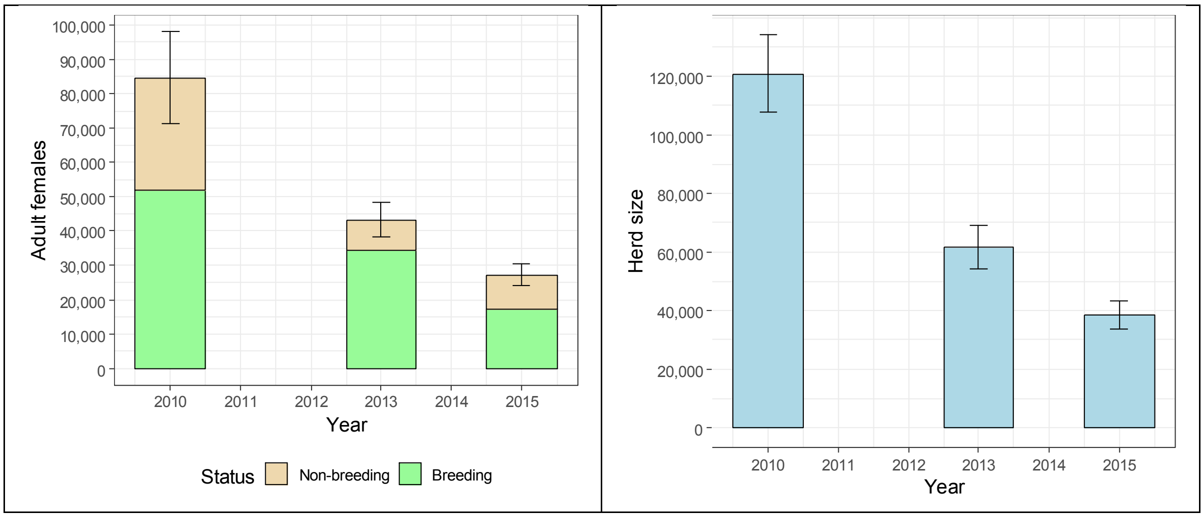

Figure 3: Estimates of adult females (subdivided by breeding status) on the left and extrapolated herd size on the right, from 2010, 2013, and 2015 calving ground surveys of the Bluenose-East caribou herd.

METHODS

The calving ground photographic survey was conducted as a sequence of steps described briefly below, then in greater detail in following text.

1. Locations from collared caribou, historic records of calving ground use, and systematic aerial reconnaissance surveys of the Bluenose-East calving area were used to identify the extent of calving between Kugluktuk and Bluenose Lake in NU in June 2018.
2. The systematic aerial reconnaissance survey was conducted before the peak of calving, where 800 m strip transects were flown at 10 km intervals to determine areas where breeding females were concentrated on the calving ground, as well as locations of bulls, yearlings, and non-breeding cows on or near the calving ground. Timing of the peak of calving was assessed by (a) observers who estimated the proportion of cows with newborn calves from survey flying, and (b) from a pattern of reduced movement rates of collared cows which was used as an indication of calving when average daily movement declined to ≤5 km/day.
3. Using data from the reconnaissance survey, geographic areas called strata (or survey blocks) were delineated for the more intensive survey, either by the photo plane or visually. We allocated photographic sampling effort to areas with the highest densities of breeding cows. Two photo blocks were delineated based on higher relative densities of breeding cows and were surveyed with photo-planes. Two visual blocks were delineated based on lower relative densities of adult female caribou and were surveyed by human observers in fixed-wing aircraft. The aerial survey was conducted with the photo-plane and by visual survey.
4. We initiated the helicopter-based composition survey at the same time of the photographic and visual surveys of the calving area. The composition survey crew classified larger groups (i.e. >~50-100 caribou) on the ground and classified smaller groups primarily from the air. Groups of caribou in each stratum were classified to determine the proportions of breeding and non-breeding cows, as well as bulls, yearlings, and newborn calves.
5. The estimate of breeding females was derived using the estimates of total 1+year old caribou within each stratum, and the proportion of breeding females within that stratum. The total number of adult females was estimated from the proportion of females and the estimate of 1+year-old caribou in the survey area.
6. The adult female estimate was then used to extrapolate the total size of the Bluenose-East herd (caribou at least two years old) by accounting for males using an estimate of the bull:cow ratio from a fall composition survey flown in October 2018.
7. Demographic data for the herd and the new estimates were used in trend analyses and population modeling to further evaluate population changes from 2015-2018 and their likely causes.

Analysis of Collared Caribou Data

Locations of 32 collared female caribou were monitored to assess movement rates and pathways and serve as a geographic guide for overall survey coverage. Of these, 17 were known Bluenose-East cows that had occurred on the Bluenose-East calving ground in June 2017 and 15 were collared during the winter of 2017-2018. Four were most likely Bluenose-West cows based on collaring locations in winter and June locations during calving. In addition, changes in daily movement rates of collared cows were assessed to determine the timing of calving. Usually, movement rates of parturient female caribou are reduced to <5 km/day during the peak of calving and for a few days after calving (Gunn et al. 1997, Nishi et al. 2007, Gunn et al. 2008, Gunn and Russell 2008, Nishi et al. 2010).

Reconnaissance Surveys to delineate Strata

Reconnaissance transect lines were systematically spaced at 10 km intervals (i.e. eight percent coverage) across the extent of calving and in adjacent areas. The initial focus was on delineating the annual concentrated calving area based on observations of caribou density and composition and the distribution of collared caribou cows. Once the extent of the calving area had been covered, additional survey transects were flown adjacent to the annual concentrated calving area to make sure that no large aggregations of female caribou were missed. Transect lines were generally extended at least 10 km past the last caribou seen, with the exception of the southern trailing edge where composition was increasingly comprised of bulls, yearlings and non-breeding females.

Kugluktuk was the base of operations for the Bluenose-East survey (Figure 1). Two Cessna Caravans were used for the systematic reconnaissance surveys and visual blocks. During visual surveys, caribou were counted within a 400 meter (m) strip on each side of the survey plane (800 m total, Gunn and Russell 2008). For each side of the plane, strip width was defined by the wheel of the airplane on the inside, and a single thin rope attached to the wing strut, that became horizontal during flight, served as the outside strip marker. Planes were flown at an average survey speed of 160 km/hr. at an average altitude of 120 m (by monitoring a radar altimeter) above the ground to ensure that the strip width of the plane remained relatively constant.

Two observers (one seated in front of the other) and a recorder were used on each side of the airplane to minimize the chance of missing caribou. Previous research (Boulanger et al. 2010) demonstrated that this method increases sightability compared to single observers. The two observers on the same side communicated to ensure that groups of caribou were not double counted.

Caribou groups were classified by whether they contained breeding females. Breeding caribou were defined as female caribou with hard antlers or a newborn calf at heel. A mature female with hard antlers is a general indicator that the caribou had yet to give birth, as cows usually shed their antlers within a week after birth (Whitten 1995). Caribou groups were classified as non-breeders based on the absence of breeding females and newborn calves, and the predominance of yearlings (as indicated by a short face and a small body), bulls (as indicated by thick, dark antlers in velvet and a large body), and non-antlered females or females with short antlers in velvet. The speed of the aircraft did not allow all caribou to be classified; the focus was on identifying breeding cows if they were present, and otherwise on the most common types of caribou present. In most cases, each group was recorded individually, but in some cases, groups were combined if the numbers were larger and distribution was more continuous. Data were recorded on Trimble YUMA 2 tablets (Figure 4). As each data point was entered, a real-time GPS waypoint was generated, allowing geo-referencing of the survey observations. Other large animals like moose, muskoxen and carnivores were also recorded with a GPS location.

North-south oriented transects were divided into 10 km segments to summarize the density and distribution of geo-referenced caribou counts. The density of each segment was estimated by dividing the count of caribou by the survey area of the segment (0.8 km strip width x 10 km = 8 km^2). The segment was classified as a “breeder” segment if at least one breeding female caribou (or newborn calf) was identified. Segments were then displayed spatially and used to delineate strata within the annual concentrated calving area based on the composition and density of the segments. During the survey, daily weather briefings were provided by Dr. Max Dupilka (Beaumont, AB) to assess current and future survey conditions.

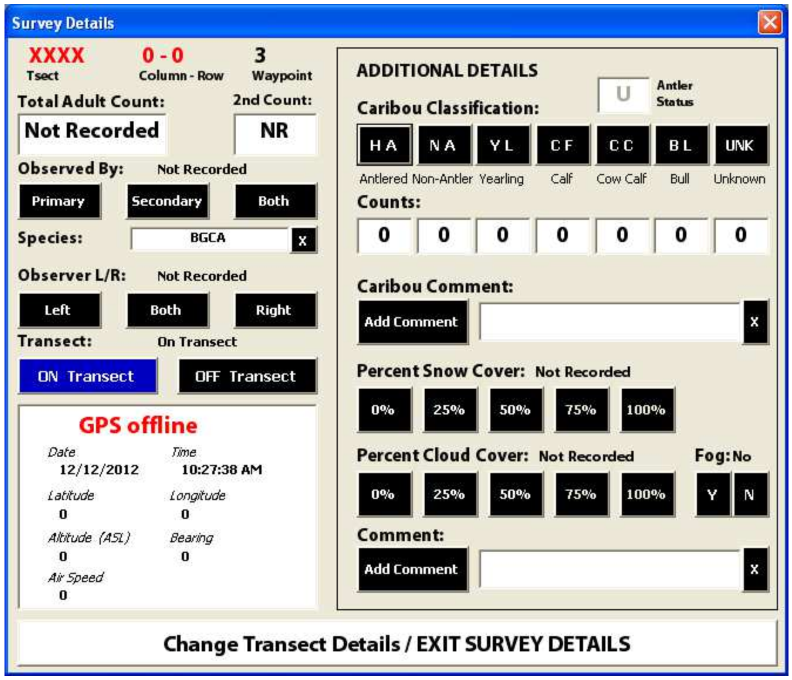

Figure 4: The tablet data entry screen used during reconnaissance and visual survey flying on Bathurst and Bluenose-East June surveys in 2018. A GPS waypoint was obtained for each observation, allowing efficient entry and management of survey data. In addition, the unique segment unit number was also assigned by the software for each observation to summarize caribou density and composition along the transect lines.

Stratification and Allocation of Survey Effort

The main objective of the survey was to obtain a precise and accurate estimate of breeding female caribou on the calving ground. To achieve this, the survey area was stratified using the results of the systematic reconnaissance survey, a procedure of grouping areas with similar densities into contiguous blocks. Areas of higher caribou densities were considered for survey by the photo plane, with lower-density areas designated for visual surveys with two observers on each side. In this survey, two relatively large photo blocks were defined. We delineated the large photo strata because we were concerned that patchy snow conditions would reduce visual sightability of caribou (particularly single animals or small groups) and that aerial photography would provide a more consistent and reliable method for detecting and counting caribou in the area where most breeding females occurred. We thought that caribou would still be found reliably on the high-resolution aerial photos, which could be searched slowly and repeatedly using multiple counters. Two other relatively small strata were designated for visual survey, one north of the photo blocks and one south of them. Given that a key objective of the survey was to estimate breeding females, areas that contained breeding females were given priority, but all areas with collared female caribou were also surveyed.

Once the survey strata were delineated, an estimate of caribou numbers (animals at least 1+year-old) was derived from the reconnaissance data (Jolly 1969). The relative population size of each stratum and the degree of variation in caribou numbers of each block were used to allocate survey effort and a suitable number of transects to each stratum.

We used two approaches for allocating survey effort. First, optimal allocation of survey effort was considered based on sampling theory (Heard 1987, Thompson 1992, Krebs 1998). Optimal allocation basically assigned more effort to strata with higher densities, given that the amount of variation in counts is proportional to the relative density of caribou within the stratum. Optimal allocation was estimated using estimates of population size for each stratum and survey variance.

Secondly, based on relative sizes of delineated strata, we adjusted optimal allocation estimates to ensure an adequate number of transects. Based on previous surveys, we considered 10 transects per stratum to be a minimum level of coverage, with closer to 20 transects being optimal for higher density areas. In general, we considered 15 percent coverage as a minimum to achieve adequate precision, and allocated higher levels of coverage for higher density strata. In the context of sampling, increasing the number of transects in a stratum is "insurance" because it minimizes the influence of any one transect on estimate precision. As populations become more clustered, a higher number of transects is required to achieve adequate precision (Thompson 1992, Krebs 1998).

Estimation of Caribou on the Calving Ground

Photo Surveys of High-density Strata

GeodesyGroup Inc. aerial survey company (Calgary, AB) was contracted for the aerial photography in the 2018 June surveys. They used two survey aircraft, a Piper PA46-310P Jet-prop and a Piper PA31 Panther, each with a digital camera mounted in the belly of the aircraft. Survey height to be flown for photos was determined at the time of stratification based on cloud ceilings and desired ground coverage. Both aircraft were used for the two Bluenose-East photo blocks. Coverage on each photo transect was continuous and overlapping so that stereoscopic viewing of the photographed areas was possible.

Caribou on the aerial photos were counted by a team of photo interpreters and supervised by Derek Fisher, president of GreenLink Forestry Inc., (Edmonton, AB) using specialized software and 3D glasses that allowed three-dimensional viewing of photographic images. Two of the authors (J. Boulanger and J. Adamczewski) visited the GreenLink office in Edmonton and tested the photo-counting equipment to gain greater familiarity with this process in fall 2018. The number of caribou counted was tallied by stratum and transect.

The exact survey strip width of photo transects was determined using the geo-referenced digital photos by GreenLink Forestry. Due to differences in topography the actual strip width varied slightly for each transect flown. Population size ($\widehat{N}$: number of caribou at least one year old) within a stratum is usually estimated as the product of the total area of the stratum (A) and the mean density ($\overline{D}$) of caribou observed within the strata ($\widehat{N} = \overline{D}A$) where density is estimated as the sum of all caribou counted on transect divided by the total area of transect sampling ($\overline{D}$=caribou counted/total transect area). An equivalent estimate of mean density can be derived by first estimating transect-specific densities of caribou ($\widehat{D}_i = caribou_i/area_i$) where $caribou_i$ is the number of caribou counted in each transect and $area_i$ is the transect area (as estimated by transect length X strip width). Each transect density is then weighted by the relative length of each transect line (w_i) to estimate mean density ($\overline{D}$) for the stratum. More exactly, $\overline{D} = \sum_i^n \widehat{D}_i w_i / \sum_i^n w_i$ where the weight (w_i) is the ratio of the length of each transect line (l_i) i to the mean length of all transect lines($w_i = l_i/\overline{l_i}$.) and n is the total number of transects sampled. Using this weighting term accommodates for different lengths of transect lines within the stratum, ensuring that each transect line contributed to the estimate in proportion to its length. Population size is then estimated using the standard formula ($\widehat{N} = \overline{D}A$) (Norton-Griffiths 1978).

When survey aircraft first flew north to Kugluktuk on June 1, snow cover on the survey area was 90 percent or greater, and in some areas 100 percent. Over the following 10 days, however, snow melted rapidly and in many areas on June 8, snow cover was highly variable and patchy. This made spotting caribou by observers in the Caravans challenging, and also made complete counting of caribou on the aerial photos more difficult than usual. Caribou on snow-free ground were easy to see, but caribou on small snow patches or on their edges required extra effort to find. Two approaches were used to address this: (1) observers took extra time to search all photos carefully, approximately doubling the time these counts usually take, and (2) a double observer method was used to estimate sightability of the caribou on photos for a subset of photos.

For the double observer method, we systematically resampled a subset of photos to estimate overall sightability for each stratum. For these photos, a second photo interpreter provided an independent count of caribou. This two-stage approach to estimation, where one stage is used to estimate detection rates that are then used to correct estimates in the second stage, has been applied to a variety of wildlife species (Thompson 1992, Barker 2008, Peters et al. 2014). The basic principle was to systematically resample the photo transects to allow an unbiased estimate of sightability from a subset of photos that were sampled by two independent observers. Systematic samples were taken by overlaying a grid over the photo transects and sampling photos that intersected the grid points.

This cross-validation process was modeled as a two-sample mark-recapture sample with caribou being “marked” in the original count and then “re-marked” in the 2nd count for each photo resampled. Using this approach avoids the assumption that the 2nd counter detects all the caribou on the photo. The Huggins closed N model (Huggins 1991) in program MARK (White and Burnham

1999) was then used to estimate sightability. A session-specific sighting probability model was used, allowing unique sighting probabilities for the first and second photo interpreter to be estimated. Model selection methods were then used to assess whether there were differences in sightability for different strata sampled. The fit of models was evaluated using the AIC index of model fit. The model with the lowest AIC_c score was considered the most parsimonious, thus minimizing estimate bias and optimizing precision (Burnham and Anderson 1998).

Non-independence of caribou counted in photos most likely caused over-dispersion of binomial variances. The over-dispersion parameter (c-hat) was estimated as the ratio of the bootstrapped (photo-based) and simple binomial variance. Sightability-corrected estimates of caribou were then generated as the original estimate of caribou on each stratum divided by the photo sightability estimate for the stratum. The delta method (Buckland et al. 1993) was used to estimate variance for the final estimate, thus accounting for variance in the original stratum estimate and in the sightability estimate.

Visual Surveys in Low-density Strata

Visual surveys were conducted in two low density strata, one north of the photo blocks and one south of them. For visual surveys, the Caravans were used with double observers and a recorder on each side of the aircraft. The numbers of caribou sighted by observers were then entered into the Trimble YUMA 2 tablet computers and summarized by transect and stratum.

A double observer method was used to estimate the sighting probability of caribou during visual surveys. The double observer method involves one primary observer who sits in the front seat of the plane and a secondary observer who sits behind the primary observer on the same side of the plane (Figure 5). The method followed five basic steps:

1. The primary observer called out all groups of caribou (number of caribou and location) he/she saw within the 400 m-wide strip transect before they passed halfway between the primary and secondary observer. This included caribou groups that were between approximately 12 and 3 o'clock for right side observers and 9 and 12 o'clock for left side observers. The main requirement was that the primary observer be given time to call out all caribou seen before the secondary observer called them out.
2. The secondary observer called out whether he/she saw the caribou that the first observer saw and observations of any additional caribou groups. The secondary observer waited to call out caribou until the group observed passed half way between observers (between 3 and 6 o'clock for right side observers and 6 and 9 o'clock for left side observer).
3. The observers discussed any differences in group counts to ensure that they were calling out the same groups or different groups and to ensure accurate counts of larger groups.
4. The data recorder categorized and recorded counts of caribou groups into primary (front) observer only, secondary (rear) observer only, or both, entered as separate records.

5. The observers switched places approximately half way through each survey day (i.e. on a break between early and later flights) to monitor observer ability. The recorder noted the names of the primary and secondary observers (Boulanger et al. 2010, Buckland et al. 2010, Boulanger et al. 2014a).

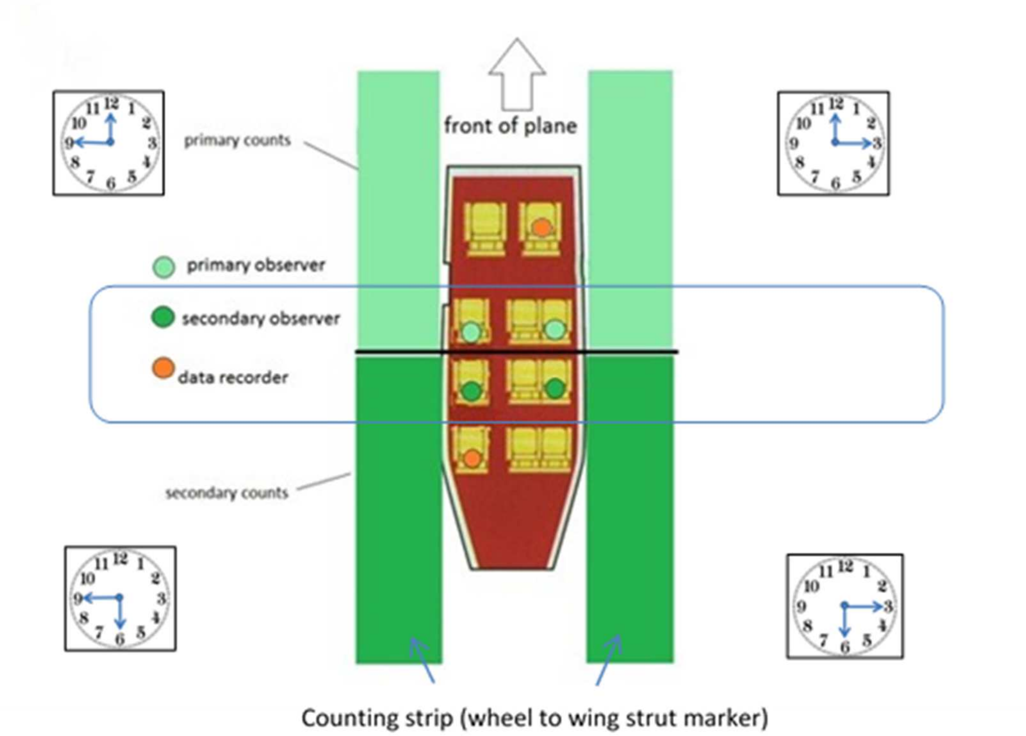

Figure 5: Observer and recorder positions for double observer methods on June 2018 caribou survey of Bluenose-East caribou. The secondary observer confirmed or called caribou not seen by the primary observer after the caribou have passed the main field of vision of the primary observer. Time on a clock can be used to reference relative locations of caribou groups (e.g. "caribou group at 1 o'clock"). The recorder was seated behind the two observers on the left side, with the pilot in the front seat. On the right side the recorder was seated at the front of the aircraft and was also responsible for navigating in partnership with the pilot.

The statistical sample unit for the survey was groups of caribou, not individual caribou. Recorders and observers were instructed to consider individuals to be those caribou that were observed independent of other individual caribou and/or groups of caribou. If sightings of individuals were influenced by other individuals, then the caribou were considered a group and the total count of individuals within the group was used for analyses.

The Huggins closed mark-recapture model (Huggins 1991) in program MARK (White and Burnham 1999) was used to estimate and model sighting probabilities. In this context, double observer sampling can be considered a two sample mark-recapture trial in which some caribou are seen ("marked") by the ("session 1") primary observer, and some of these are also seen by the second observer ("session 2"). The second observer may also see caribou that the first observer did not see. This process is analogous to mark-recapture except that caribou are sighted and re-sighted rather than marked and recaptured. In the context of dependent observer methods, the sighting probability of the second observer was not independent of the primary observer. To accommodate this removal, models were used which estimated p (the initial probability of sighting by the primary and secondary observer) and c (the probability of sighting by the second observer given that it had been already sighted by the primary observer). The removal model assumed that the initial sighting probability of the primary and secondary observers was equal. Observers were switched midway in each survey day (on most days there were two flights with a re-fueling stop between them), and covariates were used to account for any differences that were caused by unequal sighting probabilities of primary and secondary observers.

One assumption of the double observer method is that each caribou group seen has an equal probability of being sighted. To account for differences in sightability we also considered the following covariates in the MARK Huggins analysis (Table 1). Each observer pair was assigned a binary individual covariate and models were introduced that tested whether each pair had a unique sighting probability. An observer order covariate was modeled to account for variation caused by observers switching order. If sighting probabilities were equal between the two observers, it would be expected that order of observers would not matter and therefore the confidence limits for this covariate would overlap 0. This covariate was modeled using an incremental process in which all observer pairs were tested followed by a reduced model where only the beta parameters whose confidence limits did not overlap 0, were retained.

Table 1: Covariates used to model variation in sightability for double observer analysis for Bluenose-East caribou survey in June 2018.

Covariate	Acronym	Description
observer pair	obspair	each unique observer pair
observer order	obsorder	order of pair
group size	size	size of caribou group observed
Herd/calving ground	Herd (h)	Calving ground/herd being surveyed.
snow cover	snow	snow cover (0, 25, 75, 100)
cloud cover	cloud	cloud cover(0, 25, 75, 100)
Cloud cover*snow cover	Cloud*snow	Interaction of cloud and snow cover

Data from both the Bluenose-East and Bathurst calving ground surveys were used in the double observer analysis given that most planes flew the visual surveys for both calving grounds. It was possible that different terrain and weather patterns on each calving ground might affect sightability and therefore herd/calving ground was used as a covariate in the double observer analysis. Estimates of total caribou that accounted for any caribou missed by observers were produced for each survey stratum. Appendix 1 provides more details on estimation using double observer methods.

The fit of models was evaluated using the AIC index of model fit. The model with the lowest AIC_c score was considered the most parsimonious, thus minimizing estimate bias and optimizing precision (Burnham and Anderson 1998). The difference in AIC_c values between the most supported model and other models (ΔAIC_c) was also used to evaluate the fit of models when their AIC_c scores were close. In general, any model with a ΔAIC_c score of <2 was worthy of consideration.

Estimates of herd size and associated variance were estimated using the mark-recapture distance sampling (MRDS) package (Laake et al. 2012) in program R (R Development Core Team 2009). In MRDS, a full independence removal estimator which models sightability using only double observer information (Laake et al. 2008a, Laake et al. 2008b) was used. This made it possible to derive double observer strip transect estimates. Strata-specific variance estimates were calculated using the formulas of Innes et al. (2002). Estimates from MRDS were cross checked with strip transect estimates (that assume sightability = 1) using the formulas of Jolly (1969) (Krebs 1998). Data were explored graphically using the ggplot2 (Wickham 2009) R package with GIS maps being produced in QGIS software (QGIS Foundation 2015).

Composition Survey of Breeding and Non-breeding Caribou on the Calving Ground

The composition survey was initiated in the survey strata at the same time of the photo and visual surveys on June 8. Caribou were classified in strata that contained significant numbers of breeding females (based on the reconnaissance transects) to estimate proportions of breeding females and other sex and age classes. This survey allowed more detailed and accurate classification than the relatively broad classification applied during the reconnaissance survey. For this, a helicopter (initially a Long Ranger, later replaced by an A-Star) was used to systematically survey groups of caribou. Caribou groups that comprised ~<50 individuals were classified from the air by a front-seat observer using motion-stabilized binoculars (Canon 10X42L IS WP). Classified caribou counts were called out to a rear-seat data recorder who entered the data into a computer tablet.

Caribou were classified following the methods of Gunn et al. (1997) (and see Whitten 1995) where antler status, presence/absence of an udder, and presence of a calf are used to categorize breeding status of females. Newborn calves, yearlings and bulls were also classified (Figure 6). Presence of a newborn calf, presence of hard antlers signifying recent or imminent calving, and presence of a distended udder were all considered as signaling a breeding cow that had either calved, was about to calve, or had likely just lost a calf. Cows lacking any of these criteria and cows with new (velvet) antler growth were considered non-breeders.

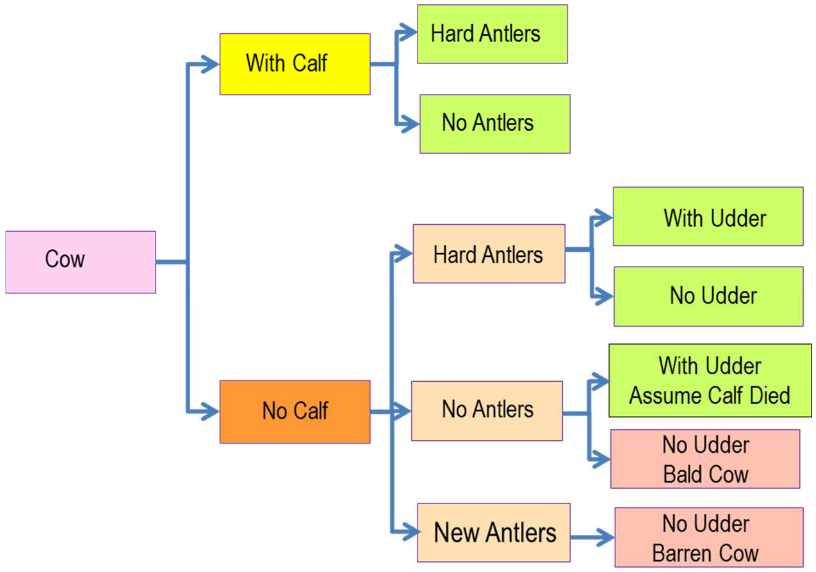

Figure 6: Classification of breeding females used in composition survey of Bluenose-East caribou in June 2018. Shaded boxes were classified as breeding females (diagram adapted from Gunn et al. (2005b)). Udder observation refers to a distended udder in a cow that has given birth, and antler observation is a hard antler distinct from new antlers growing in velvet.

The number of each group was totaled as well as the numbers of bulls and yearlings (calves of the previous year) to estimate the proportion of breeding caribou on the calving ground. Bootstrap resampling methods (Manly 1997) were used to estimate standard errors (SE) and percentile-based confidence limits for the proportion of breeding caribou.

Estimation of Breeding Females and Adult Females

The numbers of breeding females were estimated by multiplying the estimate of total (1+year old) caribou on each stratum by the estimated proportion of breeding females in each stratum from composition surveys. This step basically eliminated the non-breeding females, yearlings, and bulls from the estimate of total caribou on the calving ground.

The number of adult females was estimated by multiplying the estimate of total (1+year old) caribou on each stratum by the estimated proportion of adult females (breeding and non-breeding) in each stratum from the composition survey. This step basically eliminated the yearlings and bulls from the estimate of total caribou on the calving ground.

Each of the field measurements had an associated variance, and the delta method was used to estimate the total variance of breeding females under the assumption that the composition surveys and breeding female estimates were independent (Buckland et al. 1993).

Estimation of Adult Herd Size

Total herd size was estimated using two approaches. The first approach, which had been used in earlier calving ground surveys, assumed a fixed pregnancy rate for adult females whereas the second approach avoided this assumption.

Estimation of Herd Size Assuming Fixed Pregnancy Rate

As a first step, the total number of adult (2+year old) females in the herd was estimated by dividing the estimate of breeding females on the calving ground by an assumed pregnancy rate of 0.72 (Dauphiné 1976, Heard and Williams 1991). This pregnancy rate was based on a large sample of several hundred Qamanirjuaq caribou in the 1960s (Dauphineˈ 1976). The estimate of total females was then divided by the estimated proportion of females in the herd based on a bull:cow ratio from a fall composition survey conducted in October of 2018, to provide an estimate of total adult caribou in the herd (methods described in Heard and Williams 1991). This estimator assumes that all breeding females were within survey strata areas during the calving ground survey and that the pregnancy rate of caribou was 0.72 for 2017-2018. Note that this estimate corresponds to adult caribou at least two years old and does not include yearlings because yearling female caribou are not considered sexually mature.

Estimate of Herd Size Based upon Estimates of Adult Females

An alternative extrapolated herd size estimator was developed to explore the effect of variable pregnancy rates as part of the 2014 Qamanirjuaq caribou herd survey (Campbell et al. 2016) and has been used in other calving photo surveys for the Bluenose-East herd (Boulanger et al. 2016, Adamczewski et al. 2017). This estimator first uses data from the composition survey to estimate the total proportion of adult females, and adult females in each of the survey strata. The estimate of total adult females is then divided by the proportion of adult females (cows) in the herd from one or more fall composition surveys. Using this approach, the fixed pregnancy rate is eliminated from the estimation procedure. This estimate assumes that all adult females (breeding and non-breeding) were within the survey strata during the calving ground survey. It makes no assumption about the pregnancy rate of the females and does not include the yearlings.

In calving photo surveys since the 2014 Qamanirjuaq survey (Campbell et al. 2016), the estimate of females based on total adult females on the calving ground survey area has become the preferred way (for the Department of Environment and Natural Resources (ENR)) of estimating this number, and herd estimates based on this method are the ones graphed in Figure 3. With sufficient numbers of collared cows and extensive systematic reconnaissance surveys, it has become possible to define the full distribution of the females in the herd reliably. Pregnancy rates do vary depending on cow condition (Cameron et al. 1993, Russell et al. 1998). We found that the proportion of breeding females on the Bluenose-East calving grounds in 2010, 2013, 2015 and 2018 has been quite variable. Using survey-specific estimates of breeding and non-breeding cows is a more robust method of extrapolating to herd size, rather than assuming a constant deterministic pregnancy rate that ignores this source of variation. This method also increases the precision of the overall herd estimate.

Trends in Breeding and Adult Females.

As an initial step, a comparison of the estimates from the 2015 and 2018 surveys was made using a t-test (Heard and Williams 1990), with gross and annual rates of changes estimated from the ratio of estimates.

Longer term trends 2010-2018 were estimated using Bayesian state space models, which are similar to previously used regression methods. However, Bayesian models allow more flexible modeling of variation in trend through the use of random effects models (Humbert et al. 2009). This general approach is described further in the demographic model analysis in the next section. The population size was log transformed to partially account for the exponential nature of population change (Thompson et al. 1998). The rate of change could then be estimated as the exponent of the slope term in the regression model (*r)*. The per capita growth rate can be related to the population rate of change (λ) using the equation $\lambda=e^r=N_{t+1}/N_t$. If $\lambda=1$ then a population is stable; values > or <1 indicate increasing and declining populations. The rate of decline was also estimated as $1-\lambda$.

Demographic Analyses

Survival Rate Analyses

Collar data for female caribou 2010-2018 were compiled for the Bluenose-East caribou herd by the Government of the Northwest Territories (GNWT) ENR staff. Fates of collared caribou were determined by assessment of movement of collared caribou, with mortality being assigned to collared caribou based on lack of collar movement that could not be explained by collar failure or device drop-off. The data were then summarized by month as live or dead caribou. Caribou whose collars failed or were scheduled to drop off were censored from the analysis. Data were grouped by “caribou years” that began during calving of each year (June) and ended during the spring migration (May). The Kaplan-Meier method was used to estimate survival rates, accounting for the staggered entry and censoring of individuals in the data set (Pollock et al. 1989). This approach also ensured that there was no covariance between survival estimates for the subsequent demographic model analysis.

Demographic Model Analyses

One of the most important questions for the Bluenose-East herd was whether the breeding female segment of the population had declined since the last survey in 2015. The most direct measure that indicates the status of breeding females is their survival rate, which is the proportion of breeding females that survive from one year to the next. This metric, along with productivity (recruitment of yearlings to adult breeding females) determines the overall population trend. For example, if breeding female survival is high then productivity in previous years can be relatively low and the overall trend in breeding females can be stable. Alternatively, if productivity is consistently high, then slight reductions in adult survival rate can be tolerated. The interaction of these various indicators can be difficult to interpret and a population model can help increase understanding of herd demography.

We used a Bayesian state space Integrated Population Model (IPM) (Buckland et al. 2004, Kery and Schaub 2012) based upon the original (OLS) model (White and Lubow 2002) developed for the Bathurst herd (Boulanger et al. 2011) to further explore demographic trends for the Bluenose-East herd. A state space model is basically a model that allows separate modeling of field sampling estimates and demographic processes. This work was in collaboration with a Bayesian statistician/modeller (Joe Thorley-Poisson Consulting) (Thorley 2017, Ramey et al. 2018, Thorley and Boulanger 2019).

We used the 2010, 2013, 2015 and 2018 breeding female estimates, as well as calf-cow ratios, bull-cow ratios (Cluff et al. 2016), estimates of the proportion of breeding females, and adult female survival rates from collared caribou to estimate the most likely adult female survival values that would result in the observed trends in all of the demographic indicators for the Bluenose-East herd. Calf cow ratios were recorded during fall (late October) and spring (late March-April) composition surveys whereas proportion of breeding females was measured during composition surveys conducted on the calving ground. Proportion of females breeding was estimated as the ratio of breeding females to adult females from each calving ground survey.

The Bayesian IPM model is a stage based model that divides caribou into three age-classes, with survival rates determining the proportion of each age class that makes it into the next age class (Figure 7); this structure is identical to the OLS modeling done previously on the Bathurst and Bluenose-East herds.

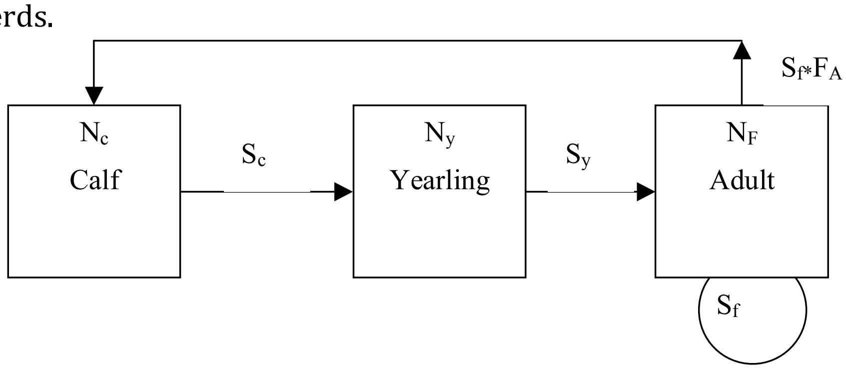

Figure 7: Underlying stage matrix life history diagram for the caribou demographic model used for Bluenose-East and Bathurst caribou. This diagram pertains to the female segment of the population. Nodes are population sizes of calves (N_c), yearlings (N_y), and adult females (N_F). Each node is connected by survival rates of calves (S_c), yearlings (S_y) and adult females (S_f). Adult females reproduce dependent on fecundity (F_A) and whether a pregnant female survives to produce a calf (S_f). The male life history diagram was similar with no reproductive nodes.

We restricted the data set for this exercise to composition and survey results between 2008 and 2018, which covered the time period in which calving ground photographic surveys had been conducted on the Bluenose-East herd. In addition, this interval basically covered potential recruitment into the breeding female class since any surviving female calf born from 2008-2010 would be a breeding female by 2013, and breeding females recruited prior to 2008 were accounted for by the 2010 calving ground estimate of breeding females (Table 2). It was assumed that a calf born in 2010 would not breed in the fall after it was born, or the fall of its second year, but it could breed in its third year (see Dauphiné 1976 for age-specific pregnancy rates). It was considered a non-breeder until 2013. Calves born in 2014 and 2015 had the most direct bearing on the number of new breeding females on the 2018 calving ground that were not accounted for in the 2015 breeding female estimate.

Table 2: A schematic of the assumed timeline 2011-2018 in the Bayesian IPM analysis of Bluenose-East caribou in which calves born are recruited into the breeding female segment (green boxes) of the population. Calves born prior to 2013 were counted as breeding females in the 2013 and 2015 surveys. Calves born in 2014 and 2015 recruited to become breeding females in the 2018 survey.

Calf	**Survey Years**							
Born	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**
2010	yearling	non-breeder	breeder	breeder	breeder	breeder	breeder	breeder
2011	calf	yearling	non-breeder	breeder	breeder	breeder	breeder	breeder
2012		calf	yearling	non-breeder	breeder	breeder	breeder	breeder
2013			calf	yearling	non-breeder	breeder	breeder	breeder
2014				calf	yearling	non-breeder	breeder	breeder
2015					calf	yearling	non-breeder	breeder
2016						calf	yearling	non-breeder

We note that the underlying demographic model used for the Bayesian state space model is identical to the previous OLS model. However, the Bayesian IPM method provides a much more flexible and robust method to estimate demographic parameters that takes into account process and observer error. One of the biggest differences is the use of random effects modeling to model temporal variation in demographic parameters. For random effects models, it is assumed that there is a central mean value for a parameter (i.e. Cow survival) with a distribution of values created over time based on temporal variation. This contrasts with the OLS method where temporal variation was often not modeled or modeled with polynomial terms which assumed an underlying directional change over time. Appendix 3 provides details on the Bayesian IPM state space modeling, including the base R code used in the analysis.

RESULTS

Survey Conditions

Weather conditions were challenging due to the late spring with higher than normal snow cover in most of the core calving ground area (Figure 8). On June 8, snow cover varied from nearly 100 percent at the north end of Bluenose Lake to nearly 0 percent at the south end near the Coppermine River. Most areas had about 50 percent snow cover and much of it was a “salt-and-pepper” patchy mosaic. This reduced sightability of caribou and we decided to photo-survey the majority of the core calving ground area to offset this potential issue. The rationale was that caribou would still be reliably seen on high-resolution photos that could be searched carefully and repeatedly with a three-dimensional projection. We expected that 80-90 percent of the female caribou found would be in the photo blocks. In addition, the sightability of caribou on photos could be tested further using independent observers.

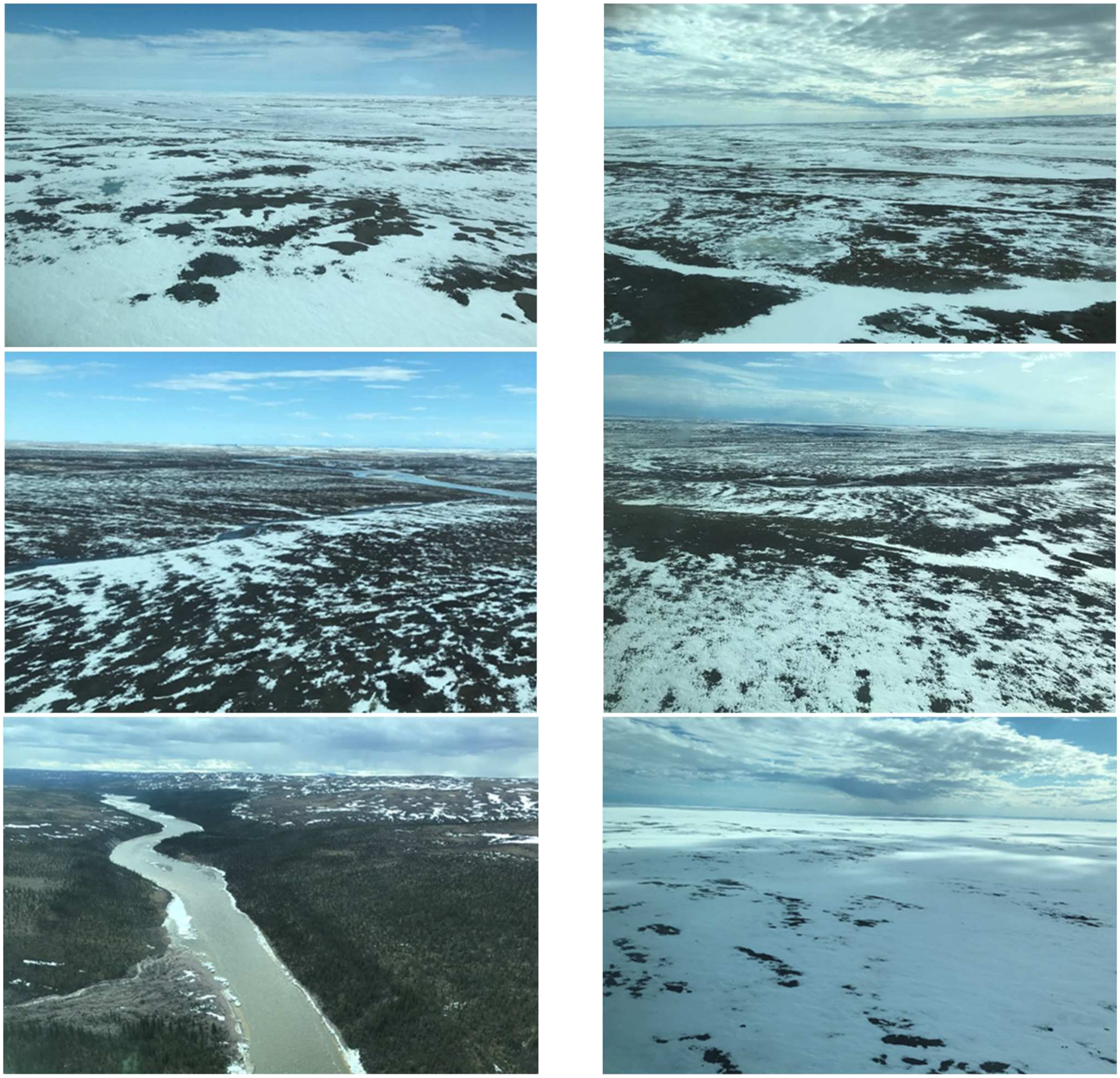

Figure 8: Photos of variable Bluenose-East survey conditions on June 8, 2018 when the visual and photo surveys were conducted (photos J. Adamczewski). Snow cover ranged from 95 percent or more at the north end near Bluenose Lake (bottom right) to nearly bare ground near the Coppermine River (bottom left).

Movement Rates of Collared Caribou

The locations of 30 adult female caribou that occurred in or around the Bluenose-East survey area were monitored throughout the June survey to assess movement rates. The peak of calving is considered close when the majority of collared female caribou exhibit movement rates of <5 km/day (Gunn and Russell 2008). Using this parameter, we surmised that the peak of calving was near starting on June 8, when mean daily movement rates were 5 km or less for half of the radio collared caribou (Figure 9). The peak of calving was further verified from observations of substantial numbers of cows with calves from the composition and visual survey flying on June 8.

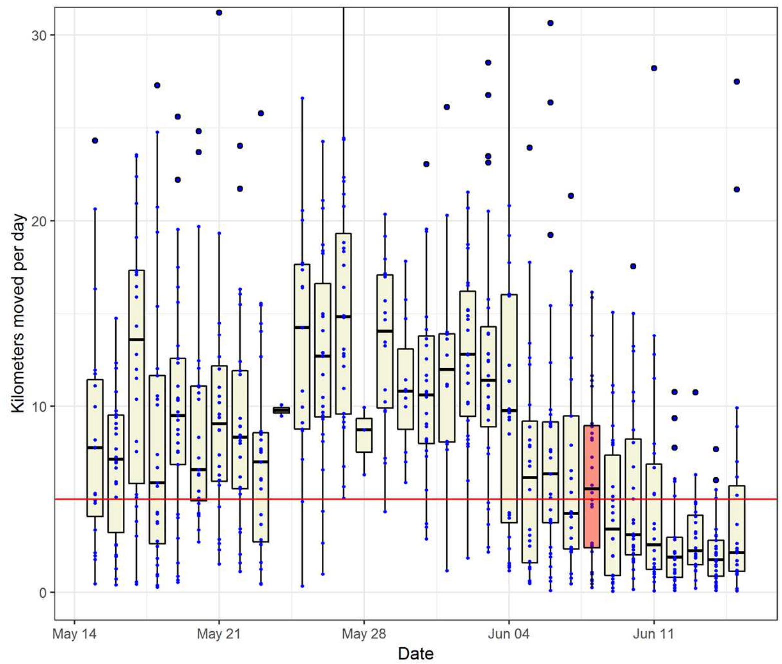

Figure 9: Movement rates of female collared caribou on or around the Bluenose-East calving ground before and during calving in 2018. The boxplots contain the 25th and 75th percentile of the data with the median shown by the central bar in each plot. The ranges up to the 95th percentile are depicted by the lines with outlier points shown as larger dots. The movement rates of collared cows on June 8, the date of the visual and photo surveys are highlighted in red.

Reconnaissance Surveys to Delineate Strata

An initial exploratory survey was conducted on June 1st to assess the breeding status of caribou. This survey focused on collared caribou and determined that calving was in the very early stages (very few cows with calves). Low ceilings and ground fog delayed subsequent flying until June 6 and 7 when full days of reconnaissance flying were conducted. A single day of clear weather with blue skies occurred on June 8, and on this day the two photo blocks and two visual blocks were surveyed (Table 3).

Table 3: Summary of reconnaissance and visual survey flying on the June 2018 Bluenose-East calving ground survey

Date	Caravan 1	Caravan 2
June 1	Arrive in Kugluktuk/recon of calving area with collared cows	Arrived in Kugluktuk
June 2-5	Grounded due to fog	Grounded due to fog
June 6	Recon of core calving ground	Recon of core calving ground
June 7	Recon of Northern area	Recon of areas SE of Kugluktuk
June 8	Visual surveys and areas to SE of Kugluktuk	Visual surveys and extra recon on northern edges of strata
June 9	Bathurst survey	Bathurst survey and lines in between Bathurst and BNE
June 10	Recon lines to the East of Kugluktuk & return to Yellowknife	Recon lines to the East of Kugluktuk & return to Yellowknife

Our objectives for the reconnaissance survey were to map the distribution of adult and breeding females and define the concentrated calving area for the Bluenose-East herd. As with the previous survey in 2015, the highest densities of breeding females were to the west of Kugluktuk with lower densities of antlered female caribou and non-breeders to the south. No collared females were found east of the Coppermine River. The distribution of caribou based on reconnaissance surveys and collared females suggested the highest concentrations of breeding caribou along the Rae River up to the east of Bluenose Lake (Figure 10).

The distribution and relative density of hard-antlered female caribou, together with the movement patterns of collared females and recent tracks in the snow, clearly showed that most breeding females were moving in a northwestern direction within a wide corridor along the headwaters of the Rae and Richardson River valleys and northward along the eastern slopes of the Melville Hills east of Bluenose Lake. The leading edge of breeding females in the northern part of the survey area was conspicuous because the density of caribou dropped markedly along the northern boundary. The leading edge and associated distribution of breeding females was included within the visual north stratum (Figure 10).

Within the observed distribution of breeding females mapped during the systematic reconnaissance, relatively consistent densities and distribution of breeding females were observed in the western reaches of the Rae and Richardson River valleys. Based on reconnaissance surveys and distribution of collared cows, we delineated the photo north stratum to encompass what we considered was a majority of breeding females. The photo south stratum was delineated directly adjacent to the photo north strata, and included remaining collared cows and observations of smaller groups with breeding females. Based on the reconnaissance survey, we delineated the photo south stratum to include the mapped distribution of breeding females but observed and expected this stratum to include more non-breeders as it included the trailing edge of the north-western migratory push of breeding females.

We added the visual south stratum as a smaller adjacent area that extended to tree-line to cover what we observed to be a dispersed trailing edge of caribou at medium densities but with no sightings of hard-antler cows and calves during the systematic reconnaissance survey. Observations of bulls and yearlings were predominant in this stratum. The southern edge of this stratum aligned with the bend of the Coppermine River and included the Coppermine Mountains. A trailing edge towards the south, increasingly composed of bulls and yearlings, is characteristic of this herd, based on previous June surveys (Boulanger et al. 2016, Adamczewski et al. 2017).

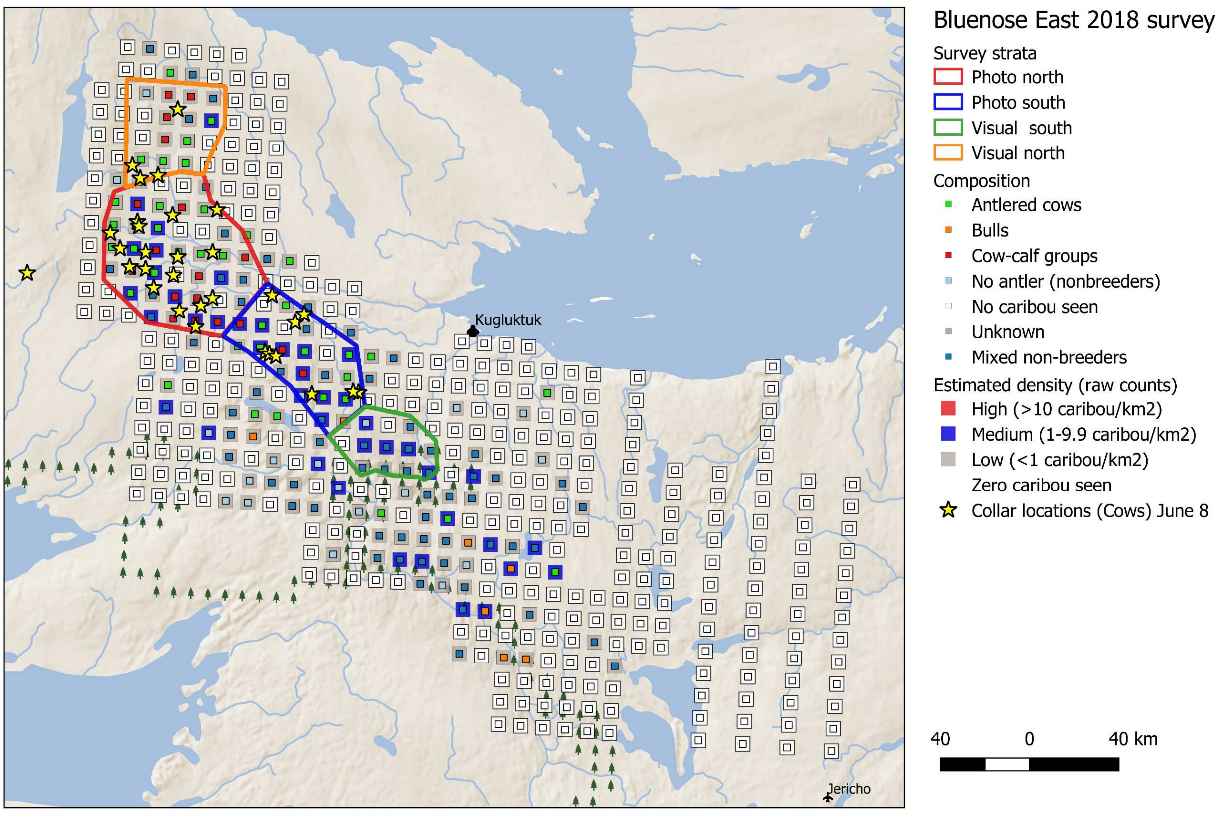

Figure 10: Reconnaissance survey coverage for the June 2018 Bluenose-East calving ground survey. The two photo blocks are shown in red and blue outlines and the two visual blocks are shown to the north and south in orange and green. Outer squares show density of the caribou found (high, medium and low), and inner squares show the kind of caribou seen. Gold stars show locations of collared female caribou, of which 30 occurred in the survey strata. The collared female south of Bluenose Lake was from the Bluenose-West herd. There was also a single caribou to the north of the survey strata from the Bluenose-West herd as shown in Figure 13.

Stratification and Allocation of Survey Effort

Photo Strata

Two photo strata were defined for the Bluenose-East 2018 survey (Figures 10, 11), which included the majority of adult and breeding females and almost all the collared cows. Based on reconnaissance data, relative abundance and density were estimated for the two strata, with higher densities suggested for the south. However, observation of the kinds of caribou recorded in segments suggested that the proportion of breeding caribou was higher in the northern stratum, which argued for higher coverage for this stratum. As a result, roughly equal coverage was given to each stratum.

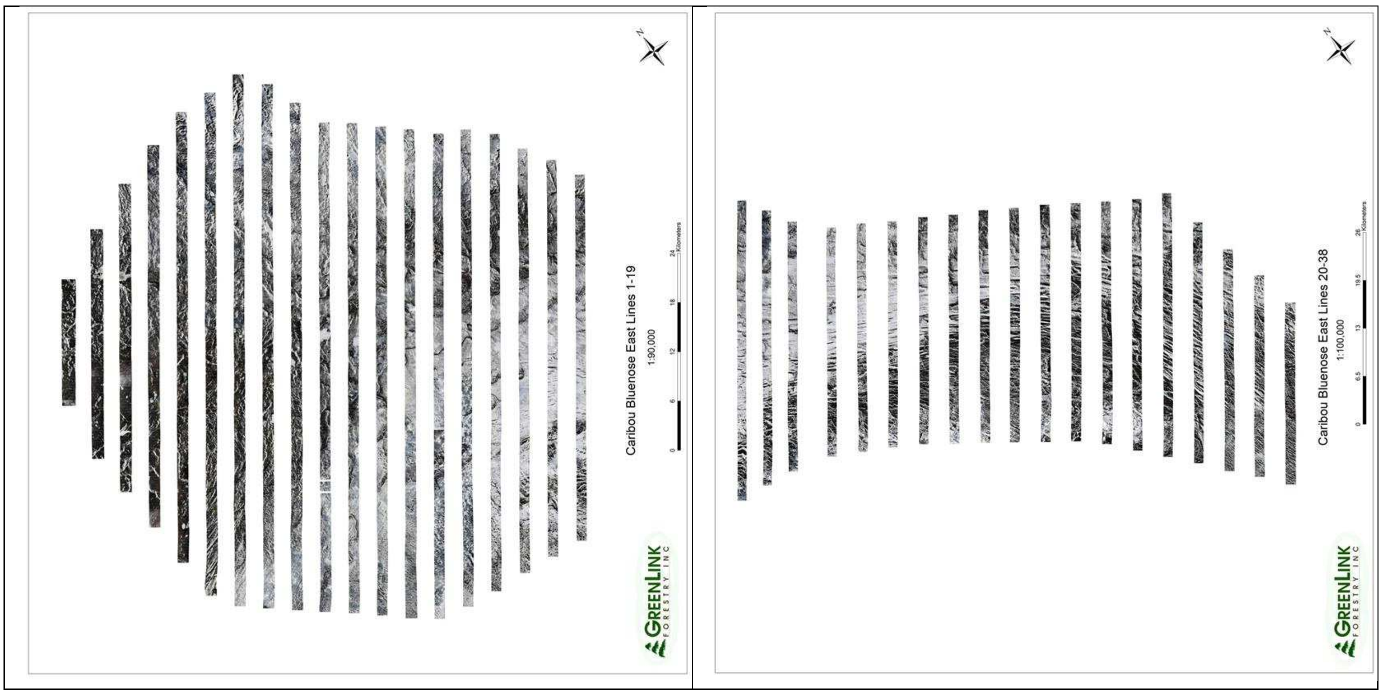

Figure 11: Composite photos of the Bluenose-East North and South photo strata.

Table 4 provides the stratum dimensions for the photo strata.

Table 4: Stratum dimensions and reconnaissance-based estimates of density for the Bluenose-East photo strata in June 2018. Average transect (the average length of a transect), baseline (length of longest axis; transects are flown perpendicular to the baseline), area surveyed, and preliminary estimates of density and abundance (N) based on reconnaissance surveys are given.

Stratum	Area (km^2)	Avg. transect (km)	Baseline (km)	Caribou counted	Area surveyed (km^2)	Density Caribou/ km^2	N	SE (N)	CV
North	3,787.8	49.8	76	221	296	0.75	2,828	442.2	0.15
South	2,051.5	34.0	68	207	208	0.99	2,042	261.9	0.13

With photo planes using high-resolution digital cameras, it is possible for the plane to fly at different altitudes. Flying at a higher altitude increases the strip width and reduces the number of pictures but also reduces the resolution of the pictures as indexed by Ground Sample Distance (GSD). GSD is a term used in aerial photography to describe the distance between pixels on the ground for a particular photo sensor. In practical terms, the GSD for the aerial photos used in this survey translates into strip width and elevation above ground level (AGL) as follows (Table 5).

Table 5: GSD for photo sensor used on Bluenose-East June 2018 caribou survey, along with associated elevation AGL and photographed ground strip width. Typical elevation and strip width used in earlier analog photo surveys are included for reference.

GSD (cm)	Elevation AGL (feet)	Strip width (m)
4	2,187	692
5	2,734	866
6	3,281	1,039
7	3,828	1,212
8	4,374	1,385
9	4,921	1,558
10	5,468	1,731
Analog Photos	2,000	914.3

The coverage of photos for the Bluenose-East survey was based upon the approximate total number of photos budgeted for the Bluenose-East and Bathurst surveys occurring at the same time (6,000) and corresponding levels of coverage across a range of likely altitudes (Table 6). When viewed in this context, GSD levels of 5 were not feasible for the Bluenose-East survey with GSD levels of at least 6 needed to keep within 2,000 photos of the budgeted number of 6,000.

Table 6: Stratum dimensions and photos required for various levels of survey coverage for the Bathurst and Bluenose-East photo strata in June 2018. The GSD/photos levels used are underlined and bold.

	Stratum Dimensions				Approximate No. of Photos at GSD				Estimated % Coverage at GSD			
Strata	Stratum Area (km^2)	Average Transect Length (km)	No. Transects	Total Transect Length (km)	5	6	7	8	5	6	7	8
Bathurst	1,159	35.0	15	525	2,389	2,003	**1,715**	1,458	40%	48%	**56%**	74%
Bluenose-East												
North	3,788	49.8	22	1,096	4,852	4,046	3,426	**3,046**	25%	30%	34%	**45%**
South	2,052	34.0	16	544	2,407	2,007	1,700	**1,511**	23%	27%	31%	**41%**
Total photos					7,259	6,053	5,126	4,557				
Total photos					9,648	8,056	6,841	6,015				

In the June 2018 surveys, the Bathurst photo stratum was flown at GSD 7 (average elevation 3,828 feet (1,167 m) above ground) and the Bluenose-East photo strata were flown at GSD 8 (average elevation 4,374 feet (1,333 m) above ground) with a resulting total of 6,170 photos. Of these, 4,455 were taken in the Bluenose-East calving ground survey and 1,715 were taken in the Bathurst survey. There was only one relatively small higher-density area on the Bathurst calving ground, while the Bluenose-East calving ground, similar to past surveys, has tended to be larger in area with calving caribou more dispersed. Ground coverage on the Bluenose-East North photo block was 37.0 percent and 30.3 percent on the South photo block.

Visual Strata

The Bluenose-East north and south visual strata were relatively small and were flown on June 8, the same day as the aerial photography. These strata had lower densities of caribou (0.36 and 0.88 caribou/km for the north and south stratum respectively). As with the Bathurst surveys, coverage was determined so that each stratum could be completed in one survey flight and each stratum had a minimum of 10 flight lines for acceptable precision. The resulting levels of coverage were 22 percent and 20 percent for the north and south visual strata (Table 7).

Table 7: Final dimensions of strata surveyed for the 2018 Bluenose-East caribou survey.

Stratum	Total Transects Possible	Sampled Transects	Area of Stratum (km^2)	Strip Width (km)	Transect Area (km^2)	Coverage
North Photo	60	22	3,787.8	1.31[A]	1,402.4	37.0%
South Photo	54	16	2,051.5	1.28[A]	621.3	30.3%
North Visual	51	12	1,746.9	0.8	378.5	21.7%
South Visual	40	10	1,085.4	0.8	214.9	19.8%

[A] Mean strip width for stratum-transect width varied by transect.

Movements of collared caribou from reconnaissance to photo/visual surveys.

Thirty-two collared females were within or around the Bluenose-East calving ground (Figure 12). Of these, 30 occurred in survey strata (Photo North 18, Photo South 8, Visual North 4, Visual South 0). One caribou moved from the south to the north photo stratum between June 7th and 8th. The general movement paths of caribou also occurred within survey strata. Collared caribou that had movement rates of >5 km/day were mainly located within the central regions of strata, suggesting that the strata contained the range of caribou movements as indicated by collared caribou (Figure 12).

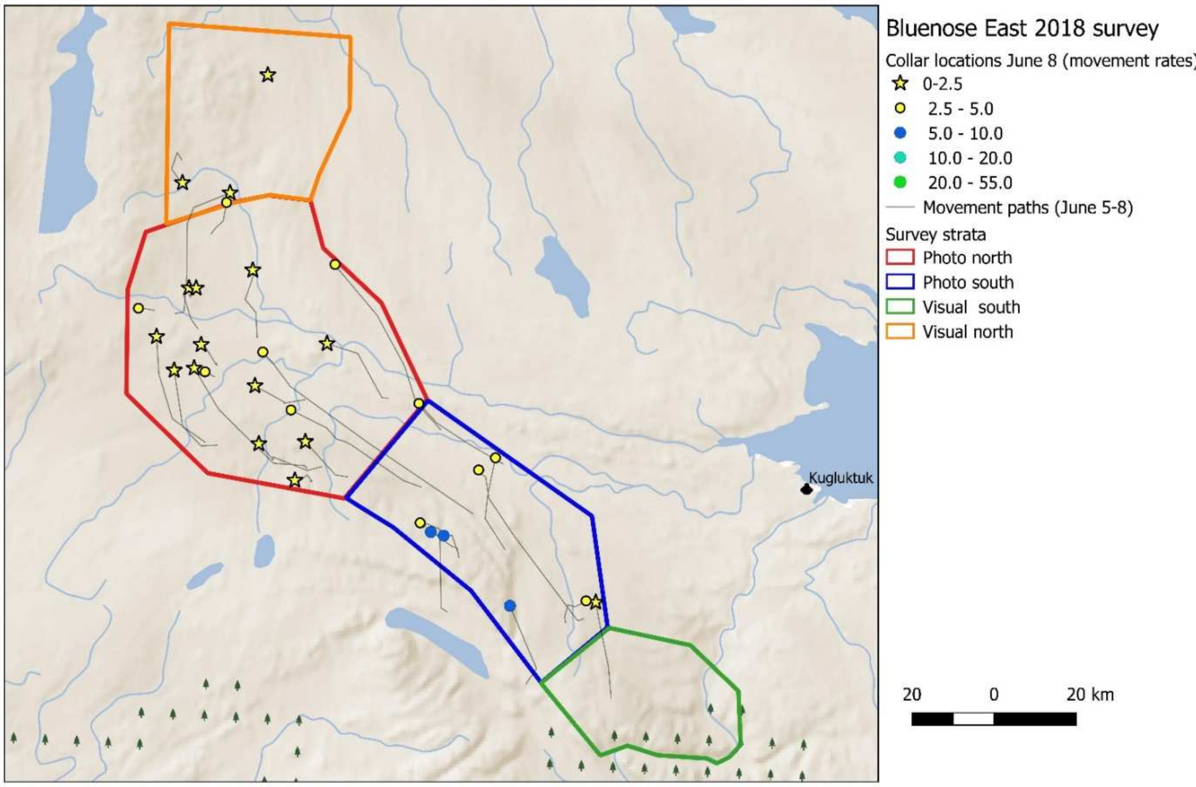

Figure 12: Locations of collared Bluenose-East female caribou and movements up to and during June 8, 2018 when the photo and visual surveys occurred.

Figure 13 displays the distribution of caribou on photos as indicated by points of caribou counted on photos. Dots with color delineating group size illustrate distribution on visual surveys. Two collared cows were north and south of Bluenose Lake and were identified as Bluenose-West females.

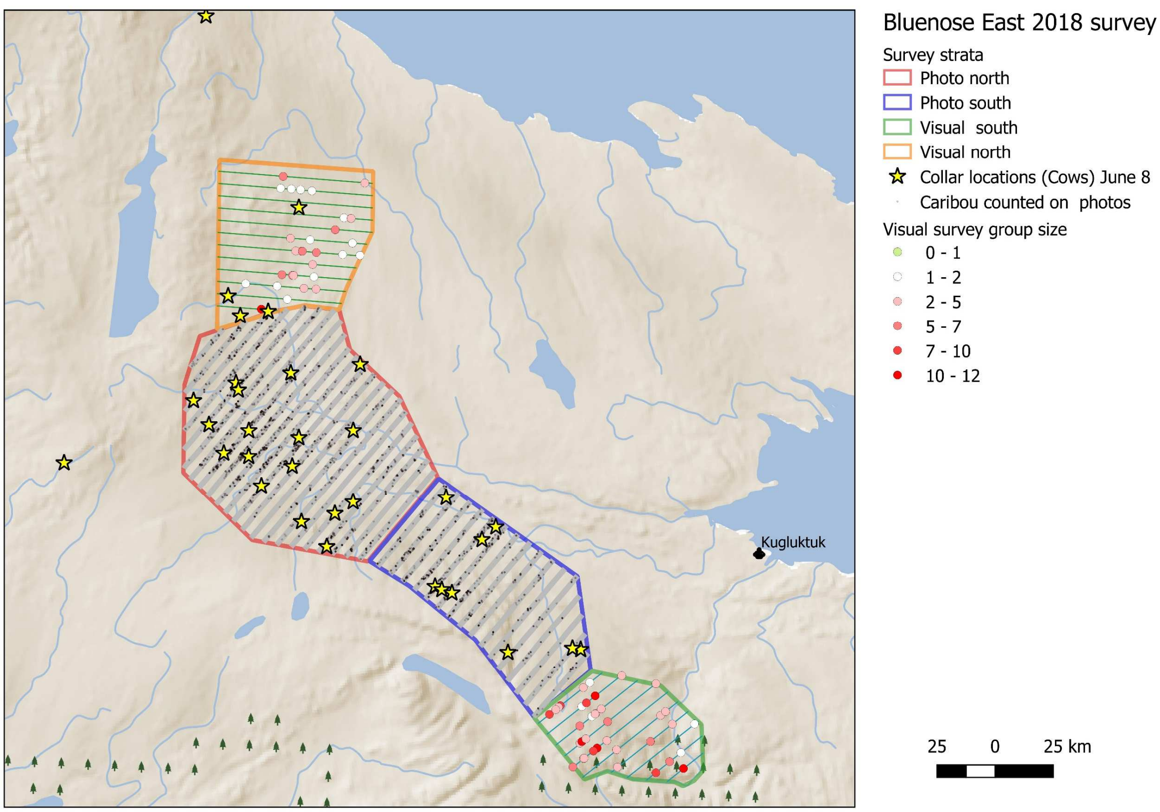

Figure 13: A plot of the Bluenose-East photo data counts and visual survey results with collar locations on June 8, 2018 when surveys occurred. Collared caribou south and north of Bluenose Lake were Bluenose-West females.

Estimates of Caribou on Photo Strata

Photo Sightability Estimation

Photo interpreters found that the sightability of caribou on photos was influenced by snow cover. If the ground was bare caribou were readily visible, however, sightability decreased with snow cover especially in cases of intermittent snow and bare ground at the edges of snow patches (Figure 14).

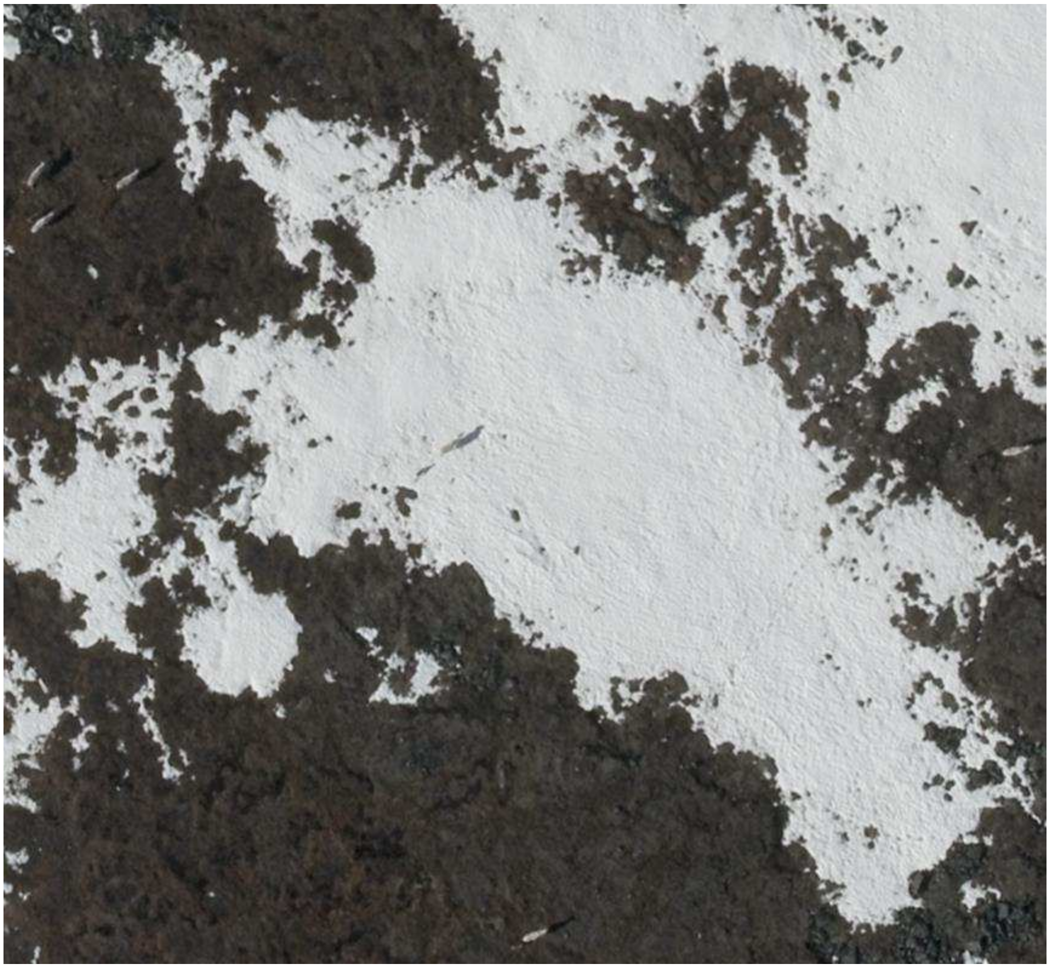

Figure 14: Close-up view of one zoomed-in portion of an aerial photo on Bluenose-East survey on June 8, 2018. Among others, three caribou are visible in the upper left corner, and a cow and calf can be seen walking (along with their shadows) across the snow-patch in the middle of the photo. Caribou in areas without snow are readily visible. There is also one caribou on the edge of the snow-patch at bottom right, which is less obvious.

Sightability of caribou on photos was estimated by having a second observer from GreenLink Forestry independently re-count caribou on a subset of photos (i.e. without knowing what the first observer had found). The second observer was Derek Fisher, who is the most experienced observer of aerial photographs at the company. The photo survey transect lines were resampled systematically using transects perpendicular to the original photo-plane transects. A design that sampled the closest photo to the transect line in which at least one caribou was detected, was used to select photos for resampling. This systematic resampling approach ensured an adequate sample size of photos with caribou on them (Figure 15).

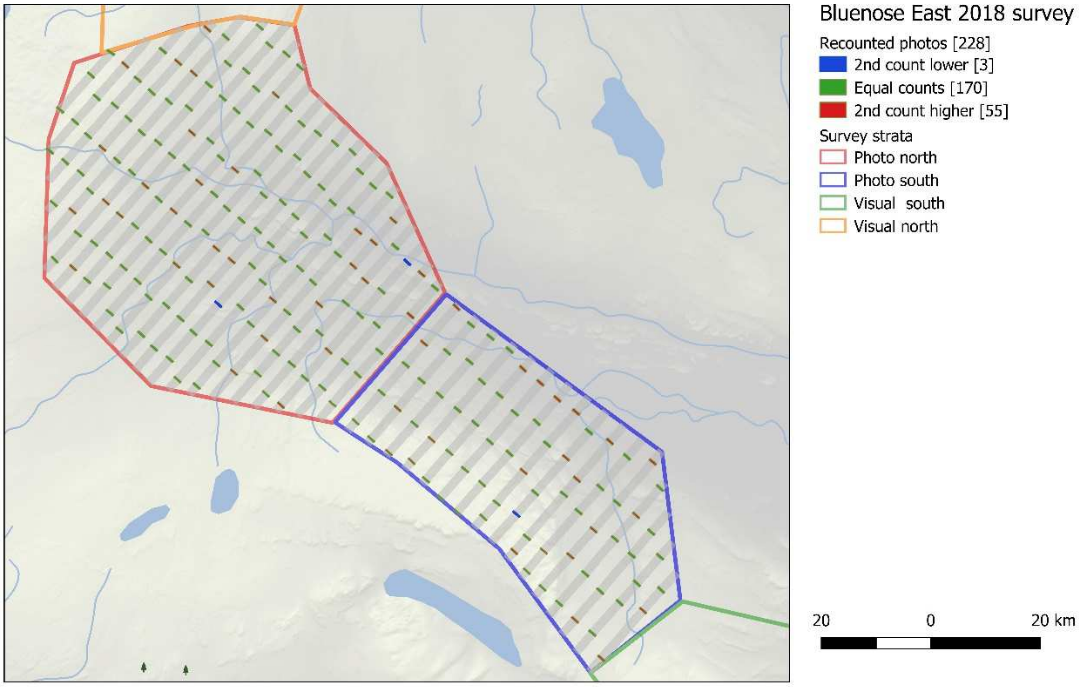

Figure 15: Systematic sampling design for cross validation of photos for the Bluenose-East June 2018 calving ground survey.

Overall, 228 photos were resampled in the North and South photo strata (Table 8). Ratios of second to original count suggested higher photo sightability in the North stratum. One assumption in this comparison is that the first and second counters were counting the same caribou on a given photo. To test this assumption the distances between points of counted caribou in the first and second count was measured in GIS to identify any counted caribou that were further distant from the original counts. This process did not identify any new caribou.

Table 8: Summary of photo cross validation data set for Bluenose-East June 2018 caribou survey photo blocks. The ratio of the original count to second count is an estimate of photo sightability.

Strata	Photos Resampled	Original Count	Second Count	New Caribou Counted in Second Count	Caribou not Detected in Second Count	Ratio of Original Count/Second Count
North	158	447	490	43	2	0.91
South	70	257	301	44	1	0.85

This cross-validation process was modeled as a two sample mark-recapture sample with caribou being “marked” in the original count and then be “re-marked” in the second count (Table 9). Model selection suggested that the difference in sightability between strata was supported even when over-dispersion was accounted for. Therefore, strata-specific sightability estimates were used for subsequent estimates.

Table 9: Model selection of photo sightability cross validation data set for Bluenose-East June 2018 caribou survey using Huggins closed models in program MARK. Quasi Akaike Information Criterion ($QAIC_c$), the difference in $QAIC_c$ between the most supported model and given model $\Delta QAIC_c$, the model weight (w_i), number of parameters (K) and quasi-Deviance (QDeviance) is given.

Model		Model Selection				
First Count	Second Count	$QAIC_c$	$\Delta QAIC_c$	w_i	K	QDeviance
Strata	Constant	269.90	0.00	0.50	3	3,609.0
Constant	Constant	270.77	0.87	0.32	2	3,611.9
Strata	Strata	271.91	2.00	0.18	4	3,609.0

The estimates of sightability are given below along with the bootstrap-based estimates of SE, CV and confidence limits, CI (Table 10). The bootstrap estimates, which use caribou counted on each photo as the sample unit, were used for subsequent variance estimates.

Table 10: Estimates of sightability from the most supported Huggins model for Bluenose-East June 2018 caribou survey.

Count-stratum	Sightability Estimate	Binomial SE	Binomial CV	Bootstrap SE	Bootstrap CV	Bootstrap (95% CI)	
1st count-North stratum	0.912	0.013	0.014	0.015	0.016	0.884	0.941
1st count -South stratum	0.853	0.020	0.024	0.035	0.040	0.782	0.919
2nd count-Both stratum	0.996	0.002	0.002				

Estimates of Total Caribou in Photo Strata

The standard Jolly 2 estimator (Jolly 1969, Norton-Griffiths 1978) was used to obtain estimates of caribou on the calving ground from the transect data. Consistent with the 2015 Bluenose-East survey (Boulanger et al. 2016), transect densities were weighted to ensure equal representation of transects with varying strip widths (Table 11). The initial estimate was divided by photo sightability to obtain the sightability-corrected abundance estimate. Overall, sightability-corrected estimates were 12 percent higher than initial estimates.

Table 11: Initial estimates of abundance in photo survey strata, estimated photo sightability and estimates of abundance with photo sightability for Bluenose-East June 2018 caribou survey.

Strata	Initial Estimate of N			Photo Sightability			Photo-sightability N Estimate		
	N	SE	CV	p	SE	CV	N	SE	CV
North	9,887	849.5	0.086	0.912	0.015	0.016	10,841	948.4	0.087
South	5,488	837.0	0.154	0.853	0.035	0.041	6,426	1,014.8	0.158

Overall, densities of caribou were lower on transects compared to previous years with all densities below the 10 caribou/km^2 level (Figure 16).

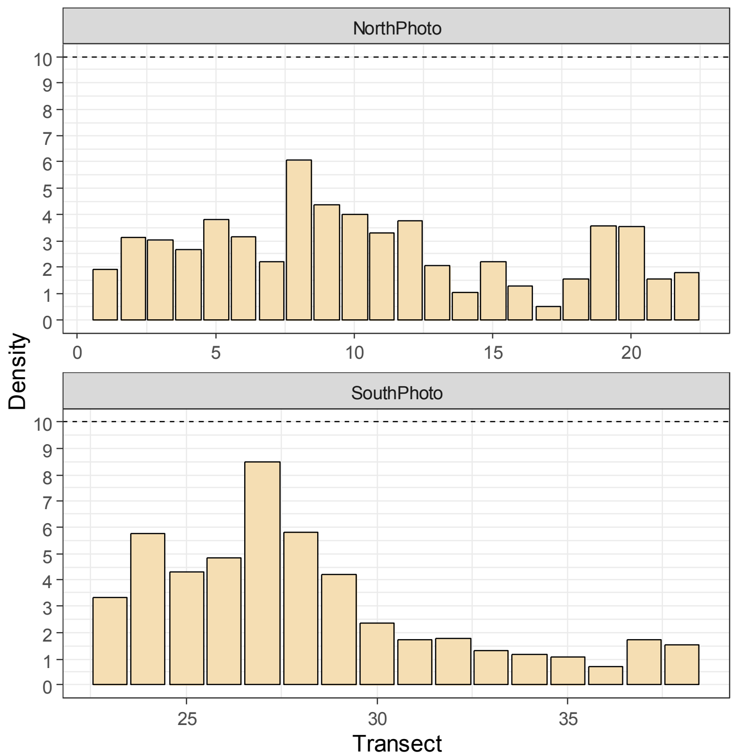

Figure 16: Transect-specific densities for the Bluenose-East photo blocks in June 2018. Transects go from west to east. Sightability was accounted for in density estimates.

Estimates of Total Caribou in Visual Strata

Double Observer Analysis

Data from both the reconnaissance and visual surveys were used in the double observer analysis, however, only the visual survey data were used to derive estimates of abundance for survey strata. Observers were grouped into pairs which were used for modeling the effect of observer on sightability. A full listing of observer pairs is given in Appendix 1. Frequencies of observations as a function of group size, survey, and phase suggested that approximately half of the single caribou were seen by both observers in most cases (Figure 17). In previous years approximately 70-80 percent of single caribou were seen by both observers. As group size increased the proportion of observations seen by both observers increased. This general pattern suggests low sightability compared to previous surveys, which generally had much less snow cover.

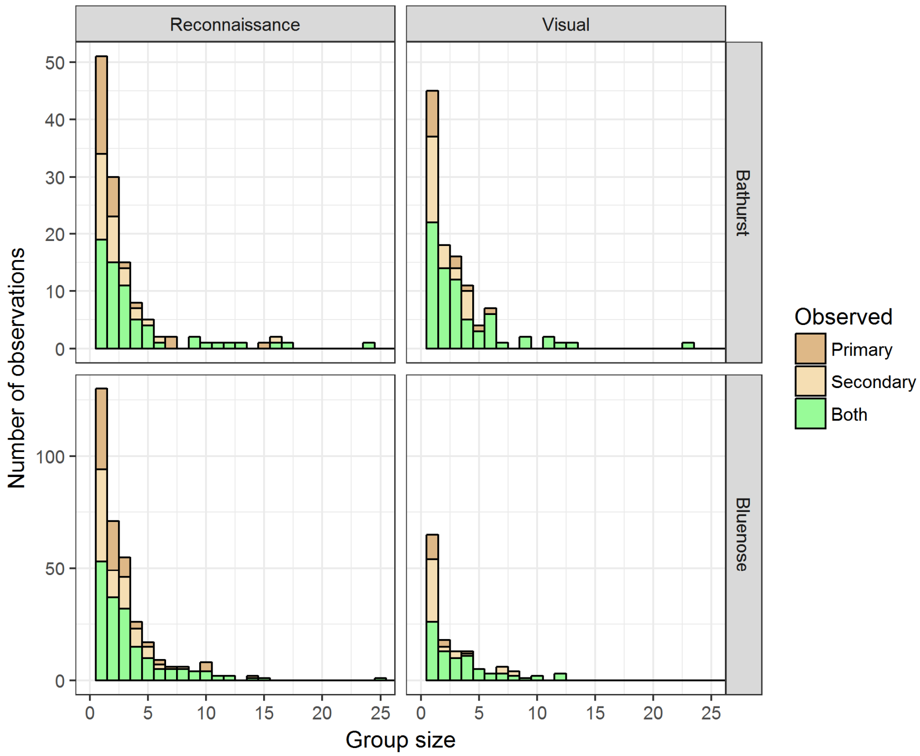

Figure 17: Frequencies of double observer observations by group size, survey phase and survey for Bluenose-East and Bathurst June 2018 caribou surveys. Each observation is categorized by whether it was observed by the primary (brown), secondary (beige), or both (green) observers.

Snow and cloud cover also influenced sightability, however, the pattern depended on survey phase and herd surveyed (Figure 18). The most noteworthy trends occurred for higher snow cover (75 percent) for the Bathurst and higher cloud cover. Snow cover was evident in all surveys with few observations of 0 snow cover and most within the 25-75 percent range. This range corresponds to the “salt and pepper” patchy snow cover where sightability is lower. The lack of “effect size” of snow cover (i.e. minimal 0 and 100 percent snow cover observations) potentially made it problematic to model the effect of increasing snow cover on observations. Instead, sightability was lower (as modeled by an intercept term) due to the poor survey conditions.

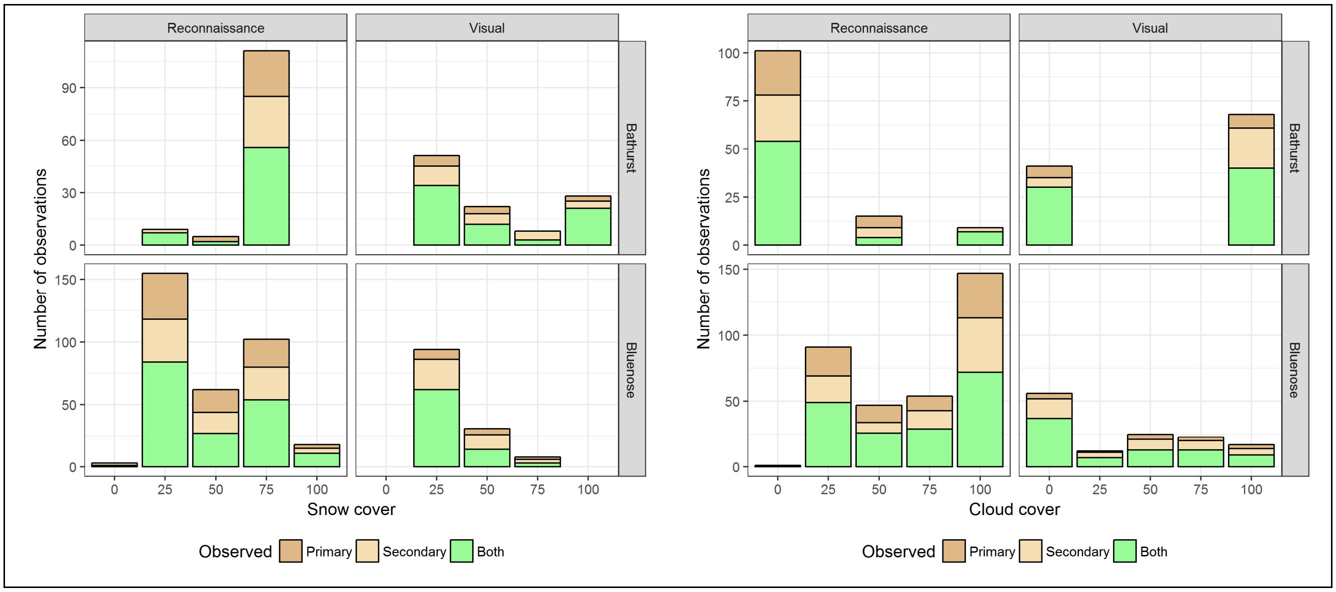

Figure 18: Frequencies of double observer observations by snow cover, cloud cover, survey phase and survey for Bluenose-East and Bathurst June 2018 caribou surveys. Each observation was categorized by whether it was observed by the primary, secondary, or both observers.

Snow cover was modeled as a continuous (snow) or categorical covariate (snow 25, snow 50, snow 75) based on the categorical entries in the tablets. Model selection identified a strong effect of the log of group size, observers, snow cover and the interaction of snow and cloud cover (Table 12). An additional effect of snow cover at 75 percent for the Bathurst herd was evident. Observer pairs were reduced to the pairs to those that showed substantial differences from the mean level of sightability in the survey.

Table 12: Double observer model selection using Huggins mark-recapture models in program MARK for Bluenose-East and Bathurst June 2018 caribou surveys. Covariates follow Table 1 in the methods section of the report. Reduced observer pairs are denoted as red_A and red_B. AIC_c, the difference in AIC_c values between the *i*th and most supported model 1 (ΔAIC_c), Akaike weights (w_i), and number K, and deviance (Dev) are presented.

No	Model	AIC_c	ΔAIC_c	w_i	K	Dev
1	log(group size)+obs(red_A)+order+herd*snow75+cloud+snow*cloud	764.99	0.00	0.33	8	748.9
2	log(group size)+obs(red_B)+order+herd*snow75+cloud+snow*cloud	767.02	2.03	0.12	9	748.9
3	log(group size)+obs(red_B)+order+snow75+cloud+snow*cloud	768.15	3.16	0.07	8	752.1
4	log(group size)+obs(red_B)+order+herd*snow75+cloud+snow+snow*cloud	768.32	3.33	0.07	10	748.2
5	log(group size)+obs(red_B)+order+herd*snow75+cloud	768.63	3.63	0.06	8	752.5
6	log(group size)+obs(red_B)+order+snow+cloud +snow*cloud	770.75	5.75	0.02	9	752.6
7	log(group size)+obs(red_B)+order+snow25+log(group)*snow25	772.54	7.55	0.01	8	756.4
8	log(group size)+obs(red_B)+order+snow(categorical)	773.52	8.52	0.00	10	753.4
9	log(group size)+obs(red_B)+order+snow+snow^2+cloud+cloud^2+snow*cloud	774.15	9.15	0.00	11	752.0
10	log(group size)	781.88	16.89	0.00	2	777.9
11	log(group size)+snow +cloud	782.04	17.05	0.00	4	774.0
12	group size	783.22	18.22	0.00	2	779.2
13	log(group size)+snow25+cloud0	784.31	19.31	0.00	4	776.3
14	log(group size)+snow25+sno50+snow75+snow100	784.84	19.95	0.00	6	772.8
15	log(group size)+obs(all))	785.96	20.97	0.00	13	759.7
16	constant	802.05	37.06	0.00	1	800.0

Plots of single and double observation probabilities show lower probabilities for individual or smaller group sizes especially in moderate snow cover and higher cloud cover, for Bluenose-East and Bathurst June 2018 caribou surveys (Figure 19). The mean detection probability (across all groups) was 0.66 (CI=0.60-0.72). This compares to a mean probability of 0.91 (CI=0.88-0.92) for the 2015 Bluenose and Bathurst surveys.

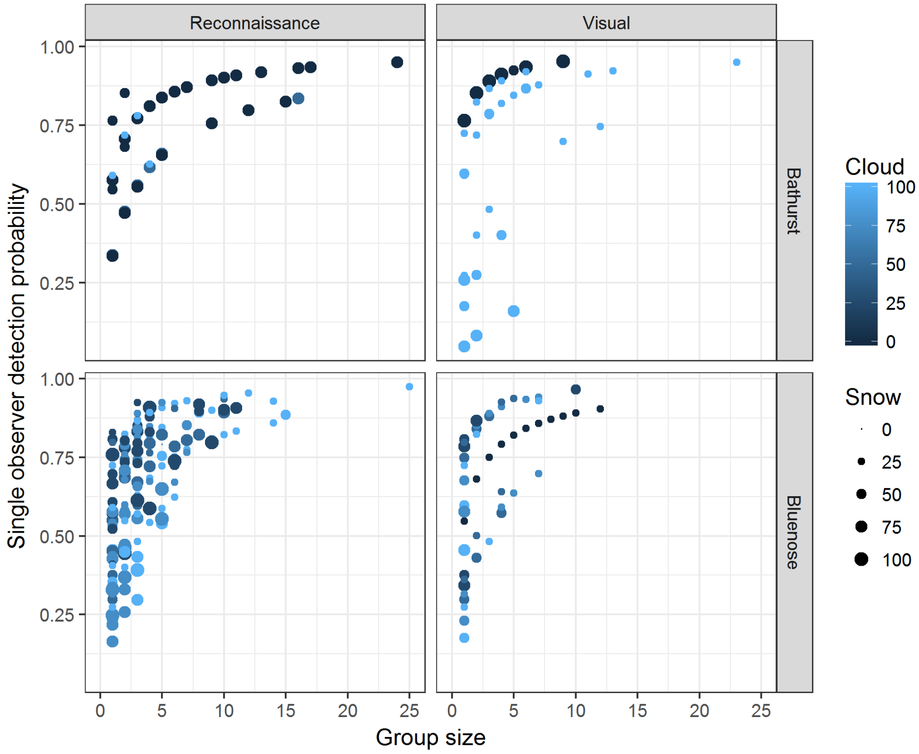

Figure 19: Estimated single observer probabilities from model 1 (Table 12) by snow cover, cloud cover, survey phase and survey for Bluenose-East and Bathurst June 2018 caribou surveys. Each observation is categorized by whether it was observed by the primary, secondary, or both observers.

Double observer probabilities (the probability that at least one of the observers saw the caribou) were higher but still relatively low for single caribou, especially for cases of higher cloud cover and snow cover (and for some observer pairs) (Figure 20).

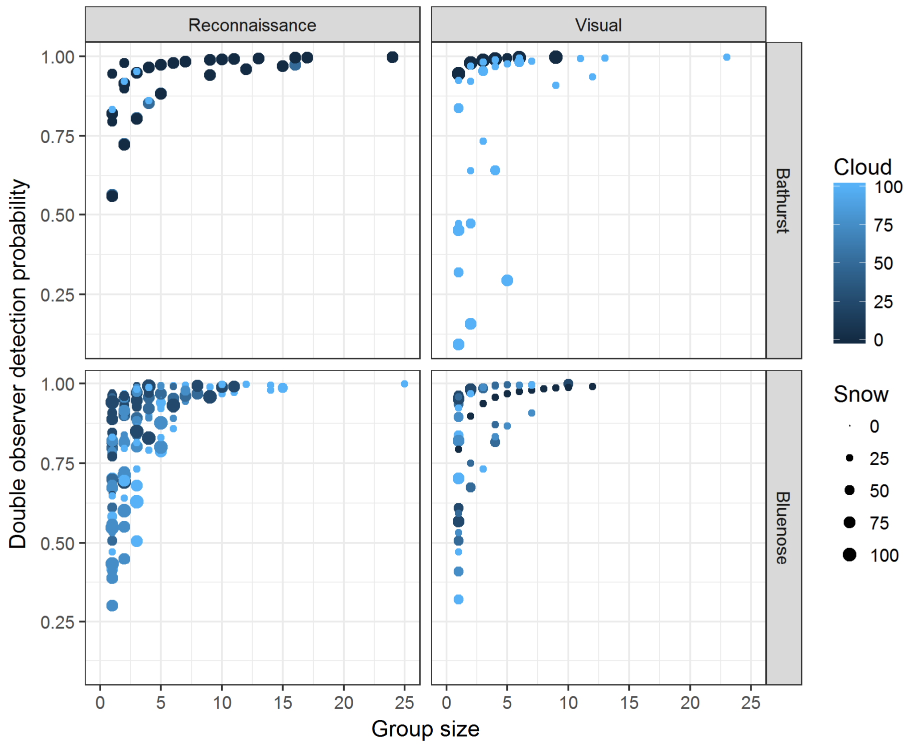

Figure 20: Estimated double observer probabilities from model 1 (Table 12) by snow cover, cloud cover, survey phase and survey for Bluenose-East and Bathurst June 2018 caribou surveys. Each observation is categorized by whether it was observed by the primary, secondary, or both observers.

Estimates of Total Caribou in Visual Strata

Double observer estimates (using the MRDS R package) were about 6 percent higher than non-double observer estimates. Precision was lower than uncorrected count-based estimates but still acceptable (Table 13).

Table 13: Standard strip transect (two observers per side with no estimation of sightability) and double observer model estimates (with sightability accounted for) of caribou on Bluenose-East visual strata in 2018 from the MRDS package in R.

Strata	Caribou	Standard Estimate			Double Observer Estimate				
	Counted	Estimate	SE	CV	Estimate	SE	CI		CV
North	159	734	100.4	13.7%	788	140.4	541	1,149	17.8%
South	210	1,061	113.7	10.7%	1,106	173.5	778	1,571	15.7%
Total	369	1,795	151.7	8.5%	1,894	223.1	1,482	2,419	11.8%

An estimate where there was only one observer per side of plane without the estimation of sightability was also run to assess the importance of having double observers on each side of the plane during surveys. This data set was created by only using observations from the front observer (excluding caribou groups only seen by the rear observer). This resulted in an overall estimate of 1,397 caribou which was 23 percent lower than the standard double observer estimate and 26 percent lower than the double observer estimate with sightability correction. The lower single observer estimate demonstrates the need for double observers on each side of the plane to ensure higher sightability of caribou and reliable estimates.

Estimation of Total Caribou on the Calving Ground

The photo data (corrected for double observer analysis) were combined with visual data (corrected for double observer analysis) to obtain a total estimate of caribou on the calving ground of 19,161 caribou at least one year old (Table 14). This total applies to strata with corresponding composition survey data. Overall, the photo strata accounted for 90.1% of caribou.

Table 14: Estimates of caribou abundance on all survey strata (photo and visual) for Bluenose-East herd in 2018.

Strata	N	SE	Conf. Limit		CV
North Visual	788	140.4	541	1,149	17.8%
North Photo	10,841	948.4	9,041	13,000	8.7%
South Photo	6,426	1,014.8	4,599	8,979	15.8%
South Visual	1,106	173.5	778	1,571	15.7%
Total	**19,161**	**1,406.8**	**16,512**	**22,233**	**7.3%**

Composition Survey

A composition survey was conducted June 8-10 in the photo strata and June 10-11 in the visual strata. During the composition survey, caribou were relatively stationary as there were few caribou groups observed outside stratum boundaries relative to search effort and flight-lines (Figure 21). Observations of the pattern of distribution, abundance, and composition of caribou during the composition survey were consistent with the delineated visual and photographic strata, which in turn provided additional confidence in representativeness of the overall survey design. The photo north and visual north blocks had high proportions of breeding cows, while the photo south block had increasing proportions of yearlings and non-breeding cows toward the south end. The visual south block had substantial proportions of bulls and yearlings and few cows.

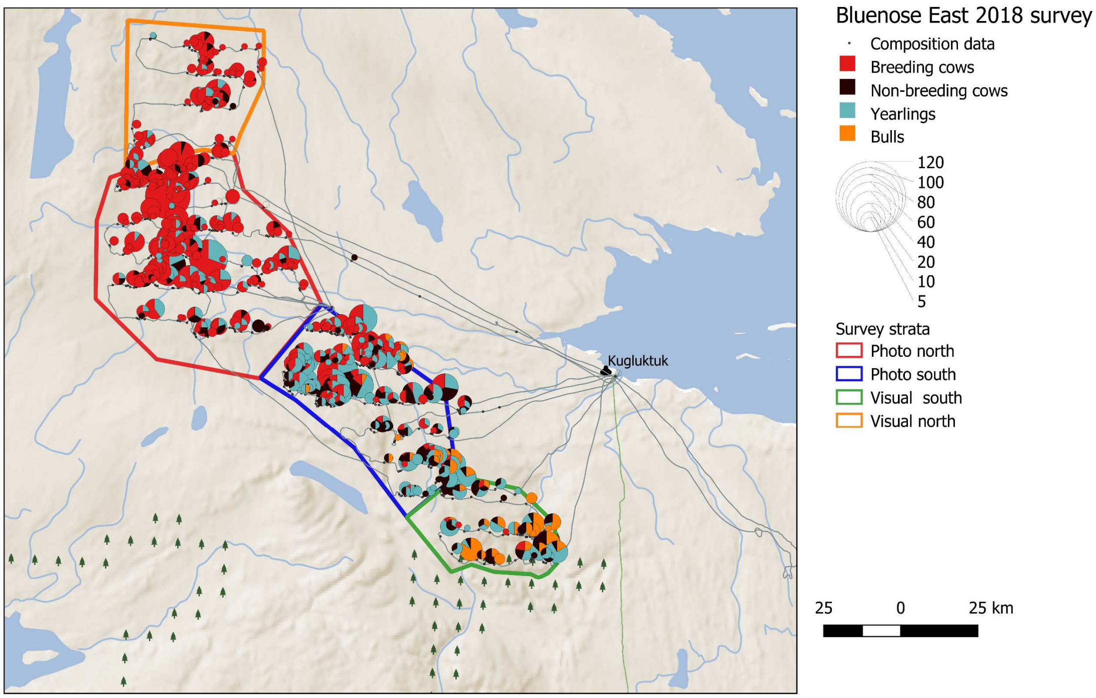

Figure 21: Helicopter flight paths and pie charts of groups classified during calving ground composition survey of Bluenose-East caribou in 2018. The size of pie charts is proportional to the number of caribou in each classification group as indicated by the scale diagram. Proportions of age-sex classes make up the individual pie sections.

Individual caribou were classified in each group based on physical characteristics as well as presence of a calf, hard antler(s) or distended udder (for breeding females) and are summarized in Table 15.

Table 15: Summary of composition survey on Bluenose-East calving ground June 2018 in photo and visual strata.

Strata	# Groups	Adult Females			Yearlings	Bulls	Total Caribou (1 yr+)
		Total	Breeding	Non-breeding			
North Visual	59	158	147	11	16	0	174
North Photo	189	726	677	49	104	0	830
South Photo	166	490	300	190	388	30	908
South Visual	39	53	7	46	71	61	185

Estimates of adult females and breeding females were then derived with variance and confidence limits estimated via bootstrap methods (Table 16).

Table 16: Proportions of breeding females and adult females from composition survey on Bluenose-East calving ground June 2018

Strata	Estimate	SE	Conf. Limit	
Breeding females=breeding females/caribou 1 yr+				
North Visual	0.845	0.027	0.786	0.892
North Photo	0.816	0.020	0.774	0.853
South Photo	0.330	0.033	0.269	0.396
South Visual	0.038	0.016	0.012	0.072
Adult females=Adult females/caribou 1 yr+				
North Visual	0.908	0.024	0.861	0.951
North Photo	0.875	0.016	0.841	0.903
South Photo	0.540	0.027	0.491	0.595
South Visual	0.286	0.042	0.213	0.380

Estimates of Adult and Breeding Females

Estimates of breeding females were derived by the product of caribou and the proportion of breeding females in each stratum (Table 17).

Table 17: Estimates of breeding females based upon initial abundance estimates and composition surveys on Bluenose-East calving ground June 2018.

Strata	Caribou		Proportion Breeders		Breeding Females				
	N	CV.N	pb	CV	N	SE	Conf. Limit		CV
North Visual	788	0.178	0.845	0.032	666	120.5	454	976	18.1%
North Photo	10,841	0.087	0.816	0.025	8,846	803.7	7,326	10,681	9.1%
South Photo	6,426	0.158	0.330	0.100	2,121	396.4	1,429	3,148	18.7%
South Visual	1,106	0.157	0.038	0.421	42	18.9	16	110	45.0%
Total	**19,161**				11,675	904.4	9,971	13,670	7.7%

Estimates of adult females are given in Table 18.

Table 18: Estimates of adult females based upon initial abundance estimates and composition surveys on Bluenose-East calving ground June 2018.

Strata	Caribou		Prop. Adult Females		Adult Females				
	N	CV.N	pf	CV	N	SE	Conf. Limit		CV
North Visual	788	0.178	0.908	0.026	716	128.9	489	1,048	18.0%
North Photo	10,841	0.087	0.875	0.018	9,486	847.7	7,880	11,419	8.9%
South Photo	6,426	0.158	0.540	0.050	3,470	574.8	2,444	4,928	16.6%
South Visual	1,106	0.157	0.286	0.147	316	68.0	196	510	21.5%
Total	**19,161**				13,988	1,034.6	12,042	16,249	7.4%

The ratio of breeding females to adult females suggests a relatively high proportion of pregnant females of 83 percent compared to previous years.

Extrapolated Herd Estimates for Bluenose-East Herd

A composition survey was conducted October 23-25, 2018 to estimate the bull-cow ratio of the Bluenose-East herd. Overall there were 115 groups observed with totals of bulls, cows and calves summarized in Table 19.

Table 19: Summary of observations from fall composition survey on Bluenose-East herd October 23-25, 2018

Cows	Bulls	Calves	Groups Observed
1,542	586	396	115

Bootstrap methods were used to obtain SEs on estimates (Table 20).

Table 20: Estimates of the bull-cow ratio, proportion cows, and calf-cow ratio from the fall composition survey on Bluenose-East herd October 2018.

Indicator	Estimate	SE	Conf. Limit		CV
Bull cow ratio	0.380	0.027	0.333	0.437	7.0%
Proportion cows	0.725	0.014	0.697	0.750	1.9%
Calf-cow ratio	0.257	0.016	0.229	0.291	6.1%

Comparison of bull:cow ratios from composition surveys 2009-2018 suggest a slowly decreasing bull cow ratio (Table 21).

Table 21: Estimates of proportion of cows and the bull cow ratio from fall surveys on the Bluenose-East herd 2009-2018.

	Proportion Cows					Bull-cow Ratio			
Year	Estimate	SE	Conf. Limit		CV	Estimate	SE	Conf. Limit	
2009	0.700	0.008	0.684	0.716	1.1%	0.429	0.017	0.396	0.463
2013	0.701	0.009	0.685	0.720	1.3%	0.426	0.019	0.389	0.461
2015	0.706	0.014	0.678	0.734	2.0%	0.417	0.029	0.367	0.479
2018	0.725	0.014	0.697	0.750	1.9%	0.380	0.026	0.332	0.437

Estimates of adult herd size (caribou at least two years old) for the Bluenose-East herd in 2018 are presented in Table 22. The estimate based on an assumed fixed pregnancy rate estimate is higher since it assumes a constant pregnancy rate of 0.72, which is lower than that observed in 2018 (0.83), thereby inflating the estimate. The preferred estimate uses the proportion of females, which is simply the estimate of adult females (13,988), divided by the proportion of cows in the herd (0.725) from the October 2018 survey. Log-based confidence limits, which were used for other estimates as well as traditional symmetrical confidence limits (estimate ± t*SE) are given. In most cases log-based limits give better representation of confidence estimates than traditional symmetrical methods because the distribution of estimates has a slight positive skew. However, previous analyses have used the symmetrical method. The actual difference in CI's is relatively minor.

Table 22: Extrapolated herd size estimates for the Bluenose-East herd in 2018 based on two estimators

Method	N	SE	Log-based CI		Symmetric Traditional CI		CV
Proportion of adult females	19,294	1,474.7	16,527	22,524	16,303	22,285	7.6%
Constant pregnancy rate (0.72)	22,366	2,861.8	17,247	29,004	16,530	28,202	12.8%

Trends in Breeding and Adult Females and Herd Size 2010-2018

Comparison of 2015 and 2018 Estimates

Comparison of 2015 and 2018 estimates suggests a gross reduction of 49 percent in adult females, which translates into a mean annual rate of decline of 20 percent in the 2015-2018 interval (Figure 22). In contrast, breeding females had a gross reduction of 32.9 percent which translates to an annual rate of change of -13 percent in the interval since 2015. The difference in gross and annual changes of breeding and adult females was due to an increase in proportion of breeding females in 2018 compared to 2015. Using a t-test the gross reduction in estimates is significant for adult females ($t=-7.35$, $df=42$, $p<0.0001$) and breeding females ($t=-3.9$, $df=47$, $p=0.002$).

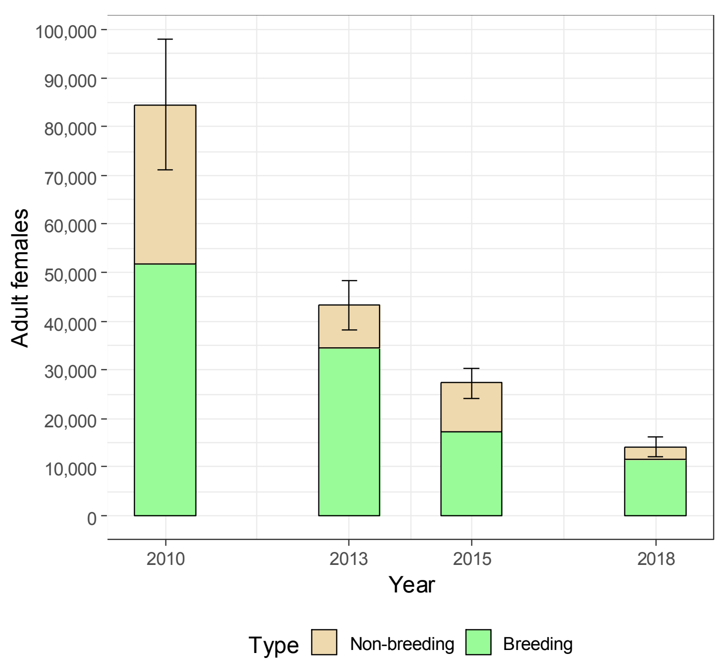

Figure 22: Estimates of total adult females in the Bluenose-East herd from 2010-2018 dichotomized shown by breeding and non-breeding females status from 2010-2018.

Overall Trends 2010-2018

A Bayesian state space model (Humbert et al. 2009, Kery and Royle 2016) was used to estimate longer term trends in the Bluenose-East data set. For this analysis, trend (log λ) was modeled as a random effect therefore allowing assessment of variation in λ in intervals between surveys.

For breeding females, yearly trends in breeding females were marginally significant (p=0.071) with estimates of λ overlapping 1 for some years between 2010 and 2018. The mean estimate of λ for breeding females was 0.81 (CI=0.62-1.04). Variation in λ for breeding females was presumably due to the influence of variable pregnancy rate on estimates of breeding females (Figure 23).

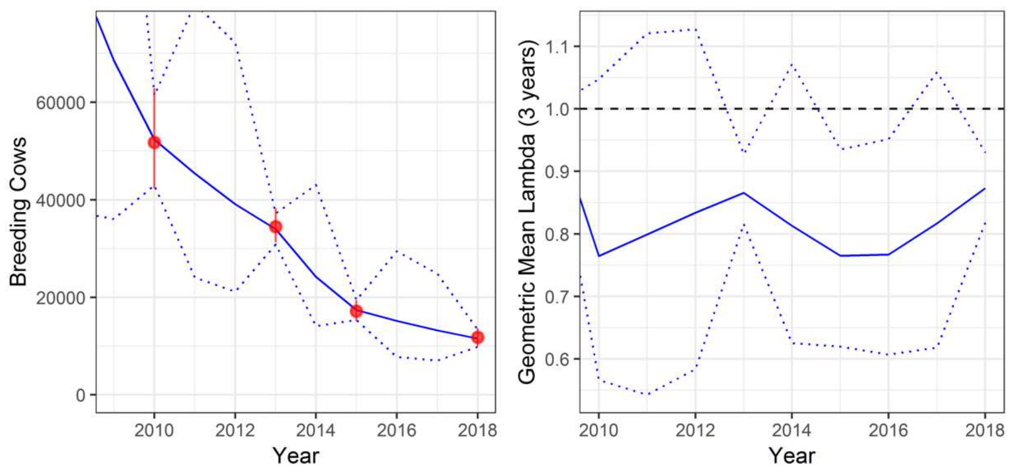

Figure 23: Estimates of breeding cows and λ (geometric mean of three previous years) in the Bluenose-East herd 2010-2018 from Bayesian state space model analysis.

In contrast, trends in adult females were significant (p=.0087) with minimal yearly variation in λ and no overlap of λ estimates with one in any of the years considered (Figure 24). The mean estimate of λ was 0.8 (CI=0.73-0.87) which translates into an annual rate of decline of 20 percent (CI=13-27percent).

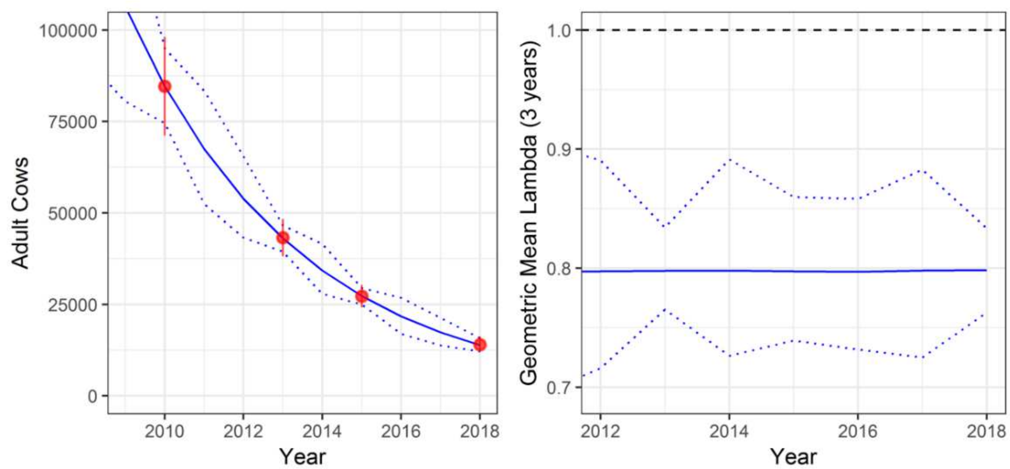

Figure 24: Estimates of adult cows and λ (geometric mean of three previous years) in the Bluenose-East herd 2010-2018 from state space model analysis.

Overall Bluenose-East herd size followed the general trend in adult and breeding females (Figure 25).

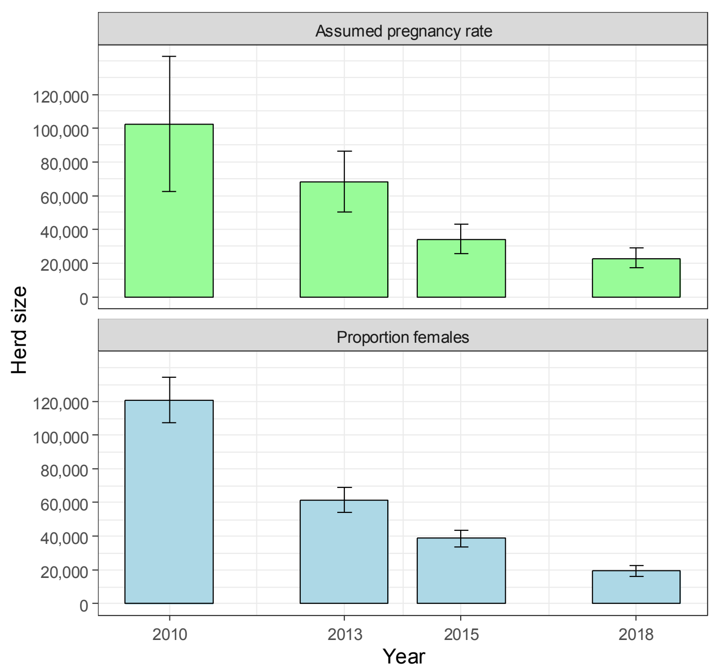

Figure 25: Estimates of Bluenose-East herd size (adults at least two years old) using the constant pregnancy rate of 0.72 and proportion of females method from 2010-2018. We suggest the estimates based on proportion of females (bottom) are more reliable.

The core calving ground area as well as densities of adult female caribou have both declined 2010-2018 suggesting that the degree of aggregation of caribou on the calving ground has not changed substantially. A full analysis of trends in core calving ground area and densities of females on the calving ground is presented in Appendix 5.

Exploration of Potential Reasons for Decline in Herd Size

Potential contributing factors to the apparent large numerical decline in breeding females on the Bluenose-East calving ground 2015-2018 could include (a) a portion of female caribou may have been missed based on limited survey coverage, (b) some female caribou may have moved to adjacent calving grounds, and (c) demographic factors including reduced survival of adult caribou, reduced pregnancy rates, and reduced calf survival. We considered the likelihood of each factor contributing significantly to the estimated reduction in abundance.

Breeding and Adult Females not Occurring on Survey Strata

One potential reason for lower estimates would have been female caribou occurring outside survey strata. We note first that extensive additional reconnaissance flying to the north, west and east of the main concentrations of calving caribou resulted in almost no caribou observations (see blank squares on Figure 27), suggesting that the herd's distribution had been well defined in those areas. Only at the southern trailing edge were there any substantive numbers of caribou seen on reconnaissance flying outside the survey strata.

All 30 Bluenose-East collared female caribou that were monitored occurred within the survey strata, and none of them were in the south visual block (Figure 13). Two collared females, which were most likely from the Bluenose-West herd, occurred to the north and south of the central study area. The south visual block contributed just 42 of 11,675 breeding females (0.3 percent) (Table 17) and 316 of 13,988 adult females (2.2 percent) (Table 18) in the survey area. The composition survey showed that the south visual block had substantial numbers of yearlings and bulls, and progressively higher proportions of them at the southern end (Figure 21). In addition, a map of the movements of 15 Bluenose-East collared bulls in May-June 2018 (Figure 26) demonstrates that most of the herd's bulls were at the southern fringe of the south visual block and south of it in the two reconnaissance-based strata. Our observations suggest that areas further south of the south visual block were likely to have mostly bulls and yearlings, a few non-breeding cows and virtually no breeding cows.

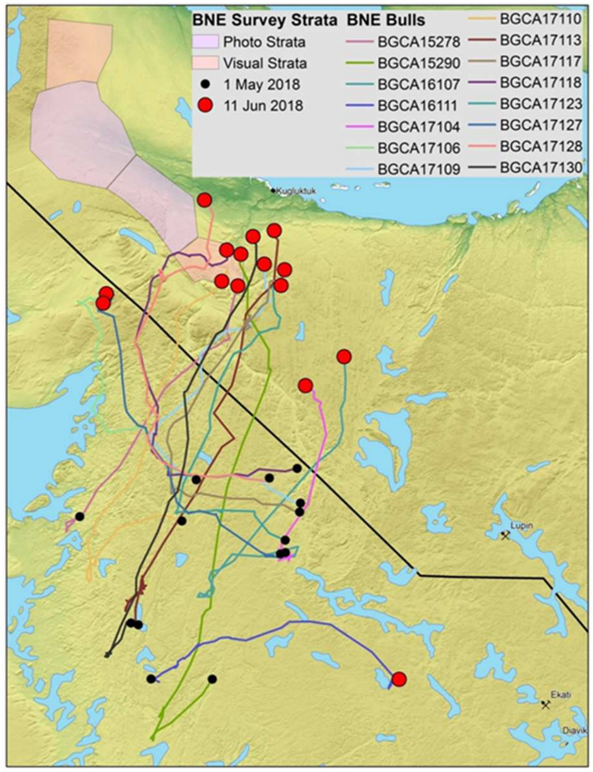

Figure 26: Spring movements (May 1 - June 11) of 15 Bluenose-East collared bulls in 2018 in relation to the survey area. Most bulls were concentrated at the south end of the survey area and some were scattered far to the south.

We added two post-hoc reconnaissance-based strata to the area south of the survey strata to assess the relative sensitivity of estimates to inclusion of these areas (Figure 27). No composition surveys were conducted for these areas, making estimates of breeding females and adult females problematic, but these areas most likely were dominated by bulls and yearlings.

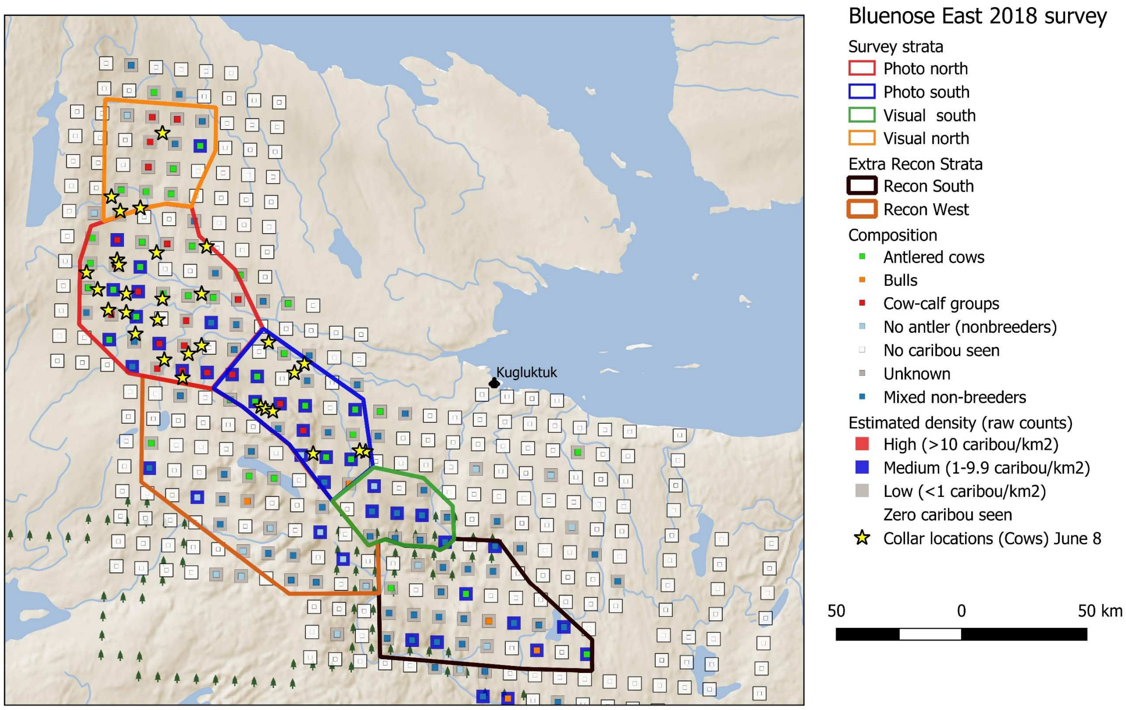

Figure 27: Bluenose-East June 2018 survey area with extra (post-hoc) reconnaissance-based strata at bottom in black and brown outlines.

The resulting estimate of total caribou was 22,425 caribou (Table 23), which is higher than the extrapolated herd estimate of 19,294 caribou at least 1-year-old for the survey area with two photo and two visual blocks (Table 22). However, the estimate of 22,425 caribou (Table 23) *includes* yearlings (calves from 2017) whereas the extrapolated herd estimate includes adult caribou and *excludes* yearlings. An estimate of yearlings in 2018 of 6,594 (CI=5,590-7,782) was derived from the demographic model (described in the next section) which suggests that the difference in extrapolated herd estimates (19,294) and total caribou on the calving ground (22,245) can largely be explained by the presence of yearlings in the total caribou on the calving ground estimate.

Table 23: Estimates of total caribou at least one year old on Bluenose-East June 2018 calving ground survey area with two supplemental reconnaissance strata (as delineated in Figure 27).

Strata	N	SE	Conf. Limit		CV
North Visual	788	140.4	541	1,149	17.8%
North Photo	10,841	948.4	9,041	13,000	8.7%
South Photo	6,426	1,014.8	4,599	8,979	15.8%
South Visual	1,106	173.5	778	1,571	15.7%
Recon South	2,117	250.2	1,616	2,773	11.8%
Recon West	1,147	285.0	661	1,991	24.8%
Total	**22,425**	**1,457.0**	**19,669**	**25,565**	**6.5%**

Movement to Adjacent Calving Grounds

Figure 28 displays movement in the mean location of calving for collared females that were monitored for successive years. The head of the arrow is the mean location for the current year and the tail is the location for the previous year. From this it can be seen that in general caribou have shown reasonable fidelity to the Bluenose-West, Bluenose-East and Bathurst calving grounds 2010-2018. Some unusual June 2018 movements of collared Bathurst cows are considered in the survey report for that herd.

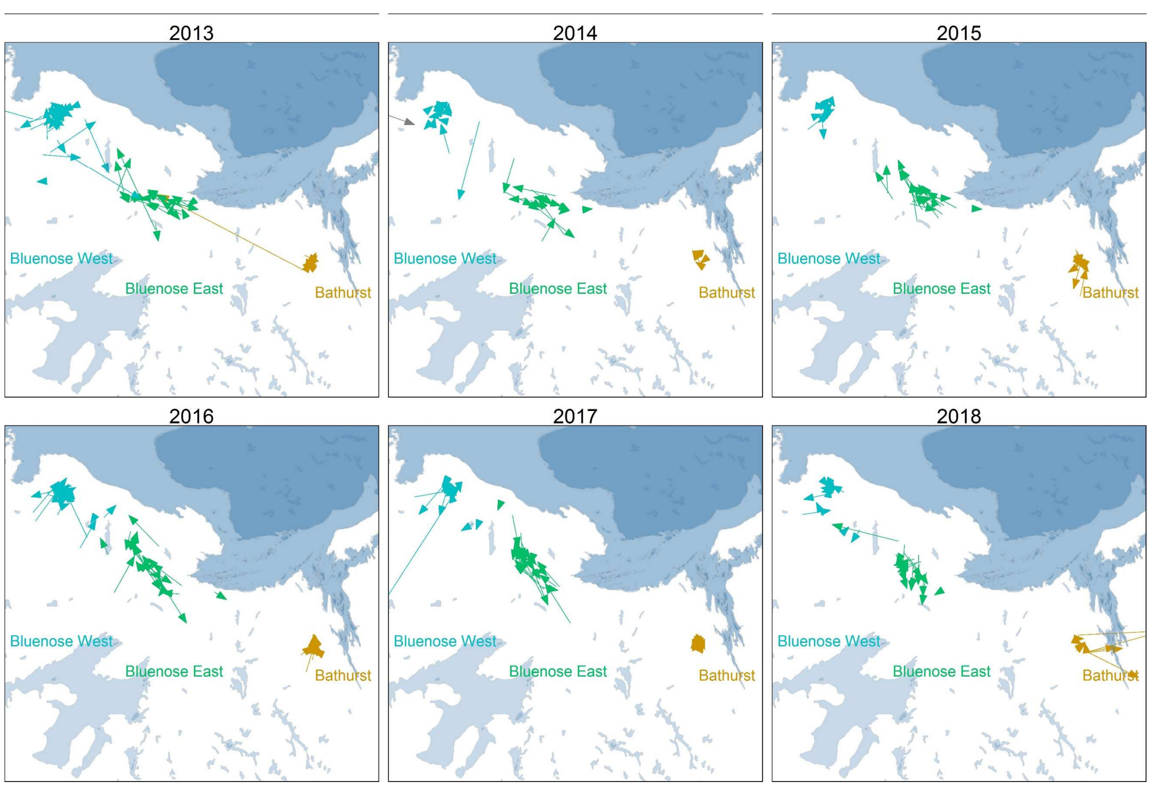

Figure 28: Yearly fidelity and movements to calving grounds in the Bluenose-West, Bluenose-East and Bathurst herds 2013-2018. The head of the arrow indicates the current calving ground in the given year and the tail indicates the mean location from the previous year calving ground.

Frequencies of movement events were assessed for collared female caribou monitored for consecutive years and tabulated (Figure 29). Overall, the rates of switching between the Bluenose-East and neighbouring Bluenose-West and Bathurst calving grounds were low for both 2010-2015 and 2015-2018. The low rate of switching of collared cows is consistent with previous estimates of about 3 percent switching and 97 percent fidelity in the Bathurst herd (Adamczewski et al. 2009) and similar fidelity in the Cape Bathurst, Bluenose-West and Bluenose-East herds (Davison et al. 2014). This factor was not likely responsible for the decline in Bluenose-East females, as there were very few switches between calving grounds and they occurred in both directions about equally.

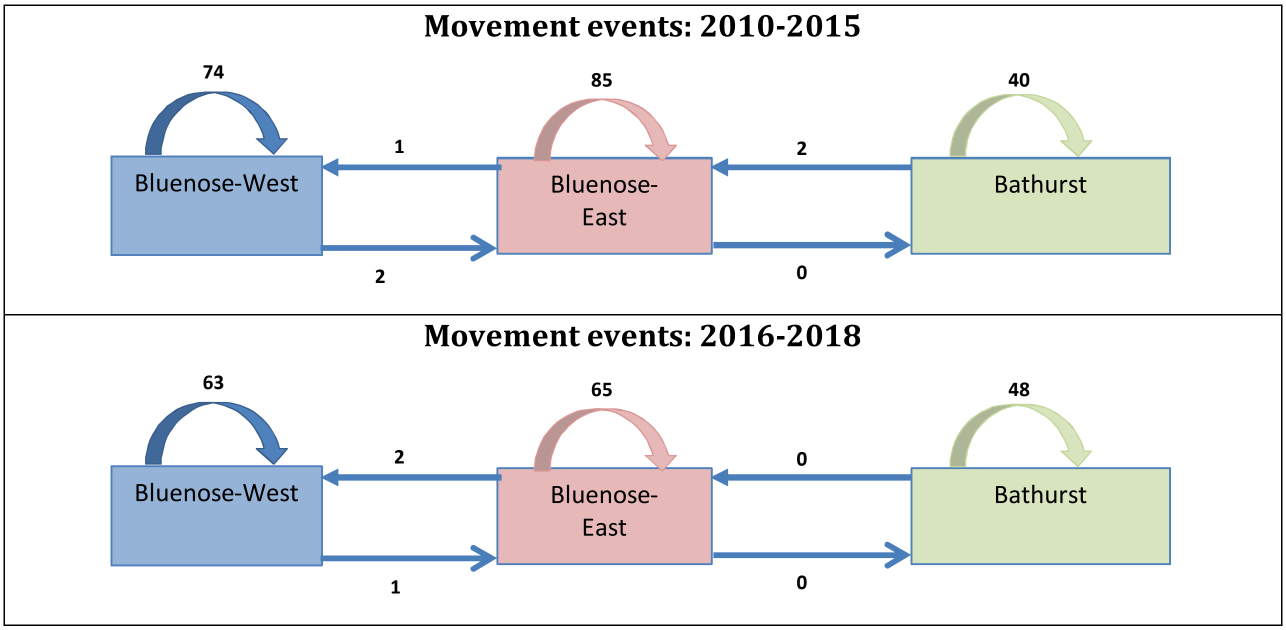

Figure 29: Frequencies of caribou movement events for the Bluenose-East and neighbouring Bluenose-West and Bathurst herds from 2010-2015 and 2016-2018 based on consecutive June locations of collared females on calving grounds. The curved arrows above the boxes indicated the number of times a caribou returned to each calving ground for successive years. The straight arrows indicate movement of caribou to other calving grounds.

Demographic Analysis using Multiple Data Sources

Survival Analysis of Collared Cows

The monthly collar data used in the Bluenose-East survival analysis are shown in Figure 30, which estimates monthly mortality rates as the ratio of the number of collared caribou mortalities divided by the number of collars monitored each month. The actual analysis was based on calving ground year which begins in June of each year. Sample sizes were in the range of 30 collars per month with the exception of 2010 and 2011 when collar sample sizes were lower. A gap in collars monitored occurred in late 2011 and early 2012 before re-deployment of collars in the spring of 2012. Survival estimates were scaled to account for this interval. Collared caribou mortalities occurred mostly in summer periods for 2016 and 2017 compared to earlier years.

Figure 30: Summary of monthly mortality rates for the Bluenose-East herd by calendar year. The mortality rate, which is the ratio of number of collar mortalities/number of available collars, is given above each bar. The analysis is based on calving ground year which begins at June of each year and ends at May the following year.

Table 24 shows the Bluenose-East collar-based cow survival data defined by caribou year (the year begins on the calving ground each year in June and ends the following May) along with summary statistics for each year. Mortalities are broken down by known and stationary (assumed mortality). The data set ends in caribou year 2017 which goes up to May 2018, the month before the 2018 calving ground survey.

Table 24: Summary of Bluenose-East collared female data used for survival analysis 2010-2018. Caribou year starts June of the caribou year and ends in May of the next year.

Caribou Year	Annual Mortalities Known	Annual Mortalities Stationary Collar	Live Caribou Sample Sizes Collar Months	Mean Alive	Min	Max
2010	3	0	103	8.6	6	12
2011	0	1	137	11.4	0	38
2012	4	12	415	34.6	31	39
2013	0	6	257	21.4	17	25
2014	0	6	319	26.6	21	37
2015	0	2	363	30.3	24	37
2016	0	5	369	30.8	26	37
2017	2	5	290	24.2	18	32
Total	9	37				

Figure 31 displays the Bluenose-East collar-based female survival estimates based on the current data set 2010-2017 using the Kaplan-Meier estimator (Pollock et al. 1989). In general, the earlier estimates had high variance due to limited numbers of collars. The overall mean number of live collared cows was 23.5 for this period, and the average annual survival rate for collared cows over the eight years was 0.79 (Table 24) with no clear trend 2010-2017. The trend 2015-2018 was a decline with the last year's survival (2017-2018) estimated at 0.76. Survival estimates were further explored and refined using information from all data sources using the Bayesian IPM model described in the next section. One concern was that the 2011 survival estimate was influenced by lack of sampling of winter months during this year. A sensitivity analysis was conducted with this estimate not included in the 2011 to assess the relative influence of this data point on overall IPM model estimates.

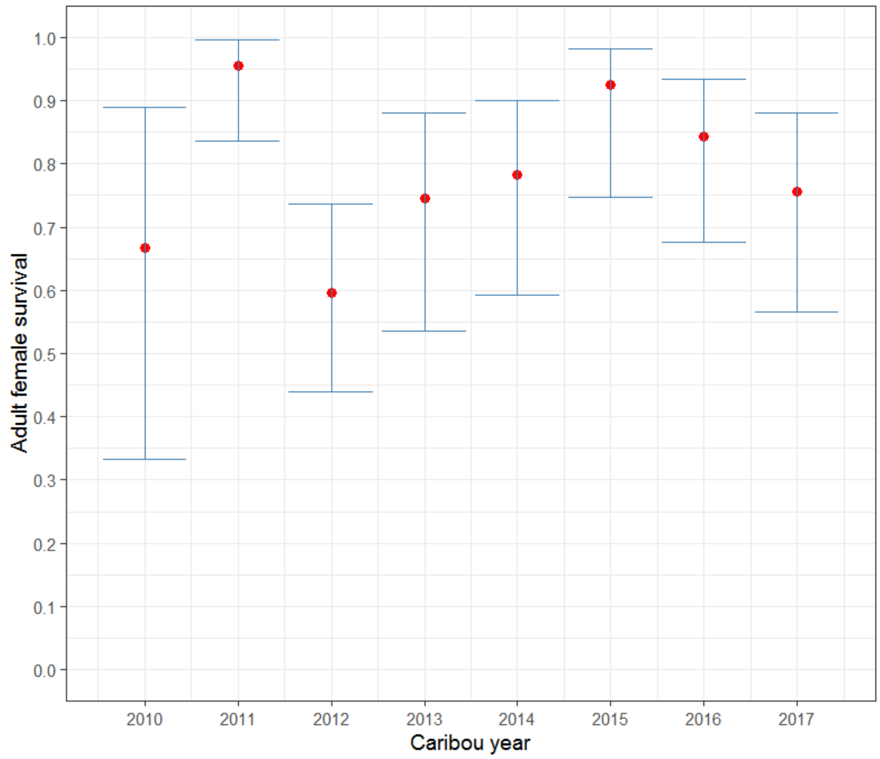

Figure 31: Annual Kaplan-Meier estimates of survival from collared Bluenose-East female caribou for caribou years 2010-2017, based on collar data in Table 24.

Table 25 provides the survival rate estimates for calving ground years (June 1 - May 31), which are also shown in Figure 31. Years begin at calving in June and extend to the following May. Note that all estimates of survival include hunting mortality.

Table 25: Estimates of yearly survival rate for the Bluenose-East herd 2010-2018 from Kaplan-Meier survival rate estimator.

Caribou Year	Survival	SE	Conf. Limit	
2010	0.67	0.16	0.33	0.89
2011	0.96	0.03	0.84	1.00
2012	0.60	0.08	0.45	0.74
2013	0.74	0.09	0.54	0.88
2014	0.78	0.08	0.59	0.90
2015	0.93	0.04	0.77	0.98
2016	0.84	0.07	0.67	0.93
2017	0.76	0.08	0.57	0.88

Bayesian Integrated Population Demographic Model

The main objective of the Bayesian IPM was to provide refined estimates of demographic parameters using all of the field data sources available. For the Bluenose-East model, temporal variation in main parameters (cow/yearling survival, calf survival) was modeled as random effects. Sparse data prevented modeling fecundity and bull survival as a random effect and therefore these parameters were held constant. A technical description of the model including tests of model parameters and the associated *R* code is given in Appendix 3.

The IPM fit most field measurements adequately (Figure 32). The main exceptions were a slight overestimate of cows and cows+bulls (compared to extrapolated estimates) in 2018. Also, since fecundity was fixed (estimated at 0.69, CI=0.64-0.75), the model did not capture variation in proportion of breeding females, however model predictions did intersect the confidence limits of field estimates in all cases. Confidence in model predictions tended to be highest for the years in which there were field estimates.

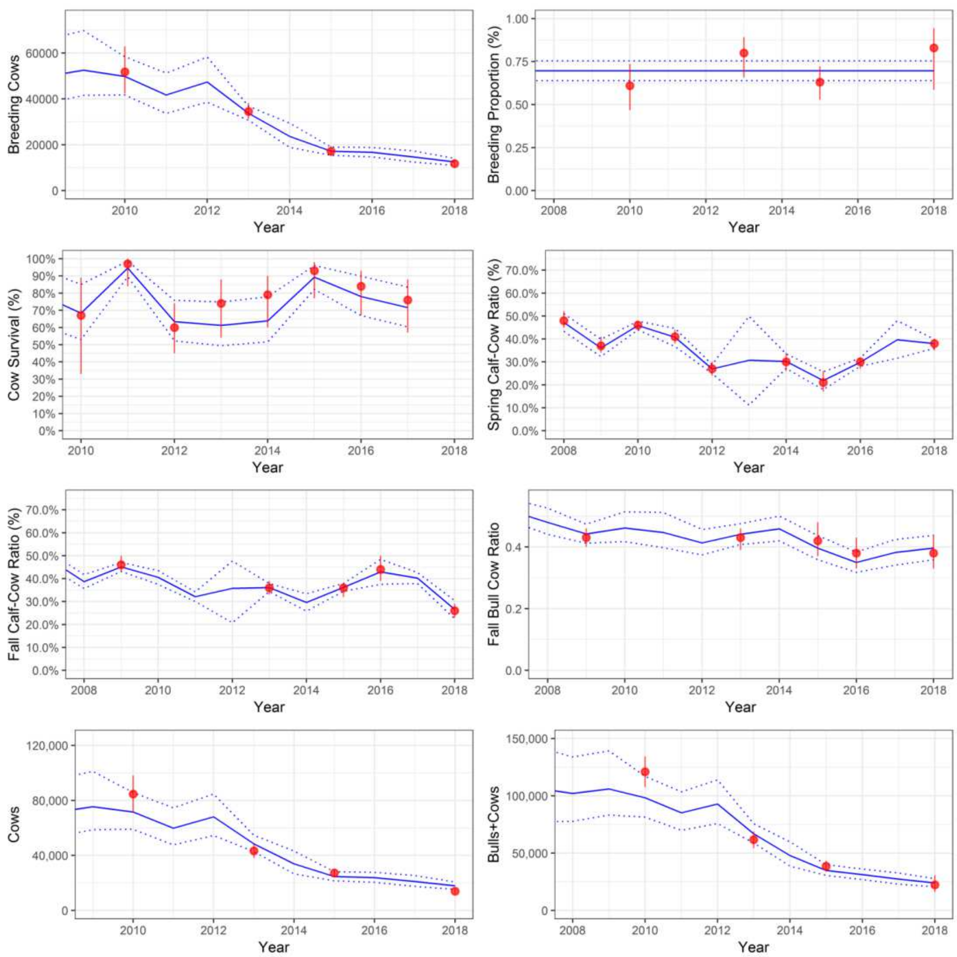

Figure 32: Predictions of demographic indicators from Bayesian IPM analysis compared to observed values, for Bluenose-East herd 2010-2018. The solid blue lines represent model predictions and confidence limits are shown as hashed blue lines. The red points are field estimates with associated confidence limits. Spring calf:cow ratios are flown in March or April and are also called late-winter surveys.

We modeled summer (June - late October) and winter (October - June) calf survival with the transition being the fall rut when fall composition surveys occur (Figure 33). This parameterization takes advantage of years where fall and spring calf cow surveys occur therefore allowing assessment of change in proportion calves between calving ground, fall surveys, and late winter surveys and subsequent estimation of calf survival for each period. As found in previous studies (Gunn et al. 2005a), summer survival is lower than winter survival (when calves are larger). We note that the survival rates in the graphs below are expressed on the annual scale for comparison purposes. The actual rates will be different (slightly higher) given that summer or winter is shorter in time than a year.

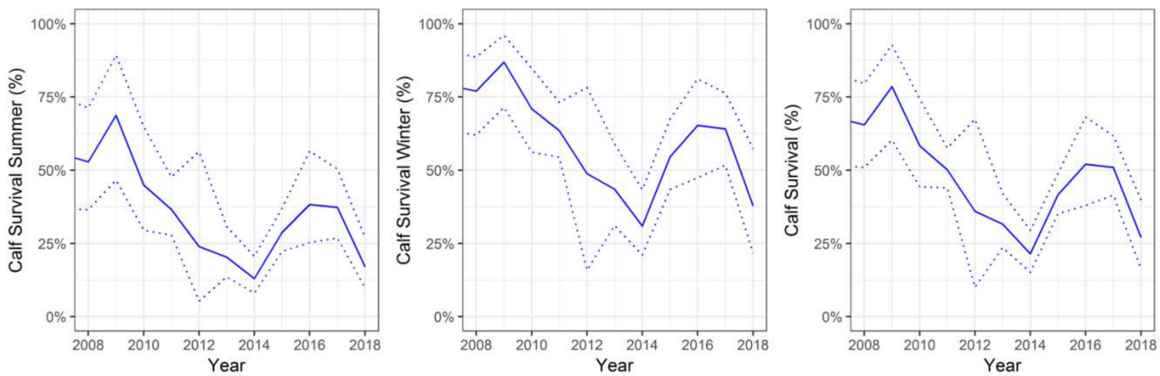

Figure 33: Trends in summer and winter and overall calf survival for the Bluenose-East herd 2010-2018 from the IPM analysis.

Overall calf productivity, which is basically the proportion of adult females that produce a calf that survives the first year of life, can be derived as the product of fecundity (from the previous caribou year) and calf survival (from the current year) (Figure 34). Calf productivity estimates suggest a negative trend in productivity 2008-2018 which was influenced by decreasing calf survival. An additional model run was conducted to test for a negative trend in calf survival which was found to be significant (p=0.02). Calf productivity is predicted to be lower in the caribou year of 2018 (June 2018 - June 2019) than 2017 due to a low calf-cow ratio in the fall 2018 survey (Figure 32). Future analyses will explore calf survival trends as well as linkages in calf survival and other demographic parameters with environmental covariates.

Spring calf-cow ratios, which are recorded in March or April, are overlaid in the productivity graph (Figure 34) and similarly suggest an overall negative trend 2008-2018. Note that the spring calf-cow ratio is influenced by cow survival, calf survival as well as fecundity and therefore will not directly correspond directly to productivity. It will be greater than actual productivity because lower cow survival rates, which influence the count of cows in the spring, will inflate calf-cow ratios. The model predictions of spring calf-cow ratios, which account for cow survival, are shown in Figure 32.

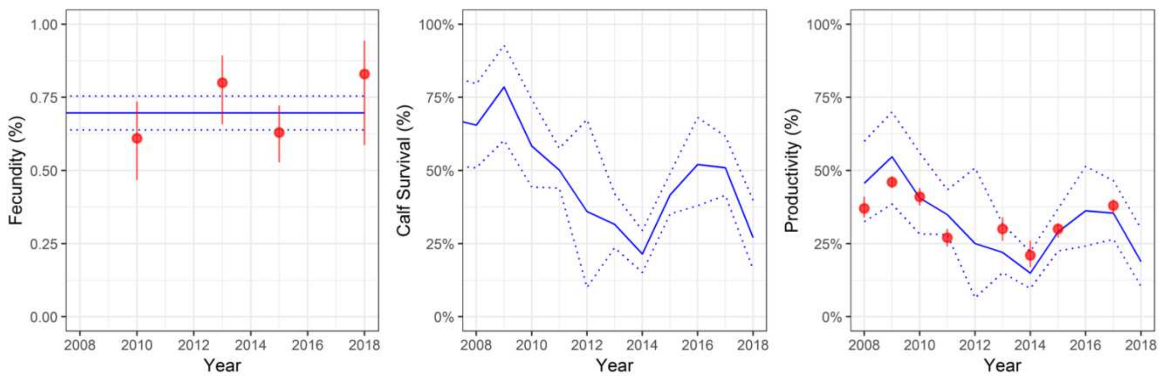

Figure 34: Trends in fecundity, calf survival and productivity (which is the product of the previous year's fecundity times the current year calf survival) for Bluenose-East herd 2010-2018. Spring calf cow ratios, which are lagged by one year (so that they correspond to the productivity/caribou year prediction of the model), are shown for reference purposes.

One of the most important determinants of herd trend is adult cow survival since this directly influences the overall productivity of the herd. Collar-based point estimates, and modeled annual and three year average values for cow survival are shown in Figure 35. A grey box indicates the range of cow survival needed for the herd population size to stabilize (as assessed using a stage-based matrix model described in Appendix 4) across the range of observed levels of productivity (Figure 34). The lower level is a cow survival of 0.84 which is the minimum level needed for herd recovery at a higher productivity level of 0.46, which is like that observed in 2009. The upper level is a cow survival of 0.92 which is the level required for stability if productivity remains low at the 0.19 observed in 2018. If productivity is at levels observed from 2015-2018 (0.30) then cow survival would need to be 0.88 for stability. The lower hashed line is 0.71 which was the mean level (for 2010-2015) estimated in the previous demographic analysis conducted after the 2015 calving ground survey (Boulanger et al. 2016).

Estimates of cow survival suggest an increasing trend in cow survival from 2015 to 2018 with a three-year average survival of 0.79 (CI=0.71-0.84) for the 2015-2018 period. However, this estimate should be interpreted cautiously since both the collar-based and IPM estimates suggest a decreasing trend in cow survival from 2015-2018. The IPM estimate of cow survival for the caribou year of 2017 (which spans from June 2017 - June 2018) is 0.716 (0.60-0.83). We suggest this average value for cow survival be used for prospective harvest modeling purposes. All estimates of survival include harvest mortality. Harvest pressure was low from 2015 to 2018 and targeted bulls, as detailed in the next section, and therefore it is likely that that harvest had minimal effect on survival rates from 2015 to 2018.

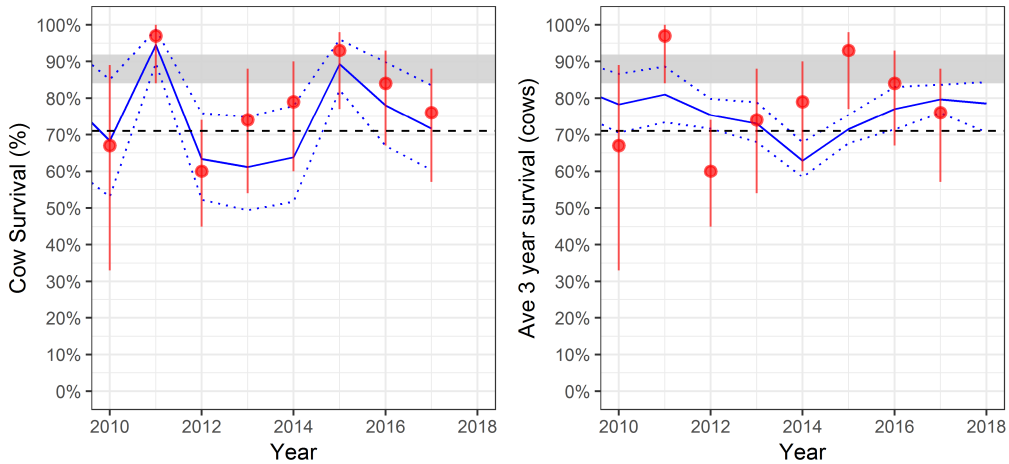

Figure 35: Trends in Bluenose-East cow survival 2010-2018 from IPM analysis. The solid blue lines represent model predictions and confidence limits are the hashed blue lines. The right graph represents a three-year moving average. The red points are field estimates from collars with associated Confidence Limit. The dashed horizontal lines indicate previous estimates of mean cow survival in 2015 (0.71). The shaded region represents the range of cow survival levels needed for population stability across lowest observed levels of productivity (19 percent) to higher levels of productivity (46 percent) as shown in Figure 34.

Bull survival was estimated at 0.52 (CI=0.48-0.57) from 2010 to 2018 which was lower than the estimate in 2015 (0.58; CI=0.55-0.60). This was presumably due to the slight decrease in bull cow ratios in fall surveys (Table 21) as well as changes in productivity. The demographic model basically estimates bull survival as the level needed to produce the observed bull-cow ratios based on levels of recruitment to the adult bull class and estimated cow survival. One potential enhancement to the model that will be considered is direct estimates of bull survival from collared bulls to further verify bull survival estimates.

Population rates of change (λ) for cows suggests a rate of 0.80 (as also indicated by regression analysis of calving ground survey estimates) up to 2015 followed by a slight increase in λ from 2015-2018 up to 0.90 (CI=0.85-0.94) (Figure 36). However, point estimates of λ decrease from 2015-2018 so that the λ estimate for 2018 is 0.85 (CI=0.71-0.99). We suggest the point estimate for 2018 be considered given the decreasing trend in λ from 2015-2018.

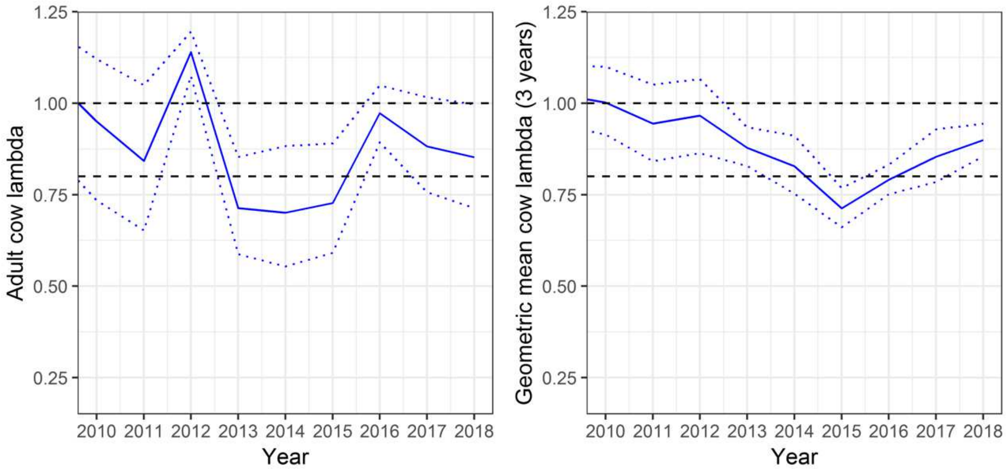

Figure 36: Overall trends in Bluenose-East adult female trend (λ) 2010-2018 from the IPM analysis. A value of 1.0 indicates stability.

Overall, the demographic model suggests that cow survival rates, which are one of the main determinants of overall herd trend, are still at lower values than needed for herd recovery (Figure 35). Low cow survival levels and an apparent negative trend in calf survival (Figure 33) both contributed to the overall decline in herd size. Overall trend estimates (three year λ) suggest a slightly less negative trend in adult cow numbers (0.90), however, there is an overall negative trend in cow survival and λ and therefore this result should be interpreted cautiously.

Sensitivity analyses were conducted to the effect of directional calf survival trends (by including a calf survival trend in the model) and the 2011 cow survival data point which may have been influenced by lower collar coverage (Figure 30), by running the model without this data point. In both cases, estimates were minimally affected. Of most interest was the 2018 cow survival estimate which was 0.72 (CI=0.62-0.83) if the 2011 cow survival data point was removed and 0.70 (CI=0.60-0.82) if a declining calf survival trend is assumed. This contrasts with the estimate of 0.72 (0.60-0.83) from the main model used in the analysis. More details are provided on this analysis including a plot of all model predictions from alternative models in Appendix 4.

Future analyses will further refine demographic predictions using environmental covariates to model temporal trends in parameters. Preliminary analysis of a limited environmental covariate data set (2008-2016) using remote sensing covariates (Russell et al. 2013) suggest negative correlations between IPM estimates of cow survival (Figure 35) and June temperature (Pearson ρ=-0.829,CI=0.96 to -0.37,t=-3.95,df=7,p=0.005) as well as negative correlation between estimated calf survival (Figure 33) and Oesterid (warble and bot fly) indices for the summer after calving (Pearson ρ =-0.831,CI=-0.96 to 0.37,df=7,p=0.0056). Once the full temporal data set is available (up to 2018) these covariates will be used to further refine estimates and explore mechanisms causing temporal variation in demographic parameters. Analyses that further explore seasonal survival estimates with the effect of hunting mortality (on earlier data points) will also be considered at this time.

Hunter Harvest of Bluenose-East Caribou 2016-2018

In 2016, three co-management boards – the Wek'èezhìi and Sahtú Renewable Resource Boards (WRRB and SRRB) in the NWT and the NU Wildlife Management Board (NWMB) in NU – held formal hearings on management of the Bluenose-East caribou herd. The WRRB determined a total allowable harvest (TAH) for Wek'èezhìi of 750 bulls and recommended that this be the harvest limit herd-wide, recognizing that the board has no jurisdiction outside Wek'èezhìi. The SRRB endorsed a community-based caribou management plan from Délı̨nę (*Belare Wíle Gots'ç Æekwç* , the Délı̨nę caribou plan)*,* which included a harvest limit of 150 caribou and 80 percent bulls. The NWMB endorsed a similar plan from the Kugluktuk Hunters and Trappers Organization for the Bluenose-East herd, called an Integrated Community Caribou Management Plan or ICCMP (the Kugluktuk caribou plan); this included a harvest limit of 340 caribou (no gender specified). Since that time, actual estimated/reported harvest of Bluenose-East caribou has been below the limits in the three plans (Table 26). Overall totals were 373 caribou in 2016-2017 and 323 caribou in 2017-2018, with a substantial number of these being bulls; however, the harvest recorded for Kugluktuk is the largest part of the harvest for these two years and gender of harvested caribou was not specified. In 2017-2018, particularly, the herd was relatively inaccessible to hunters for a large part of the year. This harvest was less than 1 percent of the herd's estimated size in 2015 (38,592). These harvest numbers suggest that harvest contributed relatively little to the herd's most recent decline, in contrast to the situation prior to 2015 (Boulanger et al. 2016).

Table 26: Reported/estimated harvest of Bluenose-East caribou in harvest seasons 2016-2017 and 2017-2018.

Harvest Season	North Slave Region NWT (including Wek'èezhìi)	Délı̨nę, NWT	Kugluktuk, NU	Total	Notes
2016-2017	15 bulls	93 bulls, 33 cows	232 caribou	373 caribou	Most N. Slave hunters harvested Beverly caribou in east
Source	ENR wildlife officers	Délı̨nę RRC	GN wildlife staff		
2017-2018	142 bulls	7 caribou	174 caribou	323caribou	Most N. Slave hunters harvested Beverly caribou in east; Délı̨nę harvest possibly boreal caribou
Source	Tłı̨chǫ Government	Délı̨nę RRC	GN wildlife staff		

Hunter Harvest Modeling of Bluenose-East Caribou 2018-2021

To assist in preparation of a joint management proposal for Bluenose-East caribou (Tłı̨chǫ Government (TG) and ENR) that was submitted to the WRRB in Jan. 2019, a limited set of harvest modeling runs was carried out to assess how harvest might affect the herd's likely numbers in 2021, three years after the 2018 survey. The full results are included in Appendix 4 of this report. We include a selection of results here as they build on the Bayesian modeling described in preceding pages.

The methodology used for simulations followed the original generic harvest model approach (Boulanger and Adamczewski 2016). In review, the harvest model assumes that harvest mortality is additive to natural mortality each year. It assumes that harvest occurs in the new year (January) for both bulls and cows with mortality of cows not affecting calf survival in the year the cow is shot (it basically assumes that the calf has weaned at that point).

We note that the main objective of simulations was to provide an assessment of relative risk of accelerated decline of the herd at various harvest levels as opposed to firm predictions of herd status in 2021. It is challenging to assess future demographic rates and therefore we suggest that the results of simulations be used with ongoing demographic monitoring to assess herd status and response to harvest.

The following simulations were considered. Simulations with estimated cow survival levels in 2018 (minimal harvest, female survival (S_f)=0.716: CI=0.6-0.83) were considered across a range of calf productivity levels. This estimate of cow survival assumes low harvest pressure from 2017-2018 so that the difference in natural and harvest-influenced survival is minimal. This assumption is reasonable since harvest levels were relatively low (2015-2016, ≈800 caribou, 2016-2017 ≈300 caribou, 2017-2018 ≈200 caribou) in the 2015-2018 interval.

Variation in productivity was simulated by varying calf survival while keeping fecundity constant. This scenario most closely follows the results of the IPM analysis where fecundity was held constant with yearly variation in calf survival estimated using a random effects model (Figures 33 and 34). The values of calf survival and productivity simulated followed the range of values estimated from the 2008-2018 data sets. We based the average productivity scenario on the last three years given that this level of productivity will have the higher influence on future herd size of the Bluenose-East herd. We note that the assumption of constant fecundity in the IPM analysis was due partially to data constraints (n=4 breeding proportion measurements) rather than lack of biological variation in pregnancy rates.

Estimates of demographic parameters in 2018 were relatively similar to those from 2015. The estimate of cow survival in 2018 of 0.716 was similar to that estimated from the 2015 analysis of 0.708. The mean cow survival rate 2015-2018 was 0.76; however the overall trend suggested a declining recent trend in cow survival 2015-2018 and therefore the 2018 estimate was used for simulations. The average level of calf productivity (0.30) from 2015-2018 was slightly higher than the previous average calf productivity of 0.26 (from 2013-2015). The lower calf productivity scenario (0.187) was based on the 2018 estimate of calf productivity. Bull survival in 2018 was estimated at 0.52, which was lower than the estimate of 0.59 in 2015. Simulations were also run at the 2015 bull survival level of 0.59 to assess the sensitivity of estimates of bull cow ratio to this change in bull survival, as detailed in Appendix 4.

Table 27: Demographic scenarios considered in harvest simulations for the Bluenose-East caribou herd in 2018. S_f = cow survival rate; S_c = calf survival rate; S_m = bull survival rate; S_y = yearling survival rate; F_a*S_c = calf productivity as the product of pregnancy and calf survival rates. Results of all simulations are detailed in Appendix 4.

Scenario	Productivity	Survival				Pregnancy Rate	λ (Cows Only)	Stable Age Distribution Proportions at 2018		
	F_a*S_c	Cow (S_f)	Calf (S_c)	Bull (S_m)	Yearling (S_y)	F_a		Calves	Yearlings	Cows
High productivity (95th percentile)	0.455	0.716	0.655	0.523	0.716	0.694	0.870	0.190	0.143	0.666
Average productivity (2015-2018)	0.301	0.716	0.433	0.523	0.716	0.694	0.828	0.206	0.108	0.686
Low productivity (2018)	0.187	0.716	0.270	0.523	0.716	0.694	0.793	0.221	0.075	0.704

As an initial cross check, demographic parameters for the female segment of the population were analyzed using a stage-based matrix model to determine stable age distributions as well as estimate the resulting lambda from the matrix model. The average productivity scenario resulted in a rate of decline (deterministic λ=0.83 from a stage-based matrix model of the female segment of the population) which is slightly higher than that observed by comparison of the 2015 and 2018 adult female calving ground survey estimates (λ=0.80). Estimates of trend from the demographic model were slightly higher than the observed difference between calving ground survey estimates, which accounts for this difference. The low productivity (2018) scenario resulted in a λ of 0.79 which is closer to the observed difference in adult female survey estimates.

The herd size estimate for 2018 (19,294) was used as the starting point for simulations with bull and cow numbers based on the fall bull cow ratio of 2018 (0.38). A stable age distribution was assumed. Harvest levels of 0-950 were considered with an additional harvest level of 2,000 to demonstrate the effects of a large-scale harvest. Simulations were kept to a short interval of three years (2018-2021) as the herd's demography has changed dynamically since 2010. In addition, population surveys have been carried out on a three-year interval in recent years.

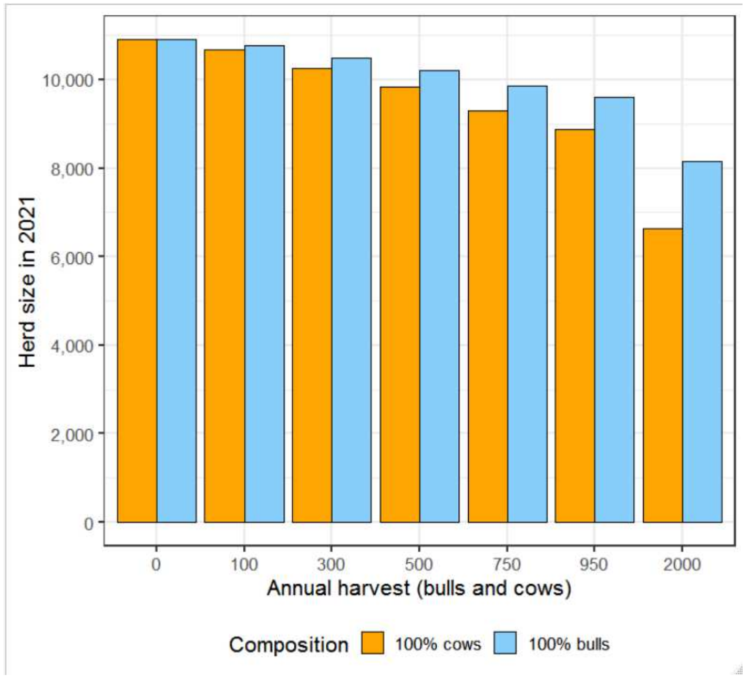

Figure 37: Projected herd size of the Bluenose-East herd in 2021 with various levels of harvest and harvest sex ratio of 100 percent bulls and 100 percent cows. Key assumptions: cow survival rate of 0.716 and average calf productivity of 0.301 (Table 27). Further simulations conducted across the range of observed productivity levels are given in Appendix 4.

Figure 37 shows projected herd size in 2021 (y-axis) across a range of harvest levels from 0-2,000 caribou/year (x-axis) and with harvest either 100 percent cows or 100 percent bulls in the harvest. Projections suggest that the herd would almost be halved again in 2021 to about 11,000 caribou with moderate productivity and 0 harvest, if recent demographic indicators stay the same. At low harvest levels of 100-300, incremental effects of harvest on herd size are limited because the scale of the harvest is small in relation to herd size (100 is 0.5 percent of the herd of 19,300 and 300 is 1.6 percent of this herd size). As the harvest level increases, the effect on herd size in 2021 increases. At the highest harvest level of 2,000 caribou/year and 100 percent cows, projected herd size in 2021 approaches 6,000-8000 caribou or 30-40 percent the size of the 2018 estimate. The effects of a cow-focused harvest vs. a bull-focused harvest are most pronounced at higher harvest levels and they increase with time.

A more detailed description of the model and predictions is given in Appendix 4. This includes simulations across a full range of observed levels of productivity.

DISCUSSION

Results from the Bluenose-East 2018 calving photo survey documented a significant decline in adult and breeding females and an overall decline in the herd since the 2015 calving ground survey, and a continuing decline since 2010 at an annual rate of decline of about 20 percent. We suggest that this decline is not attributed to poor survey methods or sampling. The caribou counted on the visual blocks may have under-estimated caribou in those blocks somewhat due to the patchy snow conditions and relatively low sightability, but 90 percent of the caribou estimated on the survey area were from the two photo blocks, where extra time spent searching photos and the double observer check suggested that a very high proportion of the caribou were found. An analysis of the herd's demography using multiple data sources suggests that low calf productivity in 2018 (Figure 34) as indicated by declining calf survival rates and pregnancy rates, combined with low adult female survival rates (Figure 35) both contributed to the continuing decline of the Bluenose-East herd. Harvest as estimated/reported for 2016-2017 and 2017-2018 was relatively small and likely contributed little to the most recent decline. Based on available data, the switching of collared female caribou between the Bluenose-East and neighbouring calving grounds was very low (Figure 29) and therefore changes in abundance are not attributable to movement to other calving grounds.

The decline in breeding females, coupled with the low estimated survival rates and low recent calf:cow ratios is cause for serious concern. In general, barren-ground caribou herds have a high probability of declining, if cow survival rates are below 80-85 percent (Crête et al. 1996, Boulanger et al. 2011); results of the IPM analysis in this study suggest that survival levels of 0.84-0.92 are needed (Figure 35) for stability given the range of productivity levels observed for the Bluenose-East herd (Figure 34). Low natural survival rates may reflect significant predation by wolves and bears (Haskell and Ballard 2007). Cyclical patterns in abundance of migratory caribou herds may also reflect the influence of large-scale weather patterns on vegetation and range conditions (Joly et al. 2011); declines of multiple NWT caribou herds from 2,000 to 2006-2008 in part reflected late calving and sustained low calf recruitment (Adamczewski et al. 2009, Adamczewski et al. 2015). A recent study (Boulanger and Adamczewski 2017) suggested that high summer drought and warble fly indices on the Bathurst and BNE ranges may in part have contributed to low pregnancy rates in some years; for example, very high drought and warble fly indices for both herds in 2014 were followed by low percentages of breeding females in both herds in June 2015. These results are further supported by the Bayesian analysis that found correlations between warble fly indices and calf survival, and June temperature and cow survival based upon estimates between 2008 and 2016.

Monitoring Recommendations

As a result of the significant declines in the Bluenose-East and Bathurst herds documented by 2018 calving photo surveys, the TG and GNWT ENR submitted joint management proposals for each herd to the WRRB in January 2019. While the WRRB has yet to determine what management actions and monitoring it will recommend, we include here the revised and increased monitoring and research included in the two proposals.

1. Calving photo surveys every two years, an increase in survey frequency from the three-year interval that has been used since about 2006. Population estimates from these surveys are key benchmarks for management decisions.
2. Annual composition surveys in June, October and late winter (March/April) to monitor initial calf productivity, survival through the first four to five months, and survival to nine to ten months in late winter. Results in 2018 suggested that initial fecundity was high for the BNE herd (83 percent breeding females) but by late October the calf:cow ratio had dropped to 25 calves:100 cows, far below recruitment and productivity needed for a stable population. Annual fall surveys will also allow close monitoring of the bull:cow ratio that has been decreasing in this herd.
3. An increase in numbers of collars on the BNE herd (and the Bathurst herd) from 50 (30 cows, 20 bulls) to 70 (50 cows, 20 bulls). This will improve estimation of annual cow survival rates and improve monitoring of herd distribution and harvest management, along with many other uses for collar information. Assessment of collar fate is essential to obtain unbiased survival estimates.
4. Suspension of reconnaissance surveys on the calving grounds. Although reconnaissance surveys on the calving grounds in years between photo surveys generally tracked abundance of cows on the calving grounds, the variance on these surveys has been high. In particular, results of the June 2017 reconnaissance survey on the BNE calving ground suggested that the herd's decline had ended and the herd had increased substantially, while the 2018 photo survey showed that in reality the herd's steep decline had continued.
5. Increased support for studies of predator abundance and predation rates, as well as studies of factors affecting range condition, caribou productivity and health.
6. Increased support for on-the-land traditional monitoring programs like the Tłı̨chǫ Boots-on-the-Ground program (Tłı̨chǫ Research and Training Institute 2017) that provide insights into caribou health and the influence of weather and other factors on caribou.

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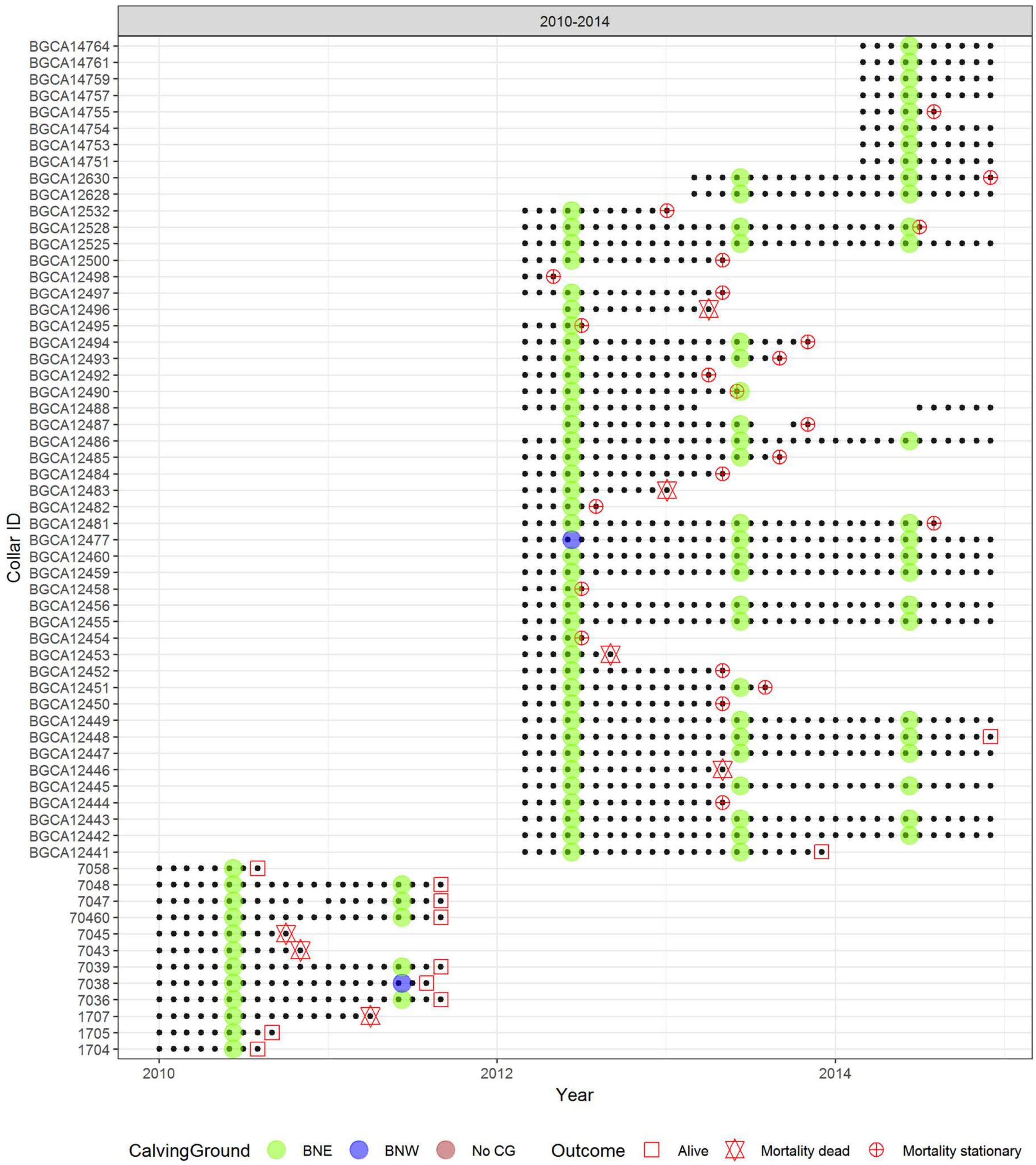
Appendix 1: Double observer visual model observer pairings

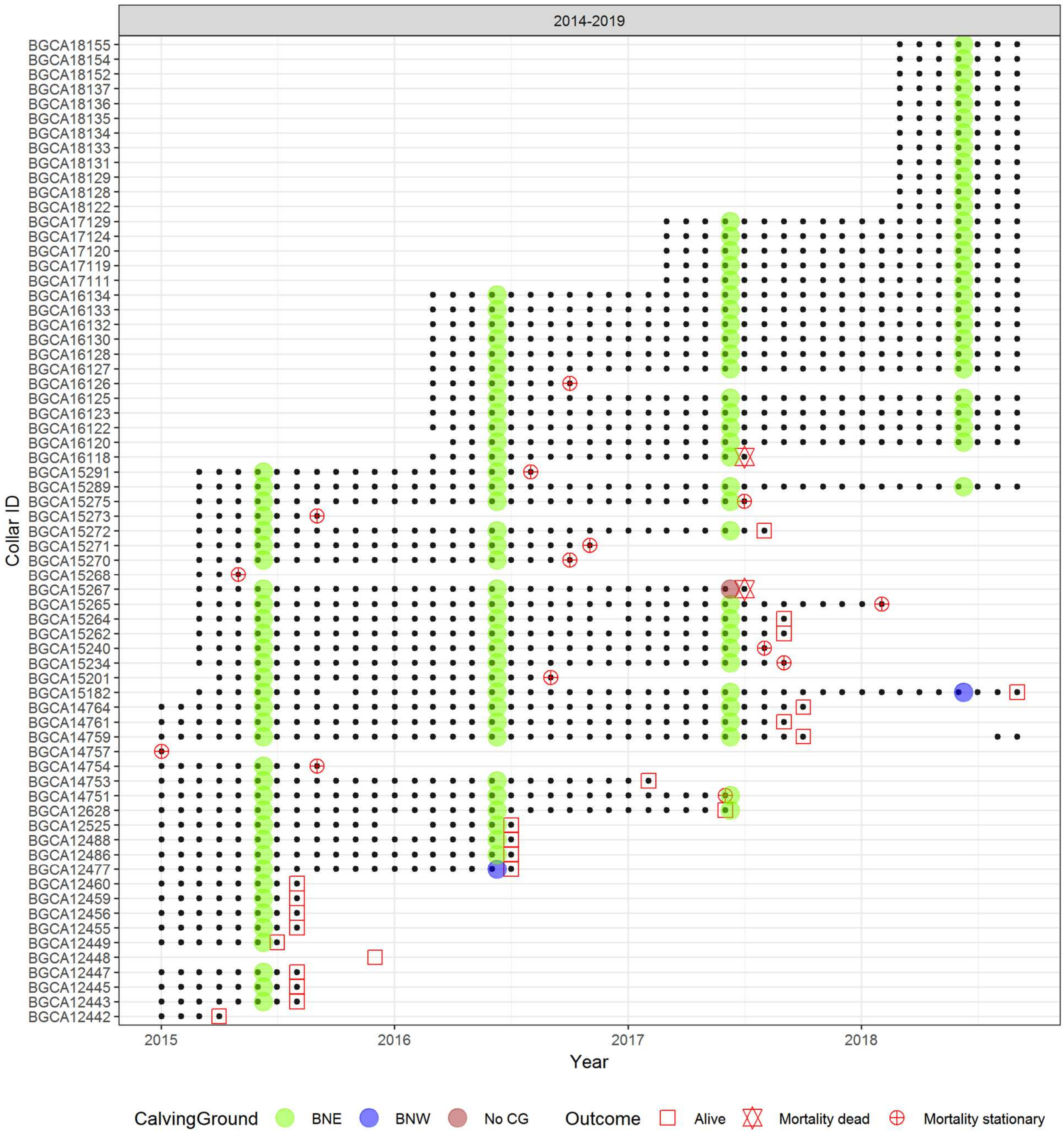
Double observer pairings with associated summary statistics.

Observer Information			**Frequencies**				**Probabilities**	
Pair No	**Pooled Pair no.**	**Notes**	**Secondary**	**Primary**	**Both**	**Total observations**	**Single ob p**	**Double ob p**
1	1	did not switch	5	6	14	25	0.80	0.96
2	2		6	3	16	25	0.76	0.94
3	2		0	0	1	1	1.00	1.00
4	3		1	4	11	16	0.94	1.00
5	3		6	10	16	32	0.81	0.96
6	4	did not switch	11	8	17	36	0.69	0.91
7	5	did not switch	14	17	48	79	0.82	0.97
8	6		18	19	46	83	0.78	0.95
9	6		17	20	38	75	0.77	0.95
10	7		16	4	23	43	0.63	0.86
11	7		5	6	8	19	0.74	0.93
12	8		0	2	3	5	1.00	1.00
13	8		20	3	20	43	0.53	0.78
14	9		5	1	7	13	0.62	0.85
15	9		20	18	42	80	0.75	0.94
16	9	pooled with 9	1	0	0	1	0.00	0.00
17	10		14	3	16	33	0.58	0.82
18	10		1	3	0	4	0.75	0.94
19	11	did not switch	10	9	41	60	0.83	0.97
20	12		0	0	1	1	1.00	1.00
21	12	pooled with 12	0	0	3	3	1.00	1.00
22	12		9	1	20	30	0.70	0.91

Appendix 2: Bluenose-East Collared Female Collar Histories

The following charts detail the histories of collared caribou in the Bluenose-East herd including monthly locations (black dots), presence on calving grounds (as indicated by mean location on June 15), and fate. Fates include alive releases (collar released when caribou was alive and therefore the record was censored at the last location), known dead (stationary collar was directly determined to be a mortality due to harvest or other factors) and stationary dead (collar became stationary before its end date and a mortality was inferred).





2014-2019
BGCA18155
BGCA18154
BGCA18152
BGCA18137
BGCA18136
BGCA18135
BGCA18134
BGCA18133
BGCA18131
BGCA18129
BGCA18128
BGCA18122
BGCA17129
BGCA17124
BGCA17120
BGCA17119
BGCA17111
BGCA16134
BGCA16133
BGCA16132
BGCA16130
BGCA16128
BGCA16127
BGCA16126
BGCA16125
BGCA16123
BGCA16122
BGCA16120
BGCA16118
BGCA15291
BGCA15289
BGCA15275
BGCA15273
BGCA15272
BGCA15271
BGCA15270
BGCA15268
BGCA15267
BGCA15265
BGCA15264
BGCA15262
BGCA15240
BGCA15234
BGCA15201
BGCA15182
BGCA14764
BGCA14761
BGCA14759
BGCA14757
BGCA14754
BGCA14753
BGCA14751
BGCA12628
BGCA12525
BGCA12488
BGCA12486
BGCA12477
BGCA12460
BGCA12459
BGCA12456
BGCA12455
BGCA12449
BGCA12448
BGCA12447
BGCA12445
BGCA12443
BGCA12442
Collar ID
2015
2016
2017
2018
Year
CalvingGround
BNE
BNW
No CG
Outcome
Alive
Mortality dead
Mortality stationary

Appendix 3: Bayesian IPM Details

This appendix details the development of the Bayesian IPM analysis. The primary IPM R coding was developed by Joe Thorley (Poisson Consulting, poissonconsulting.ca) in collaboration with John Boulanger (Thorley and Boulanger 2019). The underlying demographic model used was similar to the OLS model used in previous analyses (Boulanger et al 2011). The primary development was to evolve model fitting to a more robust Bayesian IPM state space approach. The objective of this appendix is to provide a brief description of the model used in the analysis rather than a complete description of the Bayesian model approach. Readers interested in the Bayesian modeling approach should consult Kery and Schaub (2011) which is an excellent introduction to Bayesian analysis.

Data Preparation

The estimates of key population statistics with SEs and lower and upper bounds were provided in the form of a csv spreadsheet and prepared for analysis using R version 3.5.2 (R Core Team 2018).

Statistical Analysis

Model parameters were estimated using Bayesian methods. The Bayesian estimates were produced using JAGS (Plummer 2015). For additional information on Bayesian estimation the reader is referred to McElreath (2016).

Unless indicated otherwise, the Bayesian analyses used normal and uniform prior distributions that were vague in the sense that they did not constrain the posteriors (Kery and Schaub 2011, p. 36). The posterior distributions were estimated from 1,500 Markov Chain Monte Carlo (MCMC) samples thinned from the second halves of three chains (Kery and Schaub 2011, pp. 38–40). Model convergence was confirmed by ensuring that the split potential scale reduction factor $\hat{R} \leq 1.05$ (Kery and Schaub 2011, p. 40) and the effective sample size (Brooks et al. 2011) ESS ≥ 150 for each of the monitored parameters (Kery and Schaub 2011, p. 61). In addition, trace plots of Markov Chains and the posterior distributions were inspected to further check convergence and symmetry of estimated parameter distributions.

The sensitivity of the estimates to the choice of priors was examined by multiplying the standard deviations (sd) of the normal priors by ten and using the split $\hat{R}$ (after collapsing the chains) to compare the posterior distributions (Thorley and Andrusak 2017). An unsplit $\hat{R} \leq 1.1$ was taken to indicate low sensitivity.

The parameters are summarized in terms of the point *estimate*, *sd*, the *z-score*, *lower* and *upper* 95 percent confidence/credible limits (CLs) and the *p-value* (Kery and Schaub 2011, p 37 and 42). The estimate is the median (50th percentile) of the MCMC samples, the z-score is mean/sd and the 95 percent CLs are the 2.5th and 97.5th percentiles. A p-value of 0.05 indicates that the lower or upper 95 percent CL is 0.

The results are displayed graphically in the main body of the report with 95 percent confidence/credible intervals (CIs, Bradford, Korman, and Higgins 2005). Data are indicated by points (with lower and upper bounds indicated by vertical bars) and estimates are indicated by solid lines (with CIs indicated by dotted lines).

The analyses were implemented using R version 3.5.2 (R Core Team 2018) and the mbr family of packages.

Model Descriptions

The data were analyzed using state-space population models (Newman et al. 2014).

Population

The fecundity, breeding cow abundance, cow survival, fall bull cow, fall calf cow and spring calf cow ratio data complete with SEs were analyzed using a stage-based state-space population model similar to Boulanger et al. (2011). Key assumptions of the female stage-based state-space population model include:

- Calving occurs on the 11th of June (with a year running from calving to calving).
- Cow survival from calving to the following year varies randomly by year.
- Cow and bull survival is constant throughout the year.
- Calf survival to the following year (when they become yearlings) varies by season and randomly by year.
- Yearling survival to the following year is the same as cow survival.
- The sex ratio is 1:1.
- The proportion of breeding cows is the fecundity the previous year.
- Female yearlings are indistinguishable from cows in the fall and spring surveys.
- The number of calves in the initial year is the number of cows in the initial year multiplied by the product of the fecundity and cow survival in a typical year.
- The number of yearlings in the initial year is the product of the number of calves in the initial year and the calf survival in a typical year.
- The data are normally distributed with *sd* equal to their SEs.

Model Templates

The base R code used in the analysis is summarized below.

Population (R-code)

```
.model {
  bSurvivalCow ~ dnorm(0, 2^-2)
  bSurvivalBull ~ dnorm(0, 2^-2)
  bFecundity ~ dnorm(0, 2^-2)
  bSurvivalCalfSummerAnnual ~ dnorm(0, 2^-2)
  bSurvivalCalfWinterAnnual ~ dnorm(0, 2^-2)

  sSurvivalCowAnnual ~ dnorm(0, 1^-2) T(0,)
  sSurvivalCalfAnnual ~ dnorm(0, 1^-2) T(0,)
  for(i in 1:nAnnual){
    bSurvivalCowAnnual[i] ~ dnorm(0, sSurvivalCowAnnual^-2)
    bSurvivalCalfAnnual[i] ~ dnorm(0, sSurvivalCalfAnnual^-2)

    logit(eSurvivalCow[i]) <- bSurvivalCow + bSurvivalCowAnnual[i]
    logit(eSurvivalBull[i]) <- bSurvivalBull
    logit(eFecundity[i]) <- bFecundity
    logit(eSurvivalCalfSummerAnnual[i]) <- bSurvivalCalfSummerAnnual + bSurvivalCalfAnnual[i]
    logit(eSurvivalCalfWinterAnnual[i]) <- bSurvivalCalfWinterAnnual + bSurvivalCalfAnnual[i]
  }
  bBreedingCows1 ~ dnorm(50000, 10000^-2) T(0,)
  logit(eFecundity1) <- bFecundity
  logit(eSurvivalCalfSummerAnnual1) <- bSurvivalCalfSummerAnnual
  logit(eSurvivalCalfWinterAnnual1) <- bSurvivalCalfWinterAnnual

  bCows[1] <- bBreedingCows1 / eFecundity1
  bBulls[1]<- bCows[1] * 1/2
  bCalves[1] <- bBreedingCows1
  bYearlings[1] <- bCalves[1] * eSurvivalCalfWinterAnnual1^(154/365) *
eSurvivalCalfWinterAnnual1^(211/365)

  bSpringCalfCow[1] <- bCalves[1] / (bCows[1] + bYearlings[1] / 2)

  for(i in 2:nAnnual){
    bCows[i] <- (bCows[i-1] + bYearlings[i-1] / 2) * eSurvivalCow[i-1]
    bBulls[i] <- bBulls[i-1] * eSurvivalBull[i-1] + (bYearlings[i-1] / 2) * eSurvivalCow[i-1]
    bCalves[i] <- bCows[i-1] * eSurvivalCow[i-1] * eFecundity[i-1]
    bYearlings[i] <- bCalves[i-1] * eSurvivalCalfSummerAnnual[i-1]^(154/365) *
eSurvivalCalfWinterAnnual[i-1]^(211/365)
```

```
}

for(i in 1:nAnnual) {
  eFallCor[i] <-  FallCalfCowDays[i] / 365

  eFallCows[i] <- (bCows[i] + bYearlings[i] / 2) * eSurvivalCow[i]^eFallCor[i]
  eFallBulls[i] <- (bYearlings[i] / 2) * eSurvivalCow[i]^eFallCor[i] + bBulls[i] * eSurvivalBull[i]^eFallCor[i]
  eFallCalves[i] <- bCalves[i] * eSurvivalCalfSummerAnnual[i]^eFallCor[i]

  bFallBullCow[i] <- eFallBulls[i] / eFallCows[i]
  bFallCalfCow[i] <- eFallCalves[i] / eFallCows[i]
}

for(i in 2:nAnnual) {
  eSpringCows[i] <- (bCows[i-1] + bYearlings[i-1] / 2) * eSurvivalCow[i-1]^(SpringCalfCowDays[i] / 365)
  eSpringCalves[i] <- bCalves[i-1] * eSurvivalCalfSummerAnnual[i-1]^(154/365) *
eSurvivalCalfWinterAnnual[i-1]^((SpringCalfCowDays[i] - 154) / 365)

  bSpringCalfCow[i] <- eSpringCalves[i] / eSpringCows[i]
}

for(i in SurvivalAnnual) {
  CowSurvival[i] ~ dnorm(eSurvivalCow[i], CowSurvivalSE[i]^-2)
}

for(i in CowsAnnual) {
  BreedingProportion[i] ~ dnorm(eFecundity[i], BreedingProportionSE[i]^-2)
  eBreedingCows[i] <- bCows[i] * eFecundity[i]
  BreedingCows[i] ~ dnorm(eBreedingCows[i], BreedingCowsSE[i]^-2)
}

for(i in FallBCAnnual) {
  FallBullCow[i] ~ dnorm(bFallBullCow[i], FallBullCowSE[i]^-2)
}

for(i in FallAnnual) {
  FallCalfCow[i] ~ dnorm(bFallCalfCow[i], FallCalfCowSE[i]^-2)
}

for(i in SpringAnnual) {
  SpringCalfCow[i] ~ dnorm(bSpringCalfCow[i], SpringCalfCowSE[i]^-2)
}
..
```

Parameter Estimates

The Bayesian model estimated principal parameters pertaining to the mean estimates of fecundity, bull survival, calf survival and cow survival. In addition, temporal variation in calf survival and cow survival were estimated as random effects (Table 1).

Table 1. Bayesian IPM state space model coefficients. Parameters are given on the logit scale (which is then transformed to the probability scale using a logit transform). Parameter significance is determined by overlap of confidence limits with 0. The parameters are summarized in terms of the point *estimate*, *sd*, the *z-score*, *lower* and *upper* 95 percent confidence/credible limits (CLs) and the *p-value* (Kery and Schaub 2011, p 37 and 42). The estimate is the median (50^{th} percentile) of the MCMC samples, the z-score is mean/sd and the 95 percent CLs are the 2.5^{th} and 97.5^{th} percentiles. A p-value of 0.05 indicates that the lower or upper 95 percent CL is 0.

Term	Estimate	sd	zscore	lower	upper	pvalue
Main effects						
bFecundity	0.831	0.141	5.931	0.571	1.126	0.000
bSurvivalBull	0.092	0.095	0.955	-0.100	0.272	0.337
bSurvivalCalfSummerAnnual	-0.683	0.354	-1.913	-1.380	0.041	0.062
bSurvivalCalfWinterAnnual	0.421	0.362	1.177	-0.275	1.162	0.228
bSurvivalCow	1.377	0.317	4.393	0.800	2.068	0.000
Random effects						
sSurvivalCalfAnnual	0.887	0.250	3.704	0.557	1.526	0.000
sSurvivalCowAnnual	0.932	0.286	3.407	0.547	1.661	0.000

Model fit was judged using r-hat value which suggested adequate model convergence. In addition, the distribution of parameter estimates was inspected to assess model convergence.

Table 2. Model summary. N is the number of parameters, nchains is the number of Markov chains used, nthin is the number of Markov chain samples that were thinned, ess is the effective sample size, rhat is the rhat convergence metric and convergence is the score based on effective sample size and number of parameters in the model.

n	K	nchains	niters	nthin	ess	rhat	converged
12	8	3	3000	300	5328	1.00	TRUE

Unsplit R-hat values were used to assess if choice of prior distribution influenced the posterior distribution of parameter estimates.

Table 3. Split R-hat values indicating sensitivity of posterior distributions to the choice of priors.

Term	rhat
bBreedingCows1	1.005
bFecundity	1.001
bSurvivalBull	1.004
bSurvivalCalfSummerAnnual	1.000
bSurvivalCalfWinterAnnual	1.002
bSurvivalCow	1.019
sSurvivalCalfAnnual	1.030
sSurvivalCowAnnual	1.041

The Bayesian model generated yearly estimates of demographic parameters as well as field measurements which were used in the fitting of the model. These estimates are detailed in Table 4. Most of the actual estimates are shown in Figures 32-36 of the main report.

Table 4. Parameter descriptions for estimates generated by the model.

Parameter	Description
Annual	The year as a factor
bCows1	The number of cows in the initial year
bFecundity	The proportion of cows breeding in a typical year
BreedingCows[i]	The data point for the number of breeding cows in the i^{th} year
BreedingCowsSE[i]	The SE for BreedingCows[i]
BreedingProportion[i]	The data point for the proportion of cows breeding in the i^{th} year
BreedingProportionSE[i]	The SE for BreedingProportionSE[i]
bSurvivalBull	The log-odds bull survival in a typical year
bSurvivalCalfAnnual[i]	The random effect of the i^{th} Annual on bSurvivalCalfSummerAnnual and bSurvivalCalfWinterAnnual
bSurvivalCalfSummerAnnual	The log-odds summer calf survival if it extended for one year
bSurvivalCalfWinterAnnual	The log-odds winter calf survival if it extended for one year
bSurvivalCow	The log-odds cow (and yearling) survival in a typical year
bSurvivalCowAnnual[i]	The random effect of the i^{th} Annual on bSurvivalCow
CowSurvival[i]	The data point for cow survival from the $i\text{-}1^{th}$ year to the i^{th} year
CowSurvivalSE[i]	The SE for CowSurvivalSE[i]
FallBullCow[i]	The data point for the bull cow ratio in the fall of the i^{th} year
FallBullCowSE[i]	The SE for FallBullCow[i]
FallCalfCow[i]	The data point for the calf cow ratio in the fall of the i^{th} year
FallCalfCowSE[i]	The SE for FallCalfCow[i]
SpringCalfCow[i]	The data point for the calf cow ratio in the spring of the i^{th} year
SpringCalfCowSE[i]	The SE for SpringCalfCow[i]
sSurvivalCalfAnnual	The SD of bSurvivalCalfAnnual
sSurvivalCowAnnual	The SD of bSurvivalCowAnnual

A sensitivity analysis was conducted to determine the effect of a declining calf survival trend and the including of the 2011 caribou year survival estimate which was higher than other estimates which may have been influenced by lack of collars for the winter months of 2011-2012 (Figure 30). In general, estimates were minimally affected by either of these alternative model runs (Figure 1) demonstrating the robustness of random effect models to smaller scale underlying trends in the model (calf survival) or individual historic data points (the 2011 survival rate estimate).

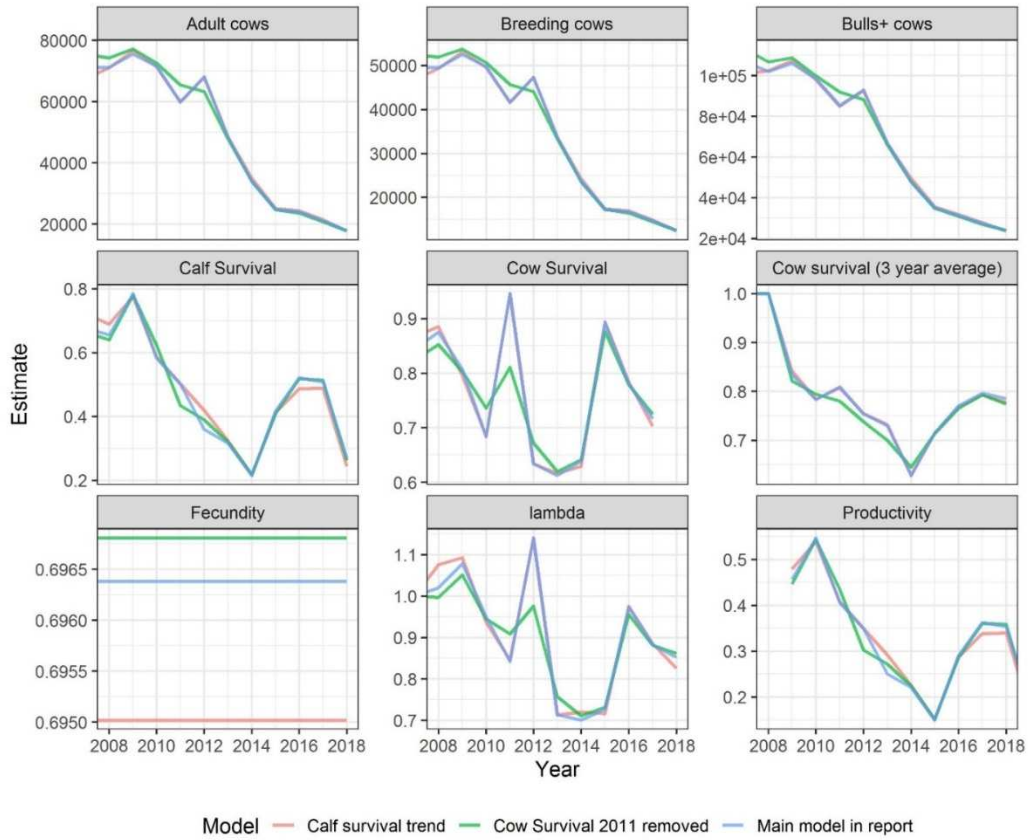


Figure 1: Comparison of model predictions of the main model used in report to a model with calf survival trends and the main model run without the 2011 collared cow survival data point.

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Appendix 4: Updated Harvest Simulations for the Bluenose-East Herd

This appendix briefly summarizes harvest simulations for the Bluenose-East herd carried out in winter 2018-2019 following the June 2018 calving photo survey for this herd. A previous version was dated January 2, 2019. The present summary uses direct estimates from the demographic model analyses described in the main body of this survey report, which were finalized after the initial harvest simulations had been completed. Harvest modeling outcomes are very similar between the January 2, 2019 summary and this version; there are slight changes in a few parameters. We suggest that readers review the original harvest simulation report with a broad range of modeling scenarios (Boulanger and Adamczewski 2016), the 2015 Bluenose-East calving ground survey report (Boulanger et al. 2016), the original Bathurst herd demographic model paper (Boulanger et al. 2011) and the section on demographic modeling of the current report, for more details on the approach used in simulations.

The IPM analysis detailed in the main report was used to produce updated estimates of demographic parameters based on the recent calving ground survey results, recent collar data and other demographic indicators. In addition, harvest pressure was reduced between 2015 and 2018 from levels 2010-2014, thus it is likely that herd decline was less influenced by harvest during the more recent interval. Updated parameter estimates were used in this updated harvest modeling.

The methodology used for simulations followed the original generic harvest model approach (Boulanger and Adamczewski 2016). In review, the harvest model assumes that harvest mortality is additive to natural mortality each year. It assumes that harvest occurs in the new year (January) for both bulls and cows with mortality of cows not affecting calf survival in the year the cow is shot (it basically assumes that the calf has weaned at that point).

We note that the main objective of simulations is to provide an assessment of relative risk of accelerated decline of the herd at various harvest levels as opposed to firm predictions of herd status in 2021. It is challenging to assess future demographic rates and therefore we suggest that the results of simulations be used with ongoing demographic monitoring to assess herd status and response to harvest.

The following simulations were considered. Simulations with estimated cow survival levels in 2018 (minimal harvest, female survival (Sf=0.716: CI=0.6-0.83) were considered across a range of calf productivity levels. This estimate of cow survival assumes low harvest pressure from 2017-2018 so that the difference in natural and harvest-influenced survival is minimal. This assumption is reasonable since harvest levels were relatively low (2015-2016, ≈800 caribou, 2016-2017 ≈300 caribou, 2017-2018 ≈200 caribou) in the 2015-2018 interval.

Variation in productivity was simulated by varying calf survival while keeping fecundity constant. This scenario most closely follows the results of the IPM analysis where fecundity was held constant with yearly variation in calf survival estimated using a random effects model (Figures 33 and 34 in main report). The values of calf survival simulated, and levels of productivity simulated follow the range of values estimated from the 2008-2018 data set. We based the average productivity scenario on the last three years given that this level of productivity will have the higher influence on future herd size of the Bluenose-East herd. We note that the assumption of constant fecundity is based partially on restrictions of the data set (n=4 estimates of proportion females breeding-Figure 32 in main report).

Estimates of demographic parameters in 2018 were relatively similar to those from 2015. The estimate of cow survival in 2018 of 0.716 was similar to that estimated from the 2015 analysis of 0.708. The mean cow survival rate 2015-2018 was 0.76, however the overall trend suggested a declining recent trend in cow survival 2015-2018 and therefore the 2018 estimate was used for simulations. The average level of calf productivity (0.30) from 2015-2018 was slightly higher than the previous average calf productivity of 0.26 (from 2013-2015). The lower calf productivity scenario (0.187) was based on the 2018 estimate of calf productivity. Bull survival in 2018 was estimated at 0.523, which was lower than the estimate of 0.58 in 2015. Simulations were also run at the 2015 bull survival level of 0.58 to assess the sensitivity of estimates of bull cow ratio to this change in bull survival.

Table 1: Demographic scenarios considered in harvest simulations for the Bluenose-East caribou herd in 2018. S_f = cow survival rate; S_c = calf survival rate; S_m = bull survival rate; S_y = yearling survival rate; F_a*S_c = calf productivity as the product of pregnancy and calf survival rates.

Scenario	Productivity	Survival				Pregnancy Rate	λ (cows only)	Stable Age Distribution Proportions at 2018		
	F_a*S_c	Cow (S_f)	Calf (S_c)	Bull (S_m)	Yearling (S_y)	F_a		Calves	Yearlings	Cows
High productivity (95th percentile)	0.455	0.716	0.655	0.523	0.716	0.694	0.870	0.190	0.143	0.666
Average productivity (2015-2018)	0.301	0.716	0.433	0.523	0.716	0.694	0.828	0.206	0.108	0.686
Low productivity (2018)	0.187	0.716	0.270	0.523	0.716	0.694	0.793	0.221	0.075	0.704

As an initial cross check, demographic parameters for the female segment of the population were analyzed using a stage-based matrix model to determine stable age distributions as well as estimate the resulting λ from the matrix model. The average productivity scenario resulted in a rate of decline (deterministic λ=0.83 from a stage-based matrix model of the female segment of the population) which is slightly higher than that observed by comparison of the 2015 and 2018 adult female calving ground survey estimates (λ=0.80). Estimates of trend from the demographic model were slightly higher than the observed difference between calving ground survey estimates, which accounts for this difference. The low productivity (2018) scenario resulted in a λ of 0.79 which is closer to the observed difference in adult female survey estimates.

The herd size estimate for 2018 (19,294) was used as the starting point for simulations with bull and cow numbers based on the fall bull cow ratio of 2018 (0.38). A stable age distribution was assumed. Harvest levels of 0-950 were considered with an additional harvest level of 2,000 to demonstrate the effects of a large-scale harvest. Simulations were kept to a short interval of three years (2018-2021) as the herd's demography has changed dynamically since 2010; In addition, population surveys have been carried out on a three-year interval in recent years. Results of the simulations are shown graphically.

Figure 1 shows projected herd size in 2021 across a range of harvest levels (x-axis) and percent bulls in the harvest. Projections suggest that the herd would almost be halved again in 2021 (top dashed line) to about 10,000 caribou with moderate productivity and 0 harvest, if recent demographic indicators stay the same. As the harvest level increases, the effect on herd size in 2021 increases. At the highest harvest level of 2,000 caribou/year, projected herd size in 2021 approaches 5,000 caribou or about one quarter the size of the 2018 estimate (the second dashed line). A harvest of primarily bulls offsets the effect of harvest to an extent; however, productivity needs to be higher to offset low cow survival rates regardless. The effects of a cow-focused harvest vs. a bull-focused harvest are most evident at higher harvest levels and they increase with time.

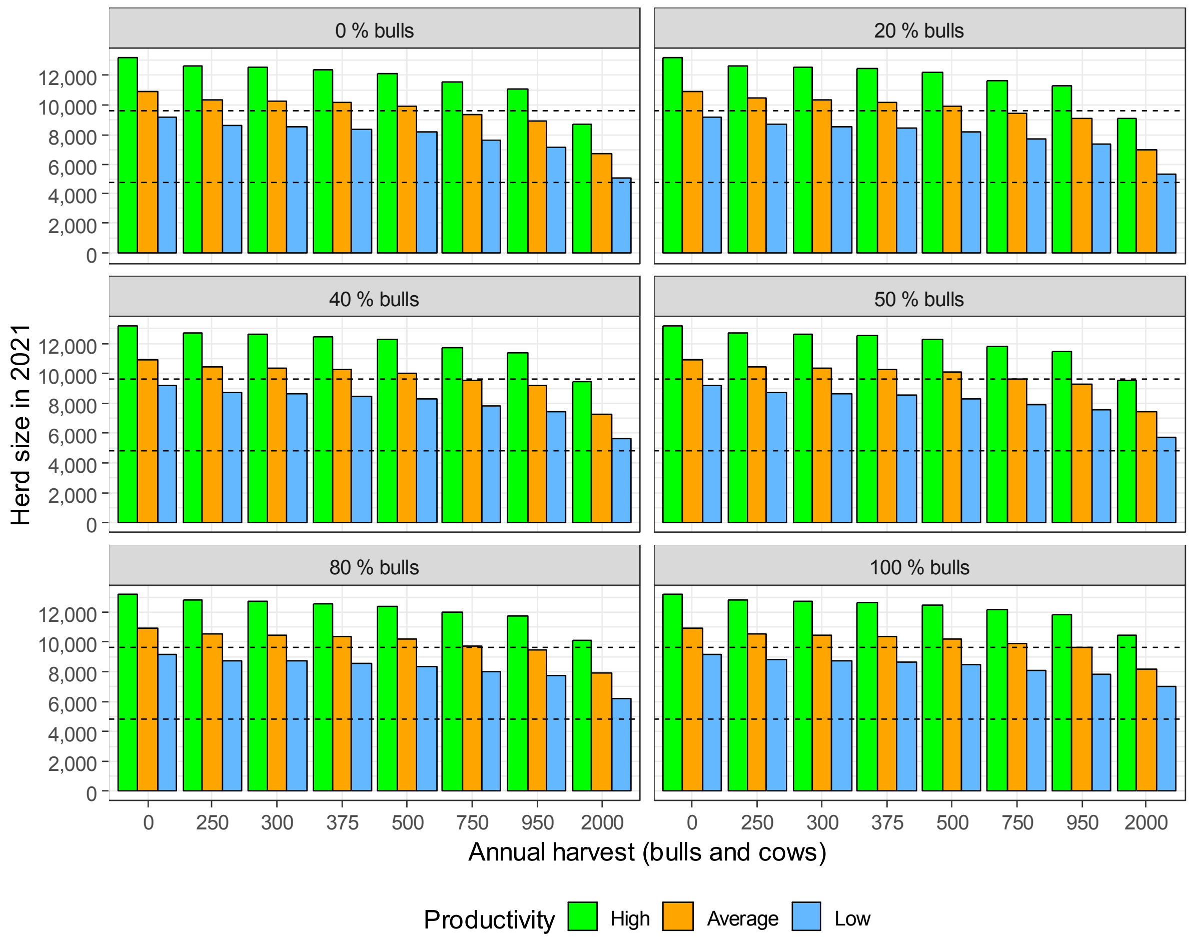

Figure 1: Projected Bluenose-East herd size in 2021, assuming a cow survival of 0.716 and three levels of calf productivity, across a range of harvest levels and percent bulls in the harvest. See Table 1 for the parameterization of each productivity level.

Figure 2 shows herd trajectories from 2018-2021 for each productivity scenario.

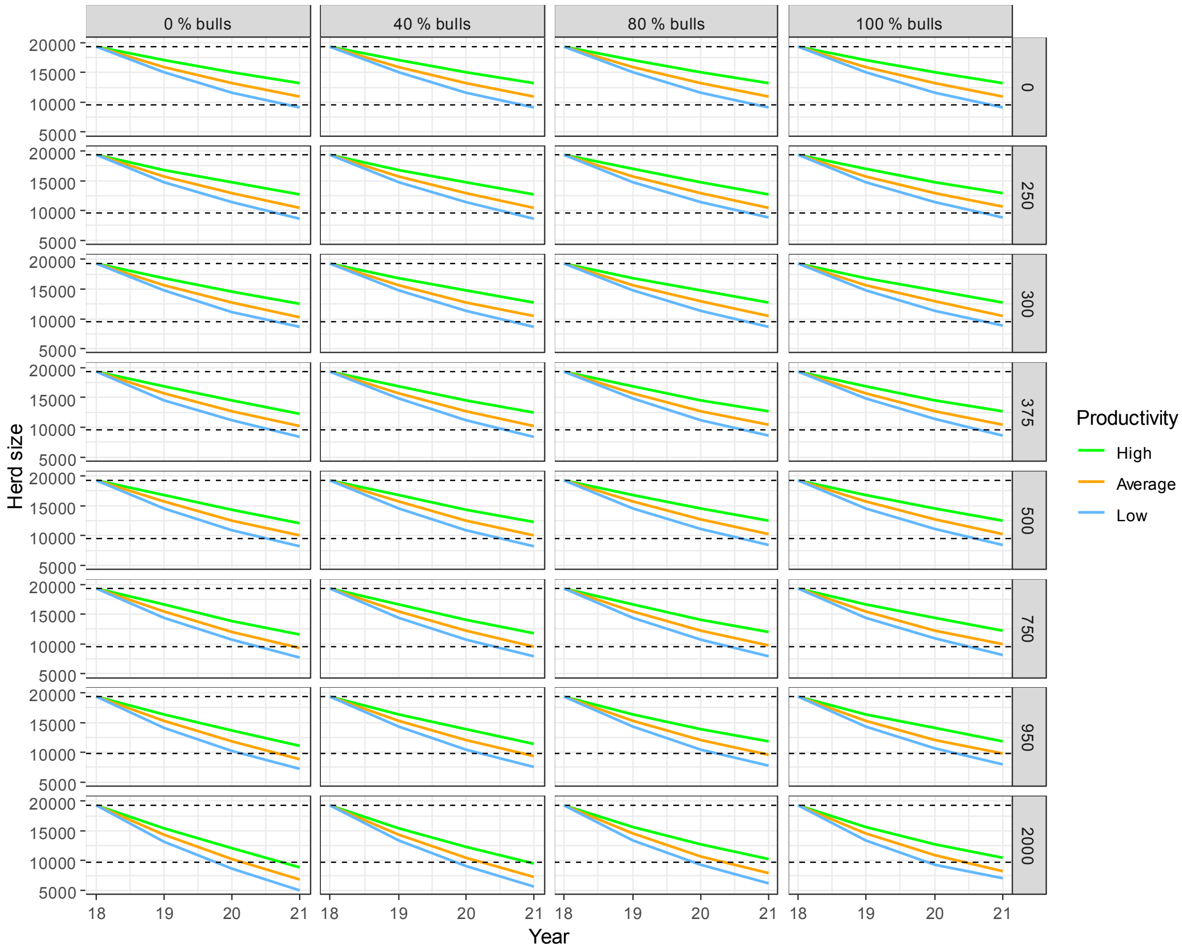

Figure 2: Projected herd trajectories for the Bluenose-East herd 2018-2021 assuming cow survival of 0.716 and three levels of calf productivity across a range of harvest levels and percent bulls in the harvest. See Table 1 for the parameterization of each productivity level.

One important point to consider with bull-dominated harvest is the effect on the bull-cow ratio. Figure 3 demonstrates the quick decline in bull-cow ratio at higher harvest levels when bulls are primarily harvested. The red line in this graph is a bull-cow ratio of 0.23 which is considered a preferred lower limit based roughly on other studies (Mysterud et al. 2002), although it is likely that all females would be bred even if the sex ratio was reduced further (Mysterud et al. 2002). At a harvest level of 300/year, the bull-cow ratio stays between the 2018 level and the lower limit regardless of productivity. When harvest is 2,000 per year, the modeled bull population in essence goes to 0 in 2020 with lower to moderate productivity. The bull cow ratio is inflated due to the decrease in cow numbers if cows are primarily harvested at higher harvest levels; ratios depend on the number in the denominator as well as the number in the numerator. In any case, it is unlikely that harvest of the herd after 2018 will be anywhere near this scale of bull or cow harvest, and increased monitoring proposed for the herd includes frequent (potentially annual) fall composition surveys that will monitor the bull:cow ratio.

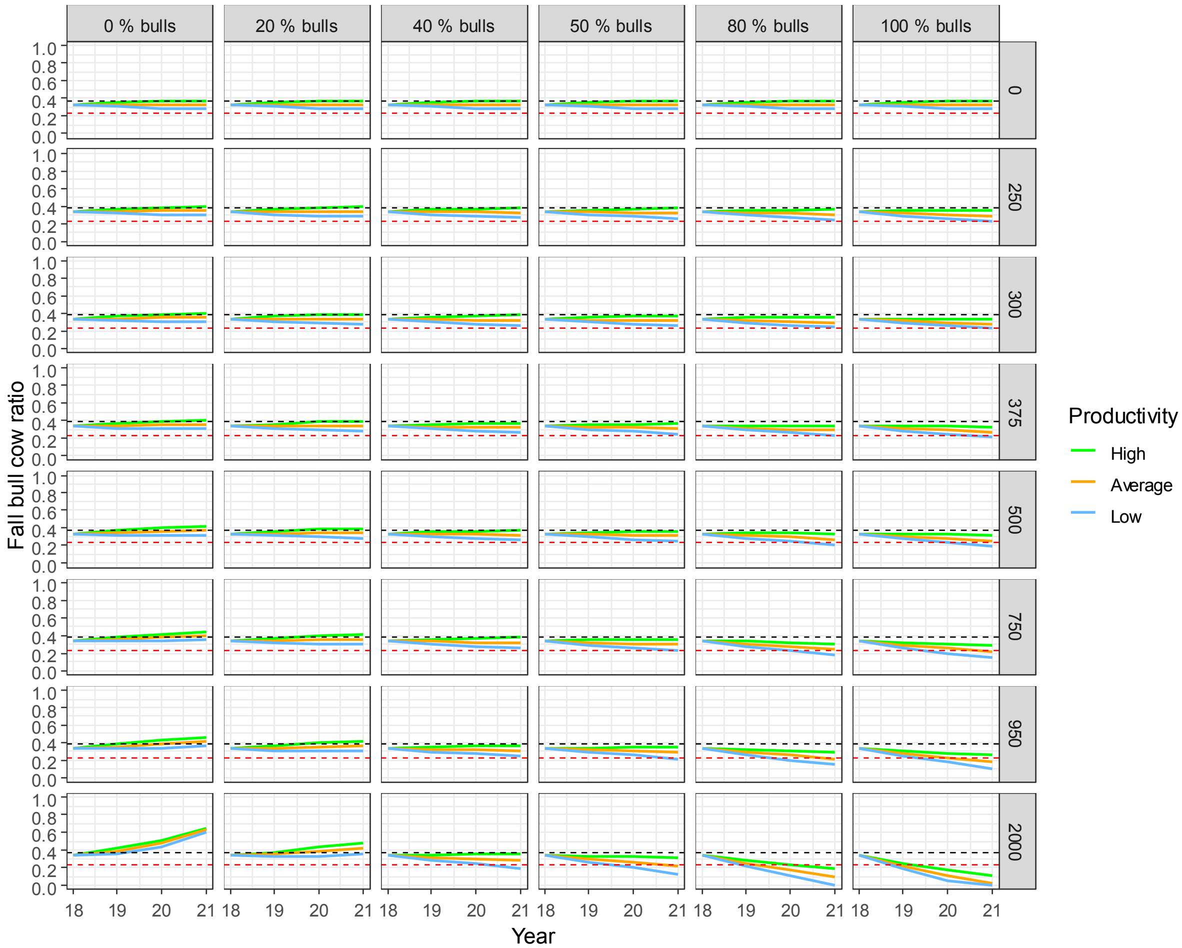

Figure 3: Projected bull-cow ratios in the Bluenose-East herd 2018-2021 assuming cow survival of 0.716 and bull survival of 0.523 and three levels of calf productivity, across a range of harvest levels and percent bulls in the harvest. See Table 1 for the parameterization of each productivity level.

Figure 4 shows predicted bull cow ratios in 2021 for the BNE herd; these are essentially the end-points of the changing ratios shown in Figure 3. Unless calf productivity is high, a reduction in bull cow ratio is projected due to the lower estimate of bull survival (0.523).

Figure 4: Projected bull-cow ratios in the Bluenose-East herd in 2021 assuming cow survival of 0.716 and bull survival of 0.523 and three levels of calf productivity, across a range of harvest levels and percent bulls in the harvest. See Table 1 for the parameterization of each productivity level.

Simulations with the previous slightly higher bull survival estimate of 0.58 from 2015 were also run to assess the sensitivity of harvest model predictions of bull cow ratio to bull survival, to compare results of projections at a bull survival of 0.523. It can be seen that in these simulations the projected bull cow ratios remain similar in 2021 to those observed in 2018 under the no harvest scenario.

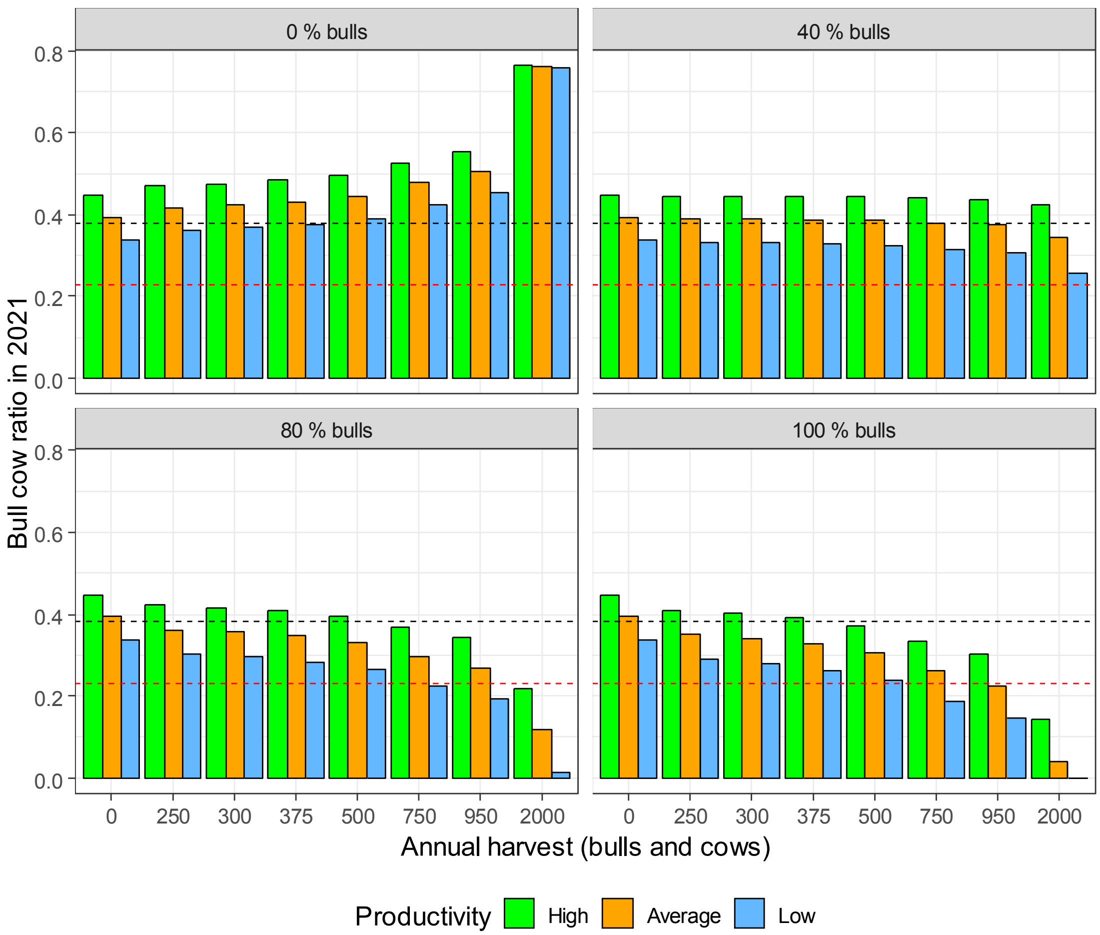

Figure 5: Projected bull cow ratios in the Bluenose-East herd in 2021, assuming cow survival of 0.716 and three levels of calf productivity and a bull survival of 0.58 (value from 2015 demographic model analysis). See Table 1 for the parameterization of each productivity level.

Why Do Low Harvest Levels have Minimal Effect on Herd Trajectories?

One question that has come up is the seemingly minimal effect of lower harvest levels on population trend. The main reason for this is that at these levels a relatively small proportion of the herd is being harvested as demonstrated in Figure 6, and thus harvest accounts for only a small proportion of the herd and mortality rates are predominantly natural. Once harvest level becomes higher (950 or higher) the proportion of the herd harvested increases as the herd declines. If the harvest remains at a constant number of caribou/year and the herd continues to decline, then the incremental effect of the harvest harvest-caused mortality keeps increasing and can lead to a downward acceleration. Then harvest adds substantially to the natural mortality rates. This effect was shown for the Bathurst herd in 2006-2009 (Boulanger et al. 2011), when harvest levels remained at 4,000-6,000/year as the herd declined rapidly. Although all harvest adds to decline if a herd is declining naturally, small-scale harvest rates have small incremental effects on a declining trend.

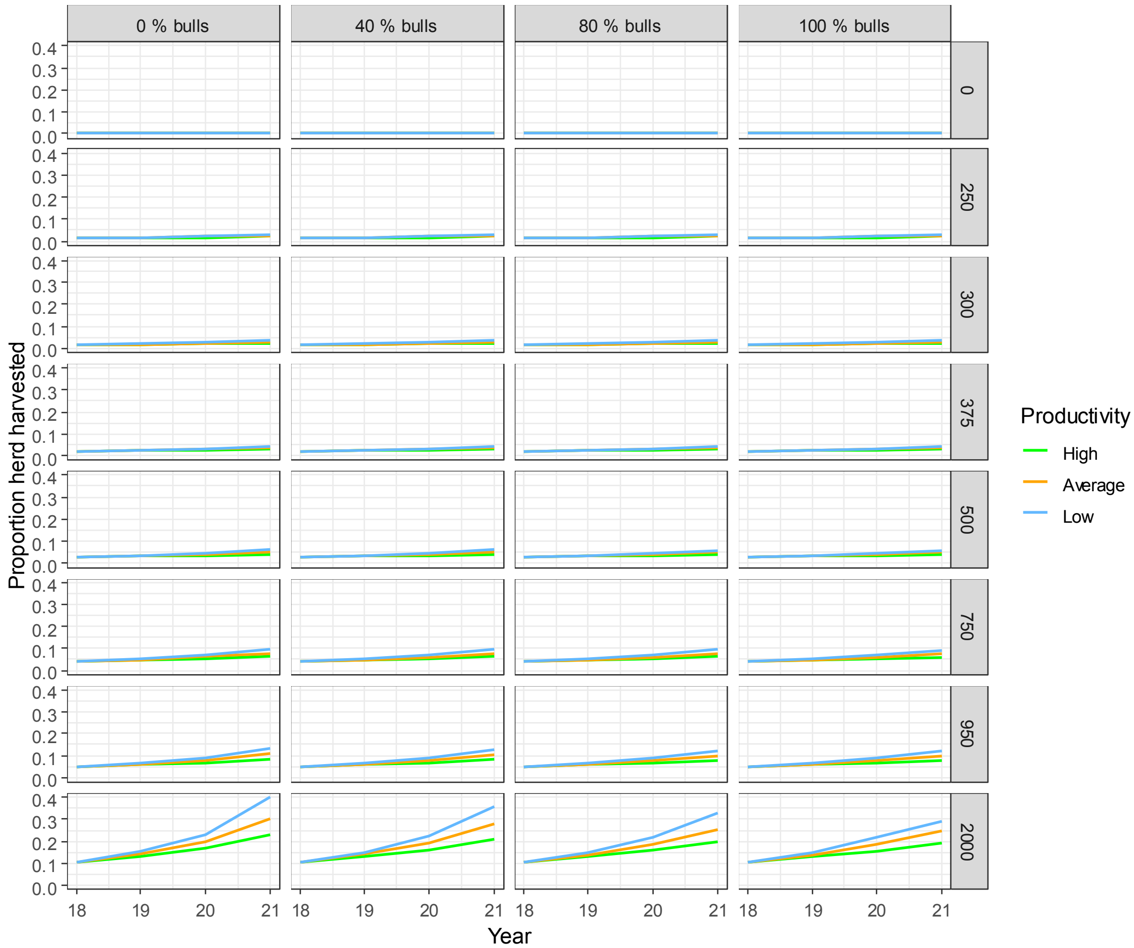

Figure 6: Proportion of the Bluenose-East herd harvested through 2021 across a range of harvest levels and proportion of the bulls in the harvest. See Table 1 for the parameterization of each productivity level.

In Figure 6 it can be seen that the proportion of herd harvested increases at a greater rate when the harvest is primarily cows. The reason for this is that harvest of cows reduces longer-term productivity of the herd through the reduction of future calves each cow would produce. For this reason, it is important to track proportion of cows (cow harvested/total cows) and proportion of bulls harvested (bulls harvested/total bulls) each year rather than just total harvest. Figure 7 provides total herd estimates subdivided by bulls and cows to further illustrate this point. It can be seen that at higher harvest levels (>750) a bull dominated harvest can adversely impact the bull population especially if productivity is low. This impact is also demonstrated by a substantial decrease in bull-cow ratios (Figures 3, 4) when bull harvest is higher.

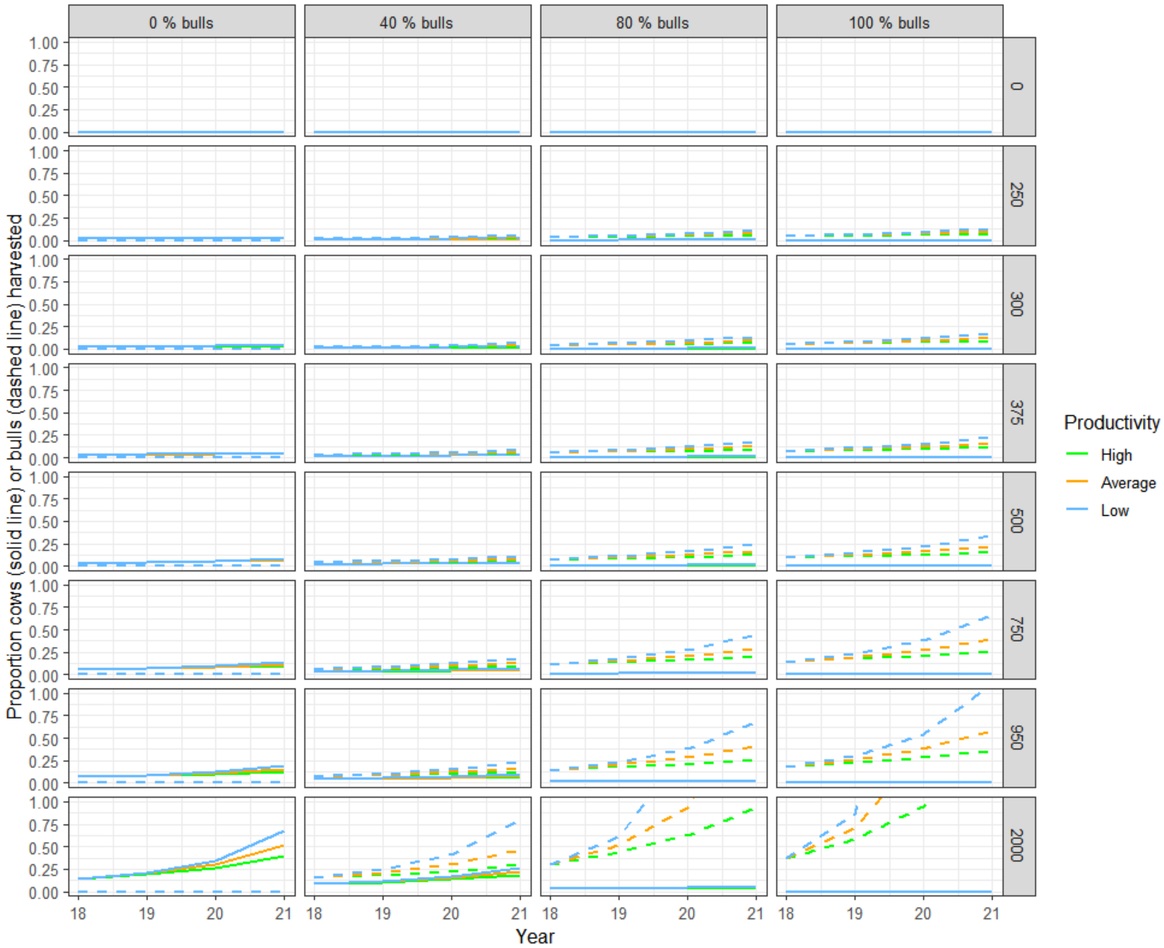

Figure 7: Proportion of bulls and cows harvested for each harvest and productivity scenario. This figure basically summarizes proportion harvested in Figure 6 by bulls and cows. See Table 1 for the parameterization of each productivity level.

Potential Future Analyses

These simulations illustrate the sensitivity of the bull cow ratio estimates to assumed bull survival. Estimates of bull survival from the demographic model are based on bull-cow ratios from fall surveys and are therefore indirect in nature. Collar-based estimates of bull survival could be used to further verify the indirect estimates from the IPM analysis.

Simulations with demographic variation could also be used to generate estimates of herd size in 2021 with confidence limits.

Literature cited (see main survey report).

Appendix 5: Trends in Calving Ground Size and Core Densities

This appendix provides additional information calving ground size, distribution of caribou on calving ground, and core calving ground densities in the Bluenose-East and Bathurst herd calving grounds based on reconnaissance survey and photo survey data. This appendix provides a summary of data from previous surveys as opposed to full documentation of methods used to define core calving areas. Readers should consult previous calving ground survey reports for the Bluenose-East (Adamczewski et al. 2014, Boulanger et al. 2014b, Boulanger et al. 2016, Adamczewski et al. 2017) for more details on each survey.

Methods

Trends in segment densities from reconnaissance surveys that occurred during photo surveys were initially assessed to infer distribution and aggregation of higher densities of caribou. Segments that were contained within core calving strata were included in the analysis. Data was plotted spatially and by segment density class.

Estimates of density based on photo survey data and core calving ground size (based on the area of survey strata) were used to estimate numbers of adult and breeding females. One potential issue with this approach is that the degree of aggregation of adult and breeding females varies among years, and therefore changes in the core area will be due to both changes in abundance, aggregation, and survey coverage. To explore this issue, a scaled estimate of core calving ground size based on the summation of the product of stratum areas and proportions of breeding and adult females was also considered as an index of core calving area. For example, if a 100 km^2 stratum had 20 percent breeding females, then its core area was estimated as 20 km^2. Each survey stratum area was estimated using this approach and summed for the survey year. Density estimates using this approach will be more robust to strata layout and composition each year. For example, this approach avoids the subjective inclusion or exclusion of survey strata areas for estimation of core areas and uses all the survey strata to estimate core area. However, the actual weighted density estimate will not directly pertain to a defined geographic area.

Results

Figure 1 displays reconnaissance segments that defined the core calving areas for the Bluenose-East herd during years that calving ground surveys were conducted (2010, 2013, 2015 and 2018). The distribution of higher density segments showed a trend toward shifting to the northwest over these years. There was also a strong trend toward fewer high density segments (at least 10 caribou/km^2) from 2010-2015, and none in 2018. The high density segments in 2010 to the south of Kugluktuk were partially influenced by higher densities of non-breeding cows, bulls and yearlings in this area.

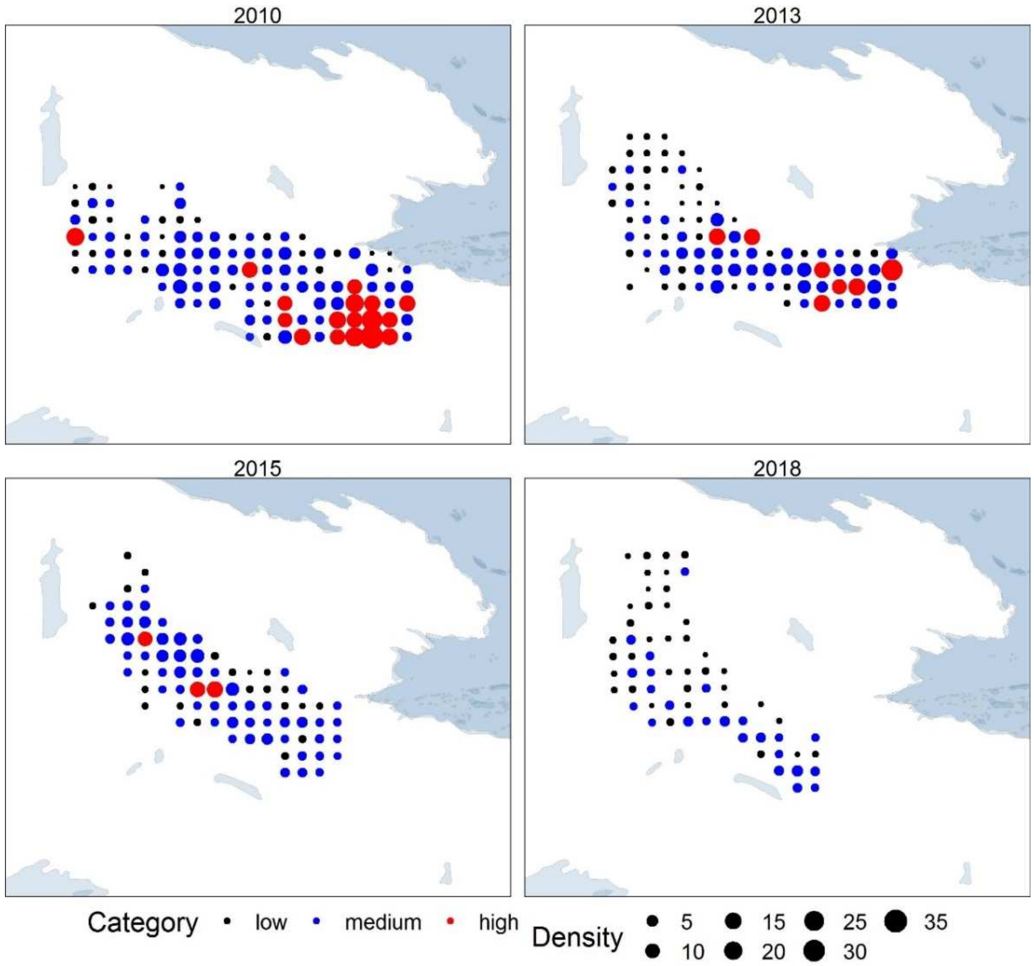

Figure 1: Segment densities in core calving areas for the Bluenose-East caribou herd 2010-2018 from calving photo surveys. Low density = <1 caribou/km^2, medium density = 1-9.9 caribou/km^2, and high density = at least 10 caribou/km^2.

Figure 2 provides a histogram of segment densities from the same Bluenose-East calving ground surveys, further demonstrating the shift to lower density segments.

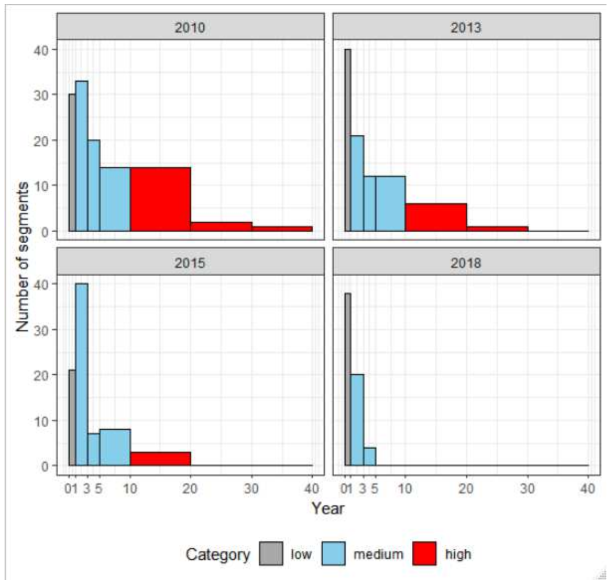

Figure 2: Segment densities in core calving areas for the Bluenose-East caribou herd 2010-2018. Low density = <1caribou/km^2, medium density = 1-9.9 caribou/km^2, and high density = at least 10 caribou/km^2.

A boxplot of the Bluenose-East segment data set shows that the median segment densities were generally <5 caribou per km^2 with the majority of segments being in the medium density category (Figure 3). In 2018 a substantial proportion of the segments were in the low density category of <1 caribou/km^2.

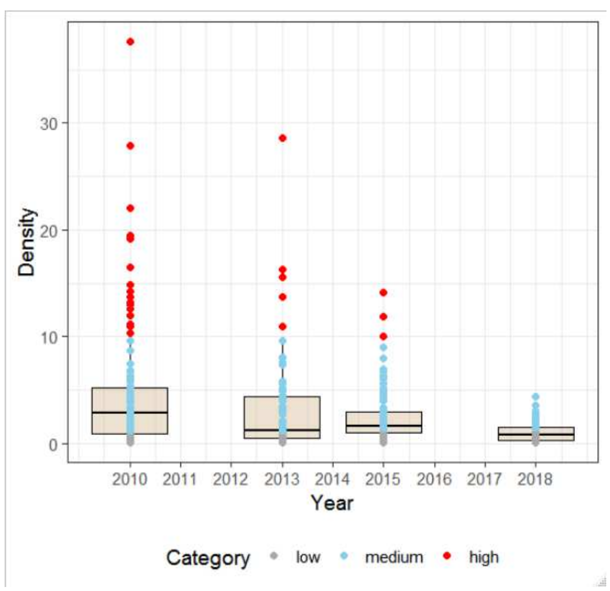

Figure 3: Boxplot of segment densities for the Bluenose-East herd 2010-2018.

Figure 4 shows the total areas of core strata for each year and the weighted area for breeding females and adult females. The weighted area n this case is simply the summation of the product of each stratum area times the proportion breeding females or adult females. Trends estimated using this approach should be less sensitive to differences in survey strata layout and yearly differences in aggregation of females.

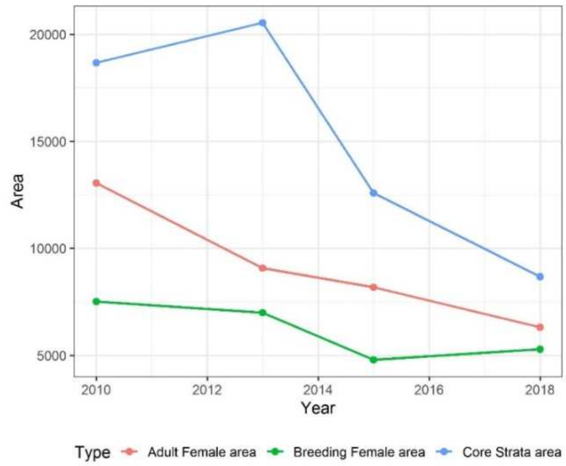

Figure 4: Estimated area of core survey strata, area weighted by proportion of breeding females, and proportion adult females in survey strata for the Bluenose-East caribou herd 2010-2018.

Comparison of the 2010 and 2018 area estimates suggests an overall decrease in area of 46 percent, 48 percent and 70 percent for core strata area, adult female, and breeding female areas. This translates to an annual decrease of 9 percent for core and adult female area and 4 percent for breeding female area. It could be argued that the breeding female area, which will be most affiliated with core densities, is most applicable to overall trends in core calving ground area. Abundance of adult and breeding females decreased at an approximate rate of 20 percent per year (Figure 5) from 2010-2018.

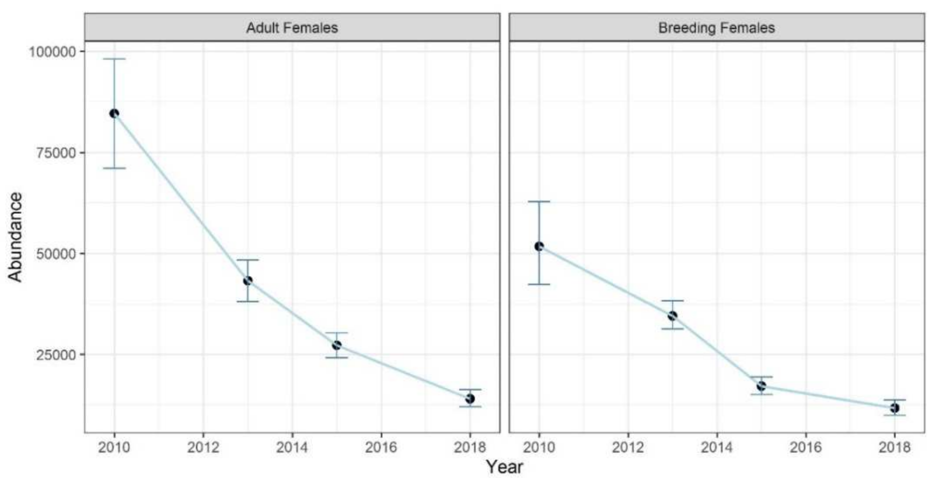

Figure 5: Estimate of abundance of adult and breeding females on core calving areas from 2010-2018 for the Bluenose East herd.

Density was estimated using abundance estimates for adult and breeding females (Figure 5) divided by the associated calving ground area (Figure 4). Comparison of 2010 and 2018 density estimates suggests a gross change in densities of 36 percent and 49 percent for adult and breeding females using strata area (Figure 6). Using weighted areas, the gross change is 34 percent and 32 percent for adult and breeding females. These rates of change translate to annual decreases that range from 9 percent (breeding females using core area) and 13 percent (breeding females using weighted area).

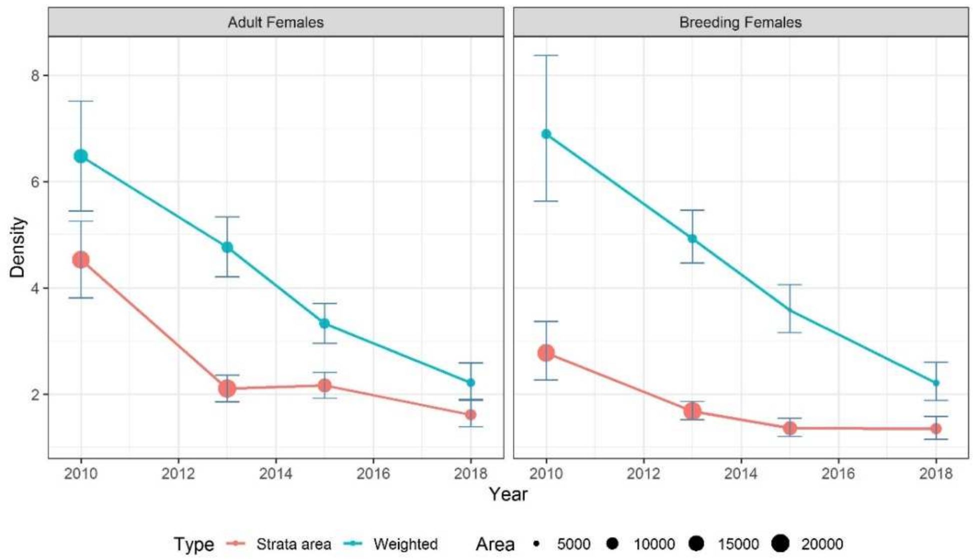

Figure 6: Density (number/km^2) of adult females and breeding females in survey strata using total area (Strata area) and corresponding breeding female or adult female areas, for the Bluenose-East caribou calving grounds 2010-2018. The symbol size is proportional to the calving ground area used to estimate density.

Discussion

Defining the core calving area is challenging due to differences in levels of aggregation of caribou during each survey year. The weighted method used to infer trends in core area attempts to confront this issue by weighting the contribution of survey stratum to the overall estimate of core area by the proportion of adult and breeding females estimated in the given strata. The resulting area estimates are best used to infer trends rather than define an absolute area.

In general, the Bluenose-East herd has not aggregated substantially as the herd size has declined as indicated by similar trends in calving ground area and density (Figure 6). Using breeding females as an indicator, the breeding female weighted core area decreased annually by 4 percent with densities decreasing by 9 percent. This general trend suggests that caribou are not aggregating into smaller areas to maintain higher densities as observed with the Bathurst herd in 2012 (Boulanger et al. 2014c).

Alternative methods such as use of collared caribou locations could be used to further infer core areas. This type of analysis could be useful for the 2018 survey year when the core area was mainly defined in a single small area. This type of analysis is beyond the scope of this report but could be pursued in the future.

Literature cited (see main survey report).

ᐊᔾ ᓱᒋᕐᕆ ᓂᖅᑦ ᓄᕐᕆᕖᑦ ᐊᒻᒪᓗ ᓄᕐᕆᐊᓂᒃᑎᓪᓗᒋᑦ ᐊᔾᓱᓕᐅᖅᑕᐅᓯᒪᔪᑦ ᖁᕐᓗᖅᑑᑉ ᓄᓇᖅᐱᖓᑕ ᑲᓇᖕᓇᖓᓂ ᓇᕚᖅᑐᖃᖅᑎᑦᑐᕐᒥᐅᑦ ᑐᒃᑐᖅᑎᖕᓂ ᑲᓇᑕᐅᑉ ᐅᐊᖕᓇᖓᓂ ᐊᕐᕋᒍᒥ 2010

ᔮᓐ ᐊᑕᔾ ᔫᔅ ᑭ -Jan Adamczewski, ᔮᓐ ᐳᓛᓐ ᔾ -John Boulanger, Bᐅᕈᓅᑲᕝᑦ -Bruno Croft, ᑐᕌᓯ ᑎᕕᓴᓐ -Tracy Davison, Hᐃᐊᑐᓴ ᐃᔾᓐ -ᑯᕌᕗᑦ -Heather Sayine-Crawford, ᐊᒻᒪᓗ Bᐅᐃᔭᓐᑐᕌᔅ -Boyan Tracz. 2017-ᒥ. ᑲᓇᑕᒥ ᐅᑦ ᐆᒪᔪᓕᕆᔾᑦ ᐊᒻᒪᓗ ᐊᐅᓚᑦ ᑎᔾᖏ 6: 4-30.

ᓇᐃᓈᖅᑕᐅᓯᒪᓪᓗᑎᒃ ᐅᓂᒃ ᑳᓕᐊᑦ
ᒪᕐᕈᙵᓂᒃ ᐊᔾᓱᓕᐅᖅᑕᐅᖃᑦ ᑕᕐ ᓂᐅᔪᓂᒃ ᖃᐅᔾᓴᕿᓯᖃᕐ ᒪᑕᑲᓇᑕᐅᑉ ᐅᐊᖕᓇᖓᓂ ᓄᓇᑦᓯᐊᕐᒥ ᐊᒻᒪᓗ ᓄᓇᕗᒻᒥ ᐊᑐᖅᑕᐅᕙᒃ ᑐᓂᒃ ᓇᓚᐅᑖᕿᑕᐅᓂᕐ ᒍᑦ ᑐᒃ ᑐᐃᑦ ᐊᒥᓲᓂᖕᓂᒃ ᓇᕚᖅᑐᖃᖅᑐᓂᑐᒃ ᑐᓂᒃ. ᑕᐃᒃ ᑯᐊᓄᕐ ᓇᕕᖕᓂᐊᔾᓱᓕᐅᖅᑕᐅᓯᒪᔪᑦ ᓇᓚᐅᑦ ᑕᕿᑕᐅᕙᒃ ᑐᑦ ᐊᒥᓲᓂᖕᓂᒃ ᐊᕐ ᓇᓪᓗᐃᑦ ᓄᕐᓇᕙᒃ ᑐᑦ ᓄᕐᓇᕕᖕᓃᑉᐸᒃ ᑐᑦ ᑖᒃᓂᔫᓐᒥ ᐊᐅᔭᒃᑯᑦ ᐊᒻᒪᓗ ᓇᓚᐅᑖᖅᑕᐅᔪᓐᓇᖅᓯᑎᒃ ᐊᒥᓲᓂᖏ ᑐᒃ ᑐᐃᑦ ᓄᕐᓇᕕᖕᓃᖕᖏ ᒥᔪᓂᒃ ᐊᑐᖅᓯᑎᒃ. ᓄᕐ ᕋᖃᓕᐊᓂᒃ ᑎᓪᓗᒋᑦ ᐊᔾᓱᓕᐅᖅᑕᐅᓚᐅᖅᑐᑦ ᔪᓚᐃᒥ ᐊᒥᓲᓂᖅᓵ ᓘᓂᖕᖏ ᓂᑐᒃ ᑐᐃᑦ ᐊᔾᓱᓕᐅᖅᑕᐅᔪᓐ ᓇᕐ ᓂᖕᖏ ᓂᐊᕕᒃ ᑐᖅᓯᒪᔪᓂᐆᒃ ᑐᕋᐃᕕᐅᑎᑕᐅᔪᓂ ᐊᒻᒪᓗ ᓈᓴᖅᑕᐅᔪᓐ ᓇᕐ ᓂᖕᖏ ᓂᓴᕿᑎᑦ ᑎᔪᓐ ᓇᖅᐳᑦ. ᑕᒪᐃᓐ ᓂᒃ ᖃᐅᔾᓴᖃᑦ ᑕᖅᓯᒪᓕᖅᑐᒍᑦ ᖁᕐ ᓗᖅᑑᑉ ᓄᓇᖅᐱᖕᑕ ᑲᓇᖕ ᓇᖕᓂ ᓇᕚᖅᑐᖃᖅᑐᕐ ᒥᐅᑦ ᑐᒃ ᑐᖕᖏ ᓂᒃ ᑖᓂ 2010-ᒥ ᓄᓇᕗᒻᒥ ᐊᒻᒪᓗ ᓴᕿᑎᑦ ᑎᓯᒪᓪᓗᑕ ᓴᓂᓕᓅᒃ ᑐᓂᒃ ᑕᑯᒃ ᓴᐅᔪᓂᒃ ᐊᔾᓱᒋᖕᖏ ᓂᖕᖏ ᓂᒃ. ᓄᕐ ᓇᕕᖕ ᓃᓐ ᓂᖕᖏ ᓂᐊᔾ ᓱᓕᐅᖅᑕᐅᓚᐅᖅᑐᑦ ᐱᒋᐊᓕᓵᕐ ᓂᖕᖏ ᓂᔫᓐᒥ ᐊᒥᓲᓂᖕᖏ ᓂᒃ ᓴᕿᑎᑦ ᑎᓚᐅᖅᑐᑦ ᐃᒪᓐ ᓇᐃᓕᖕᖁᓂᒃ ᓇᓚᐅᑖᖅᑕᐅᓯᒪᔪᓂᒃ ᓇᓴᐅᑎᓕᖕᓂ 51,757 ± ᐊᒥᔅ ᓲᓂᖅᓴᐅᓂᖃᕈᓐ ᓇᖅᓯᑎᒃ ᐅᕝ ᕙᓘᓐ ᓃᑦ ᐊᒥᔅ ᓲᖕᖏᓂᖅᓴᐅᓂᖃᕈᓐ ᓇᖅᓯᑎᒃ 11,092 (95% ᐳᓴᓐ ᑎᖕᖏᓃᑦ ᑐᑦ ᓇᓗᓇᕐ ᓂᓖᑦ) ᐱᑕᖃᕐ ᓂᖕᖏ ᓄᓕᐊᕈᓐ ᓇᖅᑐᑦ ᐊᕐ ᓇᓪ ᓗᐃᑦ ᓄᕐ ᓇᕕᖕᖏᓃᑦ ᑐᑦ ᓄᓇᒥ. ᓇᓚᐅᑖᓚᐅᖅᑐᒍᑦ ᑖᓂᓐ ᓂᖕᖏ ᓂᒃ ᓈᓴᐅᑎᓕᖕᓂ 114,472 ± ᐊᒥᔅ ᓲᓂᖅᓴᐅᓂᖃᕈᓐ ᓇᖅᓯᑎᒃ ᐅᕝ ᕙᓘᓐ ᓃᑦ ᐊᒥᔅ ᓲᖕᖏᓂᖅᓴᐅᓂᖃᕈᓐ ᓇᖅᓯᑎᒃ 15,845 ≥ ᐅᖓᑖᓃᑦ ᑐᓂᒃ ᓇᓕᖅᑲᖕᖏ ᓂᑐᓂᓗᓐ ᓃᑦ 1 ᐊᑕᐅᓯᕐᒥᒃ ᐅᑭᐅᓖᑦ ᑐᒃ ᑐᖕᖏ ᐊᔾᓱᓕᐅᖅᑕᐅᓯᒪᓂᖕᖏ ᓂᒃ ᐊᒻᒪᓗ ᑕᑯᔭᐅᓪᓗᑎᒃ ᓈᓴᖅᑕᐅᖃᑕᐅᓚᐅᖅᑐᑦ ᔩᓐᒥ ᖃᐅᔾᓴᖅᑕᐅᓕᕐ ᒪᑕ. ᓇᓚᐅᑖᖅᑕᐅᓯᒪᓂᖕᖏ ᓄᓕᐊᕈᓐ ᓇᖅᑐᑦ ᐊᕐ ᓇᓪ ᓗᐃᑦ ᐃᒪᓐ ᓇᐃᓕᖕᖑᓇᓯᕆᔭᐅᕗᑦ ᑕᒪᕐᒥᒃ ᑲᑎᓪᓗᒋᑦ ᑐᒃ ᑐᖕᖏ ᓇᓚᐅᑦ ᑖᖅᑕᐅᓯᒪᔪᑦ ᑖᓃᓐ ᓂᖅ 105,326 ± ᐊᒥᔅ ᓲᓂᖅᓴᐅᓂᖃᕈᓐ ᓇᖅᓯᑎᒃ ᐅᕝ ᕙᓘᓂᑦ ᐊᒥᔅ ᓲᖕᖏᓂᖅᓴᐅᔪᓐ ᓇᖅᓯᑎᒃ 40,984 ≥ ᐅᖓᑖᓃᑦ ᑐᓂᒃ ᓇᓕᖅᑲᖕᖏ ᓂᑐᓂᓗᓐ ᓃᑦ ᒪᕐᕈᙵᓂ 2 ᐅᑭᐅᓖᑦ ᑐᒃ ᑐᐃᑦ ᐊᑐᖅᓯᑎ ᓇᓚᐅᑖᕿᑎᖕᖏ ᓂᒃ ᐊᕕᒃ ᑐᖅᓯᒪᓂᖕᖏ ᐊᕐ ᓇᓪ ᓗᐃᓪ ᓗ ᐊᖑᑦᓴᓪ ᓗᐃᓪ ᓗ ᐊᒻᒪᓗ ᐃᑉ ᓕᐊᓖᑦ; ᐊᓯ ᖕᖑᖕᖏ ᓂᒃ ᓇᓚᐅᑖᖅᑕᐅᓯᒪᓕᖅᑐᑦ ᐊᒥᓲᓂᖕᖏ ᐃᒪᓐ ᓇ 120,880 ± ᐊᒥᔅ ᓲᓂᖅᓴᐅᓂᖃᕈᓐ ᓇᖅᓯᑎᒃ ᐅᕝ ᕙᓘᓐ ᓃᑦ ᐊᒥᔅ ᓲᖕᖏᓂᖅᓴᐅᓂᖃᕈᓐ ᓇᖅᓯᑎᒃ 13,398 ≥ ᐅᖓᑖᓃᑦ ᑐᓂᒃ ᓇᓕᖅᑲᖕᖏ ᓂᑐᓂᓗᓐ ᓃᑦ ᒪᕐᕈᙵᓂ 2 ᐅᑭᐅᓖᑦ ᑐᒃ ᑐᐃᑦ ᐊᒥᔅ ᓲᓂᖕᖏ ᑐᑭᓕᐅᖅᑕᐅᓯᒪᓕᖅᑐᓂᒃ ᒪᓕᒃ ᓯᑎᒃ ᓇᓚᐅᑖᖅᑕᐅᓯᒪᓂᖕᖏ ᓂᓄᕐ ᓇᓯᒪᔪᑦ ᐊᕐ ᓇᐃᓪ ᓗ ᐊᒻᒪᓗ ᐊᖑᑦᓴᓪ ᓗᐃᓪ ᓗ ᐊᕐ ᓇᓪ ᓗᐃᓗ ᐊᒥᓯᓂᖕᖏ. ᓈᓴᖅᑕᐅᖃᒥᒃ ᑐᒃ ᑐᐃᑦ ᐊᕕᒃ ᑐᖅᓯᒪᓂᖕᖏ ᔪᓚᐃᖑᑎᓪᓗᒍ ᓴᕿᓚᐅᖅᑐᑦ ᑕᒪᕐᒥᒃ ᑲᑎᓪᓗᒋᑦ ᐊᒥᔅ ᓲᓂᖅᑲᕐ ᓂᖅ 92,481-ᓂᒃ ᑐᒃ ᑐᖕᖏ ᑕᒪᓃ ≥ ᐅᖓᑖᓃᑦ ᑐᓂᒃ ᓇᓕᖅᑲᖕᖏ ᓂᑐᓂᓗᓐ ᓃᑦ ᐊᑕᐅᓯᕐᒥᒃ 1 ᐅᑭᐅᓖᑦ ᑐᒃ ᑐᐃᑦ ᐊᕕᒃ ᑐᖅᓯᒪᔪᓂ 39-ᖏᓃᑦ ᑐᓂᒃ ᑲᑎᖕᖓᐅᖅᑐᓂ. ᓇᓚᐅᑦ ᑖᖅᑕᐅᓂᖕᖏ ᑐᒃ ᑐᐃᑦ ᐊᒥᓲᓂᖕᖏ ᐊᑐᖅᑕᐅᓪᓗᑎᒃ ᖃᐅᔾᓴᕿᔫᑦ ᑕᐃᔭᐅᔪᑦ ᓕᓐᑲᓐ -ᐱᑐᓴᓐᒥᒃ -Lincoln-Petersen ᑐᑭᓕᐅᕈᑕᐅᓚᐅᖅᑐᑦ ᑕᒪᓃᓐ ᓂᖕᖏ ᓂᒃ 98,646 ± ᐊᒥᔅ ᓲᓂᖅᓴᐅᓂᖃᕈᓐ ᓇᖅᓯᑎᒃ ᐅᕝ ᕙᓘᓂᑦ ᐊᒥᔅ ᓲᖕᖏᓂᖅᓴᐅᔪᓐ ᓇᖅᓯᑎᒃ 13,965 ≥ ᐅᖓᑖᓃᑦ ᑐᓂᒃ ᓇᓕᖅᑲᖕᖏ ᓂᑐᓂᓗᓐ ᓃᑦ ᐊᑕᐅᓯᕐᒥᒃ 1 ᐅᑭᐅᓖᑦ ᑐᒃ ᑐᐃᑦ ᐊᒻᒪᓗ ᓇᓚᐅᑖᖅᑕᐅᓚᐅᖅᓯᑎᒃ ᐊᑐᖅᓯᑎᒃ ᖃᐅᔾᓴᕿᑎᓂᒃ ᓈᓴᐅᓯᓇᔾ ᔪᑎᓂᒃ ᑕᐃᔭᐅᔪᓂᒃ ᓇᕕᐊᔅᑦ -Rivest ᐊᒥᓲᓂᕋᐃᓚᐅᖅᑐᑦ ᐃᒪᓐ ᓇᑎᒋ 122,697 ± ᐊᒥᔅ ᓲᓂᖅᓴᐅᓂᖃᕈᓐ ᓇᖅᓯᑎᒃ ᐅᕝ ᕙᓘᓐ ᓃᑦ ᐊᒥᔅ ᓲᖕᖏᓂᖅᓴᐅᓂᖃᕈᓐ ᓇᖅᓯᑎᒃ 31,756-ᓂᒃ ≥ ᐅᖓᑖᓃᑦ ᑐᓂᒃ ᓇᓕᖅᑲᖕᖏ ᓂᑐᓂᓗᓐ ᓃᑦ ᐊᑕᐅᓯᕐᒥᒃ 1 ᐅᑭᐅᓖᑦ ᑐᒃ ᑐᐃᑦ. ᑕᐃᒃ ᑯᐊ ᓈᓴᐅᓯᓇᔾ ᔫᑎᑦ ᑕᐃᔭᐅᔪᑦ ᓇᕕᐊᔅᑦ ᒥᒃ -Rivest ᐊᑐᖅᓯᑎᒃ ᖃᓂᓛᖑᓇᓯᕆᔭᐅᕗᑦ ᑕᒪᐃᓐ ᓂᒃ ᑐᒃ ᑐᐃᑦ ᐊᒥᓲᓂᕆᔭᖅᑕᖕᖏ ᓂᒃ ᓯᓕᔪᒥᒃ (ᑕᒪᕐᒥᒃ ≥ ᐅᖓᑖᓃᑦ ᑐᓂᒃ ᓇᓕᖅᑲᖕᖏ ᓂᑐᓂᓗᓐ ᓃᑦ ᐊᑕᐅᓯᕐᒥᒃ 1 ᐅᑭᐅᓕᑦ ᑐᒃ ᑐᖕᖏ ᓂᒃ). ᐊᔾᓱᒋᖕᖏ ᓂᖕᖏ ᓴᖕᖏ ᓂᖃᕐ ᓂᖕᖏ ᐊᒻᒪᓗ ᐃᓱᖃᕐ ᓂᖕᖏᓂᓪ ᓗᒪᕐᕈᙵᓂᒃ ᑖᒃ ᑯᓇᖓᖃᐅᔾᓴᖃᑦᑕᐅᓯᒪᔪᑦ ᑐᑭᓕᐅᕈᑕᐅᔾᔪᓐ ᓇᕐ ᓂᖕᖏ ᓄᑦ ᐊᑐᖅᑕᐅᔾᔪᓐ ᓇᕐ ᓂᖅ ᐊᐅᓚᑦ ᑎᔾᔪᓐ ᓇᕐ ᓂᕐ ᒧᑦ.

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Original Research

A Comparison of Calving and Post-calving Photo-surveys of the Bluenose-East Herd of Barren-ground Caribou in Northern Canada in 2010

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Abstract

Two photographic survey methods have long been used in Canada's Northwest Territories and Nunavut to estimate herd size in migratory barren-ground caribou herds (*Rangifer tarandus groenlandicus*). The calving photo-survey provides an estimate of the abundance of breeding females on the calving grounds in June and can be extrapolated to an estimate of herd size to account for caribou not on the calving grounds. The post-calving photo-survey is carried out in July when large dense groups of caribou formed in response to insects can be photographed and counted. We carried out both surveys for the Bluenose-East caribou herd in 2010 in Nunavut to provide a side-by-side comparison.

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The calving photo survey in early June produced an estimate of 51,757 ± 11,092 (95% Confidence Interval) breeding females on the calving grounds. We estimated 114,472 ± 15,845 ≥1-year-old caribou from the photographed and visually counted June survey strata. The estimate of breeding females was extrapolated to a herd size of 105,326 ± 40,984 ≥2-year-old caribou using estimates of sex ratio and pregnancy rate; an alternate extrapolation of 120,880 ± 13,398 ≥2-year-old caribou was derived from strata-based estimates of cows and an estimate of sex ratio. Counts of photographed caribou aggregations in July resulted in a total of 92,481 ≥1-year-old caribou in 39 groups. An estimate of herd size using a Lincoln-Petersen formula was 98,646 ± 13,965 ≥1-year-old caribou and an estimate using the Rivest estimator was 122,697 ± 31,756 ≥1-year-old caribou. The Rivest-derived estimate was likely closest to true herd size (all ≥1-year-old caribou). We compared strengths and limitations of the 2 survey methods, and their applicability for management.

Key Words: Barren-ground Caribou, Calving, Photo-survey, Population Estimate, Post-calving.

INTRODUCTION

Estimating population size in migratory caribou (*Rangifer tarandus*) herds that may number more than half a million (Bergerud *et al.* 2008) remains challenging in the 21st century. Two photographic surveys have been used since the 1980s in the Northwest Territories (NT) and Nunavut (NU) in northern Canada to estimate population size in migratory barren-ground caribou (*R. t. groenlandicus*) herds. Calving photo-surveys in June (Heard 1985) and post-calving photo-surveys in July (Valkenburg *et al.* 1985) take advantage of caribou aggregating spatially at a time when there is good separation between herds. Calving photo-surveys have been used more for eastern herds in NT and NU (Williams 1995; Nishi *et al.* 2007; Campbell *et al.* 2010). Post-calving photo-surveys have been used more for western herds in NT and NU (Patterson *et al.* 2004; Nagy and Johnson 2006), Alaska (Harper 2013), and Québec (V. Brodeur, 2016, Government of Québec, personal communication). A side-by-side comparison of the 2 methods had not been previously carried out in NT and NU, and was recommended by an independent review of the Government of Northwest Territories (GNWT) barren-ground caribou program (Fisher *et al.* 2009).

Calving photo-surveys, the first of the 2 methods, are carried out near the peak of calving in June and provide estimates of the abundance of breeding females on the calving grounds (Heard 1985; Nishi *et al.* 2007; Campbell *et al.* 2010). Movement rates of cows with newborn calves are limited, reducing the likelihood of movements inside or outside the survey area (Gunn *et al.* 2005). The survey area is defined by previous knowledge of a herd's calving grounds, recent locations of radio-collared cows, and extensive systematic reconnaissance flights that define the full distribution of breeding females. In the early years of calving photo surveys, surveys were completed without radio-collared caribou (e.g., Heard and Jackson 1990). However, calving may sometimes occur south of normally used calving grounds in years of late snowmelt (e.g., Porcupine herd in 2000 and 2001, Griffith *et al.* 2002), thus a sample of radio-collared cows in June is key confirmation that the bulk of the herd's cows are within the survey area.

Survey strata are defined on the calving grounds based on patterns of spatial aggregation and relative densities and composition of caribou observed during systematic reconnaissance flights. A photo plane flies transects of continuous photos over the higher-density strata with breeding cows at ground coverage of at least 30-40% (Heard 1985; Gunn *et al.* 2005; Nishi *et al.* 2007; Boulanger *et al.* 2014) and caribou are counted on the photos. Lower-density strata are re-flown by visual strip-transect methods. A ground and helicopter-based composition survey in all strata provides a precise estimate of the proportion of breeding females and of other sex and age classes in the survey area. The counts and composition percentages from each stratum are combined to derive an estimate of the number of breeding females on the calving ground (Gunn *et al.* 2005; Nishi *et al.* 2007; Boulanger *et al.* 2014).

Because most of the bulls and some of the yearlings and non-pregnant cows are not on the calving grounds in June, an extrapolation has been used to account for the missing caribou to derive an estimate of overall herd size (Heard 1985; Heard and Williams 1990). An estimate of sex ratio from fall composition surveys is used to account for the bulls, and an estimate of pregnancy rate is used to account for non-pregnant breeding-age cows (Heard 1985; Heard and Williams 1990; Nishi *et al.* 2007; Campbell *et al.* 2010). Since the 2010 Bluenose-East (BE) herd June survey described in this paper, a revised approach to accounting for breeding and non-breeding females on the calving ground survey area was first used by Campbell *et al.* (2016) for a 2014 calving photo survey of the Qamanirjuaq herd and more recently for a 2015 survey for the BE herd (Boulanger *et al.* 2016). This approach uses the estimated totals of breeding and non-breeding females on the June survey area directly, and a correction based on sex ratio is applied to account for bulls. We refer to the earlier extrapolation method as A, and the more recent one as B.

The large variance on early surveys of this type and the extrapolation calculations have led some biologists (Thomas 1998; Rivest *et al.* 1998) to question the value of the calving photo-survey as a method of counting caribou. Over the years, however, careful attention to allocation of survey effort has reduced the variance on estimates of breeding females (Nishi *et al.* 2007; Campbell *et al.* 2010; Boulanger *et al.* 2014). Biologists using this survey have emphasized that the method is repeatable and provides a reliable and relatively precise way of monitoring size and trend in the abundance of breeding cows, which are key demographic variables for the herd (Boulanger *et al.* 2011).

Post-calving photo-surveys are the second of the 2 survey methods and are usually carried out in early to mid-July when warm weather may lead caribou to aggregate in large groups of hundreds or thousands in response to biting flies. These groups can be photographed from small fixed-wing aircraft or helicopters and the caribou counted on the photos (Valkenburg *et al.* 1985; Patterson *et al.* 2004; Nagy and Johnson 2006; Alaska Fish and Game 2011). Groups of caribou without radio-collars are also photographed and counted. This survey includes male and female caribou in the herd that are at least 1 year old. In some surveys it is possible to count calves of the year (V. Brodeur, 2016, Government of Québec, personal communication). In the NT, the experience has been that some calves of the year are not always visible in tightly bunched groups of caribou, thus only ≥1-year-old caribou are counted (e.g., Nagy and Johnson 2006).

The post-calving survey depends on having adequate numbers of radio-collared caribou to find the groups (Valkenburg *et al.* 1985; Rivest *et al.* 1998; Rettie 2008), particularly because movement rates in July can be high due to biting flies and caribou may use large ranges during this season. The survey area is essentially defined by flying to the radio-collared caribou, with additional groups of caribou (without radio-collars) generally found incidentally near groups with radio-collars or en route flying to radio-collared caribou. Post-calving surveys appear capable of enumerating nearly the entire herd under the right field conditions with herd-wide aggregation and with adequate radio-collar numbers (e.g., post-calving surveys of the Western Arctic Herd in Alaska with 90-100 radio-collars; Alaska Fish and Game 2011; Harper 2013).

Post-calving surveys, like calving photo-surveys, have their limitations. Caribou may not aggregate tightly if the July weather has cool, wet or windy conditions when biting flies are less active. If the caribou are well dispersed, photography is not feasible and the survey fails. Post-calving surveys were attempted for the Porcupine herd annually from 2004 to 2010 and failed due to weather and insufficient caribou aggregation (Porcupine Caribou Management Board, www.taiga.net/pcmb/population.html). A further limitation of this survey is that estimation of caribou groups missed during the survey is difficult. If there are many small groups of caribou during post-calving (e.g., BE herd in 2000, Patterson *et al.* 2004), then a large number of radio-collars may be needed to find a high proportion of the groups (Rettie 2008). Under these conditions, there may also be multiple groups with no radio-collars, which may be less likely to be found than groups with radio-collars (Rivest *et al.* 1998).

Two methods have been used to estimate the proportion of the herd missed by the post-calving survey. One method has relied on the simple proportion of available radio-collared caribou in the herd found in photographed groups (e.g., Russell *et al.* 1996; Nagy and Johnson 2006). Some authors have suggested that only counts of groups with radio-collars should be used with the Lincoln-Petersen estimator (Russell *et al.* 1996, Patterson *et al.* 2004) whereas other studies have included caribou from groups without radio-collars (Nagy and Johnson 2006). In the current paper, we have included the groups without radio-collars in the Lincoln-Petersen calculations. The Lincoln-Petersen mark-recapture estimator was questioned by Rivest *et al.* (1998), as both population estimates and variance estimates are likely to be negatively biased. Rivest *et al.* (1998) proposed an alternate way of estimating missed caribou groups and an alternate way of estimating population size and variance from post-calving surveys. These methods are statistically more complex but have been increasingly adopted in Alaska (Harper 2013) and Québec (V. Brodeur, 2016, Government of Québec, personal communication), where the Rivest methods were developed.

After an attempted post-calving survey of the Bluenose-East (BE) herd in July 2009 failed due to poor weather and insufficient aggregation in portions of the herd, both calving and post-calving surveys of this herd were planned for 2010. Declines had been documented in this herd and neighbouring herds between 2000 and 2006 (Adamczewski *et al.* 2009). Attempting both surveys increased the likelihood of securing an up-to-date population estimate, and allowed for a side-by-side comparison of the 2 survey methods.

In the past, calving ground surveys were used for the Bluenose herd in the 1980s (e.g., 1983, Latour *et al.* 1986), followed by post-calving surveys for this herd in 1986, 198and 1992 (e.g., McLean and Russell 1992). Satellite radio-collaring studies initiated in the late 1990s then showed that the Bluenose herd was composed of 3 herds with individual calving grounds, one of them being the BE herd, and the other 2, the Bluenose-West and Cape Bathurst herds (Nagy *et al.* 2005). Dedicated post-calving surveys for the BE herd began in 2000 (Patterson *et al.* 2004).

A modified June calving photo-survey and a post-calving survey were carried out in 1993 on the George River herd in Québec/Labrador (Couturier *et al.* 1996) and produced similar population estimates. Our objectives in this paper are to compare results of the 2 BE 2010 surveys, to assess their strengths and limitations, and to assess their suitability for management. An earlier version of these results was documented in a government report (Adamczewski *et al.* 2014). In this paper we consider all ≥1-year-old caribou in June or July to be adults; however we note that our re-examination of the extrapolation calculations of Heard (1985) and Heard and Williams (1990) indicates that those calculations omit the yearlings and these estimates are effectively for ≥2-year-old caribou. We used both the earlier (A) and the more recent (B) extrapolation calculations for the BE June 2010 survey data.

Management context of calving and post-calving surveys in the NT

Although this paper is primarily focused on caribou survey methods, we provide some context on the management significance of the population estimates these surveys generate. Migratory barren-ground caribou herds have long been known to vary widely in abundance over time scales of decades (Zalatan *et al.* 2006; Bergerud *et al.* 2008; Beaulieu 2012) and have been of enormous significance to Aboriginal cultures in the Canadian north for thousands of years (Gordon 2008; Beaulieu 2012). Management plans for herds like the BE recognize these long-term fluctuations and tie management strategies for harvest, predators and land use to herd size, trend and other indicators. A plan called "Taking Care of Caribou" finalized in 2014 (ACCWM 2014) includes the BE herd and defines 4 colour phases for this herd as red (low herd size, ≤20,000), green (high herd size, ≥60,000), yellow (intermediate herd size, 20,000–60,000, and increasing) and orange (intermediate herd size, 20,000-60,000, and declining).

After the 2010 BE surveys described here, further calving photo surveys in 2013 and 2015 documented a rapid decline (Boulanger *et al.* 2014, 2016) with the extrapolated estimate of ≥2-year-old caribou in 2015 at 38,592 ± 4,733 (95% CI) and a near 50% loss of breeding females in just 2 years (Boulanger *et al.* 2016). These results, in combination with other indicators and Aboriginal Traditional Knowledge, have resulted in the herd being designated as in the orange declining phase, and led to a series of formal hearings in the NT and NU on management actions in 2016 for this herd, including severe reductions in harvest (e.g., WRRB 2016). Although many sources of knowledge are considered in management, the herd's size and trend, as defined by photo surveys every 2-3 years, are key sources of information.

Because of the importance of population estimates for barren-ground caribou management, the GNWT has since 2006 monitored 5 neighbouring herds (including the BE) every 3 years via photographic surveys to ensure that size and trend are adequately known. An assessment of preferable frequency of population surveys focused on trend and ability to detect change either by sequential *t*-tests or regression analysis, with an average Coefficient of Variation (CV) on breeding female estimates of 15%, and suggested that surveys every 3 years were appropriate for herds at low numbers (Boulanger 2011). Heard and Williams (1990) carried out an equivalent assessment and reached similar conclusions. Considerable effort has gone into increasing the precision of NT post-calving surveys through increased numbers of caribou radio-collars (e.g., Nagy and Johnson 2006; Rettie 2008) and optimal allocation of survey efforts has been used to increase precision of calving photo survey methods (e.g., Boulanger *et al.* 2014, 2016). The comparison described here for the BE herd was carried out to assess the comparability of the 2 survey methods with respect to estimates of adult caribou and adequacy of precision, using as a benchmark a CV of 20% or less (Pollock *et al.* 1990). True herd size in 2010 was not known and thus the accuracy of both surveys cannot be assessed directly. However, similar herd estimates from 2 very different survey methods in which a high proportion of the counted caribou is from high-resolution photos should provide some assurance that the methods are basically sound and can be used for management as described in the ACCWM (2014) plan for this herd.

MATERIAL AND METHODS

Calving photo-survey in June 2010

June reconnaissance survey and radio-collars

The study area was defined based on previous surveys of this herd's calving ground, local knowledge, and locations of 43 radio-collared cows and 4 radio-collared bulls in June 2010 (Figure 1). All radio-collars had either satellite (Argos)

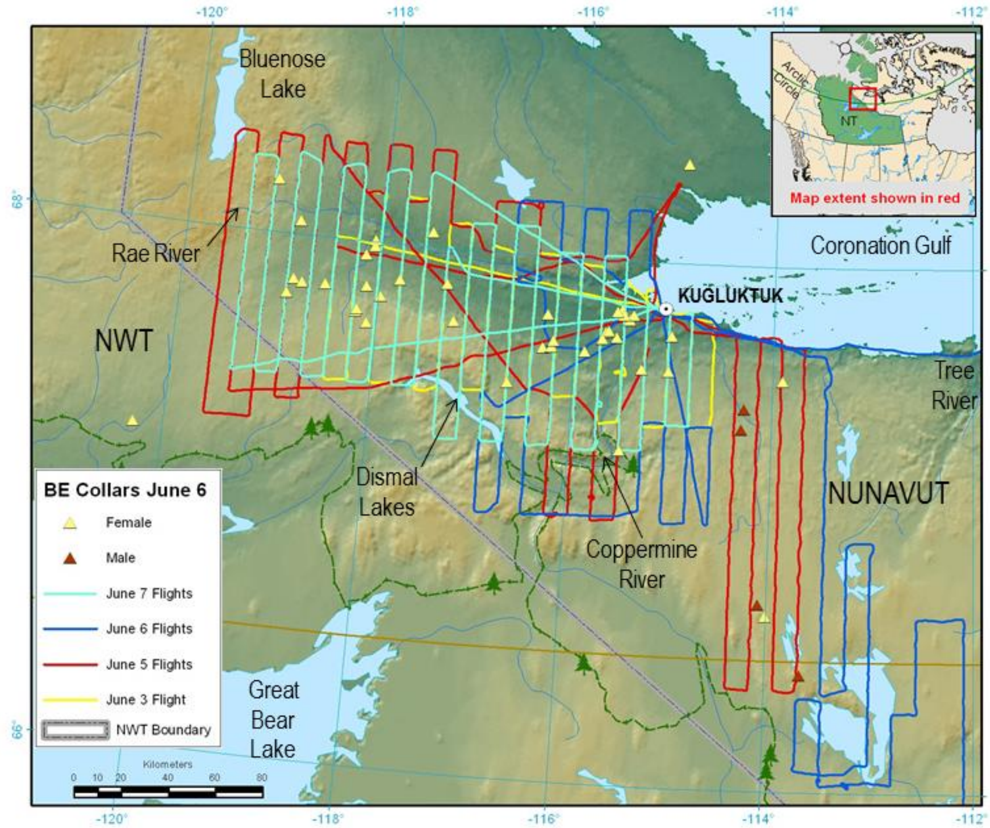

Figure 1. Reconnaissance flying over the Bluenose-East herd's calving ground and nearby areas at 10-km intervals on June 3, 5, 6, and 7, 2010. Radio-collar locations from 43 cows (yellow triangles) and 4 bulls (red triangles) for June 6 were also used to define the survey area.

transmitters and VHF (Very High Frequency) transmitters or GPS (Global Positioning System) satellite and VHF transmitters, with the satellite or GPS radio-collars programmed to provide at least 1 daily location at this time of year. Radio-collars were a number of models from Telonics, Inc. (Mesa, Arizona). These sources showed that the main cow-calf concentrations were consistently found in the Rae and Richardson valleys west of Kugluktuk, bounded in the west by Bluenose Lake (Figure 1).

Reconnaissance flying by 2 Cessna Caravan fixed-wing aircraft based in Kugluktuk was carried out on June 3, 5, 6, and 7 over the calving ground and nearby areas of the BE herd. The purpose of the initial flying was to map higher and lower densities of caribou, and to assess whether these areas had mostly breeding cows or non-breeding cows, yearlings and bulls. Flight lines were spaced at 10-km intervals in a north-south direction; survey elevation averaged 120 m above ground, and survey speeds averaged 150-160 km/hour, providing ground coverage of approximately 8%. Two observers and a recorder on each side of the aircraft recorded approximate abundance of caribou seen within a 400-m strip on either side of the plane. The presence of cows with calves, hard-antlered cows, bulls, yearlings, and non-breeding cows was recorded. Precise classification from fixed-wing aircraft was not practical, hence was estimated separately from a composition count later in the survey.

Observations from the reconnaissance flights were mapped in 10-km segments as densities of adult caribou: more than 10/km^2 was high; 1.0-9.9/km^2 was medium; and 0.1-0.9/km^2 was low. In some segments no caribou were seen. Composition of caribou in 10-km segments was mapped using the following classes:

(1) *Cows with calves* — if at least 1 newborn calf was seen or if hard-antlered cows were seen. Hard-antlered cows were considered breeding cows that had either calved recently or were about to calve, and had not yet dropped their antlers;

(2) *Non-antlered cows* — if antlerless cows were seen, but no calves or hard-antlered cows;

(3) *Non-breeding caribou* — if cows without hard antlers and yearlings were seen; non-breeding cows may have small new antlers in velvet in June;
(4) *Bulls* — if bulls were seen;
(5) *Mixed non-breeders* — if non-breeding cows, yearlings and bulls were seen.
In the periphery of the study area, few caribou were seen and composition was sometimes recorded as unknown.

In addition to the 47 (43 cows and 4 bulls) known BE radio-collared caribou during the June and July 2010 surveys, within the range of the BE herd, 1 radio-collared cow from the Bathurst herd (eastern neighbour of the BE herd) died in mid-June 2010 north of the main BE calving area. Two radio-collared caribou from the Bluenose-West herd (western neighbour of the BE herd) were within the summer range of the BE herd in 2010. One of these was briefly east of Bluenose Lake in June and early July and then returned to spend the rest of the summer well west of Bluenose Lake in Bluenose-West summer range. A second radio-collared cow that calved on the Bluenose-West calving ground in 2009 was within the BE summer range in June and July 2010, and in June 2011. Low rates of exchange of radio-collared cows between neighbouring herds in NT/NU and elsewhere have been known for many years (Adamczewski *et al.* 2009; Boulanger *et al.* 2011; Davison *et al.* 2014). These 3 radio-collared caribou were considered as falling within this normal low rate of exchange and were not considered further in estimating population size.

The reconnaissance flights in early June 2010 confirmed previous information about the distribution of cows, calves and bulls in this herd , as we found very few cows with young calves or hard-antlered cows east of the Coppermine River. Bulls, yearlings and non-breeding cows were observed consistently in this area. A few lines were flown further east to ensure spatial separation from Bathurst caribou.

June 2010 survey strata, photos, and strip transect counts

Reconnaissance flying was used to define 6 survey strata including 1 high-density stratum (Figure 2) and 1 medium-density stratum with mostly cow-calf caribou, 2 visual low-density strata with mostly cow-calf caribou (north and northwest), and 2 strata flown visually with low-medium densities and mostly bulls, yearlings and non-breeding cows (east and south). The south stratum was extended south by 10 km further than the initial reconnaissance flight lines due to the densities of caribou seen at the southern ends of the lines during the reconnaissance flights.

An optimal-allocation algorithm was used to determine the number of transect lines and coverage for each of the 6 strata, depending on stratum size and densities of caribou seen during the reconnaissance flights. Following recommendations by Gunn *et al.* (2005), a minimum of 10 transect lines were used for each stratum to reduce variance. Consistent with previous surveys of this type, the high and medium strata were re-flown on June 8 and 9 with a Commander aircraft (Geographic Air Survey Ltd., Edmonton) at an elevation of approximately 610 m taking continuous photo-transects to provide ground coverage of 31.3% and 16.8% in the high and medium strata (Figure 2). A total of 7,000 photos were taken. These 2 strata are referred to as photo strata in the remainder of the paper, and the other 4 strata are referred to as visual strata.

The other 4 strata were re-flown on June 8 and 9 with strip-transect methods with ground coverage varying from 14.2% to 28.2%. Survey lines were flown at an elevation of 120 m and an average survey speed of 150 km/hour, with 2 observers and a recorder on each side of the aircraft. Wing struts were marked to define a strip of 400 m on the ground at 120 m above ground on either side of the aircraft, using methods originally described by Norton-Griffiths (1978), and followed by previous calving photo-surveys (e.g., Gunn *et al.* 2005; Nishi *et al.* 2007).

Caribou at least 1 year old were counted on the aerial photos by an experienced consultant (P. Roy) who had counted caribou on this type of aerial photo for several previous calving photo-surveys of the Bathurst herd (Gunn *et al.* 2005; Nishi *et al.* 2007) and the Qamanirjuaq herd (Campbell *et al.* 2010). The caribou counted on photos could not be classified as cows, yearlings or bulls, only as ≥1-year-old caribou. Newborn calves were not counted as they could not always be seen if hidden by larger caribou or if bedded. In this paper, we use the term "adult" caribou for any ≥1-year-old caribou in June or July. In the 4 visual strata, adult caribou seen by any of the 4 observers were recorded.

June 2010 composition survey

A composition survey was carried out June 8-12 to sample multiple caribou groups in each of the survey strata (Figure 3). The classification was carried out primarily from the ground with a telescope and tripod to minimize disturbance to caribou, with a helicopter used to fly from 1 group of caribou to the next. Caribou were classified as described by Gunn *et al.* (2005) and Nishi *et al.* (2007) as newborn calves, cows, yearlings, and bulls. Cows were further classified into the following categories: (1) antlered cows with a distended udder; (2) antlerless cows with a distended udder; (3) antlered cows without a distended udder; and (4) antlerless cows without a distended udder. The first 2 categories of cows corresponded to breeding cows based on the distended udder, and the third, to breeding cows that likely had lost their calves. The fourth category consisted of non-breeding females characterized by the absence of a distended udder

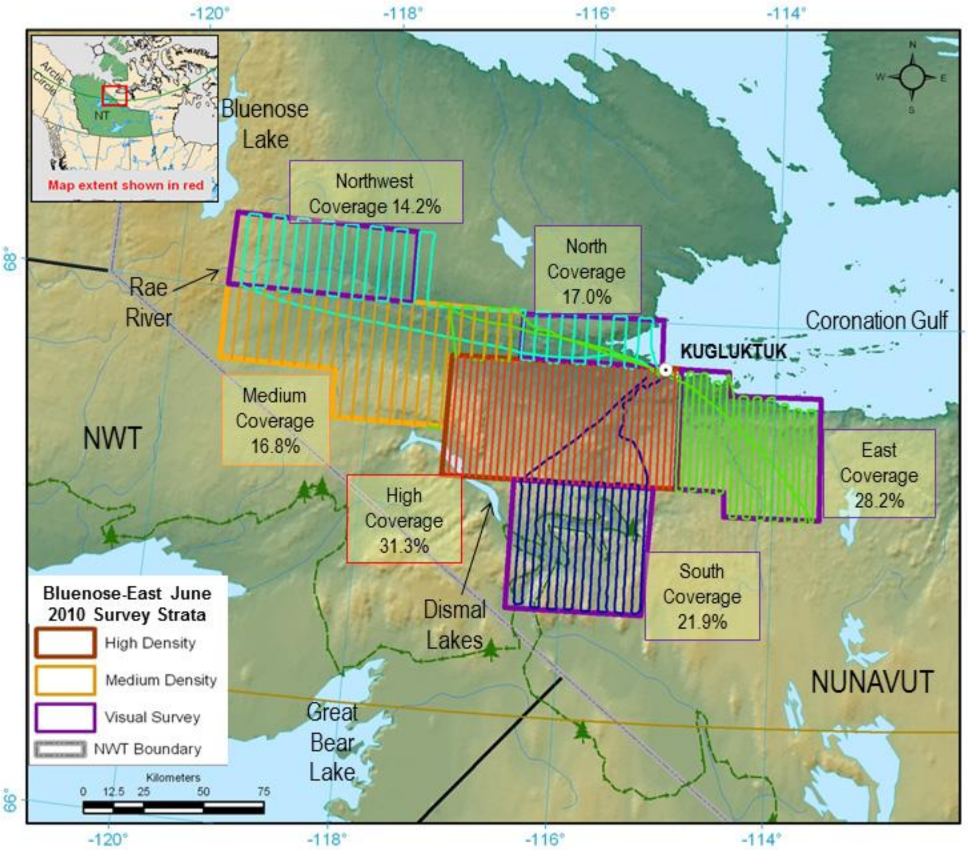

Figure 2. Survey strata, flight lines and coverage for the Bluenose-East June 2010 calving photo-survey. The high-density and medium-density strata were flown with the Commander photo-plane and the 4 strata outlined in purple were re-flown visually, with the area coverage as shown for each stratum.

and usually by the presence of new dark antler growth. Yearlings were distinguished based on their relatively small body size and short heads. Bulls were identified based on their reproductive organs, size and relatively large antlers in velvet.

Fall 2009 composition survey

To extrapolate from the estimated number of breeding females on the calving grounds to overall herd size, an estimate of herd sex ratio has been used from the fall rut in late October, as it is the one time of year when all sex and age classes are mixed (Heard 1985; Gunn *et al.* 2005; Nishi *et al.* 2007). A composition survey was carried out on October 19 and 20, 2009 on the BE range. The survey area was defined primarily by the locations of 31 radio-collared BE caribou. In addition, a fixed-wing reconnaissance survey was flown on October 16, 2009 to verify that substantial densities of caribou were associated with the concentrations of radio-collared caribou. Caribou were classified from the front seat of a helicopter as bulls, cows, and calves of the year. A total of 4,531 caribou in 79 groups were classified.

Post-calving photo-survey in July 2010

Field methods and photo counts

Reconnaissance flights over the BE summer range were carried out June 29 to July 4, to gain an overall sense of caribou distribution and composition of caribou groups (cows with calves, non-breeding cows, bulls and yearlings; Figure 4). The survey area was defined based on past July surveys of this herd and based on the locations of 47 radio-radio-collared caribou at the beginning of July. One survey crew was in a Helio-Courier equipped with Telonics RA-2AK dual antennae and an ATS receiver (Advanced Telemetry Systems Inc.) and the other survey crew was in a Cessna 185 equipped with Telonics RA-2AK dual antennae and a Telonics TR-5 Scanning-Receiver (Telonics, Inc.), with all flights based in Kugluktuk, Nunavut. After the initial reconnaissance flights, the 2 aircraft were used to check daily on radio-collared caribou and caribou associated with them, except during poor weather. Locations of all radio-collared caribou were received from a satellite link daily in the mornings and used to plan the day's flying. Exact locations of radio-collared caribou were found by homing in on their VHF signals.

Overall, caribou groups made up mostly of cows with young calves were found west of Kugluktuk in the Rae and Richardson valleys and these areas had the largest abundance of caribou. Mostly cow-calf groups were also found in lower densities north to the mainland coast (Figure 4). Bulls, yearlings, and non-breeding cows were primarily east of the Coppermine River and south-southeast of Kugluktuk, with a substantial area separating these groups from the cow-calf groups.

When caribou were seen to be forming groups of hundreds or thousands suitable for photography, every effort was made to account for all radio-collared caribou and caribou associated with them in the area, independently of group size. Caribou groups found without radio-collars were also photographed, and GPS locations of all groups were recorded. Multiple passes of either single photos of entire groups or multiple series of overlapping photos to cover larger aggregations were taken. Survey elevation was adjusted as needed. Photos were taken by 24 megapixel Nikon D3X cameras set for maximum resolution, through an open window of the Cessna 185 or through a "shooting window" on the left side of the Helio-Courier. VHF signals from the 47 radio-collars were monitored on all flights and the presence of individual radio-collared caribou was double-checked to properly identify them in the photographed groups.

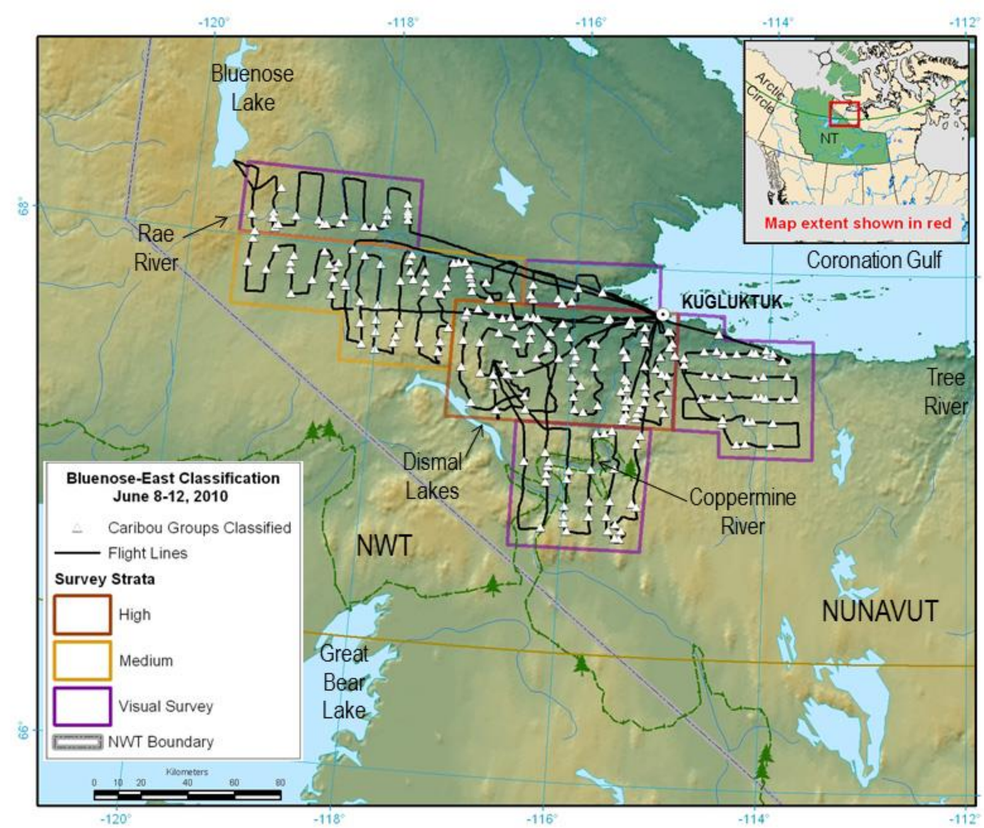

Figure 3: Locations (white triangles) and helicopter flight path (black lines) of caribou groups classified June 8 - 12, 2010 on or near the calving grounds of the Bluenose-East caribou herd.

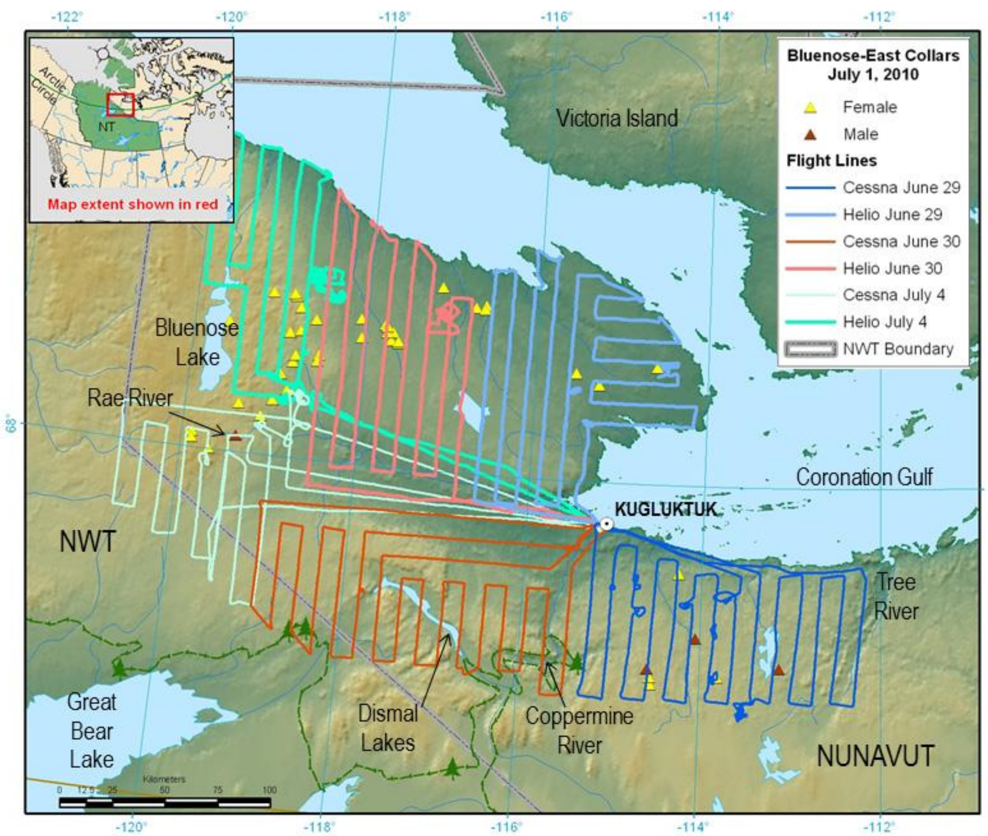

Figure 4: Initial reconnaissance flights at 10-km intervals at start of July 2010 Bluenose-East caribou post-calving survey June 29 – July 4, 2010. Radio-collar locations are from 43 cows and 4 bulls on July 1.

At the end of each day when photos were taken, the photos were downloaded and reviewed on laptop computers, and the best images were chosen for each group of caribou. Digital images were imported into the desktop mapping program Ozi Explorer (© D & L Software Ltd.) and converted to map files. Caribou on these images were then marked one after the other by placing a waypoint for each adult caribou. This method was developed by biologist J. Nagy and described in his survey reports (e.g., Nagy and Johnson 2006). All ≥1-year-old caribou were counted. Calves of the year were not counted as they could not be reliably identified under or behind larger caribou, particularly in more closely aggregated groups.

Caribou on each photo were counted at minimum by 2 of the authors independently (HS-C and JA). A third person independently counted a sub-set of the photos as a further check. On most photos, agreement among counters was close, with variation of totals well below 1 % (e.g., totals of 915 caribou vs. 918 caribou for a single photo). On a few photos of larger, tightly aggregated groups taken from higher elevations, the 2 authors who previously counted all the photos together counted the photos again to arrive at a final total.

Estimation of herd size and variance using Lincoln-Petersen estimator

White and Garrott (1990) augmented the Lincoln-Peterson Index to apply to radio-collared animals, a method that has been used in other post-calving surveys (Russell *et al.* 1996; Patterson *et al.* 2004; Nagy and Johnson 2006) to estimate population size. The formula is:

$$\mathbf{N = ((M+1)(C+1)/(R+1))-1}$$

Where:

N = estimate of population size during the census;

M = number of radio-collared caribou present in the herd (including all radio-collars known to be active during the survey);
C = number of caribou in all aggregations observed during the survey;
R = number of radio-collared caribou observed in these aggregations during the survey.
The 95% confidence interval for the estimate is calculated as:

$$\mathbf{N = 1.96\sqrt{(Var(N))}}$$

Where:
$\mathbf{Var(N) = (M+1)(C+1)(M-R)(C-R)/((R+1)^2\ (R+2))}$

These calculations were applied to the results of the July 2010 BE post-calving survey.

Estimation of herd size and variance using Rivest estimator

This section provides a basic summary of the Rivest approach; readers who want a more detailed statistical treatment are encouraged to read Rivest *et al.* (1998). All calculations were conducted using the R-package (R Development Core Team 2009) entitled "caribou" (Crépeau *et al.* 2012). The Rivest estimator considers the sampling of post-calving aggregations as a 2-phase sampling process. The first phase involves the initial radio-collaring of caribou and how the radio-collared caribou are distributed within the herd during the post-calving period. For this estimator, it is assumed that *n* radio-collared caribou are randomly distributed into *m* groups during the post-calving period. Given that radio-collared caribou are used to estimate detectability of groups, the Rivest estimator does not use data for groups of caribou that do not contain radio-collared caribou.

The second phase of sampling involves the actual aerial search for groups. For this phase, various models are proposed as to how the radio-collared caribou represent the groups, and how the radio-collared caribou and associated groups are detected. Each model is summarized below.

(1) *The homogeneity model* — this model assumes that caribou groups (with radio-collared caribou in the groups) are missed as a completely random event that is independent of the number of radio-collared caribou in the group or other factors. Each group will have the same probability of being detected by the aerial survey.

(2) *The independence model* — this model assumes that each radio-collared caribou in the group has the same independent probability of being detected and thus the overall probability of detecting a group increases as a function of the number of radio-collared caribou in the group. The assumption here is that the radio-collared caribou are independent so that a simple probability model can be applied to detection of the group.

(3) *The threshold model* — this model assumes that all groups with more than a threshold level of radio-collared caribou (symbolized by B) have a detection probability of 1. For example, it might be that, once more than 3 radio-collared caribou occur in a group, the group will always be detected whereas groups with 1 or 2 radio-collars are not always detected. For this model, all groups with 3 or more radio-collared caribou are assigned a detection probability of 1, and detection probability is estimated for groups with 1 or 2 radio-collars.

Each of these models can potentially describe detection probability variation in the data set. As part of the estimation procedure, a log-likelihood score is produced and the model with the highest log-likelihood is considered to best fit the data.

The estimate of herd size is then basically the summation of each group size divided by the probability of the observed group having at least 1 radio-collared animal included in it, and divided by the probability of the group being detected. The probability of having at least 1 radio-collared caribou is a function of the group size detection probabilities (which is associated with the underlying detection model described previously), the total group size of caribou counted relative to total herd size, and the overall number of radio-collars employed in sampling. It is through an iterative likelihood-based optimization procedure that each of these parameters is estimated to produce estimates of herd size.

An assumption of this method is that the radio-collared caribou are randomly distributed among the separate caribou groups that are photographed. This assumption can be tested by assessing the number of radio-collared caribou relative to group sizes that are counted. It is possible to test this assumption using a test for over-dispersion of the Poisson probability distribution. Over-dispersion applies to a case when non-independence of radio-collared caribou produces a distribution of radio-collared caribou relative to group sizes that is different from that if the caribou were randomly distributed. If over-dispersion occurs then both estimates of population size and variance from the Rivest estimator will be negatively biased (Rivest *et al.* 1998).

RESULTS

Calving photo-survey in June 2010

Reconnaissance survey June 3-7

Caribou observations recorded during the reconnaissance flights of June 3, 5, 6 and 7, 2010 were mapped as squares along the flight lines, with each square representing a 10-km segment, and darker red squares representing higher densities (Figure 5a). High (>10/km^2) and medium (1.0 - 9.9/km^2) adult caribou densities were generally west, southwest, south, and southeast of Kugluktuk, with lower densities in more peripheral areas. One high-density stratum, 1 medium-density stratum, and 4 low-density strata were defined based on the reconnaissance flights (Table 1).

The composition of caribou groups seen in 10-km segments was similarly mapped (Figure 5b). Cows with calves and hard-antlered cows were largely clustered in an elongated area in the Rae and Richardson valleys west of Kugluktuk. Further south and east in the survey area, non-breeding caribou predominated, with non-breeding cows and yearlings closer to the main cow-calf distribution and bulls in more peripheral areas south and southeast of Kugluktuk.

Caribou counted on photos and in visual strata

Overall, the high and medium density strata were photographed and contained 77.3% of the 28,478 adult caribou counted in the 6 survey strata, and a similar 76.1% of the adult caribou estimated for the entire survey area (Table 2). These 2 photographed strata also had the highest densities of adult caribou (10.5 and 8.2/km^2). The east and south visual strata had somewhat lower densities (3.7 and 3.9/km^2) and added proportionately to the overall total of caribou. The north and northwest visual strata had relatively low caribou densities (0.9 and 1.5/km^2).

Observations during the initial reconnaissance flights, along with composition recorded during June 8-12 indicated that the peak of calving likely occurred during June 6-9 with more than 50% of breeding cows observed after these dates having a calf at heel.

Caribou composition in June 2010 survey strata

The proportion of breeding females among adult caribou was below 50% in the high stratum, indicating a high number of non-breeding cows and yearlings (Table 3). The medium stratum, by contrast, had a much higher proportion of breeding females (77.0%) and relatively few yearlings. The calf:cow ratios for breeding females were high in the high and medium strata (86.0 and 81.2 calves:100 cows), but because of the large densities of non-breeding cows in the high stratum, the calf:cow ratio was much lower (49.6 calves:100 cows) when all cows were included, and somewhat lower (66.2:100) in the medium stratum. The proportions of breeding cows and estimates of adult caribou in each stratum were used to derive an estimate of 51,757 (± 11,092) breeding cows for the survey area.

Fall 2009 Bluenose-East composition survey and sex ratio

A total of 79 caribou groups and 4,531 caribou, including calves of the year, were classified in October 19 - 20, 2009 (Fig. 6, Table 4). This resulted in estimates of 46 calves:100 cows (± 3.5) and 42.9 bulls:100 cows (± 3.4). At the time of the survey, there were 31 active radio-collars in the BE herd, of which 30 were within or near the survey area. There were also 4 radio-collars from the neighbouring Bathurst herd to the north (Figure 6) but no caribou groups were classified among these radio-collared caribou.

Table 1. Transect sampling and size of strata for Bluenose-East June 2010 calving photo-survey.

	Stratum						
Variable	High	Medium	East	North	North west	South	Totals
Count method	Photo	Photo	Visual	Visual	Visual	Visual	n/a
Area of stratum (km^2)	4,840.0	4,453.9	2,996.4	1,118.3	2,259.6	3,006.9	18,675.1
Lines flown	33	23	21	10	16	16	n/a
Area sampled (km^2)	1,517.2	749.9	844.6	158.5	383.5	658.7	4,312.4
Coverage (%)	31.3	16.8	28.2	14.2	17.0	21.9	23.1

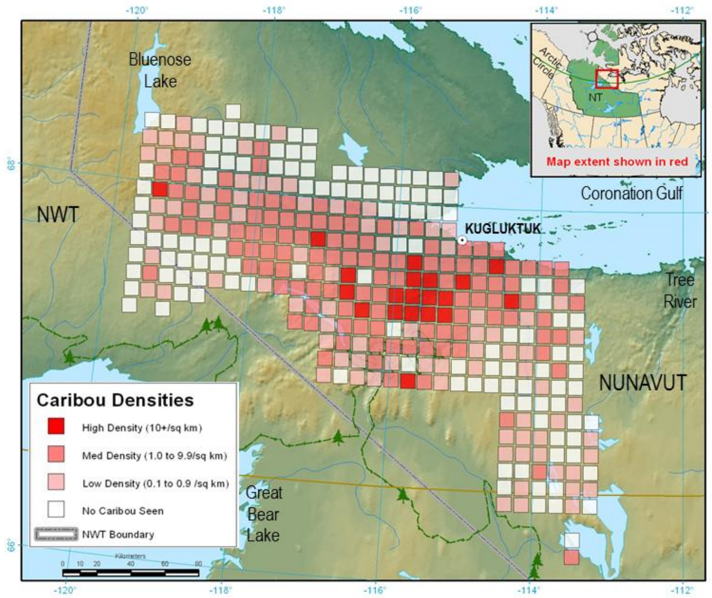

Figure 5a. Densities of adult caribou observed during June 2010 Bluenose-East caribou survey during reconnaissance flights, June 3, 5, 6 and 7. No caribou were seen in white squares and increasing densities are shown as lighter or darker pink squares, with the highest densities of >10 caribou /km^2 in red. Squares represent 10-km segments along flight lines.

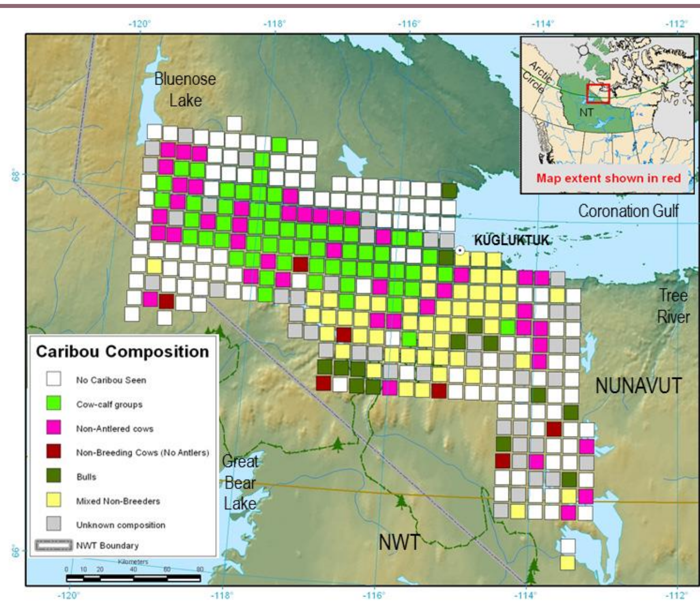

Figure 5b. Composition of Bluenose-East caribou groups during reconnaissance flights, June 3, 5, 6 and 7, 2010. The main cow-calf concentrations were light green squares, bull only areas were dark green and other types of caribou are as shown in the legend. Squares represent 10-km segments along flight lines.

Table 2. Adult caribou estimates by stratum from Bluenose-East June 2010 calving photo-survey. SE = Standard Error; CV = Coefficient of Variation.

	Stratum						
Variable	**High**	**Medium**	**East**	**North**	**North west**	**South**	**Totals**
Count method	Photo	Photo	Visual	Visual	Visual	Visual	n/a
Caribou counted	15,881	6,142	3,167	135	566	2,587	28,478
Density (caribou/km^2)	10.5	8.2	3.7	0.9	1.5	3.9	n/a
Estimated No. caribou 1+ year old in stratum	50,661.2	36,477.4	11,236.3	952.6	3,335.0	11,809.6	114,472
SE (N)	4,768.0	4,442.4	1,468.9	256.7	1,005.2	1,421.5	6,908.2
CV (N) as %	9.4	12.2	13.1	26.9	30.1	12.0	6.0

Table 3. June composition survey results and calculated stratum totals, ratios and variance from Bluenose-East June 2010 calving photo-survey. SE = Standard Error; CV = Coefficient of Variation.

	Stratum						
Variable	**High**	**Medium**	**East**	**North**	**North west**	**South**	**Totals**
Numbers classified							
No. groups classified	72	59	23	8	20	23	205
No. caribou classified	3,866	5,263	564	189	1,033	710	11,625
No. newborn calves	1,041	2,025	5	6	444	0	3,521
No. yearlings	497	157	99	40	12	132	937
No. bulls	230	23	219	10	3	353	838
No. cows	2,098	3,058	241	133	574	225	6,329
Calculated totals, ratios and variance							
No. caribou 1+ years old	2,825	3,238	559	183	589	710	8,104
No. breeding females	1,211	2,493	4	7	506	0	4,221
Proportion breeding females (%)	42.9	77.0	0.7	4.2	85.9	0	n/a
SE (% breeding females)	5.0	3.0	0.6	2.4	3.7	0	n/a
CV (% breeding females)	11.6	4.1	78.4	57.9	4.3	0	n/a
Estimated No. breeding females in stratum	21,784.3	26,993.3	80.4	39.5	2,859.7	0	51,757
SE (breeding females)	3,258.8	3,464.7	63.9	25.3	870.7	n/a	4,836
CV (% breeding females)	15.0	12.8	79.5	63.9	30.4	n/a	9.3
Calves: 100 cows, breeding cows	86.0	81.2	125	85.7	85.9	n/a	n/a
Calves: 100 cows, all cows	49.6	66.2	2.1	4.5	77.4	n/a	n/a

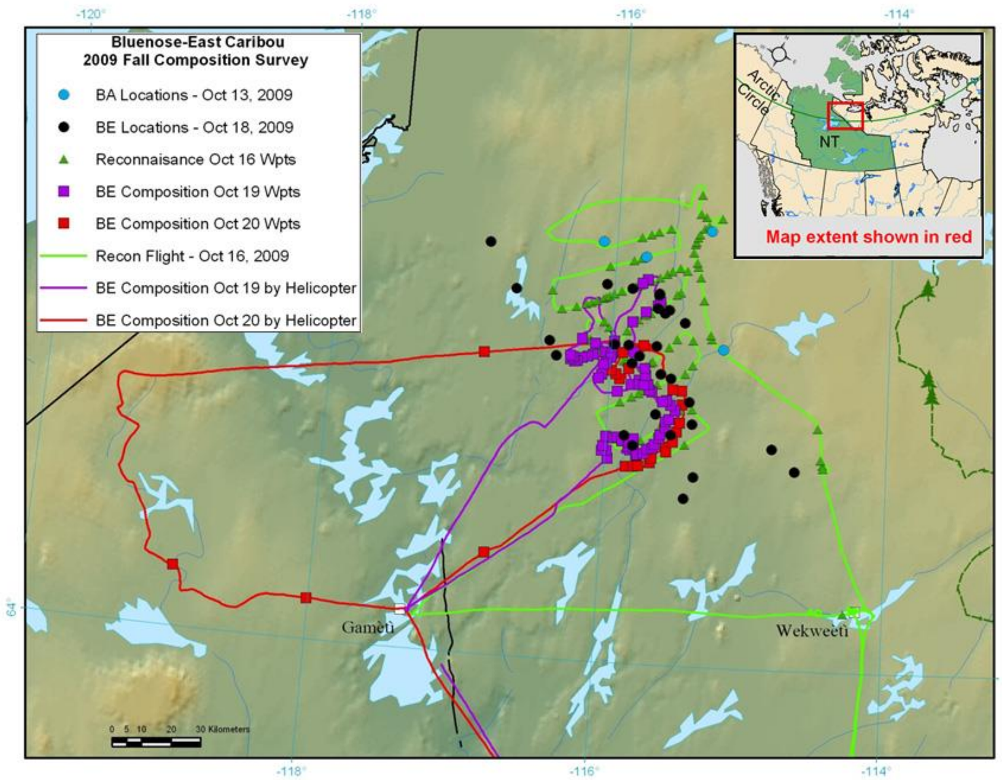

Figure 6. Composition survey flown October 19 and 20, 2009 in the range of the Bluenose-East caribou herd. Bluenose-East radio-collar locations are black dots and Bathurst radio-collar locations are blue dots. Composition of caribou groups near Bathurst radio-collars was not used for this survey.

Table 4. Composition survey results from October 19 and 20, 2009 for the Bluenose-East caribou herd. Ratios are shown ± 95% Confidence Interval.

No. groups classified	No. cows	No. calves	No. bulls	Total	Calves: 100 Cows	Bulls: 100 Cows
79	2,399	1,104	1,028	4,531	46.0 ± 3.5	42.9 ± 3.4

Estimated population size and proportions of cows, bulls and yearlings from June survey

The direct estimate of adult caribou from the June 2010 BE calving photo-survey included the total estimated number of ≥1-year-old caribou from the survey area of 114,472 ± 15,845 (95% Confidence Interval). The estimated number of breeding females, 51,757 ± 11,092, was divided by the proportion of cows in the herd (0.70, from bull:cow ratio of 42.9:100) from the fall 2009 composition survey and by 0.702 as the pregnancy rate for ≥1-year-old cows in the breeding season, resulting in an extrapolated estimate of 105,326 ± 40,984 ≥2-year-old caribou (Table 5, extrapolation A). The 0.702 pregnancy rate is based on an overall pregnancy rate of 285/406 from Dauphiné (1976, Table 14) for Qamanirjuaq ≥1-year-old cows in the breeding season in the 1960s. We note that Heard (1985) used a pregnancy rate of 0.72 based on the same source, which may have been a rounding error. We also used the more recent extrapolation method from Campbell *et al.* (2016), which included the estimated total of all ≥2-year-old cows in the survey area, divided by the same proportion of cows in the herd of 0.70 from the fall 2009 composition survey. This resulted in a second extrapolated estimate of 120,880 ± 13,398 ≥2-year-old caribou (Table 5, extrapolation B).

We used the totals of adult caribou from Table 2 for each stratum multiplied by the proportions of cows, bulls, and yearlings in Table 3 to estimate the total numbers of these 3 sex and age classes in the survey area in each stratum (Table 6). Cows made up 84,603 of the 114,472 adult caribou (73.9%) estimated for the survey area, and yearlings (13.2%) and bulls (12.9%) made up the remainder. If the yearlings are presumed to be divided equally among males and females (50:50 sex ratio), then the estimated totals overall of adult females and males were 92,174 (80.5%) and 22,298 (19.5%). This is equivalent to a ratio of 24.2 bulls:100 cows.

Post-calving survey in July 2010

Radio-collared caribou and photography of aggregated caribou

The movements of radio-collared caribou varied considerably in July. The main concentration of radio-collared cows in cow-calf groups was initially just east of Bluenose Lake (Figure 4) and later was concentrated further east and south (Figure 7). Caribou were concentrated in 3 sectors at the time photos were taken in July: bulls, yearlings and non-breeding cows were primarily in a southern sector east of the Coppermine River, most of the cow-calf groups and radio-collared cows were in a main sector west of Kugluktuk, and some smaller densities of cow-calf groups were in a northern sector. Aggregation of caribou suitable for photography generally did not last more than a day, and on some occasions changing weather meant that groups were tightly clustered for only a few hours. Caribou in the northern sector were the least likely to aggregate; caribou with and without radio-collars in this area tended to remain scattered except for the one day when photos were taken. Caribou in the southern sector were more likely to aggregate, which resulted in 2 separate sets of photos.

Caribou counted on photos from July survey

A total of 40 groups of caribou and 92,481 adult caribou were counted on photos from the July 2010 BE post-calving survey (Table 7). Two-thirds of these were in the main sector that had 30 radio-collars, with the remainder found about equally in the southern and northern sectors. The number of radio-collared caribou varied substantially among groups. There were 22 groups with radio-collars and 18 without radio-collars. Groups without radio-collared caribou were mainly between 1,000 and 2,000, with one group of 3,870 caribou. Groups with radio-collared caribou ranged from 1,000 to 11,652. Photos were taken on July 6, 9 and 12; over this time we monitored collared caribou locations daily and found no mixing between the main, northern and southern sectors.

In the northern sector, the largest group photographed had 3 radio-collars and 5,999 caribou, but there was also a group of nearly 3,870 with a single radio-collar. In the main sector, the larger groups generally had multiple radio-collars. In the southern sector on July 6, the largest group was 11,461 caribou with just 1 radio-collar, and another group of 4,080 also had only a single radio-collar. Figure 8 shows a small group of cows and calves from the July 2010 survey.

The 2 sets of photos of the southern sector resulted in 2 different counts. On July 6, 6 of 7 radio-collared caribou were found, 9 groups were photographed, and 16,917 adult caribou were counted on photos. On July 12, 7 of 7 radio-collared caribou were found, 4 groups were photographed, and 11,342 adult caribou were counted. We used the higher July 6 caribou count in the calculations of herd size. We assumed that the second set of photos was lower because the caribou had in the meantime formed different groups that resulted in a few thousand caribou without radio-collars that were not found on July 12.

Of the 47 radio-collared BE caribou in the survey area in July 2010, 44 were accounted for at the time of photos taken on July 6, 9 and 12. The other 3 were active GPS-satellite or satellite radio-collars. We assumed that these 3 radio-collared caribou and any caribou associated with them were in the survey area, given daily and changing GPS locations. However, although searched for when photos were taken in the area, they were not found at the time of taking photos due to erratic signals of VHF transmitters.

Table 5. Estimated number of breeding females and extrapolated population estimates (≥2-year-old caribou) for the Bluenose-East herd in June 2010. Extrapolation A used the estimate of breeding females divided by a sex ratio (42.9 bulls:100 cows, or proportion of females among adult population of 0.70) from an October 2009 Bluenose-East fall composition survey, and divided by 0.702 from an estimate of 70.2% pregnancy among ≥1-year-old cows in the breeding season in the herd (Dauphiné 1976). Extrapolation B used the total estimated number of cows on the June survey area divided by the proportion of females of 0.70. SE = Standard Error, CV = Coefficient of Variation, CI = 95% Confidence Interval.

Variable	Estimate	SE	CV as %	95% CI
No. breeding females	51,757	4,836	13.0	11,092
Proportion of females in entire herd	0.70	0.028	4.0	n/a
Proportion of females ≥ 2 year-old pregnant	0.702	0.072	10.0	n/a
Extrapolated estimate (A) of caribou at least 2-years-old	105,326	20,355	17.0	40,984
Extrapolated estimate (B) of caribou at least 2-years-old	120,880	5,841	4.8	13,398

Table 6. Estimated totals of cows, bulls and yearlings in each stratum, based on estimates of adult caribou in each stratum (from Table 2) and composition (from Table 3).

Variable	High	Medium	East	North	North west	South	Totals	% of Total
Estimated No. caribou 1+ year old in stratum	50,661.2	36,477.4	11,236.3	952.6	3,335.0	11,809.6	114,472	100
Estimated No. cows in stratum	37,623.7	34,449.6	4,844.3	692.3	3,250.1	3,742.5	84,603	73.9
Estimated No. yearlings in stratum	8,912.8	1,768.7	1,990.1	208.2	67.9	2,195.6	15,143	13.2
Estimated No. bulls in stratum	4,124.6	259.1	4402.1	52.1	17.0	5,871.5	14,726	12.9

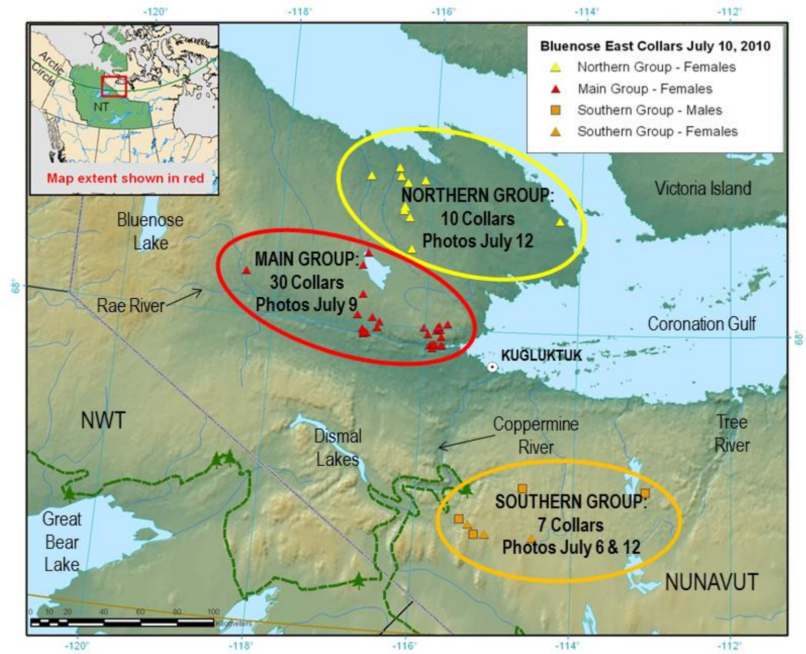

Figure 7. Locations of main, northern and southern sectors of caribou photographed during July 2010 post-calving survey of the Bluenose-East herd. Radio-collar locations are from July 10.

Figure 8. Small group of caribou cows and calves photographed during July 2010 post-calving survey of the Bluenose-East herd. Photo: B. Tracz, Environment and Natural Resources, Government of Northwest Territories.

Table 7. Groups of caribou, radio-collars, and caribou counted on photos from July 2010 Bluenose-East post-calving survey.

Southern Sector, photos July 6			**Main Sector, photos July 9**			**Northern Sector, photos July 12**		
Group No.	Radio-collars	Caribou	Group No.	Radio-collars	Caribou	Group No.	Radio-collars	Caribou
1	1	11,461	1	8	11,652	1	3	5,999
2	1	4,080	2	3	8,327	2	2	1,106
3	1	804	3	2	7,585	3	1	760
4	1	385	4	5	7,528	4	1	115
5	1	5	5	1	7,365	5	1	14
6	1	3	6	4	4,989	6	1	3
7	0	175	7	2	4,942	7	1	1
8	0	2	8	2	1,943	8	0	3,870
9	0	2	9	1	1,014	9	0	914
Totals	6 of 7	16,917	10	0	2,263	10	0	268
(used in estimate)			11	0	1,980	11	0	226
			12	0	1,523	12	0	175
Southern Sector, photos July 12			13	0	670	13	0	6
Group No.	Radio-collars	Caribou	14	0	242	14	0	2
1	2	5,711	15	0	79	Totals	10 of 10	13,459
2	2	4,629	16	0	2			
3	2	1,002	17	0	1			
4	1	1	Totals	28 of 30	62,105			
Totals	7 of 7	11,342						
(not used in estimate)								
			Overall Total	**44 of 47**	**92,481**			

Estimated herd size and variance with Lincoln-Petersen and Rivest estimators

An estimate of 98,646 ± 13,965 (95% CI) ≥1-year-old caribou in the BE herd in 2010 was derived using the Lincoln-Petersen estimator. For the Rivest estimator, only data for groups that had at least 1 radio-collared caribou were used. In general, numbers of radio-collared caribou increased with group size (Figure 9), although 3 groups greater than 4,000 had just one radio-collar.

A suite of detection models was applied to the post-calving data set. As an initial step, a test for randomness of the distribution of radio-collars in each caribou group was conducted using the independence, homogeneity, and threshold models (Table 8). In all cases, the null hypothesis of randomness was not rejected, suggesting that this assumption was reasonable for the BE 2010 data set.

The independence, homogeneity, and threshold models with thresholds of radio-collared caribou ranging from 2 to 5 were run and compared using log-likelihood scores. A threshold model that assumed that groups of caribou that had 5 or more radio-collars (B=5) had a detection probability of 1 had the highest likelihood score (2.415; Table 9). This model indicated that groups with a radio-collar sample size of < 5 had a detection probability of 0.91. A homogeneity model had a very similar likelihood (2.412) and in this case each group had a probability of 0.94 of being detected. A threshold model with B=2 radio-collars also had a very similar likelihood (2.409). The estimates and confidence intervals from these 3 models were very similar (122,697 ± 31,756; 120,495 ± 30,720; and 121,702 ± 31,231) with acceptable levels of precision (CV<14% for all estimates). The independence model had a lower likelihood but the estimate was only marginally higher at 127,101 ± 35,389. The probability of detection in this case corresponds to the individual radio-collared caribou and therefore the probability of detecting a group depended on the number of radio-collared caribou in the group. For this model the probability of detecting a group with one radio-collar was 0.83 and the probabilities of detecting a group having 3 or more radio-collars were very close to 1 (0.99).

DISCUSSION

Population estimates for the Bluenose-East herd from June 2010 calving photo-survey

The BE June 2010 calving photo-survey resulted in 3 estimates of herd size. An estimate of 114,472 ± 15,845 ≥1-year-old caribou resulted from counts of the 6 survey strata,

Table 8. Tests for randomness of radio-collared caribou relative to group sizes from Bluenose-East July 2010 post-calving survey.

Model	Z value	P value
Independence	1.11	0.133
Homogeneity	0.97	0.165
Threshold B=2	1.13	0.128
Threshold B=3	1.07	0.142

including the photographed strata that accounted for about 76% of all caribou counted. The first extrapolated estimate (A) of 105,326 ± 40,984 caribou was an estimate of ≥2-year-old caribou, based on further review detailed below, and was lower primarily because of the omission of yearlings in the extrapolation. The second extrapolated estimate (B) of 120,880 ± 13,398 was also an estimate of ≥2-year-old caribou. We suspect that all 3 of these estimates slightly under-estimated true herd size (all ≥1-year-old caribou).

The calving photo-survey was designed to provide a precise estimate of the abundance of breeding females on a herd's calving grounds (Heard 1985; Gunn *et al.* 2005; Boulanger *et al.* 2014). These surveys were initially carried out in the 1980s without radio-collared caribou (e.g., Beverly herd, Heard and Jackson 1990; Williams 1995), relying on the predictable return of pregnant cows to previous calving grounds. For the objective of assessing herd status, it could be argued that assessment of breeding female abundance is as valuable as an estimate of overall herd size. The use of a detailed composition survey in June allows for an in-depth assessment of herd demography (e.g., the proportion of breeding females on the calving ground and spatial or temporal variation in composition). The breeding female sector of the herd will generally be relatively stable over time and less influenced by annual variation in productivity; the annual increment of yearlings can vary widely from year to year (e.g., Boulanger *et al.* 2011). For the BE June 2010 survey, the first for this herd, the 43 radio-collared cows and 4 radio-collared bulls and extensive reconnaissance flying allowed us to map and survey the breeding cows on the calving grounds as planned, with good precision (CV of 9.3%).

The extrapolated estimate (A) of 105,326 ± 40,984 caribou should be considered a conservative herd estimate as it effectively is an estimate of ≥2-year-old adults. Yearlings are not included in the extrapolation because the pregnancy rate for yearlings (which would be 5-months-old during the previous fall breeding season) is effectively zero, as caribou calves almost never breed in their first year and rarely as yearlings (Dauphiné 1976; Thomas and Kiliaan 1998). Mean pregnancy rate for extrapolated estimates of herd size has been estimated by the ratio of caribou that are pregnant divided by caribou that are capable of being pregnant (0.702, Dauphiné 1976), and yearlings are almost never pregnant. If the proportion of yearlings present in the population were known, then the extrapolated herd estimate could be adjusted to include yearlings.

Heard (1985) and Heard and Williams (1990) recognized that an estimate of herd size extrapolated from the estimate of breeding cows using sex ratio and pregnancy rate was a "rough estimate" of overall herd size. Our results confirm their assertion. Some biologists showed little confidence in this method as an overall estimator of herd size (Rivest *et al.* 1998; Thomas 1998) because of the assumptions associated with the extrapolation of the breeding female estimate to total herd size, and the sometimes large variance of these estimates. The use of a fall sex ratio and an estimate of pregnancy rate in the extrapolation can lead to imprecise herd estimates and inflates variances around the extrapolated estimates when compared to the estimate of breeding females. As a percentage of the estimate, the 95% CI on the extrapolated estimate (A) of ≥2-year-old caribou was 38.9%, compared to 21.4% on the estimate of breeding females, 17.8% on the estimate of 1-year-old or older caribou on the June survey area, and 25.9% on the best Rivest estimate from the post-calving survey.

The estimation of sex ratio from 1 or more recent fall composition counts is preferable in the extrapolation to using a fixed sex ratio of 66 bulls:100 cows as initially used by Heard and Williams (1990, 1991); the sex ratio clearly can vary and was much lower in the BE herd in 2009 (42.9:100) than in the increasing herds surveyed by Heard and Williams in the 1980s. A further BE herd fall composition survey in October 2013 resulted in a similar bull:cow ratio of 42.6 bulls:100 cows based on a sample of 117 groups and 5,369 caribou (Boulanger *et al.* 2014), suggesting the 2009-2013

Table 9. Estimates of Bluenose-East adult caribou herd size in July 2010, based on detection models from Rivest estimation, ranked by log-likelihood. The Lincoln-Petersen estimate is given for comparison.

Detection Model	Log-likelihood	Detection probability	SE (Detection probability)	Estimated herd size $\hat{T}$	Standard Error SE ($\hat{T}$)	95% Confidence Interval (±)	Coefficient of Variation
Threshold (B=5)	2.415	0.91	0.069	122,697	16,202	31,756	13.2
Homogeneity	2.412	0.94	0.066	120,495	15,673	30,720	13.0
Threshold (B=6)	2.409	0.92	0.067	121,702	15,934	31,231	13.1
Threshold (B=2)	2.364	0.81	0.098	127,841	18,361	35,988	14.4
Independence	2.363	0.83[A]	0.087	127,101	18,055	35,389	14.2
Threshold (B=4)	2.361	0.90	0.072	123,872	16,349	32,045	13.2
Threshold (B=3)	2.313	0.88	0.079	124,934	17,060	33,438	13.7
Lincoln-Petersen				98,646	7,125	13,965	3.7

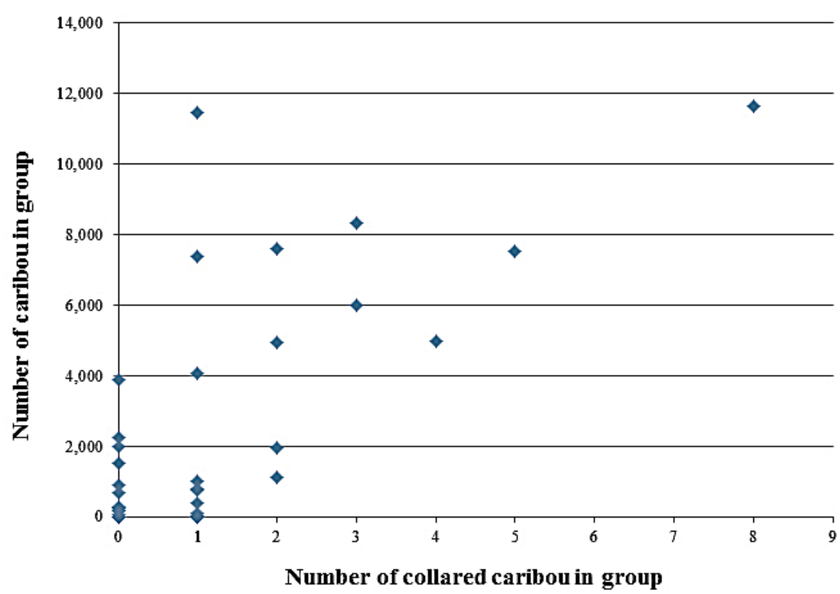

Figure 9. Number of caribou counted in individual groups as a function of the number of radio-collared caribou in each group, for Bluenose-East July 2010 post-calving survey.

herd's sex ratio was relatively constant over that period and that this ratio could be used reliably in the extrapolation.

The use of a fixed pregnancy rate in the extrapolation introduces potential error as pregnancy rates vary depending on cow condition (Gerhart *et al.* 1997; Russell *et al.* 1998). Pregnancy rates in hunter-killed Beverly caribou averaged 75.7% in ≥1-year-old females (605 of 800) from 1981 to 1987, a rate that can be compared directly to Dauphiné's (1976) 70% (285 of 406) for ≥1-year-old cows. Annual pregnancy rates in ≥4-year-old cows during this period in Beverly caribou ranged from 78 to 98% (Thomas and Kiliaan 1998). Pregnancy rate in ≥2-year-old cows in the George River herd varied over a similar range from 90-91% during the herd's increase to 78-80% near peak herd size and 69-77 % during its early decline (Bergerud *et al.* 2008). These estimates provide an index to the degree to which use of a constant pregnancy rate of 70% for ≥1-year-old cows based on Dauphiné (1976) might bias the extrapolation. A potential improvement in the extrapolation to account for non-breeding females would be the use of an estimate of pregnancy rate in the surveyed herd's females in the winter before the June survey, either from hunter-killed caribou (e.g., Thomas and Kiliaan 1998) or from fecal samples assayed for progesterone (e.g., Joly *et al.* 2015).

The revised (B) extrapolation approach to accounting for breeding and non-breeding females on the calving ground survey area was first used by Campbell *et al.* (2016); it may be a preferable approach to extrapolation than the earlier method (A) that uses ratios for both pregnancy rate and sex ratio. This approach uses the estimated totals of breeding and non-breeding females on the June survey area directly, and there is no calculation based on pregnancy rate. A correction based on sex ratio is still applied, and this extrapolation still omits the yearlings. This approach assumes that all ≥2-year-old cows (that are potential breeders) are within the June survey area; this assumption is more likely to be valid if there is an adequate number of radio-collared cows available and found within the survey area in June. Therefore, the reliability of this estimate will depend on whether survey strata included all breeding as well as non-breeding cows. In June 2010, 41 of 43 BE radio-collared cows were within the survey area, with the remaining 2 radio-collared cows found in peripheral areas with very low caribou densities.

The estimate of 114,472 ± 15,845 adults on the June survey area is based on sample counts of the full survey area, and 76% of the estimated numbers of adults were from the 2 photographed strata. We believe that we defined and surveyed a high proportion of the non-breeding cows, bulls and yearlings in the herd, most of them in the south and east strata that had very few cows with calves. The survey area included 45 of 47 radio-collared caribou in the herd, with the other 2 radio-collared caribou in areas with very low densities of caribou. However, the reconnaissance and composition survey results suggest that our survey area did not take in all the bulls, yearlings or non-breeding cows, particularly at the southern edge of the survey area. The bull:cow ratio calculated from June counts of strata and the composition survey was 24.2 bulls:100 cows, well below the 42.9 bull:100 cows estimated in October 2009 for this herd. The strata-based estimate of 114,472 ≥1-year-old caribou should be viewed with caution as an unknown proportion of the bulls, particularly, was missed.

Our June 2010 survey outcome suggests that a modified June photo-survey for barren-ground caribou that includes all herd sectors may be feasible, provided that there are adequate numbers of radio-collared cows and bulls, and if both the calving grounds and areas with non-breeding caribou can be comprehensively defined and surveyed. This could, however, be logistically challenging as the "trailing edge" of bulls, yearlings and non-breeding cows in early June may cover a large area with low caribou densities that extends south of the tree-line.

Population estimates for the Bluenose-East herd from July 2010 post-calving photo-survey

As with the June survey, the July 2010 BE caribou survey resulted in 2 population estimates: 122,697 ± 31,756 ≥1-year-old caribou from the best model of the Rivest estimator and 98,646 ± 13,965 ≥1-year-old caribou from the Lincoln-Petersen estimator. All the estimates from the Rivest models (Table 9) were similar (120,495-127,841) and had similar confidence intervals.

The estimate of 122,697 ± 31,756 from the Rivest estimator is the preferred population estimate of the 2 from the July 2010 BE post-calving survey, as the Lincoln-Petersen estimate most likely under-estimates herd size and produces an unrealistically low estimate of variance (Rivest *et al.* 1998). A fundamental assumption of the Lincoln-Petersen estimator is that all radio-collared caribou have equal probability of detection, and that each radio-collared caribou will be a random representation of all caribou, so that the recapture rate of the radio-collared caribou will reflect the true proportion of the population sampled. This assumption is problematic given that the number of radio-collared caribou is very small compared to herd size, and often larger groups have more radio-collars than smaller groups. The survey is built around flying to the radio-collared caribou, thus groups with no radio-collars are less likely to be found. On the BE 2010 survey, all radio-collars were searched for when photos were being taken, but the 3 radio-collars that were not found at the time of photography had erratic signals that did not allow us to home in on them. We had daily GPS or Argos locations for these 3 radio-collars, which indicated that they were active and moving, thus were part of the sample of radio-collars available. We found that VHF transmitters, particularly on older radio-collars, may sometimes be erratic. Thus some groups, particularly those with no radio-collars or a single radio-collar, may have lower detection rates than others. Analysis of detection probabilities for the current post-calving survey suggested that groups with several radio-collars were more likely to be detected than groups with a single radio-collar. Some ad-hoc methods have been proposed to account for bias issues with the Lincoln-Petersen estimator (Russell *et al.* 1996), however, these are subjective and often result in the loss of data from smaller group sizes (Rivest *et al.* 1998).

The homogeneity, independence and 5 threshold Rivest models produced similar estimates between 120,495 and 127,841, similar log-likelihood scores and similar 95% CIs; thus, there is little clear rationale to select one model over the others. In practice, it is very likely that a group with 2 or more radio-collars with functioning GPS/Argos and VHF transmitters would be found during a post-calving survey with good conditions and herd-wide aggregation. In attempted post-calving surveys of this herd in 2009 and 2012, conditions did arise where a portion of the herd, with associated radio-collars, did not aggregate sufficiently for photos and prevented a viable herd estimate. The results we obtained for caribou in the southern sector where the bulls, yearlings and non-breeding cows were also concentrated in July suggest that the number of radio-collars was somewhat low in this area, and that some caribou may have been missed. When photos were taken on July 6 in this area, 16,917 caribou in 9 groups were photographed and 6 of 7 radio-collars were found. Six days later, all 7 radio-collared caribou in this area were found but the total number of caribou counted (11,342) in 4 groups was more than 5,000 caribou lower. The groups found on the 2 days were quite different in size and radio-collar distribution, thus it is possible that several thousand caribou on July 12 had no radio-collars and were not found. As we noted for the June survey, there were just 4 radio-collared bulls (all in the southern sector, along with 3 radio-collared cows) during the July survey of this herd, compared to 43 radio-collared cows. A larger number of radio-collared bulls in closer proportion to the herd's bull:cow ratio would improve confidence in the population estimate from possible future post-calving surveys of this herd.

Post-calving survey methods with adequate cow and bull radio-collar numbers can result in estimates of overall herd size that include all the age classes (≥1-year-old) of the caribou population. The Rivest estimator can produce robust population estimates provided radio-collar sample sizes are adequate (Alaska Department of Fish and Game 2011; Harper 2013). Analysis of post-calving surveys of the Western Arctic Herd with 90-100 radio-collared caribou indicated that the Rivest estimates were generally very similar to the totals counted on photos, suggesting that the herd had effectively been censused or counted almost entirely (Alaska Department of Fish and Game 2011; Harper 2013). The biggest challenge of the post-calving survey method remains the possibility of caribou not aggregating sufficiently for photos due to poor weather conditions. As has happened with other herds, issues with portions of the herd not aggregating resulted in unsuccessful post-calving surveys of the BE herd in 2001, 2009, and 2012, and created challenges in BE surveys flown in 2000, 2005, and 2006.

MANAGEMENT CONSIDERATIONS

The preferred population estimate for the BE caribou herd in 2010 from July of 122,697 ± 31,756 adults had overlapping confidence intervals with the June strata-based survey estimate of 114,472 ± 15,845 adults, and differed by 6.7% of the post-calving estimate. The alternate extrapolated estimate (B) of 120,880 ± 13,398 ≥2-year-old caribou basedon strata-based estimates of all cows divided by the sex ratio was very similar to the Rivest July estimate. Because we suspect that the June strata-based estimate of 114,472 ≥1-year-old caribou slightly under-estimated the bulls, yearlings and non-breeding cows in the herd, we suggest that the July estimate of 122,697 adult caribou is likely closest to the true population size (≥1-year-old caribou) for the BE herd in 2010. This estimate had a CV of 13.2%, an acceptable variance below Pollock *et al.*'s (1990) 20% benchmark, and the other Rivest models all generated very similar herd estimates. The biggest problem in using the post-calving survey for this herd has been the lack of herd-wide aggregation that has occurred in several attempted surveys of this herd; attempted surveys in 2001 (Patterson *et al.* 2004), and in 2009 and 2012 in the present authors' experience resulted in failed surveys and no population estimate.

The estimate of breeding females from the June survey had a CV of 9.3% and the estimate of ≥1-year-old caribou in the June survey area had a CV of 6.0%, both of which should be acceptable for management purposes. Heard and Williams (1990) and Boulanger *et al.* (2011) emphasized the importance of size and trend in the breeding female sector of the herd to its dynamics. The extrapolated estimates of ≥2-year-old caribou remain rough estimates of herd size, as described by Heard (1985). The more recent approach to the extrapolation (B) developed by Campbell *et al.* (2016) uses only one ratio calculation and results in a lower variance than the earlier extrapolation (A) which uses 2 ratios. The BE 2010 estimate from this method of 120,880 was within 1.5% of the post-calving estimate of 122,697 and this approach may be preferable for June surveys where there are adequate radio-collar numbers to define the full distribution of all cows.

The June and July 1993 surveys of the George River herd by Couturier *et al.* (1996) differed somewhat from the methods and calculations we used, but the June and July 1993 George River population estimates showed good agreement. Statistically, this is a sample size of just 2 comparisons, and true herd size was not known in either case. However, the correspondence of the 2 pairs of estimates suggests that both survey methods are fundamentally sound, if carried out with adequate radio-collar numbers, field techniques that emphasize high precision, and appropriate analyses. Management recommendations about harvest or other factors (e.g., WRRB 2016) are generally based on a range in herd sizes and take other factors like trend and key demographic indicators into account (PCMB 2010; ACCWM 2014). In the case of the BE herd in 2010, the management plan (ACCWM 2014) would have identified the herd as in the green "high numbers" phase based on all the estimates generated from the June and July 2010 surveys.

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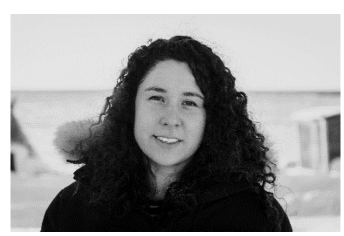

moved to Yellowknife to begin a position as Manager of Wildlife Research and Management in the Wildlife Division.

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A General Approach to Harvest Modeling for Barren-ground Caribou Herds in the NWT and Recommendations on Harvest Based on Herd Risk Status

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ABSTRACT

Previous modeling of barren-ground caribou demographics and harvest for the Bathurst and Bluenose-East herds was carried out under a limited range of demographic scenarios to evaluate the likely consequences of varying levels and sex ratio of harvest. The modeling in this report was carried out to assess risk associated with harvest in a wider range of conditions, to generate more general results that could be applicable to multiple herds varying in size and trend. A deterministic model was used with a caribou herd of 100,000 with low, moderate and high calf productivity and low, moderate and high levels of adult survival. Harvest levels modeled ranged from 0-8,000, and sex ratio of the harvest varied from 0-100% cows. Time-steps of three and six years were used to match the frequency of recent Government of the Northwest Territories population surveys of most caribou herds. With low adult survival, herd trend is likely to be negative and a substantial harvest would increase the risk of greater decline. Herds with high survival and high calf productivity can tolerate substantial harvest levels. Power to detect declines within three years was limited to larger scale (>31%) declines in herd size. Bull-cow ratios were sensitive to male and female harvest levels with increases in bull-cow ratios when female harvest was higher. Case studies of the Bathurst and Bluenose-East herds using the most recent demographic information suggest that harvest should be very conservative, given herd size, trend and relatively low cow survival in these herds. Recommended harvest should be re-assessed frequently because a herd's productivity and survival rates can change quickly. Results of the harvest modeling were used to develop approaches to recommending harvest level and sex ratio based on herd risk status, including a simple rule of thumb approach.

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INTRODUCTION

In the wake of declines in all barren-ground caribou herds monitored by the Government of the Northwest Territories (GNWT) in the early 2000s, harvest management was recommended by co-management boards and implemented for the Cape Bathurst, Bluenose-West and Bathurst herds (Adamczewski et al. 2009, Boulanger et al. 2011). Population modeling was carried out in 2009-2010 to assess acceptable hunter harvest (number and sex ratio) for the Bathurst herd compatible with providing the herd a strong opportunity to recover (see Boulanger and Adamczewski 2015 and Boulanger et al. 2011).

Long-term management planning for these herds, the Bluenose-East herd (e.g. ACCWM 2014), and for the Beverly and Qamanirijuaq herds is either completed or underway. Management recommendations for harvest for multiple herds at various population sizes and trends will be needed. The purpose of this paper is to demonstrate a modeling process that can be used to estimate the risk of harvest for a population based upon its relative size and trend. The modeling is intended to provide guidelines that could be used by co-management boards or governments to complement harvest management strategies developed through co-management processes. The modeling does not address harvest allocation. We also recognize that harvest recommendations and herd-based plans will reflect other criteria, knowledge and views, in addition to biological considerations.

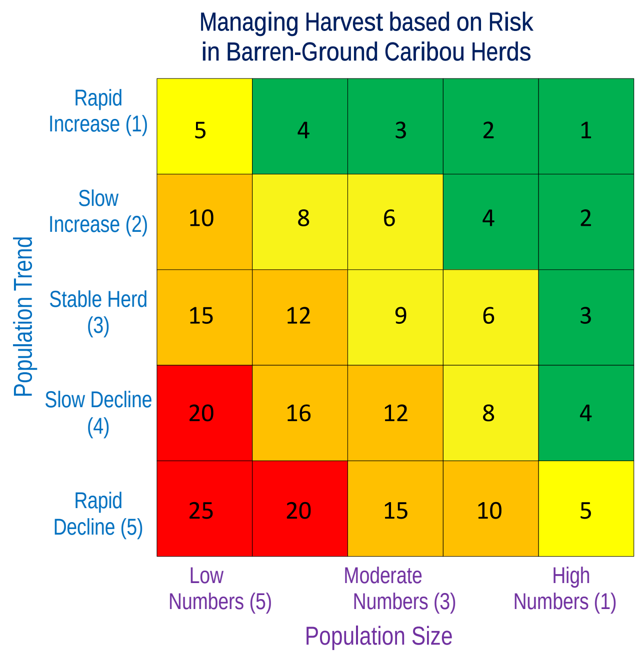


Figure 1. Relative levels of risk as a function of population trend and size.

It is important to remember that other factors that influence caribou, such as weather in all seasons, predation, and cumulative effects of development, will continue to affect each herd. In addition, barren-ground caribou herds have long been known to fluctuate widely in numbers over time (Zalatan et al. 2006, Bergerud et al. 2008). Caribou harvest management will need to be flexible and adaptive to shifting conditions for each herd.

METHODS

The underlying model used for simulations was similar to the demographic model used for the Bathurst and Bluenose-East herds (Boulanger and Adamczewski 2015, Boulanger et al. 2011, Boulanger 2016 In Prep.). Because this was a deterministic model, no variation was simulated in model parameters.

This model attempts to define the relative risk to a herd of various harvest strategies as evaluated at three and six years. This approach is meant to emulate the management process where harvest levels are initially set based upon herd size with usually less knowledge about population trend. Therefore, managers often are faced with only knowing one of the axes in Figure 1 when setting harvest levels. However, if surveys are conducted at three year intervals then it should be possible to re-evaluate trend and population size. Therefore, simulations are tailored to ask what risk category a herd would be at three years after a harvest regime is imposed.

Selection of Input Parameters

Parameters were selected to span the most commonly observed values in caribou herds. Model parameters were based upon ranges of adult survival (Figure 2) and levels of productivity (as indicated by calf-cow ratios) (Figure 3) observed for various caribou herds. Adult female survival is directly related to herd trend (Figure 2) so adult survival rates also dictated overall herd trend with smaller scale changes dictated by productivity levels.

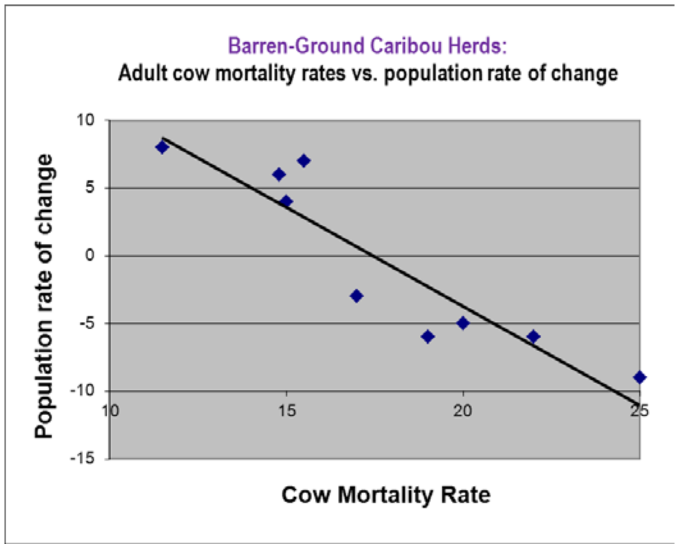


Figure 2. Empirical relationship between caribou adult cow survival rates and population rate of change (courtesy of Don Russell, coordinator, CARMA Network, personal communication).

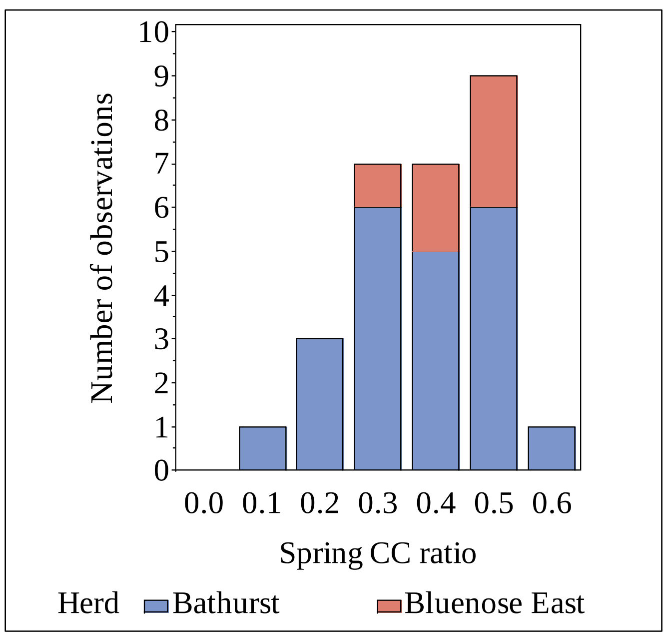


Figure 3. Ranges of spring (March-April) calf-cow ratios for the Bathurst herd (1985-2012) and Bluenose-East (2007-12) caribou herds.

Productivity was modeled as the product of calf survival and fecundity (the relative proportion of adult females that produce a calf each year). Productivity in this context would be the proportion of calves that survive their first year of life relative to the number of adult females that gave birth to calves on the calving ground in the previous year. The actual measure that is available for productivity is calf-cow ratios recorded in late winter at about ten months of age and therefore an initial step of modeling was to calibrate productivity values so that they spanned the observed range of calf cow ratios. This was done by adjusting calf survival values (which vary more than fecundity) to produce calf-cow ratios that ranged from 0.2-0.5 (Figure 3). We note that calf-cow ratios were relatively unaffected by adult female survival values (Figure 4), with a slight tendency for higher values if adult female survival was lower.

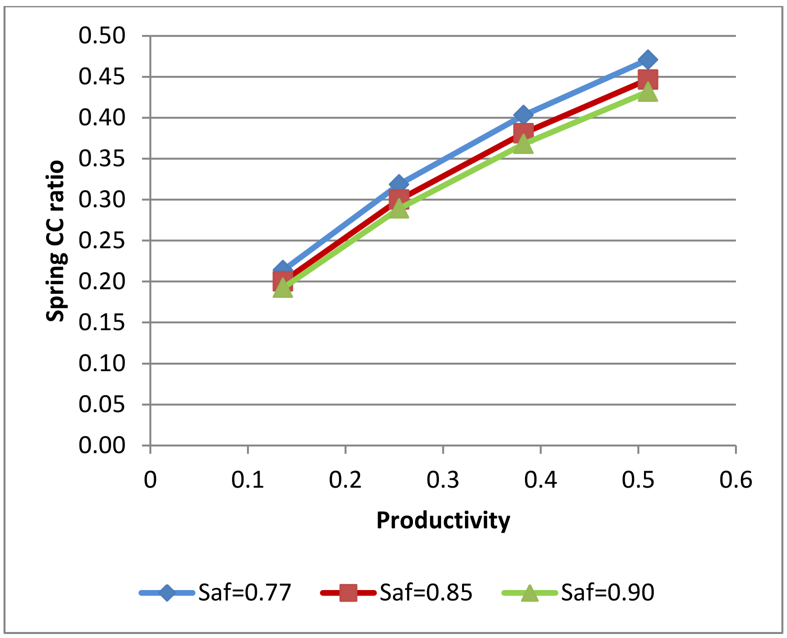


Figure 4. Productivity values with corresponding calf-cow ratios. Various values of adult survival (Saf) are given. Other parameters are listed in Table 1.

Other parameter values were based upon relationships from the OLS model analysis of the Bathurst herd (Boulanger et al. 2011) (Table 1). Namely, yearling survival was set equal to adult female survival and bull survival was assumed to be 80% of the value of adult female survival. The initial bull-cow ratio was set at 0.43 which was the average value of estimated bull-cow ratios for the Bathurst herd from 2004-12 (range=0.36-0.56) and the estimated value for the Bluenose-East herd in 2010. As discussed later, these assumptions should be re-considered for herds that have actual demographic parameter estimates since they assume demography that is similar to the Bathurst herd (a declining herd) and the Bluenose-East herd (the bull-cow ratio).

One point that is important to note is that productivity is partially influenced by adult female survival given that higher survival of adult females means that more calves will be produced in a given year. For example, for simulations the initial number of adult females (out of the herd size of 100,000) was 69,930. The actual number that produced calves was determined by the product of adult survival and fecundity. Thus higher adult survival values resulted in higher numbers of breeding females (Table 1).

Table 1. Initial parameterization of simulations. Productivity was the product of calf survival and fecundity. Initial breeding females was the product of initial cows (69,930 *adult survival* fecundity). Asymptotic λ values for females and calf cow ratios are also given.

Survival Scenario	Productivity	Survival				Fecundity	Initial	Female Trend	CC* ratios	
		Cow	Bull	Calf	Yearling		Breed F N*	λ	Spring	Fall
Low	0.14	0.77	0.62	0.16	0.77	0.85	45,769	0.83	0.21	0.40
	0.26	0.77	0.62	0.30	0.77	0.85	45,769	0.87	0.32	0.46
	0.38	0.77	0.62	0.45	0.77	0.85	45,769	0.90	0.40	0.50
	0.51	0.77	0.62	0.60	0.77	0.85	45,769	0.94	0.47	0.52
Moderate	0.14	0.85	0.68	0.16	0.85	0.85	50,524	0.91	0.20	0.38
	0.26	0.85	0.68	0.30	0.85	0.85	50,524	0.95	0.30	0.45
	0.38	0.85	0.68	0.45	0.85	0.85	50,524	0.99	0.38	0.49
	0.51	0.85	0.68	0.60	0.85	0.85	50,524	1.02	0.45	0.51
High	0.14	0.90	0.73	0.16	0.90	0.85	53,496	0.96	0.19	0.38
	0.26	0.90	0.73	0.30	0.90	0.85	53,496	1.00	0.29	0.44
	0.38	0.90	0.73	0.45	0.90	0.85	53,496	1.04	0.37	0.48
	0.51	0.90	0.73	0.60	0.90	0.85	53,496	1.08	0.43	0.51

*Breed F N = Breeding Female Number; CC = Calf: Cow

The combinations of productivity and adult survival resulted in asymptotic λ values for the female segment of the population ranging from 0.83-1.08 which corresponded to an annual 17% decrease up to an 8% increase respectively (Figure 5). At low cow survival rates (0.77), the expected population trend was negative at all levels of productivity.

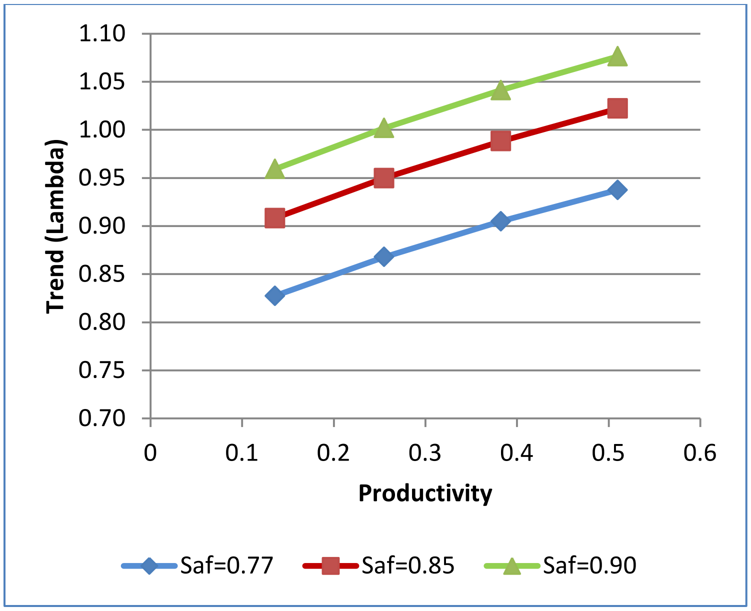


Figure 5. Trend in female population size as a function of productivity and adult female survival.

Selection of Risk Thresholds

The next step in the modeling process was to assign simulation outcomes to risk categories for the herd as evaluated in three and six years. To do this, the relative risk zones in Figure 1 were assigned categories based on herd size and annual rate of population change. As with Figure 1, higher rates of decline were considered acceptable for larger herd sizes but as herd size decreased the risk of serious decline were considered less acceptable.

Table 2. Thresholds of risk as a function of trend and population size.

Population Size (thousands)

Lambda	**% change**	**<30**	**30-60**	**60-90**	**90-120**	**>120**
>1.1	>10%	5	4	3	2	1
1.02-1.09	2-9%	10	8	6	4	2
0.98-1.02	-2 to +2%	15	12	9	6	3
0.9-0.98	-10 to -2	20	16	12	8	4
<0.9	<-10%	25	20	15	10	5

In the context of Table 2, risk levels associated with green and yellow were considered acceptable, risk zones of orange were considered to be of concern, and risk zones of red and black as not acceptable (warranting strong consideration of harvest restriction).

Case Studies for Bluenose-East and Bathurst Herds

The simulations conducted assumed a starting herd size of 100,000 caribou as a benchmark. We also ran a set of simulations that were tailored to the Bluenose-East and Bathurst herds to further illustrate the application of the generic harvest model across two different combinations of herd size and trend.

RESULTS

The relative risk of various harvest strategies was evaluated graphically with harvest levels as the x-axis and percent cows as the y-axis at three years (Figure 6) and at six years (Figure 7). Figures 6 and 7 present a wide range of outcomes specific to combinations of cow survival rate, calf productivity, harvest levels and harvest sex ratio. These graphs can also be viewed in a simpler manner: graphs with substantial amounts of green and yellow represent situations with relatively little risk of significant decline, while graphs with substantial red or black represent situations with a high risk of serious decline.

Included were results with zero harvest which corresponded to the farthest left cells on each plot. The relative amount of harvest pressure increased with increasing x-axis values but also with increasing y-axis values since the harvest would include more females. When evaluated at three years, it can be seen that the highest risk categories corresponded to the low survival and low productivity (0.14-0.25); herds with these conditions would be declining with zero harvest. In most other scenarios risk was moderate to low. However, this result was potentially misleading since a decreasing population would only have three years to decrease therefore the longer-term risks of various harvest strategies may not be as evident. If the same simulations are evaluated at six years then risk levels become higher for all of the low survival scenarios, for the medium survival scenarios if productivity <0.25, and for the high survival scenarios if productivity ≤0.14) (Figure 7). This result highlights the need for frequent re-evaluation of harvest strategies at three year intervals especially if the initial harvest strategy places a herd into a higher risk category.

In general, the lowest risk situations were herds with high adult survival and high calf productivity; these herds could tolerate substantial harvest levels, including cow harvest. These conditions were last seen in the Northwest Territories caribou herds in the early 1980s. In herds with low adult survival, a declining trend was expected with no harvest, thus any significant harvest would increase the risk of rapid decline.

One question that would be related to adaptive management is whether the effects of different harvest strategies could be detected within three years. Power analyses (Figure 8) were also evaluated graphically to explore this question. In Figure 8, red or green cells indicate that a negative or positive change would be detected in breeding female estimates. It can be seen that decreases would be detectable for the low survival scenario regardless of harvest when productivity was low (<0.25) and at higher harvest levels when productivity was higher. Declines would only be detectable at higher harvest levels in the medium and high survival scenarios when productivity was low.

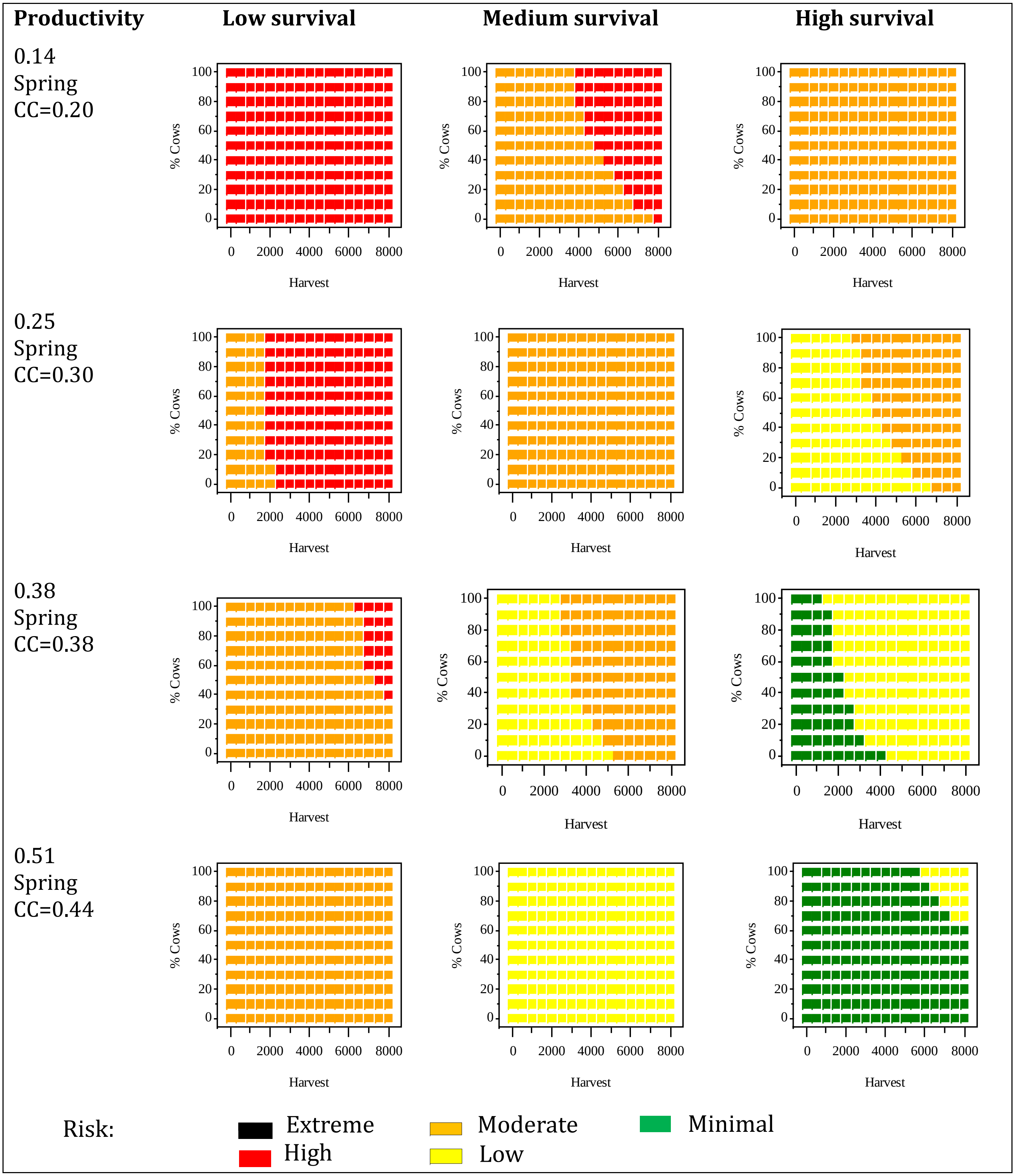


Figure 6. Relative risk of various harvest strategies when evaluated at three years. Risk categories are defined in Table 2.

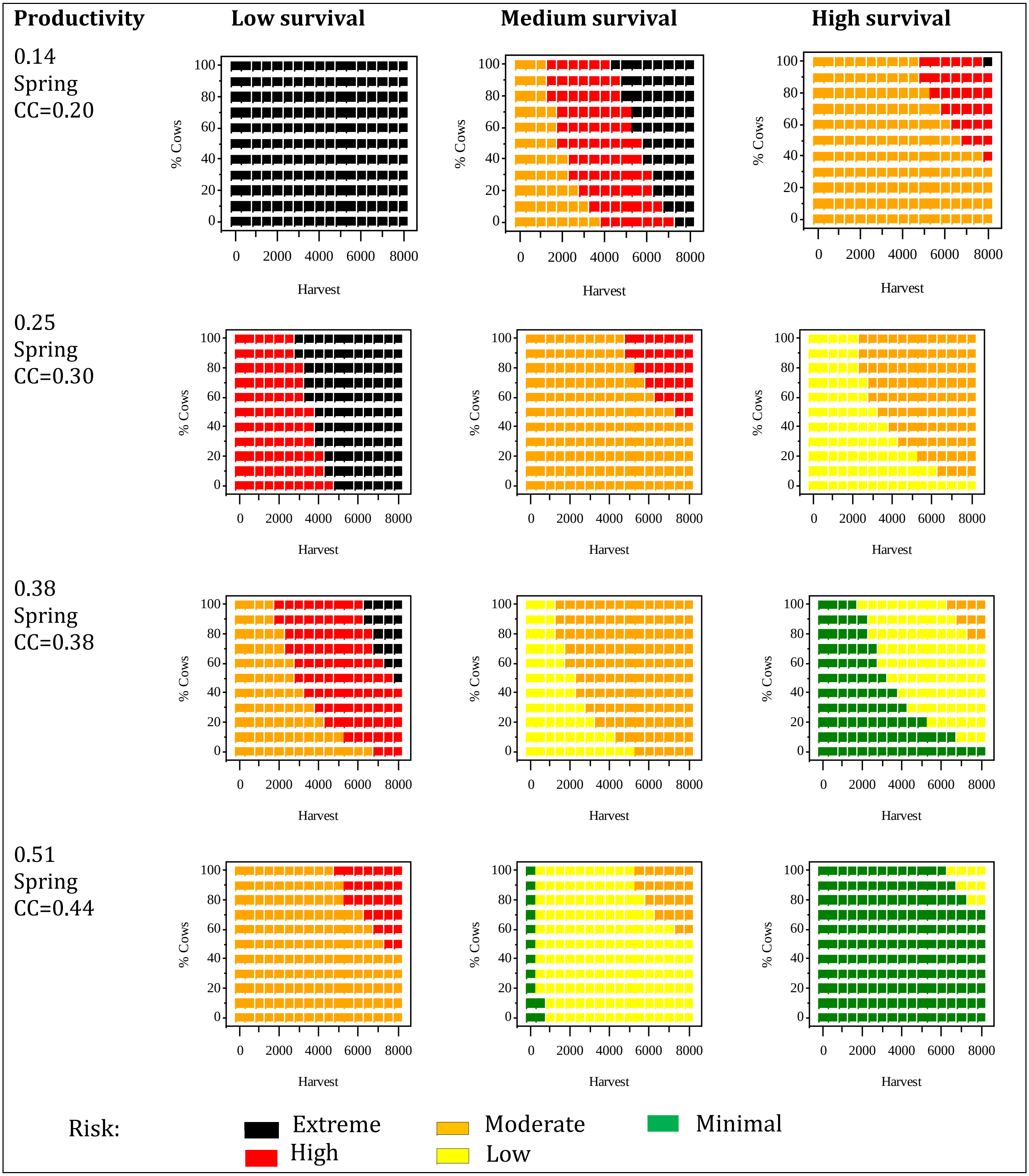


Figure 7. Relative risk of various harvest strategies when evaluated at six years. Risk categories are defined in Table 2.

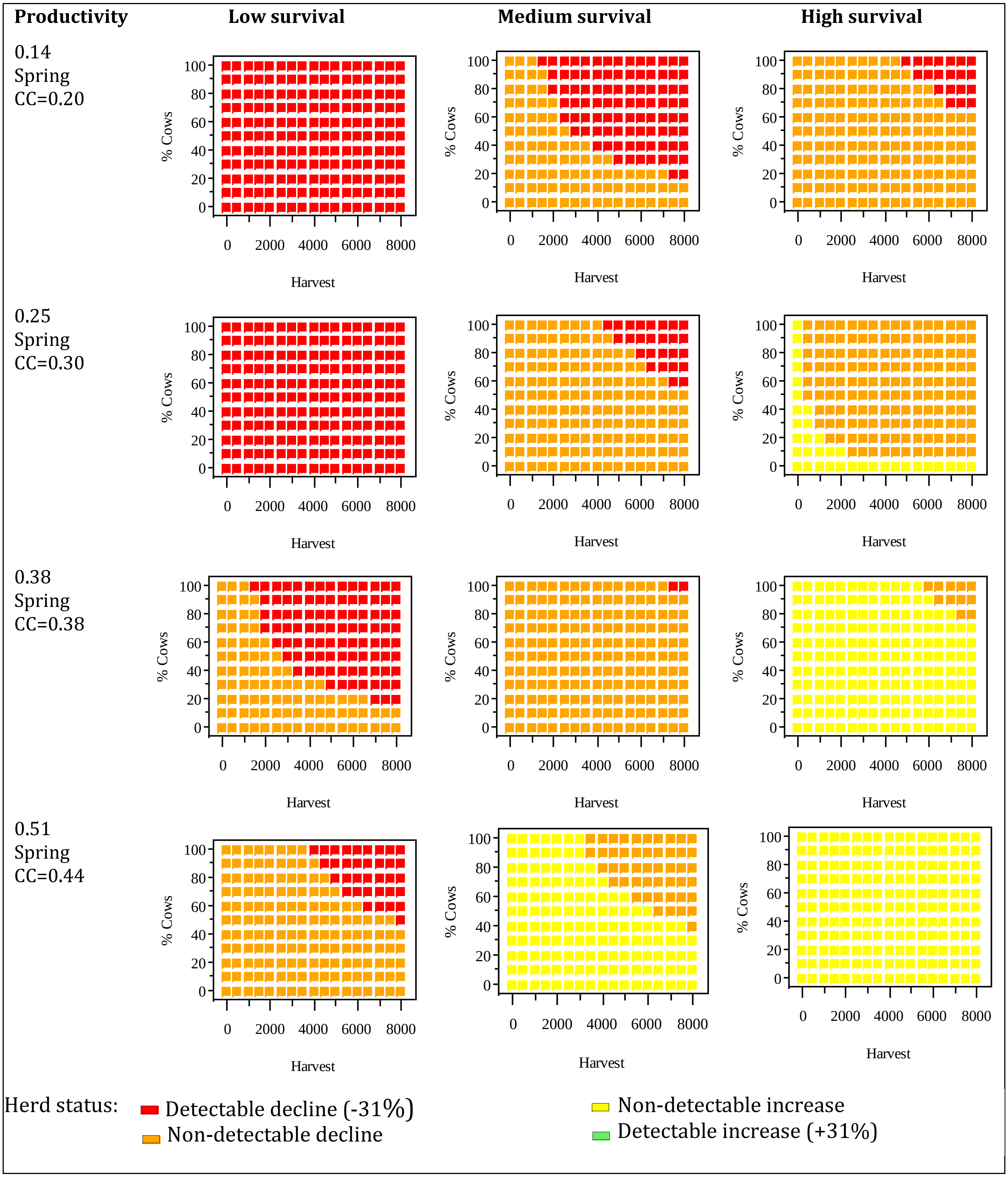


Figure 8. Power to detect change at three years based on various harvest levels. Red denotes that a negative trend was detected (at least 31% decline) whereas orange would be a non-detectable decline, yellow a non-detectable increase and green a detectable increase of at least 31%.

One important indicator of herd status is the bull-cow ratio which can signal a depletion of bulls when harvest is strongly bull-oriented. In general bull-cow ratios should remain high enough to ensure that breeding success is not reduced. However, naïve interpretation of bull-cow ratios can be misleading given that a ratio can also increase if the cow population size is decreasing relative to bulls (due to cow harvest or other factors). Figure 9 displays simulation results in terms of bull-cow ratios with higher risk indicated by red and black cells. Moderate and lower risks are indicated by orange and yellow whereas minimal risk (an increase in bull-cow ratio) is indicated by green. A grey cell indicates an increase in bull-cow ratio compared to the initial value that was partially due to a decrease in cow population size. In this case, an increasing bull-cow ratio would be misleading. From this it can be seen that higher bull harvest caused extreme risk (black cells) in scenarios where productivity is <=0.38. Grey areas (decreasing cows relative to males) could occur at higher harvest levels when the majority of the harvest is cows. In general, if productivity is above 0.38 then moderate harvest of bulls results in acceptable risk in terms of bull-cow ratios.

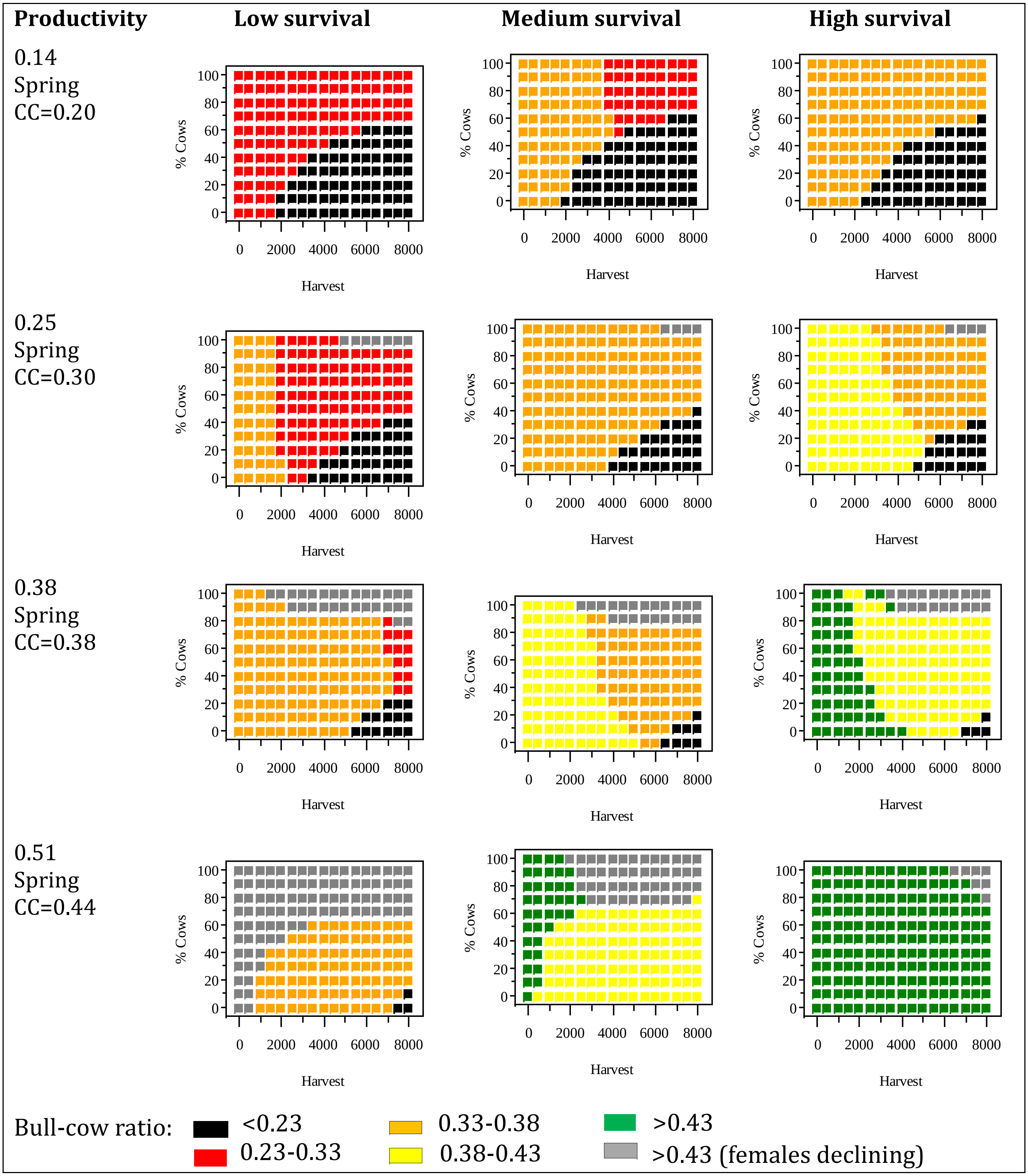


Figure 9. Bull-cow ratios after three years. Grey areas indicate higher bull-cow ratios that are partially due to declining cows and therefore should be interpreted cautiously. A value of 0.43 means a bull:cow ratio of 43 bulls: 100 cows.

The results of these simulations can be used to gauge relative levels of risk associated with harvest levels assuming an initial population size of 100,000 adult caribou. A relevant question is how risk varies with population size and proportion of the population harvested. We plotted the proportion of the adult herd harvested as a function of herd size after three years of simulations (Figure 10). From this it can be seen that overall risk is related to herd size with larger proportions of harvest acceptable when herd size is larger. However, it can be also seen that factors such as overall trend, and the proportion of females harvested will also influence risk. In fact, in the case of the simulations, herd size and trend are correlated at year three since only simulations with negative trends would cause a reduced total herd size. Harvest rates greater than 5% are only likely to be acceptable when a herd is large and has high survival and productivity. A good knowledge of a herd's demographics is essential in defining acceptable harvest recommendations.

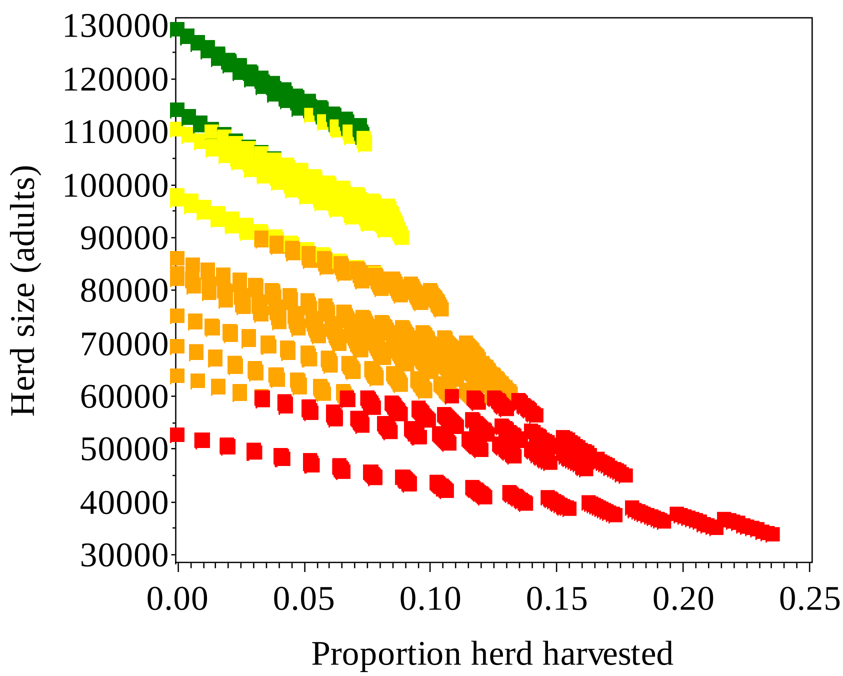


Figure 10. Proportion of herd harvested versus herd size at year three of simulations. Colors correspond to risk categories (Table 2).

Case Study: Applying Harvest Modeling to the Bluenose-East and Bathurst Herds

Recent modeling for the Bathurst herd and Bluenose-East herd has suggested that adult female survival rates are lower than assumed in previous harvest modeling papers

(Boulanger and Adamczewski 2015, Boulanger 2016 In prep.). We therefore applied the results of recent studies for these herds to the harvest model to assess relative risk of herd at assumed harvest levels. We used estimates of demographic parameters from recent analyses conducted as part of the Bathurst 2012 survey (Boulanger et al. 2014a) and Bluenose East 2013 survey (Boulanger et al. 2014b). A summary of demographic estimates is given in Table 3.

Table 3. Indicators for Bathurst and Bluenose-East herds from analyses conducted from the 2012 Bathurst and 2013 Bluenose-East calving ground surveys (Boulanger et al. 2014a, Boulanger et al. 2014b).

Indicator	Herd	
	Bathurst (2009-12)	**Bluenose-East (2010-13)**
Adult female survival	0.78	0.75 (harvest of 2,600 assumed)
Adult male survival	0.71	0.62 (harvest of 1,400 assumed)
Productivity	0.38	0.26
Herd size	2012: 34,690 (CI=24,934-44,445)	2013: 68,295 (CI=40,655-62,849)
Population trend	0.99 (CI=0.86-1.08)	0.87 (CI=0.85-0.91)
Last Bull-cow ratio	2012: 0.57 (CI=0.51-0.64)	2013: 0.426 (CI=0.39-0.46)
Annual harvest	<1,000	2,800-4,000
Proportion females harvested	0-40%	65%
Approximate proportion N harvested	1%*	4-6%

*Reported harvest for Bathurst has been <300/year but there is uncertainty as to true harvest due to overlap with Bluenose-East on winter range. A harvest of 300 is assumed here. Reported Bluenose-East harvest since 2010 has averaged 2,800/year but may be under-reported. A harvest of 2,800-4,000 is assumed here.

The population size and trend for the Bathurst herd puts it in the orange "moderate risk" category (box 12 in Table 2) mainly because the overall trend appears to be stable. The Bluenose-East herd also is placed into the orange (box 12) mainly because of the steep rate of decline even though the population size is still substantially larger than in the Bathurst herd. In both herds it is likely that substantial harvest will increase risk of serious decline.

The low levels of survival for the Bathurst and Bluenose-East put them into the lower survival scenario simulations (Table 1) with productivity at 0.38 for the Bathurst and productivity close to 0.26 for the Bluenose-East. We re-ran the harvest model with starting population sizes, bull survival rates and bull-cow ratios that were based on the 2012 (Bathurst) and 2013 (Bluenose-East) calving ground survey and evaluated the results based upon the low survival (0.77)-productivity=0.38 scenario for the Bathurst and low-survival-productivity=0.26 scenario for the Bluenose-East. The boxes predicting herd status for each herd at three years, power to detect change in three years, and bull-cow ratios are shown in Figure 11.

For both herds the majority of simulation outcomes result in a red risk category across most scenarios. If there is no harvest or harvest is low (<1,000) then the Bluenose-East remains in the orange category. This suggests that if lower survival levels continue the herd status will go into the red from the orange zone given likely harvest levels (Table 2). This is because of the low estimated survival values for both herds. For the Bathurst, levels of harvest of 2,000 or more result in the highest risk category (black) further demonstrating that this herd cannot tolerate significant harvest given its relatively low size. For Bluenose East, high harvest levels (>7,000) could also put the herd in the black zone given the relatively low level of productivity. In both cases power to detect decline in three years is high. For the Bluenose-East, bull-cow ratios will be reduced especially if bull harvest is high. If cow harvest is high (100%) and harvest is greater than 4,000 then bull-cow ratios could increase due to reduction in cow population size compared to bull population size (grey squares).

Interpretation of bull-cow ratios is more challenging given that bull-cow ratios were high (0.57) in 2012 for the Bathurst herd which placed it in the green zone in Figure 9. In this case, reduction of bull-cow ratios would not cause a significant risk to the herd since this level suggests there are a high proportion of bulls in the herd relative to cows. However, simulation results suggest that given the estimated ratios of bull and cow survival rates it is possible that the bull-cow ratio could increase (grey squares) under current levels of productivity (0.38) which would be partially due to female mortality. This is explained further in the Bathurst 2012 survey report (Boulanger et al. 2014b). Note that this effect becomes more pronounced if there is any female harvest mortality. Therefore, we suggest that any changes in bull-cow ratio for this herd be interpreted cautiously and in unison with other indicators.

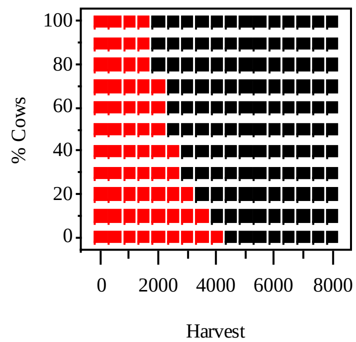
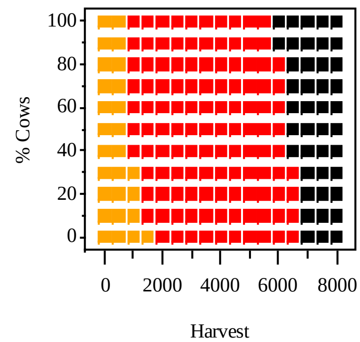
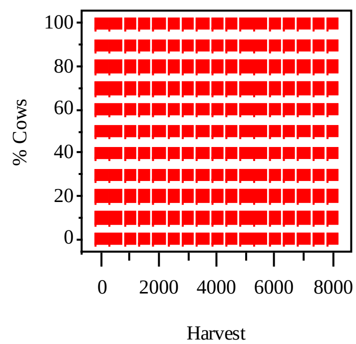
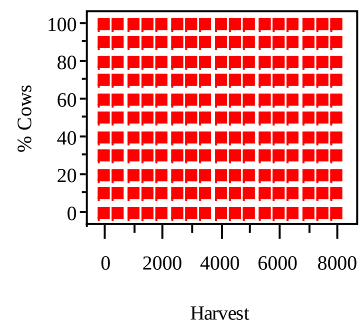
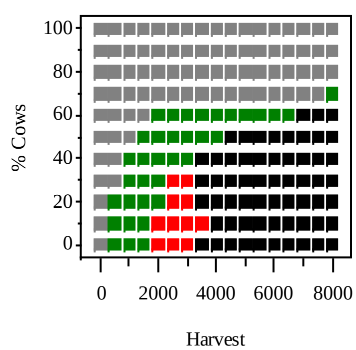
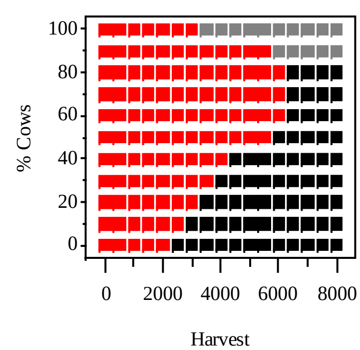
Indicator	Bathurst Low survival (0.77) Productivity=0.38	Bluenose-East Low survival (0.77) Productivity=0.26
<u>Herd status in three years</u> (Figure 7). Using initial N as starting point. *Orange indicates moderate risk (Table 2)* *Red indicates a high risk* *Black indicates extreme risk.*		
<u>Power to detect change at three years</u> (Figure 8) *Red indicates that decline would be detectable.*		
<u>Bull-cow ratios after three years</u> (Figure 9) *Grey indicates cows declining.* *Green indicates high (>0.43) b/c ratio* *Red: bc=0.23-0.33* *Black: bc<0.23*		

Figure 11. Herd indicators from harvest simulations as applied to the Bathurst and Bluenose-East herds with starting herd sizes and bull-cow ratios as listed in Table 3. Evaluations would occur at three years after population surveys *assuming constant survival and productivity rates.* Survival and productivity scenarios are detailed in Table 2.

DISCUSSION

The results of these simulations illustrate how survival and productivity need to be considered when evaluating the risk of various harvest strategies. Demographic analyses of the Bathurst and Bluenose-East herds indicate lower natural survival rates suggesting that herds are declining even without harvest pressure (Boulanger et al. 2014a, b). Therefore, assessment of additional risk of decline due to harvest pressure is required given that a constant harvest on a declining population can accelerate population declines (Boulanger et al. 2011).

Adult survival rates determine the relative robustness of the herd to harvest and other perturbations whereas productivity ensures replacement of caribou. Monitoring of survival, productivity, and population size are therefore essential elements in sound population management. Even if collar sample sizes are low, it is still possible to estimate relative survival rates using the OLS model as has been done with the Bathurst and Bluenose-East herds. If survival estimates are not available, then consideration of relative trend and levels of productivity may give an indication of survival. The following sequence of steps could be used to initially assess likely survival values.

1. What is the trend of the herd?
2. What was the level of productivity in the previous years?
3. Given levels of productivity—is trend due to survival or productivity?
   a. If it is productivity then trend will most likely be less steep
   b. If it is survival then trend will be steeper
4. Divide harvest/female N—what proportion is being harvested?

These simulations are a simplification of herd dynamics in that they assume that demographic parameters are constant across individuals and time (White 2000). In reality, all demographic parameters vary and therefore the most appropriate way to view the future trajectory of a population as influenced by harvest is as a range of outcomes or probabilities of different target harvest levels (Boulanger and Adamczewski 2015, Boulanger et al. 2011, Boulanger 2013 In Prep.). The best use of the simulation results in this paper is to define general areas of higher risk. For example, simulations show that if productivity is low then only low to moderate harvest is acceptable to ensure that longer-term risk to the herd is minimized.

The simulations in this report assume that initial bull-cow ratios were similar to the Bathurst and Bluenose-East herds in recent years. The eventual bull-cow ratios at three and six year intervals were then influenced by bull and cow survival and relative levels of recruitment into the bull and cow segments of the herd, which would be related to productivity level. If initial bull-cow ratios were higher then it would be expected that a higher level of bull harvest might be possible. We note certain cases where increasing bull-cow ratios may be due to a decreasing cow population size and therefore naïve interpretation of ratios may be misleading. We suspect that a declining female segment of the population may be one reason for the increase of bull-cow ratios with the Bathurst herd (Boulanger et al. 2014a).

The initial herd size of 100,000 was based upon an average level of herd size to allow generalization of model results. However, when possible, a more exact analysis specific to a herd under particular conditions that considers variation in demography may be needed to assess risk of harvest. Harvest levels should always be considered in relation to overall herd size given that a harvest level of 5,000 will impact a herd of 25,000 very differently than a herd of 100,000 or a herd of 350,000 (Bathurst herd in 1990s). If bull-cow ratios and related demographic parameters are available, then simulations that are more tailored to individual herds should be pursued, as detailed in the Bathurst and Bluenose-East case studies. Deterministic simulations such as those documented in this paper could be useful to assess risk of harvest levels. Unlike stochastic simulations, deterministic simulations can be run very quickly and the methods presented in this manuscript should provide an intuitive way to interpret results. Stochastic simulations would provide the best assessment of risk with focused harvest strategies given that variation in demographic parameters would be considered. Consideration of stochastic variation would be most meaningful when herd size is smaller (<50,000 caribou) in which case temporal and demographic variation may have a larger impact on herd status compared to larger herd sizes.

The case studies of the Bluenose-East and Bathurst highlight one of the most important messages of this exercise which is that caribou demographics are likely to be temporally dynamic and therefore assessment of risk due to harvest or due to estimated survival rates should be undertaken frequently.

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APPENDIX A: HARVEST RECOMMENDATIONS FOR BARREN-GROUND CARIBOU BASED ON HERD RISK STATUS: A RULE OF THUMB APPROACH

Background

The Advisory Committee for the Cooperation on Wildlife Management (ACCWM)'s management plan for the Cape Bathurst, Bluenose-West and Bluenose-East caribou herds (ACCWM 2014) identifies an approach to hunter harvest management that assumes each herd will cycle between high and low numbers. Four colored zones are defined for each herd as (a) low (red), (b) decreasing (orange), (c) increasing (yellow), or high (green). Thresholds for transitions between these zones are defined based on the range of estimated herd sizes for the three herds, and harvest recommendations are proposed based on which zone the herd is in.

This approach is intuitive and pragmatic. However, there are two potential issues with this approach: (1) herds do not always cycle predictably, and (2) at best, reliable population estimates for the three herds only extend back to the late 1980s. Consequently, the basis for defining historic high and low levels and the associated thresholds between zones may sometimes be limited[1]. The Department of Environment and Natural Resources (ENR) has developed additional "rules of thumb" approach to help in defining harvest recommendations based on a herd's risk status, particularly its size and trend. This approach should be complementary to the type of recommendations on harvest in the ACCWM plan (2014) or other management plans. Harvest recommendations are meant to be revisited as new information on a given herd's risk status becomes available. The rule of thumb approach described here was based in large part of the general harvest modeling described in the main body of this report.

[1] The Fortymile herd in Alaska/Yukon numbered an estimated 568,000 in 1920, then declined rapidly and between 1940 and 1990 (50 years) remained between about 6,000 and 50,000 (Valkenburg et al. 1994). Bergerud et al. (2008) re-constructed approximate numbers of the George River (GR) herd in Labrador/Quebec from various sources and concluded that the herd reached high numbers around 1800, 1890, and 1990. Between 1890 and 1950, the GR herd was thought to have had two smaller peaks in numbers in about 1910 and 1925, with successively lower low numbers around 1900, 1920 and then 1940-1950. What constitutes a "high" and "low" herd size is less easily defined under these conditions.

Harvest Management Context in the Northwest Territories

In the Northwest Territories (NWT), management of barren-ground caribou harvest is a shared responsibility between governments, co-management boards and communities. Recommendations and decisions about caribou harvest should in part reflect biological realities; that is, what the herd can tolerate. Management plans may also define varying priorities or goals for a herd; for example, recommended harvest for a herd might be different if the priority is maximizing hunting opportunities than if the priority is herd growth. The purpose of the approach described here is to help define a range of acceptable harvest options for a caribou herd based on its risk status. These options should be revisited in an adaptive manner when new information on the herd's risk status becomes available. Recommendations and decisions on harvest management will ultimately reflect a range of considerations, in particular the requirements of land claims and treaties, and management priorities defined through co-management.

Harvest Modeling for Caribou

Population modeling was conducted to assess the likely effects of harvest varying in scale (% of herd) and sex ratio for herds varying in population size and trend. This work, along with earlier harvest/population modeling, was described in the main body of this report.

Significance of Harvest to Barren-ground Caribou Herds

How harvest affects a caribou herd depends on a number of factors. Key ones are:

a) the herd's trend (increasing, stable, declining);
b) the rate (%) of the harvest in relation to herd size; and
c) the sex ratio of the harvest (proportion of cows in the harvest).

Herd trend: Increasing herds usually have high calf productivity and high adult survival rates; consequently, they are best able to withstand substantial hunter harvest. Modeling suggests that herds with high cow survival, sustained high calf productivity, and rapid rates of increase can tolerate annual harvest rates of up to 5-8% and continue to grow or be stable. These demographic conditions have not been observed in NWT's herds since the early 1980s. Conversely, herds with a declining natural trend usually have low calf productivity and low adult survival; consequently, mortality rates already exceed the rate at which yearling caribou are added to the herd. Under these conditions, harvest rates as low as 1-2% may increase the rate of decline.

For example, modeling of the Bluenose-East herd in 2012 suggested that if the herd's increasing trend and good calf recruitment as observed in 2010 continued, a harvest of 3,000 (2.5% of the 2010 herd size estimate of 122,000) was likely compatible with a stable herd. However, a decline in herd size was likely with a harvest of 5,000-6,000 (4-5% of estimated herd size in 2010).

Harvest as % of herd size: A harvest of 5,000 cows from a large and stable herd of 350,000 caribou is expected to have relatively little impact on the herd, since only a small fraction of the herd is harvested (just over 1%). However, a harvest of 5,000 cows from a herd of 30,000 would be 16.7% of the herd. A caribou herd could never produce enough young to sustain this level of harvest.

Harvest management plans or actions taken for a number of herds across Canada (e.g. Porcupine, George River, Cape Bathurst, Bluenose-West, Bluenose-East, and Bathurst) include possible harvest closure at very low numbers for conservation to allow the herd its greatest opportunity to recover.

Harvest of cows and bulls: Harvest of cows affects herds more strongly than harvest of bulls. Removing a breeding cow takes out the cow, the calf she is carrying, and all future calves she may produce. Although over-harvesting bulls is also not desirable, a healthy bull can breed many cows, while each cow typically only carries one fetus. The effect of harvesting a high proportion of cows is strongest in declining herds and the least in increasing herds with high calf productivity. Emphasis on bull harvest over cow harvest should be greatest in declining herds and/or herds at low numbers, and least in herds increasing and/or at high numbers.

Sustainable and acceptable harvest: Sustainable harvest from wildlife populations can be defined as harvest that does not cause a population to decline. By this definition, no harvest is sustainable from a caribou herd that has a declining natural trend. A limited harvest may be still be considered acceptable for declining caribou herds, with the understanding that substantial harvest (particularly that of cows) from a declining herd increases the risk of more rapid and extensive decline.

Rule of thumb approach to harvest based on herd risk status

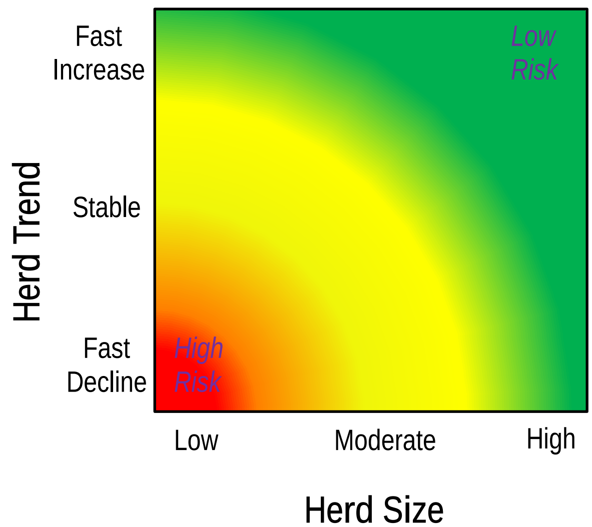

Figure 1. Assessment of risk status based on herd size and trend.

Herd risk status based on size and trend: Figure 1 shows how risk status of a caribou herd could be defined based on its size and trend (red - high risk; yellow - medium risk; green - low risk). A herd at relatively high numbers and increasing rapidly is at low risk of significant decline (green), while a herd already at low numbers and declining rapidly is at high risk of further significant decline (red). Recommendations on harvest would begin with a risk assessment of the herd.

Other measures of herd risk status: As described in the draft ACCWM caribou management plan, monitoring of caribou includes other indicators such as late-winter calf:cow ratios, fall bull:cow ratios, health and condition assessment, harvest, and information about predator numbers, herd accessibility, environmental indicators, and disturbance on the landscape. Information from people on the land is often the first indicator of change on the caribou range. These indicators could serve as additional ways of assessing the herd's risk status after herd size and trend are considered. Sustained low calf:cow ratios, caribou in consistently poor condition, high wolf numbers and increased levels of disturbance might be used to assess a herd as being at greater risk.

Basing harvest level and sex ratio on herd risk status: Figure 2 (below) shows how the rate (% of herd) and sex ratio of harvest could be adjusted to the herd's risk status. Acceptable harvest as a percentage of the herd should be limited in high-risk herds (1% or less of the herd) and increase to 2, 3 and 4% of the herd in lower-risk herds. In herds at very low risk and high numbers, harvest of 5% or greater would be acceptable. Emphasis on harvest of bulls-only or a high percentage of bulls in the harvest would be greatest in high-risk herds, while either-sex harvest would be acceptable in low-risk herds. A higher overall harvest rate could be considered in medium-high risk herds if it is predominantly a bull harvest; for example, this approach was used in harvest recommended for the Bluenose-West herd in 2007 (harvest rate of 4% and a bull biased harvest (80% bulls)).

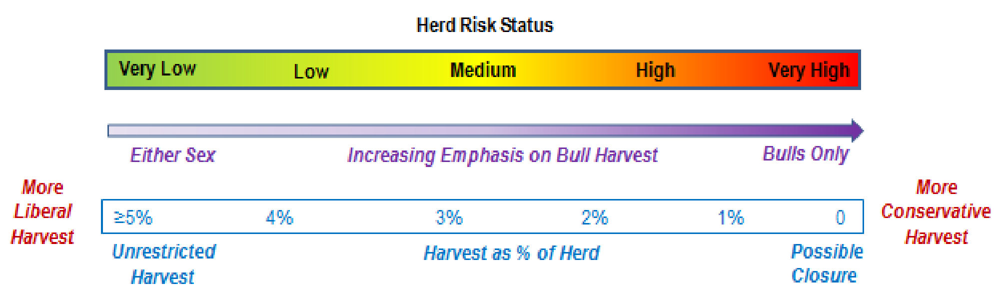

Figure 2. Suggested approach to recommending rate and sex ratio of harvest depending on a herd's risk status.

This approach could be used to define a range of options for harvest rate (% of herd) and harvest sex ratios appropriate to a herd of a particular size and trend, with consideration of other indicators. Additional indicators suggesting high risk might be low calf recruitment, poor condition assessed by hunters, accessibility of the herd's range to hunters, and substantial disturbance on key parts of the herd's range. In addition, consideration should be given to objectives for the herd: an emphasis on herd growth would be consistent with a lower harvest rate and a higher emphasis on bull harvest. An adaptive approach would include regular reviews of up-to-date information on herd status and reported harvest, and adjusting recommended harvest as needed. This approach would rely on on-going reliable reporting of harvest (numbers and sex ratio) by all hunters, whether the herds are large or small, and increasing, stable or declining.

Examples of rule of thumb approach applied to harvest recommendations

In 2009, the Cape Bathurst herd was at very low numbers compared to earlier estimates (less than 2,000), with a stable trend and improving recruitment. All harvest had been closed for this herd in 2007. The herd's range is small and easily accessed by hunters. This herd's status could be assessed as High Risk given its very low numbers or Very High Risk based on its very low numbers and continued high accessibility. Continued harvest closure would help maximize the herd's opportunity to recover. If harvest was considered, it would likely be at a low rate (1% or less of the herd) with a high emphasis on a bull-only or predominantly bull harvest.

In 2010, the Bluenose-East herd was estimated at about 122,000 with an increasing trend and good recruitment (Adamczewski et al. 2014). Based on the herd's trend and relatively large size, it would likely be assessed as being at Low-Medium risk. If the management goal was to give priority to a stable trend and a strong chance of continued herd growth, a conservative approach to harvest would be 2-3% of herd size with strong promotion of bull harvest. A more liberal approach to harvest would be 4% of the herd with a sex ratio including a substantial percentage of cows. This approach would give priority to maximizing harvest opportunities but would carry a higher risk of population decline.

Since 2010, the Bluenose-East herd was declined substantially to about 68,000 in 2013 and at a more rapid rate, to about 38,600 caribou in 2015 (see Boulanger et al. 2016 In Prep.).

Its large loss of numbers and rapid rate of decline would place it in a high risk category where any further harvest would need to be carefully considered and should include a high bull or all bull component.

Table 1 (below) includes a summary of the rule of thumb approach that includes possible approaches to resident and commercial harvest of caribou. The underlying elements of the summary are borrowed from management plans or proposed harvest management for the Porcupine, George River, Bathurst, Beverly, Qamanirijuaq, Bluenose-West, Bluenose-East and Cape Bathurst herds, and harvest modeling carried out by ENR for the Bathurst and Bluenose-East herds.

Table 1. Rule of thumb approach to recommending rate and sex ratio of harvest for barren-ground caribou based on risk status, with possible approaches to Aboriginal, resident and commercial harvest.

Herd Risk Status	Suggested Acceptable Harvest (% of herd)	Recommended Aboriginal Harvest	Recommended Resident Harvest (assuming unrestricted Aboriginal harvest)	Recommended Commercial/Outfitter Harvest (assuming unrestricted Aboriginal harvest)
Very Low	**5 % or higher**	Unrestricted, either sex	≥2 bull tags/hunter	Limited commercial tags
Low	**3-5 %**	Unrestricted, promote bull harvest	2 bull tags/hunter	Limited commercial tags
Medium	**2-3 %**	Unrestricted, promote bull harvest	1 bull tag/hunter; possible limit on tags	Either no commercial tags or small numbers of tags
High	**<2 %**	Promote conservation voluntary bulls only	1 bull tag/hunter; possible limit on tags	No commercial tags
	<1 %	Consider mandatory bulls only	No resident tags	No commercial tags
Very High	**0.01 %**	Consider closure; harvest for social/ceremonial reasons	No resident tags	No commercial tags

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ᔮᓐ Bᐅᓛᓐᔾᔾ -John Boulanger ᐊᒻᒪᓗ ᔮᓐ ᐋᑕᑦ ᔫᔅ ᑭ -Jan Adamczewski, 2016. ᓄᓇᑦ ᓯ ᐊᐸ ᒐ ᕙᒪ ᐃᑦ ᐊᕙᑎᓕᕆᔩ ᒃ ᑯᑦ ᓄᓇᒥ ᐅᑕᑐᖃᓕᕆᔩ ᓪ ᓗ, ᑎᑎᖃᖁᑎᖕ ᓂ ᐅᓂᒃ ᑳ ᓕᐊᖕ ᓂᖕᖑᖅ ᑐᑦ 262.

ᓇᐃᓈᖅᑕᐅᓯᒪᔪᑦ ᐅᓂᒃ ᑳ ᓕᐊᑦ

ᓯᕗᓂᐊᒍᑦ ᐊᑐᖅᑕᐅᕙᓪᓚᐅᖅᑐᑦ ᓇᐹᖅᑐᖃᖕᑐᕐ ᒥ ᑐᒃ ᑐᓂᒃ ᓄᓇᒥ ᖃᐅᔨ ᓴ ᖃᑦᑕᕐ ᓂᖕ ᓂᒃ ᐊᒻ ᒪᓗ ᑐᒃ ᑐᓯ ᐅᕐ ᕕᐅᕙᓪᓚᐅᕐ ᓂᖏᑦ ᕿᖓᐅᒻ ᒥᓗ ᐊᒻ ᒪᓗ ᕐᑯᕐ ᓗᖅᑑᑉ ᑲᓇᖕ ᓇᖕᒐ ᑐᒃ ᑐᓂᒃ ᐊᐅᓚᑕᐅᕙᓪᓚᐅᖅᑐᑦ ᐃᓚᐃᓇᖕᖏ ᓂᒃ ᓄᓇᒦᓐ ᓂᖕᖏ ᓂᒃ ᖃᓄᐃᓕᖕᖓᖕᖏ ᓂᒃ ᖃᐅᔨ ᓴᕈᓯ ᖃᖅᓯ ᑎᒃ ᐊᔾ ᔨ ᕖ ᖕᖏ ᑑᑎᐅᕙᓪᓚᐅᖅᑐᓂᒃ ᐊᒻ ᒪᓗ ᐊᑐᖅᓯ ᑎᒃ ᐊᕐ ᓇᓪ ᓗᐃᓪ ᓗ ᐊᖑᔾ ᓴᓪ ᓗᐃᓪ ᓗ ᐊᒥ ᓲ ᓂᖕᖏ ᓂᒃ ᒪ ᓕᖃᑕᓚᐅᖅᑐᓂᒃ . ᑖᒃ ᕙᓂ ᐊᑐᖅᑕᐅᓂᖕᖏ ᐅᓂᒃ ᑳ ᓕᐊᓂᒃ ᑲ ᔪ ᓯ ᑎᑕᐅᓚᐅᖅᐳᑦ ᖃᐅᔨ ᔪ ᒪ ᓪ ᓗᕆ ᑦ ᐅᓗᕆᐊᓐ ᓂᖃᕈ ᓐ ᓇᕐ ᓂᖕᖏ ᑐᒃ ᑐᓯ ᐅᕐ ᕕᖃᑕᕐ ᓂᖕᖏ ᓂᒃ ᐊᖏᕈᖅᓴ ᐅᔪ ᑎᒍᑦ ᑕᑯ ᕆ ᐊᖅᑕᐅᔪ ᒪ ᓪ ᓗᕆᒃ , ᑕᒪ ᐃᓐ ᓂᒃ ᓴ ᕿᑎᕆᔪ ᓐ ᓇᕐ ᓂᖅᓴ ᐅᓗᕆᒃ ᐊᑐᕈ ᓐ ᓇᖅᑖᖕᖏ ᓂᒃ ᐊᒥ ᓯ ᓂᒃ ᑐᒃ ᑐᖅᑭᕐ ᕕᐅᕙᒃ ᑐᓂᒃ ᐊᔾ ᔨ ᕖ ᖕᖏ ᑐᓂᒃ ᐊᖏᕈᓕᖕ ᓂᒃ ᐊᒻ ᒪᓗ ᐊᔾ ᔨ ᕖ ᖕᖏ ᑐᓂᒃ ᖃᓄᐃᓕᕙᓪ ᓕᐊᓂᖕᖏ ᓂᒃ . ᑐᑭ ᓕᐅᕈ ᑎᖃᖅᑦ ᑕᓚᐅᖅᑐᑦ ᑐᒃ ᑐᐃᑦ ᐊᒥ ᓲ ᓂᖅᖃᖅ ᑎᑕᐅᓂᖕᖏ ᓂᒃ ᐱᑭ ᐊᕐ ᕕᖃᖅᑐᓂᒃ ᑕᒫ ᓂ ᓈᓴ ᐅᑎᓕᖕ ᒥᒃ 100,000-ᖕᖏᑎᑕᐅᔪ ᓂᒃ , ᐊᒻ ᒪᓗ ᐋᕿᐅᒪ ᔪ ᓐ ᓇᖅᑐᓂᒃ ᐊᑦ ᑎᒃ ᑑᓂᖕᖏ ᓂᒃ , ᐊᑯ ᓂᖕᖑᓃᑦ ᑐᓂᒃ ᐊᒻ ᒪᓗ ᕐᑯᑦ ᑎᒃ ᑐᒥ ᓂᖕᖏ ᓂᒃ ᓄᕐ ᓇᕙᓪ ᓕᐊᓂᖕᖏ ᓂ ᐊᒻ ᒪᓗ ᐊᑦ ᑎᒃ ᑐᒥ ᑐᓐ ᓇᕐ ᓂᖕᖏ , ᐊᑯ ᓂᖕᖑᓃᑦ ᑐᓐ ᓇᕐ ᓂᖕᖏ ᓂᒃ ᐊᒻ ᒪᓗ ᕐᑯᑦ ᑎᒃ ᑐᒥ ᑐᓐ ᓇᕐ ᓂᖕᖏ ᓂᒃ ᐱᕈ ᐊᓂᒃ ᓯᒪᔪᑦ ᑐᒃ ᑐᐃᑦ ᐆᒪ ᐃᓐ ᓇᕈᓐ ᓇᕐ ᓂᖕᖏ . ᑐᒃ ᑐᓯ ᐅᕐ ᕕᐅᓇᔭ ᕈ ᑎᒃ ᑕᒫ ᖕᖑᑦ ᓈᓴ ᐅᑎᓕᖕ ᓂᒃ 0--ᒥᒃ 8,000-ᓄᑦ , ᐊᒻ ᒪᓗ ᐊᕐ ᓇᐃᓪ ᓗ ᐊᖑᔾ ᓴᓪ ᓗᐃᓪ ᓗ ᐊᒥ ᓲ ᓂᖕᖏ ᓂᒃ ᑐᒃ ᑐᑕᐅᕙᖕ ᓂᖕᖏ ᓂᒃ ᐊᔾ ᔨ ᕆ ᖕᖏ ᓂᖅᖃᖅ ᑎᑕᐅᕙᓪ ᓚᐅᖅᑐᓂᒃ ᓈᓴ ᐅᑎᓕᖕ ᓂᒃ 0-ᒥᒃ 100% ᐳᓴ ᓐ ᑎᓕᖕ ᓄᑦ ᐊᕐ ᓇᓪ ᓗᕐ ᓂᒃ ᓄᕐ ᕋᖅᖃᖅ ᑐᑦ . ᓯᕗᕙᓇᐊᕐ ᓗᕆ ᑦ ᐱᖕᖓᓱ ᓂᒃ 3 ᐱᖕᖓᓲ ᔭ ᖅ ᑐᓄᑦ 6-ᓄᑦ ᐊᕐ ᕋᒍ ᓄᑦ ᐊᑐᖅᑕᐅᓚᐅᖅᑐᑦ ᓈᒻ ᒪ ᓈᓇᐊᕈ ᑕᐅᓂᕐ ᒍᑦ ᐊᒥ ᓲ ᑎᕆ ᕙᖕ ᓂᖕᖏ ᓄᑦ ᒫ ᓐ ᓇᓴ ᖅ ᓄᓇᑦ ᓯ ᐊᐸ ᒐ ᕙᒪ ᒃ ᑯ ᖕᖏ ᓄᑦ ᐊᒥ ᓲ ᓂᖕᖏ ᖃᐅᔨ ᓴ ᖅ ᑕᐅᓯᒪ ᔪ ᑦ ᑕᒪ ᐃᓐ ᓂᒃ ᑲ ᓴ ᒃ ᑐᒃ ᑐᖃᕐ ᕖ ᑦ . ᐊᑦ ᑎᒃ ᑑᒥ ᓐ ᓂᖕᖏ ᓂ ᐆᒪ ᐃᓐ ᓇᕈ ᓐ ᓇᕐ ᓂᖕᖏ ᐱᕈ ᐊᓂᒃ ᓯᒪᔪ ᑦ ᑐᒃ ᑐᐃᑦ , ᑐᒃ ᑐᐃᑦ ᐊᒥ ᓱᕈ ᖅ ᐸᓪ ᓕᐊᓇᔭ ᖕᖏ ᑦ ᑐᒃ ᓴ ᐅᔭ ᑦ ᐊᒻ ᒪᓗ ᐊᒥ ᓱ ᓂᒃ ᑐᒃ ᑐᑕᐅᔭ ᓐ ᓇᕈ ᑎᒃ ᐊᒥ ᕐ ᓲ ᔭ ᓐ ᓃᕈ ᑕᐅᓯ ᐊᒃ ᑲ ᓐ ᓂᕈ ᓐ ᓇᑎᓪ ᓗᑎᒃ . ᑐᒃ ᑐᐃᑦ ᐊᒥ ᓲ ᓂᖕᖏ ᐆᒪ ᐃᓐ ᓇᕈ ᓐ ᓇᖅ ᑐᑦ ᐊᒻ ᒪᓗ ᐊᒥ ᕐ ᓯ ᓂᒃ ᑐᒃ ᑐᕝ ᕕᐅᖃᕈ ᓐ ᓇᕋᔭ ᖅ ᐳᑦ . ᐊᔭ ᖕᖏ ᖃᕐ ᓂᖕᖏ ᖃᐅᔭ ᐅᔭ ᓐ ᓇᕐ ᓂᖅ ᐊᒥ ᕐ ᓲ ᔭ ᓐ ᓃᖅ ᐸᓪ ᓕᐊᓂᖕᖏ ᓂᒃ ᐃᓗᐊᓂ ᐱᖕᖓᓲ ᑕᒫ ᑦ ᐊᕐ ᕋᒍ ᐃᑦ ᐃᓱ ᖃᕐ ᕕᐅᓚᐅᖅᑐᑦ , ᐊᖕᖆ ᑎᐅᓂᖅᓴ ᐃᓐ ᓇᐅᓂᖕᖏ ᓄᑦ ᐅᖕᖓᑖᓐ ᑐᓂᒃ >31% ᐳᓴ ᓐ ᑎᓂᒃ) ᐊᒥ ᕐ ᓲ ᔭ ᓐ ᓃᖅ ᓯᒪ ᔪ ᓂᒃ . ᐸᖕ ᓃᓪ ᓗ ᐊᕐ ᓇᓪ ᓗᐃᓪ ᓗ ᓄᕐ ᕋᖅᖃᖅ ᑐᑦ ᐊᒃ ᑐᖅ ᑕᐅᓴ ᕋᐃᑦ ᑑᕗᑦ ᐊᖑᔾ ᓴᓪ ᓗᐃᓪ ᓗ ᐊᕐ ᓇᓪ ᓗᐃᓪ ᓗ ᑐᒃ ᑐᑕᐅᔭ ᓐ ᓇᕐ ᓂᖕᖏ ᓂᒃ ᐊᒥ ᓲ ᓂᖅ ᓴ ᐅᔭ ᕌᖕᖑᒥ ᒃ ᐊᕐ ᓇᐃᓪ ᓗ ᑐᒃ ᑐᑕᐅᕙᖕ ᓂᖕᖏ ᓂ. ᖃᐅᔨ ᓴ ᓚᐅᖅ ᑐᓂ ᕿᖕᖑᐅᒻ ᒥᓗ ᕐᑯᕐ ᓗᖅ ᑑᑉ ᑲ ᓇᖕ ᓇᖕᒐ ᑐᒃ ᑐᐃᑦ ᐊᑐᖅᑕᐅᓪ ᓗᑎᒃ ᓄᓇᒥ ᓇᓃᑦ ᓲ ᖑᓂᖕᖏ ᒫ ᓐ ᓇᓴ ᖑᓚᐅᖅ ᑐᖅ ᐃᓱ ᒪ ᓇ ᖅ ᑐᑦ ᐊᒥ ᓲ ᓇᓇᐊᖅᑯᖕᖏ ᓂᖕᖏ ᓂᒃ ᑐᒃ ᑐᕝ ᕕᐅᔭ ᓐ ᓇᕐ ᓂᖕᖏ , ᐃᓱ ᒪ ᕆ ᓪ ᓗᕆ ᑦ ᑕᒪ ᕐ ᒥᒃ ᑐᒃ ᑐᐃᑦ ᐊᒥ ᕐ ᓲ ᓂᖕᖏ , ᖃᓄᐃᓕᕙᓪ ᓕᐊᓂᖕᖏ ᓗ ᐊᒻ ᒪᓗ ᐊᒥ ᓲ ᓗᐊᖅ ᐸᖕᖏ ᓂᖕᖏ ᐊᕐ ᓇᓪ ᓗᐃᑦ ᐆᒪ ᐃᓐ ᓇᕈ ᓐ ᓇᓲ ᖑᓂᖕᖏ ᑕᒪ ᒃ ᑯ ᓇᓂ ᑐᒃ ᑐᓂᒃ . ᐊᑐᓕᕐᑯᔾ ᕗᒍᑦ ᑐᒃ ᑐᓯ ᐅᕐ ᕕᐅᔭ ᓐ ᓇᕐ ᓂᖕᖏ ᖃᐅᔨ ᓴ ᖅ ᑕᐅᑲ ᓐ ᓂᖅᑕᐃᓐ ᓇᓇᐊᖅᑯᕐ ᓂᖕᖏ ᓂᒃ ᐱᔾ ᔭ ᑕᐅᓪ ᓗᑎᒃ ᑐᒃ ᑐᐃᑦ ᐊᒥ ᓯ ᕈ ᖅ ᐸᓪ ᓕᐊᔭ ᓐ ᓇᕐ ᓂᖕᖏ ᐊᒻ ᒪᓗ ᐆᒪ ᐃᓐ ᓇᕈ ᓐ ᓇᓲ ᖑᓂᖕᖏ ᓯᒃ ᑲ ᓕᔭ ᒥᒃ ᐊᔪ ᔾ ᔨ ᖃᑦ ᑕᕐ ᓂᖕᖏ ᓄᑦ . ᓴ ᕿᑎᑕᐅᓯ ᒪ ᔭ ᑦ ᑐᒃ ᑐᓯ ᐅᕐ ᕕᐅᖃᑦ ᑕᕐ ᓂᖕᖏ ᓂᒃ ᐊᑐᖅᑕᐅᓚᐅᖅᑐᑦ ᖃᓄᐃᓕᐅᕈ ᑕᐅᔭ ᓐ ᓇᕐ ᓂᕐ ᒧᑦ ᐊᑐᓕᕐᑯᔾ ᐅᓂᐊᖅ ᑐᓂᒃ ᑐᑭ ᓕᐅᕐ ᓂᕐ ᒧᑦ ᑐᒃ ᑐᓯ ᐅᕐ ᕕᐅᔭ ᓐ ᓇᕐ ᓂᖕᖏ ᓄᑦ ᐊᒻ ᒪᓗ ᖃᓄᐃᓕᖕᖑᖅ ᓇᐊᖅᑯᕐ ᓂᖕᖏ ᓄᒃ ᑐᑕᐅᔭ ᓐ ᓇᕐ ᓂᖕᖏ ᐊᕐ ᓇᐃᓪ ᓗ ᓐ ᓃᑦ ᐊᖑᔾ ᓴᓪ ᓗ ᓐ ᓃᑦ ᒪ ᓕᒃ ᑐᓂᒃ ᐅᓗᕆᐊᓇᕐ ᓂᕐ ᒦ ᓐ ᓂᖕᖏ ᑐᒃ ᑐᐃᑦ , ᐊᒻ ᒪᓗ ᐅᔾ ᔨ ᖅ ᑐᑦ ᑎᐊᕐᑯᔨ ᓂᕐ ᒥᒃ ᐱᐅᓯ ᖃᕐᑯᔨ ᑐᐃᓐ ᓇᕐ ᓂᕐ ᒥᒃ .

ᐊᒥᕐ ᓱᑭᖅᓯᐊᕆᔭᐅᓂᖓ ᓄᑦ ᖃᓄᐃᓕᐅᕈᑎᒃ ᓴᐃᑦ ᓇᐹᖅᑐᖃᖏᑦ ᒥᐅᑦ ᑐᒃᑐᖓᓂᒃ [ᑎᑎᕋᖅᑕᐅᕙᓕᐊᔪᑦ] (ᔪᓚᐃ 2019)

ᓄᓇᑦᓯᐊᕐᒥ

ᐆᒪᔪᐃᑦ ᐊᒥᕐ ᓲᖑᑐᐊᓕᕐ ᓂᖓ ᓄᑦ (ᓄᓇᑦᓯᐊᕐᒥ) ᒪᓕᑲᐃᑦ

ᐊᐅᓚᑕᐅᓂᖓ ᓄᑦ ᐸᕐ ᓇᐅᑏᑦ ᐊᒥᓱᑭᖅᓲᓂᕐ ᒧᓪ ᓗ ᖃᓄᐃᓕᐅᕈᑎᒃ ᓴᐃᑦ
ᑭᖑᓕᕇᒃ ᑐᑦ 2019

ᐊᐅᓚᑦᑎᓵᓄᑦ ᑐᕌᖓᑦ ᐅᓂᒃᑳᓕᐊᑦ ᓇᐃᓈᖅᑕᐅᓯᒪᔪᑦ

ᐃᓅᓯᖏᓄᑦ, ᐃᓕᖅᑯᓯᑐᖃᖏᓄᑦ, ᐃᓅᔾᔪᑎᒃᓴᐅᓂᕐᒧᓪᓗ ᐊᑑᑎᖃᕐᓂᖏ ᓇᐹᖅᑐᖃᖏᑦ ᑐᕐᒥᐅᑦ ᑐᒃᑐᐃᑦ ᓄᓇᓕᖓᓄᑦ ᓄᓇᑦᓯᐊᕐᒥ ᐊᒃᓱᐊᓗᒃ ᓴᖏᔫᑦ; ᐊᑕᖓᒪᑕ ᑐᒃᑐᐃᑦ ᐃᓅᓯᖏᓄᑦ ᑕᐅᓴᒐᓴᙵ ᓅᓕᖅᑐᓂᒃ ᐊᕐᕿᒍᓂ ᐊᓂᒍᖅᑐᓂ. ᓇᐹᖅᑐᖃᖏᑦ ᑐᕐᒥᐅᑦ ᑐᒃᑐᐃᑦ ᐱᑕᖃᕐᓂᖏᑦ ᓄᓇᓯᐊᕐᒥ ᐊᖑᓇᓱᒃ ᑕᐅᖃᑦ ᑕᐃᓐᓇᕐᒪᑕ ᓄᓇᓕᑐᖃᕐᓄᑦ ᓄᓇᖅᖃᑐᖅᑲᐅᖏᑦ ᑐᓄᓪᓗ ᐃᓄᕐᑯᑎᖏᓄᑦ ᑕᒪᐃᓐᓂᒃ ᐊᕕᒃᑐᖅᓯᒪᓂᖏᓂ ᓄᓇᑦᓯᐊᑉ, ᐊᒻᒪᓗ ᓴᓂᓕᕆᔨᖏᓄᑦ ᓄᓇᖃᑎᒋᖏᓄᑦ ᐅᖕᕆᔾᒃ ᑐᓂ ᐊᑭᓂᐊᓂᕐᒥ ᐅᑕᐅᔭᓂ ᓄᓇᓖᑦ ᐃᓄᕐᑯᑎᖏᓄᑦ (ᓄᓇᕗᒥ, ᓴᐃ ᑳᑦᓯᐋᓐ, ᒫᓂᑑᐸ ᐊᒻᒪᓗ ᐋᓐᑌᕆᐅ).

ᕐᑯᓕᖕᖏᓗᐊᖅᑑᑦ 9-ᖑᕗᑦ ᓇᐹᖅᑐᖃᖏᑦ ᑐᕐᒥᐅᑦ ᑐᒃᑐᖅ ᕕᐅᓂᖏ[1] ᓄᓇᒥ ᐅᑕᐅᔪᑦ ᑕᒪᐃᓐᓂᒃ ᑕᒫ ᓃᖅᑲᑕᐃᓐ ᓇᓖᖑᓂᖏᓂᒃ ᐅᕝᕙᓗᓐᓃᑦ ᐃᓚᐃᓐ ᓇᑎᕙᒃ ᑕᖏᓂ ᑕᒫ ᓃᓯᖑᓂᖏᓂᒃ ᓄᓇᑦᓯᐊᕐᒥ. ᑕᐃᒪᖓᓂᒃ, ᑐᒃᑐᖅᑲᖅᐸᖕᓂᖏ ᐊᓯᔾᓵᖅᑦᑕᖅᐳᑦ ᐊᒥᔅᓰᕙᖕᓂᖏᓂ ᐊᒥᔅᓰ ᓂᓇᕙᒃᑕᓂᖏᓗ ᖃᐅᔨᒪᔭᐅᓪᓗᑎᒃ ᓂᑭᑖᖅᑕᖅᓂᖏᓂᒃ ᑲᐃᕕᒃᑐᒥᒃ ᓰᕐᓗ ᐊᒥᔅᓯᕈᖅᐸᖕᓂᖏᓂ ᐊᒥᔅᓰᔪᓐᓃᖅᐸᖕᓂᖏᓂᓗ. ᒫᓐᓇᓵ ᖑᓕᖅᑐᖅ ᐊᒥᔅᓰᔪᓐᓂᖅᓯᒪᓂᖏ ᐊᒃᓯᐊᓗᒃ ᐱᒻᒪᕆᐅᓕᖅᑐᑦ ᑕᒫᓃᓕᖅᓯᑎᒃ 98 ᐳᓴᓐᑎᖕᖏᓂᒃ ᐊᒥᔅᓯᓂᖅᐹᕆᔭ ᐅᕙᓚᐅᖅᑐᓂᒃ. ᑕᒫᓂ ᐊᕐᕿᒍᒥ 2018-ᒥ, ᑐᒃᑐᖏ ᐊᕝᕙᖅᒥ ᐊᒻᒪᓗ ᕐᑯᕐᓗᖅᑑᐸ-ᑲᓇᖕᓇᖕᖓᓂ ᖃᓄᐃᓗᐊᖅᑑᔭᖅᑦ ᑕᓚᐅᖏ ᑑᓚᓗᐊᑦ ᑭᓯᐊᓂ ᐊᒥᓰᔪᓐᓃᖅᓯᒪᔪᑦ ᓴᓂᐊᓂᒃ ᑕᐃᒪᖕᖓᓖᖅ ᐊᒥᔅᓰᔪᓐᓃᕐᓂᕙᓚᐅᖅᑕᖏᓂᒃ ᐱᓂᖅᐹᖑᓕᖅᑐᒥᒃ. ᑐᒃᑐᔭᖅᑑᐸ ᓄᕗᐊᓂ, ᕐᑯᕐᓗᖅᑑᐸ-ᑲᓇᖕᓇᖕᖓᓂ ᐊᒻᒪᓗ ᕿᓐᖑᐅᒻᒥ ᑐᒃᑐᐃᑦ ᐊᒥᔅᓰᔪᓐᓂᖅᓯᒪᕐᔪᐊᕐᒪᑕ ᐱᒻᒪᕆᐊᓗᖕᒥᒃ. ᑎᑉᔭᓕᖕᒥ ᑐᒃᑐᐃᑦ ᓯᒃᑲᐃᓂᖅᓴᒥᒃ ᐊᒥᔅᓰᔪᓐᓂᖅᐸᓪᓕᐊᓗᑎᒃ ᑕᐃᒃᑯᐊᓗ ᖃᒪᓂ'ᑦ ᑐᐊᑉ ᑐᒃᑐᖏ ᖃᓄᐃᖕᖏᓯᑎᒃ ᐅᕝᕙᓗᓐᓃᑦ ᓯᒃᑲᐃᑦᑐᒥᒃ ᐊᒥᔅᓯᔪᓐᓃᖅᐸᓪᓕᐊᓗᑎᒃ. ᑕᒪᒃᑯᐊ ᑐᒃᑐᐃᑦ ᐊᒥᔅᓰᓗᐊᖅᑲᑦᑕᖏ ᑐᑐᖅᑲᐅᕙᒥᒃ ᓵᖕᖓᕙᓕᖅᑐᑦ ᐊᑐᖅᑕᐅᓚᐅᖅᓯᒪᖏᑐᓂᒃ ᐊᒃᓯᕈᕐᓇᖅᑐᓂᒃ ᐊᒥᔅᓯᓂᒃ ᐅᓗᓇᐊᓇᖅᑐᓂᒃ ᐊᒻᒪᓗ ᐱᕙᓪᓕᐊᔪᓂᒃ ᐊᒃᑐᖅᑕᐅᕙᓪᓕᐊᖕᖏᓇᕐᓂᖏᓂᒃ.

ᑖᒃᑯᐊ ᐊᒥᓱᕐᓰᓂᖏᑦᒧᑦ ᖃᓄᐃᓕᐅᕈᑎᒃᓴᐃᑦ ᓇᐹᖅᑐᖃᖏᑦ ᑐᕐᒥ ᑐᒃᑐᓂᒃ ᓄᓇᑦᓯᐊᕐᒥ ᓴᓇᔭᐅᓯᒪᕗᑦ ᑲᑎᒪᔨᖏᓄᑦ ᐊᐅᓚᑦᑎᓵ ᐅᔪᓐᓇᕐᓂᕐᒥᒃ ᐱᔪᓐᓇᐅᑎᖅᑕᖅᑐᓂ, ᐋᕿᐅᒪᓪᓗᑎᒃ ᐊᖑᒪᔭ ᓇᐊᖅᑲᕐᓂᖅ ᖃᓄᐃᓕᐅᕈᑕᐅᔭ ᓇᐊᖅᑲᓕᖅᑐᓂᒃ ᓇᐹᖅᑐᖃᖏᑦ ᑐᕐᒥᐅᑦ ᑐᒃᑐᖏ ᐊᒥᓱᕐᓯᐊᓇᔭᐅᓂᖏᓄᑦ ᐊᑐᕐᓗᑎᒃ ᐆᒪᔪᐃᑦ ᐊᒥᓱᕐᓰᖕᖏᓗᐊᕐᓂᖏᓂᒃ (ᓄᓇᑦᓯᐊᕐᒥ) ᒪᓕᒐᕐᓂᒃ. ᐊᒥᓱᕐᓯᐊᓇᔭᐅᓂᖏᓄᑦ ᖃᓄᐃᓕᐅᕈᑎᒃᓴᐃᑦ ᐊᑑᑎᖃᓗᐊᕐᓂᐊᖅᑐᑦ ᑲᑐᔾᔨᖅᑎᕇᖕᓂᐊᖅᑐᓂᒃ ᐊᐅᓚᑦᑎᓵ ᐅᖅᑕᐅᔪᓂᒃ ᑲᑎᒪᔨᒐᓴᖏᓂᒃ, ᓄᓇᓕᑐᖃᐃᑦ ᒐᕙᒪᒃᑯᖏᓂᒃ ᐊᒻᒪᓗ ᑎᒥᖁᑎᖏᓂᒃ, ᑲᓇᑕᐅᑉ ᐅᑭᐅᖅᑕᖅᑐᖅᐸᔨᖕᑕ ᐊᕕᒃᑐᖅᓯᒪᓂᖏᓂ/ᑲᓇᑕᐅᑉ ᓂᒋᐊᓂ ᐊᕕᒃᑐᖅᓯᒪᓂᖏᓂ/ᑲᓇᑕᐅᓪᓗ ᒐᕙᒪᖏᓂᒃ, ᑐᒃᑐᓂᒃ ᐊᐅᓚᑦᑎᓵ ᐅᓂᕐᒧᑦ ᑲᑎᒪᔨᖏᓂᒃ ᐊᒻᒪᓗ ᓄᓇᓕᖕᓂᒃ.

ᑕᒪᒃᑯᐊ ᖃᓄᐃᓕᐅᕈᑎᒃᓴᐃᑦ ᑐᑭᓕᐅᕈᑕᐅᕗᑦ ᑕᒪᐃᓐᓂᒃ ᑐᕌᒐᓇᔭᐅᓂᖏᓂᒃ, ᐱᔭᓃᖅᑕᐅᓕᐊᕐᓂᐊᖅᑐᓂᒃ, ᐊᒻᒪᓗ ᖃᓄᐃᓕᑎᑕᐅᔪᒪᔪᓂᒃ ᓇᓗᓇᐃᔭᐃᓂᕐᒧᑦ ᓴᐳᓐᓂᐊᖅᑕᐅᓯᒪᔭ ᓇᐊᖅᑲᕐᓂᖏᓂᒃ ᐊᒻᒪᓗ ᐊᒥᓱᕈᒃᑲᓐᓂᕈᓐᓇᕐᑯᓕᓗᓯᑦ ᓇᐹᖅᑐᖃᖏᑦ ᑐᕐᒥᐅᑦ ᑐᒃᑐᐃᑦ ᓄᓇᑦᓯᐊᕐᒥ. ᐊᑯᓂᐅᓂᐊᖅᑐᒧᑦ ᑕᐅᑐᒐᓇᔭᐅᔪᑦ ᑖᒃᑯᓇᓂ ᖃᓄᐃᓕᐅᕈᑎᒃᓴᓂᒃ ᐱᔾᔪᑎᖃᖅᐳᑦ ᓴᐳᓐᓂᐊᖅᑕᐅᕐᑯᓯᓂᖅ ᓇᐹᖅᑐᖃᖏᑦ ᑐᕐᒥᐅᑕᐃᑦ ᑐᒃᑐᖏᓂᒃ ᐊᒻᒪᓗ ᐅᔾᓵᖅᑐᑦ ᑎᐊᕈᒪᓂᖏᒧᑦ ᓇᐹᖅᑐᖃᖏᑦ ᑐᕐᒥᐅᑦ ᑐᒃᑐᐃᑦ

[1] ᖃᐅᔨᓴᖅᑕᐅᓯᒪᔪᓂᒃ ᖃᐅᔨᔭᐅᔪᑦ ᑎᒃᑯᐊᖅᓯᓗᑕᐅᕗᑦ ᓇᐹᖅᑐᖃᖏᑦ ᑐᕐᒥᐅᑦ ᑐᒃᑐᖏᓂᒃ ᑕᐃᒃᑯᓄᖓ ᐃᓕᑕᕆᔭᐅᔪᓐᓇᕐᓂᖏᓂᒃ ᐊᒻᒪᓗ ᐃᖕᒥᒍᖕᖓᖏᓂᒃ ᓄᕐᕆᕕᒋᕙᒃᑕᖏ. ᓄᓇᓕᑐᖃᐃᑦ ᖃᐅᔨᒪᔨᑕᕆᔭᖏ ᓄᓇᓕᑐᖃᐃᓪᓗ ᓄᓇᖏ ᐊᔾᔨᒋᖏᑑᑎᐅᔪᓂᒃ ᑐᑭᖅᑎᑦᑎᓖᖑᕗᑦ ᑐᒃᑐᐃᖅᑲ ᕕᐅᓂᖅᑲᐃᓂᕐᒥᓂᒃ: ᐃᓚᖏ ᐊᔾᔨᕇᖅᑦᑕᖏᓂᖏᓂᒃ ᑐᒃᑐᐃᑦ ᐊᒥᓯᓂᒃ ᖃᓗᐃᓕᐅᕈᓯᖅᑲᖏᓂᖏᓂᒃ (ᓇᒧᖑᐅᕙᖕᓂᖏᓂᒃ, ᓇᐅᑰᖅᑕᕐᓂᖏᓂᒃ ᓄᓇᐃᑦ ᐊᖏᓇᖏᓂᒃ, ᑕᖅᓴᖅᑲᖏᓂᖏᓂᒃ/ᑎᒥᖓᑕ ᐊᖏᓇᖏᓂᒃ/ᑎᒥᖓᑕ ᖃᓄᐃᓕᖕᖓᖏᓂᒃ ᐊᒻᒪᓗ ᓂᕿᑦ ᑎᐱᖅᑲᖏᓂᖏᓂᒃ), ᐊᓯᖏᓗ ᐃᓕᑕᖅᓯᓯᒪᓃᖑᓗᑎᒃ ᓇᐹᖅᑐᖃᖏᑦ ᑐᕐᒥᐅᑦ ᑐᒃᑐᖏᓂᒃ ᐃᓗᓕᔭᐅᕙᖕᓂᖏᓂᒃ ᐊᓯᖏᓄᑦ ᐃᖕᒥᒎᖕᖓᖅᑐᓄᓪᓗᓐᓃᑦ, ᑲᑎᖕᖓᐅᖅᐸᒃᑐᓄᓪᓗᓐᓃᑦ.

ᐱᑕᖃᐃᓐᓇᕆᐊᖃᖅᓂᖏᓐ ᐱᓪᓚᕆᐅᓂᖏᓐᓄᑦ ᐃᓕᖅᑯᓯᑐᖃᕆᔭᐅᔪᓄᓪᓗ ᐊᕙᑎᓄᑦ, ᐊᕙᑎᒥ ᐅᑕᓄᓪᓗ ᐆᒪᔪᖁᑎᒋᔭᐅᓂᖏᓐᓄᑦ. ᑕᐅᑐᒐᕆᔭᐅᔪᑦ ᖃᓄᐃᓕᐅᕈᒪᓂᖏᓐᓄᑦ ᐃᓚᖃᕆᓲᑦ ᐅᕝᔨᖅᑐᑦ ᑎᐊᕆᐊᖃᖅᓂᖅ ᓇᐹᖅᑐᖃᖕᖏᑐᖅᒥᐅᑦ ᑐᒃᑐᐃᑦ ᓇᒧᑐᐃᓐ ᓈᕈᓐᓇᓄᐊᖃᕐᓂᖏᓐ ᓄᓇᒥ, ᓇᔪᒐᓇᕙᒃ ᑕᑐᖅᑲᓇᔭᖏᓐᓂ ᑕᐃᒫᒃ ᐱᐅᓯᑐᖃᒥᓂᒃ ᐊᑐᕈᓐᓇᖅᓂᐊᖅᒪᑕ ᐊᒻᒪᓗ ᓅᑦᑐᓐᓇᖃᑦᑕᐃᓐᓇᖅᓗᑎᒃ ᓅᕙᒋᖃᑦᑕᖅᑕᑐᖅᑲᓇᔭᒥᓄᑦ. ᑕᒪᐃᓐᓂᒃ ᑐᕋᒐᖃᖅᐸᑦ ᒪᑯᓂᖓ ᐊᒥᓱᑭᖅᓯᓂᖅᒧᑦ ᖃᓄᐃᓕᐅᕈᑎᖏᓐᓂᖏᓐᓂ:

1. ᐋᖅᑭᐅᒪᑎᑦᑎᓂᖅ ᐅᕝᕙᓗᓐᓅᑦ ᐊᔪᕈᓐᓂᖅᑎᑦᑎᓂᖅ ᐃᖕᒥᓂᒃ ᖃᓄᐃᖕᖏᑐᓐᓇᖅᓂᖏᓐᓂᒃ, ᖄᖕᖏᐅᑎᔪᓐᓇᖅᑕᖅᓂᐊᖅᑐᓂᒃ ᐊᒥᐦᓃᓂᖏᓐᓂᒃ ᑕᐃᒃᑯᐊ ᓇᐹᖅᑐᖃᖕᖏᑐᖅᒥᐅᑦ ᑐᒃᑐᐃᑦ, ᑕᐃᒫᒃ ᔭᒐᐃᔭᐅᓂᐊᖏᓐᒪᑕ ᑐᒃᑐᖅᑲᖅ ᕿᐅᕙᓂᖏᓐ.
2. ᐃᑲᔪᖅᓯᐃᓂᖅ ᐊᓪ ᕿᐊᖅᑯᑕᖅᑲᖏᓐ ᑐᓂᒃ ᓇᒧᖕᖑᕿᖅᑲᕈᓐᓇᖅᓂᖏᓐᓂᒃ ᐊᒻᒪᓗ ᐅᖕᖑᒃ ᑐᒧᑦ ᓈᐸᓪ ᓯᐊᖅᑲᑦ ᑕᕈᓐᓇᖅᓂᖏᓐᓂᒃ ᓇᐹᖅᑐᖅᑲᖕᖏᑐᖅᒥᐅᑦ ᑐᒃ ᑐᖕᖏ ᓇᔪᒐᓇᕙᒃ ᑕᑐᖅᑲᓈᓐ ᓇᖅᑕᖕᖓᓂᒃ ᓄᓇᓂᒃ.
3. ᐊᑐᓕᖅᑎᑦᑎᕙᓪᓕᐊᓂᖅ ᐃᓅᖅᑲᑎᒌᒃ ᑐᓂ, ᐃᓕᖅᑯᓯᑐᖅᑲᖕᖏᓂ ᐊᒻᒪᓗ ᐃᓅᔾ ᔭᑎᒃ ᓴᓇᕙᒃ ᑕᖕᖏᓂ ᖃᓄᐃᓕᖕᖑᐊᓐ ᓇᖅ ᓂᖏᓐ ᓂᒃ ᑕᐃᒪ ᐃᑕᓇᐊᖅᑲᖅᑐᓂ ᐊᒥᓱᑭᖅᐸᓪ ᓕᐊᔭᓐ ᓇᖅ ᓂᐊᖅ ᒪᑕ ᑐᒃ ᑐᐃᑦ.

ᖃᓄᐃᓕᐅᕈᑎᒃ ᓴᐃᑦ ᐃᓕᑕᖅᓯᓯᒪᔾᔪᑦ ᓈᓕᐊᖕ ᓄᑦ ᑐᖅᑲᖕᖓᑐᖅ ᓂᖕᖏᓂᒃ ᑐᒃ ᑐᓄᑦ ᐊᐅᓚᑦ ᑎᓂᖅ ᔫᑦ ᐸᖅ ᓇᐅᑎᒃ ᓴᐃᑦ ᐱᓪ ᒪᓇᐅᓂᐊᖅ ᒪᑕ ᑐᑭ ᓕᐅᕈᑕᐅᓂᖅ ᔫᑦ ᓇᐅᑦ ᑎᖅ ᑐᖅ ᑕᐅᕙᓕ ᓕᐊᔭ ᓇᐊᖅᑲᖅ ᓂᖕᖏᓐ ᓄᑦ ᐊᒻᒪᓗ ᐊᐅᓚᑕᐅᑦ ᑎᐊᓇᐊᖅᑲᖅ ᓂᖕᖏᓐ ᓄᑦ ᒪᓕᒐᖅᑲᕈᑕᐅᓂᖕᖏᓐ. ᐃᓕᑕᓇᔭ ᐅᒥᓯᑦ ᑕᐃᒃ ᑯᐊ ᐊᐅᓚᑦ ᑎᓂᖅ ᔫᑦ ᖃᓄᐃᓕᐅᕈᑕᐅᓂᐊᖅ ᑐᑦ ᓄᓇᑦ ᓯ ᐊᖅ ᒥ ᑐᒃ ᑐᓕᓇᓂᖅ ᔫᑦ ᓈᐸᓪ ᓯᐊᖅᑲᑦ ᑐᖅ ᒥ ᐅᑕᐅᔭᓂᒃ ᐊᐅᓚᑕᐅᔭ ᓇᐊᖅᑲᖅ ᓂᖕᖏᓐ ᓂᒃ ᑲᑐ ᔨᖅᑲᖅᑎᕆᓪ ᓗᑎᒃ ᐊᐅᓚᑦ ᑎᓯ ᐅᖅᑲᑕᐅᔭ ᓐ ᓇᖅ ᓂᖕᖏᓐ ᑲᑎᒪᔨᑦ, ᓄᓇᓕᑐᖅᑲᐃᑦ ᓕᕙᒪᒃ ᑯᖕᖏᓐ ᐊᒻᒪᓗ ᑎᒥ ᖁᑎᖕᖏᓐ, ᑲᓇᑕᐅᑉ ᐅᑭ ᐅᖅᑕᖅ ᑐᖅ ᐸᓯ ᖕᖑᑦ ᐊᕕᒃ ᑐᖅ ᓯᒪ ᓂᖕᖏ ᓂ/ᑲᓇᑕᐅᑉ ᓂᒋ ᐊᓂ ᐊᕕᒃ ᑐᖅ ᓯᒪ ᓂᖕᖏ ᓂ/ᑲᓇᑕᐅᓪ ᓗ ᒐᕙᒪ ᖕᖏ ᓂᒃ, ᑐᒃ ᑐᓂᒃ ᐊᐅᓚᑦ ᑎᔨ ᐅᓂᖅ ᔫᑦ ᑲᑎᒪᔨ ᓐ ᓂᒃ ᐊᒻᒪᓗ ᓄᓇᓕᖕ ᓂᒃ ᐃᓂᖅᑲᖅ ᑐᓂᒃ ᑐᒃ ᑐᖅᑲᖅ ᕿᐅᕙ ᑐᓂ ᖃᓂᒋᔭ ᖕᖏ ᓂᓗᓐ ᓅᑦ ᒫ ᓇᐅᔭᖅ ᑕᐃᔅ ᓯᒪᓂᓗ ᑐᒃ ᑐᖅᑲᖅ ᕿᐅᔭ ᑐᖅᑲᐅᕙᓐ ᓂᖕᖏᓐ ᓂᒃ, ᑕᒪᒃ ᑯᐊ ᓈᐸᓪ ᓯᐊᖅᑲᑦ ᑐᖅ ᒥ ᐅᑦ ᑐᒃ ᑐᐃᑦ ᐱᓪ ᒪᓇᐅᓂᖅᑲᐃᓐ ᓇᖅ ᓂᓪ ᓗ ᒥᑦ ᐃᓄᖅᑲᑎᒌᒃ ᑐᓄᑦ, ᐃᓕᖅᑯᓯᑐᖅᑲᖕᖏ ᓄᑦ, ᐅᒃ ᐱᑕᔾ ᑐᖅᑲᖕᖏ ᓄᑦ ᐊᒻᒪᓗ ᐃᓅᔾ ᔭᑎᒃ ᓴᕈᑕᐅᕙᓐ ᓂᖕᖏ ᓄᑦ.

ᑖᒃ ᑯᐊ ᖃᓄᐃᓕᐅᕈᑎᒃ ᓴᐃᑦ ᐊᑐᓕᖅᑯᔨᔪᑦ ᒪᑯᓂᖓ ᐱᔭᕇᖅᑕᐅᖅᑯᔭ ᐅᔭᓂᒃ ᐊᒻᒪᓗ ᖃᓄᐃᓕᖕᖑᖅᑯᔭ ᐅᓂᖕᖏᓂᒃ:

ᐱᔭᕆᖅᑕᐅᓯᒪᔭᒃ ᓴᖅ 1: ᐃᓚᒋᓪ ᓗᑎᒃ ᑲᑐ ᔨᖅᑲᖅᑎᕆᖕ ᓂᐊᖅᑐᑦ ᓴᓇᔭ ᐅᓂᖕᖏ ᓂ ᐊᑐᓕᖅᑎᑕᐅᓂᖕᖏ ᓂᓗ ᐊᐅᓚᑦ ᑎᑦ ᔭᑎᒃ ᓴᐃᑦ, ᓇᐅᑦ ᑎᖅ ᑐᐃᕙᓕ ᓕᐊᑦ ᔭᑎᒃ ᓴᐃᑦ, ᒥᐊᓂᕆᔩ ᐅᔭᒃ ᓴᐃᑦ, ᓴᐳᓐ ᓂᐊᕈᑎᒃ ᓴᓄᓕ ᓗ ᐸᖅ ᓇᐅᑎᑦ ᓈᐸᓪ ᓯᐊᖅᑲᑦ ᑐᖅ ᒥ ᐅᑕᐅᔭ ᓄᑦ ᑐᒃ ᑐᓄᑦ ᓄᓇᑦ ᓯ ᐊᖅ ᒥ.

ᖃᓄᐃᓕᐅᖅ ᓗᑎᒃ 1.1: ᐊᑐᓕᖅᑎᑦ ᑎᓗᑎᑦ ᓇᓕ ᓕᐊᖕ ᓄᓕ ᓗᑐᖅ ᑐᒃ ᑐᓂᒃ ᐊᐅᓚᑦ ᑎᓂᖅ ᔫᑦ ᐸᖅ ᓇᐅᑎᓂᒃ ᑐᒃ ᑐᖕᖏ ᓂᒃ ᐊᕙᖅᒥ, ᖁᓗᖅᑑᑉ-ᐱᖕᖑᖕ ᓇᖕᖑᓂ, ᖁᖅ ᓗᖅᑐᑉ-ᑲ ᓇᖕ ᓇᖕᖑᓂ, ᑎᑉ ᔭᓕᖕᒥ ᐊᒻᒪᓗ ᖃᒪ ᓂᑦ ᑐᐊᑉ ᑐᒃ ᑐᖕᖏ ᓂᒃ, ᐊᒥᓱᑭᖅᓯ ᐊᓇᔭ ᐅᓂᖕᖏ ᓄᑦ ᓴᐳᓐ ᓂᐊᖅ ᑕᐅᓂᖕᖏ ᓗ ᑐᒃ ᑐᖅᑲᖅ ᕿᐅᕙ ᑐᑐᖅᑲᐃᑦ ᓄᓇᖕᖏ.

ᖃᓄᐃᓕᐅᖅ ᓗᑎᒃ 1.2: ᐱᔭᕇᖅᑕᐅᓗᑎᒃ ᐊᑐᓕᖅᑎᑕᐅᓗᑎᒡ ᓗ ᓇᓕᐊᖕ ᓄᑦ ᑐᖅᑲᖕᖑᖅ ᑐᖅ ᑐᑦ ᑐᒃ ᑐᓂᒃ ᐊᐅᓚᑦ ᑎᓂᖅ ᔫᑦ ᐸᖅ ᓇᐅᑎᒃ ᓴᐃᑦ ᑐᒃ ᑐᔭᖅ ᑑᑉ ᓄᕗᐊᓂ ᐊᒻᒪᓗ ᕿᓐ ᖕᖑᐅᑉ ᑐᒃ ᑐᖕᖏ ᓂᒃ ᐊᒥᓱᑭᖅᓯ ᐊᓇᔭ ᐅᓂᖕᖏ ᓄᑦ ᓴᐳᓐ ᓂᐊᖅ ᑕᐅᓂᖕᖏ ᓗ ᑐᒃ ᑐᖅᑲᖅ ᕿᐅᕙ ᑐᑐᖅᑲᐃᑦ ᓄᓇᖕᖏ.

ᖃᓄᐃᓕᐅᑦ ᓘᑎᒃ 1.3: ᑲᔪᓯᔪᒥᒃ ᐱᓕᕆᖃᑎᖃᐃᓐ ᓇᑦ ᓘᑎᒃ ᓄᓇᕗᒻ ᒥᐅᓂᒃ
ᐃᓚᒋ ᓂᐊᖅᑖᖅᑮ ᓂᒃ ᐋᑐᑎᖃᑦ ᑎᐊᑦ ᓂᐊᖅᑐᓂᒃ
ᓴᐳᓐ ᓂᐊᖅᑕᐅᓂᖅᑮ ᓄᑦ ᐊHᐃᐊᑉ ᑐᒃ ᑐᖅᑮ.

ᖃᓄᐃᓕᐅᑦ ᓘᑎᒃ 1.4: ᕿᒥ ᑦ ᕈᐊᖅᑕᐅᓂᖅᑮ ᓄᑖᕈᓇᐊᖅᑕᐅᓂᖅᑮ ᓗ ᓇᓪ ᓕᐊᖕ ᓄᑦ
ᑐᕋᖖ ᓘᑐᖅᑐᑦ ᑐᒃ ᑐᓂᒃ ᐊᐅᓚᑦ ᑎᓂᑦ ᒧᑦ ᐸᑦ ᓇᐅᑏᑦ
ᐱᑕᖃᓇᐊᖃᑦ ᓂᖅᑮ.

ᖃᓄᐃᓕᐅᑦ ᓘᑎᒃ 1.5: ᐃᑲᔪᖅᓱ ᐃᓘᑎᒃ ᓄᓇᓕᖕ ᒥᐅᑕᓄᑦ -ᓴ ᓇᔭ ᐅᓯ ᒪᔪᓂᒃ
ᓇᐹᖅᑐᖃᖅᑮ ᑐᑦ ᒥ ᐅᑦ ᑐᒃ ᑐᖅᑭ ᓂᒃ ᓇᐅᑦ ᑎᖅᑐᐃᓂᑦ ᒧᑦ,
ᒥ ᐊᓂᕆᔾ ᐅᓂᑦ ᒧᑦ ᐊᒻ ᒪ ᓗ ᓴ ᐳᓐ ᓂᐊᖅᑕᐅᓂᖅᑭ ᓄᑦ
ᐸᑦ ᓇᐅᑎᓕᐊᕆᔭ ᐅᔪ ᓂᒃ.

ᖃᓄᐃᓕᐅᑦ ᓘᑎᒃ 1.6: ᐱᓕᕆᐊᖑᐃᓐ ᓇᑦ ᓘᑎᒃ ᓈᒪ ᔪ ᓂᒃ ᐊᑐᒐ ᒃ ᓴ ᖃᕆᐊᖃᑦ ᓂᖅᑮ
ᐱ ᓇᐅᔭ ᓂᒃ ᐊᒻ ᒪ ᓗ ᑲ ᔪ ᓯ ᔪ ᒥ ᒃ ᐃᑲ ᔪ ᖅᓱ ᖅᑕᐅᖅᑭ ᓇᑦ ᓘᑎᒃ
ᒐ ᕙᒪ ᒃ ᑯ ᓐ ᓄᑦ ᐊᓯ ᖏᓄᓪ ᓗ ᐃᓚᒋ ᕗᖕ ᓂᐊᖅᑖᖅᑭ ᓄᑦ
(ᑕᐃᒃ ᑯ ᓇᖖ ᓗ ᓄᓇᒥ ᐱᕗᓪ ᓕᐊᔪ ᓕᕆᔾ ᐅᕝᕕ ᑐᓄᑦ,
ᐊᐅᓚᑦ ᑎᔾ ᐅᖃᑕᐅᕝᕕ ᑐᓂᒃ ᐊᒻ ᒪ ᓗ ᒪ ᓕᒐ ᓪ ᓗᑐᑦ ᓂᒃ
ᑲ ᑎᒪ ᔾ ᐅᕝᕕ ᑐᓂᒃ, ᐊᒻ ᒪ ᓗ ᒐ ᕙᒪ ᐅᖅᑮ ᑐᓂᒃ
ᑎᒥ ᖁᑎᒋ ᔭ ᐅᔪ ᓂᒃ) ᐊᑐᓕᖅ ᑎᑕᐅᓂᖅᑭ ᓄᑦ
ᑕᒪ ᒃ ᑯ ᐊ ᐊᒥ ᓱ ᕈ ᖅ ᓲ ᓂᑦ ᒧᑦ ᖃᓄᐃᕈ ᑎᒃ ᓴ ᓂᒃ
ᐊᐅᓚᑦ ᑎᔅ ᔪ ᑎᒃ ᓴ ᓂᑉ ᓗ, ᓇᐅᑦ ᑎᖅ ᑐᐃᓂᑦ ᒧᑦ,
ᒥ ᐊᓂᕆᔾ ᐅᖃᑕᐅᓂᑦ ᒧᑦ, ᐊᒻ ᒪ ᓗ
ᓴ ᐳᓐ ᓂᐊᖅ ᑎᐅᖃᑕᐅᓂᑦ ᒧᑦ ᐸᑦ ᓇᐅᑎᖅᑭ ᓂᒃ ᐅᖃᐅᓯ ᐅᓯ ᒪ ᔪᑦ
ᐊᑐᖅ ᑕᐅᓘᑎᒃ ᖃᓄᐃᓕᐅᕈ ᑕᐅᓂᐊᖅ ᑐᑦ ᓈᔅ ᓴ ᐅᑎᓖᑦ 1.1-ᒥ ᒃ
1.5- ᒧᑦ.

ᖃᓄᐃᓕᐅᑦ ᓘᑎᒃ 1.7: ᐊᖏ ᓕᒋ ᐊᖅ ᑕᐅᓘᑎᒃ ᐊᔪ ᖅᑭ ᓂᖃᕈ ᓐ ᓇᑦ ᓂᖅᑮ ᓄᓇᓕᑐᖃᐃᑦ
ᐃᓚᒋ ᔭ ᐅᖃᑕᕈ ᓐ ᓇᑦ ᓂᖅ, ᐃᓚᐅᖃᑕᑦ ᓘᑎᒃ ᓇᓕᒧᒋ ᔭ ᐅᔪ ᒥ ᒃ
ᐊᒻ ᒪ ᓗ ᐋᑐᑎᖃᑦ ᑎᐊᑦ ᓂᐊᖅᑐᓂᒃ ᐳᓐ ᓂᐊᖅ ᑎᐅᓂᑦ ᒥ ᒃ
ᓇᐹᖅᑐᖃᖅᑮ ᑐᑦ ᒥ ᐅᑦ ᑐᒃ ᑐᖅᑭ ᓂᒃ.

ᖃᓄᐃᓕᐅᑦ ᓘᑎᒃ 1.8: ᐱᓕᕆᖃᑎᒋ ᓘᒋ ᑦ ᐱᕗᓪ ᓕᐊᓂᖅᑭ ᓂ
ᐊᑐᓕᖅ ᑎᑕᐅᓂᖅᑭ ᓂᓗ ᑲ ᓇᑕᓕᒫ ᒥ ᓇᐹᖅᑐᖃᖅᑭ ᓂᑦ ᒥ ᑐᒃ ᑐᐃᑦ
ᐊᒥ ᓱ ᕈ ᖅ ᓯ ᐊᕆᔭ ᐅᓂᖅᑭ ᓄᑦ ᖃᓄᐃᓕᐅᕈ ᑎᒃ ᓴ ᐃᑦ, ᐃᓚᖃᑦ ᓘᑎᒃ
ᐃᓕᑕᕆᔭ ᐅᓂᖅᑭ ᓂᒃ ᓴ ᐳᓐ ᓂᐊᖅ ᑕᐅᓂᖅᑭ ᓗ
ᐱᑕᖃᓇᐊᖃᒻ ᒪ ᕆᒃ ᑐᑦ ᓄᓇᐃᑦ ᓇᔪ ᒐ ᕆᔭ ᐅᕝᕕ ᑐᑐᖃᐃᑦ ᑐᒃ ᑐᓄᑦ,
ᑐᑭ ᓕᐅᖅᑕᐅᓘᑎᑉ ᓗ ᑐᒃ ᑐᐃᑦ ᐊᒥ ᔅ ᓰ ᓂᖅᑮ ᐊᒻ ᒪ ᓗ
ᓇᓃᑐᓐ ᓇᑦ ᓂᖅᑮ ᐱᓕᕆᐊᖑᓂᐊᖅᑐᑦ.

ᐱᔭᕇᖅᑕᐅᔪᒃ ᓴᖅ 2: ᓇᐅᑦ ᑎᖅᑐᖅᑕᐅᕙᓪ ᓕᐊᖅᑭ ᓇᑦ ᓂᖅᑮ ᓇᐹᖅᑐᖃᖅᑮ ᑐᑦ ᒥ ᐅᑦ ᑐᒃ ᑐᐃᑦ,
ᓇᔪᖅᐸᒃ ᑖᖅᑭ ᓗ ᓄᓇᐃᑦ ᐊᒻ ᒪ ᓗ ᐱᒻ ᒪᕆᐅᓂᖅᑮ ᐱᔅ ᔪᑕᐅᔪᑦ ᐊᒻ ᒪ ᓗ ᐅᓗᕆᐊᓇᕈᑕᐅᔪᑦ
ᐊᒃ ᑐᐃᔪᓐ ᓇᑦ ᓂᖅ ᖃᓄᐃᓂᖕᖏᖅᑭ ᓄᑦ ᐊᒻ ᒪ ᓗ ᖃᓄᐃᑦᒍᐅᖅᑯᖅᑮ ᑐᒃ ᑐᐃᑦ ᓄᓇᑦ ᓯ ᐊᑦ ᒥ.

ᖃᓄᐃᓕᐅᑦ ᓘᑎᒃ 2.1: ᓇᐅᑦ ᑎᖅᑐᖅᑕᐅᕙᓪ ᓕᐊᖅᑭ ᓇᑦ ᓘᑎᒃ ᐊᒥ ᔅ ᓰ ᓂᖅᑮ,
ᖃᓄᐃᓕᕙᓪ ᓕᐊᓂᖅᑮ, ᖃᓄᐃᖅᑭ ᓂᖅᑭ ᓗ ᑕᒪ ᐃᓐ ᓂ ᓄᓇᑦ ᓯ ᐊᑦ ᒥ
ᓇᐹᖅᑐᖃᖅᑮ ᑐᑦ ᒥ ᐅᑦ ᑐᒃ ᑐᖃᑦ ᕚᐅᓂᖅᑮ.

ᖃᓄᐃᓕᐅᑦ ᓘᑎᒃ 2.2: ᓇᐅᑦ ᑎᖅᑐᖅᑕᐅᕙᓪ ᓕᐊᖅᑭ ᓇᑦ ᓘᑎᒃ ᑐᒃ ᑐᓯ ᐅᖅᐸᒃ ᑐᑦ ᐆᒪ ᔪ ᐃᑦ
ᐊᒃ ᑐᖅ ᓯ ᓯ ᒪ ᔪᓐ ᓇᖅ ᑐᑦ ᓇᐹᖅᑐᖃᖅᑮ ᑐᑦ ᒥ ᐅᑕᓂᒃ ᑐᒃ ᑐᓂᒃ,
ᖃᐅᔾ ᓴ ᖅ ᑕᐅᖃᑕᑦ ᓘᑎᒃ ᐊᑕᖃᑎᒌ ᓲ ᖑᓂᖅᑮ ᐆᒪ ᔪ ᐃᑦ

ᑐᒃ ᑐᓯ ᐅᖅᐸᓐ ᓂᖕᒋ ᓂᕿᒃ ᓴᒥ ᓄᑦ-ᑐᒃ ᑐᐃᑉ ᓗ ᐊᒻ ᒪᓗ ᖃᓄᑎᒋ
ᑐᒃ ᑐᕕᐅᕙᓐ ᓂᖕᒋ ᑕᒪᒃ ᑯ ᓄᖕᒐ

ᖃᓄᐃᓕᐅᕐ ᓗᑎᒃ 2.3: ᓇᐅᑦ ᑎᖅᑐᖅᑕᐅᓗᑎᒃ ᐊᒃ ᑐᖅᑕᐅᓯᒪᔭᓐ ᓇᕐ ᓂᖕᒋ ᐊᓯ ᖕᖏ ᓄᑦ ᐱᔾ ᔭᑕᐅᔭᓐ ᓇᖅᑐᓄᑦ ᓇᐹᖅᑐᖅᑲᖕᒋ ᑐᕐ ᒥᐅᑦ ᑐᒃ ᑐᖕᖏ ᓂᒃ ᐊᒻ ᒪᓗ ᓇᔭᖅᐸᒃ ᑕᖕᖏ ᓂᒃ ᓄᓇᓂᒃ, ᑕᒪᒃ ᓂᖕᒐ ᓵᕐ ᓗ ᐆᒃ ᑑᑎᒋ ᓗᒋᑦ, ᖃᓂᒪ ᓕᕈ ᑕᐅᔭᓐ ᓇᕐ ᓂᖕᒋ ᑐᒃ ᑐᓄᑦ, ᑯᒪ ᖃᓕᕈᓐ ᓇᕐ ᖕᒋ, ᖁᐱᕐ ᕈᒐᓴ ᐃᑦ, ᐊᓇᖕ ᕌᑉ ᓗᓐ ᓅᑦ, ᕿᒃ ᑐᓇᐊᑉ ᓗᓐ ᓅᑦ ᐊᒻ ᒪᓗ ᓯ ᓚᐅᑉ ᐊᓯ ᔾ ᔨ ᖅᐸᑉ ᓕᐊᓂᖕᒐ

ᖃᓄᐃᓕᐅᕐ ᓗᑎᒃ 2.4: ᓇᐅᑦ ᑎᖅᑐᖅᑕᐅᓗᑎᒃ ᐊᓯ ᔾ ᔨ ᖅᐸᑉ ᓕᐊᓂᖕᒋ ᓇᔭᒐ ᓇᕚᒃ ᑕᖕᖏ ᓂ ᓄᓇᖕᒋ ᑕ ᐱᐅᕚ ᓂᖕᒋ, ᐱᑕᖃᑦ ᑎᐊᕐ ᓂᖕᒋ ᐊᒻ ᒪᓗ ᐊᑐᐃᓐ ᓇᐅᔭᓐ ᓇᕐ ᓂᖕᒋ ᑐᒃ ᑐᓄᑦ ᐱᐅᓯ ᑐᖃᕐ ᒥᔪᑦ ᐊᒻ ᒪᓗ ᐃᓄᖕ ᓄᑦ ᐱᔾ ᔭᑕᐅᔭ ᓂᒃ ᐊᓯ ᔾ ᔨ ᖅᑕᐅᕙᑉ ᓕᐊᓂᖕᖏ ᓂᒃ ᓄᓇᐃᑦ ᓇᔭᒐ ᓇᕚᒃ ᑕᖕᒋ.

ᖃᓄᐃᓕᐅᕐ ᓗᑎᒃ 2.5: ᓇᐅᑦ ᑎᖅᑐᖅᑕᐅᓗᑎᒃ ᖃᓄᐃᓕᖕᖠᓂᖕᒋ ᐊᑕᖃᑎᕆ ᖕ ᓂᖕᒋ ᐃᓄᐃᑉ ᓗ ᐊᑉ ᓚᐃᑉ ᓗ ᑐᒃ ᑐᐃᑉ ᓗ ᓇᓗᓇᐃᒃ ᑯᑕᓇᔭ ᐅᔭᓐ ᓇᕐ ᓂᕐ ᒧᑦ ᑐᒃ ᑐᐃᑦ ᖃᓄᐃᓂᖕᖏ ᓄᑦ.

ᐱᔭ ᓈᖅᑕᐅᔭᒃ ᓴᖅ 3: ᖃᐅᔨᒪᔭ ᐅᖕᖏ ᓂᖕᒋ ᖃᐅᔨᔭ ᐅᕙᑉ ᓕᐊᓗᑎᒃ, ᐊᑐᕐ ᓗᑎᒃ ᐃᓄᐃᑦ /ᐊᑉ ᓚᐃᑦ ᖃᐅᔨᒪᔭ ᑐᖅᑲᖕᖏ ᓂᒃ, ᓄᓇᓕᑦ ᖃᐅᔨᒪᔭ ᖕᖏ ᓂᒃ ᐊᒻ ᒪᓗ ᖃᐅᔨᓴᖅᑎᑦ ᖃᐅᔨᒪᔭ ᖕᖏ ᓂᒃ, ᐱᐅᓯ ᕆᐊᕈ ᑕᐅᔭᓐ ᓇᕐ ᓂᖕᖏ ᓂᒃ ᑲᒪᔨ ᐅᑦ ᑎᐊᓇᐊᖅᑲᕐ ᓂᖕᖏ ᓄᑦ ᐊᒻ ᒪᓗ ᐃᒃ ᐱᕆᔭ ᐅᑦ ᑎᐊᓇᐊᖅᑲᕐ ᓂᖕᖏ ᓄᑦ ᓇᐹᖅᑐᖅᑲᖕᒋ ᑐᕐ ᒥᐅᑦ ᑐᒃ ᑐᐃᑦ ᓴᕗᓐ ᓂᐊᖅᑕᐅᓇᓯ ᖕ ᓂᖕᒋ.

ᖃᓄᐃᓕᐅᕐ ᓗᑎᒃ 3.1: ᓄᑖᕈ ᓇᐊᖅᑕᐅᖃᑦᕐ ᓗᑎᒃ ᐅᕝ ᕙᓗᓐ ᓅᑦ ᓴ ᓇᔭ ᐅᑦ ᑎᐊᒃ ᑕᑲ ᓂᖃᑦᕐ ᓗᑎᒃ ᐊᒥ ᔅ ᓰ ᓂᖕᖏ ᓂᒃ ᐃᔾ ᔭᐊᖅᓯ ᓯ ᒪ ᔾ ᔭ ᑏᑦ ᐊᑐᖅᑕᐅᕙᓐ ᓂᖕᖏ ᓄᑦ ᒫ ᓐ ᓇᐅᔭ ᖅ ᖃᐅᔨ ᔭ ᐅᕙᑉ ᓕᐊᔭ ᑦ.

ᖃᓄᐃᓕᐅᕐ ᓗᑎᒃ 3.2: ᐊᑐᓕᖅ ᑎᑦ ᑎᕙᑉ ᓕᐊᕐᑯᔨ ᓂᕐ ᒧᑦ ᑲ ᑎᖅ ᓯ ᐃᕕᐅᔭᓐ ᓇᕐ ᓂᖕᖏ ᓂᒃ ᐊᒻ ᒪᓗ ᑐᓂᓯ ᖃᑦ ᑕᐅᑎᔭᓐ ᓇᕐ ᓂᖕᖏ ᓂ ᖃᐅᔨᒪ ᔾ ᔭ ᑎᒃ ᓴ ᓇᔭ ᐅᓂᐊᖅᑐᓂᒃ ᑐᒃ ᑐᐃᑦ ᐊᕙᑎᒥ ᐱᑕᖃᕐ ᓂᖕᖏ ᓂᒃ, ᖃᓄᐃᓕᖕᖠᓂᖕᖏ ᓂᒃ ᐊᒻ ᒪᓗ ᑐᓂᓯ ᖃᑕᐅᑎᔭᓐ ᓴᕐ ᓂᖕᖏ ᓂᒃ ᑐᒃ ᑐᓄᑦ ᐅᓗᓇᐊᓇᕈᑕᐅᕚᒃ ᑐᓂᒃ.

ᖃᓄᐃᓕᐅᕐ ᓗᑎᒃ 3.3: ᐊᑐᓕᖅ ᑎᑦ ᑎᕙᑉ ᓕᐊᕐᑯᔨ ᓂᕐ ᒧᑦ ᑲ ᑎᖅ ᓯ ᐃᕝ ᕕᐅᔭᓐ ᓇᕐ ᓂᖕᖏ ᓂᒃ ᐊᒻ ᒪᓗ ᑐᓂᓯ ᖃᑕᐅᑎᔭᓐ ᓇᕐ ᓂᖕᖏ ᓂ ᖃᐅᔨ ᒪ ᔾ ᔭ ᑎᒃ ᓴ ᐅᔭᓐ ᓇᓯ ᖅᑐᓂᒃ ᐱᔾ ᔭ ᑎᖅᖅᑐᓂᒃ ᐱᑕᖃᓹ ᖖᓂᖕᖏ ᓂ ᖃᓄᐃᓕᖕᖠᓂᖕᖏ ᓂᒃ ᓇᐹᖅᑐᖅᑲᖕᒋ ᑐᕐ ᒥᐅᑦ ᑐᒃ ᑐᐃᑦ, ᑐᒃ ᑐᓂᒃ ᐆᒪ ᔭ ᐃᑦ ᓂᒃ ᓴ ᖅ ᓯ ᐅᖅᐸᓐ ᓂᖕᖏ ᓂᒃ ᐊᒻ ᒪᓗ ᑕᒪ ᐃᓐ ᓂᒃ ᐊᕙᓗᖕᖏ ᓂᒃ ᖃᓄᐃᓕᖕᖠᓂᖕᖏ ᓂᒃ.

ᖃᓄᐃᓕᐅᕐ ᓗᑎᒃ 3.4: ᖃᐅᔨ ᓴ ᖃᑦᕐ ᓗᑎᒃ ᐱᕙᑉ ᓕᐊᖕᖏ ᓇᖅᑐᓂᒃ ᐊᒃ ᑐᖅᑕᐅᕙᑉ ᓕᐊᓂᖕᖏ ᓂᒃ ᐱᐅᓯ ᑐᖃᓇᔭ ᐅᔭ ᓄᑦ ᐊᒻ ᒪᓗ ᐃᓄᐃᑦ ᐱᓕᕆᕚᖕ ᓂᖕᖏ ᓄᑦ ᓄᓇᒥ ᒃ ᐊᓯ ᔾ ᔩ ᓂᕐ ᒥ ᒃ ᓇᐹᖅᑐᖅᑲᖕᒋ ᑐᕐ ᒥᐅᑦ ᑐᒃ ᑐᖕᖏ ᓂᒃ ᐊᒻ ᒪᓗ ᓇᔭᒐ ᓇᕚᒃ ᑕᖕᖏ ᓂᒃ.

ᐱᔭ ᓈᖅᑕᐅᔭᒃ ᓴᖅ 4: ᓴᕗᓐ ᓂᐊᖅᑕᐅᓂᖕᒋ ᖃᓄᐃᓕᔭ ᐅᓂᕐ ᓗᒃ ᑕᐃᓕᒪ ᓂᖕᖏ ᓗ ᓇᐹᖅᑐᖅᑲᖕᒋ ᑐᕐ ᒥᐅᑦ ᑐᒃ ᑐᐃᑦ ᐊᒥ ᓲ ᓂᖕᒋ ᐊᒻ ᒪᓗ ᓇᔭᖅᐸᒃ ᑕᖕᒋ ᓄᓇᐃᑦ.

ᖃᓄᐃᓕᐅᕐ ᓗᑎᒃ 4.1: ᐱᓕᕆᖃᑎᒋ ᓗᒋ ᑦ ᓄᓇᒥ ᐱᕙᓪ ᓕᐊᔪ ᓕᕆᔾ ᐅᔭ ᒃ ᑐᑦ, ᒐ ᕙᓚ ᐃᓪ ᓗ,
ᐊᐅᓚᑦ ᑎᔾ ᐅᖃᑕᐅᔪ ᓪ ᓗ ᑲ ᑎᒪ ᔨ ᖕᒋ ᐊᒻ ᒪ ᓗ ᒪᓕᒐ ᓪ ᓗᑐᕐ ᓂᒃ
ᒪ ᓕᒐ ᓕᕆᔩ ᑦ ᓴ ᓇᔭ ᐅᓂᖕᒋ ᓂ ᐊᑐᓕᕐ ᑎᑕᐅᓂᖕᒋ ᓂᓗ
ᐱᐅᓂᕐ ᐹᖑᓂᐊᕐ ᑐᓂᒃ ᐱᐅᓯ ᕆᔭ ᐅᓂᐊᕐ ᑐᑦ
ᐊᒃ ᑐᑕᐅᓗᐊᕇᒃ ᑯ ᑎᒃ ᓴ ᐅᓂᐊᕐ ᑐᓄᑦ ᐃᓄᐃᑦ ᓄᓇᒥ
ᐊᑐᖃᑕᕐ ᓂᖕᒋ ᓄᑦ ᑕᒫ ᓂ ᓇᐹᕐ ᑐᖃᖕᒋ ᑐᕐ ᒥ ᐅᑦ
ᑐᒃ ᑐᖃᕐ ᑯ ᐅᓂᖕᒋ ᓂ.

ᖃᓄᐃᓕᐅᕐ ᓗᑎᒃ 4.2: ᐃᓱ ᒪ ᒃ ᓴ ᕐ ᓯ ᐅᑭ ᑕᐅᕝ ᓗᑎᒃ ᑲ ᒪ ᒋ ᔭ ᐅᔪ ᓐ ᓇ ᕐ ᓂᖕᒋ ᓂᒃ
ᑐᒃ ᑐᓯ ᐅᕐ ᐸ ᒃ ᑐᑦ ᓂᕿᒃ ᓴ ᖃᓲ ᑦ ᐆᒪ ᔪ ᐃᑦ ᐊᐅᓚᑦ ᑕᐅᓂᖕᒋ ᓄᑦ
ᐊᑐᕐ ᑕᐅᖕᑮ ᓇᕐ ᑐᓂᒃ ᑕᐃᒫ ᒃ ᐃᑲ ᔪ ᕐ ᓂᖃᑭ ᓐ ᓇᕐ ᓂᐊᕐ ᑐᓂᒃ
ᓇᐹᕐ ᑐᖃᖕᒋ ᑐᕐ ᒥ ᐅᑦ ᑐᒃ ᑐᐃᑦ ᐊᒥ ᓱ ᑭ ᑲ ᓐ ᓂᑭ ᓐ ᓇᕐ ᓂᖕᒋ ᓄᑦ.

ᖃᓄᐃᓕᐅᕐ ᓗᑎᒃ 4.3: ᐊᑐᕆᕐ ᑎᑦ ᑎᓗᑎᒃ ᑕᒻ ᒪ ᕐ ᑕᕐ ᓯ ᒪ ᖕᒋ ᑐᓂᒃ ᑕᒪ ᒃ ᑭ ᕐ ᑐᓂᒃ
ᐅᓂᒃ ᑳ ᓕᐅᑭ ᑎᓂᒃ ᐱᔅ ᔭ ᑎᖃᕐ ᑐᓂᒃ ᓇᐹᕐ ᑐᖃᖕᒋ ᑐᕐ ᒥ ᐅᑦ
ᑐᒃ ᑐᐃᑦ ᑐᒃ ᑐᓯ ᐅᕐ ᕗᐅᕙᖕ ᓂᖕᒋ ᓂᒃ ᓇᓂᑐᐃᓐ ᓇᕐ ᓄᓇᑦ ᓯ ᐊᕐ ᒥ
ᑕᐃᒃ ᑯ ᓂᖖ ᐃᓚᖃᕐ ᓗᑎᒃ ᓇᓚᐅᑖᑭ ᑕᐅᔭ ᓂᒃ ᑐᕐᑯᑕᐅᓂᖕᒋ ᓂᒃ
ᐱᔭ ᐅᖃᑦ ᑕᕐ ᓯ ᒪ ᖕᒋ ᑐᓂᒃ ᐊᒻ ᒪ ᓗ ᐋᓐ ᓂᕐ ᑕᐅᑐᐃᓐ ᓇᕐ ᓯ ᒪ ᔭ ᓂᒃ
ᐃᑭ ᓕᑭ ᕐ ᑕᐅᓯ ᒪ ᔭ ᓂᒃ ᐱᑕᕐ ᑕᐅᓯ ᒪ ᖕᒋ ᑐᓂᒃ.

ᖃᓄᐃᓕᐅᕐ ᓗᑎᒃ 4.4: ᐊᑐᕆᕐ ᑎᑦ ᑎᓂᕐ ᐃᒃ ᐱᒍ ᑦ ᑎᐊᖃᑕᕐ ᓂᕐ ᒥ ᒃ ᑐᒃ ᑐᐸᖕ ᓂᕐ,
ᑕᐃᒃ ᑯ ᓂᖕᒐ ᐊᑐᖃᑕᕐᑯᓰ ᓂᕐ ᐃᒃ ᐱᒍ ᓱ ᑦ ᑎᐊᕐ ᑐᓂᒃ ᐱᐅᓯ ᑐᖃᕐ ᒥ ᒍ ᑦ
ᒪ ᓕᒐ ᑐᖃᖕᒋ ᓂᒃ ᐊᒻ ᒪ ᓗ ᐊᖕᑭ ᑕᐅᓯ ᒪ ᔭ ᓂᒃ ᐊᒻ ᒪ ᓗ
ᒪ ᓕᒃ ᑕᐅᕙᖕ ᓂᖕᒋ ᓂᒃ ᑐᒃ ᑐᓯ ᐅᖃᑦ ᑕᕐ ᓂᖕᒋ ᓂ
ᐊᐅᓚᑦ ᑎᑦ ᑎᐊᖃᑦ ᑕᕆᐊᖃᕐ ᓂᖕᒋ ᓂᒃ.

ᖃᓄᐃᓕᐅᕐ ᓗᑎᒃ 4.5: ᓴ ᕐᑭᑎᑦ ᑎᓗᑎᒃ ᓄᓇᕐ ᕗᐅᓂᖕᒋ ᓂ ᖃᓄᐃᓕᐅᕈᑎᒃ ᓴ ᓂᒃ
ᐊᐅᓚᑕᐅᓂᖕᒋ ᓄᑦ ᑲ ᔭ ᓯ ᕗᓪ ᓕᐊᖕᒋ ᓇᕐ ᑐᒥ ᒃ ᐊᒃ ᑐᕐ ᑕᐅᕙᖕ ᓂᖕᒋ
ᓇᐹᕐ ᑐᖃᖕᒋ ᑐᕐ ᒥ ᐅᑦ ᑐᒃ ᑐᐃᑦ ᐊᒻ ᒪ ᓗ ᓇᔭ ᕐ ᐸ ᒃ ᑕᖕᒋ ᓄᓇᖕᒋ
ᐱᐅᓯ ᑐᖃᕐ ᒧ ᑦ ᐊᒻ ᒪ ᓗ ᐃᓄᐃᑦ ᓄᓇᒦ ᖃᑕᕐ ᓂᖕᒋ ᓂᒃ
ᐊᓯ ᔅ ᓰ ᕗᓪ ᓕᐊᖃᑕᕐ ᓂᖕᒋ ᓄᑦ.

ᖃᓄᐃᓕᐅᕐ ᓗᑎᒃ 4.6: ᐱᕋᔭ ᒍ ᑕᐅᑦ ᑕᐃᓕᒪ ᓂᖕᒋ ᓇᐹᕐ ᑐᖃᖕᒋ ᑐᕐ ᒥ ᐅᑕᓄᑦ
ᓄᓇᕐᑯᑎᒋᔭ ᐅᓂᖕᒋ ᑐᒃ ᑐᓄᑦ ᐃᓚᐅᖃᑕᕐ ᓗᑎᒃ ᐱᓪ ᒪᕆᐅᔪ ᓂᒃ
ᐊᕙᑎᒥ ᒃ ᐊᒃ ᑐᕐ ᑕᐅᔪ ᓐ ᓇᕐ ᑐᓂᒃ ᐅᖃᐅᓯ ᐅᔪ ᓂᒃ ᐊᒻ ᒪ ᓗ ᓄᓇᐃᑦ
ᐊᑐᕐ ᑕᐅᔪ ᓐ ᓇᕐ ᓂᖕᒋ ᓂᒃ ᐸᕐ ᓇᐅᑎᓕᕆᓂᕐ ᒥ ᒃ ᓄᓇᑦ ᓯ ᐊᕐ ᒥ,
ᐊᓯ ᖕᒋ ᓂᓗ ᐱᓕᕆᕗᐅᔪ ᒪ ᔭ ᑦ ᐊᒃ ᑐᐃᓂᖃᕐ ᓂᐊᑭ ᑎᒃ ᓄᓇᑦ ᓯ ᐊᕐ ᒥ ᒃ
ᑐᒃ ᑐᖃᕐ ᕗᐅᓂᖕᒋ ᓂᒃ.

ᖃᓄᐃᓕᐅᕐ ᓗᑎᒃ 4.7: ᐃᓕᑕᕆᔭ ᐅᓂᖕᒋ ᐊᒻ ᒪ ᓗ ᓴ ᐳᓐ ᓂᐊᕐ ᑕᐅᓂᖕᒋ
ᐱᑕᕐᑲᕆᐊᕐᑲᒻ ᒪ ᕆᒃ ᑐᑦ ᐱᓪ ᒪᕆᐅᔪ ᓪ ᓗ ᓇᐹᕐ ᑐᖃᖕᒋ ᑐᕐ ᒥ ᐅᑦ
ᑐᒃ ᑐᖕᒋ ᓄᑦ ᓄᓇᐃᑦ ᓲ ᕐ ᓗ ᓄᕐ ᕆᕕᒋ ᕙᒃ ᑕᖕᒋ,
ᓄᕐ ᕆᓯ ᒪ ᓕᕐ ᑎᓪ ᓗᒋ ᑦ ᓇᔭ ᕐ ᐸ ᒃ ᑕᖕᒋ ᐊᒻ ᒪ ᓗ ᐱᓪ ᒪᕆᐅᓂᖕᒋ
ᑕᒪ ᒃ ᑯ ᐊ ᐃᒪ ᒃ ᑯ ᑦ ᐃᑳ ᕆᐊᕐ ᑐᕐ ᕕᕆ ᕙᑕᖕᒋ.

ᖃᓄᐃᓕᐅᕐ ᓗᑎᒃ 4.8: ᐅᔅ ᔨ ᕐ ᑐᑦ ᑎᐊᕐ ᑲ ᑦ ᑕᕐ ᓂᕐ ᑕᐃᒃ ᑯᐊ ᓇᐹᕐ ᑐᖃᖕᒋ ᑐᕐ ᒥ ᐅᑦ
ᑐᒃ ᑐᐃᑦ ᐱᓪ ᒪᕆᐊᓗᖕ ᓂᒥ ᒃ ᐊᓐ ᓂᕐ ᓇᕐ ᓂᖕᒋ ᓂᒃ
ᐃᓚᒋᔭ ᐅᔪ ᓪ ᒪᕆᐅᓗᑎᒃ ᐊᕙᑎᓕᕆᓂᕐ ᒥ ᒃ
ᐊᒃ ᑐᕐ ᑕᐅᓯ ᒪ ᔭ ᓐ ᓇᕐ ᓂᖕᒋ ᓂᒃ ᐃᓱ ᒪ ᓕᐅᑭ ᑕᐅᔭ ᕆᐊᕐ ᑐᓄᑦ
ᐊᒻ ᒪ ᓗ ᓴ ᐳᓐ ᓂᐊᕐ ᑕᐅᔭ ᕆᐊᕐ ᓂᖕᒋ ᓄᑦ ᐸᕐ ᓇᐅᑕᐅᔪ ᓂ

ᓄᓇᑦᓯᐊᕐᒥ ᐊᓯᙳᓂᒡᔪ ᐊᐅᓚᑦᑎᕕᐅᔪᓂ ᐱᒋᐊᖅᑎᑕᐅᔪᒪᓂᙳᓂ ᐃᓱᒪᓕᐅᕈᑕᐅᔾ ᓇᐊᖃᖅᑐᓂᒃ ᐊᒃ ᑐᐃᓂᖃᕐ ᕿᓐ ᓇᖅᑐᓂᒃ ᓄᓇᑦᓯᐊᕐᒥᒃ ᑐᒃ ᑐᙳᓂᒃ.

ᐱᔾᓅᖅᑕᐅᔪᒃᓴᖅ 5: ᐃᓕᓐ ᓂᐊᖅᑎᑦ ᑎᖃᑕᕐ ᓗᑎᒃ ᐊᒻᒪᓗ ᐃᒃ ᐱᒋᔾᐅᑦ ᑎᐊᖃᑦ ᑕᕐᑯᔨ ᓗᑎᒃ ᓇᐹᖅᑐᖃᖏᑦ ᑐᕐ ᒥᐅᑦ ᑐᒃ ᑐᙳᓂᒃ, ᓇᔪᒐᓈᕙᒃ ᑕᙳᓂᒃ ᐊᒻᒪᓗ ᓴᐳᓐ ᓂᐊᖅᑕᐅᓇᓱᙵᓂᙳᓄᑦ ᐱᓕᕆᐊᙳᐅᓂᒃ.

ᖃᓄᐃᓕᐅᕐ ᓗᑎᒃ 5.1: ᐱᕚᓪᓕᐊᑎᑦ ᑎᓗᒃ ᐊᑐᓕᖅᑎᑦ ᑎᕚᓪᓕᐊᓗᑎᒡ ᓗ ᐊᙲᓇᓱ ᑦ ᑎᐅᓂᕐ ᒥᒃ ᐃᓕᓐ ᓂᐊᕿᑎᓂᒃ ᖃᐅᔾᔭ ᐅᔪᓂᒃ ᑐᓂᓯ ᖃᑕᐅᔪ ᓐ ᓇᕐ ᓂᐊᕐ ᒪᑕ ᐱᔅ ᔪᑎᖃᖅᑐᓂᒃ ᓈᐹᖅᑐᖃᖏᑦ ᑐᕐ ᒥᐅᑦ ᑐᒃ ᑐᙳᓂ ᐊᒻᒪᓗ ᐊᑐᖃᑦ ᑕᕐᑯᔨ ᓂᕐ ᒥᒃ ᐱᐅᔪᓂᒃ ᐊᙲᓇᓱ ᑦ ᑎᐊᕿᓯ ᐅᕙᖕ ᓂᐊᖅᑐᓂᒃ.

ᖃᓄᐃᓕᐅᕐ ᓗᑎᒃ 5.2: ᐃᑲᔪ ᖅᓱ ᐃᓗᑎᒃ ᐊᑐᒐ ᒃ ᓴ ᓂᒃ ᐱᔅ ᔪᑎᖃᖅᑐᓂᒃ ᓈᐹᖅᑐᖃᖏᑦ ᑐᕐ ᒥᐅᑦ ᑐᒃ ᑐᓂᒃ, ᑲᑎᑐᓐ ᓇᐅᑕᐅᕚᖕ ᓂᐊᖅᑐᓂᒃ ᐃᓐ ᓇᑐᖃᕐ ᓄᓪ ᓗ ᒪ ᒃ ᑯ ᒃ ᑐᓄᓪ ᓗ ᐃᓕᓐ ᓂᐊᕐ ᕕ ᖕ ᓂ ᐊᒻᒪᓗ ᓄᓇᒨᖅᐅᖃᑕᕐ ᓗᑎᒃ.

ᖃᓄᐃᓕᐅᕐ ᓗᑎᒃ 5.3: ᐊᑐᓕᖅᑎᑦ ᑎᕚᓪᓕᐊᓗᑎᒃ ᐃᓕᓐ ᓂᐊᕿᑎᒃ ᓴ ᓂᒃ ᐊᑐᖅᑕᐅᓂᐊᖅᑐᓂᒃ ᐊᔾ ᔩ ᓖ ᖏᑦ ᑑᑎᐅᔪ ᓂᑦ ᐃᓕᑦ ᑎᖃᑕᐅᔪ ᓐ ᓇᕐ ᒥ ᔪ ᓄᑦ ᑐᑭ ᓯ ᐅᒪᔾ ᐅᑦ ᑎᐊᒃ ᑲ ᓐ ᓂᑭ ᓐ ᓇᕐ ᓂᐊᕐ ᒪᑕ ᓴ ᐳᓐ ᓂᐊᖅᑕᐅᓂᖏᓄᑦ ᐱᓕᕆᐊᖑᓕᖅᑐᑦ ᐊᒻᒪᓗ ᐊᐅᓚᑕᐅᔪ ᓐ ᓇᕐ ᓂᖏᓄᑦ ᐅᓗᕆᐊᓇᕿᑕᐅᕚᒃ ᑐᑦ ᓈᐹᖅᑐᖃᖏᑦ ᑐᕐ ᒥᐅᑦ ᑐᒃ ᑐᖏᓄᑦ.

RECOVERY STRATEGY FOR BARREN-GROUND CARIBOU [DRAFT]

In the Northwest Territories

SPECIES AT RISK (NWT) ACT

Management Plan and Recovery Strategy Series 2019

For copies of the recovery strategy or for additional information on Northwest Territories (NWT) species at risk, please visit the NWT Species at Risk website (www.nwtspeciesatrisk.ca).

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Cover illustration: Barren-ground caribou, Rob Gau, Environment and Natural Resources (ENR).

What is the *Species at Risk (NWT) Act*?
The *Species at Risk (NWT) Act* (the Act) provides a process to identify, protect, and recover species at risk in the NWT. The Act applies to any wild animal, plant, or other species for which the Government of the Northwest Territories has management authority. It applies everywhere in the NWT, on both public and private lands, including private lands owned under a land claims agreement, in accordance with the land claims agreements.

What is the Conference of Management Authorities?
The Conference of Management Authorities (the Conference) was established under the Act and is made up of the wildlife co-management boards and governments in the NWT that share responsibility for the conservation and recovery of species at risk in the NWT (referred to as 'Management Authorities'). The purpose of the Conference is to build consensus among Management Authorities on the conservation of species at risk and to provide direction, coordination, and leadership with respect to the assessment, listing, conservation, and recovery of species at risk while respecting the roles and responsibilities of Management Authorities under land claim and self-government agreements. The Conference develops consensus agreements on listing species at risk, conservation measures, management strategies, and recovery plans. Only Management Authorities that have jurisdiction for a species are involved in making the decisions.

What is a Threatened species?
Under the Act, a Threatened species is a species that is likely to become Endangered in the NWT if nothing is done to reverse the factors leading to its extirpation or extinction.

What is a recovery strategy?
Under the Act, a recovery strategy is a document that recommends objectives for the conservation and recovery of a Threatened species. It also recommends approaches to achieve those objectives. It includes a description of threats and positive influences on the species and its habitat. Under the Act, a recovery strategy must be done for Threatened species within two years after the species is added to the NWT List of Species at Risk.

PREFACE

This *Recovery Strategy for Barren-ground Caribou in the Northwest Territories* (recovery strategy) is the result of a collaborative effort among diverse groups representing many different perspectives across the range of barren-ground caribou in the NWT. It is important to acknowledge that the species at risk approach, and more broadly, perspectives on "managing" caribou, are part of a scientific framework that may not necessarily represent how some Indigenous individuals and organizations would characterize their relationships with caribou. In particular, there is a strong belief in some northern Indigenous communities that talking about caribou too much or in a negative way can make them go away. The draft Łutsel K'e Dene First Nation's caribou stewardship plan entitled, Yúnethé Xá Ɂetthën Hádı[1], notes the following:

> **Etthën hurétth'ą** (the caribou are listening to us) – We shouldn't talk too much about Ɂetthën; they are listening to us; we must speak good words for them; and we must help protect them. The Ɂetthën have their own natural laws and, as such, we have to respect the ways of the Ɂetthën and all life forms.

Generally, using terms like "threatened", "at risk", or "dramatic declines" can be seen to be negative. Discussions about "managing" caribou can also be seen as inappropriate; it is at times preferable to clarify that while caribou can look after themselves, it is peoples' activities that need to be managed. This topic is addressed in Délı̨nę́'s *Belare Wíle Gots'ę́ Ɂekwę́ - Caribou for All Time*[2] plan:

> **Goɂǫ́ beghǫ gots'edé nı̨dé dzá ǫt'e** (when people talk about caribou too much, it's not good) – The talk disturbs ɂekwę́ and they don't like it. This is true for all animals. When ɂekwę́ move away, this is a sign that they want to be left alone. Ɂekwę́ make their own decisions – we're not the boss of them. We need to give them a rest for as long as it takes for them to recover. Dene ɂehtséokə say that when they decide to return, ɂekwę́ nı̨ɂah, they make a thundering sound.

Differing perspectives such as these can be difficult to reconcile in species at risk discussions and documentation, yet there is also alignment between scientific and Indigenous knowledge regarding caribou not being as available currently as they were in the past. For the immediate purposes of helping to protect caribou and create conditions in which they can recover, those involved in the development of this recovery strategy chose to work within the scientific framework, sharing a language and terminology that helps us understand each other and facilitate important discussion.

This recovery strategy constitutes advice to:

- other jurisdictions with management and guardianship responsibilities for the herds and their habitats;
- all potential partners or organizations whose activities may impact the herds or their habitats, including industry, communities, and individuals; and

- organizations that play a role in influencing the extent to which the herds are impacted, including community organizations, co-management boards, environmental assessment and regulatory bodies, and environmental non-government organizations.

This recovery strategy will outline overall goals, objectives, and approaches for barren-ground caribou conservation and recovery across the NWT. This recovery strategy applies to all barren-ground caribou herds that occur either entirely or partially in the NWT, with the exception of the Porcupine herd, which is considered geographically distinct and not at risk at this time.

Management tools and actions specific to the needs of individual barren-ground caribou herds are outlined in herd-specific management plans (either existing or under development). The recovery strategy will therefore provide overarching guidance on management and stewardship of barren-ground caribou in the NWT over the long term, while ensuring that herd-specific requirements are met through more detailed herd-specific management plans. This approach recognizes the huge amount of work that governments, co-management authorities, communities, and stakeholders have already put in, and are still putting in, to developing herd-specific management plans.

Background information on barren-ground caribou and threats is summarized from *Caribou Forever - Our Heritage, Our Responsibility: A Barren-ground Caribou Management Strategy for the Northwest Territories 2011-2015* (ENR 2011[3]) (CMS) and the Species at Risk Committee's (SARC) 2017 *Species Status Report for Porcupine Caribou and Barren-ground Caribou (Tuktoyaktuk Peninsula, Cape Bathurst, Bluenose-West, Bluenose-East, Bathurst, Beverly, Ahiak, and Qamanirjuaq herds) (*Rangifer tarandus groenlandicus*) in the Northwest Territories*[4] (status report). To avoid repetitive citations, it can be assumed that the information was taken from the CMS and/or the status report, unless another reference is given.

This recovery strategy does not commit any party to actions or resource expenditures; implementation of this strategy is subject to the appropriations, priorities, and budgetary constraints of the participating Management Authorities.

Success in the recovery of this species depends on the commitment and cooperation of the many groups who will be involved in implementing the approaches set out in this strategy and cannot be achieved by the Management Authorities or any other group alone. All NWT residents and others who use NWT lands and waters are encouraged to join in supporting and implementing this strategy for the benefit of barren-ground caribou, communities that have traditionally relied on these herds, and NWT society as a whole.

ACCEPTANCE STATEMENT

To be completed as a final step once the recovery strategy is finalized.

The Wildlife Management Advisory Council (NWT), Gwich'in Renewable Resources Board, Sahtú Renewable Resources Board, Wek’èezhìı Renewable Resources Board, Tłı̨chǫ Government, and the Government of the Northwest Territories accepted this recovery strategy on DATE through a Conference of Management Authorities consensus agreement under the *Species at Risk (NWT) Act*.

ACKNOWLEDGEMENTS

Two five-year management strategies were developed for barren-ground caribou in the NWT by Environment and Natural Resources (ENR) and its partners: *Caribou Forever - Our Heritage, Our Responsibility: A Barren-ground Caribou Management Strategy for the Northwest Territories 2006-2010* (ENR 2006[5]) and *2011-2015* (ENR 2011[3]). These caribou management strategies recognized the collaborative nature of management for barren-ground caribou in the NWT along with the importance of herd-specific management strategies. In May 2018, the Conference of Management Authorities met and agreed to adapt and update the 2011-2015 caribou management strategy as the recovery strategy for barren-ground caribou in the NWT, in accordance with the *Species at Risk (NWT) Act*.

Preparation of this strategy was funded by ENR. We would like to thank ENR, and particularly Jan Adamczewski (Wildlife Biologist, Ungulates), for their work on the earlier caribou management strategies, along with the partners and reviewers who provided extensive input on earlier drafts of this recovery strategy.

Background information in this document is also summarized from the 2017 *Species Status Report for Porcupine Caribou and Barren-ground Caribou (Tuktoyaktuk Peninsula, Cape Bathurst, Bluenose-West, Bluenose-East, Bathurst, Beverly, Ahiak, and Qamanirjuaq herds) (*Rangifer tarandus groenlandicus*) in the Northwest Territories*[4]. We would like to thank the NWT Species at Risk Committee for their work on this detailed and extensive assessment of the status of barren-ground caribou in the NWT.

We would also like to thank the Species at Risk Secretariat for adapting the caribou management strategy to address the requirements of a recovery strategy, as required by the *Species at Risk (NWT) Act*. The principal preparers of the adapted strategy were Michele Grabke (Species at Risk Implementation Specialist) and Claire Singer (Species at Risk Implementation Supervisor).

Finally, we thank the many individuals who reviewed and provided input on earlier drafts; this work significantly improved the recovery strategy. We thank the following organizations for providing helpful comments:

- Wildlife Management Advisory Council (NWT)
- Gwich'in Renewable Resources Board
- Sahtú Renewable Resources Board
- Wek'èezhìı Renewable Resources Board
- Tłı̨chǫ Government
- Government of the Northwest Territories
- Government of Canada
- Beverly and Qamanirjuaq Caribou Management Board
- Athabasca Denesųłiné Né Né Land Corp.

EXECUTIVE SUMMARY

The social, cultural, and economic value of barren-ground caribou to the people of the Northwest Territories (NWT) is immense; the relationship between people and caribou dates back thousands of years. Barren-ground caribou that occur in the NWT have been harvested by Indigenous and non-Indigenous people from nearly all regions of the NWT, as well as by Indigenous people from adjacent jurisdictions (Nunavut, Saskatchewan, Manitoba, and Alberta).

There are nine barren-ground caribou herds[a] that reside partially or entirely in the NWT. Historically, herds have undergone large fluctuations in population size and their abundance has been known to cycle. Recent decreases have been dramatic and estimates indicate historically low numbers. For example, the Bathurst herd has declined as much as 98 percent from peak numbers. As of 2018, the Cape Bathurst and Bluenose-West herds appeared roughly stable but at lower numbers than observed in historic surveys. The Tuktoyaktuk Peninsula, Bluenose-East, and Bathurst herds were declining at a substantial rate. The Beverly herd was declining slowly, and the Qamanirjuaq herd was either stable or declining slowly. These herds are at historically low numbers and are facing unprecedented pressure from a range of threats and cumulative effects.

This *Recovery Strategy for Barren-ground Caribou in the Northwest Territories* was prepared by the Conference of Management Authorities and is designed to meet the requirement for a barren-ground caribou recovery strategy under the *Species at Risk (NWT) Act*. The recovery strategy emphasizes collaboration among co-management boards, Indigenous governments and organizations (IGOs), territorial/provincial/federal governments, caribou management boards, and communities.

This strategy defines overall goals, objectives, and approaches to guide conservation and recovery of barren-ground caribou in the NWT. The long-term vision of this strategy is to conserve barren-ground caribou and to ensure that barren-ground caribou remain a cultural and ecological keystone species. The vision includes ensuring that barren-ground caribou are able to move freely on the land within their historic ranges to ensure natural habitat use and migration. The overall goals of the recovery strategy are:

1. Maintain or restore self-sustaining, resilient populations of each barren-ground caribou herd, such that no herd is lost.
2. Support unobstructed movement and migration of barren-ground caribou across historic ranges.
3. Promote the social, cultural, and environmental conditions necessary for recovery.

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[a] Scientific knowledge designates barren-ground caribou into herds based on identifiable and distinct calving grounds. Traditional knowledge holders and Indigenous communities vary in the interpretation of herds; some distinguish among different herds using a variety of techniques (direction of travel, range, colour/size/body condition and the taste of the meat), while others do not identify barren-ground caribou as belonging to distinct units or groups at all.

The strategy recognizes herd-specific management plans as having a key role in defining detailed monitoring and management requirements. It also recognizes that management actions in the NWT for barren-ground caribou are carried out in a collaborative process with co-management boards, IGOs, territorial/provincial/federal governments, and communities located on or near the current and historical ranges of herds and for which barren-ground caribou have and continue to play a key role socially, culturally, spiritually, and economically.

The strategy recommends the following objectives and approaches:

Objective 1: Partners collaborate on the development and implementation of management, monitoring, guardianship, and conservation plans for barren-ground caribou in the NWT.

Approach 1.1: Implement herd-specific management plans for the Cape Bathurst, Bluenose-West, Bluenose-East, Beverly, and Qamanirjuaq herds to promote recovery and conserve habitat.

Approach 1.2: Complete and implement herd-specific management plans for the Tuktoyaktuk Peninsula and Bathurst herds to promote recovery and conserve habitat.

Approach 1.3: Continue working with partners in Nunavut on effective conservation of the Ahiak herd.

Approach 1.4: Review and update herd-specific management plans as required.

Approach 1.5: Support community-based barren-ground caribou monitoring, guardianship, and conservation plans.

Approach 1.6: Continue working to secure adequate resources and ongoing support from governments and other partners (including industry, co-management and regulatory boards, and non-government organizations) for the implementation of this recovery strategy and the management, monitoring, guardianship, and conservation plans noted in approaches 1.1 to 1.5.

Approach 1.7: Increase capacity among Indigenous partners to participate equally and meaningfully in the conservation of barren-ground caribou.

Approach 1.8: Cooperate in the development and implementation of the national barren-ground caribou recovery strategy, including identification and protection of critical habitat, and defining population and distribution objectives.

Objective 2: Monitor barren-ground caribou, their habitat, and key factors and threats that may be affecting the status and health of herds in the NWT.

Approach 2.1: Monitor size, trend, and health of all NWT barren-ground caribou herds.

Approach 2.2: Monitor predator populations that may affect barren-ground caribou, assess predator-prey relationships and predation rates.

Approach 2.3: Monitor the impacts of other key factors affecting barren-ground caribou and their habitat, including, for example, disease, parasites, insects, and climate change.

Approach 2.4: Monitor changes in habitat quality, quantity, and availability for caribou resulting from natural and human-caused landscape changes.

Approach 2.5: Monitor the status of the relationship between people and caribou as an indicator of caribou well-being.

Objective 3: Fill knowledge gaps, using traditional, community, and scientific knowledge, to enhance responsible and respectful barren-ground caribou conservation.

Approach 3.1: Update or develop population models using current information.

Approach 3.2: Promote the collection and exchange of information on caribou ecology, status, and threats.

Approach 3.3: Promote the collection and exchange of information on the relationships among barren-ground caribou, predators, competitors, and their wider environment.

Approach 3.4: Assess cumulative impacts of natural and human-caused landscape change on barren-ground caribou and their habitat.

Objective 4: Conserve and protect barren-ground caribou populations and their habitat.

Approach 4.1: Work with industry, governments, and co-management and regulatory boards to develop and implement best practices to minimize impacts of human land use on barren-ground caribou.

Approach 4.2: Consider responsible predator management options that may benefit barren-ground caribou recovery.

Approach 4.3: Develop accurate and complete reporting of barren-ground caribou harvest across the NWT along with estimates of unrecovered kills and wounding losses.

Approach 4.4: Promote respectful harvest of caribou, including respect for traditional laws and protocols, and compliance with harvest management measures.

Approach 4.5: Develop range-level approaches for management of cumulative impacts on barren-ground caribou and their habitat from natural and human-caused landscape change.

Approach 4.6: Conserve integrity of barren-ground caribou habitat through participation in key environmental assessment and land use planning processes in the NWT and other jurisdictions where projects may affect NWT herds.

Approach 4.7: Identify and protect essential and important barren-ground caribou habitats such as calving grounds, post-calving ranges, and important water crossings.

Approach 4.8: Ensure that barren-ground caribou habitat is a key value that is integrated into environmental assessment decisions and conservation planning initiatives in the NWT and other jurisdictions where proposed decisions/initiatives may affect NWT herds.

Objective 5: Provide education and promote respect for barren-ground caribou, their habitat, and conservation initiatives.

Approach 5.1: Develop and implement hunter education programs to share information on barren-ground caribou and promote hunter excellence.

Approach 5.2: Support programs centred around barren-ground caribou that bring elders and youth together in schools and on the land.

Approach 5.3: Promote educational programs for diverse audiences to increase understanding of conservation initiatives and management of threats to barren-ground caribou.

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1. INTRODUCTION

1.1. Background

Barren-ground caribou (*Rangifer tarandus groenlandicus*) are an ecological and cultural keystone species[b], and are a critical part of northern ecosystems. Barren-ground caribou have been a central part of Indigenous cultures for many generations and all languages across the range of barren-ground caribou have words for the iconic species: tuktu/tuktut (Inuvialuktun), tuktuvialuit/tuktuit (Inuinnaqtun and Siglitun), tuttuvialuk (Ummarmiutun), vadzaıh (Teetł'it and Gwichya Gwich'in), ʔekwǫ̀ or hozıʔekwǫ̀ (Tłı̨chǫ), ʔekwé̜, ʔepé̜, ʔedə (Sahtú Dene – Délı̨ne, Tulít'a, and Fort Good Hope/Colville Lake), nódı (South Slavey - Kátł'odeeche dialect), ʔetthé̄n (Chipewyan – Denínu Kųé and Łutsel K'e), etthén (Dënesųłıné), atihk (Cree), and caribou de la toundra (French).

Barren-ground caribou are often classified in terms of 'herds'. Scientific knowledge defines herds based on identifiable and distinct calving grounds (Figure 1), although some mixing and movement does occur. Traditional knowledge holders and Indigenous communities vary in their interpretation of barren-ground caribou herds. Some distinguish among different herds using a variety of techniques (e.g. direction of travel, range, colour/size/body condition, and the taste of the meat). Other interpretations stress fluidity and interconnectedness and do not identify barren-ground caribou as belonging to distinct units or groups. Indigenous stewards of the land, management authorities, and governments have been working within the scientific designations of herds to facilitate collaboration on managing threats for barren-ground caribou and to guide recovery.

Across the global range of barren-ground caribou, 14-15 barren-ground caribou herds are recognized, extending from northeastern Alaska to western Hudson Bay and Baffin Island.[6] The NWT is considered home, either entirely or partially, to nine of these herds, or approximately 45% of the global population of barren-ground caribou (Porcupine[c], Tuktoyaktuk Peninsula, Cape Bathurst, Bluenose-West, Bluenose-East, Bathurst, Beverly, Ahiak, and Qamanirjuaq herds).

[b] An ecological keystone species is a species that plays an important role in an ecosystem, such that if it was lost, the ecosystem would change significantly. A cultural keystone species is a species of exceptional significance to a culture/people.
[c] The Porcupine herd is not included within the scope of this recovery strategy, see *Preface*.

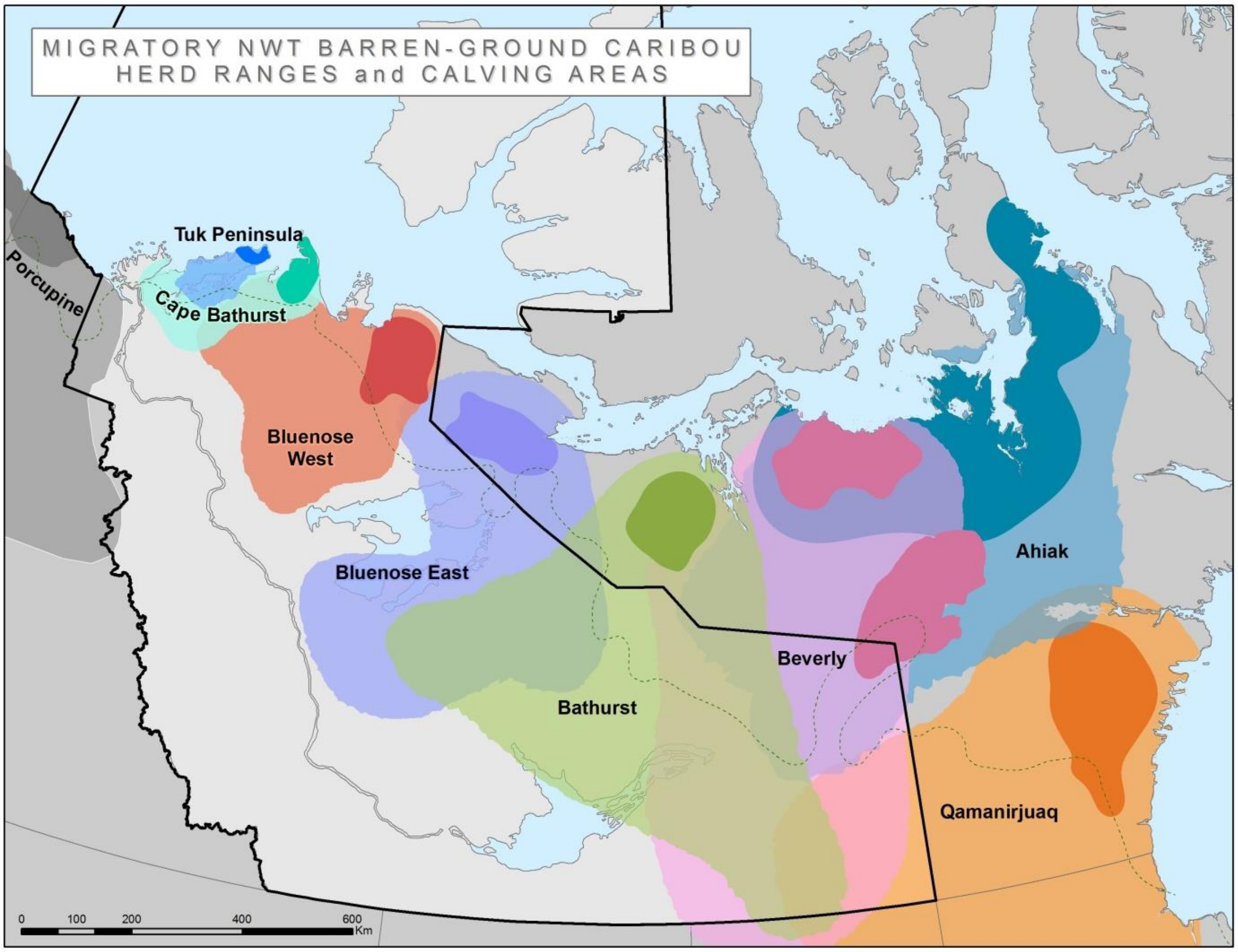

Figure 1: Barren-ground caribou annual ranges (pale colours) and calving grounds (dark colours) for herds that occur in the NWT based on collar data.[d,e] Polygons were derived using collar data from the Government of the Northwest Territories (GNWT), Government of Nunavut, Yukon Environment, and United States Fish and Wildlife Service. The composite shapefile was developed by GNWT-ENR, Yellowknife.[f]

Barren-ground caribou herds have historically undergone large fluctuations in population size and their abundance has been known to cycle. However, recent decreases have been dramatic and estimates indicate historically low numbers (Table 3, section 4.2.2). The reasons for these recent declines are complex and due to multiple

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[d] Qamanirjuaq range based on radio-collar data from 1993-2008; Qamanirjuaq calving ground based on compilation of all data from government surveys (1963-2008) and telemetry (1993-2012). Tuktoyaktuk Peninsula range based on collar data from 2006-2012. Cape Bathurst, Bluenose-West, Bluenose-East, Bathurst, and Ahiak ranges based on collar data from 1996-2008. Beverly range based on collar data from 1995-2008; Beverly calving ground based on compilation of all data from government surveys (1957-2011) and telemetry (1996-2012). The inland Beverly calving ground (southern of the two dark pink polygons) has not been used by the herd since 2010.

[e] The range of the Porcupine herd is included (greyscale) for completeness, however, as noted in the *Preface*, this geographically distinct population is not included in the recovery strategy.

[f] Annual range use varies for each herd, and actual annual ranges since 2000 have been smaller, corresponding with smaller herd sizes. This figure does not necessarily reflect the historic extent of barren-ground caribou ranges.

interacting factors. These declines have raised concerns about caribou conservation, well-being, herd viability, and have highlighted the importance of long-term monitoring and management.

In light of the observed declines, barren-ground caribou were assessed as Threatened by both the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) and the Species at Risk Committee (SARC) in December 2016 and April 2017, respectively[g]. Habitat changes due to climate, predation, industrial development, and forest fires were identified as threats to barren-ground caribou, according to both science and traditional knowledge. SARC noted that "the cumulative effects from multiple interacting threats are considered unprecedented[4]." For details of these assessments, please see APPENDIX A – SPECIES STATUS and ASSESSMENTS. Currently, a decision on listing under the federal *Species at Risk Act* is pending the completion of Aboriginal consultation and public engagement. In the NWT, barren-ground caribou were added to the NWT List of Species at Risk as Threatened in July 2018.

1.1.1. About the Recovery Strategy

Recovery strategies are required for Threatened species within two years of their designation under the *Species at Risk (NWT) Act*. This recovery strategy will provide overall guidance on recovery and stewardship of barren-ground caribou in the NWT over the long term. Existing and under development herd-specific and community management plans will provide more detailed, herd-specific guidance. This approach recognizes the work that barren-ground caribou management partners have put into developing existing management plans.

Guiding principles were followed in preparing this recovery strategy. They are provided in APPENDIX C – GUIDING PRINCIPLES.

Table 1 lists the herds included in this recovery strategy along with corresponding herd-specific and community management plans (if applicable). These plans support cross-regional action planning by providing specific guidance on what management for barren-ground caribou looks like from a community perspective. They also offer a community vision, community perspectives on the key problems to be addressed, and actions that communities can help to lead, with support from their co-management partners.

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[g] Note that the scope of COSEWIC's assessment was of the Designatable Unit of barren-ground caribou, including the Porcupine herd, some islands (e.g. Baffin Island), and some northeast mainland populations in Nunavut. As noted in *Preface*, SARC's assessment included all barren-ground caribou herds that occur partially or entirely within the NWT, with the exception of the Porcupine herd, which is considered geographically distinct and not at risk at this time.

Table 1: Existing or under development herd-specific and community management plans for barren-ground caribou in the NWT.

Herd	Management Plan	Lead Organization	Review Period
Tuktoyaktuk Peninsula	To be developed	Wildlife Management Advisory Council (NWT)	To be determined
Cape Bathurst	Taking Care of Caribou: the Cape Bathurst, Bluenose-West, and Bluenose-East Barren-ground Caribou Herds Management Plan (November 2014)[7]	Advisory Committee for Cooperation on Wildlife Management (ACCWM)	5-year review (2019); 10-year intervals thereafter
Bluenose-West			
Bluenose-East	Belarewíle Gots’ę́ ʔekwę́ (Délı̨ne caribou conservation plan)[2]	Délı̨ne Belarewíle Gots’ę́ ʔekwę́ Planning Participants	To be determined
Bathurst	Draft Bathurst Caribou Range Plan (under development)[8]	Bathurst Caribou Range Plan Working Group	5-year review
	Yúnethé Xá ʔetthën Hádı - Caribou Stewardship Plan	Łutsel K’e Dene First Nation	To be determined
	Bathurst Caribou Management Plan (under development)	Bathurst Caribou Advisory Committee	To be determined
Beverly	Beverly and Qamanirjuaq Caribou Management Plan 2013-2022 (March 2014)[9]	Beverly and Qamanirjuaq Caribou Management Board (BQCMB)	Ongoing for objectives and actions; overall review in 2021-2022
Qamanirjuaq	Yúnethé Xá ʔetthën Hádı - Caribou Stewardship Plan	Łutsel K’e Dene First Nation	To be determined
Ahiak	Not applicable	Management of the Ahiak herd is under the jurisdiction of the Government of Nunavut.	To be determined
	Yúnethé Xá ʔetthën Hádı - Caribou Stewardship Plan (Łutsel K’e Dene First Nation)	Łutsel K’e Dene First Nation	To be determined

1.1.2. Collaboration and Management for Barren-ground Caribou

The recovery strategy recognizes the collaborative and interjurisdictional nature of barren-ground caribou conservation in the north and the shared responsibility to care for caribou by Indigenous governments and organizations (IGOs), federal/territorial/provincial governments, co-management boards, and caribou management boards (APPENDIX B – PLANNING PARTNERS).

Under the *Species at Risk (NWT) Act*, the responsibility for developing the recovery strategy rests primarily with the Conference of Management Authorities (CMA). The CMA is the group of renewable resources boards and governments in the NWT that share management responsibility for the conservation and recovery of species at risk. In addition, other IGOs and management boards have been invited to participate in CMA meetings and to provide input into the development of the recovery strategy. Table 2 lists Management Authorities and other IGOs who were invited to participate in the development of this recovery strategy.

Table 2: Members and participants/observers of the Conference of Management Authorities.

Management Authorities for barren-ground caribou in the NWT	Wildlife Management Advisory Council (NWT) Gwich'in Renewable Resources Board Sahtú Renewable Resources Board Wek'èezhìı Renewable Resources Board Tłı̨chǫ Government Government of the Northwest Territories Government of Canada
Invited participants or observers	Acho Dene Koe First Nation Akaitcho Territory Government Athabasca Denesųłiné Beverly and Qamanirjuaq Caribou Management Board Dehcho First Nations Kátł'odeeche First Nation North Slave Métis Alliance Northwest Territory Métis Nation Salt River First Nation

2. HISTORICAL AND SOCIAL PERSPECTIVES

The people of the NWT are intrinsically linked to and share a sacred relationship with barren-ground caribou. Barren-ground caribou are a cultural keystone species and for many Indigenous peoples and communities, no other animal has such a large influence socially, culturally, spiritually, or economically on their way of life and indigeneity, in the past and for present and future generations. The relationship between Indigenous peoples and caribou is intertwined both historically and currently. Caribou provide essential resources such as food, clothing, tools, shelter, and connections to the land, animals, community, and ancestors. Since time immemorial, Indigenous peoples have maintained a relationship of reciprocity with barren-ground caribou, forming their cultural identities, spiritual practices, seasonal rounds, trails and travel-ways, and habitation sites around the relatively dependable health and well-being of barren-ground caribou. This experience is of vital importance to the effective management of barren-ground caribou.

Even with the documented changes in harvesting in recent years, the importance of barren-ground caribou to Indigenous peoples and communities cannot be overstated. Indeed, many Indigenous peoples feel a tremendous responsibility to care for caribou and feel immense loss when caribou well-being is threatened.

3. HOW DO WE KNOW ABOUT BARREN-GROUND CARIBOU?

Barren-ground caribou range widely throughout circumpolar North America, including throughout the majority of the NWT. The extensive network of caribou trails carved into the landscape of the NWT reflects the traditional range of barren-ground caribou. Traditional knowledge explains the importance of these caribou life-ways and how the survival of "caribou people" depended on their expertise of knowing caribou trails, crossings, and ways of being at any given time.

Traditional understandings of respectful relationships, including things like laws and harvesting protocols, are fundamental to the continued survival of people and caribou as well as their relationship with the land. In this context, traditional knowledge provides detailed, direct, seasonal observations about caribou and their habitat. Additionally, traditional knowledge spans very long timeframes, and is often a strong source of up-to-date information on trends, behaviour, herd movements, predators, health, and body condition.

Periodic scientific estimates of herd size provide key quantitative benchmarks for management, and comparison of two or more consecutive surveys shows whether a herd is increasing, stable, or declining. Currently, most NWT herds are surveyed every 3 years; this frequency reflects low herd numbers and increased concern over herd status. This affirms what traditional knowledge holders have already observed.

Population size is estimated using visual and photographic calving ground surveys in June for the eastern barren-ground caribou herds in the NWT (Bathurst, Bluenose-East, Beverly, Ahiak, and Qamanirjuaq). The Government of the Northwest Territories

(GNWT) uses estimates of breeding females in the herd and pregnancy rates to extrapolate to overall herd size for the Bluenose-East and Bathurst herds. A similar method is used for the Beverly and Qamanirjuaq herds by the Government of Nunavut to extrapolate total herd size based on an estimate of all adult females in the herd. For western herds (Bluenose-West, Cape Bathurst, and Tuktoyaktuk Peninsula), photographic post-calving surveys in July are used to provide an estimate of adult caribou in the herd, based on photos of large aggregations that form in response to biting flies. Both methods are considered to be accurate and the results are comparable.

Additional information may also be collected by biologists, harvesters, and elders (e.g. body condition, survival rates, sex ratio, pregnancy rates, the proportion of cows calving in June, condition of habitat or changes to habitat, fat thickness, colour of marrow, colour of organs, signs of disease or parasites in harvested caribou, and predator abundance) to assess factors that may affect trend and condition of caribou or caribou habitat. Population models can be useful for integrating various kinds of information and providing insight into past and likely future trends. All this information helps wildlife managers and Indigenous guardians identify possible reasons for caribou declines and increases, understand the potential impacts of key factors, and decide on monitoring and management actions.

4. SPECIES INFORMATION

Common name in English:	Barren-ground caribou
Name(s) in other languages:	Tuktu/tuktut (Inuvialuktun) Tuktuvialuit/Tuktuit (Inuinnaqtun and Siglitun) Tuttuvialuk (Ummarmiutun) Vadzaıh (Teetł’it and Gwichya Gwich’in) ʔekwǫ̀ or hozıʔekwǫ̀ (Tłı̨chǫ) ʔekwé̜, ʔepé̜, ʔedə (Sahtú Dene – Délı̨ne Tulít’a and Fort Good Hope/Colville Lake) Nódı (South Slavey - Kátł’odeeche dialect) ʔetthë́n (Chipewyan – Denínu Kué̜ and Łutsel K’e) Etthén (Denesųłiné) Atihk (Cree) Caribou de la toundra (French)
Scientific name:	*Rangifer tarandus groenlandicus*

4.1. Species Description, Biology, and Habitat Needs

Barren-ground caribou are a medium-sized member of the deer family and are slightly smaller than the closely related boreal woodland caribou (*Rangifer tarandus caribou*). Barren-ground caribou have the largest antlers relative to their size of any species of deer. Caribou and reindeer are the only deer species in which females grow antlers, but breeding males may have larger antlers for display and contest during the rut (breeding season).

There can be wide variation in colouring within and between herds. Both males and females have light-coloured hair around their tails and on their stomachs, and their coats become progressively darker towards the spine. Mature males have a striking white neck and mane, a brown back, and a distinct band along the flank separating the brown back from the white belly. Females and juveniles show a more muted version of the males' colours. Females have smaller antlers, shorter necks, and smaller bodies, and are typically lighter in colour than the males. Variation in the flavour of the caribou meat also exists among different herds in the NWT.

Barren-ground caribou males usually reach maturity between the ages of 2 and 4 years but may not reach full size and weight until they are 4-6 years old. Males may not begin breeding at that age though, as large dominant males do most of the breeding. Female caribou usually first breed at 2-3 years of age and will typically have one calf per year (in very rare cases, twins), although breeding pauses may occur when females are in poor condition. Rut (breeding) - and consequently calving - are highly synchronized, with most calves born within a few days of each other. Calves are typically born eight to nine months after the fall rut, in late May or the first two weeks of June, after the spring migration northwards to the barrens. The reproductive lifespan of caribou is likely about 12 years, with some females living as long as 12-17 years, and males for a few years less.

An array of predators and scavengers depend on barren-ground caribou. Wolves are considered the primary predators of barren-ground caribou, though grizzly bears, wolverines, and possibly lynx and eagles also prey on or scavenge barren-ground caribou. The role and impact of predation on caribou probably differs among herds, and has a stronger influence during declines and when herds are at low numbers. Grizzly bears may have a greater impact on newborn caribou on calving grounds than wolves in some herds, but wolves are effective year-round predators of all sex and age classes of caribou. Parasites may also have an important impact on caribou. High numbers of insects in July can cause stress for caribou, resulting in decreased body condition and, in extreme cases, death from heat exhaustion as caribou attempt to find refuge.

Typically, barren-ground caribou prefer colder temperatures, which they are very well adapted to: in winter, cold weather prevents icing conditions and inaccessibility of forage, while in summer it reduces insect activity, resulting in less stress for the caribou and better body condition overall.

Barren-ground caribou calve on the tundra near the Arctic coast in the NWT and Nunavut and winter below the treeline of the NWT and in the northern regions of Manitoba, Saskatchewan, and (historically) Alberta. Barren-ground caribou require the use of large annual ranges to support their seasonal migrations, to be able to use alternate ranges (e.g. when some winter habitat burns), and to support large populations. Their twice-annual migration between calving grounds and wintering grounds is, in part, a response to seasonal changes in the suitability of their habitat (food becomes unavailable, movement becomes difficult, etc.) as well as a means of reducing predation risk, especially for cows during calving.[10,11]

All ranges used during the year are important to barren-ground caribou, but calving and post-calving ranges have been consistently identified as necessary to the survival of barren-ground caribou, and hence essential to recovery of herds at low numbers. Calving and post-calving ranges have been identified from scientific knowledge and traditional knowledge as highly sensitive habitat that should not be disturbed.[8,12,13,14] Displacement from preferred calving ranges has been linked, through simulation modeling, to negative effects on calf survival and population trend.[15,16]

Other important parts of the range include: [8,12,13]

- Key water crossings and land bridges: Some water crossings have a history of use by caribou and hunters dating back thousands of years.[17,18] These areas are well known to Indigenous peoples who have long set up camps at these key locations. Land bridges are considered key travel and migration corridors.[8]
- Centre of habitation or core range: The centres of habitation or core ranges are used even at times of low herd numbers. This concept was first defined by Skoog[19] for Alaskan caribou, but the idea was recognized much earlier by Indigenous elders.[18,20] The Bathurst herd's restricted annual range at low numbers, effectively its core range or centre of habitation, was recognized in the Bathurst Caribou Range Plan[8] and given a high priority as an important area through times of scarcity and abundance.
- Large, strategically located patches of unburned winter range: The importance of lichen-rich, unburned, older forests has been recognized by multiple Indigenous communities in the north and identified in the Bathurst Caribou Range Plan.

4.2. Population and Distribution

4.2.1. Changes in Distribution

Written descriptions from traditional knowledge and spatial data from scientific knowledge indicate that the historic range[h] of barren-ground caribou has contracted substantially (several hundred kilometers) since the 1970s-1980s with a large movement north and east (Figure 2). Historically, the winter range of barren-ground caribou in the NWT extended further to the south, including northern Alberta, Saskatchewan, and Manitoba. Migration routes and calving grounds have also shifted slightly or changed over time.

[h] Historic ranges are areas that barren-ground caribou were known to use in the past. The historic maximum range is the outermost area that barren-ground caribou once occupied but are not currently using, for one or multiple reasons.

Figure 2: Historic maximum barren-ground caribou range, compiled based on spatial data and written descriptions of range, derived from traditional and community knowledge.

Distribution changes are often linked to changes in population numbers, in that fewer caribou will occupy a smaller area. However, measuring changes in distribution over time is complicated due to gaps in historical trend information, variation in annual range use, changes or shifts in winter distribution among years, and overlapping winter distribution among neighbouring herds. Also, as some herds contract, other herds may move into and occupy adjacent ranges.

In addition to changes in population numbers, distribution changes may be the result of forest fires, food availability, and hunting pressure. Localized contractions in range resulting from human development in the form of roads, mines, mineral exploration camps, towns, oil and gas, hydro projects, and utility corridors have also been documented.

Traditional knowledge holders often mention the disappearance of barren-ground caribou populations. In some instances, it is said that caribou go underground or underwater, and when they become lonely for people they will return. Caribou may also disappear as a result of disrespectful treatment by humans. This is the lesson at the heart of the frequently told story of the man hitting a caribou with a stick, and the caribou's subsequent shunning of that region for an extended period of time.

Although the distribution of barren-ground caribou has changed over time, it is important that the habitat throughout the historic distribution of the herds is maintained. Even if barren-ground caribou do not currently use the full extent of their historic distribution, they may need to use those areas again in the future.

4.2.2. Changes in Population

It is generally understood that barren-ground caribou undergo large, natural fluctuations in population numbers. These fluctuations are likely driven by interactions among factors such as climate, food availability, predation, and parasites. Periods between high and low numbers can be decades in duration, although the timing and extent of peaks and troughs are not reliably predictable. Traditional and community knowledge suggests that the difference between high and low population numbers within these cycles can be quite large. Although the natural range of variation in barren-ground caribou population cycles has not been quantified beyond scientific surveys over the past 50 years, traditional and community knowledge holders have stated that the population highs are not as high as they used to be and, if recent declines are the result of permanent changes to the landscape, the ability of herds to return to historic highs may be impeded.

In terms of more recent trends in barren-ground caribou populations, traditional and community knowledge does not typically speak to numerical abundance; rather, traditional knowledge holders observe general trends in their region or around their community. Where changes in abundance have been noted, it was often understood to be changes in migration patterns, rather than changes in absolute numbers. From these accounts, there is some indication that the Tuktoyaktuk Peninsula herd may be increasing. The Bathurst and Bluenose-East herds are likely decreasing and there is some evidence of recent declines in the Beverly and Qamanirjuaq herds. Trends for the Cape Bathurst and Bluenose-West herds are not clear based on available resources and there is no available trend information for the Ahiak herd. In the area of the Athabasca Denesųłiné (northern Saskatchewan), knowledge holders suggest a recent decline in caribou in their region.

Scientific surveys and population estimates indicate that barren-ground caribou numbers were generally low from the 1950s to the 1970s, after which numbers began to increase. By the mid-1980s to mid-1990s, populations were peaking in abundance. Declines were underway during the late 1990s and 2000s. Numbers stabilized for some herds between 2009 and 2012, but the declines of the 1990s-2000s (70-90%) continued through 2012-2018. As of 2018, two herds appeared roughly stable at low numbers (Cape Bathurst, Bluenose-West), three were declining at a substantial rate (Tuktoyaktuk Peninsula, Bluenose-East, and Bathurst), and the Beverly and Qamanirjuaq herds were declining slowly (Table 3). Trends in the Ahiak herd cannot be determined. Declines in several herds have been extensive (Cape Bathurst, Bluenose-

West, and Bluenose-East), with the largest decline having been seen in the Bathurst herd (98% decline from peak population in 1986).

Table 3. Barren-ground caribou herd population estimates and trends in the NWT[i]. ± indicates 95% confidence interval on estimate, except where standard error (SE) is noted. Population estimates are based on scientific surveys completed since the 1980s.

Barren-ground caribou herd	Population estimates			Recent trend	Short-term approach to address recent trend
	High (year)	Low (year)	Most recent		
Tuktoyaktuk Peninsula	3,320 ± 623 (2006)[21]	1,499 ± 614 (2018)	1,499 ± 614 (2018)	Continued decline since 2006	More information required
Cape Bathurst	16,813 ± 18,119 (1987)[22]	2,039 ± 319 (2006)[23]	4,521 ± 876 (2018)	Roughly stable 2006-2015; increasing 2015-2018	Maintain current trend
Bluenose-West	140,083 ± 31,828 (1987)[24,25]	21,011 ± 4,602 (2018)	21,011 ± 4,602 (2018)	Roughly stable since 2006	Increase trend
Bluenose-East	120,880 ± 13,398 (2010)[26]	19,294 ± 3,230 (2018)	19,294 ± 3,230 (2018)	Continued decline since 2010	Stop the decline
Bathurst	472,000 ± 147,017 (1986)	8,210 ± 3,604 (2018)	8,210 ± 3,604 (2018)	Continued decline since 1986	Stop the decline
Beverly[j,k]	276,000 ± 106,600 SE (1994)[27]	103,372 ± 5,109 SE (2018)[28]	103,372 ± 5,109 SE (2018)	Slow decline since 2011-2018[29]; decline since 1994	Stop the decline
Ahiak[l]	Not available	Not available	71,340 ± 3,882 SE (2011)[29]	Unknown	More information required
Qamanirjuaq[m]	496,000 ± 105,400 SE (1994)[30]	264,718 ± 21,913 SE (2014)[31]	288,244 ± 22,439 SE (2017)[32]	Roughly stable 2014-2017; slow decline from 2008-2017; decline since 1994	Stop the decline

[i] High and low estimates (if known) are based on surveys since the 1980s. Population estimates for 2017 and 2018 are based on unpublished data from the GNWT and Government of Nunavut.
[j] The Beverly herd was defined by calving ground surveys up to 1994 based on an inland calving ground south of Garry Lake. The Beverly herd was redefined in 2011 as calving in Queen Maud Gulf and may not be equivalent to the Beverly herd as defined to 1994.
[k] The 1994 Beverly estimate used a different method to extrapolate total herd size (based on breeding females) than the method used for 2011 and 2018 surveys (based on all females).
[l] The Ahiak herd as defined in 2011 does not correspond to earlier Ahiak surveys in the 1990s and 2000s.
[m] The 1994 Qamanirjuaq estimate used a different method to extrapolate total herd size (based on breeding females) than the method used for 2008, 2014, and 2017 surveys (based on all females).

5. LIMITING FACTORS, THREATS, AND POSITIVE INFLUENCES

5.1. Natural Limiting Factors

Barren-ground caribou are a resilient and adaptable species and occupy diverse habitats. In general, they are adapted to a range of environments, temperatures, and forage, and they have the long, slender legs and endurance to walk hundreds of kilometers. However, barren-ground caribou prefer and are well-adapted to colder temperatures. They may be vulnerable to extreme heat and there has been some speculation in traditional knowledge sources that barren-ground caribou may begin to range further north in an effort to avoid stresses related to this kind of heat. Cold weather also helps prevent icing conditions and inaccessibility of forage. Traditional knowledge studies indicate that barren-ground caribou do not tolerate noise or human disturbance well, resulting in changes in behaviour and stress. Minimizing noise disturbance is important for barren-ground caribou.

Barren-ground caribou are generalist foragers, particularly in the snow-free period, however, their preferred winter forage is lichen. Lichens are high in digestible carbohydrates, but low in protein and minerals. Caribou are able to offset low protein content by recycling nitrogen and by also selecting for vascular plants higher in protein. As well, a mixed diet of lichen and vascular plants stimulates digestion of the lichen. Therefore, while not an obligate relationship, the availability of lichen on the winter range likely limits caribou distribution. In situations where lichen is substantially disturbed or removed (e.g. from forest fires), regrowth of lichen is very slow.

5.2. Threats

Indigenous peoples have co-existed for a long time with barren-ground caribou and with the certainty that although their numbers may go up and down, caribou eventually come back. However, changing conditions across barren-ground caribou ranges reduce that certainty and make predicting caribou movements, behaviour, and migrations more challenging.

Barren-ground caribou are affected by multiple threats and each herd is exposed to these threats to varying degrees. Threats that can be managed to some extent include predation, harvest, land use activities, forest fires, and environmental contaminants and pollution. Other threats are more difficult to manage, such as parasites/disease and climate change. Combined climate change impacts are perhaps the greatest single threat.

The combined influence of these threats is acting in addition to large natural population fluctuations. The cumulative effects from multiple interacting threats are considered unprecedented. As the importance of these threats differs among herds, it is important to monitor and manage the threats that each herd is exposed to separately.

The below subsections describe each threat in more detail. They are presented in no particular order.

5.2.1. Management Complexity

The extensive range and transboundary nature of barren-ground caribou herds leads to interjurisdictional complexity. In the NWT, caribou conservation involves the participation of many IGOs, territorial/provincial/federal governments and agencies, co-management boards, various stakeholder organizations, and communities. Differences in political, cultural, economic, land management, and wildlife management interests create a net effect where management on caribou seasonal ranges can be fragmented, disjointed, and partial.

However, progress has been made to facilitate the challenges encountered by transboundary partners working towards the conservation of barren-ground caribou. As discussed earlier (subsection 1.1.1), herd-specific management plans and community conservation plans support cross-regional action planning by providing specific guidance on what management for barren-ground caribou looks like from a community perspective. Co-management organizations have also been established to bring together representatives from public governments, IGOs, and cultures that share conservation responsibilities. The Beverly and Qamanirjuaq Caribou Management Board was established in 1982, in part, to help provide a consistent approach to the conservation of the Beverly and Qamanirjuaq herds and to promote communication among diverse participants. The Advisory Committee for Cooperation on Wildlife Management (ACCWM) was created to share information and coordinate wildlife management between inter-jurisdictional wildlife management boards, with a particular focus on the management of trans-boundary caribou herds.

In addition to interjurisdictional complexity, obtaining some information, such as herd size/composition and harvest levels, affects the ability of governments and co-management boards to respond rapidly to declines. When declines are initially reported, there is an understandable desire to first confirm and then an obligation to consult on the declines before taking actions. The Bathurst herd's decline was first identified in 2003, but limited actions were undertaken until 2010, by which time the decline had accelerated and population size was further reduced. Further, interweaving traditional knowledge with scientific knowledge in a timely, meaningful, appropriate, and respectful way presents more challenges.

Although some herds have management plans and guardianship programs in place, a key challenge is the lack of long-term management plans for all herds, especially in the context of cumulative effects.

5.2.2. Land Use Activities

Land use activities have the potential to increase access for harvesters and predators, create energetically costly disturbances, and/or create barriers to movement. Disturbances (low flying aircraft, people on foot, and vehicles) can increase caribou energetic costs, particularly if caribou are feeding, resting, or migrating. Roads and development sites may be avoided or act as barriers to movement (altering migration routes). Concerns about cumulative effects and development footprints are an ongoing concern. There still remains considerable uncertainty about when, how, and if there is a threshold for cumulative effects at which clear and predictable effects on herd size and trend can be expected. Many traditional knowledge holders see these combined activities as being disrespectful to caribou and link them to changes in caribou populations.

The NWT remains relatively undisturbed compared to most Canadian jurisdictions. Land use in some barren-ground caribou ranges is relatively low (e.g. Bluenose-West and Bluenose-East). Other ranges have experienced more substantial land use activities. Industrial development activities (exploration, mining, and oil and gas) have varied over time, in a boom and bust cycle dependent upon the global economy. Following peaks in the 1990s and mid- to late 2000s (prior to the 2008 market crash), exploration and development activity has, for the most part, been declining in the NWT. However, the NWT has large undeveloped oil and gas reserves that could represent a significant portion of Canada's marketable petroleum resources. There has been some recent increase in prospecting and mineral claims as a result of interest in diamond, gold, base metal, rare earth element, and uranium exploration. Mineral exploration and mining have increased in areas such as the Kitikmeot and Kivalliq regions of Nunavut.

The range of the Bathurst herd, which has experienced the greatest population decline, has also experienced the greatest amount of pressure from human activity. Exploration within the Bathurst range increased rapidly through the early to mid-2000s to peak at 95 exploration camps in 2006. Winter roads, all-season roads, and highways totalling over 2,100 km in length occur within the Bathurst herd's range. Within the next two decades, development is forecasted to increase on the tundra in the range of the Bathurst herd.

Despite decades of concerns, calving grounds remain mostly unprotected by legal mechanisms, with the exception of the Bluenose-West herd's calving ground, which is largely protected by Tuktut Nogait National Park, and the Beverly and Ahiak herd's calving grounds, which are provided partial protection by the Queen Maud Gulf Migratory Bird Sanctuary.

Developments on calving grounds are a significant potential threat as almost all the females of a herd are in one relatively small area during calving. Intact calving grounds are generally accepted as being essential for the continued survival of the herds. Well-known trails and water crossings are also used repeatedly by migrating barren-ground caribou. Water crossings are extremely important and play a large role in dictating the direction caribou travel across the landscape. Water crossings are particularly sensitive to human disturbances such as the construction of camps, cabins, mines, roads, or other infrastructure in their vicinity, and if crossings become blocked or are subject to major disturbances, migration routes may shift to less familiar and less desirable areas.

5.2.3. Forest Fires

Forested winter range offers caribou more shelter during winter months, and potentially better lichen forage than can be found on the tundra. Community members have stated that caribou that winter in the forest are larger than caribou that spend all their time on the tundra.[33]

Fire renews forest stands and is a normal occurrence in the boreal forest ecosystem. However, forest fires can affect the availability of forage, especially slow-growing lichen. In the NWT, regeneration of lichen-supporting forest stands can take 70-230 years. Caribou have adapted to fire over thousands of years by shifting from recently burned areas to unburned older forests. Traditional knowledge holders explain that caribou tend to avoid recently burned areas and may not return to a burned site for upwards of 100 years, when the habitat may be suitable again. Recent studies on the Bathurst winter range indicate that caribou do use recently burned areas more than expected, possibly to access nutritious regenerating vegetation. Caribou are also known to use unburned or little-burned areas within burns.

Forest fires disturb an average of 600,000 hectares (ha) of NWT forest annually. A warming climate may mean an increase in the intensity, duration, and frequency of big fire years like 2014 (approximately 3.4 million ha were disturbed), and potentially a shift to a younger forest overall, with less of the prime, older, lichen-rich forests that caribou prefer.

Some community observers from the NWT and Saskatchewan have identified loss of barren-ground caribou winter range to fire as a serious concern for caribou and have asked for protection for key unburned winter range areas in important migratory corridors. Some of these areas have been mapped and will be considered in fire management practices, including values at risk fire planning. In big fire years like 2014, with exceptionally dry and warm conditions, some fires will burn regardless of fire-fighting activities and NWT communities and infrastructure will remain the priority for fire suppression. Suppressing all fires is unrealistic and in the past, in the south, has resulted in building fuel for fires that may then be more intense.

5.2.4. Climate and Range Conditions

A rapidly changing climate means that the pace of change in environmental variables (temperature, precipitation, etc.) is accelerating, as are changes in vegetation and habitat on the tundra and in the boreal forest. It is difficult to know what impact climate-related changes will have, however, changes to the ecology of barren-ground caribou due to climate change will be complex, consisting of positive and negative effects.

Documented changes to the range of barren-ground caribou include longer growing seasons, increases in shrub cover, changes in the timing of spring green-up, and decreases in lichen. Precipitation has also changed, with increases in wet snow or freezing rain in the Arctic tundra that have been linked to mortality of caribou. Some NWT barren-ground caribou ranges have experienced increased drought in the summer. Elders have observed more freeze-thaw cycles that trap tundra vegetation under ice, meaning that barren-ground caribou must work harder to get at their food. Deep or wind-packed snow and ice crusts make it hard or even impossible to access forage and may also influence the ability of caribou to move across the landscape. Melting or thawing permafrost has also been noted, as well as increases in the number of insects. Changes in the presence and abundance of other ungulates and predators have been observed and further changes are anticipated, however, predicting future trends is difficult.

Climate change signals are particularly strong in the Arctic and the Mackenzie River valley. In the Mackenzie District (western and southwestern NWT), the increase is so pronounced that it drives national averages: between 1948 and 2011, winter temperatures increased by 4.5°C.[34] During hot, dry summers, plant growth may be of poor quality for caribou and abundant insects may interfere with caribou feeding, resulting in poor physical condition in cows and lower pregnancy rates. Traditional knowledge holders have extensive experience observing this behaviour and explain how caribou can run around in a frenzy and then collapse in exhaustion - the link between increased temperatures, insects, and caribou exhaustion is well understood. Hot, dry summers will also likely mean more large fire years and altered winter foraging conditions for caribou in the boreal forest. These factors are likely to be of increasing importance to NWT barren-ground caribou herds in the future and will need to be monitored and understood better. A changing climate may also mean an influx of diseases and parasites previously uncommon in the NWT, as well as more favourable conditions for disease outbreaks, parasitism, and invasive species. Further, traditional knowledge holders talk about how caribou can change their range when competitors such as moose and deer expand their ranges.

As climate change is a global phenomenon, climate change needs to be addressed at a global scale. However, while total emissions in the NWT are low on a national scale, the NWT economy depends heavily on fossil fuels to meet its energy needs. This dependence on fossil fuels results in significant greenhouse gas emissions per capita in the NWT.[35] Taking shared action on this threat is therefore important.

5.2.5. Parasites and Disease

Parasites such as warble flies have been shown to significantly influence barren-ground caribou behaviour, body condition, pregnancy rates, and ultimately productivity and survival. Barren-ground caribou also harbour a diverse array of gastro-intestinal nematodes and tapeworms, muscle and lung worms, as well as blood parasites, but their interrelationships are not well described or understood. Some parasites (i.e. bot flies) are commonly found in harvested caribou, but are not considered overly harmful.

Although it is very unusual for caribou to be killed by insects outright, excessive harassment by mosquitoes can impact caribou through stress-related effects that may further impact behaviour, body condition, and productivity.

Warbles bite caribou and lay their eggs under the skin. The eggs then hatch into larvae, which bore holes into the hide. The stress caused by these insects can result in less time spent resting and foraging. The level of infestation is partly determined by weather. Adult flies are active only when the temperatures and wind speed are suitable. Warble fly activity on the summer range of the Bathurst herd has shown a significant increase as summers have become warmer, especially after the early 1980s. In this manner, climate change may therefore increase the incidence of parasites and disease.

Territory expansion by other species, including wood bison and white-tailed deer, may increase the potential for disease transmission to barren-ground caribou. Chronic wasting disease (CWD) is transmitted between species and is considered a potential threat to barren-ground caribou. CWD has not been recorded in the NWT, however, if it reaches the range of barren-ground caribou herds it is expected to have devastating effects.[36] CWD is transmitted and spread through both direct (animal to animal) and indirect environmental (animal-to-premises-to-animal) transmission. CWD is a progressive and fatal disease of the nervous system and it is known to naturally infect white-tailed deer, mule deer, moose, red deer, elk, and reindeer.[37] Other interspecific diseases that caribou may be susceptible to include anthrax, Johne's disease (*Mycobacterium avium paratuberculosis* (MAP)), brucellosis, and foot rot.

Harvesters and community members have reported numerous instances of poor body condition, including changes in the flavour, colour, and smell of the meat (e.g. yellow/white pus on the meat, cysts or white spots in the meat, blister-like spots) and abnormalities in the meat and internal organs (lungs stuck to rib cages, swollen joints, sandpaper skin, sores and puss, watery joints, bad livers). Information from hunters and observers on the land provides key insights into caribou health.

Monitoring of harvested caribou provides general assessments of health and disease in NWT herds. In addition, assessing potential threat risks would be beneficial to barren-ground caribou health monitoring.

5.2.6. Predation

Barren-ground caribou are an integral part of the ecosystem and a number of predators rely on caribou as a prey species, including wolves, grizzly bears, wolverines, lynx, and possibly golden eagles. Predation is a limiting factor in barren-ground caribou ecology as it can affect adult and calf survival rates, thus ultimately affecting abundance.

The role of predation on barren-ground caribou abundance differs among herds. Predation rates are influenced by barren-ground caribou life stage, seasonal distribution, and environmental conditions. Predation likely has a greater impact on barren-ground caribou populations during declines and the phase of low numbers (i.e. mortality has a greater effect on lower populations). In addition, when predation pressure is combined, or interacts, with other factors (climate change, parasites, disease, loss of habitat, harvest) it may threaten the ability of barren-ground caribou populations to recover.

Wolves are considered the primary predator of barren-ground caribou throughout the year. Wolves and caribou are linked in that wolf abundance and productivity are in part limited by the caribou population. However, there is uncertainty as to how and when wolf abundance responds to changes in caribou abundance because there is limited information on wolf abundance available in the NWT. Traditional knowledge holders from several communities have indicated that in some areas the number of wolves is increasing in the NWT. Increases in wolf populations may occur in response to increases in alternate prey abundance (e.g. moose, muskoxen) or in response to decreases in the number of people hunting wolves. In other areas of the NWT, wolf populations may be declining. Scientific studies on wolf-caribou dynamics were completed on the summer range of the Bathurst caribou herd from 1996 to 2012. This work suggested that wolf numbers and productivity declined as caribou numbers declined. Despite the decline, it is likely that wolves continue to have an impact on caribou populations.

Grizzly bear predation on barren-ground caribou has been described by traditional knowledge holders as occurring during the calving period when the calves are young and vulnerable. Some surveys suggest that there are more grizzly bears than wolves on the calving grounds. There are also reports of increasing numbers of grizzly bears in some areas of the NWT (Mackenzie Mountains, mainland of the Inuvialuit Settlement Region, and the Arctic Archipelago),[4] including within the ranges of the Bluenose-East, Bluenose-West, Cape Bathurst, and Tuktoyaktuk Peninsula herds.

As barren-ground caribou population numbers have fallen to historic lows, there have been increasing calls for action to reduce predator populations that may be limiting the ability of herds to recover. Predator control or removal has been highly controversial in Canada and views about predator removal vary in the NWT. In 2016/2017, the Wolf Feasibility Assessment Technical Working Group was established and compiled information on wolf management options in the Bathurst herd's range and associated costs, likely effectiveness, risks, and uncertainties.[38] There has also been interest in predator management on the ranges of other herds.

Whether predator populations are increasing or decreasing, there is a desire to better understand the impact predation has on barren-ground caribou. There is little recent information available about predation rates of wolves or grizzly bears on barren-ground caribou in the NWT. Information on predation has been collected primarily through sightings during aerial surveys and through the number of predators harvested. Management decisions and actions would benefit from a holistic approach that incorporates information on predator abundance and predation rates.

5.2.7. Disrespectful Harvesting Practices

Since time immemorial, Indigenous peoples have harvested barren-ground caribou for subsistence, sustenance, clothing, tools, materials, and more. The relationship between people and caribou was fostered though respectful practices such as honouring caribou that "give" themselves so that people can survive. Many traditional knowledge holders talk about harvesting caribou as defining what it means to be a northern Indigenous person such that cultural identity is threatened without maintaining this cultural practice. No other animal has had such a profound influence on northern Indigenous peoples socially, culturally, or economically in most NWT communities. However, harvest has a direct impact on barren-ground caribou numbers and is an important factor to consider in management for this keystone species.

Harvest alone is not considered a threat to the ability of barren-ground caribou populations to recover, particularly when herds have stable to increasing populations and harvest rates are low. However, when populations are declining or when herd numbers are low, harvest can negatively influence the ability of a herd to recover, particularly where roads enable easy access for hunters. Further, when traditional harvesting protocols are not taught or practiced, caribou well-being is threatened.

Changes to hunting practices, such as technological enhancements (powerful snow-machines, air-supported hunts, knowledge of caribou locations from satellite collars) or increasing access (development and use of winter and all-season roads) have the potential to adversely affect population recovery. These disrespectful harvest practices are considered a threat.

Measuring the impact of this threat requires successful harvest monitoring to detect trends, including information on how many animals are being taken and whether those animals are cows, calves, or bulls. Continuous, reliable, long-term information on harvesting will help Management Authorities better understand how harvest influences herds. Developing effective means of communicating and sharing information is also critical for informing management decisions. In the NWT, harvest information is collected by government and IGOs, but there are regional differences in the approach and scale of harvest monitoring in different areas. Community guardianship/monitoring initiatives have a role in collecting this important information.

Concerns related to non-traditional harvest practices should also be considered. These include reckless shooting, inappropriate or heavy use of motorized vehicles (pickup trucks versus snowmobiles), wasting meat and leaving carcasses on the ground, not sharing meat, and not using the entire carcass. Other concerns include the sale of barren-ground caribou meat and traditional harvest shifting from declining herds to adjacent herds (e.g. shifting harvest from Bathurst to Bluenose-East, Beverly, Ahiak, and Qamanirjuaq herds). The impact of these threats is unknown, but they are recognized as likely affecting caribou populations.

Ensuring that barren-ground caribou remain a cultural and ecological keystone species will require a concerted effort towards respectful harvest, harvest education, promotion of traditional laws and values, harvest management measures, and harvest reporting that is both accurate and complete.

5.2.8. Environmental Contaminants and Pollution

Contaminants can affect caribou health and condition and the effect of pollution, including tailings ponds, hazardous waste, and airborne particulates from mines, is identified as an important concern for traditional knowledge holders. However, monitoring for more than 20 years suggests that contaminant levels in herds across the NWT, Nunavut, and Yukon are generally low and stable. Caribou are monitored for the presence and concentration of contaminants, such as heavy metals like cadmium and mercury, and various chemicals used as pesticides and herbicides. Variation in concentrations of heavy metals among herds is apparent and possibly related to the proportion of lichen in the diet.

5.2.9. Cumulative Effects

Cumulative effects[n] have become an increasing concern for NWT communities, particularly for herds at low numbers where any impediments to recovery are problematic.[7] Most barren-ground caribou herd populations are now at low points and they are facing an unprecedented level of cumulative effects from multiple interacting threats. These include development and industrial activity (including mines, mills, roads, and powerlines), disrespectful treatment by humans not following traditional laws and harvesting protocols, use of advanced hunting equipment, increased access for harvesters and predators, and climate change. Each major development project that is subject to environmental assessment includes a cumulative effects assessment, but a range-wide approach is needed to properly assess and manage the threat from multiple interacting factors.

5.3. Factors That May Have a Positive Influence

The immense importance that barren-ground caribou have had to NWT Indigenous cultures, in some cases for thousands of years, means that safeguarding caribou habitat and giving herds at low numbers a chance to recover are high priorities for Indigenous peoples. In some cases, Indigenous governments and organizations have taken a lead role in developing plans that define their own limits to harvesting and set out other actions such as guardianship programs to promote herd recovery and healing the relationship between people and caribou.

A number of management instruments are already in place for herds in the NWT. A management plan called *Taking Care of Caribou: the Cape Bathurst, Bluenose-West, and Bluenose-East Barren-ground Caribou Herds Management Plan* was developed by a group of co-management boards called the Advisory Committee for Cooperation on Wildlife Management (ACCWM) and finalized in late 2014. Action plans for all three herds were completed in 2018 and these are updated annually. In 2014, the Beverly and Qamanirjuaq Caribou Management Board (BQCMB) finalized an updated *Beverly and Qamanirjuaq Caribou Management Plan: 2013-2022*, the fourth management plan produced by the BQCMB and supported by the GNWT since 1982. These herd-specific plans are comprehensive and include actions that may be taken to address harvest, predators, land use, habitat protection, threats to caribou, and the need to respect caribou.

A *Bathurst Caribou Range Plan* has been drafted and is scheduled to be finalized in 2019 following approval by the Tłı̨chǫ Government and GNWT. The range plan is focused on developing an approach to range-wide management of development that considers key habitats like calving grounds, water crossings, and core ranges used by the Bathurst herd at low numbers.

[n] Cumulative effects refer to changes to the environment that are caused by an action in combination with other past, present, and potential future human actions. Cumulative effects are usually greater than the sum of individual effects.

In addition to these plans, most NWT herds have been subject to measures implemented by governments and co-management boards between 2006 and 2016. Hearings held by co-management boards have been a key part of reviewing information and determining actions to be taken for each herd. Harvest has been restricted on most NWT herds' ranges since 2007-2010 and was closed on the Cape Bathurst range in 2007 and the Bathurst range in 2015. Various forms of subsistence and resident harvest restrictions or protections are in place for the Tuktoyaktuk Peninsula (seasonal protection – Inuvialuit harvest restricted between April 1 to June 15 to permit the migration of the Cape Bathurst herd), Bluenose-West (Indigenous harvest limited by quota), Bluenose-East (voluntary restriction of Indigenous harvest), Beverly (NWT resident harvest is limited to one male per year), and Ahiak (NWT resident harvest is limited to one male per year). Currently, there is no commercial harvesting of any barren-ground caribou herd in the NWT[o]. These restrictions, along with collaborative co-management planning and application of traditional laws and protocols, have contributed to stabilizing trends in the Cape Bathurst and Bluenose-West herds since 2006.

Habitat protection for barren-ground caribou in the NWT is currently offered through existing protected areas, while proposals for protected areas may offer additional future protection (Thaidene Nene, Ezdzìtì, Thelon Wildlife Sanctuary, Edaįįla, Saoyú-ʔehdacho National Historic Site, Tuktut Nogait National Park, Yambahti). Range planning processes and regional land use planning processes (Gwich'in, Sahtú, Tłįchǫ, and Nunavut land use plans, and the six community conservation plans in place in the Inuvialuit Settlement Region) may also offer some protection. The GNWT and Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC) have developed a draft Terms of Reference for a land use planning committee for the public lands in Wek'èezhìı, and are working towards the start-up phase to plan for the public lands in Wek'èezhìı. In the southeastern NWT, the GNWT and CIRNAC are working in partnership with the Akaitcho Treaty 8 Tribal Corporation, the Athabasca Denesųłiné, and the Northwest Territory Métis Nation on the Terms of Reference to design a land use planning process based on future land claim settlements being negotiated in this area. The GNWT is engaging with IGOs with traditional territories in this area to understand their interests in future planning. The Dehcho Land Use Planning Committee, made up of representatives from the Dehcho First Nations, Canada, and the GNWT is leading the development of an Interim Dehcho Land Use Plan pursuant to the Dehcho Interim Measures Agreement.

The direct and indirect effects of climate change are important factors influencing barren-ground caribou recovery and health. The GNWT has developed a territorial climate change mitigation and adaptation framework to guide mitigation and adaptation activities within the NWT.

[o] Note that there is commercial harvest of the Bathurst and Qamanirjuaq herds in Nunavut for Nunavut outfitters (Bathurst) and the Rankin Inlet meat plant (Qamanirjuaq).

5.4. Knowledge Gaps

1. **Climate change impacts:** Climate change may act as a continuing threat to barren-ground caribou through a complex mechanism involving shifts in timing of green-up, changes in summer forage quality, rain-on-snow and icing events on the winter range, longer fire seasons, melting permafrost and erosion, changes to freeze-up and thaw timing, and increasing shrub cover. Parasites and diseases are a potential and complex threat under a warmer climate. Shifts in ranges of deer, moose, and other species will also affect caribou ranges. A better understanding of the impacts of climate change on barren-ground caribou habitat is needed.
2. **Predator-prey dynamics:** Predation plays a stronger role when barren-ground caribou are at low numbers, but the impact of predators is unclear. Predation can affect survival of adult and calf caribou and therefore abundance, and there are reports of increasing predator populations in some areas. Information on predator abundance and distribution, as well as on the effectiveness of predator management actions, would benefit management decisions. Information on the impact of predators on caribou numbers and herd dynamics, the impact of different predators, which age/sex class(es) of caribou are most affected, and how predation impacts recovery is also required.
3. **Impacts of human-caused disturbance:** Industrial development is considered to be a significant factor affecting barren-ground caribou, however, a clear link has not been established. Activities and infrastructure associated with exploration and development may disturb caribou and affect their behaviour (e.g. migration patterns, gregarious calving behaviour), reduce the quantity, quality, and availability of habitat and forage, and facilitate access to caribou for hunters and predators. This can contribute to reduced caribou reproduction and survival rates and population declines. Further, many community members talk about disturbance as being disrespectful and harmful to overall caribou well-being. Additional information is needed.
4. **Natural disturbance regimes:** Forest fires represent the most visible factor driving habitat fragmentation and change, impacting forage availability and movement. This threat is particularly important in the winter range. Climate change may lead to even hotter and drier summers in the NWT, possibly increasing the frequency, size, and intensity of fires. Recognizing uncertainties, it is important in the interim to pursue an experimental approach, with companion research to determine effectiveness over time. Research into the implications of climate change on wildfire frequency, intensity, and extent is also required.[8]
5. **Population/demography:** Barren-ground caribou populations undergo large fluctuations over periods of several decades. Caribou can respond to changes in climate and the ecosystem, as well as to human-caused disturbance, through changes in abundance, productivity, and distribution. However, the extent to which caribou can adapt to rapid and often complex changes and fluctuations is poorly understood (for example frequency and rate of herd switching).

6. **Cumulative effects:** The impact of multiple interacting threats to barren-ground caribou and their habitat is considered unprecedented and the implications to barren-ground caribou are unknown. More information is required to understand the scope and scale of cumulative effects from natural and human-caused stressors.
7. **Harvest information:** Harvest plays a stronger role when barren-ground caribou are declining or at low numbers. Management actions such as hunting restrictions have contributed to stabilizing trends in some herds, however, the relationship between harvest and population trends is complex and difficult to measure. Improved harvest information, including information about wastage, would help guide management actions. The practice of traditional laws around harvesting is critical to caring for caribou.
8. **Health (including nutrition, disease, parasites, toxicology, and contaminants):** It is not known if the decline in reproductive rate is due to body condition, energy use/availability, or overall nutrition from the diet. A better understanding of general health (pregnancy rates, mortality rates, etc.), condition, diseases, parasites, and insect harassment would help guide management decisions.
9. **Identification of important/preferred habitat:** It is generally recognized that some areas of the seasonal and annual ranges are more important to barren-ground caribou.[8] Additional research on habitat use, forage availability, and habitat importance and sensitivity would help to identify key areas and habitats for barren-ground caribou. An improved understanding may help provide better spatial and temporal resolution for identifying sensitive habitats and times for barren-ground caribou that can be incorporated into mitigation measures and habitat protection.

6. CONSERVATION AND RECOVERY

6.1. Conservation and Recovery Goals and Objectives

The long-term vision of this strategy is to conserve barren-ground caribou and to ensure that barren-ground caribou remain a cultural and ecological keystone species. The vision includes ensuring that barren-ground caribou are able to move freely on the land within their historic ranges to ensure natural habitat use and migration. The overall goals of the recovery strategy are to:

1. Maintain or restore self-sustaining, resilient populations of each barren-ground caribou herd, such that no herd is lost.
2. Support unobstructed movement and migration of barren-ground caribou across historic ranges.
3. Promote the social, cultural, and environmental conditions necessary for recovery.

As noted in subsection 4.2.2, the natural range of variation for population numbers is difficult to quantify. Barren-ground caribou herds have undergone large fluctuations in population size in the past, but it is not known how high or how low their numbers were. Population estimates are only available for the recent past (within the last 50 years, or one population cycle). These documented low and high numbers are presented in Table 3, along with the recent trend for each herd.

Short-term milestones towards reaching the recovery strategy goals are listed below (also see Table 3 in subsection 4.2.2, *Changes in Population*).

- Tuktoyaktuk Peninsula herd – more information is required to determine short-term milestones
- Cape Bathurst herd – maintain current trend
- Bluenose-West herd – increase trend
- Bluenose-East herd – stop the decline
- Bathurst herd – stop the decline
- Beverly herd – stop the decline
- Ahiak herd – more information is required to determine short-term milestones
- Qamanirjuaq herd – stop the decline

In order to accomplish the recovery strategy goals, five objectives have been established (Table 4), combined with recommended approaches to achieve these objectives. Progress toward achieving these objectives will be evaluated every five years.

Table 4. Conservation and recovery objectives.

No.	Conservation and Recovery Objectives
1	Partners collaborate on the development and implementation of management, monitoring, guardianship, and conservation plans for barren-ground caribou in the NWT.
2	Monitor barren-ground caribou, their habitat, and key factors and threats that may be affecting the status and health of herds in the NWT.
3	Fill knowledge gaps, using traditional, community, and scientific knowledge, to enhance responsible and respectful barren-ground caribou conservation.
4	Conserve and protect barren-ground caribou populations and their habitat.
5	Provide education and promote respect for barren-ground caribou, their habitat, and conservation initiatives.

6.2. Approaches to Achieve Objectives

This recovery strategy recommends the following approaches to achieve the conservation and recovery objectives:

Objective 1: Partners collaborate on the development and implementation of management, monitoring, guardianship, and conservation plans for barren-ground caribou in the NWT.

In the NWT, caribou management involves interactions among many IGOs, territorial/provincial/federal governments and agencies, co-management boards, various stakeholder organizations, industrial interests, and communities. Successfully managing threats to barren-ground caribou in the NWT requires collaborative decision-making with these partners.

Management plans have been completed and implementation is underway for the Cape Bathurst, Bluenose-West, Bluenose-East, Beverly, and Qamanirjuaq herds. Implementation of these plans needs to be continued and resourced adequately. Work remains to be done to complete and implement herd-specific management plans for the Tuktoyaktuk Peninsula and Bathurst herds. As most NWT herds range into neighbouring jurisdictions, transboundary agreements and collaboration are necessary for consistent and effective management. The Ahiak herd is not currently subject to a co-management agreement or management plan, and monitoring and management is primarily the responsibility of the Government of Nunavut and other Nunavut organizations. However, management of this herd is done collaboratively between the Government of Nunavut and GNWT. Further to these management plans, Indigenous monitoring programs based on traditional knowledge of elders, harvesters, and community members have been developed to collect field knowledge of barren-ground caribou and their habitat. Indigenous-led caribou conservation and guardianship programs can be a key component in caring for caribou. Indigenous guardians can play an important role in monitoring caribou health and conditions on the land, respectful harvesting, and promoting conservation.

Meaningful participation in management for wildlife in the NWT, and particularly management for caribou, will be enhanced if IGOs have sufficient resources to participate meaningfully and the commitment that their contributions and understandings will be considered fully and equally.

Approach 1.1: Implement herd-specific management plans for the Cape Bathurst, Bluenose-West, Bluenose-East, Beverly, and Qamanirjuaq caribou herds to promote recovery and conserve habitat.

Approach 1.2: Complete and implement herd-specific management plans for the Tuktoyaktuk Peninsula and Bathurst caribou herds to promote recovery and conserve habitat.

Approach 1.3: Continue working with partners in Nunavut on effective conservation of the Ahiak herd.

Approach 1.4: Review and update herd-specific management plans as required.

Approach 1.5: Support community-based barren-ground caribou monitoring, guardianship, and conservation plans.

Approach 1.6: Continue working to secure adequate resources and ongoing support from governments and other partners (including industry, co-management and regulatory boards, and non-government organizations) for the implementation of this recovery strategy and the management, monitoring, guardianship, and conservation plans noted in approaches 1.1 to 1.5.

Approach 1.7: Increase capacity among Indigenous partners to participate equally and meaningfully in the conservation of barren-ground caribou.

Approach 1.8: Cooperate in the development and implementation of the national barren-ground caribou recovery strategy including identification and protection of critical habitat, and defining population and distribution objectives.

Objective 2: Monitor barren-ground caribou, their habitat, and key factors and threats that may be affecting the status and health of herds in the NWT.

Difficult harvest management decisions were required when declines in barren-ground caribou became apparent. Since then, herd numbers have been monitored more closely compared to when population numbers were high. This kind of monitoring is expensive but it provides key information on herd status and range use. Monitoring of indicators like late-winter calf-cow ratios, cow survival and pregnancy rates, health and condition of harvested caribou, disturbance on the land, industrial development impacts, range and vegetation condition, trends in environmental variables, harvest levels, and predator abundance has also intensified. Monitoring of this kind is often done using scientific methods, but information from elders and harvesters on the land can also contribute important information, knowledge, and context. Guardianship programs, as well as Indigenous-led monitoring and health programs, increase both interest in and opportunities to collect baseline information.

Approach 2.1: Monitor size, trend, and health of all NWT barren-ground caribou herds.

Approach 2.2: Monitor predator populations that may affect barren-ground caribou, assess predator-prey relationships and predation rates, and consider responsible predator management options that may benefit barren-ground caribou recovery.

Approach 2.3: Monitor the impacts of other key factors affecting barren-ground caribou and their habitat, including, for example, disease, parasites, insects, and climate change.

Approach 2.4: Monitor changes in habitat quality, quantity, and availability for caribou resulting from natural and human-caused landscape changes.

Approach 2.5: Monitor the status of the relationship between people and caribou as an indicator of caribou well-being.

Objective 3: Fill knowledge gaps, using traditional, community, and scientific knowledge, to enhance responsible and respectful barren-ground caribou conservation.

Although monitoring of herd size and trend is essential for management, the reasons underlying declines are not fully understood, and projecting herd trend into the future remains difficult. This recovery strategy recognizes the importance of supporting research that may help improve our understanding of factors underlying declines of NWT herds. As Management Authorities have limited capacity for in-depth research, resources should be directed towards increased partnerships with communities, academic researchers, including graduate students, and towards cost-sharing of research projects.

Population models have been used to integrate demographic information to improve understanding of declines, and to assess the likely impacts of various levels of harvest and harvest sex ratio on caribou herds. The Cumulative Impact Monitoring Program and cumulative effects models have helped improve our understanding of how development affects caribou and how future development scenarios may affect caribou.

Large-scale declines in migratory caribou are not limited to the NWT, and there are traditional knowledge holders, researchers, biologists, and managers across North America, Europe, and Russia with shared interests and useful knowledge. Continuing exchange of knowledge and information will begin to heal the relationship between people and caribou and benefit conservation of caribou, habitat, and ecosystems in the NWT and elsewhere. It will be important to share results of herd monitoring and research with co-management partners quickly so that management is based on the best knowledge available.

Approach 3.1: Update or develop population models using current information.

Approach 3.2: Promote the collection and exchange of information on caribou ecology, status, and threats.

Approach 3.3: Promote the collection and exchange of information on the relationships among barren-ground caribou, predators, competitors, harvest, and their wider environment.

Approach 3.4: Assess cumulative impacts of natural and human-caused landscape change on barren-ground caribou and their habitat.

Objective 4: Conserve and protect barren-ground caribou populations and their habitat.

The impact mines, roads, and other exploration and development activities have on barren-ground caribou and their habitat is a concern to many people, particularly on the range of the Bathurst herd. In this context, it is important to develop range-level approaches for managing cumulative impacts and to minimize the effects of development as part of promoting the conditions necessary for recovery.

There have also been increasing calls for action to reduce predator populations that might limit the ability of herds to recover. Predator removal has often been controversial in Canada and views on predator control measures are diverse in the NWT.

Forest fires disturb an average of 600,000 ha of NWT forest annually. A warming climate may mean an increase in the intensity, duration, and frequency of forest fires. The loss of barren-ground caribou habitat to fire is of serious concern to many people. Additional ecological changes associated with climate change will be complex and it is difficult predict whether the sum of these changes will be positive or negative for barren-ground caribou. Harvest restrictions have been implemented for conservation reasons in the NWT ranges of barren-ground caribou herds: Cape Bathurst (since 2007), Bluenose-West (since 2007), Bluenose-East (since 2016), and Bathurst (since 2014-15). Implementation of harvest closures or restrictions will need adequate monitoring to ensure compliance. Accurate, consistent, and complete harvest reporting will be necessary to ensure effective caribou management in the NWT. Ensuring respectful harvest of caribou, including respect for traditional laws and harvesting protocols, will also be necessary.

Most barren-ground caribou herds are now at low points in their abundance and they are facing cumulative effects from multiple interacting threats that are considered unprecedented.

Approach 4.1: Work with industry, governments, and co-management and regulatory boards to develop and implement best practices to minimize impacts of human land use on barren-ground caribou.

Approach 4.2: Consider responsible predator management options that may benefit barren-ground caribou recovery.

Approach 4.3: Develop accurate and complete reporting of barren-ground caribou harvest across the NWT along with estimates of unrecovered kills and wounding losses.

Approach 4.4: Promote respectful harvest of caribou, including respect for traditional laws and protocols, and compliance with harvest management measures.

Approach 4.5: Develop range-level approaches for management of cumulative impacts on barren-ground caribou and their habitat from natural and human-caused landscape change.

Approach 4.6: Conserve integrity of barren-ground caribou habitat through participation in key environmental assessment and land use planning processes in the NWT and other jurisdictions where projects may affect NWT herds.

Approach 4.7: Identify and protect essential and important barren-ground caribou habitats such as calving grounds, post-calving ranges, and important water crossings.

Approach 4.8: Ensure that barren-ground caribou habitat is a key value that is integrated into environmental assessment decisions and conservation planning initiatives in the NWT and other jurisdictions where proposed decisions/initiatives may affect NWT herds.

Objective 5: Provide education and promote respect for barren-ground caribou, their habitat, and conservation initiatives.

Indigenous elders have taught that becoming knowledgeable about the land and the caribou is the way that respect is shown to caribou. Widespread caribou declines and harvest restrictions have meant a loss of opportunities to learn traditional respect and culture through caribou harvesting, but the need to respect caribou and their habitat has never been greater. Public education programs carried out in collaboration with Indigenous organizations, especially with youth in schools and on the land, can promote respect for caribou and ensure that all NWT residents understand the status of caribou herds, traditional protocols around caring for caribou, and the measures necessary for herd recovery.

Approach 5.1: Develop and implement hunter education programs to share information on barren-ground caribou and promote hunter excellence.

Approach 5.2: Support programs centred around barren-ground caribou that bring elders and youth together in schools and on the land.

Approach 5.3: Promote educational programs for diverse audiences to increase understanding of conservation initiatives and management of threats to barren-ground caribou.

6.3. Measuring Progress

At least every five years, a report will be produced focusing on the activities carried out by all parties and the progress made towards meeting the objectives of this recovery strategy. The first such report will be due in 2026. The recovery strategy may also be updated at that time.

Overall progress and success can be measured using various factors, for example: adherence to traditional laws and protocols, renewed relationship between caribou and people, population trends (stable or increasing), species distribution (species continues to be found in its historical range and range recession has not occurred, or has been reversed), and species status (species has not become at risk or further at risk when assessed/re-assessed). These are long-term indicators of success.

Recovery will be considered successful if barren-ground caribou are conserved and their place as a cultural and ecological keystone species is maintained. They should be able to move freely on the land within their historic ranges, facilitating natural habitat use and migration. Healing the relationship between people and caribou will be critical to barren-ground caribou conservation.

Table 4. Recommended approaches for conservation and recovery of barren-ground caribou in the NWT.

Objective	Management approaches	Threats and/or knowledge gaps addressed	Relative Priority[p]/ Time frame[q]
Objective #1: Partners collaborate on the development and implementation of management, monitoring, guardianship, and conservation plans for barren-ground caribou in the NWT.	**Approach 1.1:** Implement herd-specific management plans for the Cape Bathurst, Bluenose-West, Bluenose-East, Beverly, and Qamanirjuaq caribou herds to promote recovery and conserve habitat.	All	Critical/Short-term
	Approach 1.2: Complete and implement herd-specific management plans for the Tuktoyaktuk Peninsula and Bathurst caribou herds to promote recovery and conserve habitat.	All	Critical/Short-term
	Approach 1.3: Continue working with partners in Nunavut on effective conservation of the Ahiak herd.	All	Beneficial/Ongoing
	Approach 1.4: Review and update herd-specific management plans as required.	All	Necessary/Ongoing
	Approach 1.5: Support community-based barren-ground caribou monitoring, guardianship, and conservation plans.	All	Necessary/Ongoing
	Approach 1.6: Continue working to secure adequate resources and ongoing support from governments and other partners (including industry, co-management and regulatory boards, and non-government organizations) for the implementation of this recovery strategy and the management, monitoring, guardianship, and conservation plans noted in approaches 1.1 to 1.5.	Management complexity	Necessary/Ongoing
	Approach 1.7: Increase capacity among Indigenous partners to participate equally and meaningfully in the conservation of barren-	All	Necessary/Ongoing

[p] Relative priority can be *critical, necessary* or *beneficial*. Critical approaches are the highest priority for the conservation of caribou and should be implemented sooner rather than later. Necessary approaches are important to implement for the conservation of caribou but with less urgency than critical. Beneficial approaches help to achieve management goals but are less important to the conservation of the species compared to critical or necessary.

[q] Relative timeframe can be short-term, long-term, or ongoing. Short-term approaches should be completed within five years (2026) and long-term approaches require more than five years to complete. Ongoing approaches are long-term actions carried out repeatedly on a systematic basis.

	ground caribou.		
	Approach 1.8: Cooperate in the development and implementation of the national barren-ground caribou recovery strategy, including identification and protection of critical habitat, and defining population and distribution objectives.	All	Critical/Short-term
Objective #2: Monitor barren-ground caribou, their habitat, and key factors and threats that may be affecting the status and health of herds in the NWT.	**Approach 2.1:** Monitor size, trend, and health of all NWT barren-ground caribou herds.	All	Critical/Ongoing
	Approach 2.2: Monitor predator populations that may affect barren-ground caribou, assess predator-prey relationships and predation rates.	All	Necessary/Ongoing
	Approach 2.3: Monitor the impacts of other key factors affecting barren-ground caribou and their habitat, including, for example, disease, parasites, insects, and climate change.	All	Necessary/Short-term
	Approach 2.4: Monitor changes in habitat quality, quantity, and availability for caribou resulting from natural and human-caused landscape changes.	All	Necessary/Ongoing
	Approach 2.5: Monitor the status of the relationship between people and caribou as an indicator of caribou well-being.	All	Necessary/Ongoing
Objective #3: Fill knowledge gaps, using traditional, community, and scientific knowledge, to enhance responsible and respectful barren-ground caribou conservation.	**Approach 3.1:** Update or develop population models using current information.	All	Beneficial/Short-term
	Approach 3.2: Promote the collection and exchange of information on caribou ecology, status, and threats.	All	Necessary/Ongoing
	Approach 3.3: Promote the collection and exchange of information on the relationships among barren-ground caribou, predators, competitors, and their wider environment.	All	Necessary/Ongoing
	Approach 3.4: Assess cumulative impacts of natural and human-caused landscape change on barren-ground caribou and their habitat.	Cumulative effects	Necessary/Ongoing
Objective #4: Conserve and protect barren-ground caribou populations and their habitat.	**Approach 4.1:** Work with industry, governments, and co-management and regulatory boards to develop and implement best practices to minimize impacts of human land use on barren-ground caribou.	Land use activities	Necessary/Ongoing
	Approach 4.2: Consider responsible predator management options that may benefit barren-ground caribou recovery.	Predation	Necessary/Ongoing
	Approach 4.3: Develop accurate and complete reporting of barren-ground caribou harvest across the NWT along with estimates of unrecovered kills and wounding losses.	Disrespectful harvesting practices	Critical/Ongoing

	Approach 4.4: Promote respectful harvest of caribou, including respect for traditional laws and protocols, and compliance with harvest management measures.	Disrespectful harvesting practices	Critical/Short-term
	Approach 4.5: Develop range-level approaches for management of cumulative impacts on barren-ground caribou and their habitat from natural and human-caused landscape change.	Land use activities	Necessary/Ongoing
	Approach 4.6: Conserve integrity of barren-ground caribou habitat through participation in key environmental assessment and land use planning processes in the NWT and other jurisdictions where projects may affect NWT herds.	Land use activities	Critical/Ongoing
	Approach 4.7: Identify and protect essential and important barren-ground caribou habitats such as calving grounds, post-calving ranges, and important water crossings.	Land use activities	Critical/Short-term
	Approach 4.8: Ensure that barren-ground caribou habitat is a key value that is integrated into environmental assessment decisions and conservation planning initiatives in the NWT and other jurisdictions where proposed decisions/initiatives may affect NWT herds.	Land use activities	Necessary/Ongoing
Objective #5: Provide education and promote respect for barren-ground caribou, their habitat, and conservation initiatives.	**Approach 5.1:** Develop and implement hunter education programs to share information on barren-ground caribou and promote hunter excellence.	All	Necessary/Ongoing
	Approach 5.2: Support programs centred around barren-ground caribou that bring elders and youth together in schools and on the land.	All	Necessary/Ongoing
	Approach 5.3: Promote educational programs for diverse audiences to increase understanding of conservation initiatives and management of threats to barren-ground caribou.	All	Necessary/Ongoing

6.4. Socioeconomic, Cultural, and Environmental Effects of Management

Barren-ground caribou are of exceptional cultural and ecological significance. The Indigenous people of the NWT are inextricably bound to barren-ground caribou. For Indigenous peoples and many NWT communities, no other animal has such a large influence socially, culturally, spiritually or economically on their way of life, in the past and for current and future generations. The importance of barren-ground caribou to Indigenous peoples and communities cannot be overstated. Caribou provide subsistence and sustenance, including essential resources such as food, clothing, tools, and shelter to survive in the harsh northern environment. Caribou also provide connections to the land, animals, community, and ancestors. Survival would be difficult for many Indigenous people and community members without caribou. Indigenous people honour, respect, and identify with caribou and caribou are fundamental to survival.

> *"One of the first things I was taught as a child is to respect and honour ekwǫ̀, because without this herd many of my ancestors would have perished and would be gone. Ekwǫ̀ give us life, so in return we have to do our best to guard and protect them."*[39]

The economic value of barren-ground caribou is also immense; the Beverly and Qamanirjuaq Caribou Management Board estimated that the annual economic value of the harvest alone from the Beverly and Qamanirjuaq herds for 2005-2006 was about $20 million.[9]

Accepting when a caribou offers itself through harvest and use of caribou are seen as signs of respect in many Indigenous cultures. Traditional laws and harvesting protocols emphasize taking only what you need, using everything you take, and not wasting anything. These protocols help keep populations strong.

Declines in caribou population numbers have initiated restrictions of harvest of some herds. Voluntary and/or land owner-mandated harvest restrictions are considered sacrifices and they have the potential to displace a nutritious food resource, to threaten cultural identity, harm the relationship between people and caribou, and to negatively impact the way of life for Indigenous people. Without caribou, aspects of Indigenous culture are at risk of being lost and connections to the land are also in peril.

In addition, whether voluntary or not, harvest restrictions can cause frustration among harvesters. There are concerns that harvest and hunters are being unfairly targeted for management action and that population numbers are not increasing despite restrictions. These adverse impacts need to be carefully considered and addressed in reference to land claim agreements and Aboriginal and treaty rights.

Similar to harvest, predation has the potential to limit barren-ground caribou population growth. Actions to manage predator populations have been proposed as a potential approach to assisting the recovery of barren-ground caribou. However, predator control is a complex and controversial topic. Responsible predator management will need to consider the impacts on predator population dynamics and on other species (i.e. moose).

7. NEXT STEPS

Management partners will use this recovery strategy to help in assigning priorities and allocating resources to conserve and recover barren-ground caribou in the NWT, as well for engaging other parties (e.g. communities, industry, co-management boards, regulators, caribou management boards, non-government organizations).

This recovery strategy will be followed by a consensus agreement by the Conference of Management Authorities that will lay out the actions the participating Management Authorities intend to undertake to implement it. At least every five years, there will be a report on the actions undertaken to implement the recovery strategy and the progress made towards meeting its objectives. The first such report will be due in 2026.

Success in the conservation and recovery of barren-ground caribou depends on the commitment and cooperation of various groups involved in directing this plan and cannot be achieved by any one agency alone. All NWT residents and others who use NWT lands and waters, including the NWT public, management partners, municipalities, industry, and other organizations are encouraged to join in supporting and implementing this strategy for the benefit of barren-ground caribou, communities that have traditionally relied on these herds, and NWT society as a whole.

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APPENDIX A – SPECIES STATUS AND ASSESSMENTS

Jurisdiction	Status Rank[r] (Coarse filter – to prioritize)	Status Assessment[s] (Fine filter – to provide advice)	Legal Listing[t] (To protect under species at risk legislation)
NWT	S3 – At Risk (2016)	Threatened (2017)	Threatened (2018)
Canada	N4 – Apparently Secure (2016)	Threatened (2016)[u]	Under Consideration
Global	G5T4 – Apparently secure (2016)	N/A	N/A

[r] National and global ranks are from the NatureServe conservation status assessments that determine the extinction risk of species and elimination risk of ecosystems at global scales, as well as their extirpation risk at national scales. Website: http://explorer.natureserve.org/. For NatureServe definitions of rankings, see: http://www.natureserve.org/conservation-tools/conservation-status-assessment. The NWT status ranks and ranking definitions are from the Working Group on General Status of NWT Species (2016).
[s] Status assessments are independent biological assessments. A status assessment in the NWT is determined by the NWT Species at Risk Committee (SARC): http://www.nwtspeciesatrisk.ca/SARC. Status in Canada is assessed by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC): http://www.cosewic.gc.ca/ and the species status assessment can be found at: www.sararegistry.gc.ca. Global status is assessed by the IUCN Species Survival Commission (SSC) and is found on the IUCN Red List of Threatened Species: http://www.iucnredlist.org/. Status and year in table reflects the most recent assessment.
[t] Legal listing is the legal status of the species on the NWT List of Species at Risk under the territorial *Species at Risk (NWT) Act*: www.nwtspeciesatrisk.ca and on Schedule 1 of the federal *Species at Risk Act*: www.sararegistry.gc.ca. There is no global legal listing.
[u] Note that the scope of the status assessment for Canada is somewhat different than that used for the NWT. See *Preface* for more details.

<u>Species Assessments:</u>

Assessment of Barren-ground Caribou in the NWT by the Species at Risk Committee (SARC 2017[4]).

The Northwest Territories Species at Risk Committee met in Fort Smith, Northwest Territories on April 5, 2017 and assessed the biological status of barren-ground caribou in the Northwest Territories (including the Tuktoyaktuk Peninsula, Cape Bathurst, Bluenose-West, Bluenose-East, Bathurst, Beverly, Ahiak, and Qamanirjuaq herds).The assessment was based on the approved status report. The assessment process and objective biological criteria used by the Species at Risk Committee are available at: www.nwtspeciesatrisk.ca.

<u>Assessment:</u> Threatened in the Northwest Territories

Likely to become endangered in the Northwest Territories if nothing is done to reverse the factors leading to its extirpation or extinction.

<u>Reasons for the assessment:</u> Barren-ground caribou fit criterion (a) for Threatened.

(a) There is evidence that the population is declining in such a way that it could disappear from the Northwest Territories in our children's lifetime.

<u>Main factors:</u>

- This means that there is a 10% chance that barren-ground caribou could disappear from the Northwest Territories within 75 years.
- Although about 530,000 barren-ground caribou still reside either entirely or partially within the NWT, overall, the numbers have declined by more than 85% for all herds where we have trend information, except the Qamanirjuaq herd, during the past three caribou generations (about 25 years).
- Overall trend demonstrates a continued population decline even though two herds (Cape Bathurst and Bluenose-West) appear to have recently stabilized at very low numbers.
- The main threats are:
    - Climate change may act as a continuing threat to barren-ground caribou through a complex mechanism involving shifts in timing of green-up, changes in summer forage quality, rain-on-snow and icing events on the winter range, longer fire seasons, melting permafrost and erosion, changes to freeze-up and thaw timing, and increasing shrub cover. Parasites and diseases are a potential and complex threat under a warmer climate.
    - Predation can affect survival and reproduction and therefore abundance, and there are reports of increasing predator populations in some areas.
    - Industrial development is considered to be one of the most significant factors affecting barren-ground caribou. It can disturb caribou and affect

their behaviour, the quality of habitat and forage, and ultimately, the survivability of the species. It can also facilitate access for both humans and predators.

    - Forest fires represent the most visible factor driving habitat fragmentation and change, impacting forage availability and movement. This threat is particularly important in the winter range. Climate change may lead to even hotter and drier summers in the NWT, possibly increasing the frequency and intensity of fires.

<u>Additional factors:</u>

- Barren-ground caribou populations undergo large fluctuations over several decades. The causes of these fluctuations in abundance are complex and likely driven by climate interacting with forage availability, predation, and parasites. Harvest and predation play a stronger role when barren-ground caribou are at low numbers.
- The threats mentioned above are acting in addition to these large fluctuations. The cumulative effects from multiple interacting threats are considered unprecedented.

<u>Positive influences on barren-ground caribou and their habitat:</u>

- Collaborative co-management has led to management planning for caribou and resulted in measures to reduce harvest in response to low numbers. Range planning has been initiated for the Bathurst herd.
- Application of traditional laws and harvesting protocols (e.g. respectful harvest, sharing, avoiding wastage, etc.) have, and will continue to have, a positive influence on caribou health, population numbers, and habitat.
- There are community-based conservation measures and community support for management actions.
- Calving grounds of the Bluenose-West and Beverly herds are provided partial protection from development by inclusion in protected areas and sanctuaries. Habitat protection is also offered through land use planning instruments.

<u>Recommendations:</u>

- Complete and implement herd management and action plans.
- Complete or initiate range planning where needed.
- Improve harvest reporting.
- Work with interjurisdictional partners to achieve effective protection of all calving grounds and other key habitat components (e.g. water crossings).
- Consideration should be given to increasing research into causes of barren-ground caribou population decline and habitat changes to better inform effective management actions.
- Climate change is an underlying driver of many of the threats facing barren-ground caribou and their habitat. Action to reduce greenhouse gas emissions is

required for the long term conservation of barren-ground caribou. Actions should be taken to ensure that the impact of climate change on caribou is highlighted through the appropriate regional, national, and international fora and that effects of climate change on caribou are monitored and mitigation actions taken where possible.

Assessment of Caribou - Barren-ground Population in Canada by COSEWIC (COSEWIC 2016[6])

Assessment Summary - November 2016

Common name
Caribou - Barren-ground population[v]

Scientific name
Rangifer tarandus

Status
Threatened

Reason for designation
Members of this population give birth on the open arctic tundra, and most subpopulations (herds) winter in vast subarctic forests. Well-known for its large aggregations, lengthy migrations, and significant cultural and social value to northern Aboriginal peoples and other Canadians, its 14-15 subpopulations range from northeastern Alaska to western Hudson Bay and Baffin Island. Numbering more than 2 million individuals in the early 1990s, the current population is estimated at about 800,000. Most subpopulations have declined dramatically, but two are increasing, including the Porcupine caribou herd. For 70% of the population with sufficient data to quantify trends, the decline is estimated at 56% over the past three generations (since 1989), with several of the largest herds having declined by >80% from peak numbers. Available survey data for an additional 25% of the total population also indicate declines. Evidence from both local Aboriginal people and scientific studies suggests that most herds have undergone natural fluctuations in numbers in the past; however, available demographic data indicate no sign of rapid recovery at this time and cumulative threats are without historical precedent. Status meets criteria for Endangered because of a reduction in numbers of ≥50%, but Threatened is recommended because, overall, this population does not appear to be facing imminent extinction at this time. Despite worrisome declines across most of the range, the current numerical abundance of the Porcupine caribou herd and the initiation of numerous management actions by governments, wildlife management boards, and communities support Threatened as a more appropriate conservation status. The status of these subpopulations will have to be carefully monitored and may warrant re-assessment

[v] Note that the scope of COSEWIC's assessment was somewhat different than the scope of the NWT assessment. See *Preface* for more information.

within five years.

Occurrence
Yukon, Northwest Territories, Nunavut, Alberta, Saskatchewan, Manitoba

Status history
Designated Threatened in November 2016

APPENDIX B – PLANNING PARTNERS

The Wildlife Management Advisory Council (NWT) advises governments on wildlife policy, management, regulation, and administration of wildlife, habitat, and harvesting in the NWT portion of the Inuvialuit Settlement Region (*Inuvialuit Final Agreement*, section 14). The Wildlife Management Advisory Council (NWT) works collaboratively with the Inuvialuit Game Council, hunters and trappers committees, and government in research, monitoring, and management of wildlife and habitat. The Wildlife Management Advisory Council (NWT) consults regularly with the Inuvialuit Game Council and hunters and trappers committees, and these groups assist the Council in carrying out its functions, upon request.

The Gwich'in Renewable Resources Board is the main instrument of wildlife management in the Gwich'in Settlement Area. Its powers include approving plans for the management and protection of particular wildlife populations (including endangered species), particular wildlife habitats, and forests (*Gwich'in Comprehensive Land Claim Agreement*, sections 12 and 13). The Gwich'in Renewable Resources Board works collaboratively with renewable resources councils and government in research, monitoring, and management of wildlife and habitat. The Gwich'in Renewable Resources Board consults regularly with the renewable resources councils, and its management authority may be delegated to renewable resources councils.

The Sahtú Renewable Resources Board is the main instrument of wildlife management in the Sahtú Settlement Area. Its powers include approving plans for the management and protection of particular wildlife populations (including endangered species), particular wildlife habitats, and forests (*Sahtú Dene and Metis Comprehensive Land Claim Agreement*, sections 13 and 14). The Sahtú Renewable Resources Board works collaboratively with renewable resources councils and government in research, monitoring, and management of wildlife and habitat. The Sahtú Renewable Resources Board consults regularly with the renewable resources councils, and management authority may be delegated to renewable resources councils.

The Wek'èezhìı Renewable Resources Board is the wildlife co-management authority responsible for managing wildlife, wildlife habitat, forests, plants, and protected areas in Wek'èezhìı as set out in the *Tłı̨chǫ Agreement* (*Tłı̨chǫ Agreement*, sections 12, 13, 14 & 16). Responsibilities include making determinations or recommendations on management proposals for activities that may affect wildlife and wildlife habitat. The Wek'èezhìı Renewable Resources Board works collaboratively with the Tłı̨chǫ communities and Tłı̨chǫ, territorial, and federal governments in research, monitoring, and management of wildlife and habitat.

The Tłı̨chǫ Government has powers to enact laws in relation to the use, management, administration and protection of lands and renewable resources, on Tłı̨chǫ lands. This includes laws relating to the management and exercise of harvesting rights for wildlife, plants and trees (*Tłı̨chǫ Agreement*, section 7). The Tłı̨chǫ Government has prepared the *Tłı̨chǫ Land Use Plan* to assist in managing approximately 39,000 km^2 of Tłı̨chǫ lands.

The Plan provides a guide for future development by outlining how Tłı̨chǫ land will be protected and how activities and development on Tłı̨chǫ lands should occur.

The Government of Canada has ultimate responsibility for the management of migratory birds (as described in the *Migratory Birds Convention Act*, 1994), fish, marine mammals, and other aquatic species (as described in the *Fisheries Act*). It also has responsibilities for the implementation of the federal *Species at Risk Act*, including enforcement of the general prohibitions and critical habitat prohibitions where listed species occur on federal lands that belong to her Majesty, in Right of Canada, or under the direct authority of the Minister of the Environment (national wildlife areas and migratory bird sanctuaries) and the Minister responsible for the Parks Canada Agency (national parks, national park reserves, and national historic sites).

The Government of the Northwest Territories (GNWT), represented by the Minister of Environment and Natural Resources (ENR), has ultimate responsibility for the conservation and management of wildlife, wildlife habitat, and forest resources in the NWT, subject to land claims and self-government agreements. It is the Minister of ENR's ultimate responsibility to prepare and complete management plans and recovery strategies under the *Species at Risk (NWT) Act*. Other GNWT departments also have responsibilities, including for land management, resources, communities, public infrastructure, and economic development. ENR engages with other GNWT departments on species at risk issues through the Inter-departmental Species at Risk Committee, inter-departmental committees of Directors and Deputy Ministers, and Executive Council.

Table B1: Shared management for NWT barren-ground caribou herds.

Herd	**Co-management organizations**	**Main management board/instrument**
Tuktoyaktuk Peninsula	Government of the Northwest Territories Hunters and trappers committees Inuvialuit Game Council Wildlife Management Advisory Council (NWT)	No main board or instrument
Cape Bathurst	Government of the Northwest Territories Gwich'in Renewable Resources Board Hunters and trappers committees Inuvialuit Game Council Wildlife Management Advisory Council (NWT)	Advisory Committee for Cooperation on Wildlife Management
Bluenose-West	Government of Canada Government of the Northwest Territories Gwich'in Renewable Resources Board Hunters and trappers committees Inuvialuit Game Council Sahtú renewable resource councils Sahtú Renewable Resources Board Tuktut Nogait National Park Management Board Wildlife Management Advisory Council (NWT)	Advisory Committee for Cooperation on Wildlife Management
Bluenose-East	Délı̨nę Renewable Resources Council Government of Canada Government of Nunavut Government of the Northwest Territories	Advisory Committee for Cooperation on Wildlife Management

	Hunters and trappers committees Inuvialuit Game Council Kitikmeot Regional Wildlife Board Kugluktuk Hunters and Trappers Organization Nunavut Tunngavik Inc. Nunavut Wildlife Management Board Sahtú renewable resource councils Sahtú Renewable Resources Board Tłı̨chǫ Government Wek'èezhìı Renewable Resources Board Wildlife Management Advisory Council (NWT)	
Bathurst	Athabasca Denesųłiné Né Né Land Corporation Deninu Kųę́ First Nation Government of Canada Government of Nunavut Government of the Northwest Territories Hunters and trappers organizations Kitikmeot Inuit Association Kitikmeot Regional Wildlife Board Łutsel K'e Dene First Nation North Slave Métis Alliance Northwest Territory Métis Nation Nunavut Tunngavik Inc. Nunavut Wildlife Management Board Salt River First Nation Tłı̨chǫ Government Wek'èezhìı Renewable Resources Board Yellowknives Dene First Nation	Bathurst Caribou Advisory Committee Bathurst Caribou Range Planning Working Group
Beverly	Athabasca Denesųłiné Government of Canada Government of Nunavut Government of Saskatchewan Government of the Northwest Territories Hunters and trappers organizations Kitikmeot Regional Wildlife Board Kivalliq Wildlife Board Łutsel K'e Dene First Nation Northwest Territory Métis Nation Nunavut Tunngavik Inc. Nunavut Wildlife Management Board Tłı̨chǫ Government Wek'èezhìı Renewable Resources Board	Beverly and Qamanirjuaq Caribou Management Board
Ahiak	Athabasca Denesųłiné Government of Canada Government of Nunavut Government of Saskatchewan Government of the Northwest Territories Hunters and trappers organizations Kitikmeot Regional Wildlife Board Kivalliq Wildlife Board Łutsel K'e Dene First Nation Northwest Territory Métis Nation Nunavut Tunngavik Inc. Nunavut Wildlife Management Board	No main board or instrument

	Tłı̨chǫ Government Wek'èezhìı Renewable Resources Board	
Qamanirjuaq	Athabasca Denesųłiné Ghotelnene K'odtineh Dene Government of Canada Government of Manitoba Government of Nunavut Government of Saskatchewan Government of the Northwest Territories Hunters and trappers organizations Kivalliq Wildlife Board Łutsel K'e Dene First Nation Northlands Denesuline First Nation Northwest Territory Métis Nation Nunavut Tunngavik Inc. Nunavut Wildlife Management Board Sayisi Dene First Nation	Beverly and Qamanirjuaq Caribou Management Board

APPENDIX C – GUIDING PRINCIPLES

The following principles guided the development of this recovery strategy:

- Recognize that the biological diversity of the NWT is a legacy to be preserved, and that all NWT residents and others who use NWT lands and waters have a shared responsibility for the protection and conservation of species at risk:
    - Recognize the shared responsibility of the Management Authorities, seek collaborative partnerships, and expect that all responsible parties will contribute.
    - Respect Treaty and Aboriginal rights as well as land claim and self-government agreements.
    - Involve interested parties in developing the plan/strategy, including engagement at the community level throughout the process.
    - Promote engagement by all parties in playing a meaningful role in implementing this strategy and supporting long-term recovery of NWT barren-ground caribou.
- Recognize that conservation measures may have social, economic, or ecological implications.
- Use adaptive management, which is: a systematic approach for continually improving management policies or practices by deliberately learning from the outcomes of management actions.
- Be guided by and implement the Precautionary Principle, which states that a lack of scientific certainty will not be used as a reason to delay measures to alleviate a threat to a species at risk.
- Make full use of the best available information, including traditional, community, and scientific knowledge:
    - Recognize and respect differences and similarities in approaches to the collection and analysis of different types of knowledge.
    - Recognize and address information gaps.
- Have a clear goal and clear, measurable objectives:
    - Include only management approaches that are realistic and biologically feasible.
    - Recognize that conservation and recovery can take a long time; therefore long-term approaches are needed.
- Management actions will be taken at the herd level to maintain population numbers, distribution, and range use of each barren-ground caribou herd, such that no herd is lost and sufficient high quality habitat is maintained to allow for herd recovery into historic range.

- Each caribou herd has value to one or more NWT Indigenous governments and organizations and to others outside the NWT as well, and should be maintained in a healthy state on the landscape.
- Collaboration among governments, co-management boards, caribou management boards, communities, and, where needed, with neighbouring jurisdictions, is essential to ensuring successful and effective management for caribou in the NWT.
- Public education will be necessary to promote respect for caribou and awareness of traditional Indigenous practices so that all NWT residents and others who use NWT lands and waters know how and are encouraged to contribute to the recovery of caribou.

Follow the links below to view the *How we count caribou, calving ground photo survey* video submitted by the Government of Northwest territories.

English

https://buff.ly/2wsN9Ad

Inuinnaqtun

https://buff.ly/2SYREdr

Inuktitut

https://buff.ly/2T0ffuf

Wek’èezhìı Renewable Resources Board

ᕕᕝᕗᐊᕆ 14, 2020

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ᐱᓪᓗᒍ: ᓄᓇᕗᑦ ᐆᒪᔪᓕᕆᔩᑦᔪᐊᑦ ᑲᑎᒪᔩᖏᑦ ᐃᓄᑦᑎᒍᑦ ᐃᓄᓐᓂᑦ ᑲᑎᒪᑎᑦᑎᓂᖅ ᐃᓱᒪᒋᔭᖃᕐᓂᕐᒧᑦ ᓄᓇᕗᑦ ᒐᕙᒪᒃᑯᑦ ᑐᔪᕋᐅᑎᖓ ᐋᖅᑭᒋᐊᖅᑕᐅᓗᓂ ᑲᑎᑦᑐᒋᑦ ᑐᑦᑐᑕᐅᔪᓐᓇᖅᑐᑦ ᐳᓘᓅᔅ ᑲᓇᓐᓇᖓᓂ ᑐᑦᑐᐃᑦ ᐅᕙᓐᖓᑦ 340 ᑎᑭᓪᓗᒍ 107 ᐊᖅᒪ ᓴᖅᑭᑎᑦᑎᓗᑎ ᐊᖑᑎᑐᐊᓂᑦ ᑐᑦᑐᒍᓐᓇᕐᓗᑎ ᑰᑕᕐᑲᖏᑦᑐᒥ ᑭᓪᓕᖏᑦ

ᑐᕌᖅᑐᖅ ᒥᔅᑕ ᓯᐅᓴᒃ:

ᐅᑯᐊ ᑎᑎᕋᖅᓯᒪᔪᑦ ᑐᓂᔭᐅᔪᑦ, ᐃᑲᔪᖅᑐᐃᔪᑦ ᑎᑎᕋᖅᓯᒪᔪᑦ ᐊᒻᒪ ᑐᓂᔭᐅᔪᑦ ᑭᒡᒐᑐᖅᑐᒋᑦ Wek’èezhìı (ᕗᐃᑭᔩ) ᓄᓇᒥᐅᑕᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔩᖏᑦ (WRRB), ᐃᓱᒪᒋᔭᐅᓂᐊᖅᑐᑦ ᓄᓇᕗᑦ ᐆᒪᔪᓕᕆᔩᑦᔪᐊᑦ ᑲᑎᒪᔩᖏᑦ (NWMB) ᐃᓄᓐᓂᑦ ᑲᑎᒪᑎᑦᑎᓂᕐᒧᑦ Sahtì ekwǫ̀ (ᓵᑎ ᐃᐊᒃᕗ [ᐳᓘᓅᔅ–ᑲᓇᓐᓇᖓᒥ ᑐᑦᑐᖏᑦ]) ᑐᑦᑐᐃᑦ, ᐊᖅᑭᑦᑕᐅᓯᒪᔪᑦ ᒫᑦᓯ 2-3, 2020 ᖁᓪᓗᖅᑑᒥ, ᓄᓇᕗᑦ. ᑲᑎᒪᔩᑦ ᖁᔭᓐᓇᒦᕈᒪᔪᑦ ᓄᓇᕗᒻᒥ ᐆᒪᔪᓕᕆᔩᑦᔪᐊᒃᑯᑦ ᑲᑎᒪᔩᖏᓐᓂᑦ ᑐᓂᓯᓂᖏᓐᓄᑦ ᕗᐃᑭᔩ ᓄᓇᒥᐅᑕᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔩᖏᑦ “ᑎᒥᐅᔪᖅ” ᖃᓄᐃᓂᖓᓂᖓᓂ ᐃᓄᓐᓄᑦ ᑲᑎᒪᑎᑦᑎᓪᓗᒋᑦ, ᐱᔪᓐᓇᑎᑦᑎᔪᖅ ᑲᑎᒪᔩᑦ ᑐᓂᓯᓗᑎ, ᑭᐅᓗᑎ ᐊᒻᒪ ᑕᑯᓐᓇᕐᓗᑎ ᐃᓚᓕᒫᖓᓂ ᑲᑎᒪᑎᑦᑎᓂᐅᔪᒥᑦ.

ᕗᐃᑭᔩ ᓄᓇᒥᐅᑕᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔩᖏᑦ ᑐᕋᒐᖅᑕᖅᑐᑦ ᐆᒪᔪᓄᑦ, ᐱᕈᖅᑐᓄᑦ ᐊᒻᒪ ᓇᕿᖅᑐᓄᑦ ᓄᐃᑭᔩᒥ ᐊᒻᒪ ᒪᓕᖅᑲᑦᑕᖅᑐᑦ ᒪᓕᒐᖏᓐᓂ ᐊᒻᒪ ᐊᑐᖅᑕᐅᕙᑦᑐᓂᑦ ᐱᐅᖅᓯᐊᓂᕐᒧᑦ ᐱᓕᕆᐊᖃᖅᑕᖏᓐᓂᑦ. ᑲᑎᒪᔩᖅ ᑲᑐᔾᔨᔪᑦ ᑲᒪᒋᔭᖃᓂᕐᒥᑦ ᐊᐅᓚᑦᑎᓂᕐᒥᑦ ᐊᒻᒪ ᖃᐅᔨᓴᓂᕐᒥᑦ ᓵᑎ ᐃᐊᒃᕗ ᑐᑦᑐᐃᑦ. ᑲᑎᒪᔩᑦ ᑎᑎᕋᖅᓯᒪᔪᑦ ᑐᓂᔭᖏᑦ, ᐃᑲᔪᓯᖅᑐᑦ ᑎᑎᕋᖅᓯᒪᔪᑦ, ᐊᒻᒪ ᖃᕋᓴᐅᔭᒃᑯᑦ ᑕᑯᔅᓴᐅᑎᑕᐅᔪᖅ, ᐊᑎᖅᑲᖅᑐᖅ *“ᕗᐃᑭᔩ ᓄᓇᒥᐅᑕᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔩᖏᑦ ᐊᒻᒪ 2019 ᐳᓘᓅᔅ–ᑲᓇᓐᓇᖓ ᑐᑦᑐᖏᑦ ᑐᑦᑐᐃᑦ ᐱᕙᓪᓕᐊᓂᖏᑦ”*, ᐱᑕᖅᖃᖅᑎᑦᑎᔪᖅ ᓄᓇᕗᒻᒥ ᐆᒪᔪᓕᕆᔩᑦᔪᐊᒃᑯᑦ ᑲᑎᒪᔩᖏᑦ ᑐᑭᓯᒋᐊᕈᑎᔅᓴᓐᓂᖏᓐᓂᑦ ᐱ–ᔪᑎᖃᖅᑐᑦ ᐱᖃᑕᐅᓂᖏᓐᓄᑦ ᕗᐃᑭᔩ ᓄᓇᒥᐅᑕᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔩᖏᑦ ᐊᐅᓚᑦᑎᓂᕐᒧᑦ ᓵᑎ ᐃᐊᒃᕗ ᑐᑦᑐᐃᑦ ᓄᓇᓯᐊᒥ (NWT), ᐱᓗᐊᖅᑐᒥᑦ ᕗᐃᑭᔩ, ᐊᒻᒪ ᓄᓇᕗᑦ.

<u>ᓵᑎ ᐃᐊᒃᕗ (ᐳᓘᓅᔅ–ᑲᓇᓐᓇᖓ ᑐᑦᑐᖏᑦ) ᑐᑦᑐᐃᑦ ᐊᐅᓚᑦᑎᓂᕐᒧᑦ ᓄᓇᓯᐊᒥ</u>

ᓴᖅᑭᖅᑎᑕᐅᔪᒻᒪᓂᓂᑦ 2006–ᒥᑦ, ᕗᐃᑭᔩ ᓄᓇᒥᐅᑕᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔩᖏᑦ ᐱᓕᕆᑎᑕᐅᓯᒪᔪᑦ ᐊᐅᓚᑦᑎᓂᕐᒥᑦ ᓇᐹᖅᑐᖅᑲᖏᑦᑐᒥ ᑐᑦᑐᐃᑦ. ᑲᑎᒪᔩᑦ ᐱᕙᓪᓕᐊᑎᑦᑎᓂᖅᑲᓚᐅᖅᑐᑦ ᐱᓕᕆᐊᖅᑕᖅᑐᑎᑦ ᓵᑎ ᑕᐃᐊᒃᕗ ᑐᑦᑕᐅᕙᑦᑐᑦ ᑭᓪᓕᖏᑦ 2010, 2016, ᐊᒻᒪ 2019 ᑐᑦᑐᓄᑦ ᐊᑦᑎᓪᓕᕙᓪᓕᐊᖏᓐᓇᖅᑐᑦ 2009–ᒥᓂᑦ. ᐅᓂᒃᑳᑦ 2010 ᐊᒻᒪ 2016 ᐱᕙᓪᓕᐊᓂᐅᔪᑦ ᐊᒻᒪ ᓄᓇᓯᐊᑉ ᒐᕙᒪᖓᑦ (GNWT) ᐊᒻᒪ łı̨chǫ (ᑎᓖᓯ) ᒐᕙᒪᖓᑦ (TG) ᑭᐅᔾᔪᑎᖏᑦ ᐊᑐᐃᓐᓇᐅᔪᑦ ᕗᐃᑭᔩ ᓄᓇᒥᐅᑕᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔩᖏᑦ ᖃᕋᓴᐅᔭᒃᑯᑦ ᑐᓯᒋᐊᕐᕕᖓᓂ.

.../ᒪᑉᐱᒐᖅ 2

ᔮᓐᓄᐊᕆ 2019, ᑎᓖᓱ ᒐᕙᒪᖓᑦ ᐊᒻᒪ ᓄᓇᕗᑦ ᒐᕙᒪᖓᑦ ᑐᓂᓯᓚᐅᖅᑐᑦ *ᑲᑐᑦᔨᓗᒋ ᑐᔅᓯᕋᐅᑦ ᐊᐅᓚᑕᐅᓂᖅᑭᓐᓄᑦ ᖃᓄᐃᓕᓯᒋᐊᓂᕐᒧᑦ ᕿᖓᐅᖅ ᐃᐊᒃᕗ (ᓇᐸᖅᑐᖃᖅᑭᑦᑐᓂᑦ ᑐᑦᑐᖅᑭᑦ) ᑐᑦᑐᐃᑦ 2019-2021* ᑲᑎᒪᔩᓄᑦ, ᓇᓗᓇᐃᔭᐃᔪᑦ ᑐᔅᓯᕋᖅᑕᐅᒧᑦ ᐊᐅᓚᑦᑎᓂᕐᒧᑦ ᖃᓄᐃᓕᓯᒋᐊᓂᕐᒧᑦ ᓵᑎ ᐃᐊᒃᕗ ᑐᑦᑐᐃᑦ ᕗᐃᑭᔩᒥ. ᐊᐅᓚᑦᑎᓂᕐᒧᑦ ᖃᓄᐃᓕᓯᒋᐊᕈᑏᑦ ᑐᔅᓯᕌᖑᔪᑦ ᑎᓖᓱ ᒐᕙᒪᖓᑦ (TG) ᐊᒻᒪ ᓄᓇᕗᑦ ᒐᕙᒪᖓᑦ ᑲᑐᑦᔨᓗᒋ ᑐᔅᓯᕋᐅᒻᒥᑦ ᑲᑎᖅᓱᖅᑕᐅᓚᐅᖅᑐᑦ ᑕᓪᓚᒪᐅᔾᔨᓗᒋ ᖃᓄᐃᓕᖓᓂᖅᑭᑦ: ᐊᖑᓇᓱᑦᑕᐅᔪᑦ, ᑐᑦᑐᓂᑦ ᓂᕆᖃᑦᑕᖅᑐᑦ, ᓇᔪᖅᑕᖅᑭᑦ ᐊᒻᒪ ᓄᓇ ᐊᑐᖅᑕᐅᓂᖓ, ᐊᒻᒪ ᐃᓕᓐᓂᐊᕐᓂᖅ ᐊᒪᓗᑦᑕᐅᖅ ᖃᐅᔨᓴᕐᓂᖅ ᐊᒻᒪ ᖃᐅᔨᓴᖃᑦᑕᕐᓂᖅ. ᐱᓗᐊᖅᑐᒥᒃ, ᑎᓖᓱ ᒐᕙᒪᖓᑦ ᐊᒻᒪ ᐱᓕᕆᕕᐊᖓ ᐊᕙᑎᓕᕆᔨᒃᑯᑦ ᐊᒻᒪ ᓄᓇᒦᐅᑕᓕᕆᔨᒃᑯᑦ ᑐᔅᓯᕋᓚᐅᖅᑐᑦ ᐊᑐᓕᖅᑎᑦᑎᓗᒋ ᑐᑦᑐᓕᒫᖅᑭᓐᓄᑦ ᑲᑎᑦᑐᒋᑦ ᑐᑦᑐᑕᐅᔪᓐᓇᖅᑐᑦ 300 ᐊᖑᑎᓂᑐᐊᖅ ᓵᑎ ᐃᐊᒃᕗ ᑐᑦᑐᖅᑭᓐᓄᑦ. ᕗᐃᑭᔩ ᓄᓇᒥᐅᑕᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔨᖅᑭᑦ ᐃᓱᒪᒋᔭᖅᑲᖅᑐᑦ ᓇᓗᓇᐃᖅᓯᒪᔪᓂᑦ ᑭᓪᓕᖅᑲᖅᑎᑕᐅᔪᓂᑦ ᐅᕙᓘᓐᓃᑦ ᐃᓚᒍᑕᖓ ᐊᖑᓇᓱᓐᓂᕐᒧᑦ ᑰᑕᑎᒍᑦ ᓴᖅᑭᖅᑎᑕᐅᓂᖓᓄᑦ ᑲᑎᑦᑐᒋᑦ ᑐᑦᑐᑕᐅᔪᓐᓇᖅᑐᑦ (TAH). ᕗᐃᑭᔩ ᓄᓇᒥᐅᑕᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔨᖅᑭᑦ ᒪᓕᒃᓂᖃᓚᐅᖅᑐᑦ ᐃᓚᖓ 12.3.10 ᑎᓖᓱ ᐊᖏᕈᑎᒥᑦ ᐊᒻᒪ ᐃᓄᓐᓂᑦ ᑲᑎᒪᑎᑦᑎᓚᐅᖅᑐᑦ ᐱᐅᓲᑯᒥ, ᓄᓇᕗᑦ ᐄᐳᓗ 9-11, 2019.

ᒪᓕᑦᑐᒍ ᐃᓚᖓ 12.5.5(a)(i) Tłįchǫ (ᑎᓖᓱ) ᐊᖏᕈᑎᒥᑦ, ᕗᐃᑭᔩ ᓄᓇᒥᐅᑕᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔨᖅᑭᑦ ᐊᑕᐅᓯᐅᓪᓗᓂ ᑲᒪᒋᔭᖅᑲᖅᑐᑦ ᓴᓇᓗᑎ ᑭᖑᓪᓕᖅᐹᒥᑦ ᑲᔪᖅᑭᓯᒪᓂᕐᒧᑦ ᐱᔾᔪᑎᖃᖅᑐᓂᑦ ᑲᑎᑦᑐᒋᑦ ᑐᑦᑐᑕᐅᔪᓐᓇᖅᑐᑦ ᐊᒥᓲᓂᖅᑭᓐᓄᑦ ᐅᕙᓘᓐᓃᑦ ᑲᑎᓐᖓᓯᔪᓂᑦ ᐆᒪᔪᓂᑦ ᕗᐃᑭᔩᒥᑦ. ᕗᐃᑭᔩ ᓄᓇᒥᐅᑕᓕᕆᔨᒃᑯᑦ ᓇᓗᓇᐃᖅᓯᓚᐅᖅᑐᑦ ᑖᒃᑯᐊ ᑲᑎᑦᑐᒋᑦ ᑐᑦᑐᑕᐅᔪᓐᓇᖅᑐᑦ f 193 ᐊᖑᑎᑐᐊᓂᑦ ᐊᑐᓕᖅᑎᑕᐅᔭᕆᐊᓕᒃ ᐊᑐᖅᑲᑦᑕᖅᑐᓕᒫᓄᑦ ᓵᑐ ᐃᐊᒃᕗ ᑐᑦᑐᖅᑭᑦ ᐃᓗᐊᓂ ᕗᐃᑭᔩ 2019/2020 ᐊᒻᒪ 2020/2021 ᑐᑦᑐᓚᓱᐊᕐᓇᐅᔪᒥᑦ. ᐃᓚᒋᐊᕐᓗᒍ, ᑲᑎᒪᔩᑦ ᓇᓗᓇᐃᖅᓯᓚᐅᖅᑐᑦ ᐊᖏᓂᖅᓴᓇᔭᖓ ᐃᓕᐅᖅᑲᖅᑕᐅᔪᑦ ᑲᑎᑦᑐᒋᑦ ᑐᑦᑐᑕᐅᔪᓐᓇᖅᑐᑦ ᓵᑎ ᐃᐊᒃᕗ ᑐᑦᑐᖅᑭᑦ 2019/2020 ᐊᒻᒪ 2020/2021 ᑐᑦᑐᓚᓱᐊᕐᓇᐅᔪᒥᑦ ᐃᒪᐃᓕᖓᔭᓇᐊᓖᑦ: ᑎᓖᓱᒥᐅᑕᐃᑦ – 39.29%, ᐊᒻᒪ ᐃᓚᒋᔭᐅᔪᑦ ᓄᓇᖃᖅᑳᖅᓯᒪᔪᑦ ᐊᖑᓇᓱᖃᑦᑕᖅᑐᑦ ᓵᑎ ᐃᐊᒃᕗ (ᐱᖃᓯᐅᑎᓪᓗᓂ ᓄᓇᕗᑦ) – 60.71%. ᐃᓚᒋᐊᕐᓗᒍ, ᕗᐃᑭᔩ ᓄᓇᒥᐅᑕᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔨᖅᑭᑦ ᐊᑐᓕᖁᔨᓚᐅᖅᑐᑦ ᐊᐅᓚᑦᑎᓂᕐᒧᑦ ᖃᓄᐃᓕᓯᒋᐊᕈᑎᒃᑲᓂᕐᓂᑦ ᐊᑦᑐᐊᓂᖏᑦ ᑐᑦᑐᓂᑦ ᓂᕆᖃᑦᑕᖅᑐᑦ, ᓇᔪᖅᑕᖅᑭᑦ ᐊᒻᒪ ᓄᓇ ᐊᑐᖅᑕᐅᓂᖓ, ᐊᒻᒪ ᐃᓕᓐᓂᐊᕐᓂᖅ ᐊᒪᓗᑦᑕᐅᖅ ᖃᐅᔨᓴᕐᓂᖅ ᐊᒻᒪ ᖃᐅᔨᓴᖃᑦᑕᕐᓂᖅ.

ᓄᓇᕗᒻᒥ ᐆᒪᔪᓕᕆᓴᔾᔪᐊᒃᑯᑦ ᑲᑎᒪᔨᖅᑭᑦ ᐃᓱᒪᒋᓂᐊᖅᑕᖅᑭᓐᓂᑦ, ᕗᐃᑭᔩ ᓄᓇᒥᐅᑕᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔨᖅᑭᑦ ᑐᓂᓯᔪᑦ ᐅᑯᓂᖓ ᐃᑲᔪᓱᖅᑐᓂᑦ ᑎᑎᕋᖅᓯᒪᔪᓂᑦ:

- ᕗᐃᑭᔩ ᓄᓇᒥᐅᑕᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔨᖅᑭᑦ 2019 ᓵᑎ ᐃᐊᒃᕗ ᐱᔾᔪᑎᖅᑭᑦ ᐃᓱᒪᓕᐅᕐᓂᕐᒧᑦ ᐅᓂᒃᑳᑦ, ᐊᑎᖅᑲᖅᑐᖅ *"ᐅᓂᒃᑳᑦ ᐃᓄᓐᓂᑦ ᑲᑎᒪᑎᑦᑎᓂᕐᒧᑦ ᕗᐃᑭᔩ ᓄᓇᒥᐅᑕᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔨᖅᑭᑦ 9-11 ᐄᐳᓗ 2019 ᐱᐅᓲᑯ, ᓄᓇᕗᑦ ᐊᒻᒪ ᐱᔾᔪᑎᖅᑭᑦ ᐃᓱᒪᓕᐅᖅᑕᐅᔪᑦ ᐊᑦᑐᐊᓂᖏᑦ ᑲᑐᑎᔪᓂᑦ ᑐᔅᓯᕋᐅᒥ ᐊᐅᓚᑦᑎᓂᕐᒧᑦ ᓵᑎ ᐃᐊᒃᕗ (ᐳᓘᓅᔅ–ᑲᓇᓐᓇᒥ ᑐᑦᑐᖅᑭᑦ) ᑐᑦᑐᐃᑦ"*
- ᓇᓗᓇᐃᔭᖅᓯᒪᔪᑦ ᕗᐃᑭᔩ ᓄᓇᒥᐅᑕᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔨᖅᑭᑦ 2019 ᓵᑎ ᐃᐊᒃᕗ ᐱᔾᔪᑎᖅᑭᑦ ᐃᓱᒪᓕᐅᕐᓂᕐᒧᑦ ᐅᓂᒃᑳᑦ
- ᑭᐅᔪᑏᑦ ᓄᓇᕗᑦ ᒐᕙᒪᖓᑦ ᐊᒻᒪ ᑎᓖᓱ ᒐᕙᒪᖓᑦ ᕗᐃᑭᔩ ᓄᓇᒥᐅᑕᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔨᖅᑭᑦ 2019 ᓵᑎ ᐃᐊᒃᕗ ᐱᔾᔪᑎᖅᑭᑦ ᐃᓱᒪᓕᐅᕐᓂᕐᒧᑦ ᐅᓂᒃᑳᑦ
- ᐊᑐᓕᖅᑎᑕᐅᓂᖓ ᖃᐅᔨᒪᔭᐅᓂᖅᑭᓐᓄᑦ ᑎᑎᕋᕝᕕᒃ ᕗᐃᑭᔩ ᓄᓇᒥᐅᑕᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔨᖅᑭᑦ 2019 ᓵᑎ ᐃᐊᒃᕗ ᐱᔪᒪᓂᖅᑭᓐᓄᑦ ᐊᒻᒪ ᐊᑐᓕᖁᔭᐅᔪᑦ

<u>ᐊᑯᓂᐅᔪᒧᑦ ᐊᐅᓚᑦᑎᓂᕐᒧᑦ ᐸᕐᓇᐃᓂᖅ</u>

ᐃᓚᒋᐊᕐᓗᒍ, ᑲᑎᒪᔩᑦ ᐃᓚᐅᖃᑕᐅᓯᒪᔪᑦ ᐊᑯᓂᐅᔫᒧᑦ ᐊᐅᓚᑦᑎᓂᕐᒧᑦ ᐸᕐᓇᐃᓂᕐᒧᑦ ᐱᕙᓪᓕᐊᓂᖅᑭᓐᓄᑦ ᐳᓘᓅᔅ ᑐᑦᑐᖅᑭᓐᓄᑦ ᐅᖃᐅᓯᕆᐊᖅᑎᑦ ᑲᑎᒪᔨᕋᓛᑦ ᐱᓕᕆᖃᑎᒌᓐᓂᕐᒧᑦ ᐆᒪᔪᓂᑦ ᐊᐅᓚᑦᑎᓂᕐᒧᑦ (ACCWM). ᐅᖃᐅᓯᕆᐊᖅᑎᑦ ᑲᑎᒪᔨᕋᓛᑦ ᐱᓕᕆᖃᑎᒌᓐᓂᕐᒧᑦ ᐆᒪᔪᓂᑦ ᐊᐅᓚᑦᑎᓂᕐᒧᑦ (ACCWM) ᓴᖅᑭᖅᑎᑕᐅᓚᐅᖅᓯᒪᔪᑦ ᑐᓂᓯᑦᑕᐅᑎᓗᑎ ᑐᑭᓯᒋᐊᕈᑎᓂᑦ, ᐃᑲᔪᕐᓗᑎ ᓴᖅᑭᑎᑦᑎᓗᑎ ᐱᓕᕆᖃᑎᒌᓐᓂᕐᒥᑦ ᐊᒻᒪ ᐊᖏᖃᑎᒌᓐᓂᕐᒥᑦ, ᐊᒻᒪ ᐊᑐᓕᖁᔭᓕᐅᕐᓗᑎ ᐆᒪᔪᓂᑦ ᐊᒻᒪ ᐆᒪᔪᐃᑦ ᓇᔪᖅᑕᖅᑕᖅᑭᑦ ᐃᓱᒫᓘᑕᐅᔪᓂᑦ ᐃᑳᖅᑲᑦᑕᖅᑐᓂ ᓄᓇᑖᕈᑎᓄᑦ ᐊᒻᒪ ᐊᖏᕈᑎᓄᑦ ᑭᓪᓕᖏᓐᓄᑦ. ᑲᑎᒪᔨᕋᓛᓃᑦ ᓴᐆᒪᔪᓂᑦ ᐊᐅᓚᑦᑎᓂᕐᒧᑦ ᑲᑎᒪᔩᑦ

…/ᒪᐱᒐᖅ 3

ᓄᓇᕐᔪᐊᒥᑦ ᐊᒻᒪ ᓄᓇᕗᒻᒥ: ᐆᒪᔪᓂᑦ ᐊᐅᓚᑦᑎᓂᕐᒧᑦ ᐅᕐᑲᐅᔨᕆᐊᖅᑏᑦ ᑲᑎᒪᔨᖏᑦ (NWT), ᒍᐃᕚᑦ ᓴᓐ ᓄᓇᒥᐅᑕᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔨᖏᑦ, ᓵᑐ ᓄᓇᒥᐅᑕᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔨᖏᑦ, ᕿᑎᕐᒥᐅᑦ ᐆᒪᔪᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔨᖏᑦ, ᑐᒃᑐ ᓄᕐᖁᐃᑦ ᑲᓇᑕᒥ ᒥᕐᖑᐃᓯᕐᕕᒃ ᐊᐅᓚᑦᑎᓂᕐᒧᑦ ᑲᑎᒪᔨᖏᑦ, ᐊᒻᒪ ᕗᐃᑭᓐ ᓄᓇᒥᐅᑕᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔨᖏᑦ.

ᐅᕐᑲᐅᔨᕆᐊᖅᑎᑦ ᑲᑎᒪᔨᕐᑫᓛᑦ ᐱᓕᕆᕐᑲᑎᒌᓐᓂᖏᑦ ᐆᒪᔪᓂᑦ ᐊᐅᓚᑦᑎᓂᕐᒧᑦ (ACCWM) ᓴᖅᑭᑎᑦᑎᓚᐅᖅᑐᑦ, ᑲᑎᒪᕐᑲᑎᕐᑲᖅᑐᑎᑦ ᐊᒥᓲᓂᖅᓴᓂᑦ ᓄᓇᓕᓐᓂᑦ ᑐᑦᑐᕐᑲᑦᑕᖅᑐᓂᑦ ᑖᒃᑯᓂᖓ ᐱᖓᓱᔪᓂᑦ ᑐᑦᑐᓂᑦ, ᐅᓇ “*ᑲᒪᒋᔭᕐᑲᑦᑎᐊᕐᓂᖅ ᑐᑦᑐᓂᑦ: ᑲᐃᑉ ᕿᖕᒐᐅᕐ, ᐳᓘᓃᔅ-ᐱᖕᒐᓇ, ᐊᒻᒪ ᐳᓘᓃᔅ-ᑲᓇᓐᓇᖅ ᑐᑦᑐᖏᑦ ᐊᐅᓚᑦᑎᓂᕐᒧᑦ ᓴᐸᕐᓇᐅᑦ*” ᐱᓕᕆᐊᕐᑲᕐᑐᓂ ᑐᑦᑐᓂ ᐊᐅᓚᑦᑎᓂᕐᒧᑦ ᐊᒻᒪ ᐱᓯᒪᑦᑎᔨᐅᓂᕐᒧᑦ ᐊᑯᓂᐅᔪᒧᑦ. ᐊᐅᓚᑦᑎᓂᕐᒧᑦ ᑐᕌᒐᓇᔭᖕᒋᖕᒋᑦ ᐱᓯᒪᔪᒥᑦ ᑐᑦᑐᐃᑦ ᐊᔾᔨᒌᖕᒋᓐᓂᓇᓚᔪᑦᑕᖕᒋᓐᓂ, ᐱᐅᖅᓱᐊᓂᕐᒧᑦ ᐊᒻᒪ ᐊᐅᓚᓗᒋᑦ ᑐᑦᑐᐃᑦ ᓇᔪᕐᑲᑦᑕᖅᑕᖕᒋᑦ, ᐊᒻᒪ ᑐᑦᑐᓚᔪᐊᕐᓂᐅᔪᖅ ᐃᑉᐱᒍᓱᑦᑎᐊᕐᓂᕐᑲᕐᓗᓂ ᐊᒻᒪ ᓄᖑᓴᐃᖏᓪᓗᑎ. ᑐᓂᔭᐅᔪᑦ ᐅᕗᖓ ᑎᓕᓯ ᒐᕙᒪᖓᑦ, ᓄᓇᕐᔪᐊᖅ ᒐᕙᒪᒃᑯᖏᓐᓂᑦ ᐊᒻᒪ ᓄᓇᕗᑦ ᒐᕙᒪᒃᑯᑦ ᓅᕙᐱᓇ 2014, ᐊᐅᓚᑦᑎᓂᕐᒧᑦ ᐸᕐᓇᐅᑦ ᑎᑎᕋᖅᓯᒪᔪᑦ ᐊᑐᖅᑕᐅᔪᑦ ᓴᖅᑭᑎᑦᑎᓗᑎ ᓇᓗᓇᐃᖅᓯᒪᔪᓂᑦ ᐊᐅᓚᑦᑎᓂᕐᒧᑦ ᓴᓇᕐᕈᑎᓂᑦ, ᑐᑦᑐᓄᑦ ᑐᕌᖓᔪᑦ ᕐᑲᓄᐃᓕᓯᒥᐊᓂᕐᒧᑦ ᐸᕐᓇᐅᑏᑦ. ᐅᕐᑲᐅᔨᕆᐊᖅᑎᑦ ᑲᑎᒪᔨᕐᑫᓛᑦ ᐱᓕᕆᕐᑲᑎᒌᓐᓂᖏᑦ ᐆᒪᔪᓂᑦ ᐊᐅᓚᑦᑎᓂᕐᒧᑦ ACCWM ᕐᑲᑎᕐᑲᑦᑕᖅᑐᑦ ᐊᕐᕌᒍᑕᒫᑦ ᐅᕐᑲᐅᓯᕐᑲᖅᑐᑎᑦ ᐊᒻᒪ ᓇᓗᓇᐃᖅᓯᓪᓗᑎ ᑐᑦᑐᐃᑦ ᕐᑲᓄᐃᓕᖕᒐᓂᖕᒋᓐᓄᑦ ᐊᐅᓚᑦᑎᓂᕐᒧᑦ ᕐᑲᓄᐃᓕᓯᒥᐊᕈᑏᑦ ᓴᓇᓯᒪᓂᖕᒐᓂ ᐊᐅᓚᑦᑎᓂᕐᒧᑦ ᐸᕐᓇᐅᑦ. ᐅᓇᐅᑎᓐᓄᒍ 2020 ᑐᑦᑐᓄᑦ ᓇᓗᓇᐃᖅᓯᒪᔪᑦ ᕐᑲᓄᐃᓕᓯᒥᐊᓂᕐᒧᑦ ᐸᕐᓇᐅᑏᑦ ᒫᓐᓇᐅᔪᒥᑦ ᑭᖑᓪᓕᖅᐸᒥ ᐋᖅᑭᑦᑕᐅᕙᓪᓕᐊᔪᑦ ᐅᑯᓄᖓ ᐅᕐᑲᐅᔨᕆᐊᖅᑎᑦ ᑲᑎᒪᔨᕐᑫᓛᑦ ᐱᓕᕆᕐᑲᑎᒌᓐᓂᖏᑦ ᐆᒪᔪᓂᑦ ᐊᐅᓚᑦᑎᓂᕐᒧᑦ, ᑐᓂᔭᐅᓂᐊᖅᑐᑦ ᒐᕙᒪᓄᑦ ᕚᕗᐊᓇ 2020.

ᓄᖅᑲᕐᓂᖓ

ᑕᐃᒪᐃᖕᒋᓐᓇᖅᑐᑎᑦ ᓴᑎ ᐃᐊᒃᕗ ᑐᑦᑐᖕᒋᑦ ᕐᑲᑦᑏᓐᓇᕈᖅᐸᓪᓕᐊᖕᒋᓐᓇᖅᑐᑎᑦ 2009–ᒥᓂᑦ, ᑲᑎᒪᔩᑦ ᐅᐸᕈᓯᑦᑐᑦ ᐃᓄᓕᒫᑦ ᑐᑦᑐᕐᑲᑦᑕᖅᑐᑦ ᑐᑦᑐᖕᒋᓐᓂ ᐃᑲᔪᓇᐊᕐᑲᖅᑐᑎᑦ ᑐᑦᑐᐃᑦ ᐅᑎᖅᑕᐅᕙᓪᓕᐊᓂᖕᒋᓐᓄᑦ. ᐊᑐᕐᑲᑦᑕᖅᑐᑦ ᐊᒻᒪ ᐊᐅᓚᑦᑎᔩᑦ ᒫᓐᓇ ᕐᑲᓄᐃᓕᓯᒥᐊᓇᐊᕐᑲᓚᖅᑐᑦ, ᕐᑲᓄᑐᐃᓐᓇᕐᑎᐊᖅ, ᓴᐳᒻᒥᔪᒥᑦ ᑐᑦᑐᖕᒋᑦ ᓯᕗᓂᔅᓴᒥ ᐅᑎᕈᓐᓇᓂᐊᕐᒪᑕ. ᐱᕐᑲᓯᐅᑎᓪᓗᒥᑦ ᐊᑎᓪᓕᕆᐊᖅᑕᐅᓴᑖᓚᐅᖅᑐᑦ ᑐᑦᑐᑕᐅᔪᓐᓇᖅᑐᑦ ᑭᓪᓕᖕᒋᑦ ᐅᑯᓄᖓ ᓵᑎ ᐃᐊᒃᕗ ᑐᑦᑐᖕᒋᑦ ᓄᓇᕐᔪᐊᒥ, ᕗᐃᑭᓐ ᓄᓇᒥᐅᑕᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔨᖏᑦ ᑲᔪᖕᒋᖅᓴᐃᔪᑦ ᓄᓇᕗᒻᒥ ᐊᕙᑎᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔨᖕᒋᓐᓂ ᐊᔾᔨᐸᓗᖕᒋᓐᓂ ᐊᑐᕐᓂᕐᑲᕐᑐᑎ ᓴᐳᒻᒥᔭᐅᓂᖕᒋᓐᓄᑦ ᓵᓂ ᐃᐊᒃᕗ ᓄᓇᕗᒻᒥ.

ᕗᐃᑭᓐ ᓄᓇᒥᐅᑕᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔨᖏᑦ ᑲᔪᓯᑎᑦᑎᔪᒪᔪᑦ ᐱᓕᕆᕐᑲᑎᕐᑎᐊᖅᑐᒥᑦ ᐱᓕᕆᕐᑲᑎᖏᓐᓂᕐᒥᑦ ᓄᓇᕗᒻᒥ ᐊᕙᑎᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔨᖕᒋᓐᓄᑦ ᐱᔾᔪᑎᖅᑲᖅᑐᑦ ᓇᐸᖅᑐᖅᑲᖅᑐᒥ ᑐᑦᑐᓂᑦ. ᐊᐱᖅᑯᑎᓴᖅᑲᕕᑦ, ᕐᑲᐅᔨᒥᐊᕕᑎᒍᒃ ᐊᓪᓚᕝ ᐅᕙᓂ (867) 873-5740 ᐅᕝᕙᓘᓐᓃᑦ jpellissey@wrrb.ca.

ᑎᑎᕋᖅᑐᖅ,

ᔫᓴᑉ ᔫᑕᔅ
ᐃᒃᓯᕙᐅᑕᖅ

ᐊᔾᔨᖏᒃ ᐱᑎᑕᐅᔪᑦ

ᐅᕗᖓᓗ ᔭᐃᓴᓐ ᐊᕿᐊᕈᖅ, ᑐᑭᒧᐊᖅᑎᑦᑎᔨ
ᓄᓇᕗᒻᒥ ᐆᒪᔪᓕᕆᔾᔪᐊᑦ ᑲᑎᒪᔨᖏᑦ

ᒪᓕᒐᓕᐅᕐᑎᖅᔪᐊᖅ ᓴᐃᓐ ᑖᒻᓴᓐ, ᒥᓂᔅᑕ
ᐊᕙᑎᓕᕆᓂᕐᒧᑦ ᐊᒻᒪ ᓄᓇᒦᖕᒐᖅᑐᓂᑦ, ᓄᓇᕐᔪᐊᑉ ᒐᕙᒪᖓᑦ

ᐃᐅᓇᓐ ᑭᐊᓕ, ᐃᓇᖕᒋᖅᓯᓯᒪᑲᐃᓐᓇᖅᑐᖅ ᒥᓂᔅᑕᐅᑉ ᑐᖕᒐᓕᖕᒐᑕ ᐃᑲᔪᖅᑎᖕᒐᓄᑦ
ᐊᕙᑎᓕᕆᓂᕐᒧᑦ ᐊᒻᒪ ᓄᓇᒦᖕᒐᖅᑐᓂᑦ, ᓄᓇᕐᔪᐊᑉ ᒐᕙᒪᖓᑦ

ᑭᐅᓇᓐ ᑲᓛᒃ, ᐃᓇᖏᖅᓯᓯᒪᑲᐃᓐᓇᕐᑐᖅ ᑐᑭᒧᐊᖅᑎᑦᑎᔨᐅᑲᐃᓐᓇᖅᑐᖅ ᐆᒪᔪᓕᕆᓂᕐᒧᑦ
ᐊᕙᑎᓕᕆᓂᕐᒧᑦ ᐊᒻᒪ ᓄᓇᒦᙳᖅᑐᓂᑦ, ᓄᓇᑦᓯᐊᑉ ᖃᕙᒪᙳᑦ

ᐊᖏᔪᖅᑳᖅ ᔨᐊᔅ ᒪᑭᐊᓐᓯ
ᑎᑖᓱ, ᖃᕙᒪᙳᑦ

ᓘᐊᕋ ᑕᓐᑲᓐ, ᑎᑖᓱ, ᑐᑭᒧᐊᖅᑎᑦᑎᔨ
ᑎᑖᓱ, ᖃᕙᒪᙳᑦ

ᑕᒥ ᓯᑕᐃᓐᕚᓐ-ᑎᐊᔅᓵᓪᕗᑦᑦ, ᑐᑭᒧᐊᖅᑎᑦᑎᔨ
ᐱᓕᕆᕝᕙ ᐱᖅᑯᓯᓂᑦ ᐊᒻᒪ ᓄᓇᐃᑦ ᓴᐳᒻᒥᔭᐅᓂᖏᓐᓄᑦ, ᑎᑖᓱ, ᖃᕙᒪᙳᑦ

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Wek’èezhìı (ᕗᐃᑭᔫ) ᓄᓇᒥᐅᑕᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔨᖏᑦ ᐊᒻᒪ 2019 ᐳᓛᓅᔅ–ᑲᓇᓐᓇᖓᓂ ᑐᕐᑐᖏᑦ ᐱᕚᓪᓕᐊᓂᖏᑦ

ᒥᔅᑕ ᔩᓯᕝ ᔩᑕᔅ, ᐃᒃᓯᕚᐅᑕᖅ ᐊᒻᒪ ᔩᐅᑎ ᐱᓪᓕᔅᓯ, ᐊᓪᓚᕝᕕᒥ ᐃᓱᒪᑕᖅ
ᓄᓇᕗᒻᒥ ᐆᒪᔪᓕᕆᔨᕐᔪᐊᒃᑯᑦ ᑲᑎᒪᔨᖏᑦ ᐳᓛᓅᔅ–ᑲᓇᓐᓇᖓᓂ ᑐᕐᑐᖏᓐᓄᑦ ᐃᓄᓐᓂᑦ
ᑲᑎᒪᑎᕐᑎᓂᖅ, ᖁᓪᓗᖅᑑᖅ
ᒫᓯ 2-3, 2020

Wek'èezhìi Renewable Resources Board

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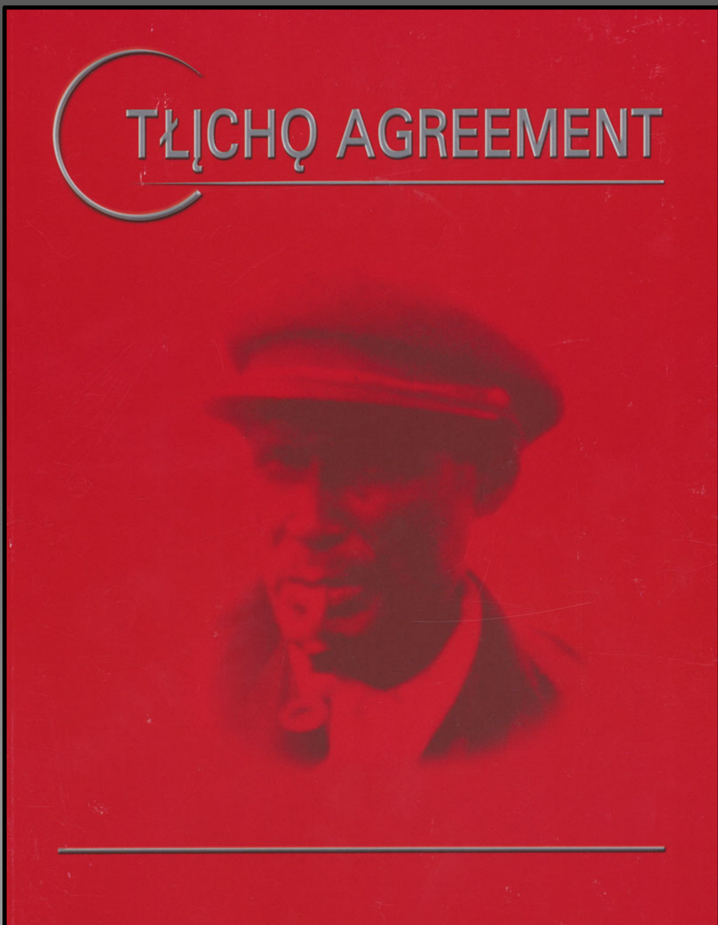
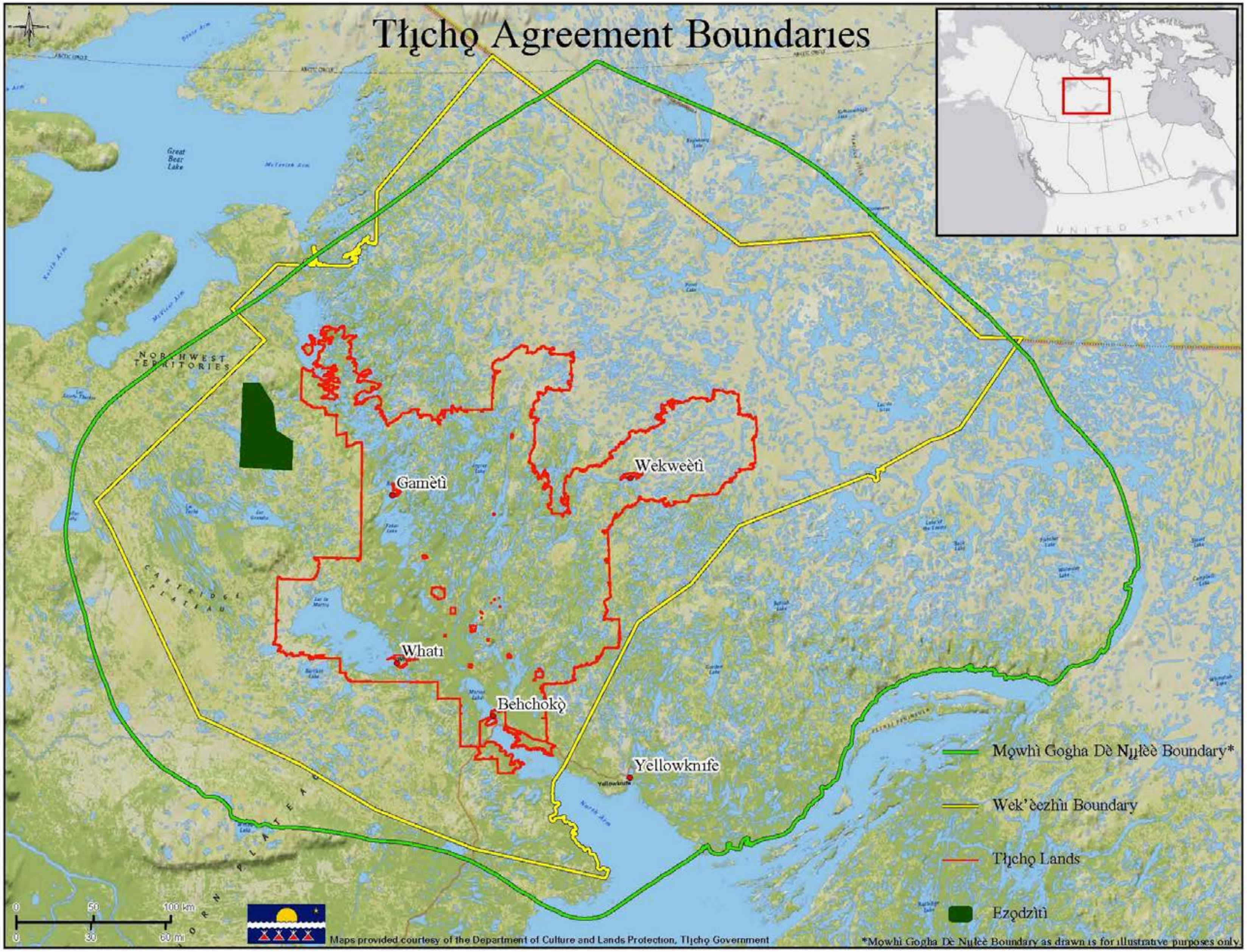
ᕗᐃᑭᔩ ᓄᓇᒥᐅᑕᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔨᖏᑦ



- ᕗᐃᑭᔩ ᓄᓇᒥᐅᑕᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔨᖏᑦ ᐊᐅᓚᑦᑎᖃᑎᒌᖃᑕᐅᔪᖅ ᑲᑎᒪᔨᐅᓪᓗᑎ ᓴᖅᑭᖅᑎᑕᐅᔪᑦ ᐅᑯᓄᖓ **Tłįchǫ** (ᑎᓘᓱ) ᐊᖏᕈᑦ

- ᑲᑎᒫᑦ ᐱᓕᕆᖃᑦᑕᖅᑐᑦ ᐃᓄᓐᓄᑦ ᐱᔭᐅᔪᒪᔪᓂᑦ; ᐃᓱᒪᒋᔭᖃᖅᑐᑦ ᐱᔭᐅᔪᒪᔪᓂᑦ’ ᐊᑐᖃᑦᑕᖅᑐᓕᒫᓂᑦ ᐃᓱᒪᓕᐅᕐᓂᐅᔪᓂᑦ



Tłı̨chǫ Agreement Boundaries
Gamètì
Wekweètì
Whatì
Behchokǫ̀
Yellowknife
Great Bear Lake
NORTHWEST TERRITORIES
CARTRIDGE PLATEAU
UNITED STATES
Mǫwhì Gogha Dè Nı̨ı̨tłèè Boundary*
Wek'èezhìı Boundary
Tłı̨chǫ Lands
Ezǫdzìtì
0 50 100 km
0 30 60 mi
Maps provided courtesy of the Department of Culture and Lands Protection, Tłı̨chǫ Government
*Mǫwhì Gogha Dè Nı̨ı̨tłèè Boundary as drawn is for illustrative purposes only.

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ᐃᖅᑲᓇᐃᔭᖅᑲᑎᒌᖕᓂᖅ ᑲᒪᒋᑦᑎᐊᖅᑐᒥᑦ ᐆᒪᔪᐃᑦ ᓇᐹᖅᑐᓘᑦ, ᐱᕈᖅᑐᐃᑦ ᐊᒻᒪ ᓴᐳᒻᒥᔭᐅᔪᑦ ᑯᐃᑭᔾᒥ ᒫᓐᓇᐅᔪᒧᑦ ᐊᒻᒪ ᓱᑯᓂᔅᓴᒧᑦ ᑭᖑᕚᑦᑎᓐᓄᑦ

ʔełexè ʔeghàlaìdè dıı tįch'aàdìı, dèk'eè ʔasìı dehshe, ʔeyıgots'ǫ dııdzęę̀ ts'ǫ ʔįdaà ghà Wek'èezhìı k'èè goghà wek'èhodı

ᐃᓱᒪᒋᔭᐅᔪᑦ

- ᐊᑦᑐᐊᓂᖃᖃᑎᒌᓐᓂᐅᔪᑦ ᐆᒪᔪᐃᑦ, ᓄᓇᐃᑦ ᐊᒻᒪ ᐃᓄᐃᑦ
- ᐱᐅᖅᓱᐊᓂᕐᒧᑦ ᐊᒻᒪ ᖃᐅᔨᒪᓇᓱᑦᑎᐊᓂᕐᒧᑦ ᐊᑐᐊᕙᐃᑦ
- ᐊᑐᕐᓂᖅ ᐱᕐᑯᖨᓂᑦ ᑐᑭᓯᒋᐊᕈᑎᓂᑦ ᐊᑐᐃᓐᓇᐅᔪᓂᑦ ᐃᓱᒪᓕᐅᕈᑎᒋᓗᒋᑦ
  - Tłı̨chǫ (ᑎᓲᓯ) ᖃᐅᔨᒪᔭᖏᑦ
  - ᖃᐅᔨᓴᖅᑏᑦ ᖃᐅᔨᒪᔭᖏᑦ
  - ᖃᐅᔨᒪᑎᑕᕐᒧᑦ ᐃᓱᒪᒋᔭᐅᔪᖅ

“ᓴᖏᔪᑦ ᒪᕿᑎᑐᑦ ᐃᓅᓐᓂᒃ”

S. ᐴᕐᒫᓐ,
ᕗᐃᑭᕖ ᓄᓇᒥᐅᑕᓕᕆᔩᒃᑯᑦ ᑲᑎᒪᔩᖏᑦ

2019 ᐳᔾᓅᒃ–ᑲᓇᓐᓇᖅᒐᓂ ᑐᕐᑐᐃᑦ ᑐᕐᑐᖏᑦ ᐱᕚᓪᓕᐊᓂᖏᑦ

- *ᑲᑐᑎᔦᐅᓪᓗᓂ ᑐᓯᑫᐅᑦ ᐊᐅᓚᕿᓂᕐᒧᑦ ᖃᓄᐃᓕᓯᒋᐊᕈᑏᑦ ᐅᑯᓄᖓ ᐳᔾᓅᒃ–ᑲᓇᓐᓇᖅᒐᓂ ʔekwǫ̀ (ᐃᐊᒃᕗ) (ᓇᐹᖅᑐᖄᖏᕐᑐᒥᑦ ᑐᕐᑐᐃᕐ) ᑐᕐᑐᖏᑦ 2019-2021*
- ᑐᓯᕌᖑᔪᑦ ᖃᓄᐃᓕᓯᒋᐊᕈᑎᐅᔪᑦ: ᐊᖑᓇᓱᓐᓂᖅ, ᑐᕐᑐᓂ ᓂᕆᖃᑦᑕᖅᑐᑦ, ᓇᔪᖃᑦᑕᖅᑕᖏᑦ ᐊᒻᒪ ᓄᓇᐃᑦ ᐊᑐᖅᑕᐅᓂᖏᑦ, ᐊᒻᒪ ᖃᐅᔨᓴᕐᓂᖅ ᐊᒻᒪ ᖃᐅᔨᓴᖃᑦᑕᕐᓂᖅ

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ᖃᐃᑭᔩ ᓄᓇᒥᐅᑕᓕᕆᔩᒃᑯᑦ ᑲᑎᒪᔩᖏᑦ ᐊᖑᓇᓱᑦᑕᐅᔪᒥᑦ ᐱᔪᒪᓂᕆᓯᒪᔭᖏᑦ

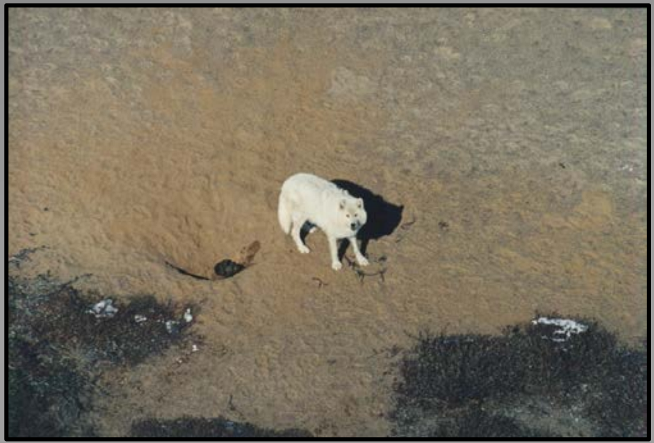
ᖃᐃᑭᔩ ᓄᓇᒥᐅᑕᓕᕆᔩᒃᑯᑦ ᑲᑎᒪᔩᖏᑦ ᓇᓗᓇᐃᖅᓯᓚᐅᖅᑐᑦ ᑲᑎᑦᑐᒋᑦ ᐆᒪᔪᖅᑕᐅᔪᓐᓇᖅᑐᑦ 193 ᐊᖑᑏᑦ ᑐᑦᑐᐃᑦ ᐊᑐᓕᖅᑎᑕᐅᔭᕆᐊᓕᒃ ᐊᑐᖃᑦᑕᖅᑐᓕᒫᓄᑦ ᖁᖕᒐᐅᑦ ᑐᑦᑐᖏᓐᓂ ᐃᓗᐊᓂ ᖃᐃᑭᔩ ᐊᖅᖀᒍᒧ 2019-2021.

ᑐᑦᑐᓂᑦ ᓂᕆᖃᑦᑕᖅᑐᑦ

- ᖃᐅᔨᓴᖅᑕᐅᓂᖏᑦ ᐱᐅᓯᑎᒋᐊᖅᓯᒪᔪᑦ ᓄᐊᑦ ᓯᓚᐃᑉ ᐊᒪᕈᖏᑦ ᐆᒪᔪᖅᑕᐅᓂᖏᓐᓄᑦ ᐱᓕᕆᐊᖅ

- ᐊᑐᓕᖅᑎᑕᐅᓂᖓ ᖃᐅᔨᓴᖃᑦᑕᓂᖅᒧᑦ ᐊᒪᕉᔭᖅᓂᑦ ᐊᒥᓲᓂᖏᓐᓂᑦ

- ᓴᐳᒻᒥᑦᑎᓂᖅ ᓄᖅᑲᓕᐅᖅᕕᖏᓐᓂ ᑐᑦᑐᓂᑦ ᓂᕆᖃᑦᑕᖅᑐᓂᑦ



ᓇᔪᖅᑲᑦᑕᖅᑕᖏᑦ ᐊᒻᒪ ᓄᓇᐃᑦ ᐊᑐᖅᑕᐅᓂᖏᑦ

- ᓇᓄᓇᐃᖅᑕᐅᓂᖏᑦ ᖁᕝᕕᓯᑦᑐᒥ ᓯᕗᕐᓕᐅᔾᔭᐅᔭᕆᐊᓖᑦ ᓇᔪᖅᑲᑦᑕᖅᑕᖏᑦ ᐊᒻᒪ ᐊᑐᓕᖅᑎᑕᐅᓂᖓ ᒪᓕᒐᖅᑎᒍᑦ ᓴᐳᒻᒥᑦᑎᒋᐊᕈᑏᑦ

- ᐊᑐᓕᖅᑎᑕᐅᓂᖓ ᐃᖏᕋᒧᓂᑦ ᑐᑦᑐᓂᑦ ᐱᐅᖅᓱᐊᕈᑎᐅᔪᑦ ᒫᓐᓇᐅᔪᒥᑦ

- ᐊᖏᕐᓕᒋᐊᖅᑕᐅᓂᖓ Ekwǫ̀ Nàxoède K’è (ᐃᐊᒃᕗ ᓇᐋᔾᐅᐃᑎ ᑲ’ᐄ [ᑲᓖᓘᒃ ᓄᓇᒥ]) ᐱᓕᕆᐊᖅ ᐃᐊᒃᕗ ᓇᐋᔾᐅᐃᑎ ᑲ’ᐄ ᑐᑦᑐᐃᑦ ᑎᑭᐸᑦᑕᖏᓐᓄᑦ

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ᖃᐅᔨᓴᕐᓂᖅ ᐊᒻᒪ ᖃᐅᔨᓴᖃᑦᑕᕐᓂᖅ

- ᐱᕙᓪᓕᐊᑎᑕᐅᓂᖓ ᑐᑦᑐᓄᑦ–ᓇᓄᓇᐃᖅᓯᒪᔪᓄᑦ ᐊᑐᓕᖅᑕᐅᔪᓐᓇᖅᑐᖅ ᐊᐅᓚᕆᓂᕐᒧᑦ ᓴᓇᓯᒪᓂᖓ ᐊᒥᓱᓂᑦ ᑲᑎᖕᖓᓂᖃᖅᑐᓂ ᓇᓄᓇᐃᕐᓯᒪᔪᒧᑦ ᐊᐅᓚᕆᓂᕐᒧᑦ ᖃᓄᐃᓕᓯᒋᐊᕈᑏᑦ

- ᐋᖅᑭᒋᐊᖅᑕᐅᔪᑦ ᑐᑦᑐᐃᑦ ᖃᐅᔨᓴᖅᑕᐅᖃᑦᑕᕐᓂᖏᓐᓄᑦ ᐱᓕᕆᐊᖅ

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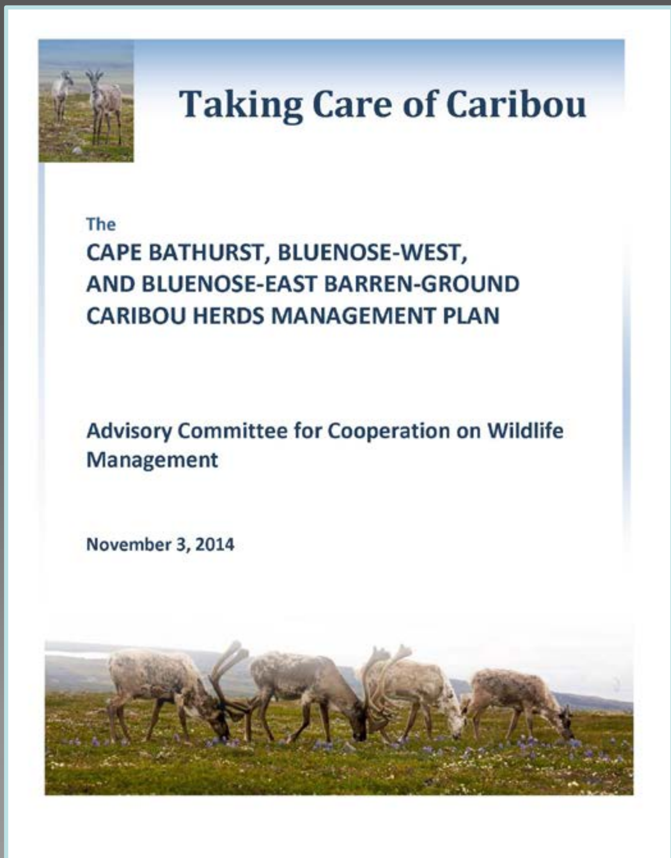
ᐊᑯᓂᐅᔪᒧᑦ ᐊᐅᓚᕐᑎᓂᕐᒧᑦ ᐸᕐᓇᐅᑦ


Taking Care of Caribou

The
CAPE BATHURST, BLUENOSE-WEST,
AND BLUENOSE-EAST BARREN-GROUND
CARIBOU HERDS MANAGEMENT PLAN

Advisory Committee for Cooperation on Wildlife Management

November 3, 2014

ᐅᕐᑲᐅᓯᒥᐊᖅᑎᑦ
ᑲᑎᒪᓯᕋᓛᑦ
ᐱᓕᓇᖅᑲᑎᒦᓐᓂᕐᒧᑦ
ᐆᒪᔪᓂᑦ ᐊᐅᓚᕐᑎᓂᕐᒧᑦ

ᐊᑐᖃᑦᑕᖅᑐᑦ ᐊᒻᒪ ᐊᐅᓚᑦᑎᔫᑦ ᒫᓐᓇ ᖃᓄᐃᓕᓯᒋᐊᓇᐊᖃᓕᖅᑐᑦ, ᖃᓄᑐᐃᓐᓇᑦᑎᐊᖅ, ᓴᐳᒻᒥᔪᒋᑦ ᑐᑦᑐᕐᒋᑦ ᓱᕗᓂᔅᓴᒥ ᐅᑎᕈᓐᓇᓂᐊᖅᒪᑕ

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ᖁᓯᓐᓇᒦᒃ

ᕗᐃᑭᖐ ᓄᓇᒥᐅᑕᓕᕆᔩᒃᑯᑦ ᑲᑎᒪᔩᖏᑦ ᑐᑭᓯᒋᐊᕐᕕᐅᓂᖏᓐᓄᑦ ᑐᑭᓯᒋᐊᕈᑎᖏᑦ:

102A, 4504-49th Ave, Yellowknife

jpellissey@wrrb.ca, 867-873-5740

Tłı̨chǫ Ndek'àowo
Tłı̨chǫ Government

Government of Northwest Territories / Gouvernement des Territoires du Nord-Ouest

ᐊᑲᑦᓯ 21, 2019

Mr. Joseph Judas, Chair (ᒥᔅᑕ ᔩᓯᕙ ᔩᑕᔅ, ᐃᒃᓯᕙᐅᑕᖅ)
Wek'eezhii Renewable Resources Board
(ᕗᐃᑭᔩ ᓄᓇᒥᐅᑕᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔨᖏᑦ)
4504 49TH AVENUE
YELLOWKNIFE NT   X1A 1A7

ᑐᕌᖅᑐᑦ ᒥᔅᑕ ᔩᓯᕙ ᔩᑕᔅᒧᑦ:

ᕗᐃᑭᔩ ᓄᓇᒥᐅᑕᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔨᖏᑦ (WRRB) ᐱᔾᔪᑎᒋᓯᒪᔭᖏᑦ ᐃᓱᒪᓕᐅᕈᑎᖃᕐᓂᕐᒥᓂ ᑭᖑᓪᓕᖅᐹᒥᒃ ᐅᓂᒃᑳᓕᐊᕐᑐᓯᒪᔪᓄᑦ – Sahtì Ekwǫ (ᓵᑎ ᐃᐊᒃᕗ [ᐳᓘᓅᔅ–ᑲᓇᓐᓇᒥ ᑐᑦᑐᖏᑕ]) ᐊᒥᕐᕋᕐᑯᑎᖏᓐᓄᑦ

Tłı̨chǫ (ᑎᑖᓱ) ᒐᕙᒪᖓᑦ (TG) ᐊᒻᒪᓗ ᐊᕙᑎᓕᕆᔨᒃᑯᑦ ᓄᓇᒥᐅᑕᓕᕆᔨᒃᑯᓪᓗ ᐱᕈᒃᑳᓂᕈᓐᓇᖅᑐᓕᕆᔨᑦ (ENR) ᓄᓇᖃᕐᐊᑉ ᒐᕙᒪᖓᓂᑦ (GNWT) ᐱᓯᒪᓕᓚᐅᕐᒪᑕ Wek'èezhìi (ᕗᐃᑭᔩ) ᓄᓇᒥᐅᑕᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔨᖏᑦ (WRRB) *"ᐅᓂᒃᑳᓕᐊᕐᑐᓯᒪᔪᑦ ᑭᒃᑯᑐᐃᓐᓇᐃᑦ ᑐᓵᓂᕐᑲᖅᑎᕐᓯᑎᓪᓗᒋᑦ ᕗᐃᑭᔩ ᓄᓇᒥᐅᑕᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔨᖏᑦ* (WRRB) *ᐄᐳᓗ 9-11, 2019 ᐱᐊᓲᑰ, ᓄᓇᕗᒻᒥ ᐊᒻᒪᓗ ᐃᓱᒪᓕᐅᕈᑎᖃᕐᓂᕐᒥᓂ ᐱᔾᔪᑎᒋᔭᐅᔪᓄᑦ ᑐᕌᖓᑎᓪᓗᒋᑦ ᑲᑐᔾᔨᓂᖅᑲᖅᓯᑎᒃ ᐃᓱᒪᓕᐅᕈᑎᐅᓯᒪᔪᓄᑦ ᐊᐅᓚᕐᓯᓂᖃᕐᓂᕐᓂ ᓵᑎ ᐃᐊᒃᕗ (ᐳᓘᓅᔅ–ᑲᓇᓐᓇᒥ ᑐᑦᑐᖏᑦ) ᐊᒥᕐᕋᕐᑯᑎᖏᓐᓄᑦ"*. ᑖᒃᑯᐊ ᑎᑎᕋᖅᑕᐅᓯᒪᔪᑦ ᐊᐅᓪᓚᖅᑎᑕᐅᓯᒪᓕᓚᐅᕐᒪᑕ ᐱᓕᕆᐊᕐᑲᖅᑎᐅᔪᓄᑦ ᔫᓂ 16, 2019-ᒥ.

ᐊᒃᑎ ᕿᓂᕐᓗᒋᑦ ᑖᒃᑯᓄᖓ ᐃᓕᔭᐅᕐᑲᑕᐅᓯᒪᔪᑦ ᑲᑐᔾᔨᓂᖅᑲᖅᓯᑕ ᑭᐅᔾᔪᑎᒋᔭᕐᑎᓐᓄᑦ ᕗᐃᑭᔩ ᓄᓇᒥᐅᑕᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔨᖏᑦ (WRRB) ᐃᓱᒪᓕᐅᕈᑎᒥᓐᓄᑦ ᐱᔾᔪᑎᒋᔭᐅᔪᓄᑦ ᐊᒻᒪᓗ ᐃᓱᒪᓕᐅᕈᑎᖏᑦ ᐊᑐᓕᖅᑎᑕᐅᕐᑯᓪᓗᒋᑦ ᐃᓕᔭᐅᕐᑲᑕᐅᓯᒪᔪᑦ ᑭᖑᓪᓕᖅᐹᑦ ᐅᓂᒃᑳᓕᐊᕐᑐᓯᒪᔪᓂ. ᓂᕆᐅᓐᓂᕐᑲᖅᐳᒍᑦ ᐱᓕᕆᕐᑲᑎᕐᑲᕆᐊᕐᑎᓐᓂᒃ ᕗᐃᑭᔩ ᓄᓇᒥᐅᑕᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔨᖏᑦ (WRRB) ᐊᐅᓚᕐᓯᓂᕐᑲᕐᓂᕐᓂ ᓵᑎ ᐃᐊᒃᕗ ᐳᓘᓅᔅ–ᑲᓇᓐᓇᒥ ᑐᑦᑐᖏᑕ ᐊᒥᕐᕋᕐᑯᑎᖏᓐᓂᒃ.

ᑎᑎᕋᖅᑐᖅ,

ᐃᓱᒪᑖᒻᒪᕆᒃ ᔪᐊᔾ ᒪᑭᓐᔨ
ᑎᑖᓱ ᒐᕙᒪᖓᓂᑦ (TG)
ᐱᐊᓲᑰ, ᓄᓇᕗᑦ

ᕌᐳᑦ ᓯ. ᒪᒃᓚᐅᑦ, ᒥᓂᔅᑕᕆᔭᐅᔪᖅ
ᐊᕙᑎᓕᕆᔨᒃᑯᑦ ᓄᓇᒥᐅᑕᓕᕆᔨᒃᑯᓪᓗ
ᐱᕈᒃᑳᓂᕈᓐᓇᖅᑐᓕᕆᔨᖏᑦ
ᔭᓗᓇᐃ, ᓄᓇᕗᑦ

ᐊᔾᔨᖏᓐ ᐱᑎᑕᐅᔪᑦ

ᐊᔾᔨᖏᓐ. ᒥᔅᑕ ᑭᐊᓇ ᐆᓂᐊᕐ, ᐃᓱᒪᑕᐅᓪᓗᓂ ᑎᑎᕋᖅᑎ
ᐃᓱᒪᑕᒻᒪᕇᑦ ᐊᒻᒪᓗ ᓇᖃᖅᑳᕐᑐᓕᕆᔾᑯᑦ

ᒥᔅᑕ ᒪᐃᒃ ᐊᐅᒫᓐᑦ, ᒥᓂᔅᑕᓄᑦ ᑎᑎᕋᖅᑎ/ᒥᓂᔅᑕᐅᑉ ᑐᖓᓕᖓ
ᐃᓱᒪᑕᒻᒪᕇᑦ ᐊᒻᒪᓗ ᓄᓇᖃᖅᑳᕐᑐᓕᕆᔾᑯᑦ

ᒥᔅ ᓴᐃᓘᓐ ᒍᑦᒍᐊᕐᑦ, ᑎᑎᕋᖅᑎᐅᔪᒨᑦ ᑐᖓᓕᕆᔭᐅᔪᖅ ᓄᓇᖃᖅᑳᕐᑐᓕᕆᔾᑯᑦ ᐊᒻᒪᓗ ᒐᕙᒪᓕᕆᔾᑯᑦ ᐃᓱᒪᑕᒻᒪᕇᑦ ᐊᒻᒪᓗ ᓄᓇᖃᖅᑳᕐᑐᓕᕆᔾᑯᑦ

ᑑᑦᑖᖅ. ᔫᐅ ᑐᕋᐃᒑᓐ, ᒥᓂᔅᑕᐅᑉ ᑐᖓᓕᖓ
ᐊᕙᑎᓕᕆᔾᑯᑦ ᓄᓇᒥᐅᑕᓕᕆᔾᑯᓪᓗ ᐱᕈᒃᑲᓐᓂᕈᓐᓇᖅᑐᓕᔾᖏᑦ

ᒥᔅ ᓅᑕ ᒨᓗᕐ, ᒥᓂᔅᑕᐅᑉ ᑐᖓᓕᖓᑕ ᐃᑲᔪᖅᑎᖓ, ᐊᐅᓚᑦᓯᓂᕐᓂ
ᐊᕙᑎᓕᕆᔾᑯᑦ ᓄᓇᒥᐅᑕᓕᕆᔾᑯᓪᓗ ᐱᕈᒃᑲᓐᓂᕈᓐᓇᖅᑐᓕᔾᖏᑦ

ᑑᑦᑖᖅ. ᐳᓇᑦ ᐃᐊᓪᑭᓐ, ᐃᓱᒪᑕᖅ, ᐆᒪᔪᓕᕆᔾᑯᓐᓂ
ᐊᕙᑎᓕᕆᔾᑯᑦ ᓄᓇᒥᐅᑕᓕᕆᔾᑯᓪᓗ ᐱᕈᒃᑲᓐᓂᕈᓐᓇᖅᑐᓕᔾᖏᑦ

ᒥᔅᑕ ᐳᐲᓄ ᑯᕌᑦ, ᐃᓱᒪᑕᖅ, ᓄᐊᔅ ᓴᓚᐄ ᐊᕕᒃᑐᖅᓯᒪᓂᖓᓂ
ᐊᕙᑎᓕᕆᔾᑯᑦ ᓄᓇᒥᐅᑕᓕᕆᔾᑯᓪᓗ ᐱᕈᒃᑲᓐᓂᕈᓐᓇᖅᑐᓕᔾᖏᑦ

ᐃᓱᒪᑕᒻᒪᕆᒃ ᑭᓕᒍᖅ ᑖᓂᐅᓪᔅ
ᓄᓇᓕᐅᔪᒥ ᒐᕙᒪᐅᔪᑦ ᐱᐊᐦᑰ
Tłįchǫ (ᑎᓖᓱ) ᒐᕙᒪᖓᑦ

ᐃᓱᒪᑕᒻᒪᕆᒃ ᑕᐃᕕᑦ ᕕᐊᑕᕕᓐ
ᓄᓇᓕᐅᔪᒥ ᒐᕙᒪᐅᔪᑦ ᒐᒥᐊᐱ
ᑎᓖᓱ ᒐᕙᒪᖓᑦ

ᐃᓱᒪᑕᒻᒪᕆᒃ ᓵᕐᓚ ᒍᑦᐹᓪ
ᓄᓇᓕᐅᔪᒥ ᒍᐃᑭᔩ ᒐᕙᒪᖓᑦ
ᑎᓖᓱ ᒐᕙᒪᖓᑦ

ᐃᓱᒪᑕᒻᒪᕆᒃ ᐃᐊᓪᕗᐋᓐᔅ ᓂᑦᓯᔅ
ᓄᓇᓕᐅᔪᒥ ᒍᐊᐱ ᒐᕙᒪᖓᑦ
ᑎᓖᓱ ᒐᕙᒪᖓᑦ

ᒥᔅ ᑐᐊᕋ ᑕᓐᑲᓐ, ᑎᓖᓱ ᐃᓱᒪᑕᐅᓪᓗᓂ ᐃᖅᑲᓇᐃᔭᖅᑎ
ᑎᓖᓱ ᒐᕙᒪᖓᑦ

ᒥᔅ ᑖᒥ ᓯᑕᐃᓐᐋᓐᓪ-ᑎᐊᔅᓵᒡᐳᕐᑦ, ᑐᑭᒧᐊᖅᑎᑦᑎᔾ, ᐱᐅᓯᑐᕐᑲᓕᕇᑦ ᐊᒻᒪᓗ ᓄᓇᐃᑦ ᒥᐊᓂᕆᔭᐅᓂᖏᓐᓄᑦ
ᑎᑖᓱ ᒐᕙᒪᖓᑦ

ᒥᔅᑕ ᒪᐃᑯᓪ ᐆᕐᓕ, ᐊᐅᓚᑦᓯᔾ, ᐱᐅᓯᑐᕐᑲᓕᕇᑦ ᐊᒻᒪᓗ ᓄᓇᐃᑦ ᒥᐊᓂᕆᔭᐅᓂᖏᓐᓄᑦ
ᑎᑖᓱ ᒐᕙᒪᖓᑦ

ᐃᓱᒪᑕᒻᒪᕆᒃ ᒨᐊᓈᔅ ᓵᓯᔅ
ᐱᐸᑦᔸᐊ ᑮ ᐃᖅᑭᓖᑦ

ᐃᓱᒪᑕᒻᒪᕆᒃ ᐃᐊᑦᕗᑦ ᔅᐃᖕᕆᔅ ᐊᒻᒪᓗ ᐃᖅᑭᓖᑦ ᑲᑎᒪᔨᖏᑦ
ᔭᓗᓇᐃᒥ ᑎᓐᓃᑦ ᐃᖅᑭᓕᖏᑦ (ᑎᐊᑕ)

ᐃᓱᒪᑕᒻᒪᕆᒃ ᐉᕐᓂᔅᑦ ᐱᐊᓯᓇ ᐊᒻᒪᓗ ᐃᖅᑭᓖᑦ ᑲᑎᒪᔨᖏᑦ
ᔭᓗᓇᐃᒥ ᑎᓐᓃᑦ ᐃᖅᑭᓕᖏᑦ (ᐃᓐ'ᑎᓪᓗ)

ᐃᓱᒪᑕᒻᒪᕆᒃ ᑎᐊᕈᓪ ᒫᕐᔫ ᐊᒻᒪᓗ ᐃᖅᑭᓖᑦ ᑲᑎᒪᔨᖏᑦ
ᓗᑦᓯᐊᓪ'ᐄ ᑎᓐᓂ ᐃᖅᑭᓕᖏᑦ

ᒥᔅ ᐃᓱᓪ ᓕᔅᒃ, ADFN-ᑯᑦ ᐊᖏᕐᑲᑎᑮᒐᓱᐊᕈᑎᖏᓐᓄᑦ ᐋᖅᑭᒃᓱᐃᔾ
ᐊᑲᐃᑦᓲ ᑎᓐᓂ ᐃᖅᑭᓕᖏᑦ

ᐃᓱᒪᑕᒻᒪᕆᒃ ᒑᑎᔅ ᓄᐊᕐᑮᔾᓐ
ᑎᐊᓲ ᐃᖅᑭᓕᖏᑦ

ᐊᖏᔪᖅᑳᖅ ᒍᐃᓕᐊᒻ (ᐱᐅᓪ) ᐃᖕ
ᓄᐊᔅ ᓯᓚᐃᑉ ᐊᓪᓚᐃᖕᒐᔪᑦ ᑲᑐᔾᔾᕐᑲᑎᒌᖏᑦ

ᐊᖏᔪᖅᑳᖅ ᕆᐊᓇ ᐸᐃᓕ
ᓄᓇᑦᓯᐊᕐᒥ ᐊᓪᓚᐃᖕᒐᔪᑦ ᐃᖅᑭᓕᖏᑦ

ᐊᖏᔪᖅᑳᖅ ᑭᓕᒻ ᐹᓪ
ᒪᐅᓐᑎᓐ ᓚᐃᐊᓐᒥ ᐊᓪᓚᐃᖕᒐᔪᑦ

ᒥᔅ ᔫᐅᑎ ᐱᓪᓕᔅᓯ, ᐊᓪᓚᕖᖕᒥ ᐃᓱᒪᑕᖅ
ᕗᐃᑭᔀ ᓄᓇᒥᐅᑕᓕᕇᒃᑯᑦ ᑲᑎᒪᔨᖏᑦ

ᒥᔅᑕ ᒪᐃᑯᓪ ᓇᐃᔾᐊᓪ, ᐃᒃᓯᕙᐅᑕᖅ
ᔮᑑ ᓄᓇᒥᐅᑕᓕᕇᑯᑦ ᑲᑎᒪᔨᖏᑦ

ᒥᔅ ᑎᑉᐳᕋ ᓯᒥᓐᔅ, ᐊᓪᓚᕖᖕᒥ ᐃᓱᒪᑕᖅ
ᔮᑑ ᓄᓇᒥᐅᑕᓕᕇᑯᑦ ᑲᑎᒪᔨᖏᑦ

ᒥᔅᑕ ᔫᓯᕝ ᑳᖅᓄᒌᖕᑭ, ᐃᒃᓯᕙᐅᑕᖅ
ᑯᐃᑦᓯᓐ ᓄᓇᒥᐅᑕᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔨᖏᑦ

ᒥᔅ ᐊᐃᒥ ᐋᓘᔅ, ᐊᓪᓚᕕᖕᒥ ᐃᓱᒪᑕᖅ
ᑯᐃᑦᓯᓐ ᓄᓇᒥᐅᑕᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔨᖏᑦ

ᒥᔅᑕ ᓕᐊᓇ ᑳᐱᓐᑐᖅ, ᐃᒃᓯᕙᐅᑕᖅ
ᐆᒪᔪᓕᕆᓂᖅᓂ ᐊᐅᓚᑦᓯᔨᑦ ᐅᖃᐅᔾᔪᐃᕆᐊᖃᑎᐅᓪᓗᑎᒃ ᑲᑎᒪᔨᑦ-ᓄᓇᑦᓯᐊᖅ

ᒥᔅ ᔫᐅᑎ ᐱᓪᓕᔅᓯ
ᐅᖃᐅᔨᕆᐊᖃᑎᑦ ᑲᑎᒪᔨᕋᓛᑦ ᐱᓕᕆᖃᑎᒌᓐᓂᖅᖢᑦ ᐆᒪᔪᓂᑦ ᐊᐅᓚᑦᑎᓂᖅᖢᑦ

ᒥᔅᑕ ᓅᖅᓇᓐ ᐊᐃᓘᔅ, ᐃᒃᓯᕙᐅᑕᖅ
ᐃᓄᕕᐊᓗᐃᑦ ᐆᒪᔪᓕᕆᔨᑦ ᑲᑎᒪᔨᖏᑦ

ᒥᔅ ᔫᐅᑎ ᒥᐊᓕᖕ, ᓄᓇᒥᐅᑕᓕᕆᔨᒃᑯᑦ ᐋᖃᒃᓱᐃᔨᖕᒋᑦ
ᐆᒪᔪᓕᕆᓂᖅᓂ ᐊᐅᓚᑦᓯᔨᑦ ᐅᖃᐅᔾᔪᐃᕆᐊᖃᑎᐅᓪᓗᑎᒃ ᑲᑎᒪᔨᑦ (ᓄᓇᑦᓯᐊᖅ)

ᒥᔅᑕ ᑖᓂᐅᓪ ᓯᐅᑦᓴᒃ, ᐃᒃᓯᕙᐅᑕᖅ
ᓄᓇᕗᑦᒥ ᐆᒪᔪᓕᕆᔨᖅᔪᐊᑦ ᑲᑎᒪᔨᖏᑦ

ᒥᔅ ᐊᓗᑭ ᑰᑦᑎᖅ, ᐊᖏᔪᖅᑳᖅ
ᓄᓇᕗᑦ ᑐᙵᕕᒃ ᑎᒥᖅᑯᑎᖓᑦ

ᒥᔅᑕ ᓕᐊᓇ ᐋᑦᔪᓐ, ᐃᒃᓯᕙᐅᑕᖅ
ᖅᑯᖅᓗᖅᑑᖅ ᐊᖑᓇᓱᒃᑏᑦ ᒥᑭᓯᐊᖅᑏᓪᓗ ᑲᑐᔾᔨᖅᑲᑎᒌᖏᑦ

ᒥᔅᑕ ᓯᑖᓐᓕ ᐊᓇᐸᓚᒃ, ᐊᖏᔪᖅᑳᖅ
ᖅᑭᑎᖅᒥᐅᑦ ᐃᓄᐃᑦ ᑲᑐᔾᔨᖅᑲᑎᒌᖏᑦ

ᒥᔅᑕ ᔨᒥ ᓅᐸᓪ ᓄᑲᖅᓚᖅ, ᒥᓂᔅᑕᐸ ᑐᖕᖓᓕᖕᖓ
ᐊᕙᑎᓕᕆᔨᒃᑯ, ᓄᓇᕗᑦ ᒐᕙᒪᖓᑦ

ᒥᔅᑕ ᑐᓃᑲᔅ ᔨᓯᖕ, ᐆᒪᔪᓕᕆᔨᒃᑯᓐᓄᑦ ᐃᓱᒪᑕᖅ
ᐊᕙᑎᓕᕆᔨᒃᑯ, ᓄᓇᕗᑦ ᒐᕙᒪᖓᑦ

ᑭᐅᔾᔪᑏᑦ ᑦᐃᑉᐹ ᓄᓇᒥᐅᑕᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔩᖏᑦ (WRRB) ᐃᓱᒪᓕᐅᕈᑎᖃᕐᓂᕐᒥᓂ ᐱᔾᔪᑎᒋᔭᒥᓂᓪ
ᑐᕌᖓᑎᓪᓗᒋᑦ ᑲᑐᔾᔨᓂᖃᖅᓱᑎᒃ ᐃᓱᒪᓕᐅᕈᑎᐅᓯᒪᔪᓄᑦ ᐊᐅᓚᔪᓂᖃᕐᓂᕐᓂ ᓵᑎ ᐃᐊᒃᑰ
(ᐳᓘᓅᓴ-ᑲᓇᓐᓇᒥ ᑐᒃᑐᖏᑦ) ᐊᒥᕐᕋᕐᑯᑎᖏᓐᓄᑦ

ᐃᓱᒪᓕᐅᕈᑎᐅᓯᒪᓂᖏᑦ

<u>ᐃᓱᒪᓕᐅᕈᑎᖃᕐᓂᖅ #1-2019:</u> ᑲᑎᒪᔩᐅᔪᑦ ᐃᓱᒪᓕᐅᕈᑎᖃᖅᓯᒪᕗᑦ ᑲᑎᓪᓗᒋᑦ ᐊᖑᓇᓱᐊᖅᑕᐅᔪᓐᓇᕐᒪᑕ 193-ᖑᔪᑦ ᑐᒃᑐᐃᑦ, ᐊᖑᓴᓪᓗᐃᑦ ᑭᓱᒥᒃ, ᑕᒪᐃᓐᓂᑦ ᐊᑐᖅᐸᒃᑐᓂᒃ ᓵᓂ ᐃᐊᒃᑰ ᐊᒥᕐᕋᕐᑯᑎᖏᓐᓂᑦ ᑦᐃᑉᐹᐅᑉ ᐃᓗᐊᓂᑦ ᐊᑐᓕᖅᑎᑕᐅᕐᑯᓪᓗᒋᑦ ᑎᓖᓯ ᒐᕙᒪᖓᓂᑦ (TG) ᐊᒻᒪᓗ ᓄᓇᕗᐊᑉ ᒐᕙᒪᖓᓂᑦ (GNWT) ᐅᑭᐅᖏᓄᑦ 2019/2020 ᐊᒻᒪᓗ 2020/2021 ᐊᖑᓇᓱᐊᕐᕕᐅᕙᓐᓂᖏᑦ ᐊᑐᓕᖅᓯᒪᑎᓪᓗᒋᑦ.

<u>ᑭᐅᔾᔪᑎᖏᑦ:</u> ᓈᒻᒪᒋᔭᐅᔪᑦ

<u>ᐱᔾᔪᑎᒋᔭᐅᔪᑦ:</u> ᑎᓖᓯ ᒐᕙᒪᖓᑦ (TG) ᐊᒻᒪᓗ ᓄᓇᕗᐊᑉ ᒐᕙᒪᖓᑦ (GNWT) ᑕᒪᑐᒥᖓ ᐃᓱᒪᓕᐅᕈᑎᐅᓯᒪᔪᒥᒃ ᐱᔾᔪᑎᒋᓪᓗᒍ ᑦᐃᑉᐹᑯᓐᓂᑦ ᓈᒻᒪᒃᓴᐃᓯᒪᒻᒪᑕ ᖁᔭᓕᓯᒪᓪᓗᑎᒃ ᑲᑎᒪᔩᐅᔪᓄᑦ ᓴᖅᑭᓂᖃᓯᐊᖅᑐᒥᒃ ᐸᐸᕿᓂᖃᕋᓱᐊᕐᓂᖏᓐᓄᑦ ᐊᒻᒪᓗ ᑭᒡᓕᖃᓕᖅᑎᕿᕐᑯᔨᓂᖏᓐᓄᑦ ᐱᑕᖃᖅᑕᐅᔪᓐᓇᖅᑐᓂᒃ ᑖᒃᑯᓇᙵᑦ ᓄᖑᕆᓪᓕᐊᓪᓗᑎᒃ ᐊᒥᕐᕋᕐᑯᑎᐅᔪᓂᑦ. ᐊᕙᑎᓕᕆᔨᒃᑯᑦ ᓄᓇᒥᐅᑕᓕᕆᔨᒃᑯᓪᓗ ᐱᕈᒃᑲᓐᓂᕈᓐᓇᖅᑐᓕᕆᔩᖏᑦ (ENR) ᐋᖅᑮᒋᐊᕐᓂᐊᖅᑐᑦ ᒪᓕᒃᑕᐅᒋᐊᓕᕐᑯᑎᓂᒃ ᐋᖅᑮᒋᐊᖃᓕᕚᖓᒥᒃ ᐊᑐᓕᖅᑎᔪᓂᐊᕐᓂᕐᒥ ᑖᓱᒥᖓ ᐃᓱᒪᓕᐅᕈᑎᐅᓯᒪᔪᓂᒃ ᑦᐃᑉᐹᒧᑦ ᐊᒻᒪᓗ ᐃᓚᖏᓄᑦ ᐱᔾᔪᑎᖃᖅᑐᓄᑦ ᑐᒃᑐᓂᒃ ᐊᐅᓚᔪᓂᖃᕕᐅᓪᓗᑎᒃ ᐊᕙᑎᒋᔭᐅᔪᓄᑦ ᐱᕕᒃᓴᖃᓕᖅᑐᐊᕈᑎᒃ.

<u>ᐃᓱᒪᓕᐅᕈᑎᖃᕐᓂᖅ #2-2019:</u> ᐃᓚᑐᐃᓐᓇᖓᑎᒍᑦ ᓴᓂᕐᕙᐃᓯᒪᓂᖅ ᑲᑎᓪᓗᒋᑦ ᖃᔅᓯᓂᒃ ᐊᖑᓇᓱᒐᐅᕙᒍᓐᓇᖅᑐᓂᑦ ᓵᑎ ᐃᐊᒃᑰ ᐊᒥᕐᕋᕐᑯᑎᖏᓂᑦ 2019/2020 ᐅᑭᐅᖓᓂ ᐊᒻᒪᓗ 2020/2021 ᐅᑭᐅᖓᓂ ᐊᖑᓇᓱᐊᕐᕕᐅᕙᓐᓂᖏᓂᑦ ᐃᒪᓐᓇᐃᑦᑑᓂᐊᖅᐳᑦ:

ᑎᓖᓯ ᓄᓇᓕᕐᑲᖅᑐᑦ: 39.29%-ᑎᖓᓂᒃ (76 ᐆᒪᔪᐃᑦ)

ᐃᓚᒋᔭᐅᕐᑲᑕᐅᔪᑦ ᓄᓇᕐᑲᖅᑳᕐᑐᓂ ᐱᐅᓱᑐᕐᑲᒥᓐᓂ ᐊᐅᓇᓱᐊᖅᐸᒃᑐᓄᑦ ᓵᑎ ᐃᐊᒃᑰ ᑐᒃᑐᖏᓂᒃ (ᐃᓚᕐᑲᖅᐳᑦ ᓄᓇᑰᑦ): 60.71%-ᑎᖓᓂᒃ (117 ᐆᒪᔪᐃᑦ)

ᑎᓖᓯ ᒐᕙᒪᖓᑦ (TG) ᐃᓱᒪᓕᐅᕈᑎᖃᖅᓯᒪᔭᕆᐊᖕᖏᑦ ᖃᔅᓯᖏᓂᒃ ᓴᓂᕐᕚᖅᑎᑕᐅᓯᒪᓂᐊᕐᑐᓄᑦ ᑎᓖᓯ ᓄᓇᓕᖏᓐᓄᑦ, ᐊᒻᒪᓗ ᓄᓇᕗᐊᑉ ᒐᕙᒪᖓᑦ (GNWT) ᐃᓱᒪᓕᐅᕈᑎᖃᖅᓯᒪᔭᕆᐊᕐᑲᖅᑎᓪᓗᒋᑦ ᖃᔅᓯᖏᓂᒃ ᓴᓂᕐᕚᖅᑎᑕᐅᓯᒪᓂᐊᖅᑐᓄᑦ ᐃᓚᒋᔭᐅᕐᑲᑕᐅᔪᑦ ᓄᓇᕐᑲᖅᑳᕐᓯᒪᔪᓂᑦ ᐱᐅᓱᑐᕐᑲᒥᒃᑎᒍᑦ ᐊᖑᓇᓱᐊᖅᐸᒃᑐᑐᕐᑲᐃᑦ ᐱᑕᕈᓐᓇᖅᑎᕐᓯᓂᐊᕐᓂᕐᒥᒃ ᓵᑎ ᐃᐊᒃᑰ ᐊᒥᕐᕋᕐᑯᑎᖏᓐᓂᑦ ᕐᑲᐅᔩᒋᐊᖅᓯᒪᓂᕐᒥᒃᑎᒍᑦ ᑖᒃᑯᓇᙵᑦ ᑲᑎᓐᓂᕐᑲᖅᑐᓂᑦ.

<u>ᑭᐅᔾᔪᑎᖏᑦ:</u> ᓈᒻᒪᒋᔭᐅᔪᑦ

<u>ᐱᔾᔪᑎᒋᔭᐅᔪᑦ:</u> ᑎᓖᓯ ᒐᕙᒪᖓᑦ (TG) ᐊᒻᒪᓗ ᓄᓇᕗᐊᑉ ᒐᕙᒪᖓᑦ (GNWT) ᑖᒃᑯᓂᖓ ᐃᓱᒪᓕᐅᕈᑎᐅᓯᒪᔪᓂᒃ ᑦᐃᑉᐹᒧᑦ ᓈᒻᒪᒃᓴᐃᓯᒪᕗᑦ. ᒪᓕᒃᑎᑕᐅᓯᒪᓪᓗᓂ ᐊᒃᑐᖅᓯᒪᓂᖏᑦ 12.9-ᒥ ᐅᕐᑲᖅᑕᐅᓯᒪᔪᓄᑦ ᑎᓖᓯ ᐊᖏᕈᑎᖏᑦ, ᑎᓖᓯ ᒐᕙᒪᖓᑦ (TG) ᐱᓕᕆᐊᕐᑲᕐᓂᐊᖅᑐᑦ ᓴᓂᕐᕚᖅᑕᐅᓯᒪᔪᓄᑦ ᓵᑎ ᐃᐊᒃᑰ ᑐᒃᑐᕐᑯᑎᖏᓐᓄᑦ ᐱᔾᔪᑎᖃᖅᑐᓂᒃ ᐱᓕᕆᕐᑲᑎᒋᓗᒋᑦ ᑎᓖᓯ ᓄᓇᓕᒋᔭᖏᑦ. ᓱᕐᓗ ᐃᓱᒪᓕᐅᕈᑎᐅᓯᒪᒻᒪᑦ ᐊᑐᓕᖅᑎᑕᐅᕐᑯᓪᓗᒋᑦ ᑦᐃᑉᐹ ᓄᓇᒥᐅᑕᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔩᖏᑦ (WRRB), ᓄᓇᕗᐊᑉ ᒐᕙᒪᖓᑦ (GNWT) ᓴᓂᕐᕙᐃᓯᒪᓕᕐᓂᐊᖅᑐᑦ ᐊᒥᐊᒃᑯᖏᓂᒃ ᐊᖑᓇᓱᐊᖅᑕᐅᔪᓐᓇᖅᑐᓂᒃ ᐊᓯᖏᓂᑦ ᓄᓇᕐᑲᖅᑳᕐᓯᒪᔪᓂ ᐊᑐᖅᐸᒃᑐᑦ ᑲᑎᓐᓂᕐᑲᖅᑑᓪᓗᒋᑦ ᐃᓅᕐᑲᑎᕕᓂᑦ ᓵᑎ ᐃᐊᒃᑰ ᐊᒥᕐᕋᕐᑯᑎᖏᓂᑦ.

ᐊᑐᓕᖅᑎᑕᐅᕐᑯᔭᐅᓪᓗᑎᒃ

<u>ᐊᑐᓕᕐᑯᔭᐅᓪᓗᑎᒃ #1-2019</u> (ᓵᑎ ᐃᐊᒃᑰ): ᓵᑎ ᐃᐊᒃᑰ ᐊᒥᕐᕋᕐᑯᑎᖏᓂᑦ ᐊᖑᓇᓱᐊᖅᑕᐅᕙᑦᑐᓂᒃ ᓇᐅᓯᖅᑐᐃᓂᖅ: ᑲᑎᓪᓗᒋᑦ ᐊᖑᓇᓱᐊᖅᑕᐅᔪᓐᓇᖅᑐᓂᒃ ᒪᓕᑦᓯᐊᖅᑕᐅᑎᑦᓯᔪᒪᓪᓗᑎᒃ, ᐊᒻᒪᓗ ᐊᑐᖅᑕᐅᓕᕐᑯᓪᓗᒋᑦ ᐊᖑᓇᓱᒃᑏᑦ ᕐᑲᐅᔨᒪᓂᒪᓇᒋᔭᖏᑦ ᑎᓖᓯ ᒐᕙᒪᖓᑦ ᐋᖅᑮᒋᐊᖅᓯᒪᓕᕐᓂᐊᖅᑐᑦ ᐱᓕᕆᐊᖃᕈᓯᒥᓐᓂᒃ ᓵᑎ ᐃᐊᒃᑰ ᐊᒥᕐᕋᕐᑯᑎᖏᓂᑦ ᐊᖑᓇᓱᐊᖅᐸᓐᓂᐅᔪᓄᑦ ᓇᐅᓯᖅᑐᐃᕙᓐᓂᐅᓂᐊᖅᑐᓄᑦ 2019/2020 ᐅᑭᐅᖓᓂ, ᐊᒻᒪᓗ 2020/2021 ᐅᑭᐅᖓᓂ ᐊᖑᓇᓱᐊᕐᕕᐅᕙᑦᑐᑦ ᐃᓚᕐᑲᖅᑎᑕᐅᑎᓪᓗᒋᑦ:

- ᑐᑭᓯᐊᕐᕖᑦᓴᖁᑎᑦ ᑲᑎᖅᓱᐊᕐᕆᓯᒪᔪᑦ ᐊᕐᕌᓂᒃᑎᒃᑭᑦ, ᒥᑭᓂᖅᐸᐅᒐᓗᐊᕈᑎᒃ, ᐃᓚᖕᖏᑎᑕᐅᔪᒃᓴᐅᕗᑦ ᖃᓯᓂᒃ ᐊᒻᒪᓗ ᓇᓂ ᐱᑕᓚᐅᕐᓂᕐᒧᑦ, ᐊᕐᓇᓪᓘᓂᕐᒪᓂᒃ ᐊᕐᕌᓴᓪᓘᓂᕐᒪᓂᒃᓗᓐᓂᑦ, ᐋᓐᓂᐊᕐᑲᙳᕆᒻᒪᕐᒦᑦ, ᐊᒻᒪᓗ ᑎᒥᖓᑕ ᖃᓄᐃᓕᕐᒪᓐᓂᕐᒪᓂᒃ ᐆᒪᔫᑉ, ᐊᒻᒪᓗ ᖃᓄᖅ ᐅᕐᒪᓯᒃᑎᕆᔭᒥᑦ ᐊᕐᕌᓂᒃᑎᑦ ᐃᕆᕐᖃᔭᕆᐊᕐᑲᓚᐅᕐᓂᕐᒥᓄᑦ ᑎᑎᖅᑲᖅᓯᒪᔭᓂᒃ;
- ᐊᕐᕌᓂᒃᑕᐅᔭᓄᑦ ᑐᑭᓯᐊᕐᕖᑦᓴᖁᑎᑦ ᑐᓂᔭᐅᕙᕆᐊᕐᑲᖅᑐᑦ ᐱᓇᓱᐊᕈᓯᖅᑕᒫᑦ ᑎᓕᓯ ᒐᕙᒪᖓᓂᑦ (TG) ᕗᐃᑭᔮ ᓄᓇᒥᐅᑕᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔨᖏᑦ (WRRB), ᐊᒻᒪᓗ ᐅᑭᐅᑕᒫᑦ ᐊᕐᕌᓂᐊᕐᕙᓐᓂᕐᓄᑦ ᐊᒻᒪᓗ ᓇᐅᑦᓯᖅᑐᐃᓂᕐᒧᑦ ᓇᐃᓪᓕᒋᐊᖅᓯᒪᔪᑦ ᐅᓂᒃᑳᓕᐊᕐᕈᓯᒪᔪᑦ ᐋᖅᑭᒃᓯᐊᕐᕈᕙᒃᖢᑎᒃ ᓄᓇᕗᐊᑉ ᒐᕙᒪᕐᒐᓂᑦ (GNWT) ᐊᒻᒪᓗ ᑎᓕᓯ ᒐᕙᒪᕐᒐᓂᑦ (TG) ᐊᒻᒪᓗ ᓴᖅᑭᑕᐅᓯᒪᓕᖅᐸᒃᖢᑎᒃ ᑭᒃᑐᐃᓐᓇᓄᑦ ᓯᕗᕐᖓᓂ ᔫᓂ 30 ᐊᑐᓂ ᐅᑭᐅᖑᔪᓂ; ᐊᒻᒪᓗ
- ᐱᔭᕇᕐᑲᓕᕐᖓᒥᒃ ᐱᔾᔪᑎᖏᓐᓱᒋᑦ ᐊᒥᓱᕈᖅᓯᒪᓕᕐᓂᕐᑕ ᐃᐊᒃᕗ ᑐᒃᑐᕐᑦ ᖃᓂᖁᐊᓕᕐᓂᕐᑕ ᓄᓇᓕᐅᔪᒧᑦ, ᑎᑭᓪᓗᑎᑦ ᓯᑕᒪᓂᒃ ᓄᓇᓕᐅᔪᒥᑦ ᓇᐅᑦᓯᖅᑐᐃᓃᓂᒃ ᐃᖅᑲᓇᐃᔭᖅᑎᑖᖅᐸᒃᖢᑎᒃ ᑲᑎᖅᓱᐃᓃᐅᕙᓐᓂᐊᖅᑐᓂᒃ, ᐊᒻᒪᓗ ᓴᖅᑮᓃᐅᕙᓐᓂᐊᖅᑐᓂᒃ ᐊᕐᕌᓱᐊᕐᓂᓕᕆᓂᕐᒧᑦ ᑐᑭᓯᐊᕐᕖᑦᓴᖁᑎᓂᒃ ᐱᓇᓱᐊᕈᓯᖅᑕᒫᑦ

<u>ᑭᐅᔾᔪᑎᖓ:</u> ᐊᔾᔨᒌᙱᓂᖃᕐᕕᐅᔪᑦ

ᑎᓕᓯ ᒐᕙᒪᖓ (TG) ᐊᔾᔨᒌᙱᑦᑕᕆᑎᒍᑦ ᐅᖃᖅᓯᒪᕗᑦ "ᐊᑐᓕᖁᔭᐅᓪᓗᑎᒃ #1-2019"-ᒧᑦ ᐃᒪᓐᓇ ᐅᖃᖅᓯᒪᓪᓗᑎᑦ:

<u>ᐊᑐᓕᖁᔭᐅᓪᓗᑎᒃ #1-2019 (ᓵᑎ ᐃᐊᒃᕗ):</u> ᓵᑎ ᐃᐊᒃᕗ ᐊᒥᕐᕋᖁᑎᖏᓂᑦ ᐊᕐᕌᓂᐊᖅᑕᐅᕙᑦᑐᓂᒃ ᓇᐅᑦᓯᖅᑐᐃᓂᖅ: ᑲᑎᓪᓗᒋᑦ ᐊᕐᕌᓂᐊᖅᑕᐅᔪᓐᓇᖅᑐᓂᒃ ᒪᓕᒃᑕᐅᑦᓯᐊᖅᑎᑕᐅᖁᓪᓗᒋᑦ, ᐊᒻᒪᓗ ᐊᑐᖅᑕᐅᓕᖁᓪᓗᒋᑦ ᐊᕐᕌᓂᒃᑏᑦ ᖃᐅᔨᒪᓂᒻᒪᕆᔭᕆᑦ, ᑎᓕᓯ ᒐᕙᒪᖓ (TG) ᐋᒃᑮᕆᐊᖅᓯᒪᓕᕐᓂᐊᖅᑐᑦ ᐱᓕᕆᐊᖃᕈᓯᒥᓐᓂᒃ ᓵᑎ ᐃᐊᒃᕗ ᐊᒥᕐᕋᖁᑎᖏᓂᑦ ᐊᕐᕌᓂᐊᖅᐸᓐᓂᐅᔪᓄᑦ ᓇᐅᑦᓯᖅᑐᐃᕙᓐᓂᐅᓂᐊᖅᑐᓄᑦ 2019/2020 ᐅᑭᐅᖑᓂ, ᐊᒻᒪᓗ 2020/2021 ᐅᑭᐅᖑᓂ ᐊᕐᕌᓂᐊᕐᕖᐅᔪᓐᓇᕐᓂᕐᒥ ᐃᓚᖅᑲᖅᑎᑕᐅᑎᓪᓗᒋᑦ ᒪᑯᓂᖓ:

- ᑐᑭᓯᐊᕐᕖᑦᓴᖁᑎᑦ ᑲᑎᖅᓱᐊᕐᕆᓯᒪᔪᑦ ᐊᕐᕌᓂᒃᑎᒃᑭᑦ, ᒥᑭᓂᖅᐸᐅᒐᓗᐊᕈᑎᒃ, ᐃᓚᖅᑲᖅᑎᑕᐅᔪᒃᓴᐅᕗᑦ ᖃᓯᓂᒃ ᐊᒻᒪᓗ ᓇᓂ ᐱᑕᓚᐅᕐᓂᕐᒧᑦ, ᐊᕐᓇᓪᓘᓂᕐᒪᓂᒃ ᐊᕐᕌᓴᓪᓘᓂᕐᒪᓂᒃᓗᓐᓂᑦ, ᐋᓐᓂᐊᕐᑲᙳᕆᒻᒪᕐᒦᑦ, ᐊᒻᒪᓗ ᑎᒥᖓᑕ ᖃᓄᐃᓕᕐᒪᓐᓂᕐᒪᓂᒃ ᐆᒪᔫᑉ, ᐊᒻᒪᓗ ᖃᓄᖅ ᐅᕐᒪᓯᒃᑎᕆᔭᒥᑦ ᐊᕐᕌᓂᒃᑎᑦ ᐃᕆᕐᖃᔭᕆᐊᕐᑲᓚᐅᕐᓂᕐᒥᓄᑦ ᑎᑎᖅᑲᖅᓯᒪᔭᓂᒃ;
- ᐊᕐᕌᓂᒃᑕᐅᔭᓄᑦ ᑐᑭᓯᐊᕐᕖᑦᓴᖁᑎᑦ ᑐᓂᔭᐅᕙᕆᐊᕐᑲᖅᑐᑦ ᑕᖅᑭᑕᒫᑦ ᑎᓕᓯ ᒐᕙᒪᖓᓂᑦ (TG) ᕗᐃᑭᔮ ᓄᓇᒥᐅᑕᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔨᖏᑦ (WRRB), ᐊᒻᒪᓗ ᐅᑭᐅᑕᒫᑦ ᐊᕐᕌᓂᐊᕐᕙᓐᓂᕐᓄᑦ ᐊᒻᒪᓗ ᓇᐅᑦᓯᖅᑐᐃᓂᕐᒧᑦ ᓇᐃᓪᓕᒋᐊᖅᓯᒪᔪᑦ ᐅᓂᒃᑳᓕᐊᕐᕈᓯᒪᔪᑦ ᐋᖅᑭᒃᓯᐊᕐᕈᕙᒃᖢᑎᒃ ᓄᓇᕗᐊᑉ ᒐᕙᒪᕐᒐᓂᑦ (GNWT) ᐊᒻᒪᓗ ᑎᓕᓯ ᒐᕙᒪᕐᒐᓂᑦ (TG) ᐊᒻᒪᓗ ᓴᖅᑭᑕᐅᓯᒪᓕᖅᐸᒃᖢᑎᒃ ᑭᒃᑐᐃᓐᓇᓄᑦ ᓯᕗᕐᖓᓂ ᔫᓂ 30 ᐊᑐᓂ ᐅᑭᐅᖑᔪᓂ; ᐊᒻᒪᓗ
- ᐱᔭᕇᕐᑲᓕᕐᖓᒥᒃ ᐱᔾᔪᑎᖏᓐᓱᒋᑦ ᐊᒥᓱᕈᖅᓯᒪᓕᕐᓂᕐᑕ ᐃᐊᒃᕗ ᑐᒃᑐᕐᑦ ᖃᓂᖁᐊᓕᕐᓂᕐᑕ ᓄᓇᓕᐅᔪᒧᑦ, ᑎᑭᓪᓗᑎᑦ ᓯᑕᒪᓂᒃ ᓄᓇᓕᐅᔪᒥᑦ ᓇᐅᑦᓯᖅᑐᐃᓃᓂᒃ ᐃᖅᑲᓇᐃᔭᖅᑎᑖᖅᐸᒃᖢᑎᒃ ᑲᑎᖅᓱᐃᓃᐅᕙᓐᓂᐊᖅᑐᓂᒃ, ᐊᒻᒪᓗ ᓴᖅᑮᓃᐅᕙᓐᓂᐊᖅᑐᓂᒃ ᐊᕐᕌᓱᐊᕐᓂᓕᕆᓂᕐᒧᑦ ᑐᑭᓯᐊᕐᕖᑦᓴᖁᑎᓂᒃ ᑕᖅᑭᑕᒫᑦ.

<u>ᐱᔾᔪᑎᒋᔭᐅᔪᑦ:</u> ᑎᓕᓯ ᒐᕙᒪᖓᓂᑦ (TG) ᐊᕐᕆᖅᓯᒪᕗᑦ ᑐᑭᓯᐊᕐᕖᑦᓴᖁᑎᓂᒃ ᑲᑎᖅᓱᐃᕙᓐᓂᐊᓂᕐᒥᓂᒃ ᐊᒻᒪᓗ ᐋᖅᑮᕆᐊᕐᓂᐊᕐᓂᕐᒧᑦ ᐱᓕᕆᐊᖅᑲᕈᓯᕐᒥᓂᒃ ᓵᑎ ᐃᐊᒃᕗ ᐊᒥᕐᕋᖁᑎᖏᓂᒃ ᓇᐅᑦᓯᖅᑐᐃᕙᓐᓂᕐᓄᑦ. ᑎᓕᓯ ᒐᕙᒪᖓᓂᑦ (TG) ᐃᓱᒪᒃᓴᖅᓯᐅᕈᑎᖃᕐᓯᐊᕋᓱᒃᓯᒪᕗᑦ ᓱᓇᓂᒃ ᐃᑲᔪᕈᑎᒃᓴᓂᒃ ᐱᓯᒪᓕᕆᐊᖃᕐᒪᕐᓘᕐᒥᓃᒃ ᐊᑐᓕᖅᑎᕐᓯᓂᐊᕐᓗᑎᒃ ᕗᐃᑭᔮ ᓄᓇᒥᐅᑕᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔨᖏᑦ (WRRB) ᐃᓱᒪᓕᐅᕈᑎᕆᓯᒪᔭᕐᒐᓂᒃ <u>ᐱᓇᓱᐊᕈᓯᖅᑕᒫᑦ</u> ᓴᖅᑮᕙᕆᐊᖅᑲᕐᓂᕐᒧᑦ ᐊᒻᒪᓗ ᐃᓱᒪᓕᕈᑎᕆᓯᒪᓕᖅᓱᒍ ᑕᒪᓐᓇ ᒪᓕᒃᑎᑕᐅᓯᐊᕐᑯᓪᓗᒍ ᐃᓱᒪᓕᐅᕈᑎᐅᓯᒪᔪᓄᑦ ᐊᑐᓕᖁᔭᐅᓪᓗᑎᒃ, ᓂᕈᐊᖅᑖᓯᒪᓕᕐᒪᑕ ᑲᔪᓯᑎᑦᓯᓐᕿᕐᓂᐊᕐᓂᕐᒥᓐᓂᒃ ᑕᖅᑭᑕᒫᑦ ᓴᖅᑮᕙᓐᓂᐊᕐᓂᕐᒥᓐᓄᑦ. ᕗᐃᑭᔮ ᓄᓇᒥᐅᑕᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔨᖏᑦ (WRRB) ᐃᓱᒪᓕᐅᖅᐳᑦ ᑐᑭᓯᐊᕐᕖᑦᓴᖁᑎᑦ ᑲᑎᖅᓱᐊᕐᕆᓯᒪᔪᑦ ᐊᕐᕌᓂᒃᑎᒃᑭᑦ, <u>ᒥᑭᓂᖅᐸᐅᒐᓗᐊ ᕈᑎᒃ</u>, ᐃᓚᖅᑲᖅᑎᑕᐅᔪᒃᓴᐅᕗᑦ ᖃᓯᓂᒃ ᐊᒻᒪᓗ ᓇᓂ ᐱᑕᓚᐅᕐᓂᕐᒧᑦ, ᐊᕐᓇᓪᓘᓂᕐᒪᓂᒃ ᐊᕐᕌᓴᓪᓘᓂᕐᒪᓂᒃᓗᓐᓂᑦ, ᐋᓐᓂᐊᕐᑲᙳᕆᒻᒪᕐᒦᑦ, ᐊᒻᒪᓗ ᑎᒥᖓᑕ ᖃᓄᐃᓕᕐᒪᓐᓂᕐᒪᓂᒃ ᐆᒪᔫᑉ, ᐊᒻᒪᓗ ᖃᓄᖅ ᐅᕐᒪᓯᒃᑎᕆᔭᒥᑦ ᐊᕐᕌᓂᒃᑎᑦ ᐃᕆᕐᖃᔭᕆᐊᕐᑲᓚᐅᕐᓂᕐᒥᓄᑦ ᑎᑎᖅᑲᖅᓯᒪᔭᓂᒃ. ᑎᓕᓯ ᒐᕙᒪᖓ (TG) ᐱᓇᓱᐊᖅᓯᒪᓇᓱᓪᓚᕆᓐᓂᐊᖅᑐᑦ ᐱᑕᖅᑲᖅᑎᑦᓯᕆᐊᖅᐸᓐᓂᕐᓂᒃ ᑖᒃᑯᓂᖓ ᑐᓴᒐᒃᓴᖁᑎᓂᒃ ᑭᓯᐊᓂᓗ ᑎᓕᓯ ᒐᕙᒪᖓ (TG) ᐊᐅᓚᑦᓯᓂᖅᑲᕐᓇᙱᓐᒪᑕ ᖃᓄᐃᑦᑐᓂᒃ ᑐᓴᒐᒃᓴᓂᒃ ᐊᕐᕌᓂᐊᖅᑎᑦ ᐊᒥᖅᑲᕈᑎᖃᖃᑦᑕᓂᐊᕐᒪᕐᒫᑕ ᐊᕐᕌᓂᐊᖅᓯᒪᓕᐊᓂᒃᑳᕐᒪᒥᒃ ᐊᒻᒪᓗ ᑕᐃᒪᓐᓇᐃᑎᓪᓗᒍ ᓇᓗᓇᐃᖅᓯᓯᒪᓕᕈᓐᓇᙱᑦᑐᑦ ᐃᓱᒪᓕᐅᕈᑎᐅᓯᒪᔪᑦ ᒥᑭᓂᖅᐹᑎᒍᑦ ᐱᑕᖅᑲᖅᑎᑦᓯᓃᐅᕙᓐᓂᐊᕐᓂᕐᑕ ᑐᑭᓯᐊᕐᕖᑦᓴᖁᑎᐅᔪᑦ ᐃᓗᓕᓐᓂᐊᖅᑕᕆᓐᓄᑦ.

<u>ᐊᑐᓕᖅᑯᔭᐅᓪᓗᑎᒃ #2-2019</u> **(ᓵᑎ ᐃᐊᒃᕗ):** ᐱᐅᓯᕆᐊᖅᑎᑕᐅᓯᒪᔪᑦ ᓄᐊᔅ ᓯᓚᐃᑉ ᑎᒐ (ᐊᒪᕈᖅ) ᐊᖑᓇᓱᐊᖅᐸᓐᓂᕐᒧᑦ ᐱᓕᕆᐊᖑᔪᖅ: ᑐᑭᓯᐅᒪᔭᐅᓕᖅᑯᓪᓗᒋᑦ ᖃᓄᖅ ᐃᖏᕐᕋᕐᓯᐊᕐᑎᒋᒻᒪᖔᑦ ᐆᒃᑐᕋᐅᑎᐅᓪᓗᓂ ᐅᑭᐅᒥ ᐱᐅᓯᕆᐊᖅᑎᑕᐅᓯᒪᔪᑦ ᓄᐊᔅ ᓯᓚᐃᑉ ᑎᒐ ᐊᖑᓇᓱᐊᖅᐸᓐᓂᕐᒧᑦ ᐱᓕᕆᐊᖑᔪᒧᑦ, ᓄᓇᕐᓯᐊᑉ ᒐᕙᒪᖓᑦ (GNWT) ᐱᑕᕐᑲᖅᑎᕐᓯᕙᕆᐊᓖᑦ ᓇᓂ ᐊᒻᒪᓗ ᖃᔅᓯᓂᒃ ᑎᒐ ᐱᑕᖅᓯᒪᓂᕐᓄᑦ ᐱᔾᔪᑎᕐᑲᖅᑐᓂᒃ, ᐃᓚᖏᔭᐅᑎᓪᓗᒋᑦ ᐱᓕᕆᐊᒧᑦ, ᕗᐃᑉᐹ ᓄᓇᒥᐅᑕᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔨᖏᑦ (WRRB) ᓯᕗᕐᖓᓂ ᔪᓚᐃ 26, 2019.

<u>**ᑭᐅᔾᔪᑎᖏᑦ:**</u> ᓈᒻᒪᒋᔭᐅᔪᑦ

<u>**ᐱᔾᔪᑎᒋᔭᐅᔪᑦ:**</u> ᓄᓇᕐᓯᐊᑉ ᒐᕙᒪᖓᑦ (GNWT) ᒫᓐᓇᐅᔪᖅ ᐋᖅᑭᒃᓯᐃᕐᕌᓂᒃᐸᓪᓕᐊᓕᕐᒪᑕ ᐅᓂᒃᑳᓕᐊᖑᕙᑦᑐᓂᒃ ᐅᑭᐅᖓᓄᑦ 2018-2019-ᒥ ᐱᐅᓯᕆᐊᖅᑎᑕᐅᓯᒪᔪᑦ ᓄᐊᔅ ᓯᓚᐃᑉ ᑎᒐ ᐊᖑᓇᓱᐊᖅᐸᓐᓂᕐᒧᑦ ᐱᓕᕆᐊᖑᔪᒧᑦ. ᓯᕗᓪᓕᖅᐹᕐᓯᐅᑎᑦ ᐅᓂᒃᑳᓕᐊᖑᓯᒪᓕᖅᑐᑦ ᐊᒥᖅᑲᕈᑎᐅᓚᐅᕐᒪᑕ ᕗᐃᑉᐹ ᓄᓇᒥᐅᑕᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔨᖏᑦ (WRRB) ᔪᓚᐃ 15, 2019-ᒥ. ᐊᔾᔨᕐᓚᒋᔭᖏᓐᓂᒃ ᐅᓂᒃᑳᓕᐅᖅᓯᒪᕙᓐᓂᐊᖅᑐᑦ ᐅᑭᐅᑕᒫᑦ ᓄᓇᕐᓯᐊᑉ ᒐᕙᒪᖓᑦ (GNWT).

<u>ᐊᑐᓕᖅᑯᔭᐅᓪᓗᑎᒃ #3-2019</u> **(ᓵᑎ ᐃᐊᒃᕗ):** ᐱᐅᓯᕆᐊᖅᑎᑕᐅᓯᒪᔪᑦ ᓄᐊᔅ ᓯᓚᐃᑉ ᑎᒐ ᐊᖑᓇᓱᐊᖅᐸᓐᓂᕐᒧᑦ ᐱᓕᕆᐊᖑᔪᖅ: ᖃᐅᔨᔭᐅᓯᒪᓕᖅᑯᓪᓗᒋᑦ ᓯᕗᓂᕐᒥ ᐊᑐᖅᑕᐅᕙᒐᔭᖅᑐᓄᑦ ᐱᐅᓯᕆᐊᖅᑎᑕᐅᓯᒪᔪᑦ ᓄᐊᔅ ᓯᓚᐃᑉ ᑎᒐ ᐊᖑᓇᓱᐊᖅᐸᓐᓂᕐᒧᑦ ᐱᓕᕆᐊᖑᔪᑦ ᐊᐅᓚᑦᓯᓂᕐᑲᕐᓂᕐᓂ ᓵᑎ ᐃᐊᒃᕗ ᐊᒥᕐᕋᕐᑯᑎᖏᓐᓂᒃ ᐊᒻᒪᓗ ᐊᓱᖏᓐᓂᒃ ᐃᐊᒃᕗ ᐊᒥᕐᕋᕐᑯᑎᖏᓐᓂᒃ, ᓄᓇᕐᓯᐊᑉ ᒐᕙᒪᖓᑦ (GNWT) ᐊᒻᒪᓗ ᑎᐗᓯ ᒐᕙᒪᖓᑦ (TG) ᐋᖅᑭᒃᓯᐃᓯᒪᓕᕆᐊᖃᖅᑐᑦ ᑐᙵᕕᖅᑯᑎᒃᓴᐅᓂᐊᖅᑐᓂᒃ ᖃᐅᔨᓯᐊᕈᑎᐅᕙᓐᓂᐊᖅᑐᓄᑦ ᑖᒃᑯᐊ ᐱᓕᕆᐊᖑᔪᑦ ᐊᑐᕐᓂᕐᑲᕐᒪᖔᑕ ᐃᐊᒃᕗ ᐊᒥᕐᕋᕐᑯᑎᖏᑕ ᒥᐊᓂᕆᔭᐅᓯᒪᓕᕐᓂᒃᓴᖏᑕ ᑐᕌᕐᕕᒃᓴᕐᑯᑎᐅᔪᓄᑦ, ᕿᒥᕐᕈᔭᐅᔪᒃᓴᓂᒃ ᐊᒻᒪᓗ ᓈᒻᒪᒋᔭᐅᓯᒪᓕᕐᑯᓪᓗᒋᑦ ᕗᐃᑉᐹ ᓄᓇᒥᐅᑕᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔨᖏᑦ (WRRB), ᓯᕗᕐᖓᓂ ᓯᑎᐱᕆ 30, 2019.

<u>**ᑭᐅᔾᔪᑎᖏᑦ:**</u> ᐊᔾᔨᒌᙱᓐᓂᕐᑲᕐᕕᐅᔪᑦ

ᑎᐗᓯ ᒐᕙᒪᖓᑦ ᐊᒻᒪᓗ ᓄᓇᕐᓯᐊᑉ ᒐᕙᒪᖓᑦ (GNWT) ᐊᔾᔨᒌᙱᓐᓂᕐᑲᕐᕕᖏᑦ "ᐊᑐᓕᖅᑯᔭᐅᓪᓗᑎᒃ #3-2019"-ᒧᑦ ᐃᒪᓐᓇ ᐅᖃᖅᓯᒪᓂᖏᓂ:

<u>ᐊᑐᓕᖅᑯᔭᐅᓪᓗᑎᒃ #3-2019</u> (ᓵᑎ ᐃᐊᒃᕗ): ᐱᐅᓯᕆᐊᖅᑎᑕᐅᓯᒪᔪᑦ ᓄᐊᔅ ᓯᓚᐃᑉ ᑎᒐ ᐊᖑᓇᓱᐊᖅᐸᓐᓂᕐᒧᑦ ᐱᓕᕆᐊᖑᔪᖅ: ᖃᐅᔨᔭᐅᓯᒪᓕᖅᑯᓪᓗᒋᑦ ᓯᕗᓂᕐᒥ ᐊᑐᖅᑕᐅᕙᒐᔭᖅᑐᓄᑦ ᐱᐅᓯᕆᐊᖅᑎᑕᐅᓯᒪᔪᑦ ᓄᐊᔅ ᓯᓚᐃᑉ ᑎᒐ ᐊᖑᓇᓱᐊᖅᐸᓐᓂᕐᒧᑦ ᐱᓕᕆᐊᖑᔪᑦ ᐊᐅᓚᑦᓯᓂᕐᑲᕐᓂᕐᓂ ᓵᑎ ᐃᐊᒃᕗ ᐊᒥᕐᕋᕐᑯᑎᖏᓐᓂᒃ ᐊᒻᒪᓗ ᐊᓱᖏᓐᓂᒃ ᐃᐊᒃᕗ ᐊᒥᕐᕋᕐᑯᑎᖏᓐᓂᒃ, ᓄᓇᕐᓯᐊᑉ ᒐᕙᒪᖓᑦ (GNWT) ᐊᒻᒪᓗ ᑎᐗᓯ ᒐᕙᒪᖓᑦ (TG) ᐋᖅᑭᒃᓯᐃᓯᒪᓕᕆᐊᖃᖅᑐᑦ ᑐᙵᕕᖅᑯᑎᒃᓴᐅᓂᐊᖅᑐᓂᒃ ᖃᐅᔨᓯᐊᕈᑎᐅᕙᓐᓂᐊᖅᑐᓄᑦ ᑖᒃᑯᐊ ᐱᓕᕆᐊᖑᔪᑦ ᐊᑐᕐᓂᕐᑲᕐᒪᖔᑕ ᐃᐊᒃᕗ ᐊᒥᕐᕋᕐᑯᑎᖏᑕ ᒥᐊᓂᕆᔭᐅᓯᒪᓕᕐᓂᒃᓴᖏᑕ ᑐᕌᕐᕕᒃᓴᕐᑯᑎᐅᔪᓄᑦ, ᕿᒥᕐᕈᔭᐅᔪᒃᓴᓂᒃ ᐊᒻᒪᓗ ᓈᒻᒪᒋᔭᐅᓯᒪᓕᕐᑯᓪᓗᒋᑦ ᕗᐃᑉᐹ ᓄᓇᒥᐅᑕᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔨᖏᑦ (WRRB), ᓯᕗᕐᖓᓂ ᔮᓄᐊᕆ 10, 2020.

<u>**ᐱᔾᔪᑎᒋᔭᐅᔪᑦ:**</u> ᑎᐗᓯ ᒐᕙᒪᖓᑦ (TG) ᐊᒻᒪᓗ ᓄᓇᕐᓯᐊᑉ ᒐᕙᒪᖓᑦ (GNWT) ᐃᓱᒪᓕᐅᖅᐳᑦ ᐋᖅᑭᒃᓯᐃᓯᒪᓕᕐᓂᖅ ᑐᙵᕕᖅᑯᑎᒃᓴᓂᒃ ᖃᐅᔨᓯᐊᕈᑎᐅᕙᓐᓂᐊᖅᑐᓂᒃ ᐊᑐᕐᓂᕐᑲᕐᒪᖔᑕ ᐱᐅᓯᕆᐊᖅᑎᑕᐅᓯᒪᔪᑦ ᓄᐊᔅ ᓯᓚᐃᑉ ᑎᒐ ᐊᖑᓇᓱᐊᖅᐸᓐᓂᕐᒧᑦ ᐱᓕᕆᐊᖑᔪᖅ ᐱᓕᕆᐊᖑᕐᑯᓪᓗᒋᑦ ᐃᓚᐅᑎᑕᐅᓪᓗᑎᒃ ᐊᖏᓂᖅᓴᐅᓪᓗᑎᒃ ᑎᒐ ᐊᐅᓚᑦᓯᓂᕐᑲᕐᓂᕐᒧᑦ ᐃᓱᒪᓕᐅᕈᑎᐅᓯᒪᔪᓄᑦ ᐃᓗᐊᓂ ᐋᖅᑭᒃᓯᐃᓂᐅᔪᓄᑦ, ᑐᕌᕐᓇᑎᑦᓯᔾᔪᑎᐅᕙᒍᓐᓇᕐᑯᑎᒃ ᐋᖅᑭᒃᓯᐊᕐᑕᐅᓯᒪᓪᓗᑎᒃ ᐊᐅᓚᑦᓯᓂᕐᓄᑦ ᑐᙵᕕᖅᑯᑎᐅᔪᓄᑦ ᐃᓱᒪᒃᓴᖅᓯᐅᕈᑎᐅᔪᓄᑦ #9-2019-ᒧᑦ. ᐃᓱᒪᓕᐅᕈᑎᐅᓯᒪᔪᖅ ᒪᓕᒃᑕᐅᔪᓐᓇᕐᑯᓪᓗᒍ ᐊᒻᒪᓗ ᐃᓱᒪᒋᓗᑦ ᐊᓯᖏᑦ ᐱᓕᕆᐊᒃᓴᐃᑦ ᐱᓕᕆᐊᖑᓯᒪᔪᓐᓇᕐᑯᓪᓗᑎᑦ ᐊᑯᓂᐅᙳᕆᑦᑐᖅ ᐱᕙᒃᓴᕐᑲᖅᑎᑕᐅᓪᓗᑎᒃ, ᑎᐗᓯ ᒐᕙᒪᖓᑦ (TG) ᐊᒻᒪᓗ ᓄᓇᕐᓯᐊᑉ ᒐᕙᒪᖓᑦ (GNWT) ᐃᓱᒪᓕᐅᖅᐳᑦ ᐃᓱᒪᓕᐅᕈᑎᑦ ᐊᒻᒪᓗ ᑐᑭᓯᕙᒃᓴᐅᔪᑦ ᐊᑐᓕᖅᑯᔭᐅᓪᓗᑎᒃ #3-2019-ᒥ ᐱᔭᕇᖅᓯᒪᓂᐊᙳᕆᒻᒪᑕ ᓯᕗᕐᖓᓂ ᓯᑎᐱᕆ 30, 2019, ᐊᒻᒪᓗ ᐊᔾᔨᒌᙱᓐᓂᖅᑲᕐᓂᐊᕐᒪᑕ ᐱᔭᕇᖅᑕᐅᓯᒪᕙᒃᓴᕆᑦ ᐅᓪᓗᖓᓄᑦ ᔮᓄᐊᕆ 10, 2020-ᒥ. ᓄᓇᕐᓯᐊᑉ ᒐᕙᒪᖓᑦ (GNWT) ᐅᔾᔨᕈᓱᒃᑭᕗᑦ ᐊᒥᓱᕐᓚᐅᔪᑦ ᐱᓕᕆᐊᒃᑲᕐᑎᒃᓴᐃᑦ ᐊᒪᖅᑯᑦ ᐊᒥᒐᓂᕐᓇᔾᔭᕆᑦ ᒥᒃᓵᓂᕆᐊᖅᑎᑕᐅᓯᒪᓕᕐᑯᓪᓗᒋᑦ ᐃᓱᒪᒃᓴᖅᓯᐅᕈᑎᐅᓯᒪᓂᕆᑕ ᐊᖏᕐᓂᖅᓴᐅᓪᓗᑎᒃ ᑎᒐᓄᑦ ᐊᐅᓚᑦᓯᓂᖅᑲᖅᓯᓂᕐᓄᑦ ᐃᓱᒪᓕᐅᕈᑎᓂ. ᐱᐅᓯᕆᐊᖅᑎᑕᐅᓯᒪᓪᓗᑎᒃ ᐱᓕᕆᐊᖑᒐᕈᒪᔪᓄᑦ ᐱᓕᕆᐊᖅ ᐋᖅᑮᔾᔪᑎᐅᓯᒪᓕᖅᓯᒪᓕᑦ ᐃᓚᖃᖑᒧᑦ ᑖᒃᑯᓂᖓ ᐃᓱᒪᓕᐅᕈᑎᒃ ᐊᒻᒪᓗ ᐊᖏᕐᓂᖅᓴᐅᓗᑎᒃ ᐱᓕᕆᐊᒥ ᐊᑐᕐᓂᕐᑲᕐᓂᖅᓴᓇᕐᒪᑦ ᖃᐅᔨᓯᐊᖅᑕᐅᔭᕆᐊᖅᑲᕐᓂᐊᕐᓗᑎᒃ ᐊᑐᕐᓗᑎᑦ ᐊᒪᖅᑯᓄᑦ-ᑐᕌᖓᑎᑕᐅᓯᒪᓪᓗᑎᒃ ᐊᒻᒪᓗ ᑐᒃᑐᓄᑦ-ᑐᕌᖓᑎᑕᐅᓯᒪᓪᓗᑎᒃ ᓇᓗᓇᐃᒃᑯᑕᐅᔪᓄᑦ.

<u>ᐊᑐᓕᕐᑯᔭᐅᓪᓗᑎᒃ #4-2019 (ᓵᑎ ᐃᐊᒃᕗ):</u> ᓈᖅᕼᐊ (ᖃᕝᕚᑦ): ᖃᐅᔨᔭᐅᓯᒪᓕᕐᑯᓪᓗᒋᑦ ᒫᓐᓇᐅᓕᖅᑐᒥ ᐊᒥᓲᓂᕆᔭᐅᔪᓄᑦ ᖃᓄᐃᓕᖓᓕᖅᓯᒪᓂᐅᔪᑦ ᐊᒻᒪᓗ ᓯᐊᒻᒪᒃᑎᖅᓯᒪᓂᖏᑕ ᓵᑎ ᐃᐊᒃᕗ ᐊᒥᕐᕋᕐᑯᑎᓂᒃ ᐆᒪᔪᐃᑦ ᓂᕿᖃᖅᐸᒃᑐᑦ, ᓄᓇᕗᐊᑉ ᒐᕙᒪᖓ (GNWT) ᐊᒻᒪᓗ ᑎᓖᓱ ᒐᕙᒪᖓ (TG) ᓇᐅᓯᖅᑐᐃᔨᐅᕙᓐᓂᐊᖅᑐᑦ ᓈᖅ Hᐋ (ᖃᕝᕚᑦ) ᐊᒥᓲᓂᕆᓪᓕᓂᒃ ᕗᐃᑭᔩᒥ, ᐱᒋᐊᕐᓗᑎᒃ ᐋᐳᓗ 1, 2020. ᓇᐅᓯᖅᑐᐃᕙᓐᓂᕐᓄᑦ ᑐᓴᒐᒃᓴᕐᑯᑏ ᐊᒥᖅᑲᕈᑎᒋᔭᐅᕙᒋᐊᖃᖅᑐᑦ ᕗᐃᑭᔩ ᓄᓇᒥᐅᑕᓕᕆᔩᒃᑯᑦ ᑲᑎᒪᔩᖏᑦ (WRRB) ᐊᑐᐃᓐᓇᐅᓕᖀᖓᑕ.

<u>ᑭᐅᔾᔪᑎᖏᑦ:</u> ᐊᔾᔨᒌᖕᒋᓐᓂᖃᕐᕕᐅᔪᑦ

ᑎᓖᓱ ᒐᕙᒪᖓ (TG) ᐊᒻᒪᓗ ᓄᓇᕗᐊᑉ ᒐᕙᒪᖓ (GNWT) ᐊᔾᔨᒌᖕᒋᑕᖏᑎᒍᑦ ᐅᖃᖅᓯᒪᕗᑦ "ᐊᑐᓕᕐᑯᔭᐅᓪᓗᑎᒃ #4-2019"-ᒧᑦ ᐃᒪᓐᓇ ᐅᖃᖅᓯᒪᓪᓗᒋᑦ:

<u>ᐊᑐᓕᕐᑯᔭᐅᓪᓗᑎᒃ #4-2019</u> (ᓵᑎ ᐃᐊᒃᕗ): ᓈᖅᕼᐊ (ᖃᕝᕚᑦ): ᖃᐅᔨᔭᐅᓯᒪᓕᕐᑯᓪᓗᒋᑦ ᒫᓐᓇᐅᓕᖅᑐᒥ ᐊᒥᓲᓂᕆᔭᐅᔪᓄᑦ ᖃᓄᐃᓕᖓᓕᖅᓯᒪᓂᐅᔪᑦ ᐱᓕᕆᓂᕐᑲᓕᖅᐸᓐᓂᐊᖅᑐᑦ ᑕᐃᒪᐅᓕᐊᓂᒃᓯᑎᒃ ᓇᐅᓯᖅᑐᒐᐅᓂᖏᓐᓂᒃ ᐊᒻᒪᓗ ᓯᐊᒻᒪᒃᑎᖅᓯᒪᓂᖏᑕ ᓵᑎ ᐃᐊᒃᕗ ᐊᒥᕐᕋᕐᑯᑎᓂᒃ ᐆᒪᔪᐃᑦ ᓂᕿᖃᖅᐸᒃᑐᑦ, ᓄᓇᕗᐊᑉ ᒐᕙᒪᖓ (GNWT) ᐊᒻᒪᓗ, ᐊᑐᓕᖅᑎᑕᐅᔪᓐᓇᖀᖓᑦ, ᐊᕕᒃᑐᖅᓯᒪᓂᐅᔪᓂᑦ ᓄᓇᕗᒻᒥ ᓯᕗᓪᓕᓂ ᐋᐳᓗ 1, 2020. ᑖᒃᑯᐊ ᐊᑐᖅᑕᐅᓂᐊᕐᒪᑕ ᐃᓱᒪᒃᓴᖅᓯᐅᕈᑎᖃᕐᓂᕐᓂ ᓯᕗᓂᕐᒥ ᓇᐅᓯᖅᑐᐃᓂᐅᓕᕈᓐᓇᖅᑐᓄᑦ ᖃᕝᕕᖕᓂᒃ. ᖃᓄᐃᑦᑐᑐᐃᓐᓇᐃᑦ ᑕᐃᒪᐅᓕᐊᓂᒃᑐᑦ ᓇᐅᓯᖅᑐᐃᕙᓐᓂᕐᒧᑦ ᑐᓴᒐᒃᓴᐃᑦ ᐊᒥᖅᑲᕈᑎᐅᕙᓐᓂᐊᖅᑐᑦ ᕗᐃᑭᔩ ᓄᓇᒥᐅᑕᓕᕆᔩᒃᑯᑦ ᑲᑎᒪᔩᖏᑦ (WRRB).

<u>ᐱᔾᔪᑎᒋᔭᐅᔪᑦ:</u> ᑎᓖᓱ ᒐᕙᒪᖓ (TG) ᐃᑲᔪᖅᑐᐃᕗᑦ ᐱᔾᔪᑎᒋᔭᐅᔪᓂᒃ ᑲᑎᖅᓱᐃᕙᓐᓂᕐᒧᑦ ᓇᐅᓯᖅᑐᐃᓂᕐᒥ ᑐᓴᒐᒃᓴᕐᑯᑎᐅᓂᐊᖅᑐᓂᒃ ᐱᔾᔪᑎᒋᓪᓗᒋᑦ ᓈᖅᕼᐊ (ᖃᕝᕚᑦ). ᑎᓖᓱ ᒐᕙᒪᖓ (TG) ᑮᓇᐅᔭᕐᑯᑎᖃᖏᒻᒪᑕ ᐃᑲᔪᕈᑎᒃᓴᓂᒃ ᐱᓕᕆᐊᕐᑲᓕᕈᑎᒃᓴᒥᓐᓄᑦ ᖃᕝᕕᖕᓂᒃ ᓇᐅᓯᖅᑐᐃᓂᕐᒥ ᖃᐅᔨᓴᕈᑎᒃᓴᐅᓇᔭᖅᑐᓂᒃ, ᐊᒻᒪᓗ ᒫᓐᓇᐅᔪᒥ ᓂᕈᐊᖅᑖᓯᒪᓪᓗᑎᒃ ᐊᑐᓕᖅᑎᑦᓯᓯᒪᒋᐊᒧᑦ ᓯᕗᓪᓕᖅᐸᐅᑎᑕᐅᕐᑯᔭᐅᓪᓗᑎᒃ ᐅᖃᖅᑕᐅᓯᒪᓕᓚᐅᖅᑐᓂᑦ 2019-ᒥ ᐃᓱᒪᓕᐅᕈᑎᓂᒃ ᐊᑐᓕᖅᑎᑕᐅᕐᑯᔭᐅᔪᓂᒃ ᐃᓚᖃᖅᑎᓪᓗᒋᑦ ᐱᔭᓈᖅᑕᐅᓯᒪᓕᕐᑯᓪᓗᒋᑦ ᐃᓱᒪᓕᐅᕈᑎᓕᐊᖑᖅᑳᓚᐅᖅᑐᓂᑦ ᕗᐃᑭᔩ ᓄᓇᒥᐅᑕᓕᕆᔩᒃᑯᑦ ᑲᑎᒪᔩᖏᑦ (WRRB). ᑎᓖᓱ ᒐᕙᒪᖓ (TG) ᐃᓱᒪᓕᐅᖅᐳᑦ ᐱᓕᕆᓂᖃᖖᒫᕐᑯᔩᓪᓗᑎᒃ ᐋᖅᑭᒃᓯᐃᓯᒪᓕᕐᓂᒃᓴᒧᑦ ᑲᑐᔾᔨᓂᖃᕐᓗᑎᒃ ᑐᙵᕘᓕᐅᖅᓯᒪᓕᕐᓂᐊᕐᓂᖏᑕ ᓄᓇᕗᐊᑉ ᒐᕙᒪᖓᓂᑦ (GNWT) ᐊᒻᒪᓗ ᕗᐃᑭᔩ ᓄᓇᒥᐅᑕᓕᕆᔩᒃᑯᑦ ᑲᑎᒪᔩᖏᑦ (WRRB).

ᓄᓇᕗᐊᑉ ᒐᕙᒪᖓ (GNWT) ᐅᔾᔨᕈᓱᒃᑐᑦ ᓱᓇᑐᐃᓐᓇᓂᒃ ᖃᐅᔨᓴᐃᔨᐅᔪᑦ ᓇᓗᓇᐃᖅᓯᒪᓕᖅᑕᖏᑦ ᒫᓐᓇᒧᑦ ᓇᓗᓇᐃᖅᓯᓯᒪᖕᒋᒻᒪᑕ ᖃᕝᕚᓐᓄᑦ ᐱᔾᔪᑎᖃᖅᑐᓂᒃ ᐊᖏᔫᓪᓗᑎᒃ ᐱᑕᖅᐸᓐᓂᖏᑕ ᓄᓇᐃᓐᓇᕐᒥ ᑐᒃᑐᕐᑯᑎᐅᔪᓂᒃ. ᖃᕝᕚᑦ ᐆᒪᔪᕐᑯᑎᐅᔪᑦ ᓯᕗᓪᓕᕐᒥᒃ ᑐᕐᑯᖓᓕᖅᑐᓂᒃ ᓂᕿᒋᔭᒃᓴᖅᓯᐅᖅᐸᓐᓂᖏᑕ ᐊᒻᒪᓗ ᒫᓐᓇᐅᔪᒥ ᓇᓗᓇᐃᖅᑕᐅᓯᒪᔪᑦ ᓇᓗᓇᐃᖅᓯᓯᒪᔫᔭᕐᒪᑕ ᐊᒥᓲᓂᕆᖏᑦ ᕿᖓᒪᐅᑦ ᐊᒥᕐᕋᕐᑯᑎᖏᑕ ᓇᒧᖅᐸᒃᑕᖏᓂ ᐊᒥᓲᖕᓃᖅᐸᓪᓕᐊᓯᒪᓂᖏᑕ ᐱᔾᔪᑎᒋᓪᓗᒍ ᐊᒥᕐᕋᕐᑯᑎᐅᔪᑦ ᐊᒥᓲᖕᓃᖅᐸᓪᓕᐊᓯᒪᓂᖏᑦ. ᐱᓕᕆᔾᔪᓯᐅᕙᑦᑐᓂ ᓇᐅᓯᖅᑐᐃᓂᕐᒥ ᖃᕝᕚᑦ ᐊᒥᓲᓂᖏᑕ ᐊᒻᒪᓗ ᓯᐊᒻᒪᒃᑎᖅᓯᒪᓂᖏᑕ ᐱᓕᕆᔾᔪᑎᖃᖃᑦᑕᖅᓯᒪᒻᒪᑕ ᓇᕿᙱᖅᓯᒪᓂᖏᓄᑦ ᓇᓗᓇᐃᒃᑯᑕᑎᒍᑦ-ᖃᐅᔨᓴᕐᓴᓂᒃ ᐱᓯᒪᓕᒃᑲᓐᓂᖅᐸᓐᓂᖅᑎᒍᑦ, ᓄᓇᕗᐊᑉ ᒐᕙᒪᖓ (GNWT) ᓇᐅᓯᖅᑐᐃᓂᕐᒥ ᐱᓕᕆᓂᖅᖃᖅᓯᒪᓕᖅᑐᑦ ᑎᐊᕆᖓ ᑖᒃ ᑕᓯᐊᑕ ᐊᕙᑎᒋᔭᖓᓂ ᐊᒻᒪᓗ ᓯᑎᓂᖅᐹᓂᒃ ᐅᔭᖅᑲᓂᒃ ᐅᔭᕋᒃᑕᕆᐊᖅᑎᒃᑯᑦ ᐊᔾᔨᕐᓚᖓᒋᓂᒃ ᐱᓕᕆᓂᖅᑲᖅᓯᒪᓕᕐᓯᑎᒃ ᐊᕙᑎᒋᔭᒥᓐᓂ. ᐊᕙᑎᓕᕆᔨᒃᑯᑦ ᓄᓇᒥᐅᑕᓕᕆᔨᒃᑯᓪᓗ ᐱᕈᒃᑲᓂᕈᓐᓇᖅᑐᓕᕆᔩᖏᑦ (ENR) ᐱᑕᖃᖅᑎᑦᓯᔪᓐᓇᕐᒪᑕ ᒫᓐᓇᒧᑦ ᑎᑭᑎᑕᐅᓯᒪᔪᓂᒃ ᓇᐃᓪᓕᒋᐊᖅᓯᒪᓪᓗᒋᑦ ᖃᕝᕕᖕᓂᒃ ᓇᐅᓯᖅᑐᐃᕙᓐᓂᕐᓄᑦ ᓄᓇᕗᐊᕐᒥ, ᐃᓚᖃᖅᑎᓪᓗᒋᑦ ᖃᓄᐃᓕᖓᓕᕐᓂᐅᔪᓂᒃ ᓄᓇᕗᒻᒥᑦ ᐊᑐᐃᓐᓇᐅᑎᑕᐅᒃᐸᑕ, ᑐᙵᕘᕕᐅᓕᕈᓐᓇᖅᑐᓂᒃ ᐃᓱᒪᒃᓴᖅᓯᐅᕈᑎᖃᕐᓂᕐᓂ ᓯᕗᓂᕐᒥ ᓇᐅᓯᖅᑐᐃᓂᐅᓕᕋᔭᖅᑐᓄᑦ.

<u>ᐊᑐᓕᕐᑯᔭᐅᓪᓗᑎᒃ #5-2019 (ᓵᑎ ᐃᐊᒃᕗ):</u> ᓂᕿᑐᖅᐸᒃᑐᑦ ᐆᒪᔪᐃᑦ ᓄᕋᖃᕕᐅᕙᒃᑐᓂ: ᐊᒥᓱᕈᖅᓯᒪᓕᕈᓐᓇᕐᑯᓪᓗᒋᑦ ᓄᕋᖅᑖᕗᕙᑦᑐᓄᑦ ᑐᒃᑐᓂᑦ ᓵᑎ ᐃᐊᒃᕗ ᐊᒥᕐᕋᕐᑯᑎᖏᓂᑦ ᕐᑯᑦᓯᖕᓂᓇᔭᐅᔪᑦ, ᓄᓇᕗᐊᑉ ᒐᕙᒪᖓ (GNWT) ᐊᒻᒪᓗ ᑎᓖᓱ ᒐᕙᒪᖓ (TG) ᐱᓕᕆᖃᑎᒌᒃᓗᑎᒃ ᐱᓕᕆᖃᑎᖃᓇᖅᑲᖅᑎᑕᐅᕗᑦ ᐊᕙᑎᓕᕆᔩᒃᑯᓐᓂᒃ, ᓄᓇᕗᑦ ᒐᕙᒪᖓᓂ ᒥᐊᓂᕆᔭᐅᓯᒪᓕᕐᑯᓪᓗᒋᑦ ᓄᕋᖃᕕᐅᕙᒃᑐᑦ ᓄᓇᐃᑦ ᓵᑎ ᐃᐊᒃᕗ ᑐᒃᑐᖏᓂ ᑎᒐ, ᓵᐊᓲ, ᑎᐊᑦᐅᓴᓲ, ᐊᒻᒪᓗ ᓈᖅᕼᐊᓂᑦ. ᐱᒋᐊᕐᕕᖃᕐᓗᑎᒃ 2020 ᐅᑭᐅᖓᓂ, ᓄᕋᖃᕕᐅᕙᑦᑐᑦ ᓄᓇᐃᑦ ᒥᐊᓂᕆᔭᐅᓯᒪᓕᕐᓂᖏᑦ ᐱᓕᕆᐊᕐᑲᔪᓐᓇᕐᒪᑕ ᓇᐅᓯᖅᑐᐃᕙᓐᓂᕐᓂᒃ ᐊᕙᑎᒋᔭᖓᓂᒃ ᐊᒻᒪᓗ ᐱᒋᐊᖅᑎᑕᐅᓯᒪᕙᒋᐊᖃᕐᓯᑎᒃ ᐊᑕᐅᓯᕐᒥᒃ ᐱᓇᓱᐊᕈᓯᕐᒥᒃ ᓯᕗᓪᓕᖓᓂ ᓄᕋᖃᓕᖅᓯᒪᕙᓐᓂᐅᔪᓂᑦ.

ᑭᐅᔾᔪᑎᖏᑦ: ᐊᔾᔨᕆᙱᓐᓂᖃᖅᑲᐅᔪᑦ

ᑎᓕᓲ ᒐᕙᒪᖓ (TG) ᐊᒻᒪᓗ ᓄᓇᕗᐊᑉ ᒐᕙᒪᖓ (GNWT) ᐊᔾᔨᙱᕐᑕᕆᑎᒍᑦ ᐅᖃᖅᓯᒪᕗᑦ “ᐊᑐᓕᖅᑯᕋᐅᓪᓗᑎᒃ #5-2019”-ᒧᑦ ᐃᒪᓐᓇ ᐅᖃᖅᓯᒪᓪᓗᑎᑦ:

ᐊᑐᓕᖅᑯᕋᐅᓪᓗᑎᒃ #5-2019 (ᓵᑎ ᐃᐊᒃᕗ): ᓂᕿᑐᖅᐸᒃᑐᑦ ᐆᒪᔪᐃᑦ ᓄᕋᖅᑲᖅᑳᐅᕙᒃᑐᓂ: ᐊᒥᓲᙳᓇᐊᖅᓯᒪᓕᖅᑯᓪᓗᑎᑦ ᓄᕋᐃᑦ ᐃᖅᓂᖓᙳᓵᖅᑐᑦ ᐊᓐᓇᐅᒪᔪᓐᓇᖅᓂᖏᑦ ᐊᒻᒪᓗ ᐃᓐᓇᐅᓕᖅᑐᑦ ᑐᒃᑐᐃᑦ ᓵᑎ ᐃᐊᒃᕗ ᐊᒥᖅᑲᖅᑯᑎᖏᓂ, ᓄᓇᕗᐊᑉ ᒐᕙᒪᖓ (GNWT) ᐊᒻᒪᓗ ᑎᓕᓲ ᒐᕙᒪᖓ (TG) ᑲᔪᓯᑎᕙᓯᒪᔭᓇᐊᓖᑦ ᐃᓚᐅᖃᑕᐅᑎᕙᓂᒥᓐᓂᒃ ᐊᕙᑎᓕᓇᔾᑯᓐᓂᒃ, ᓄᓇᕗᐊᑉ ᒐᕙᒪᖓᓂᑦ ᖃᐅᔨᓴᐃᓂᓇᔭᒥᓐᓄᑦ ᐱᓕᓇᔾᔪᑎᐅᙳᒃᑐᓂᒃ ᐊᑐᖅᑕᐅᔪᓐᓇᖅᔭᖅᑐᓂᒃ ᒥᑭᓪᓕᐊᖅᑎᑕᐅᓯᒪᓕᖅᑯᓪᓗᑎᑦ ᖁᓯᖕᓂᓇᔭᖏᑦ ᓂᕿᑐᖅᐸᒃᑐᑦ ᐆᒪᔪᐃᑦ ᓄᕋᖅᑲᖅᕕᕆᕙᒃᑕᖏᓂ ᓵᑎ ᐃᐊᒃᕗ ᐊᒥᖅᑲᖅᑯᑎᖏᑕ ᑎᒐ, ᓴᐊᓲ, ᑎᐊᑦᐅᔅᓲ, ᐊᒻᒪᓗ ᓈHᐊᓂᑦ. ᓄᕋᖅᑲᖅᕙᐅᕙᑦᑐᑦ ᒥᐊᓂᕆᔭᐅᓕᖅᓂᖏᑦ ᐱᓕᕆᐊᙳᓕᕈᓐᓇᖅᒪᑕ ᓇᐅᑦᓯᖅᑐᐃᕙᓐᓂᖅᑎᒍᑦ ᐊᕙᑎᒋᔭᕐᒐᒍᑦ ᐊᒻᒪᓗ ᐱᒋᐊᖅᑎᑕᐅᓯᒪᕙᒃᓗᑎᒃ ᐊᑕᐅᓯᖅᒥᒃ ᐱᓇᓱᐊᕈᓯᖅᒥᒃ ᓯᕗᕐᒐᕐᒐᓂ ᓄᕋᖅᑲᓕᖅᓯᒪᕙᓐᓂᐅᔪᓂᑦ.

ᐱᔾᔪᑎᒋᔭᐅᔪᑦ: ᑎᓕᓲ ᒐᕙᒪᖓ (TG) ᐊᒻᒪᓗ ᓄᓇᕗᐊᑉ ᒐᕙᒪᖓ (GNWT) ᐅᔾᔨᕈᓱᒃᑐᑦ ᓄᕋᖅᑲᖅᕕᕆᕙᒃᑕᕐᕆᑦ ᓵᑎ ᐃᐊᒃᕗ ᐊᒥᖅᑲᕐᕆᓂᑦ ᓇᓂᔭᐅᓯᒪᒻᒪᑕ ᓄᓇᕗᒻᒥ ᓯᓚᑖᓃᑦᑐᓂ ᑎᓕᓲ ᓄᓇᖏᓐᓂᑦ ᐊᒻᒪᓗ ᒪᐅHᐃ ᒍᒻHᐊ ᑎ ᓃᑦᓕ ᐊᒻᒪᓗ ᓯᓚᑖᓂ ᓄᓇᕗᐊᑉ ᒐᕙᒪᖓ (GNWT) ᐊᐅᓚᕝᓯᓂᖅᑲᖅᕕᕆᔭᕆᑕ.

ᑎᓕᓲ ᒐᕙᒪᖓ (TG) ᐊᕆᕈᑎᖅᑲᖅᓯᒪᕗᑦ ᑐᕌᖅᕙᒃᓴᖅᑯᑎᐅᔪᓂᒃ “ᐊᑐᓕᖅᑯᕋᐅᓪᓗᑎᒃ #5-2019”-ᒥ ᐊᒻᒪᓗ ᖁᕙᐊᓱᒃᐳᑦ ᐃᓚᒋᔭᖅᑲᓕᓇᐊᒥᓐᓂ ᐱᓕᓇᐊᖑᔪᓄᑦ ᓄᓇᕗᒻᒥ ᒐᕙᒪᖓᓂᒃ. ᑎᓕᓲ ᒐᕙᒪᖓ (TG) ᐃᑲᔪᖅᑐᐃᓯᒪᓇᔭᖅᑐᑦ ᖃᓄᐃᑦᑐᑐᐃᓐᓇᓂᒃ ᐸᕐᓇᐅᑎᓕᐊᕝᔪᓯᒪᔪᓂᒃ ᓄᓇᕗᒻᒥ ᒥᐊᓂᓇᔭᐅᓯᒪᓕᖅᑯᓪᓗᑎᑦ ᓄᕋᖅᑲᖅᕙᐅᕙᑦᑐᑦ ᐊᑐᖅᐸᓐᓂᖅᑎᒍᑦ ᓇᐅᑦᓯᖅᑐᐃᓂᐅᔪᓄᑦ ᐊᕙᑎᒋᔭᐅᔪᓂ ᐊᑕᐅᓯᖅᒥᒃ ᐱᓇᓱᐊᕈᓯᖅᒥᒃ ᓯᕗᕐᒐᕐᒐᓂ ᓄᕋᖅᑲᓕᖅᓯᒪᕙᓐᓂᐅᔪᓂᑦ. ᑖᒃᑯᐊ ᐃᑲᔪᖅᓯᓂᐅᔪᑦ ᓇᓗᓇᐃᖅᑕᐅᓯᒪᕗᑦ ᐊᕆᕈᑎᐅᓯᒪᔪᓄᑦ ᓄᓇᕗᒻᒥᑦ. ᑕᐃᒪᓐᓇᐃᒃᑲᓗᐊᖅᑎᓪᓗᑎᑦ ᑖᒃᑯᐊ ᐃᑲᔪᖅᓯᓯᒪᓂᐅᔪᑦ ᑎᓕᓲ ᒐᕙᒪᖓ (TG) ᓇᓗᓇᐃᖅᓯᓯᒪᓪᓚᑦᑖᓕᕈᓐᓇᙱᑦᑐᑦ 2020-ᒥ ᐊᑐᓕᖅᑎᑕᐅᓇᔭᖅᕕᕐᒐᑕ ᐅᓪᓗᖕᒐᓂᒃ.

ᖃᓄᑐᐃᓐᓇᖅ ᐆᒪᔪᓂᒃ ᐊᐅᓚᕝᓯᓂᖅᑲᖅᓂᖅᒥ ᐱᓕᓇᐊᕝᔪᑦ ᓄᓇᕗᒻᒥ ᒪᓕᒋᐊᖅᑲᖅᑎᑕᐅᓇᔭᖅᑐᑦ ᓈᒻᒪᒃᑐᓂᒃ ᐱᓇᓱᐊᕈᓯᐅᕙᒃᑐᓂᒃ ᐃᒪᓐᓇ ᐊᕕᒃᑐᖅᓯᒪᓂᐅᔪᒥ ᐊᒻᒪᓗ ᐱᓕᓇᓂᖅᑲᖅᑐᑎᒃ ᑲᑐᔾᔨᖅᑲᑎᒌᕆᔭᐅᔪᑎᒍᑦ ᑕᐅᕙᓂ, ᐃᓚᖅᑲᖅᑎᓪᓗᑎᑦ ᓄᓇᕗᑦ ᒐᕙᒪᖓᓂᒃ (GN), ᓄᓇᕗᒥ ᐆᒪᔪᓕᕆᔨᖅᔪᐊᑦ ᑲᑎᒪᔨᖏᑦ (NWMB), ᐊᒻᒪᓗ ᐊᕕᒃᑐᖅᓯᒪᓂᐅᔪᒥ ᐊᒻᒪᓗ ᓄᓇᓕᐅᔪᒥ ᑲᑐᔾᔨᖅᑲᑎᒌᕝᔪᓂᒃ. ᓄᓇᕗᐊᑉ ᒐᕙᒪᖓ (GNWT) ᑲᔪᓯᑎᕙᓯᒪᓂᐊᖅᑐᑦ ᑲᑐᔾᔨᓂᖅᑲᖅᓗᑎᒃ ᐱᓕᓇᖅᑲᑎᖅᑲᖅᓂᖅᒥᓐᓂᒃ ᓄᓇᕗᑦ ᒐᕙᒪᖓᓂᒃ (GN).

ᐊᑐᓕᖅᑯᕋᐅᓪᓗᑎᒃ #6-2019 (ᓵᑎ ᐃᐊᒃᕗ): ᖁᑦᑎᒃᑐᒻᒪᓇᕐᒥᒃ ᓯᕗᓪᓕᖅᐸᐅᑎᑕᐅᖁᔭᐅᓯᒪᔪᑦ ᓇᔪᖅᑕᐅᕙᑦᑐᓄᑦ ᐆᒪᔪᓂᑦ ᓇᓗᓇᐃᔭᐃᓯᒪᓕᖅᓂᖅ: ᐱᓕᓇᓂᖅᑲᖅᑯᓪᓗᑎᑦ ᑐᕌᒐᖅᑲᖅᓗᑎᒃ ᒥᐊᓂᓇᔭᐅᓯᒪᓕᖅᓂᒃᓴᖅᑕ ᓵᑎ ᐃᐊᒃᕗ ᐊᒥᖅᑲᖅᑯᑎᖅᑕ ᓇᔪᖅᐸᒃᑕᖅᑦ, ᑎᓕᓲ ᒐᕙᒪᖓ (TG) ᐱᓕᓇᖅᑲᑎᖅᑲᓇᐊᓖᑦ ᓄᓇᓕᐅᔪᓂᒃ ᓇᓗᓇᐃᔭᐃᓂᖅᒥ ᖁᑦᑎᒃᑐᒻᒪᓇᕐᒥᒃ ᓯᕗᓪᓕᖅᐸᐅᑎᑕᐅᖁᔭᐅᓯᒪᔪᓄᑦ ᓇᔪᖅᑕᐅᕙᒃᑐᓄᑦ ᐆᒪᔪᓂᑦ ᒥᐊᓂᓇᔭᐅᓯᒪᓕᖅᑯᓪᓗᑎᑦ. ᖁᑦᑎᒃᑐᒻᒪᓇᕐᒥᒃ ᓯᕗᓪᓕᖅᐸᐅᑎᑕᐅᖁᔭᐅᓯᒪᔪᑦ ᓇᔪᖅᑕᐅᕙᑦᑐᓄᑦ ᐆᒪᔪᓂᑦ ᐃᓚᖅᑲᖅᑎᑕᐅᔭᓇᐊᖅᑲᖅᑐᑦ ᓇᔪᖅᑕᐅᕙᑦᑐᑦ ᐊᑐᖅᑕᐅᕙᒃᓯᑎᒃ ᓵᑎ ᐃᐊᒃᕗ ᐊᒥᖅᑲᖅᑯᑎᖏᓂᑦ ᐊᒥᓷᙱᑦᑑᓪᓗᑎᒃ. ᓇᓗᓇᐃᔭᖅᑕᐅᓯᒪᓕᖅᐸᑕ, ᖁᑦᑎᒃᑐᒻᒪᓇᕐᒥᒃ ᓯᕗᓪᓕᖅᐸᐅᑎᑕᖁᔭᐅᓯᒪᔪᑦ ᓇᔪᖅᑕᐅᕙᑦᑐᓄᑦ ᐆᒪᔪᓂᑦ ᐊᒥᖅᑲᕈᑎᐅᔭᓇᐊᖅᑲᖅᐳᑦ ᕗᐃᑮᔅ ᓄᓇᒥᐅᑕᓕᓇᔾᑯᑦ ᑲᑎᒪᔨᖏᑦ (WRRB).

ᑭᐅᔾᔪᑎᖏᑦ: ᓈᒻᒪᒋᔭᐅᔪᑦ

ᐱᔾᔪᑎᒋᔭᐅᔪᑦ: ᐱᓕᓇᐊᕝᔪᓕᖅᓯᒪᕗᑦ ᒫᓐᓇᐅᔪᒥ ᑎᓕᓲ ᒐᕙᒪᖓᓂᑦ (TG) ᐃᖅᑲᓇᐃᔭᖅᑎᐅᔪᓂᑦ ᑐᕌᖓᔪᑦ ᑕᑖ ᐊᒻᒪᓗ ᐃᒪᒃᑯᑦ ᐃᑳᖅᑲᐅᕙᒃᑐᑦ. ᑎᓕᓲ ᒐᕙᒪᖓ (TG) ᐃᓄᑐᖅᑲᓇᔭᐅᔪᓂᒃ ᑲᑎᙱᓚᑎᕝᓯᓚᐅᖅᐳᑦ ᔭᓗᓇᐃᒥ ᐅᖃᓪᓚᐅᓯᖅᑲᖅᑎᖅᑲᖅᑯᓪᓗᑎᑦ ᖁᑦᑎᒃᑐᒻᒪᓇᕐᒥᒃ ᓯᕗᓪᓕᖅᐸᐅᑎᑕᐅᖁᔭᐅᓯᒪᔪᑦ ᓇᔪᖅᑕᐅᕙᒃᑐᓄᑦ ᑐᒃᑐᑦ, ᑐᙵᕝᕕᕆᓪᓗᑎᑦ ᒫᓐᓇᐅᔪᒥ ᐃᑯᐊᗨᓕᖅᑲᐅᕙᒃᑐᖃᖅᓄᑦ ᓄᓇᒥ (ᓄᓇᙳᐊᑦ); ᑎᓕᓲ ᒐᕙᒪᖓ (TG) ᐊᒥᖅᑲᕈᑎᖅᑲᖅᓂᐊᖅᑐᑦ ᑐᓴᒃᓴᖅᑯᑎᓂᒃ ᓄᓇᕗᐊᑉ ᒐᕙᒪᖓᓂᒃ (GNWT) ᓯᕗᓪᓕᖅᐸᐅᑎᑕᐅᔫᓴᓂᒃ ᐋᖅᑮᓯᓕᖅᑯᓪᓗᑎᑦ ᐱᔾᔪᑎᐅᓗᐊᖅᓱᑎᒃ ᐅᑭᐅᒥ ᓇᔪᖅᑕᐅᕙᒃᑐᑦ ᐃᑯᐊᗨᓕᖅᓯᒪᓂᐅᔪᑦ ᖃᒥᑎᑕᐅᕙᓪᓕᐊᖅᑯᓪᓗᑎᑦ ᐊᒻᒪᓗ ᑐᓂᓯᓯᒪᓕᖅᓂᐊᖅᑐᑦ ᑖᒃᑯᓂᖓ ᑐᓴᒐᒃᓴᓂᒃ ᕗᐃᑮᔅ ᓄᓇᒥᐅᑕᓕᓇᔾᑯᑦ ᑲᑎᒪᔨᖏᑦ (WRRB) ᓯᕗᖓᓂ ᑎᓯᐱᓇ 1, 2019.

ᐊᑐᓕᖅᑯᔭᐅᓪᓗᑎᒃ #7-2019 (ᓵᑎ ᐃᐊᒃᕗ): ᒪᓕᒃᑎᒍᑦ ᒥᐊᓂᖅᓯᓯᒪᓕᖅᓂᖅ: ᓇᓗᓇᐃᔭᖅᑕᐅᓯᒪᓕᖅᐸᑕ ᖁᑦᑎᒃᑐᒻᒪᕆᒻᒥᒃ ᓯᕗᓪᓕᖅᐸᐅᑎᑕᐅᖅᑯᔭᐅᓯᒪᔪᑦ ᓵᑎ ᐃᐊᒃᕗ ᐊᒥᖅᖁᑎᖏᓂᑦ, ᐊᒻᒪᓗ ᑕᒪᒃᑯᐊ ᓇᔪᖅᑕᐅᕙᑦᑐᑦ ᑕᐃᒪᐅᖏᓐᓇᖅᑎᑕᐅᖅᑯᓪᓗᒋᑦ, ᒪᓕᒃᑎᒍᑦ ᐊᑐᓕᖅᑎᑕᐅᔪᓐᓇᖅᓯᑎᒃ ᓇᔪᖅᑕᐅᕙᒃᑐᑦ ᒥᐊᓂᕆᔭᐅᓕᕆᑎᒃᓴᖏᑦ ᐊᑐᓕᖅᑎᑕᐅᔭᕆᐊᖅᑲᖅᐳᑦ ᓄᓇᕘᑉ ᒐᕙᒪᖓᓂᑦ (GNWT) ᒪᓕᒃᑐᒋᑦ ᐆᒪᔪᓕᕆᓂᖅᒧᑦ ᒪᓕᒐᖅᑎᐅᔪᑦ ᐅᕝᕙᓘᓐᓃᑦ ᐆᒪᔪᖅᑯᑏᑦ ᓄᖑᑐᐃᓐᓇᕆᐊᖅᑲᖅᑐᓄᑦ ᒪᓕᒐᖅᑎᐅᔪᑦ ᓄᓇᕘᑉ ᓄᓇᖓᓂ (NWT). ᒫᓐᓇᐅᔪᒥ ᐱᓕᕆᐊᖑᓕᖅᓯᒪᓂᖓᓂ, ᐅᐊᔭᖅᐸᒃᑐᑦ ᑐᒃᑐᐃᑦ ᒥᐊᓂᕆᔭᐅᓯᒪᓕᖅᕕᖓᓂ ᒥᐊᓂᖅᓯᔾᔪᑎᑦ ᐊᑐᓕᖅᑎᑕᐅᔭᕆᐊᖅᑲᖅᐳᑦ ᓄᓇᕘᑉ ᒐᕙᒪᖓᓂᑦ (GNWT) ᐊᒻᒪᓗ ᑎᓖᓯ ᒐᕙᒪᖓᓂᑦ (TG) ᓯᕗᓂᖓᓂ ᓯᑎᐱᕆ 2020.

ᑭᐅᔾᔪᑎᖏᑦ: ᐊᔾᔨᒌᙱᓐᓂᖅᑲᖅᕕᐅᔪᑦ

ᓄᓇᕘᑉ ᒐᕙᒪᖓᓂᑦ (GNWT) ᐊᔾᔨᙱᑦᑕᕆᑎᒍᑦ ᐅᖅᑲᖅᓯᒪᕗᑦ "ᐊᑐᓕᖅᑯᔭᐅᓪᓗᑎᒃ #7-2019"-ᒧᑦ ᐃᒪᓐᓇ ᐅᖅᑲᖅᓯᒪᓪᓗᒋᑦ:

ᐊᑐᓕᖅᑯᔭᐅᓪᓗᑎᒃ #7-2019 (ᓵᑎ ᐃᐊᒃᕗ): ᒪᓕᒃᑎᒍᑦ ᒥᐊᓂᖅᓯᓯᒪᓕᖅᓂᖅ: ᓇᓗᓇᐃᔭᖅᑕᐅᓯᒪᓕᖅᐸᑕ ᖁᑦᑎᒃᑐᒻᒪᕆᒻᒥᒃ ᓯᕗᓪᓕᖅᐸᐅᑎᑕᐅᖅᑯᔭᐅᓯᒪᔪᑦ ᓵᑎ ᐃᐊᒃᕗ ᐊᒥᖅᖁᑎᖏᓂᑦ, ᐊᒻᒪᓗ ᑕᒪᒃᑯᐊ ᓇᔪᖅᑕᐅᕙᑦᑐᑦ ᑕᐃᒪᐅᖏᓐᓇᖅᑎᑕᐅᖅᑯᓪᓗᒋᑦ, ᒪᓕᒃᑎᒍᑦ ᐊᑐᓕᖅᑎᑕᐅᔪᓐᓇᖅᓯᑎᒃ ᓇᔪᖅᑕᐅᕙᒃᑐᑦ ᒥᐊᓂᕆᔭᐅᓕᕆᑎᒃᓴᖏᑦ ᖃᐅᔨᒋᐊᖅᑕᐅᔭᕆᐊᖅᑲᖅᐳᑦ ᓄᓇᕘᑉ ᒐᕙᒪᖓᓂᑦ (GNWT) ᒪᓕᒃᑐᒋᑦ ᐆᒪᔪᓕᕆᓂᖅᒧᑦ ᒪᓕᒐᖅᑎᐅᔪᑦ ᐅᕝᕙᓘᓐᓃᑦ ᐆᒪᔪᖅᑯᑏᑦ ᓄᖑᑐᐃᓐᓇᕆᐊᖅᑲᖅᑐᓄᑦ ᒪᓕᒐᖅᑎᐅᔪᑦ ᓄᓇᕘᑉ ᓄᓇᖓᓂ (NWT). ᐊᒻᒪᓗᒃᑲᓐᓂᖅ, ᓄᓇᕘᑉ ᒐᕙᒪᖓᓂᑦ (GNWT) ᖃᐅᔨᒋᐊᖅᓯᒪᓕᖅᑕᐅᓂᐊᖅᑐᑦ ᐆᒃᑐᕋᐅᑎᐅᓪᓗᑎᒃ ᐱᓕᕆᐊᓂᒃ ᖃᐅᔨᓴᕈᑎᒋᓗᒋᑦ ᐅᐊᔭᖅᐸᒃᑐᑦ ᑐᒃᑐᐃᑦ ᒥᐊᓂᖅᓯᓯᒪᓕᖅᕕᖓᓂᒃ ᐱᓕᕆᐊᖑᓕᖅᑐᑦ.

ᐱᔾᔪᑎᒋᔭᐅᔪᑦ: ᐃᑖᓗ ᓄᑖᖑᓪᓗᓂ *ᐆᒪᔪᓕᕆᓂᖅᒧᑦ ᒪᓕᒐᖅᑎᐅᔪᑦ* ᐊᒻᒪᓗ *ᐆᒪᔪᖅᑯᑏᑦ ᓄᖑᑐᐃᓐᓇᕆᐊᖅᑲᖅᑐᓄᑦ ᒪᓕᒐᖅᑎᐅᔪᑦ* ᐃᓕᖅᑲᖅᑎᑕᐅᒐᓱᐊᖅᑎᓪᓗᒋᑦ ᐱᒋᐊᖅᑎᖅᓯᒪᓕᕈᓐᓇᖅᓂᖏᒃ ᒥᐊᓂᖅᓯᕙᐅᔭᕐᓂᒃ ᐊᕙᑎᓂᒃ ᐆᒪᔪᖅᑎᓄᑦ, ᑕᒪᒃᑯᐊ ᑕᐃᒪᐅᑎᑕᐅᔪᑦ ᖃᐅᔨᓴᖅᑕᐅᓯᒪᓂᖅᑐᐊᖅᑕ. ᐃᓱᒪᒋᓗᒋᑦ ᑐᒃᑐᐃᑦ ᐊᑐᖅᐸᓐᓂᖅᑎᑦ ᓄᓇᐅᑉ ᑕᐅᑦᑐᓴᖅᑎᓂᒃ ᐊᖅᑭᒃᓪᒪᓇᐅᑲᓗᐊᖅᑎᓪᓗᒋᑦ, ᐊᓯᔾᔨᓇᐊᖅᑕᐅᔪᓐᓇᓇᐊᖅᑲᖅᓂᐊᖅᑐᑦ ᐃᓱᒪᒋᖅᑲᓯᐅᑎᓗᒋᑦ ᐊᑐᖅᑕᐅᓕᕆᔭᖅᓂᖅᑎᓂ ᐊᒻᒪᓗ ᐊᑐᓕᖅᑎᑕᐅᔪᓇᖅᑯᓪᓗᑎᒃ ᓇᔪᖅᑕᐅᕙᒃᑐᓂᒃ ᒥᐊᓂᖅᓯᓯᒪᓕᖅᓂᖅᒥ ᓴᓇᕿᑎᒃᓴᓂᒃ ᐱᓕᕆᐊᖅᑲᖅᓂᖅᓂ.

ᐅᐊᔭᖅᐸᒃᑐᑦ ᑐᒃᑐᐃᑦ ᒥᐊᓂᕆᔭᐅᓯᒪᓕᖅᕕᖓᓂᒃ ᒥᐊᓂᓯᔾᔪᑎᑦ ᐃᓕᓴᐅᖅᑲᖅᑕᐅᓯᒪᕗᑦ ᖃᕐᒪᐅᑦ ᑐᒃᑐᕐᒋᑕ ᓇᔪᖅᐸᒃᑕᕐᒋᓇᓄᑦ ᐸᖅᓇᐅᑎᓂ ᐱᓕᕆᓂᖅᑲᖅᓂᖅᒥ ᑭᒡᓕᖅᑲᖅᑎᖅᓯᕆᐊᖅᓂᖅᒧᑦ ᐸᕝᕙᕌᖅᑕᐅᓯᒪᓕᖅᐸᓐᓂᕐᒋᑕ ᐊᓯᔾᔨᓇᐊᖅᑕᐅᔪᓇᖅᑲᖅᓂᖅᑯᓯᑎᒃ ᐊᒻᒪᓗ ᐊᑐᓕᖅᑎᑕᐅᔪᓇᖅᓯᑎᒃ ᑐᒃᑐᐃᑦ ᓇᓅᓕᖅᓯᒪᓂᕐᒋᓇᓂ ᐅᑭᐅᖅ ᐊᑐᖅᐸᓪᓕᐊᓂᕐᒋᓂ. ᑭᓯᐊᓂᓗ, ᓲᕐᓗ ᐅᖅᑲᖅᓯᒪᓪᓚᑕ ᓇᔪᖅᐸᒃᑕᕐᒋᓇᓄᑦ ᐸᖅᓇᐅᑎᓂ, ᑕᐃᒪᓐᓇ ᐱᓕᕆᓂᖅᑲᕕᐅᓕᖅᑐᖅᑐᑦ ᖃᐅᔨᓴᖅᑕᐅᓯᒪᓕᕐᒋᓗᐊᖅᓚᑕ ᐊᒻᒪᓗ ᐆᒃᑐᕋᐅᑎᐅᓪᓗᑎᒃ ᐃᓕᓐᓇᐊᖑᔪᑦ ᓈᒻᒪᕐᓂᖅᓴᐅᓇᔭᖅᓯᑎᒃ ᐱᓕᕆᓂᖅᑲᓕᐊᖅᓂᖅᓄᑦ. ᐃᓱᒪᒋᓗᒋᑦ ᖃᓄᐃᑎᒋ ᐱᕙᓪᓕᐊᑎᑕᐅᓯᒪᓂᐅᔪᑦ ᖁᕐᖓᐅᑦ ᐊᒥᖅᖁᑎᖅᑕ ᓇᔪᖅᐸᒃᑕᕐᒋᓂ ᐃᓱᒪᒋᓗᒋᑦ ᐊᕐᒋᔪᐊᓗᒻᒥᒃ ᑭᒡᓕᖅᑲᖅᑎᑕᐅᓪᓗᑎᒃ ᐱᕙᓪᓕᐊᑎᑕᐅᓯᒪᔪᑦ ᓵᑎ ᐃᐊᒃᕗ ᐊᒥᖅᖁᑎᖏᓐᓂᑦ ᓇᔪᖅᑕᐅᕙᑦᑐᑦ ᐊᒻᒪᓗ ᐅᐊᔭᖅᐸᒃᑐᑦ ᑐᒃᑐᐃᑦ ᒥᐊᓂᕆᔭᐅᓯᒪᓕᖅᕕᖓᓂ ᒥᐊᓂᖅᓯᔾᔪᑎᑦ ᐃᓱᒪᓕᐅᕆᑎᐅᓯᒪᔪᑦ ᐊᑐᓕᖅᑯᔭᐅᓪᓗᑎᒃ ᖁᕐᖓᐅᑦ ᐊᒥᖅᖁᑎᖅᑕ ᓇᔪᖅᐸᒃᑕᕐᒋᓂᒃ ᐸᖅᓇᐅᑎᓕᐊᖑᓯᒪᔪᑦ, ᐆᒃᑐᕋᐅᑎᐅᓪᓗᑎᒃ ᐱᓕᕆᐊᖑᔪᑦ ᐸᖅᓇᐅᑎᓕᐊᖑᓯᒪᑐᐃᓐᓇᕆᐊᖅᑲᖅᐳᑦ ᖁᕐᖓᐅᑦ ᐊᒥᖅᖁᑎᖅᑕ ᓇᔪᖅᐸᒃᑕᕐᒋᓄᑦ. ᑭᓯᐊᓂᓗ, ᖃᓄᐃᓕᖓᓕᖅᓂᐅᓇᔭᖅᑐᑦ ᐊᒻᒪᓗ ᐃᓕᑦᓯᕙᐅᓯᒪᓕᖅᑲᔭᖅᑐᑦ ᑕᒪᒃᑯᓇᙵᑦ ᐱᓕᕆᐊᓂᑦ ᐆᒃᑐᕋᐅᑎᐅᓪᓗᑎᒃ ᐱᓕᕆᐊᖑᑲᐃᓐᓇᖅᑐᓂ ᑐᓴᒃᑲᖅᑯᑎᓂᒃ ᐱᓯᒪᓕᕈᑎᐅᓇᔭᖅᓚᑕ ᓄᓇᐃᓐᓇᒥ ᑐᒃᑐᓂᒃ ᐊᐅᓚᓯᓂᐅᕙᒃᑐᓄᑦ ᓄᓇᕘᑉ ᓄᓇᓕᒫᒥ (NWT).

ᐊᑐᓕᖅᑯᔭᐅᓪᓗᑎᒃ #8-2019 (ᓵᑎ ᐃᐊᒃᕗ): ᐊᓯᒋᔭᕐᒋᑦ ᐆᒪᔪᖅᑯᑎᐅᔪᑦ: ᐃᑲᔪᖅᑕᐅᓯᒪᓕᖅᑯᓪᓗᒋᑦ ᐃᓅᓯᖅᑲᓯᐊᕋᓯᐊᕐᓂᖅᒋᑦ ᐃᓗᐊᓂ ᑏᐃ, ᐱᖅᑲᓯᐅᑎᓯᒪᓗᒋᑦ ᓂᕿᒋᔭᒃᓴᓂᒃ ᐱᓯᒪᓕᕋᓯᐊᖅᐸᓐᓂᕐᓂᒃ, ᐊᒻᒪᓗ ᐃᓱᒪᒋᓗᒋᑦ ᑭᒡᓕᖅᑲᖅᑎᑕᐅᓯᒪᓪᓗᑎᒃ ᐊᖑᓇᓱᒍᓐᓇᕐᓂᐅᕙᒃᑐᑦ ᓵᑎ ᐃᐊᒃᕗ ᐊᒥᕋᖅᑯᑎᖏᓐᓂᑦ, ᕗᐃᑭᔾ ᓄᓇᒥᐅᑕᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔨᖏᑦ (WRRB) ᐃᓱᒪᓕᐅᖅᐳᑦ ᐊᑐᓕᖅᑎᑕᐅᖁᓪᓗᒋᑦ ᑎᓖᓯ ᒐᕙᒪᖓ (TG) ᐊᒻᒪᓗ ᓄᓇᕘᑉ ᒐᕙᒪᖓ (GNWT) ᐃᑲᔫᖅᑐᐃᓯᒪᓕᖅᑯᓪᓗᒋᑦ ᒃᑏᓯ ᓄᓇᓕᖅᑲᖅᑐᓂᒃ ᐊᖑᓇᓱᐊᖅᐸᖅᑯᓪᓗᒋᑦ ᐊᓯᒋᔭᕐᒋᓂᒃ ᐆᒪᔪᖅᑯᑎᔪᓂᒃ ᓂᕿᒋᕙᒃᑕᖅᑲᒥᓂᒃ, ᐱᒋᐊᖅᓗᑎᒃ ᓯᑎᐱᕆ 2019-ᒥ.

ᑭᐅᔾᔪᑎᖏᑦ: ᓈᒻᒪᒋᔭᐅᔪᑦ

ᐱᔾᔪᑎᒋᔭᐅᔪᑦ: ᑎᓖᓯ ᒐᕙᒪᖓ (TG) ᓴᖅᑭᖅᑲᖅᑕᓕᖅᓂᐊᖅᑐᑦ ᕗᐃᑭᔾ ᓄᓇᒥᐅᑕᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔨᖏᑦ (WRRB), ᐱᒋᐊᖅᓗᑎᒃ ᓯᑎᐱᕆ 2019, ᓱᓇᓂᒃ ᐱᓕᕆᖅᑲᖅᓯᒪᓂᕐᒋᑕ ᑎᓖᓯ ᒐᕙᒪᖓ (TG) ᐃᑲᔫᖅᑐᐃᓯᒪᓕᖅᓂᖅᒥᓄᑦ ᑎᓖᓯ ᓄᓇᓕᖅᑲᖅᑐᓂᒃ ᐊᖑᓇᓱᐊᖅᐸᖅᑯᓪᓗᒋᑦ ᐊᓯᒋᔭᕐᒋᓂᒃ ᐆᒪᔪᖅᑯᑎᔪᓂᒃ ᓂᕿᒋᕙᒃᑕᖅᑲᒥᓂᒃ, ᑭᓯᐊᓂᓗ ᐅᔾᔨᕈᓱᒃᐳᑦ ᓇᓗᓇᐃᖅᓯᓕᖅᑕᖅᑎᕋᓇᖅᑲᒋᓪᓚᑕ ᖃᓄᐃᓕᖓᓕᖅᓂᐅᔪᓂᒃ ᐃᑲᔫᖅᑐᐃᓯᒪᓕᕆᑎᐅᔪᓄᑦ. ᑖᒃᑯᐊ ᐊᑐᓕᖅᑯᔭᐅᓪᓗᑎᒃ ᐱᓕᕆᐊᖑᔪᓐᓇᕐᒥᔪᑦ ᐊᑐᓕᖅᑎᖅᓯᒪᓂᖅᑎᒍᑦ "ᐊᑐᓕᖅᑎᑕᐅᖅᑯᓪᓗᒋᑦ #1-2019", ᐃᒪᓐᓇ

ᓇᐅᑦᓯᖅᑐᐃᓯᒪᓕᕐᑯᔨᓂᕐᒥᒃ ᑐᒃᓯᕋᕈᓐᓇᕐᑎᑕᐅᓪᓗᑎᒃ, ᐊᒻᒪᓗ ᐱᑕᖅᑲᖅᑎᑦᓯᕗᒃᓗᑎᒃ ᑐᓴᒃᓴᖅᑯᑎᐅᓕᖅᑐᓂᒃ ᖃᓄᐃᑦᑐᓂᒃ ᐊᓯᒌᔾᔨᓂᒃ ᐆᒪᔪᖅᑯᑎᐅᔪᓂᒃ ᓂᕿᒌᕙᒃᑕᑐᖅᑲᒥᓐᓂᒃ ᐊᑐᖅᐸᒻᒪᖔᑕ ᑎᓖᓯ ᓄᓇᓕᖅᑲᖅᑐᑦ.

ᓄᓇᕙᑦ ᒐᕙᒪᖓᑦ (GNWT) ᑲᔪᓯᑎᑦᓯᓯᒪᓂᐊᖅᑐᑦ ᐃᑲᔪᖅᑐᐃᓂᕐᒥᓐᓂᒃ ᑎᓖᓯ ᒐᕙᒪᖓᑦ (TG) ᖄᓇᐅᔭᖅᑯᑎᒃᓴᖅᑲᖅᑎᑦᓯᕙᓐᓂᕐᑎᒍᑦ ᑕᐃᒪᐅᑎᑕᐅᕗᒃᑐᓂᒃ ᐊᓯᔾᔨᑎᒍᑦ ᓂᕿᒋᔭᐅᕙᑦᑐᑐᖅᑲᕐᓂᖅ ᐱᑕᖅᑲᖅᑎᑦᓯᓂᐅᕙᑦᑐᓄᑦ ᐃᓚᖅᑲᖅᑎᓪᓗᒋᑦ, ᑭᓯᐊᓂᓗ ᑭᒡᓕᖅᑲᕋᑎᒃ, ᑐᒃᑐᕗᓐᓂᒃ ᐊᖑᓇᓱᐊᖅᐸᓐᓂᕐᓂᒃ, ᑎᒃᔭᓕᐅᑉ ᑐᒃᑐᖅᑯᑎᖕᒋᓂᒃ ᐊᖑᓇᓱᐊᖅᐸᓐᓂᕐᓂᒃ, ᒪᑦᑎᑕᐅᑎᓄᑦ ᐃᖅᑲᓪᓕᐊᖅᐸᓐᓂᕐᓂᒃ, ᐊᓯᕐᒋᓂᒃᓗ. ᑖᓐᓇ ᐃᓱᒪᓕᐅᕈᑎᐅᓯᒪᔪᖅ ᐊᑐᓕᖅᑎᑕᐅᖅᑯᔭᐅᓪᓗᓂ ᐃᓚᖓᒍᑦ ᐱᓕᕆᐊᖑᓂᐊᖅᑐᖅ ᐊᑐᓕᖅᑎᓯᓂᒃᑯᑦ ᐊᕙᑎᓕᕆᔾᔪᑎᒃᑯᑦ ᓄᓇᒥᐅᑕᓕᕆᔾᔪᑎᒃᑯᑦᓗ ᐱᕈᒃᑲᓐᓂᕈᓐᓇᖅᑐᓕᕆᓂᕐᒧᑦ (ENR) ᐊᓐᓇᐅᒪᔾᔪᑎᒃᓴᓂᒃ ᐱᓕᕆᐊᒧᑦ ᐸᕐᓇᐅᑎᖕᒋᓂᒃ ᑲᑐᔾᔨᓂᖅᑲᕐᓗᑎᒃ ᐱᓕᕆᐊᖅᑲᖅᑎᖅᑲᕐᓗᑎᒃ ᐊᒥᓱᓂᒃ ᐱᓕᕆᐊᖅᑲᖅᑎᐅᔪᓂᒃ. ᐱᓕᕆᐊᖑᓕᖅᑯᔭᐅᓪᓗᓂ ᐸᕐᓇᐅᑎᓕᐊᖑᓯᒪᔪᖅ ᑖᓐᓇ ᓇᓗᓇᐃᔭᐃᓯᒪᕗᖅ ᐱᓕᕆᐊᖑᓕᕈᓐᓇᖅᑐᓂᒃ ᑐᕌᖓᑎᓪᓗᒋᑦ ᓂᕿᒋᔭᐅᕗᒃᑐᑐᖅᑲᓂᒃ ᖃᐅᔨᓴᐃᓂᕐᓄᑦ, ᐋᖅᑭᒃᓯᐃᓯᒪᓕᕐᓂᒃᓴᒧᑦ ᐊᖑᓇᓱᒃᑎᐅᓂᕐᒧᑦ ᑐᑭᒧᐊᒃᑎᑦᓯᔨᖅᑲᕐᓂᖅ ᐊᒻᒪᓗ ᐱᓪᒪᒃᓴᐃᓂᕐᒧᑦ ᐱᓕᕆᐊᖑᔪᓂᒃ, ᐱᓕᕆᓂᖅᑲᖅᕕᐅᓕᕈᓐᓇᖅᑐᓂᒃ ᒪᒃᑯᒃᑐᓕ, ᐊᒻᒪᓗ ᓄᓇᓕᐅᔪᒥ ᓂᕿᒋᔭᒃᓴᓕᕆᓂᕐᒥ ᐸᕐᓇᐅᑎᓕᐅᕐᓂᖅ, ᑕᒪᕐᒥᒃᓗ ᐃᓚᖅᑲᖅᑎᑕᐅᔭᓇᖅᓯᑎᒃ ᑐᕌᖓᔪᓂᒃ ᐊᓯᒌᔾᔨᓂᒃ ᐆᒪᔪᖅᑯᑎᐅᔪᓂᒃ ᓂᕿᒋᔭᐅᕚᒍᓐᓇᖅᑐᓂᒃ. ᓄᓇᕙᑦ ᒐᕙᒪᖓᑦ (GNWT) ᖁᕝᕙᐊᓯᒐᔭᖅᑐᑦ ᑲᑎᙵᖅᑲᑎᖅᑲᖏᒃᓴᒥᓐᓂᒃ ᑎᓖᓯ ᒐᕙᒪᖓᓂᒃ (TG) ᐊᒻᒪᓗ ᕗᐃᑭᐋ ᓄᓇᒥᐅᑕᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔨᖏᑦ (WRRB) ᐃᓱᓕᓚᐅᖅᑎᓐᓇᒍ ᐅᑭᐅᖓ 2019 ᐅᖃᑦᓚᖃᑎᒋᓂᐊᖅᑐᒋᑦ ᐋᖅᑭᒃᓯᐃᓯᒪᓕᕐᓂᒃᓴᓄᑦ ᐊᒻᒪᓗ ᐊᑐᓕᖅᑎᑕᐅᓂᒃᓴᕐᒋᑕ ᐱᓕᕆᐊᖑᔪᑦ ᑐᕌᖓᑎᑕᐅᓪᓗᑎᒃ ᑎᓖᓯ ᓄᓇᓕᖅᑲᖅᑐᓄᑦ ᒪᓕᒃᑐᒋᑦ ᑖᒃᑯᐊ ᐱᓕᕆᐊᖑᓕᕐᑯᔭᐅᓪᓗᑎᒃ ᐸᕐᓇᐅᑎᑦ.

<u>ᐊᑐᓕᖅᑯᔭᐅᓪᓗᑎᒃ #9-2019</u> **(ᓵᑎ ᐃᐊᒃᕗ):** ᐋᖅᑭᒋᐊᖅᑕᐅᓯᒪᓪᓗᑎᒃ ᐊᐅᓚᑦᓯᓂᖅᑲᖅᓂᕐᓄᑦ ᑐᙵᕘᕕᖅᑯᑎᒃᓴᓕᐅᕐᓂᖅ: ᕗᐃᑭᐋ ᓄᓇᒥᐅᑕᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔨᖏᑦ (WRRB), ᑎᓖᓯ ᒐᕙᒪᖓᑦ (TG) ᐊᒻᒪᓗ ᓄᓇᕙᑦ ᒐᕙᒪᖓᑦ (GNWT) ᑲᑐᔾᔨᓂᖅᑲᕐᓗᑎᒃ ᐱᓕᕆᓂᖅᑲᕐᓂᐊᖅᑐᑦ ᐋᖅᑭᒃᓯᐃᓂᕐᒥ ᐊᒥᕐᕋᖅᑯᑎᓄᑦ ᑐᕋᖓᑎᑕᐅᓪᓗᑎᒃ ᐋᖅᑭᒋᐊᖅᑕᐅᓯᒪᓪᓗᑎᒃ ᐊᐅᓚᑦᓯᓂᕐᒧᑦ ᑐᙵᕘᕕᖅᑯᑎᒃᓴᓂᒃ ᐊᑦᑕᑕᖅᓯᒪᓂᖅᑲᖅᑎᑕᐅᓗᑎᒃ ᓇᓗᓇᐃᖅᑕᐅᓯᒪᓪᓗᑎᒃ ᐊᐅᓚᑦᓯᓂᕐᒥ ᐱᓕᕆᐊᖑᕗᓄᑦ ᓯᕗᓪᓕᓂ ᔨᓄᐊᕆ 2020.

<u>ᑭᐅᔾᔪᑎᖕᒋᑦ:</u> ᐊᔾᔨᒌᙱᓐᓂᖅᑲᖅᕕᐅᕗᑦ

ᑎᓖᓯ ᒐᕙᒪᖓᑦ (TG) ᐊᒻᒪᓗ ᓄᓇᕙᑦ ᒐᕙᒪᖓᑦ (GNWT) ᐊᔾᔨᒌᙱᑕᖕᒋᑎᒍᑦ ᐅᖃᖅᓯᒪᕗᑦ “ᐊᑐᓕᖅᑯᔭᐅᓪᓗᑎᒃ #9-2019”-ᒧᑦ ᐃᒪᓐᓇ ᐅᖃᖅᓯᒪᓪᓗᒋᑦ:

<u>ᐊᑐᓕᖅᑯᔭᐅᓪᓗᑎᒃ #9-2019</u> (ᓵᑎ ᐃᐊᒃᕗ): ᐋᖅᑭᒋᐊᖅᑕᐅᓯᒪᓪᓗᑎᒃ ᐊᐅᓚᑦᓯᓂᖅᑲᖅᓂᕐᓄᑦ ᑐᙵᕘᕕᖅᑯᑎᒃᓴᓕᐅᕐᓂᖅ: ᕗᐃᑭᐋ ᓄᓇᒥᐅᑕᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔨᖏᑦ (WRRB), ᑎᓖᓯ ᒐᕙᒪᖓᑦ (TG) ᐊᒻᒪᓗ ᓄᓇᕙᑦ ᒐᕙᒪᖓᑦ (GNWT) ᑲᑐᔾᔨᓂᖅᑲᕐᓗᑎᒃ ᐱᓕᕆᓂᖅᑲᕐᓂᐊᖅᑐᑦ ᐋᖅᑭᒃᓯᐃᓂᕐᒥ ᐊᒥᕐᕋᖅᑯᑎᓄᑦ ᑐᕋᖓᑎᑕᐅᓪᓗᑎᒃ ᐋᖅᑭᒋᐊᖅᑕᐅᓯᒪᓪᓗᑎᒃ ᐊᐅᓚᑦᓯᓂᕐᒧᑦ ᑐᙵᕘᕕᖅᑯᑎᒃᓴᓂᒃ ᐊᓯᐊᓄᐊᕐᕕᒃᓴᓂᒃ ᐱᓕᕆᓂᖅᑲᖅᓂᖅ ᐊᑦᑕᑕᖅᓯᒪᓂᖅᑲᖅᑎᓪᓗᒋᑦ ᓇᓗᓇᐃᔭᖅᑕᐅᓯᒪᓪᓗᑎᒃ ᐊᐅᓚᑦᓯᓂᖅᑲᖅᓂᖅ ᐱᓕᕆᐊᖑᓕᖅᓯᒪᕗᓄᑦ ᓯᕗᓪᓕᓂ ᔨᓄᐊᕆ 2020, ᕗᐃᑭᐋ ᓄᓇᒥᐅᑕᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔨᖏᑦ (WRRB) ᓯᕗᓕᖅᑎᕆᔭᐅᓪᓗᑎᒃ ᑐᙵᕘᕕᓕᐊᖑᓯᒪᕗᑦ ᐃᓚᖅᑲᖅᑎᑦᓯᓯᒪᕗᓐᓇᖅᒥᕗᑦ ᑕᐃᒪᐅᓕᐊᓂᒃᑐᓂᒃ ᐊᐅᓚᑦᓯᓂᖅᑲᖅᓂᖅᒧᑦ ᐸᕐᓇᐅᑎᓂᒃ ᐊᒻᒪᓗ ᐃᓱᒪᓕᐅᕈᑎᐅᓯᒪᕗᓂᒃ ᐊᒻᒪᓗ ᐃᓱᒪᓕᐅᕈᑎᐅᓯᒪᕗᑦ ᐊᑐᓕᖅᑎᑕᐅᖅᑯᔭᐅᓪᓗᑎᒃ ᑲᑎᒪᔨᐅᕗᓂᑦ ᐊᒻᒪᓗ ᒐᕙᒪᒋᔭᐅᕗᓂᑦ.

<u>ᐱᔾᔪᑎᒋᔭᐅᕗᑦ:</u> ᑎᓖᓯ ᒐᕙᒪᖓᑦ (TG) ᐊᒻᒪᓗ ᓄᓇᕙᑦ ᒐᕙᒪᖓᑦ (GNWT) ᐊᖏᕗᒻᒪᓇᒻᒥᒃ ᐃᑲᔪᖅᑐᐃᓂᖅᑲᖅᑐᑦ ᐱᒋᐊᖅᑎᑦᓯᓯᒪᓕᕋᔭᕐᓂᕐᒧᑦ ᐋᖅᑭᒋᐊᖅᑕᐅᓯᒪᓪᓗᑎᒃ ᐊᐅᓚᑦᓯᓂᖅᑲᑎᕆᓕᕋᔭᕐᓂᕐᒧᑦ ᑐᙵᕘᐅᓂᐊᖅᑐᓂᒃ ᐊᒻᒪᓗ ᐊᖏᒡᓕᒋᐊᖅᑎᑕᐅᕗᓇᕐᓗᓂ ᑲᑐᔾᔨᓂᖅᑲᓪᓚᑦᓛᕋᔭᕐᓂᕆᑦ ᐱᓕᕆᖅᑎᕖᕐᓂᕆᑕ ᑎᓖᓯ ᒐᕙᒪᖓᑕ (TG), ᓄᓇᕙᑦ ᒐᕙᒪᖓᑦ (GNWT) ᐊᒻᒪᓗ ᕗᐃᑭᐋ ᓄᓇᒥᐅᑕᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔨᖏᑦ (WRRB) ᐱᔾᔪᑎᒋᓪᓗᒍ ᑕᒪᒃᑯᓂᖓ ᐱᓕᕆᐊᖅᑲᓕᖅᓂᖅ ᑕᐃᒪᐃᑦᑑᔭᕆᐊᖅᑲᖅᓂᐊᕐᒪᑦ.

ᓄᓇᕙᑦ ᒐᕙᒪᖓᑦ (GNWT) ᐅᔾᔨᕈᓱᒃᑐᑦ ᐃᓕᖓᓐᓂᖅᑲᓕᖅᑎᑦᓯᓯᒪᓪᓗᑎᒃ ᐋᖅᑭᒋᐊᖅᑕᐅᓯᒪᔪᑎᒍᑦ ᐊᐅᓚᑦᓯᓂᖅᑲᓕᕐᕕᐅᒃᑦᑕᖅᓯᒪᓂᖅᑕᑦ ᐅᑭᐅᑦ ᐱᖓᓱᑦ ᓈᓯᒪᓕᕌᖓᑕ ᐊᓯᔾᔨᖅᓯᒪᓕᖅᑎᑕᐅᕗᓐᓂᖏᑦ. ᑕᒪᓐᓇ ᐊᓯᔾᔨᖅᓯᒪᓕᖅᑎᑦᓯᕗᓐᓂᖅ ᐊᑯᓚᐃᓐᓂᖅᓴᒥᒃ ᐱᑕᖅᕕᐅᒃᑦᑕᓕᓚᐅᖅᑐᖅ ᓄᑕᐅᓂᖅᐸᐅᓪᓗᑎᒃ ᑲᑐᔾᔨᓂᖅᑲᖅᓗᑎᒃ ᐊᐅᓚᑦᓯᓂᖅᑲᖅᓂᖅᓄᑦ ᐃᓱᒪᓕᐅᕈᑎᓕᐅᖅᑕᐅᓯᒪᕗᓂᑦ, ᐃᒪᓐᓇ ᓄᑖᑦ ᑐᓴᒃᓴᐃᑦ ᐊᑐᖅᑕᐅᓚᐅᖅᑎᓪᓗᒋᑦ ᖃᒥᖅᑭᐃᓂᖅᓄᑦ ᐊᐅᓚᑦᓯᓂᖅᑲᖅᓂᐅᕗᓄᑦ ᐊᒻᒪᓗ ᓇᐅᑦᓯᖅᑐᐃᓂᐅᕗᓄᑦ ᐊᒥᕐᕋᖅᑯᑎᓂᒃ ᑖᒃᑯᓂᖓ. ᓄᓇᕙᑦ ᒐᕙᒪᖓᑦ (GNWT) ᐅᔾᔨᕈᓱᒻᒥᕗᑦ ᐊᐅᓚᑦᓯᓂᖅᑲᖅᓂᖅᒧᑦ ᐸᕐᓇᐅᑎᓕᐊᖑᓯᒪᕗᑦ ᑕᐃᔭᐅᓪᓗᑎᒃ ᑐᒃᑐᖅᑯᑎᓂᒃ ᑲᒪᒋᔭᖃᑦᓯᐊᖅᑕᓂᖅ ᐃᓚᖅᑲᓂᖕᒋᑕ ᓵᑎ ᐃᐊᒃᕗ ᐊᒥᕐᕋᖅᑯᑎᖕᒋᓐᓂᒃ ᐊᒻᒪᓗ ᐅᖃᐅᔨᒋᐊᖅᑎᑦ ᑲᑎᒪᔨᕋᓛᑦ ᐱᓕᕆᖃᑎᒌᓐᓂᖅᑐᑦ ᐆᒪᔪᓂᑦ ᐊᐅᓚᑦᑎᓂᖅᑐᑦ (ACCWM) ᐅᑭᐅᑕᒫᑦ ᑲᑎᖕᒪᓂᖅᑲᖅᐸᒻᒪᑕ ᖃᐅᔨᒋᐊᕈᑎᒋᓂᐊᖅᓯᒋᑦ ᖃᓄᐃᓕᖓᓕᕐᓂᖅᑕ ᐱᖓᓱᐃᓪᓗᑎᒃ ᑐᒃᑐᐃᑦ

ᐊᒥᕐᕋᕐᑯᑎᒋᔭᖅᒋᑦ ᐊᒻᒪᓗ ᒫᓐᓇᔪᑦ ᑎᑭᑎᑕᐅᓯᒪᓪᓗᑎᒃ ᐱᓕᕆᐊᕐᔪᓕᖅᑯᔭᐅᓪᓗᑎᒃ ᐸᕐᓇᐅᑎᓕᐊᕐᔪᓯᒪᔪᓄᑦ ᐊᑐᓂ ᐊᒥᕐᕋᕐᑯᑎᐅᔪᓄᑦ ᑐᕌᖓᔪᓂᒃ. ᑖᒃᑯᐊ ᐸᕐᓇᐅᑎᒋᔭᐅᓯᒪᔪᑦ ᐊᒻᒪᓗ ᐅᑭᐅᑕᒫᑦ ᑲᑎᖕᒪᓂᐅᕙᑦᑐᑦ ᐃᓱᒪᒃᓴᖅᓯᐅᕈᑎᐅᔪᓐᓇᕐᒥᔪᑦ ᐋᖅᑭᒋᐊᖅᑕᐅᓯᒪᓪᓗᑎᒃ ᐊᐅᓚᑦᓯᓂᖃᕈᑎᐅᔪᓐᓇᕐᓂᖅᒋᑕ.

ᑕᒪᒃᑯᐊ ᑕᐃᒪᐃᓕᖓᓂᖅᒋᑦ ᐃᓱᒪᒋᓪᓗᒋᑦ, ᑎᓴᓯ ᒐᕙᒪᖓᑦ (TG) ᐊᒻᒪᓗ ᓄᓇᑦᓯᐊᑉ ᒐᕙᒪᖓᑦ (GNWT) ᐃᓱᒪᓕᐅᖅᐳᑦ ᒪᕿᓪᓗᑎᒃ ᒐᕙᒪᒋᔭᐅᔪᑦ ᐊᒻᒪᓗ ᕗᐃᑭᕚ ᓄᓇᒥᐅᑕᓕᕆᔾᑯᑦ ᑲᑎᒪᔨᖏᑦ (WRRB) ᑲᑐᔾᔨᓂᖃᕐᓗᑎᒃ ᐋᖅᑭᒃᓯᐃᓯᒪᓕᕐᑯᓪᓗᒋᑦ ᐋᖅᑭᒋᐊᖅᑕᐅᓯᒪᓪᓗᑎᒃ ᐊᐅᓚᑦᓯᓂᖃᕐᓂᕐᓄᑦ ᑐᙵᕝᕙᕐᑯᑎᒃᓯᓕᐅᕐᑯᓪᓗᒋᑦ ᓵᑎ ᐃᐊᒃᕗ ᐊᒥᕐᕋᕐᑯᑎᖏᓐᓄᑦ, ᐊᒻᒪᓗ ᕗᐃᑭᕚ ᓄᓇᒥᐅᑕᓕᕆᔾᑯᑦ ᑲᑎᒪᔨᖏᑦ (WRRB) ᓯᕗᓕᖅᑎᐅᓗᑎᒃ ᐋᖅᑭᒃᓯᐃᓂᕐᒥ ᑖᓯᒥᖓ ᐋᖅᑭᒋᐊᖅᑕᐅᓯᒪᓪᓗᑎᒃ ᐊᐅᓚᑦᓯᕐᑲᑎᒌᓐᓂᐅᓕᕋᔭᖅᑐᒥᒃ ᐱᓕᕆᐊᕐᑲᕐᓂᕐᓂ. ᑖᒃᑯᐊ ᐃᓚᕐᑲᕈᓐᓇᖅᑐᑦ ᐋᖅᑭᒃᓯᐃᓯᒪᓕᕐᓂᒃᓯᒥᒃ ᖃᖓ ᑲᑎᒪᓂᕐᑲᕐᓂᒃᓴᒍᑦ ᐋᖅᑭᒃᓯᐊᖑᓯᒪᔪᓂᒃ ᐊᒻᒪᓗ ᐱᓕᕆᐊᖑᓕᕐᕝᕕᒃᓴᖅᒋᓄᑦ ᐸᕐᓇᐅᑎᓂᒃ ᓯᕗᕐᖓᓂ ᐅᑐᐱᕆ 30, 2019.

<u>**ᐊᑐᓕᕐᑯᔭᐅᓪᓗᑎᒃ #10-2019**</u> **(ᓵᑎ ᐃᐊᒃᕗ):** ᖃᔅᓯᐅᓂᖅᒋᓐᓄᑦ ᐊᒥᓲᓂᖅᒋᑕ ᖃᐅᔨᓴᐃᓃᑦ: ᑭᖑᕙᖅᑎᑕᐅᓯᒪᕐᑯᓇᒍ ᐋᖅᑭᒋᐊᖅᑕᐅᓯᒪᓪᓗᑎᒃ ᐊᐅᓚᑦᓯᓂᕐᓂᐅᓕᕋᔭᖅᑐᓄᑦ, ᓄᓇᑦᓯᐊᑉ ᒐᕙᒪᖓᑦ (GNWT), ᖃᔅᓯᐅᓂᖅᒋᓐᓄᑦ ᐊᒥᓲᓂᖅᒋᑕ ᖃᐅᔨᓴᐃᖃᑦᑕᕐᑯᔭᐅᕗᑦ ᓵᑎ ᐃᐊᒃᕗ ᐊᒥᕐᕋᕐᑯᑎᖅᒋᑕ ᐅᑭᐅᑦ ᒪᕐᕈᒃ ᓈᓯᒪᓕᑐᐊᕌᖓᑕ. ᑕᐃᒪᓗ ᖃᔅᓯᐅᓂᖅᒋᓐᓄᑦ ᐊᒥᓲᓂᖅᒋᑦ ᖃᐅᔨᓴᖅᑕᐅᓯᒪᓕᕆᐊᕐᑲᖅᑐᑦ ᔫᓂ 2020-ᒥ.

<u>**ᑭᐅᔾᔪᑎᖅᒋᑦ:**</u> ᓈᒻᒪᒋᔭᐅᔪᑦ

<u>**ᐱᔾᔪᑎᒋᔭᐅᔪᑦ:**</u> ᑎᓖᓯ ᒐᕙᒪᖓᑦ (TG) ᐊᒻᒪᓗ ᓄᓇᑦᓯᐊᑉ ᒐᕙᒪᖓᑦ (GNWT) ᕐᑯᔭᓐᓇᒦᖅᐳᑦ ᕗᐃᑭᕚ ᓄᓇᒥᐅᑕᓕᕆᔾᑯᑦ ᑲᑎᒪᔨᖏᑦ (WRRB) ᐃᑲᔪᖅᑐᐃᓂᖅᒋᓐᓄᑦ ᐃᓱᒪᓕᐅᕈᑎᓕᐊᕐᔪᓯᒪᔪᓂᒃ ᖃᔅᓯᐅᓂᖅᒋᓐᓄᑦ ᐊᒥᓲᓂᖅᒋᑦ ᖃᐅᔨᓴᖅᑕᐅᕙᓕᕐᑯᔨᓂᕐᒥᓐᓄᑦ ᐅᑭᐅᑦ ᒪᕐᕈᒃ ᓈᓯᒪᓕᕌᖓᑕ.

<u>**ᐊᑐᓕᕐᑯᔭᐅᓪᓗᑎᒃ #11-2019**</u> **(ᓵᑎ ᐃᐊᒃᕗ):** ᓅᕋᒃᓴᖅᑲᖅᑐᓂᒃ ᓇᐅᑦᓯᖅᑕᐃᕙᓐᓂᖅ: ᐊᖏᓂᖅᓴᒥᒃ ᑐᑭᓯᐅᒪᓕᕈᓐᓇᕐᑯᓪᓗᒋᑦ ᐋᓐᓂᐊᕐᑲᓕᕐᑯᓇᒋᑦ ᓵᑎ ᐃᐊᒃᕗ ᐊᒥᕐᕋᕐᑯᑎᖅᒋᑦ, ᓄᓇᑦᓯᐊᑉ ᒐᕙᒪᖓᑦ (GNWT) ᐊᒻᒪᓗ ᑎᓖᓯ ᒐᕙᒪᖓᑦ (TG) ᐊᑐᓕᖅᑎᑦᓯᔭᕆᐊᕐᑲᖅᐳᑦ ᓵᑎ ᐃᐊᒃᕗ ᐊᒥᕐᕋᕐᑯᑎᖅᒋᓂᑦ ᓅᕋᒃᓴᖅᑲᖅᑐᓂᒃ ᓇᐅᑦᓯᖅᑐᐃᕙᒍᑎᒃᓴᓂᒃ ᐊᓇᖅᒋᓂᒃ ᑲᑎᖅᓯᐃᕙᓐᓂᖅᑎᒍᑦ ᐅᑭᐅᖑᑎᓪᓗᒍ ᑕᖅᑭᖅᒋᑦ ᐊᑐᖅᑎᓪᓗᒋᑦ, ᐱᒋᐊᖅᑎᑕᐅᓗᑎᒃ ᔮᓄᐊᕆ 2020. ᐱᓕᕆᐊᕐᑲᕈᑎᐅᓂᐊᖅᑐᑦ ᑖᔅᓯᒎᖓ ᐱᓕᕆᐊᒎᑦ ᐃᓚᕐᑲᖅᑎᑕᐅᓯᒪᓗᑎᒃ ᓄᓇᓕᐅᔪᓂ ᖃᐅᔨᓴᖑᒃᓴᓂᒃ ᐱᓯᒪᓕᖅᑲᑦᑕᕐᓂᕐᓂᒃ.

<u>**ᑭᐅᔾᔪᑎᖅᒋᑦ:**</u> ᐊᔾᔨᒌᙱᒋᓐᓂᕐᑲᕝᕙᐅᔪᑦ

ᑎᓖᓯ ᒐᕙᒪᖓᑦ (TG) ᐊᒻᒪᓗ ᓄᓇᑦᓯᐊᑉ ᒐᕙᒪᖓᑦ (GNWT) ᐊᔾᔨᒋᙱᒋᑕᖅᒋᑎᒍᑦ ᐅᕐᑲᖅᓯᒪᕗᑦ "ᐊᑐᓕᕐᑯᔭᐅᓪᓗᑎᒃ #11-2019"-ᒍᑦ ᐃᒪᓐᓇ ᐅᕐᑲᖅᓯᒪᓪᓗᒋᑦ:

<u>ᐊᑐᓕᕐᑯᔭᐅᓪᓗᑎᒃ #11-2019</u> (ᓵᑎ ᐃᐊᒃᕗ): ᓅᕋᒃᓴᖅᑲᖅᑐᓂᒃ ᓇᐅᑦᓯᖅᑕᐃᕙᓐᓂᖅ: ᐊᖏᓂᖅᓴᒥᒃ ᑐᑭᓯᐅᒪᓕᕈᓐᓇᕐᑯᓪᓗᒋᑦ ᐋᓐᓂᐊᕐᑲᓕᕐᑯᓇᒋᑦ ᓵᑎ ᐃᐊᒃᕗ ᐊᒥᕐᕋᕐᑯᑎᖅᒋᑦ, ᓄᓇᑦᓯᐊᑉ ᒐᕙᒪᖓᑦ (GNWT) ᐊᒻᒪᓗ ᑎᓖᓯ ᒐᕙᒪᖓᑦ (TG) ᑲᔪᓯᑎᑦᓯᓪᓗᑎᒃ ᖃᐅᔨᕆᐊᕐᓂᕐᑲᓇᐊᕐᑲᖅᐳᑦ ᓵᑎ ᐃᐊᒃᕗ ᐊᒥᕐᕋᕐᑯᑎᖅᒋᓂᑦ ᓅᕋᒃᓴᖅᑲᖅᑐᓂᒃ ᓇᐅᑦᓯᖅᑐᐃᕙᒍᑎᒃᓴᓂᒃ ᐊᓇᖅᒋᓂᒃ ᑲᑎᖅᓯᐃᕙᓐᓂᖅᑎᒍᑦ ᐅᑭᐅᖑᑎᓪᓗᒍ ᑕᖅᑭᖅᒋᑦ ᐊᑐᖅᑎᓪᓗᒋᑦ ᐱᒋᐊᖅᑎᑕᐅᓗᑎᒃ ᒫᑦᓯ 2020 ᐅᑭᐅᑐᕐᑲᐅᓕᖅᑎᓪᓗᒍ ᐊᒥᓱᐃᓕᖓᑎᑕᐅᓪᓗᓂ ᖃᐅᔨᓴᐃᓂᐅᕙᒃᑐᓄᑦ ᕐᑯᓕᒥᗀᓕᒃᑯᑦ. ᐱᓕᕆᐊᕐᑲᕈᑎᐅᔪᑦ ᑖᔅᓯᒎᖓ ᐱᓕᕆᐊᒎᑦ ᐃᓚᕐᑲᖅᑎᑕᐅᔪᓐᓇᖅᑐᑦ ᓄᓇᓕᐅᔪᓂ ᖃᐅᔨᓴᖑᒃᓴᓂᒃ ᐱᓯᒪᓕᖅᑲᑦᑕᕐᓂᕐᓂᒃ.

<u>**ᐱᔾᔪᑎᒋᔭᐅᔪᑦ:**</u> ᑎᓖᓯ ᒐᕙᒪᖓᑦ (TG) ᐅᒃᐱᕈᓯᒻᒪᑕ ᐊᓇᖅᒋᓂᒃ ᑲᑎᖅᓯᐃᓯᒪᓕᖅᐸᓐᓂᖅ ᓄᓇᓕᐅᔪᓂ ᖃᐅᔨᓴᖑᒃᓴᓂᒃ ᐱᓯᒪᓕᖅᐸᓐᓂᖅᑎᒍ ᐊᔪᕐᓇᙱᑐᐃᓐᓇᕆᐊᕐᑲᕐᒪᑦ ᑭᓯᐊᓂᓗ ᓇᓗᓇᐃᓪᓚᑦᑖᕆᐊᒥᒃ ᐊᖑᓇᓱᒃᑏᑦ ᑕᒪᑐᒥᖓ ᐱᓕᕆᐊᒥᒃ ᐊᑐᓕᖅᑎᑦᓯᓯᒪᓕᕐᓂᐊᕐᓂᖅᒋᑕ ᐊᔪᕐᓇᕐᒪᑦ. ᑐᒃᑐᐃᑦ ᐊᓇᖅᒋᓂᒃ ᑲᑎᖅᓯᐃᔨᐅᕙᓐᓂᖅ ᐊᖑᓇᓯᐊᖅᑏᑦ ᐱᓕᕆᐊᕆᕙᖕᒋᒃᑲᓗᐊᕐᒪᔾᔪᒃ. ᑎᓖᓯ ᒐᕙᒪᖓᑦ (TG) ᐅᔾᔨᕈᓱᒃᐳᑦ ᐱᔾᔪᑎᒋᓪᓗᒍ ᑐᒃᑐᓂᒃ ᐊᖑᓇᓱᒃᑏᑦ ᐊᖑᓇᓱᐊᖅᐸᒻᒪᑕ ᐊᖑᓯᓪᓗᕐᓂᒃ ᑭᓯᐊᓂ, ᓄᓇᓕᐅᔪᓂ ᑐᒃᑐᑦ ᐊᓇᖅᒋᓂᒃ ᖃᐅᔨᓴᖑᒃᓴᓂᒃ ᐱᓕᕆᐊᖑᓇᔭᕐᒪᑦ ᐊᑯᓂᐅᙲᑦᑐᒥᒃ ᑕᕝᕙᑐᐊᖑᓗᓂ. ᑎᓖᓯ ᑲᔪᓯᓗᑎᒃ ᑐᙵᕝᕙᖃᕐᓂᐊᖅᑐᑦ ᓄᓇᑦᓯᐊᑉ ᒐᕙᒪᖓᑦ (GNWT) ᓵᑎ ᐃᐊᒃᕗ ᐊᒥᕐᕋᕐᑯᑎᖅᒋᑕ ᓅᕋᒃᓴᖅᑲᖅᑐᓂᒃ ᓇᐅᑦᓯᖅᑐᐃᓂᕙᒃᑕᖅᒋᓄᑦ ᐊᓇᖅᒋᓂᒃ ᑲᑎᖅᓯᐃᕙᓐᓂᕐᓂᒃ ᐊᑕᐅᑦᓯᒃᑰᖅᑎᑕᐅᓪᓗᓂ ᕐᑯᓕᒥᗀᓕᒃᑯᑦ ᐅᑭᐅᑐᕐᑲᐅᑎᓪᓗᒍ ᖃᐅᔨᓴᐃᓂᐅᕙᒃᑐᓄᑦ. ᑕᐃᒪᓕ, ᓯᕗᓂᕐᒥ, Ekwò Nàxoède K’è (ᐃᐊᒃᕗ ᓇᐋᔾᐅᐃᑎ ᑳᐄ [ᑲᒫᓘᒃ ᓄᓇᒥ]) ᐱᓕᕆᐊᕆᔭᖅᑐᑦ ᐊᖏᓪᓕᒋᐊᖅᑕᐅᓯᒪᓕᕐᓂᖅᐸᑦ ᓵᑎ ᐃᐊᒃᕗ ᐊᒥᕐᕋᕐᑯᑎᖅᒋᓐᓄᑦ ᐱᓕᕆᓂᕐᑲᖅᑕᐅᓕᕐᓗᑎᒃ, ᓇᓗᓇᐃᔭᖅᑕᐅᓯᒪᓪᓗᓂ ᓄᓇᓕᐅᔪᓂᑦ ᑐᒃᑐᑦ ᐊᓇᖅᒋᓂᒃ ᖃᐅᔨᓴᖑᒃᓴᓂᒃ ᐱᓯᒪᓕᖅᐸᓐᓂᕐᒍᑦ ᐱᓕᕆᐊᖑᔪᖅ ᐱᓕᕆᐊᖑᓕᕈᓇᕋᔭᕐᒪᑦ ᐃᓚᒋᔭᐅᑎᑕᐅᓗᓂ ᐅᑭᐅᒥ ᖃᐅᔨᓴᐃᓂᕐᒍᑦ ᐱᓕᕆᓂᐅᕙᒃᑐᓄᑦ.

ᓄᓇᕗᐊᑉ ᒐᕙᒪᖓᑦ (GNWT) ᑲᔪᓯᓗᑎᒃ ᑲᑎᖅᓱᐃᕙᓐᓂᐊᖅᑐᑦ ᑐᒃᑐᑦ ᐊᓇᖏᓂᒃ ᖃᐅᔨᓴᒃᓴᐅᓂᐊᑐᓂᒃ ᐅᑭᐅᑐᖃᐅᑎᓪᓗᒍ ᑐᒃᑐᓂᒃ ᖃᐅᔨᓴᐃᓂᐅᕙᒃᑐᓄᑦ ᐃᓚᒋᔭᐅᖃᑕᐅᓗᑎᒃ ᓵᑎ ᐃᐊᒃᕗ ᐊᒥᕐᕋᕐᑯᑎᖏᓐᓂᑦ, ᐱᒋᐊᕐᓗᑎᒃ ᒫᕐᓯ 2020, ᐱᓗᐊᖅᑐᒥᒃ ᐱᓯᒪᓕᕆᐊᖅᐸᓪᓗᑎᒃ ᓈᒻᒪᒃᑐᓂᒃ ᖃᐅᔨᓴᒐᒃᓴᐅᓂᐊᖅᑐᓂᒃ ᐊᒻᒪᓗ ᓈᒻᒪᒃᑐᓂᒃ ᐊᕙᑎᒋᔭᖕᒐᓂ ᐱᓕᕆᓂᖃᕐᓂᐅᔪᓄᑦ. ᓯᕗᓂᑦᑎᓐᓂ ᑎᓖᓯ ᒐᕙᒪᖓᑦ (TG) ᑲᑎᖅᓱᐃᔾᓇᓕᕋᔭᖅᐸᑕ ᑐᒃᑐᑦ ᐊᓇᖏᓂᒃ ᖃᐅᔨᓴᒐᐅᔫᓯᓂᒃ ᓄᓇᓕᐅᔪᒥ ᐱᓕᕆᐅᔪᓯᐅᕙᒃᑐᑎᒍᑦ, ᑕᐃᒃᑯᐊ ᑲᑎᖅᓱᐊᖑᓯᒪᔪᑦ ᐃᓚᒋᐊᖅᑕᐅᔭᑎᐅᔫᓇᕋᔭᕐᒪᑕ ᑲᑎᖅᓱᐊᖑᓯᒪᓕᓚᐅᖅᑐᓂᑦ ᐅᑭᐅᑐᖃᐅᓕᖅᑎᓪᓗᒍ ᖁᓕᒥᒎᓕᒃᑯᑦ ᖃᐅᔨᓴᐃᓂᖃᖅᑎᓪᓗᒋᑦ.

<u>ᐊᑐᓕᖁᔭᐅᓪᓗᑎᒃ #12-2019</u> (ᓵᑎ ᐃᐊᒃᕗ): ᕿᒥᕐᕈᐃᓂᖃᖅᓯᑎᒃ ᖃᐅᔨᓴᐃᓂᖃᖅᐸᓐᓂᖅ: ᐃᐊᒃᕗ ᑐᒃᑐᐃᑦ ᐸᕝᕚᖅᑕᐅᓕᕐᑯᓇᒋᑦ, ᐊᒻᒪᓗ ᑭᓯᐊᓂ ᖃᓂᒃᓕᓯᒪᓕᖅᐸᖁᓪᓗᒋᑦ ᑐᒃᑐᓄᑦ ᐱᔭᕆᐊᖃᓪᓚᕆᒃᑳᖓᒥᒃ, ᓄᓇᕗᐊᑉ ᒐᕙᒪᖓᑦ (GNWT) ᐅᑭᐅᑕᒫᑦ ᕿᒥᕐᕈᐃᔭᖅᑐᕋᐸᓐᓂᕐᒥᓐᓂᒃ ᖃᐅᔨᓴᐃᓂᖃᖅᓯᑎᒃ ᓵᑎ ᐃᐊᒃᕗ ᐊᒥᕐᕋᕐᑯᑎᖏᓂᒃ ᓄᖅᑲᖅᑎᕋᓯᒪᓕᕆᐊᖅᑲᖅᑐᖅ.

<u>ᑭᐅᔾᔪᑎᖏᑦ:</u> ᓈᒻᒪᒋᔭᐅᔪᑦ

<u>ᐱᔾᔪᑎᒋᔭᐅᔪᑦ:</u> ᑎᓖᓯ ᒐᕙᒪᖓᑦ (TG) ᐊᒻᒪᓗ ᓄᓇᕗᐊᑉ ᒐᕙᒪᖓᑦ (GNWT) ᐅᒃᐱᕈᓯᒻᒪᑕ ᐊᑐᓕᖁᔭᐅᓪᓗᑎᒃ ᑐᕌᖓᑎᑕᐅᔭᕆᐊᖅᑲᕐᓂᖏᑕ <u>ᓄᕋᖅᑲᕿᐅᕙᒃᑐᓂᒃ</u> ᕿᒥᕐᕈᐃᓂᖃᖅᐸᓐᓂᕐᓄᑦ ᖃᐅᔨᓴᐃᓂᖃᖅᓯᑎᒃ – ᑕᑯᓗᒋᑦ ᕗᐃᑮᔾ ᓄᓇᒥᐅᑕᓕᕆᔩᒃᑯᑦ ᑲᑎᒪᔩᖏᑦ (WRRB) ᐅᓂᒃᑲᐅᓯᕆᓯᒪᓪᓗᒋᑦ ᐅᖃᐅᓯᒃᓴᕆᔭᖏᑦ ᒪᒃᐱᕋᖓ 61-ᒥ ᕗᐃᑮᔾ ᓄᓇᒥᐅᑕᓕᕆᔩᒃᑯᑦ ᑲᑎᒪᔩᖏᑦ (WRRB) ᐱᔾᔪᑎᒋᓯᒪᔭᒥᓐᓄᑦ ᐃᓱᒪᓕᐅᕈᑎᒥᓐᓂ ᐅᖃᐅᓯᒃᓴᓕᐊᕆᓯᒪᔭᖏᑦ. ᑎᓖᓯ ᒐᕙᒪᖓᑦ (TG) ᐊᒻᒪᓗ ᓄᓇᕗᐊᑉ ᒐᕙᒪᖓᑦ (GNWT) ᐅᔾᔨᕈᓯᒃᑐᑦ ᐃᓱᒪᔾᔪᓯᕆᔭᐅᔪᑦ ᓄᖅᑲᖅᑎᕋᓯᒪᓕᖁᔨᓪᓗᒋᑦ ᓄᕋᖅᑲᕿᐅᕙᒃᑐᓂ ᕿᒥᕐᕈᐃᓂᖃᖅᓯᑎᒃ ᖃᐅᔨᓴᐃᓂᐅᕙᒃᑐᓄᑦ ᐱᔾᔪᑎᖃᕈᑎᖃᖅᑲᓂᖏᑕ ᑐᒃᑐᓂᒃ ᐸᕝᕚᖅᐸᓐᓂᕐᓂᒃ, ᑭᓯᐊᓂᓗ ᐊᑐᕐᓂᖃᖅᑑᓂᖏᑦ ᑐᑭᓯᒋᐊᕐᕕᒃᓴᖁᑎᑦ ᓴᖑᓐᓂᐊᕈᑎᐅᔪᓇᕐᓂᖏᓂᒃ ᐱᔾᔪᑎᖃᖑᕐᒪᑕ.

<u>ᐊᑐᓕᖁᔭᐅᓪᓗᑎᒃ #13-2019</u> (ᓵᑎ ᐃᐊᒃᕗ): ᓈᓚᐅᑎᓕᖅᑐᒐᐅᕙᓐᓂᖏᑦ: ᐊᖏᓂᖅᓴᒥᒃ ᑐᑭᓯᐅᒪᓂᖅᑕᕐᑲᓕᖁᓪᓗᒍ ᐊᒥᕐᕋᕐᑯᑏᑦ ᓯᐊᒻᒪᒃᑎᖅᓯᒪᓂᖏᓐᓄᑦ, ᐃᖏᕐᕋᕙᓪᓕᐊᕙᓂᖏᓄᑦ, ᐊᒻᒪᓗ ᐊᓯᖏᓄᑦ ᐊᒥᕐᕋᕐᑯᑎᓄᑦ ᓄᒃᑎᖅᓯᒪᓕᑐᕋᐅᑉᐸᓂᕐᓄᑦ, ᓄᓇᕗᐊᑉ ᒐᕙᒪᖓᑦ (GNWT) ᐊᒥᓲᒍᓇᐊᖅᑎᕋᓯᔭᓇᐊᕐᑲᖅᐳᑦ ᖃᔅᓯᐅᓂᖏᓂᒃ ᓈᓚᐅᑎᓕᖅᑐᐃᕙᓐᓂᕐᒥᓂ ᓵᑎ ᐃᐊᒃᕗ ᐊᒥᕐᕋᕐᑯᑎᖏᓂᒃ 50-ᓂᑦ 70-ᓄᑦ. ᐊᓯᒃᑲᓂᖏᓂᒃ ᖃᐅᔨᒋᐊᖅᑕᐅᓯᒪᔪᓂᒃ ᑲᑎᖅᓱᐃᓯᒪᓂᖅ ᓈᓚᐅᑎᓕᖅᑐᒐᐅᓯᒪᔪᓂᑦ ᑐᓂᔭᐅᓯᒪᕙᒋᐊᖅᑲᖅᑐᑦ ᕗᐃᑮᔾ ᓄᓇᒥᐅᑕᓕᕆᔩᒃᑯᑦ ᑲᑎᒪᔩᖏᑦ (WRRB) ᓄᓇᕗᐊᑉ ᒐᕙᒪᖓᓂᑦ (GNWT) ᐅᑭᐅᑕᒫᑦ ᐃᓚᕐᑲᖅᑎᓪᓗᒋᑦ ᑭᓯᐊᓂᓗ ᑭᒡᓕᖅᑲᖅᑎᑕᐅᓇᑎᒃ ᒪᑯᓄᖓ:

1) ᓯᐊᒻᒪᒃᑎᑕᐅᓯᒪᓕᕐᓗᑎᒃ ᓄᕋᖅᑲᕿᐅᔪᓄᑦ ᑐᕌᖓᑎᓪᓗᒋᑦ ᑕᐃᒪᙵᓂᑐᖅᑲᒥᑦ ᑐᑭᓯᒋᐊᕐᕕᒃᓴᖅᑎᐅᔪᓄᑦ;
2) ᖃᖓᐅᑎᓪᓗᒍ ᓄᕋᖅᑲᓕᖅᓯᒪᕙᓐᓂᕐᓂᒃ ᑐᕌᖓᑎᓪᓗᒋᑦ ᑕᐃᒪᙵᓂᑐᖅᑲᒥᑦ ᑐᑭᓯᒋᐊᕐᕕᒃᓴᖅᑎᓄᑦ;
3) ᓄᕋᐃᑦ: ᐊᕐᓇᓪᓗᐃᑦ ᖃᔅᓯᐅᓂᖏᑦ; ᐊᒻᒪᓗ,
4) ᖁᑦᑎᖑᓂᕆᔭᐅᔪᑦ ᐊᒥᕐᕋᕐᑯᑏᑦ ᑭᐳᒃᓯᒪᓕᖅᐸᓐᓂᖏᑕ ᐊᒻᒪᓗ ᓄᓕᐊᓕᖅᐸᓐᓂᖏᑕ ᓇᓂ.

<u>ᑭᐅᔾᔪᑎᖏᑦ:</u> ᐊᔾᔨᒋᙱᓐᓂᖅᑲᖅᑲᐅᔪᑦ

ᐊᕙᑎᓕᕆᔨᒃᑯᑦ ᓄᓇᒥᐅᑕᓕᕆᔨᒃᑯᓪᓗ ᐱᕈᒃᑲᓐᓂᕈᓐᓇᖅᑐᓕᕆᓂᕐᒧᑦ (ENR) ᐊᔾᔨᙳᕐᑕᖏᑎᒍᑦ ᐅᖃᖅᓯᒪᕗᑦ “ᐊᑐᓕᖁᔭᐅᓪᓗᑎᒃ #13-2019”-ᒧᑦ ᐃᒪᓐᓇ ᐅᖃᖅᓯᒪᓪᓗᒋᑦ:

<u>ᐊᑐᓕᖁᔭᐅᓪᓗᑎᒃ #13-2019</u> (ᓵᑎ ᐃᐊᒃᕗ): ᓈᓚᐅᑎᓕᖅᑐᒐᐅᕙᓐᓂᖏᑦ: ᐊᖏᓂᖅᓴᒥᒃ ᑐᑭᓯᐅᒪᓂᖅᑕᕐᑲᓕᖁᓪᓗᒍ ᐊᒥᕐᕋᕐᑯᑏᑦ ᓯᐊᒻᒪᒃᑎᖅᓯᒪᓂᖏᓐᓄᑦ, ᐃᖏᕐᕋᕙᓪᓕᐊᕙᓂᖏᓄᑦ, ᐊᒻᒪᓗ ᐊᓯᖏᓄᑦ ᐊᒥᕐᕋᕐᑯᑎᓄᑦ ᓄᒃᑎᖅᓯᒪᓕᑐᕋᐅᑉᐸᓂᕐᓄᑦ, ᓄᓇᕗᐊᑉ ᒐᕙᒪᖓᑦ (GNWT) ᐊᒥᓲᒍᓇᐊᖅᑎᕋᓯᔭᓇᐊᕐᑲᖅᐳᑦ ᖃᔅᓯᐅᓂᖏᓂᒃ ᓈᓚᐅᑎᓕᖅᑐᐃᕙᓐᓂᕐᒥᓂ ᓵᑎ ᐃᐊᒃᕗ ᐊᒥᕐᕋᕐᑯᑎᖏᓐᓂᒃ 50-ᓂᑦ 70-ᓄᑦ (50-ᐅᓪᓗᑎᒃ ᐊᕐᓇᓪᓗᐃᑦ ᐊᒻᒪᓗ 20-ᐅᓪᓗᑎᒃ ᐊᖑᓯᓪᓗᐃᑦ). ᐊᕙᑎᓕᕆᔨᒃᑯᑦ ᓄᓇᒥᐅᑕᓕᕆᔨᒃᑯᓪᓗ ᐱᕈᒃᑲᓐᓂᕈᓐᓇᖅᑐᓕᕆᔩᖏᑕ (ENR) ᐅᓂᒃᑳᓕᐊᕆᕙᑦᑕᖏᑦ ᐃᓚᕐᑲᖅᑎᑕᐅᓯᒪᓪᓗᑎᒃ ᖃᐅᔨᓴᐃᓂᐅᓯᒪᔪᓂᒃ ᑐᙵᕚᕐᑲᖅᑎᑕᐅᓪᓗᑎᒃ ᓈᓚᐅᑎᓕᖅᑐᐃᕙᓐᓂᕐᓂᑦ ᑐᑭᓯᒋᐊᕐᕕᒃᓴᖅᑎᓄᑦ ᑐᓂᔭᐅᓯᒪᓕᕐᓂᐊᖅᑐᑦ ᕗᐃᑮᔾ ᓄᓇᒥᐅᑕᓕᕆᔩᒃᑯᑦ ᑲᑎᒪᔩᖏᑦ (WRRB) ᐱᔭᕇᖅᑕᐅᓯᒪᓕᕌᖓᑕ.

<u>ᐱᔾᔪᑎᒋᔭᐅᔪᑦ:</u> ᑐᒃᑐᑦ ᓈᓚᐅᑎᓕᖅᑐᒐᐅᓯᒪᔪᓂᑦ ᑐᑭᓯᒋᐊᕐᕕᒃᓴᖅᑎᐅᔪᑦ ᐊᑐᖅᑕᐅᕙᓪᓚᑕ ᐊᒥᓱᓄᑦ ᐱᓕᕆᔾᔪᑎᐅᕙᒃᓯᑎᒃ ᓄᓇᕗᐊᑉ ᒐᕙᒪᖓᓂᑦ (GNWT) ᐊᒻᒪᓗ ᐊᓯᖏᓂᑦ ᑲᑐᔾᔨᕐᑲᑎᒌᖑᔪᓂᑦ ᖃᐅᔨᓴᐃᓂᕐᓂ ᐅᕝᕙᓗᐋᓅᑦ

ᐊᑐᓕᖅᑎᑕᐅᓯᒪᓪᓗᑎᒃ ᐊᐅᓚᕝᓯᓂᐅᓕᖅᓯᒪᔪᓄᑦ. ᓱᕐᓗ, ᐅᔭᕐᒃᑕᕆᐊᑦ ᐊᑐᖅᐸᒻᒪᑕ ᓈᓚᐅᑎᓕᖅᑐᒐᐅᓯᒪᔪᓂᑦ ᑐᑭᓯᒋᐊᕐᕕᒃᓴᕐᑯᑎᓂᒃ ᐅᔾᔨᕆᔭᐅᕙᕐᑯᓪᓗᒋᑦ ᖃᖓᐅᓕᖅᑎᓪᓗᒍ ᑐᒃᑐᐃᑦ ᐊᕙᑎᒋᔭᖏᓐᓃᓕᖅᐸᓐᓂᖏᑕ ᐊᒻᒪᓗ ᖃᓄᐃᓚᕿᑎᕝᓯᑦᑕᐃᓕᕽᔪᑎᓂᒃ ᐱᓕᕆᓂᖃᓕᕈᓐᓇᖅᐸᒃᓱᑎᒃ. ᕿᖓᐅᑦ ᐊᒥᕐᕋᕐᑯᑎᖏᓄᑦ, ᐃᐊᒃᕗ ᓇᐋᔾᐅᐃᑎ ᑲ'ᐄ ᐱᓕᕆᐊᑦ ᐊᑐᖅᐸᒃᑐᑦ ᖃᐅᑕᒫᑦ ᓈᓚᐅᑎᓕᖅᑐᒐᐅᓯᒪᔪᑦ ᓇᓅᓐᓂᖏᓂᒃ ᐸᕐᓇᐅᑎᓕᐅᕐᓂᐊᖅᓱᑎᒃ ᖃᐅᔨᓴᐃᓂᕐᓂ ᐱᓕᕆᓂᐅᕙᒃᑐᓄᑦ ᔪᓚᐃᒥ ᐊᒻᒪᓗ ᐋᒡᒌᓯᒥ. ᓄᓇᕗᐊᑉ ᒐᕙᒪᖓᓂᑦ (GNWT) ᐅᔾᔨᕈᓱᒃᑐᑦ ᒪᑯᓂᖓ, ᑭᓯᐊᓂᓗ:

- ᔫᓂ 2018-ᒥ ᖃᐅᔨᓴᐃᓂᐅᓚᐅᖅᑐᑦ ᐅᕐᑲᖅᓯᒪᓚᐅᕐᒪᑕ ᓵᑎ ᐃᐊᒃᕗ ᐊᒥᕐᕋᕐᑯᑎᖏᑦ ᔈᓛᓐᔪᕐ ᐊᓯᖏᓂᓪᓗ ᐅᓂᒃᑳᓕᐊᖑᓯᒪᔪᑦ (2019) ᐃᓚᕐᑲᕐᓂᖏᑕ ᒦᓐᓇᒍᑦ ᑎᑭᓯᒪᓪᓗᒋᑦ ᖃᐅᔨᒋᐊᖅᓯᒪᓂᕐᓂᒃ ᐊᒥᕐᕋᕐᑯᑎᐅᔪᑦ ᓄᓇᙳᐊᑎᒍᑦ ᓇᓃᓕᓚᐅᕐᓂᖏᓂᒃ ᑎᑭᑦᓯᒋᑦ 2018-ᒍᑦ. ᐃᓚᕐᑲᖅᑐᑦ, ᓱᕐᓗ, ᖃᐅᔨᒋᐊᕈᑎᐅᓯᒪᔪᓂᒃ ᓄᕐᕋᕐᑲᕐᕕᐅᔪᑦ ᐳᓘᕝ-ᑲᓇᓐᓇᒥ ᑐᒃᑐᖏᓂ ᓈᓚᐅᑎᓕᖅᑐᒐᐅᓯᒪᓪᓗᑎᒃ ᐊᕐᓇᓪᓗᐃᑦ ᑲᑎᙳᐃᓐᓇᖅᐸᒻᒪᖕᒫᑕ ᐊᒥᕐᕋᕆᔭᐅᔪᓄᑦ ᐃᓚᖏᔭᐅᕐᑲᑕᐅᕝᕕᒻᒥᓐᓄᑦ ᐊᒻᒪᓗ ᖃᓄᖅ ᕐᑯᑦᓯᒃᑎᒋᓂᕐᑲᕐᓂᖏᑕ ᐊᓯᔾᔨᖅᓯᒪᓕᖅᐸᓐᓂᐅᔪᓄᑦ ᒪᕐᕉᓪᓗᑎᒃ ᐊᒥᕐᕋᕐᑯᑎᐅᔪᓄᑦ, ᖃᐅᔨᒋᐊᕈᑎᐅᓯᒪᔪᓂᒃ ᖃᖓ ᐊᒥᓲᓂᖅᐸᐅᓕᕝᕕᒃᑲᕐᐸᒻᒪᖕᒫᑕ ᓄᕐᕋᕐᑲᓕᕝᓯᒪᓂᐅᕙᒃᑐᑦ ᐊᒥᕐᕋᕐᑯᑎᐅᔪᓂ ᑐᙳᕙᕝᕕᕐᑲᖅᑎᓪᓗᒋᑦ ᓅᐸᑦᓕᐊᓂᐅᕙᒃᑐᑦ ᕐᑯᑦᑎᖕᓂᕆᔭᕐᒋᓄᑦ ᓈᓚᐅᑎᓕᖅᑐᒐᐅᓯᒪᓪᓗᑎᒃ ᐊᕐᓇᓪᓗᓐᓂ, ᓇᐃᒡᓕᒋᐊᖅᓯᒪᓪᓗᒋᑦ ᒦᓐᓇᕓᒍᓚᐅᖅᑐᒥ ᓄᕐᕋᐃᑦ-ᐊᕐᓇᓪᓗᐃᑦ ᖃᓄᑎᖠᕐᓂᖏᑕ ᐊᒥᓲᓂᖏᑎᒍᑦ ᐊᒥᕐᕋᕐᑯᑎᐅᔪᓂ, ᓇᐃᒡᓕᒋᐊᖅᓯᒪᓪᓗᒋᑦ ᓈᓚᐅᑎᓕᖅᑐᒐᐅᓯᒪᔪᓄᑦ ᑐᙳᕙᕝᕕᕐᑲᖅᑐᓄᑦᐊᒻᒪᓗ ᐱᓕᕆᔾᔪᑎᓄᑦ ᑐᙳᕙᕝᕕᕐᑲᖅᑎᑕᐅᔪᓄᑦ ᐊᕐᓇᓪᓗᐃᑦ ᑐᒃᑐᑦ ᐊᓐᓇᐅᒪᓯᒪᔪᓄᑦ ᓇᓚᐅᑦᓵᖅᑕᐅᓯᒪᓂᖏᑦ, ᐊᒻᒪᓗ ᐊᕙᑎᒋᔭᕐᒋᓂᒃ ᖃᐅᔨᒋᐊᕐᓂᐅᓚᐅᖅᑐᑦ ᒦᓐᓇᕓᒍᓚᐅᖅᑐᒥ ᒪᓕᒃᑐᕋᐅᑎᓪᓗᑎᒃ ᔫᓂᒥ ᓇᓅᓐᓂᐅᓚᐅᖅᑐᓄᑦ ᓄᕐᕋᕐᑲᕐᕕᐅᕗᒃᑐᓂ (ᓱᕐᓗ ᖃᓄᖅ ᐅᖓᓯᒃᑎᒋᓯᒪᓕᕐᓂᖏᑕ ᐅᑭᐅᒥᒃ ᐊᑕᐅᓯᕐᒥᒃ ᓈᓚᐅᑎᓕᖅᑐᒐᐅᓯᒪᔪᑦ ᐊᕐᓇᓪᓗᐃᑦ ᓇᓅᓐᓂᑲᓕᖅᑕᒥᓐᓄᑦ ᐅᑭᐅᒍᓚᐅᖅᑐᒥ ᓇᓅᓐᓂᑲᓚᐅᖅᑕᕐᒋᓐᓂᑦ. ᓄᓇᕗᐊᑉ ᒐᕙᒪᖓ (GNWT) ᑲᔪᓯᑎᕝᓯᓯᒪᓂᐊᖅᑐᑦ ᐱᑕᕐᑲᖅᑎᕝᓯᕙᓐᓂᕐᒥᓐᓂᒃ ᑕᒪᒃᑯᓂᖓ ᓇᓗᓇᐃᔭᖅᑕᐅᓯᒪᓪᓗᑎᒃ ᖃᐅᔨᒋᐊᕐᓂᐅᓚᐅᖅᓯᒪᔪᓄᑦ ᐅᑭᐅᓂ ᓄᕐᕋᕐᑲᕐᕕᐅᔪᓂᒃ ᐊᔾᔨᓕᐅᑲᕙᒃᓱᑎᒃ ᖃᐅᔨᓴᐃᓂᐅᓚᐅᖅᑐᓂᑦ.
- ᕗᐃᑭᔩ ᓄᓇᒥᐅᑕᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔨᖏᑦ (WRRB) ᐱᓕᕆᐊᖅᑲᖅᑎᐅᓕᕈᒪᒃᐸᑕ ᐊᓯᒃᑲᓐᓂᕐᒋᑎᒍ ᖃᐅᔨᒋᐊᖅᐸᓐᓂᕐᓂᒃ ᓈᓚᐅᑎᓕᖅᑐᒐᐅᓯᒪᔪᓂᑦ ᑐᑭᓯᒋᐊᕐᕕᕐᑯᑎᓂᒃ, ᓄᓇᕝᓯᐊᑉ ᒐᕙᒪᖓᑦ (GNWT) ᑐᑭᓯᒋᐊᕐᕕᒃᓴᕐᑯᑎᓂᒃ ᐊᑐᐃᓐᓇᐅᓕᖅᑎᕝᓯᔪᓐᓇᖅᑐᑦ ᑐᑭᓯᒋᐊᕐᕕᒃᓴᕐᑯᑎᓂᒃ ᐊᒥᖅᑲᕐᑲᑎᕐᑲᕈᑎᕐᑲᕐᓂᕐᒥ ᐊᕐᒋᕈᑎᑎᒍᑦ.
- ᐊᓯᕐᒋᑦᑕᐅᖅ ᓇᓕᑐᐃᓐᓇᕐᒋᑦ ᐱᔭᕇᖅᑕᐅᓯᒪᓪᓗᑎᒃ ᐅᓂᒃᑳᓕᐊᕐᒎᓯᒪᔪᑦ ᓄᓇᕝᓯᐊᑉ ᒐᕙᒪᖓᓂᑦ (GNWT) ᐊᑐᖅᑕᐅᕙᑦᑐᑦ ᓵᑎ ᐃᐊᒃᕗ ᐊᒥᕐᕋᕐᑯᑎᕐᒋᓂᑦ ᓈᓚᐅᑎᓕᖅᑐᒐᐅᓯᒪᔪᓂᑦ ᑐᑭᓯᒋᐊᕐᕕᒃᓴᕐᑯᑎᐅᔪᑦ ᐊᑐᐃᓐᓇᐅᓕᖅᑎᑕᐅᔪᓐᓇᕐᒥᔪᑦ ᕗᐃᑭᔩ ᓄᓇᒥᐅᑕᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔨᖏᑦ (WRRB). ᐊᑕᐅᓯᖅ ᐆᒃᑐᕋᐅᑎᐅᔪᓐᓇᖅᓯᓂ ᓇᐃᑦᑑᓪᓗᓂ ᖃᐅᔨᓴᐃᓂᕐᒍᑦ ᐅᓂᒃᑳᓕᐊᕐᒎᕙᒃᓯᓂ ᓄᓇᕝᓯᐊᑉ ᒐᕙᒪᖓᓂᑦ (GNWT) ᐅᑭᐅᕐᒎᑎᓪᓗᒍ ᓈᓚᐅᑎᓕᖅᑐᐃᕙᓐᓂᕐᒥᒃ ᑐᒃᑐᓂ ᐱᔭᕇᖅᑕᐅᓯᒪᓕᓕᖅᕗᑦ. ᓇᐃᒡᓕᒋᐊᖅᑕᐅᓯᒪᓪᓗᑎᒃ ᑐᒃᑐᓄᑦ ᑲᑎᑕᐅᓯᒪᓪᓗᑎᒃ ᖃᐅᔨᓴᐃᓂᐅᓯᒪᔪᓄᑦ ᔫᓂ, ᐅᑐᐱᕆ ᐊᒻᒪᓗ ᒫᑦᓯ/ᐄᐳᓗ ᑕᖅᑭᕐᒋᓄᑦ ᐃᓚᕐᑲᖅᑎᑕᐅᔪᑦ ᓄᓇᙳᐊᓕᐊᕐᒎᓯᒪᔪᓂᒃ ᓇᓗᓇᐃᔭᐃᓯᒪᓪᓗᑎᒃ ᓈᓚᐅᑎᓕᖅᑐᐃᓯᒪᓂᕐᓄᑦ ᖃᐅᔨᓴᐃᓂᕐᑲᖅᑎᓪᓗᒋᑦ, ᐊᒻᒪᓗ ᑖᒃᑯᐊ ᐊᑐᐃᓐᓇᐅᓕᖅᑎᑕᐅᔪᓐᓇᕐᒥᔪᑦ ᕗᐃᑭᔩ ᓄᓇᒥᐅᑕᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔨᖏᑦ (WRRB).

ᐆᓛᓐᔪᕐ, ᔩ. ᔩ. ᐋᑕᓯᐅᔅᑭ, ᔩ. ᓂᓯ, ᑏ. ᑲᓚᕝ, ᔩ. ᒍᐃᓕᐊᔅ, H. ᓴᐃᔩᓐ-ᑯᕞᕗᑦ, ᐊᒻᒪᓗ ᐃᐊᓪ. ᐃᓪ. ᓚᒃᔫᒃ. 2019–ᒥ. ᓇᓚᐅᑦᓵᖅᑕᐅᓯᒪᓪᓗᑎᒃ ᓄᕐᕋᓕᐅᖅᑐᑦ ᐊᕐᓇᓪᓗᐃᑦ ᐊᒻᒪᓗ ᐃᓐᓇᐅᓕᖅᑐᑦ ᐊᒥᕐᕋᕐᑯᑎᐅᔪᑦ ᐊᕐᒋᓂᖁᔭᕐᒋᓂᒃ ᐊᒻᒪᓗ ᖃᐅᔨᒋᐊᕈᑎᐅᓯᒪᔪᓂᒃ ᓄᓇᙳᐊᑎᒍᑦ ᓇᓗᓇᐃᔭᐃᓂᕐᓂ ᐳᓘᕝ-ᑲᓇᓐᓇᒥ ᐊᒥᕐᕋᕐᑯᑎᕆᔭᐅᔪᓂᒃ ᓄᓇᐃᓐᓇᒥᐅᑕᓄᑦ ᑐᒃᑐᓄᑦ: 2018 ᓄᕐᕋᕐᑲᕐᕕᐅᔪᓂ ᐊᔾᔨᓕᐅᕆᓪᓗᑎᒃ ᖃᐅᔨᓴᐃᓂᖅ. ᐊᕙᑎᓕᕆᔨᒃᑯᑦ ᓄᓇᒥᐅᑕᓕᕆᔨᒃᑯᓪᓗ ᐱᕈᒃᑲᓐᓂᕈᓐᓇᖅᑐᓕᕆᔩᑦ, ᓄᓇᕝᓯᐊᑉ ᒐᕙᒪᖓᓂᑦ (GNWT), ᔭᓗᓇᐃ, ᓄᓇᕝᓯᐊᕐᒥ, ᑲᓇᑕ. ᑎᑎᕋᖅᑕᐅᓯᒪᔪᑦ ᐅᓂᒃᑳᓕᐊᑦ 278-ᖓ.

<u>ᐊᑐᓕᕐᑯᔭᐅᓪᓗᑎᒃ #14-2019</u> **(ᓵᑎ ᐃᐊᒃᕗ):** ᓈᓚᐅᑎᓕᖅᑐᒐᐅᕙᓐᓂᖏᑦ: ᑐᕌᖓᓂᕐᑲᕐᑲᑕᐅᓪᓗᓂ ᐃᓱᒪᒋᔭᐅᓂᕐᓂᑦ ᐃᓄᑐᕐᑲᐅᔪᓂᑦ ᐊᒻᒪᓗ ᓇᓗᓇᐃᔭᖅᑕᐅᓯᒪᓕᕐᑯᓪᓗᒋᑦ ᓱᓇᓂᒃ ᖃᐅᔨᒋᐊᕆᐊᕐᑲᖅᐸᓐᓂᐅᔪᑦ ᐊᕐᒋᓂᖅᓴᐅᓪᓗᑎᒃ ᖃᐅᔨᓴᖓᒃᓴᓂᒃ ᐱᓯᒪᓕᕆᐊᕐᑲᖅᐸᓐᓂᕐᓄᑦ, ᑎᓖᓯ ᒐᕙᒪᖓ (TG) ᐊᒻᒪᓗ ᓄᓇᕝᓯᐊᑉ ᒐᕙᒪᖓ (GNWT) ᓴᖅᑮᕙᕆᐊᕐᑲᖅᑐᑦ ᓇᓗᓇᐃᔭᖅᑕᐅᓯᒪᓪᓗᑎᒃ ᑐᑭᓯᔭᐅᑎᑕᐅᔪᓄᑦ ᐃᓱᒪᒋᔭᐅᓯᒪᓪᓗᑎᒃ ᓈᓚᐅᑎᓕᖅᑐᐃᕙᓐᓂᕐᒥᓐᓂ ᐊᒥᓱᙳᕆᐊᖅᓯᒪᓂᐅᔪᓂᒃ ᕗᐃᑭᔩ ᓄᓇᒥᐅᑕᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔨᖏᑦ (WRRB). ᑖᒃᑯᐊ ᐱᔭᕇᖅᑕᐅᓯᒪᓕᕐᓂᐊᖅᑐᑦ ᐊᑐᕐᓗᑎᒃ ᓈᓚᐅᑎᓕᖅᑐᒐᐅᓯᒪᔪᓂᑦ ᐅᑭᐅᑕᒫᑦ ᐱᓕᕆᐊᕐᒎᕙᓐᓂᐊᕐᓗᑎᒃ ᐃᓚᐅᑎᓪᓗᒋᑦ ᐋᖅᑭᒋᐊᖅᑕᐅᓯᒪᓪᓗᑎᒃ ᐊᐅᓚᕝᓯᓂᕐᑲᕐᓂᕐᓄᑦ.

ᑭᐅᔾᔪᑎᖏᑦ: ᐊᔾᔨᒌᖕᒋᓐᓂᖃᖅᑲᐅᔪᑦ

ᑎᓵᓯ ᒐᕙᒪᖓᑦ (TG) ᐊᒻᒪᓗ ᐊᕙᑎᓕᕆᔨᒃᑯᑦ ᓄᓇᒥᐅᑕᓕᕆᔨᒃᑯᓪᓗ ᐱᕈᒃᑲᓐᓂᕈᓐᓇᖅᑐᓕᕆᓂᕐᒧᑦ (ENR) ᐊᔾᔨᒌᖕᒋᑕᖕᒋᑎᒍᑦ ᐅᖃᖅᓯᒪᔭᑦ "ᐊᑐᓕᖅᑯᔭᐅᓪᓗᑎᒃ #14-2019"-ᒧᑦ ᐃᒪᓐᓇ ᐅᖃᖅᓯᒪᓪᓗᒋᑦ:

<u>ᐊᑐᓕᖅᑯᔭᐅᓪᓗᑎᒃ #14-2019</u> (ᓴᑎ ᐃᐊᒃᔭ): ᓈᓚᐅᑎᓕᖅᑐᒐᐅᕙᓐᓂᖓᑦ: ᑐᕌᖓᓂᖅᑲᖅᑕᐅᓪᓗᓂ ᐃᓱᒪᒋᔭᐅᓂᖅᓂᑦ ᐃᓄᑐᖅᑲᐅᔪᓂᑦ ᐊᒻᒪᓗ ᓇᓗᓇᐃᔭᖅᑕᐅᓯᒪᓕᖅᑯᓪᓗᒋᑦ ᓱᓇᓂᒃ ᖃᐅᔨᒋᐊᕆᐊᖃᖅᐸᓐᓂᐅᔪᑦ ᐊᖏᓂᖅᓴᐅᓪᓗᑎᒃ ᖃᐅᔨᓴᕐᓴᓂᒃ ᐱᓯᒪᓕᕆᐊᖃᖅᐸᓐᓂᖅᓄᑦ, ᑎᓵᓯ ᒐᕙᒪᖓᑦ (TG) ᐊᒻᒪᓗ ᓄᓇᕐᓯᐊᑉ ᒐᕙᒪᖓᑦ (GNWT) ᓴᖅᐹᕙᒋᐊᖅᑲᖅᑐᑦ ᓇᓗᓇᐃᔭᖅᑕᐅᓯᒪᓪᓗᑎᒃ ᑐᑭᒋᔭᐅᑎᑕᐅᔪᓄᑦ ᐃᓱᒪᒋᔭᐅᓯᒪᓪᓗᑎᒃ ᓈᓚᐅᑎᓕᖅᑐᐃᕙᓐᓂᖏᓐᓂ ᐊᒥᓱᓪᒍᕆᐊᖅᓯᒪᓂᐅᔪᓂᒃ ᕗᐃᑭᔩ ᓄᓇᒥᐅᑕᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔨᖏᑦ (WRRB).

<u>**ᐱᔾᔪᑎᒋᔭᐅᔪᑦ:**</u> ᓄᓇᕐᓯᐊᑉ ᒐᕙᒪᖓᑦ (GNWT) ᐱᑕᖅᑲᖅᑎᖃᓯᒪᓕᓚᐅᖅᑐᑦ ᕗᐃᑭᔩ ᓄᓇᒥᐅᑕᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔩᖏᑦ (WRRB) ᓇᓗᓇᐃᔭᖅᑕᐅᓯᒪᓪᓗᑎᒃ ᑐᑭᒋᔭᐅᑎᑕᐅᔪᓄᑦ ᐃᓱᒪᒋᔭᐅᓯᒪᓪᓗᑎᒃ ᐊᒥᓱᓪᒍᕆᐊᖅᑎᖃᓯᒪᓂᖅᒧᑦ ᖁᒻᒧᐊᒃᑎᑕᐅᓯᒪᔪᑎᒡᖅᑐᓂᒃ ᓈᓚᐅᑎᓕᖅᑐᐃᓂᖅᓄᑦ ᕿᖓᐅᑦ ᐊᒥᒃᖁᖅᑯᑎᖏᓐᓂ (ᐋᑕᒻᓯᐅᔅᑭ ᐊᒻᒪᓗ ᐳᓖᓐᔪᖅ, 2016). ᑐᑭᒋᔭᐅᑎᑕᐅᔪᓄᑦ ᐃᓱᒪᒋᔭᐅᓯᒪᔪᑦ ᐱᑕᖅᑲᖅᑎᑕᐅᔪᑦ ᐅᓂᒃᑳᓕᐊᕐᒍᓯᒪᔪᓂ ᐊᑐᓕᖅᑎᑕᐅᔪᓐᓇᖅᒥᔪᑦ ᓴᑎ ᐃᐊᒃᔭ ᐊᒥᖅᖁᖅᑯᑎᖏᓐᓄᑦ. ᑖᒃᑯᐊ ᐅᓂᒃᑳᓕᐊᖑᔪᓯᒪᔪᑦ ᐃᓱᒪᓕᐅᕈᑎᖅᑲᖅᓯᒪᔭᑦ ᐊᑐᓕᖅᑎᕆᖅᑯᔨᓪᓗᑎᒃ ᐊᒥᓱᓪᒍᕆᐊᑎᑕᐅᓯᒪᖅᑯᓪᓗᑎᒃ 65-ᓄᑦ ᓈᓚᐅᑎᓕᖅᑐᕐᓗᐅᓯᒪᔪᑦ ᕿᖓᐅᑦ ᐊᒥᖅᖁᖅᑯᑎᖏᓐᓂ, ᐃᓱᒪᒋᖅᑲᓯᐅᑎᓪᓗᒋᑦ ᖃᔅᓯᐅᔪᓂᒃ ᖁᒻᒧᐊᒃᑎᑕᐅᓯᒪᔪᑎᒍᑦ ᓈᓚᐅᑎᓕᖅᑐᐅᓯᒪᓇᔭᖅᑐᑦ ᐊᒻᒪᓗ ᐃᓱᒪᓕᐅᕈᑎᐅᓯᒪᓪᓗᑎᒃ ᐊᑐᓕᖅᑎᕐᓯᖅᑯᔨᓂᖅᓄᑦ ᖃᔅᓯᐅᔪᓂᒃ ᓈᓚᐅᑎᓕᖅᑐᐃᓂᐊᖅᓂᖅᒧᑦ ᑖᒃᑯᓇᖓ ᐊᑐᓕᖅᑎᑕᐅᔪᓄᑦ. 2015-ᒥ ᑎᓵᓯ ᒐᕙᒪᖓᑦ (TG) ᓈᒻᒪᒃᓴᐃᓯᒪᓕᓚᐅᖅᓚᑕ ᐊᒥᓱᓪᒍᕆᐊᖅᑎᑕᐅᔪᒪᔪᓂᒃ ᕿᖓᐅᑦ ᐊᒥᖅᖁᖅᑯᑎᖏᓂ ᓈᓚᐅᑎᓕᖅᑐᐃᓂᖅᓄᑦ ᐊᒥᓲᓂᕆᔭᐅᔪᓂᒃ 30-ᓄᑦ ᐊᖅᓇᓪᓗᖅᓄᑦ ᐊᒻᒪᓗ 20-ᓄᑦ ᐊᖑᓴᓪᓗᖅᓄᑦ (50-ᐅᓪᓗᑎᒃ ᑲᑎᓪᓗᒋᑦ), ᐊᒻᒪᓗ 2019-ᒥ ᑲᑐᔾᔨᓂᖅᑲᖅᓯᑎᒃ ᐊᐅᓚᑦᓯᓂᖅᑲᖅᓂᖅᒧᑦ ᐃᓱᒪᓕᐅᕈᑎᐅᓯᒪᔪᑦ ᕿᖓᐅᑦ ᐊᒻᒪᓗ ᓴᑎ ᐃᐊᒃᔭ ᐊᒥᖅᖁᖅᑯᑎᖏᓐᓄᑦ ᑎᓵᓯ ᒐᕙᒪᖓᓂᑦ (TG) ᐊᒻᒪᓗ ᓄᓇᕐᓯᐊᑉ ᒐᕙᒪᖓᓂᑦ (GNWT) ᐃᓚᖅᑲᓚᐅᖅᑐᑦ ᐊᒥᓱᓪᒍᕆᐊᖅᑎᓯᓂᖅᒥᒃ ᑎᑭᑦᓯᒋᑦ 70-ᓄᑦ ᓈᒪᐅᑎᓕᖅᑐᒐᐅᓯᒪᔪᓄᑦ (50-ᐅᓪᓗᑎᒃ ᐊᖅᓇᓪᓗᐃᑦ ᐊᒻᒪᓗ 20-ᐅᓪᓗᑎᒃ ᐊᖑᓴᓪᓗᐃᑦ) ᐊᑐᓂ ᒪᕈᐃᖑᓪᓗᑎᒃ ᐊᒥᖅᖁᖅᑎᐅᔪᓂ. 70-ᐅᓪᓗᑎᒃ ᓈᓚᐅᑎᓕᖅᑐᒐᐅᓯᒪᔪᑦ (50 ᐊᒻᒪᓗ 20) ᐃᓚᖓᒍᑦ ᑐᙵᕘᖅᑲᖅᑎᑕᐅᓚᐅᖅᑐᑦ ᖃᐅᔨᒋᐊᕈᑎᐅᓚᐅᖅᑐᓂᑦ ᐋᑕᒻᓯᐅᔅᑭᒥᑦ ᐊᒻᒪᓗ ᐳᓖᓐᔪᖅᒥᑦ, (2016) ᐊᒻᒪᓗ ᐃᓕᑕᖅᓯᓯᒪᓪᓗᑎᒃ ᐱᒻᒪᕆᐅᓂᖓᑕ ᑲᔪᓯᑎᑕᐅᓂᒃᓴᖓᓄᑦ ᓇᔪᕐᓯᖅᑐᐃᕙᓐᓂᐅᔪᑦ ᐊᖑᓴᓪᓗᖏᓂᒃ ᑖᒃᑯᓇᙵᑦ ᐊᒥᖅᖁᑎᐅᔪᓂᑦ. ᓄᓇᕐᓯᐊᑉ ᒐᕙᒪᖓᑦ (GNWT) ᐃᓱᒪᓕᐅᖅᐳᑦ ᐅᑭᐅᑕᒫᑦ ᖃᐅᔨᒋᐊᖅᑕᐅᕙᒃᑐᑦ ᓈᓚᐅᑎᓕᖅᑐᒐᐅᓯᒪᔪᓂ ᐊᒥᓲᓂᕆᔭᐅᔪᑦ ᐱᔭᐅᓯᒪᓕᖅᑕᐅᔭᕆᐊᖅᑲᖅᐸᒃᓯᑎᒃ ᐊᐅᓚᑦᓯᓂᖅᑲᖅᓂᖅᓂ ᐊᑐᓕᖅᑎᓯᓂᖅᒧᑦ ᑲᔪᓯᑎᑕᐅᔭᕆᐊᖅᑲᖏᓂᖓᑕ, ᑭᓯᐊᓂᓗ ᓄᓇᕐᓯᐊᑉ ᒐᕙᒪᖓᑦ (GNWT) ᐱᑕᖅᑲᖅᑎᓯᕙᒍᓐᓇᖅᑐᑦ ᐅᑭᐅᑕᒫᑦ ᓇᐃᓪᓕᒋᐊᖅᑕᐅᓯᒪᓪᓗᑎᒃ ᖃᔅᓯᐅᓂᖏᓄᑦ ᓈᓚᐅᑎᓕᖅᑐᒐᐅᓯᒪᔪᓂᑦ ᒪᕈᐃᖑᓪᓗᑎᒃ ᐊᒥᖅᖁᑎᓂᑦ ᑎᑎᕋᖅᑕᐅᓯᒪᔪᓂᒃ, ᐊᒻᒪᓗ ᐅᕙᓯᐊᕈᙱᒃᑲᓐᓂᖅᒥᒃᐸᑦ ᖃᐅᔨᒋᐊᖅᑕᐅᒃᑲᓐᓂᕈᓘᓇᓪᓗᑎᒃ ᓈᒻᒪᖕᒪᖕᖔᑕ ᓈᓚᐅᑎᓕᖅᑐᒐᐅᓯᒪᔪᓂ ᖃᔅᓯᐅᓂᓇᔭᐅᔪᑦ ᐃᓱᒪᒃᓴᖅᓯᐅᕈᑎᐅᔪᓐᓇᖅᓚᑕ ᒪᓕᒃᓗᒋᑦ ᐋᖅᑭᒋᐊᖅᑕᐅᓯᒪᓪᓗᑎᒃ ᐊᐅᓚᑦᓯᓂᖅᑲᖅᓂᖅᒥ ᑐᙵᕘᖅᑯᑎᐅᔪᑦ ("ᐊᑐᓕᖅᑎᑕᐅᖅᑯᓪᓗᒋᑦ #9-2019").

ᐋᑕᒻᓯᐅᔅᑭ, ᔩ. ᐊᒻᒪᓗ ᔩ. ᐳᓖᓐᔪᒥ. 2016. ᓴᓇᕿᑎᓕᕆᓂᖅᒥ ᑐᑭᒋᔭᐅᑎᑕᐅᔪᓄᑦ ᐃᓱᒪᒋᔭᐅᓯᒪᔪᑦ ᐊᒥᓱᓪᒍᕆᐊᖅᑎᑕᐅᖅᑯᓪᓗᒋᑦ ᖃᔅᓯᐅᓂᖏᑦ ᖁᒻᒧᐊᒃᑎᑕᐅᓯᒪᔪᑎᒍᖅᑐᑦ ᓈᓚᐅᑎᓕᖅᑐᒐᐅᓯᒪᔪᑦ ᕿᖓᐅᑦ ᐊᒥᖅᖁᖅᑎᖏᓐᓄᑦ. ᐊᕙᑎᓕᕆᔨᒃᑯᑦ ᓄᓇᒥᐅᑕᓕᕆᔨᒃᑯᓪᓗ ᐱᕈᒃᑲᓐᓂᕈᓐᓇᖅᑐᓕᕆᔩᖏᑦ, ᓄᓇᕐᓯᐊᑉ ᒐᕙᒪᖓᓂᑦ (GNWT), ᔭᓗᓇᐃ, ᓄᓇᕐᓯᐊᖅ, ᑲᓇᑕ. ᑎᑎᕋᖅᑕᐅᓯᒪᔪᑦ ᐅᓂᒃᑳᓕᐊᑦ 254-ᖓ.

<u>**ᐊᑐᓕᖅᑯᔭᐅᓪᓗᑎᒃ #15-2019**</u> **(ᓵᑎ ᐃᐊᒃᔭ):** ᓱᓚᐅᑉ ᐊᓱᔾᔨᖅᐸᓪᓕᐊᓂᖓ: ᑲᑎᖅᓱᐃᓯᒪᓕᖅᓂᐊᖅᓂᖅᓂ ᓄᓇᒥᑦ ᓱᓚᐅᑉ ᐊᓱᔾᔨᖅᐸᓪᓕᐊᓂᖓᓂᑦ ᖃᒥᕈᐃᓪᓗᑎᒃ ᖃᐅᔨᓴᐃᓂᖅᓂᑦ, ᑎᓵᓯ ᒐᕙᒪᖓᑕ (TG) ᐃᐊᒃᔭ ᓄᐋᔾᔭᐅᐃᑎ ᑲ'ᐋ ᐱᓕᕆᐊᖓᑦ ᐊᖏᒡᓕᒋᐊᖅᑎᐅᓯᒪᓕᕆᐊᖅᑲᖅᐳᑦ ᓄᕌᖅᑲᖅᕙᐅᓚᐅᖅᑐᑦ ᐊᒻᒪᓗ ᐊᐅᔭᒥ ᓇᔪᖅᑕᐅᓚᐅᖅᑐᓄᑦ ᓵᑎ ᐃᐊᒃᔭ ᐊᒥᖅᖁᑎᖏᓐᓂ ᓯᕗᓪᓕᖅᐹᒥ ᐅᑐᐱᕆ 1, 2019. ᖃᐅᔨᓴᐅᓯᒪᓕᖅᑐᑦ ᓇᐅᑦᓯᖅᑐᐃᓂᖅ ᐱᓕᕆᐊᒃᑯᑦ ᐋᖅᑭᒃᓱᖅᑕᐅᓯᒪᔭᕆᐊᖅᑲᖅᐳᑦ ᐱᑕᖅᑲᕈᑎᐅᓂᐊᖅᓗᑎᒃ ᐋᖅᑭᒋᐊᖅᑕᐅᓯᒪᓪᓗᑎᒃ ᐊᐅᓚᑦᓯᓂᖅᑲᖅᓂᖅᒥ ᑐᙵᕘᖅᑯᑎᓂᒃ.

ᑭᐅᔾᔪᑎᖏᑦ: ᐊᔾᔨᒌᖕᒋᓐᓂᖃᖅᑲᐅᔪᑦ

ᑎᓵᓯ ᒐᕙᒪᖓᑦ (TG) ᐊᔾᔨᒌᖕᒋᑕᖕᒋᑎᒍᑦ ᐅᖃᖅᓯᒪᔭᑦ "ᐊᑐᓕᖅᑯᔭᐅᓪᓗᑎᒃ #15-2019"-ᒧᑦ ᐱᒋᐊᕐᕕᖃᖅᑲᖅᑯᔨᓪᓗᑎᒃ ᐊᐅᖓᓂ, 2020.

<u>ᐱᔾᔪᑎᒋᔭᐅᔪᑦ:</u> ᑎᓖᓯ ᕼᐊᒪᓚᓚᑦ (TG) ᖁᔭᓐᓇᒦᖅᐳᑦ ᕗᐃᑭᐃ ᓄᓇᒥᐅᑕᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔨᖏᑦ (WRRB) ᐃᓕᑕᖅᓯᓯᒪᓂᖏᓐᓄᑦ ᑎᓖᓯ ᕼᐊᒪᓚᑕ (TG) ᐃᐊᒃᕗ ᓇᐋᔾᐅᐃᑎ ᑲ'ᐋ (ᑲᒫᓘᒃ ᓄᓇᒥ) ᐱᓕᕆᐊᖓᓐᓂᒃ. ᑎᓖᓯ ᕼᐊᒪᓚᓚᑦ (TG) ᐱᓕᕆᓂᖅᑲᖅᐸᒻᒪᑕ ᐃᑎᔪᒥᒃ ᖃᐅᔨᕙᐊᕝᕙᖅᐸᓐᓂᖅᑎᒍᑦ ᐋᖅᑭᒃᓱᐃᓂᕐᒥᓐᓂ ᐱᓕᕆᐊᖑᓂᐊᖅᑐᓂᒃ ᓱᕐᓗ ᐃᐊᒃᕗ ᓇᐋᔾᐅᐃᑎ ᑲ'ᐋ ᐱᓕᕆᐊᒥᒃ. ᑎᓖᓯ ᕼᐊᒪᓚᓚᑦ (TG) ᐃᓯᒪᒃᓴᖅᓯᐅᕈᑎᖃᖅᓯᒪᕗᑦ ᖃᓄᖅ ᐊᑯᓂᐅᑎᒋᔪᒥᒃ, ᐃᓯᒪᒋᔾᔭᐅᓯᒪᔪᓄᑦ ᐱᕙᓪᓕᐊᔪᓕᕆᓂᐅᔪᑦ, ᐃᑲᔪᕈᑎᒃᓴᐅᓪᓗᑎᒃ ᕿᓇᐅᔾᔪᑎᒋᔾᔭᐅᔾᔭᕆᐊᖃᖅᑐᓄᑦ ᐊᒻᒪᓗ ᐱᓕᒻᒪᒃᓴᐃᓯᒪᓕᕈᑎᒃᓴᓂᒃ ᐱᓕᕆᐊᖃᖅᑐᖅᓯᓄᑦ ᐊᑐᓕᖅᑎᕐᕿᐊᖅᓯᒪᓂᖅᑲᓐᓂᒃ ᐃᐊᒃᕗ ᓇᐋᔾᐅᐃᑎ ᑲ'ᐋ ᐱᓕᕆᐊᖑᔪᒥᒃ ᓄᖅᑲᖅᑲᖅᑕᐅᓚᐅᖅᑐᓄᑦ ᐊᒻᒪᓗ ᐊᐅᔨᒥ ᓇᔪᖅᑕᐅᕙᒃᑐᓄᑦ ᓵᑎ ᐃᐊᒃᕗ ᐊᒥᖅᑯᑎᖏᓐᓄᑦ ᐱᓕᕆᐊᖑᓕᖅᑎᓐᓂᐊᖅᓱᒍ, ᐊᒻᒪᓗ ᐃᓯᒪᓕᐅᖅᓯᒪᓕᓚᐅᖅᑐᑦ ᕿᓇᐅᔭᑎᒍᑦ ᐊᑐᖅᓂᖅᑲᖅᓯᒪᓕᑦ ᐊᑐᓕᖅᑎᑕᐅᓇᔭᖅᐸᑕ ᑕᒪᒃᑯᐊ ᑕᕝᕙᓂ ᐅᑭᐅᓂᔪᑦᑎᓐᓂ. ᐱᒋᐊᕈᑎᒋᓪᓗᒋᑦ ᐸᖅᓇᐅᑎᓕᐅᓕᖅᓂᖅᓂ ᐱᓕᕆᐊᖑᓕᖅᓂᐊᖅᑐᓄᑦ ᐃᐊᒃᕗ ᓇᐋᔾᐅᐃᑎ ᑲ'ᐋ ᐱᓕᕆᐊᖑᔪᒧᑦ ᓵᑎ ᐃᐊᒃᕗ ᐊᒥᖅᑯᑎᖏᑕ ᓄᖅᑲᖅᑕᕝᕕᒋᓚᐅᖅᑕᖏᓐᓂ ᐊᒻᒪᓗ ᐊᐅᔨᒥ ᓇᔪᖅᐸᒃᑕᖏᓐᓂ ᐱᒋᐊᖅᑎᑕᐅᓯᒪᓕᖅᑕ ᑐᖅᑯᕙᒃᓴᖅᑎᑕᐅᓯᒪᓪᓗᑎᒃ ᐱᒋᐊᖅᑎᑕᐅᓂᐊᖅᓂᖏᑕ ᐊᐅᔭᖓᓂ, 2020. ᑎᓖᓯ ᕼᐊᒪᓚᓚᑦ (TG) ᐅᔾᔨᕈᓯᒃᐳᑦ ᖃᐅᔨᓴᖅᓂᐅᔪᒪᔪᑦ ᐊᑐᓕᖅᑎᑕᐅᓇᔭᖅᓂᖏᑦ ᑐᙵᕕᒃᓴᖅᓯᒪᓪᓗᑕ ᐃᓯᒪᔾᔪᓯᐅᔪᓄᑦ ᐱᓕᕆᐊᒃᓴᒃᓚᐅᕙᒃᑐᓄᑦ, ᓯᓚᐅᑉ ᓈᒻᒪᒐᔭᕐᓂᖓᓄᑦ ᐃᓚᖅᑲᖅᑎᓪᓗᒍ ᐅᒥᐊᕐᒥᒃ ᐊᑐᕈᓐᓇᕐᓂᕐᓄᑦ ᐊᑐᐃᓐᓇᐅᑎᑕᐅᔪᓄᑦ ᐊᒻᒪᓗ ᓄᓇᒃᑯᑦ ᑎᑭᑕᐅᔪᓐᓇᖅᓯᓐᓂᖏᓄᑦ ᓵᑎ ᐃᐊᒃᕗ ᐊᒥᖅᑯᑎᖏᑕ. ᐃᖏᕐᕋᓯᐊᖅᑎᑕᐅᓯᒪᓂᖓᓄᑦ ᕿᓪᓚᐅᑦ ᐊᒥᖅᑯᑎᖏᓄᑦ ᐱᓕᕆᐊᑉ ᐃᓚᖅᑲᓪᓚᑦ ᓄᓇᒧᑦ ᐃᖏᕐᕋᕝᕕᐅᕙᓐᓂᖓ ᑐᒃᑐᑦ ᐊᒥᖅᑯᖏᓄᑦ ᖃᐅᔨᓴᖅᑎᐅᔪᓂᑦ ᐅᒥᐊᒃᑯᑦ ᐊᔪᖃᕐᓂᖅᓯᐊᖅᑑᓂᖓ ᑳᓐᕗᐃᑐ ᓚᐃᑦ ᑕᓯᐊᒍᑦ, ᕿᓚᒡᒐᓗᐊᑦ ᐊᒥᖅᑯᑎᖏᑕ ᓄᖅᑲᖅᑕᕝᕕᖏᓐᓂ ᐊᒻᒪᓗ ᐊᐅᔨᒥ ᓇᔪᖅᐸᒃᑕᖏᓐᓂ ᕿᑎᐊᓃᑦᑐᒧᑦ.

ᐊᒻᒪᓗᒃᑲᓂᖅ ᐃᓚᒋᔭᐅᑎᓯᓂᖅ ᐃᓄᑐᖅᑲᖅᔭᐅᔪᓂᒃ ᖃᐅᔨᒪᓂᖅᑲᖅᑐᓂᒃ ᓵᑎ ᐃᐊᒃᕗ ᐊᒥᖅᑯᑎᖏᓐᓂᑦ ᓇᔪᖅᑕᐅᕙᒃᑐᓄᑦ, ᐊᑐᖅᓂᖅᑐᑎᒍᑦ ᐱᓕᕆᐊᒃᓯᓂᒃ ᐱᓕᕆᓂᖅᑲᓕᕈᓐᓇᖅᒪᑕ ᖃᐅᔨᒋᐊᕈᑎᒃᓯᖅᓯ ᓵᑎ ᐃᐊᒃᕗ ᐊᒥᖅᑯᑎᖏᓐᓂᑦ ᓈᓚᐅᑎᓕᖅᑐᒐᐅᓯᒪᔪᑦ ᐃᖏᕐᕋᕙᓪᓕᐊᕙᓐᓂᖏᓐᓂᑦ (ᓄᖅᑲᖅᑕᕝᕕᐅᓚᐅᖅᑐᓂᑦ ᐊᒻᒪᓗ ᐊᐅᔨᒥ/ᐅᑭᐊᒃᓵᒥᓗ) ᑐᑭᓯᐅᒪᓕᕆᐊᖅᓂᐊᖅᓗᒋᑦ ᓇᓕᖏᑦ ᑕᔾᒋᑦ ᐃᖏᕐᕋᕝᕕᐅᔪᓐᓇᖏᑕ ᖃᐅᔨᓴᕆᐊᖃᖅᓯᒪᔪᑦ ᕿᒥᕐᕈᐃᕝᕕᒋᔭᐅᓂᐊᖅᑕᖏᓐᓄᑦ ᑐᒃᑐᓂᒃ.

ᑎᓖᓯ ᕼᐊᒪᓚᓚᑦ (TG) ᐱᓕᕆᖃᑎᖃᓕᖅᓂᐊᖅᐳᑦ ᕗᐃᑭᐃ ᓄᓇᒥᐅᑕᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔨᖏᓐᓂᒃ (WRRB) ᐊᔪᖅᓴᙱᓐᓇᔭᕆᐊᖓᓄᑦ ᕗᐃᑭᐃ ᓄᓇᒥᐅᑕᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔨᖏᑦ (WRRB) ᐱᑕᖃᖅᑎᑦᓯᓯᒪᓕᖅᑲᖅᓂᖏᓐᓂᒃ ᐃᓕᖓᓂᒃ ᐆᒪᔪᓕᕆᔨᒃᑯᑦ ᐃᖅᑲᓇᐃᔭᖅᑎᖏᓐᓂᒃ ᐃᑲᔪᖅᑎᖃᖅᑎᑦᓯᓂᐊᖅᓱᑎᒃ ᐊᖏᕐᓕᕆᐊᖅᑎᑦᓯᓂᖅᓯ ᐃᐊᒃᕗ ᓇᐋᔾᐅᐃᑎ ᑲ'ᐋ ᐱᓕᕆᐊᖑᔪᒥᒃ ᓄᖅᑲᖅᑕᕝᕕᐅᓯᒪᔪᓄᑦ ᐊᒻᒪᓗ ᐊᐅᔨᒥ ᓇᔪᖅᑕᐅᕙᒃᑐᓄᑦ ᓵᑎ ᐃᐊᒃᕗ ᐊᒥᖅᑯᑎᖏᓐᓂ ᐱᓕᕆᐊᒧᑦ.

<u>ᐊᑐᓕᖁᔭᐅᓪᓗᑎᒃ #16-2019</u> (ᓵᑎ ᐃᐊᒃᕗ): ᑎᓖᓯ ᖃᐅᔨᓴᐃᓂᕐᒧᑦ ᐊᒻᒪᓗ ᓇᐅᑦᑎᖅᑐᐃᓂᕐᒧᑦ ᐸᓕᓐᓇᖑᔪᖅ: ᑕᒪᕐᒥᒃ ᐃᐊᒃᕗ ᐊᒥᖅᑯᑎᖏᑦ ᐊᒻᒪᓗ ᐃᐊᒃᕗ ᐊᒥᖅᑯᑎᖏᑕ ᓇᔪᖅᐸᒃᑕᖏᑦ ᓇᐅᑦᑎᖅᑐᖅᑕᐅᓯᒪᖁᔨᓪᓗᒋᑦ ᐊᒻᒪᓗ ᖃᔾᔨᓪᓚᑦᑖᓂᒃ ᐊᖑᓇᓯᐊᖅᓯᒪᓂᐅᔪᑦ ᑎᑎᕋᖅᑕᐅᓯᒪᓕᖅᐸᖁᔨᓪᓗᒋᑦ ᐱᐅᓯᑐᖃᒃᑯᑦ ᓈᒻᒥᓯᐅᔪᑎᒍᑦ, ᑎᓖᓯ ᖃᐅᔨᓴᐃᓂᕐᒧᑦ ᐊᒻᒪᓗ ᓇᐅᑦᑎᖅᑐᐃᓂᕐᒧᑦ ᐸᓕᓐᓇᖑᔪᖅ (TRMP) ᐊᑐᓕᖅᑎᑕᐅᓇᔭᖅᑐᖅ ᑎᓖᓯ ᕼᐊᒪᓚᓂᑦ (TG), ᐱᒋᐊᕐᓗᓂ ᓯᑎᐱᕆ 2019 (ᑕᑯᓗᒋᑦ ᐅᐃᒍᖏᑦ I).

<u>ᑭᐅᔾᔪᑎᖏᑦ:</u> ᐊᔾᔨᒌᙱᖏᓐᓂᖅᑲᖅᓯᒪᔪᑦ

ᑎᓖᓯ ᕼᐊᒪᓚᓚᑦ (TG) ᐊᔾᔨᙱᖏᑕᖏᑎᒍᑦ ᐅᖃᖅᓯᒪᕗᑦ "ᓯᒪᓕᐅᕈᑎᑦ ᐊᑐᓕᖁᔭᐅᓪᓗᑎᒃ #16-2019"-
ᒧᑦ ᐃᒪᓐᓇ ᐅᖃᖅᓯᒪᓪᓗᑎᑦ:

<u>ᐊᑐᓕᖁᔭᐅᓪᓗᑎᒃ #16-2019</u> (ᓵᑎ ᐃᐊᒃᕗ): ᑎᓖᓯ ᖃᐅᔨᓴᐃᓂᕐᒧᑦ ᐊᒻᒪᓗ ᓇᐅᑦᑎᖅᑐᐃᓂᕐᒧᑦ ᐸᓕᓐᓇᖑᔪᖅ: ᑕᒪᕐᒥᒃ ᐃᐊᒃᕗ ᑐᒃᑐᑦ ᐊᒻᒪᓗ ᐃᐊᒃᕗᑦ ᑐᒃᑐᐃᑦ ᓇᔪᖅᐸᒃᑕᖏᑦ ᖃᐅᔨᓴᖅᑕᐅᖁᔨᓪᓗᒋᑦ, ᐊᒻᒪᓗ ᖃᓄᐃᓕᖓᓂᐅᔪᑦ ᐊᖑᓇᓯᐊᖅᓯᒪᓂᐅᔪᑦ ᑎᑎᕋᖅᑕᐅᓯᒪᓕᖅᐸᖁᔨᓪᓗᒋᑦ ᐱᐅᓯᑐᖃᒃᑯᑦ ᓈᒻᒥᓯᐅᔪᑎᒍᑦ, ᑎᓖᓯ ᕼᐊᒪᓚᓚᑦ (TG) ᕿᒥᕐᕈᐃᓯᒪᓕᒃᑲᓂᕐᓂᐊᖅᐳᑦ 2007-ᒥ ᐅᓂᒃᑳᓕᐊᖑᓚᐅᖅᑐᓂᒃ ᐋ. ᓚᒍᒥᑦ ᑕᐃᔭᐅᓪᓗᑎᒃ "ᑎᓖᓯ ᖃᐅᔨᓴᐃᓂᕐᒧᑦ ᐊᒻᒪᓗ ᓇᐅᑦᑎᖅᑐᐃᔨᐅᓂᕐᒧᑦ ᐸᓕᓐᓇᖑᔪᖅ" ᐱᔾᔪᑎᖃᕐᓗᑎᒃ ᖃᐅᔨᒋᐊᖅᓯᒪᓕᕐᓂᐊᕐᓗᒋᑦ ᑐᕌᒃᓴᐅᑎᑕᐅᓗᑎᒃ ᐅᖃᖅᑕᐅᓯᒪᓚᐅᖅᑐᑦ ᑖᒃᑯᓇᖓ ᐊᑐᓕᖅᑎᑕᐅᓯᒪᓕᕐᒥᑦᑐᓂᑦ ᓯᓚ ᐊᑐᕐᓂᖃᕐᓯᒪᓕᕐᒪᑕ.

<u>ᐱᔾᔪᑎᒋᔭᐅᔪᑦ:</u> "ᑎᓖᓯ ᖃᐅᔨᓴᐃᔾᔪᑎᓂᕐᒧᑦ ᐊᒻᒪᓗ ᓇᐅᑦᑎᖅᑐᐃᔾᔪᑎᓂᕐᒧᑦ ᐸᓕᓐᓇᖑᔪᖅ" ᐃᓯᒪᒃᓴᖅᓯᐅᕈᑕᐅᓚᐅᖅᑐᖅ ᑎᓖᓯ ᕼᐊᒪᓚᓂᑦ (TG) ᐅᑭᐅᖏᑦ 2010-ᒥᑦ 2012-ᒧᑦ ᐊᑐᖅᑎᓪᓗᒋᑦ ᐊᒻᒪᓗ ᑖᒃᑯᐊ ᐱᔾᔪᑎᓪᓗᒋᑦ ᐱᒋᐊᖅᑎᕆᓯᒪᓕᓚᐅᖅᑐᓂᒋᑦ ᑎᓖᓯ ᖃᐅᔨᓴᐃᔾᔪᑎᓂᕐᒧᑦ ᑎᓖᓯ ᖃᐅᔨᓴᐃᓂᕐᒧᑦ ᐊᒻᒪᓗ ᐱᓕᒻᒪᒃᓴᐃᓂᕐᒧᑦ ᐃᖅᑲᓇᐃᔭᕝᕕᖓᓂᒃ (TRTI) ᐅᕙᓂᖓᑦ ᑎᑦᓵᓐᑏᐊ. ᑎᑦᓵᓐᑏᐊ ᐱᔾᔪᑎᖃᖅᓯᒪᑦ ᐊᖏᕈᓐᓇᕐᓗᑎᑦ ᐱᐅᓯᑐᖃᒃᑯᑦ ᐅᔾᔨᖅᑲᓂᒃ ᑎᓖᓯ ᓄᓇᖏᓐᓂ ᐃᓄᖁᑎᖏᑦ ᐃᓚᖅᑯᓯᑐᖃᖏᓐᓂ ᐊᑐᕐᐸᒃᓯᒪᔪᖃᖅᑐᓂᒃ ᐱᕈᕐᓂᐊᖃᑦᑕᕐᒥᒃ ᐊᒻᒪᓗ ᐃᓯᒪᓕᒃᑲᓂᖕᓂᕈᕐᓂᐊᖅᓯᒪᑦ ᓱᓇᓐᖑᐊᖅᑕᖏᓐᓄ/ᐸᖕᖑᐊᖅᑕᖏᓐᓄ ᐅᐊᔾᔪᑎᒃ ᓄᓇᐃᓐᓇᒧᑦ ᐊᒻᒪᓗ ᐅᑎᒧᑦ. ᐊᑎᖕᒑ ᑖᓐᓇ

ᑎᒍᔭᐅᓯᒪᓕᓚᐅᕐᒪᑦ ᑕᐃᔭᐅᔾᔪᓯᐅᓂᐊᖅᓱᓂ ᑎᓖᓱ ᖃᐅᔨᓴᐃᓂᕐᒧᑦ ᐊᒻᒪᓗ ᐱᓕᒻᒪᕆᓴᐃᓂᕐᒧᑦ ᐃᖅᑲᓇᐃᔭᕐᕕᖓᓄᑦ (TRTI) ᐱᔾᔪᑎᒋᓪᓗᒍ ᓇᓗᓇᐃᖅᓯᔾᔪᑎᐅᓂᖓᑕ ᐱᕐᑎᖅᑲᕐᕕᐅᕙᑦᑐᓄᑦ, ᐱᑖᕐᕕᐅᒃᑲᓐᓂᖅᐸᑦᑐᓄᑦ ᐊᒻᒪᓗ ᑭᖑᓂᐊᓂ ᐊᑐᖅᑕᐅᕙᓕᓚᐅᖅᓱᓂ ᑎᓖᓱ ᖃᐅᔨᒪᔭᕆᖅᑲᖏᓐᓄᑦ. ᑎᑖᒃᐋᕐᐊ (ᑎᓖᓱ ᖃᐅᔨᓴᐃᓂᕐᒧᑦ ᐊᒻᒪᓗ ᐱᓕᒻᒪᕆᓴᐃᓂᕐᒧᑦ ᐃᖅᑲᓇᐃᔭᕐᕕᖓᑦ) ᐱᒋᐊᖅᑎᑕᐅᓕᓚᐅᖅᓯᒪᒻᒪᑦ ᐃᓱᒪᒃᓴᖅᓯᐅᕈᑎᖃᕐᓂᕐᒥᑦ "ᑎᓖᓱ ᖃᐅᔨᓴᐃᔨᐅᓂᕐᒧᑦ ᐊᒻᒪᓗ ᓇᐅᑦᓯᖅᑐᐃᔨᐅᓂᕐᒧᑦ ᐱᓕᕆᐊᖓᓂᒃ". ᒥᔅ ᔫᑦᑖᖅ ᓕᒌᑦ ᐱᓕᕆᐊᖏᑦ ᐱᑕᕐᑲᖅᑎᕐᓯᓯᒪᓚᐅᖅᐳᑦ ᑐᙵᕗᕕᐅᔪᓂᒃ ᐅᓪᓗᒥ ᐱᓕᕆᐊᖑᓕᖅᑐᒧᑦ ᑕᐃᔭᐅᓪᓗᓂ ᑎᓖᓱ ᖃᐅᔨᓴᐃᓂᕐᒧᑦ ᐊᒻᒪᓗ ᐱᓕᒻᒪᕆᓴᐃᓂᕐᒧᑦ ᐃᖅᑲᓇᐃᔭᕐᕕᖓᑦ (TRTI), ᐊᒻᒪᓗ ᑭᖑᓂᐊᓂ ᐱᒋᐊᖅᑎᑕᐅᓯᒪᓕᓚᐅᖅᑐᒧᑦ ᑕᐃᔭᐅᓪᓗᓂ ᑎᑖᒃᐋᕐᐊ, ᐊᓯᔾᔨᕆᐊᖅᓯᒪᓂᕐᑲᓕᕐᑐᖅ ᑕᐃᒪᓐᓇ. ᑕᐃᒪᓗ, ᑎᓖᓱ ᒐᕙᒪᖓᑦ (TG) ᐃᓱᒪᓂᕐᑲᓕᖅᑐᑦ ᐱᔾᔪᑎᐅᓗᐊᖅᑑᓪᓗᑎᒃ ᐃᓚᒋᔭᐅᔪᑦ "ᑎᓖᓱ ᖃᐅᔨᓴᐃᔨᐅᓂᕐᒧᑦ ᐊᒻᒪᓗ ᓇᐅᑦᓯᖅᑐᐃᔨᐅᓂᕐᒧᑦ ᐱᓕᕆᐊᖑᔪᖅ" ᐃᓗᐃᒃᑲᐅᑎᓪᓗᒍ ᖃᐅᔨᒋᐊᖅᑕᐅᓯᒪᓕᕆᐊᙳᒋᒻᒪᑕ, ᐊᖏᔪᒥᒃ ᐃᓱᒪᒃᓴᖅᓯᐅᕈᑕᐅᓯᒪᓕᐊᓂᓐᓂᖓᑕ ᐊᒻᒪᓗ ᐊᑐᓕᖅᑎᑕᐅᕙᓪᓕᐊᓕᖅᓯᑎᒃ.

https://research.tlicho.ca/ *ᑐᙱᕗᕕᒋᓗᒋᑦ ᑎᓕᐅᕈᑎᖏᑦ ᐃᓱᒪᑕᒻᒪᓂᑦ ᐃᓱᒪᑕᐃᑦ ᑲᑎᒪᔩᖏᑦ ᑎᓖᓱ ᒐᕙᒪᖓᓂ (TG), ᑎᑖᒃᐋᕐᐊ ᐱᓕᕆᐊᒃᓴᖏᑦ ᐅᑯᐊᖑᔫ: ᑎᓖᓱ ᖃᐅᔨᓴᐃᓂᕐᒧᑦ ᐊᒻᒪᓗ ᐱᓕᒻᒪᕆᓴᐃᓂᕐᒧᑦ ᐃᖅᑲᓇᐃᔭᕐᕕᖓᑦ (TRTI) ᐱᓕᕆᐊᒃᓴᒥᓐᓂ ᓯᕗᓪᓗᒋᐊᖅᑎᕐᓯᔭᕆᐊᖃᖅᐳᑦ ᖃᐅᔨᓴᐃᓂᐅᔪᓄᑦ ᑎᓖᓱ ᓄᓇᖁᑎᖏᓂᒃ, ᐅᖃᐅᓯᖓᓐᓂᒃ, ᐱᐅᓯᑐᖃᖓᓐᓂᒃ ᐊᒻᒪᓗ ᐃᓅᓯᖏᓂᒃ. ᑕᒪᓐᓇ ᐱᓕᕆᐊᖑᓂᐊᖅᐳᖅ ᖁᕝᕙᖅᑎᕐᓯᓯᒪᓕᕆᐊᕐᓂᒃᑯᑦ ᖃᐅᔨᓴᐃᓂᖃᖅᐸᓐᓂᕐᓂᒃ, ᐊᒻᒪᓗ ᐊᑐᖅᑕᐅᕙᓐᓂᖏᓂᒃ ᐱᓕᒻᒪᕆᓴᐃᓂᕐᒥ, ᐃᓕᓐᓂᐊᖅᑎᕐᓯᓂᕐᓂ ᐊᒻᒪᓗ ᓇᐅᑦᓯᖅᑐᐃᓂᕐᓂ ᒐᕙᒪᒃᑯᑦ ᐃᓕᓇᐊᒃᓴᓇᔭᖏᓂᒃ ᐊᒻᒪᓗ ᐱᓕᕆᐊᖅᑲᖅᑎᐅᓂᖏᓐᓄᑦ, ᑎᓖᓱ ᐱᐅᓯᑐᖅᑲᓕᕆᓂᕐᒥ ᑐᙱᕗᕐᑯᑎᖑᑎᒍᑦ.*

ᑎᓖᓱ ᒐᕙᒪᖓᑦ (TG) ᕿᒥᕐᕈᐃᓯᒪᓕᒃᑲᓐᓂᕐᓂᐊᖅᑐᑦ ᓯᕗᓪᓕᖅᐸᐅᓪᓗᑎᒃ ᐅᓂᒃᑳᓕᐊᖑᓯᒪᓚᐅᖅᑐᓂᒃ ᑕᐃᔭᐅᓪᓗᑎᒃ "ᑎᓖᓱ ᖃᐅᔨᓴᐃᓂᕐᒧᑦ ᐊᒻᒪᓗ ᓇᐅᑦᓯᖅᑐᐃᔨᐅᓂᕐᒧᑦ ᐱᓕᕆᐊᖑᔪᖅ" ᐱᔾᔪᑎᖃᕐᓗᑎᒃ ᖃᐅᔨᒋᐊᖅᓯᒪᓕᕐᓂᐊᕐᓗᒋᑦ ᑐᕚᕕᒃᓴᐅᑎᑕᐅᓪᓗᑎᒃ ᐅᖃᖅᑕᐅᓯᒪᓚᐅᖅᑐᑦ ᑖᒃᑯᓄᖓ ᐊᑐᓕᖅᑎᑕᐅᓯᒪᙱᑦᑐᓂᑦ ᓱᓕ ᐊᑐᕐᓂᖃᕐᔭᕐᒪᖔᑕ.

ᐳᓘᓅᔅ-ᑲᓇᓐᓇᒥ ᑑᑦᑐᖏᑦ (Sahtì Ekwǫ [ᓵᑎ ᐃᐊᒃᕗ])

ᐃᓱᒪᓕᐅᕈᑎᐅᓯᒪᓂᖏᑦ

ᓱᓇᐅᓂᖓ	ᐱᓕᕆᐊᖅ/ᐱᓕᕆᐊᖑᔪᖅ	ᑭᐅᔾᔪᑎᖏᑦ	ᑭᐅᔾᔪᑎᐅᔪᓄᑦ ᐱᔾᔪᑎᒋᔭᐅᔪᑦ	ᓯᕗᓕᖅᑎᐅᓪᓗᑎᒃ ᐱᓕᕆᐊᒃᓴᖃᕐᓂᑦ	ᐱᓕᕆᓐᕕᒃᓴᖃᖅᑎᑕᐅᓂᕐᓄᑦ ᑐᑭᓕᐊᕈᑎᒃᓴᐃᑦ	ᖃᓄᐃᓕᖓᓕᕐᓂᖏᑦ
ᓵᑎ ᐃᐊᒃᕗ ᑑᑦᑐᖏᓂᒃ ᐊᖑᓇᓱᐊᖅᐸᓐᓂᖅ						
ᕗᐃᑮᓰ ᓄᓇᒥᐅᑕᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔨᖏᑦ (WRRB) ᐃᓱᒪᓕᐅᕈᑎᖃᕐᓂᖏᑦ #1-2019-ᒧᑦ (ᓵᑎ ᐃᐊᒃᕗ)	ᑲᑎᒪᔨᐅᔪᑦ ᐃᓱᒪᓕᐅᕈᑎᖃᖅᓯᒪᕗᑦ ᑲᑎᙵᓂᑦ ᐊᖑᓇᓱᐊᖅᑕᐅᔪᓐᓇᕐᒪᑕ 193-ᖑᔪᑦ ᑑᑐᐃᑦ, ᐊᖑᓴᙵᐃᑦ ᑮᓯᒥᒃ, ᑕᒪᐃᓐᓂᑦ ᐊᑐᖅᐸᒃᑐᓂᒃ ᓵᓂ ᐃᐊᒃᕗ ᐊᒥᕐᕋᑎᖏᓐᓂᑦ Wek'èezhìı (ᕗᐃᑮᓰ) ᐃᓗᐊᓂᑦ ᐊᑐᓕᖅᑎᑕᐅᑦᑕᕐᓗᒋᑦ Tłıchǫ (ᑎᖨᓱ) ᒐᕙᒪᖓᓂᑦ ᐊᒻᒪᓗ ᓄᓇᕗᐊᑉ ᒐᕙᒪᖓᓂᑦ (GNWT) ᐅᑭᐅᖏᓄᑦ 2019/2020 ᐊᒻᒪᓗ 2020/2021 ᐊᖑᓇᓱᐊᕝᕕᐅᕙᓐᓂᖏᑦ ᐊᑐᓕᖅᓯᒪᑎᑦᑐᒋᑦ.	ᓈᒻᒪᒋᔭᐅᔪᑦ	ᑎᖨᓱ ᒐᕙᒪᖓᑦ (TG) ᐊᒻᒪᓗ ᓄᓇᕗᐊᑉ ᒐᕙᒪᖓᑦ (GNWT) ᑖᓯᒥᖓ ᐃᓱᒪᓕᐅᕈᑎᐅᓯᒪᔪᒥᒃ ᕗᐃᑮᓰᒧᑦ ᓈᒻᒪᒃᓴᐃᓯᒪᕗᑦ ᐊᒻᒪᓗ ᖁᔭᓕᑦᑐᑎᒃ ᑲᑎᒪᔨᐅᔪᓄᑦ ᓴᙱᓂᖅᓯᐊᖅᑐᑎᒍᑦ ᒥᐊᓂᖅᓯᓯᒪᓕᕆᐊᒧᑦ ᑐᕋᕝᕕᖅᑎᓯᓂᖏᓐᓂᒃ ᐊᒻᒪᓗ ᑮᓕᖃᓕᖅᑎᑕᐅᓯᕆᐊᖅᑲᓂᖓᓄᑦ ᐊᖑᓇᓱᐊᕐᓂᐅᕙᒃᑐᓄᑦ ᑖᒃᑯᓇᙵᑦ ᐊᒥᓲᖓᓂᖅᐸᓪᓕᐊᕋᓚᔅᒃᑑᑎᒃ ᐊᒥᕐᕋᑎᐅᔪᓄᑦ. ᐊᕐᕌᓂᓕᕆᔨᒃᑯᑦ ᓄᓇᒥᐅᑕᓕᕆᔨᒃᑯᓪᓗ ᐱᕈᒃᑲᓂᕈᓐᓇᖅᑐᓕᕆᔨᒃᑯᑦ (ENR) ᐋᖅᑭᒋᐊᕐᓂᐊᖅᑐᑦ ᒪᓕᒃᑕᐅᒋᐊᓕᖁᑎᓂᒃ ᐋᖅᑭᒋᐊᖃᓕᕐᖓᒥᒃ ᐊᑐᓕᖅᑎᓯᓂᐊᕐᓂᕐᒥ ᑖᓯᒥᖓ ᐃᓱᒪᓕᐅᕈᑎᐅᓯᒪᔪᓂᒃ ᕗᐃᑮᓰᒧᑦ ᐊᒻᒪᓗ ᐃᓚᖏᓄᑦ ᐱᔾᔪᑎᖃᖅᑐᓄᑦ ᑐᑐᓂᒃ ᐊᐅᓚᑦᓯᓂᖃᕕᐅᓪᓗᑎᒃ ᐊᕐᕌᒍᑎᐅᔪᓄᑦ ᐱᕕᒃᓴᖃᕐᓗᐊᕈᑎᒃ.	ᑎᖨᓱ ᒐᕙᒪᖓᑦ ᐊᒻᒪᓗ ᓄᓇᕗᐊᑉ ᒐᕙᒪᖓᑦ (GNWT)	2019-2020/2020-2021	ᐱᔭᕇᖅᓯᒪᔪᑦ

ᓱᓇᐅᓂᖓ	ᐱᓕᕆᐊᖅ/ᐱᓕᕆᐊᖑᔪᖅ	ᑭᐅᔾᔪᑎᖏᑦ	ᑭᐅᔾᔪᑎᐅᔪᓄᑦ ᐱᔾᔪᑎᒋᔭᐅᔪᑦ	ᓯᕗᓕᖅᑎᐅᓪᓗᑎᒃ ᐱᓕᕆᐊᒃᓴᖃᕐᓂᑦ	ᐱᓕᕆᓐᕕᒃᓴᖃᖅᑎᑕᐅᓂᕐᓄᑦ ᑐᑭᓕᐊᕈᑎᒃᓴᐃᑦ	ᖃᓄᐃᓕᖓᓕᕐᓂᖏᑦ
ᓵᑎ ᐃᐊᒃᕗ ᑑᑦᑐᖏᓂᒃ ᐊᖑᓇᓱᒃᑕᐅᔪᓐᓇᖅᑐᓄᑦ ᓴᓂᕐᕙᐃᓯᒪᓂᖅ						
ᕗᐃᑮᓰ ᓄᓇᒥᐅᑕᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔨᖏᑦ (WRRB) ᐃᓱᒪᓕᐅᕈᑎᒃᑲᓂᖏᑦ #2-2019-ᒧᑦ (ᓵᑎ ᐃᐊᒃᕗ)	ᐃᓚᑐᐃᓐᓇᖓᑎᒍᑦ ᓴᓂᕐᕙᐃᓯᒪᓂᖅ ᑲᑎᑦᑐᒋᑦ ᖃᔅᓯᓂᒃ ᐊᖑᓇᓱᒪᐅᕙᒍᓐᓇᖅᑐᓂᑦ ᓵᑎ ᐃᐊᒃᕗ ᐊᒥᕐᕋᑎᖏᓂᑦ 2019/2020 ᐅᑭᐅᖓᓂ ᐊᒻᒪᓗ 2020/2021 ᐅᑭᐅᖓᓂ ᐊᖑᓇᓱᐊᕝᕕᐅᕙᓐᓂᖏᓐᓂᑦ ᐃᒪᓐᓇᐃᑦᑑᓂᐊᖅᐳᑦ: ᑎᖨᓱ ᓄᓇᓕᖅᑲᖅᑐᑦ: 39.29%-ᑎᖓᓂᒃ (76 ᐆᒪᔪᐃᑦ) ᐊᖑᓇᓱᐊᕈᓐᓇᖅᑐᓄᑦ ᐃᓚᒋᔭᐅᔪᑦ ᓄᓇᖃᖅᑳᕐᓯᒪᔪᓂᑦ ᐱᐅᓯᑐᖃᒥᒃᑎᒍᑦ ᐊᖑᓇᓱᐊᖅᐸᒃᑐᑐᖃᐃᑦ ᓵᑎ ᐃᐊᒃᕗ ᐊᒥᕐᕋᑎᖏᓐᓂᑦ (ᐃᓚᖃᖅᑎᑦᑐᒋᑦ ᓄᓇᕘᒥᐅᓂᒃ): 60.71%-ᑎᖓᓂᒃ (117 ᐆᒪᔪᐃᑦ) ᑎᖨᓱ ᒐᕙᒪᖓᑦ (TG) ᐃᓱᒪᓕᐅᕈᑎᖃᖅᓯᒪᔭᕆᐊᓖᑦ ᖃᔅᓯᖏᓂᒃ ᓴᓂᕐᕙᖅᑎᑕᐅᓯᒪᓂᐊᕐᑐᓄᑦ ᑎᖨᓱ ᓄᓇᓕᖏᓐᓄᑦ, ᐊᒻᒪᓗ ᓄᓇᕗᐊᑉ ᒐᕙᒪᖓᑦ (GNWT) ᐃᓱᒪᓕᐅᕈᑎᖃᖅᓯᒪᔭᕆᐊᖃᖅᑎᑦᑐᒋᑦ ᖃᔅᓯᖏᓂᒃ ᓴᓂᕐᕙᖅᑎᑕᐅᓯᒪᓂᐊᖅᑐᓄᑦ ᐃᓚᒋᔭᐅᖃᑕᐅᔪᑦ ᓄᓇᖃᖅᑳᕐᓯᒪᔪᓂᑦ ᐱᐅᓯᑐᖃᒥᒃᑎᒍᑦ ᐊᖑᓇᓱᐊᖅᐸᒃᑐᑐᖃᐃᑦ ᐱᑕᕈᓐᓇᖅᑎᓯᓂᐊᕐᓂᕐᒥᒃ ᓵᑎ ᐃᐊᒃᕗ ᐊᒥᕐᕋᑎᖏᓐᓂᑦ ᖃᐅᔨᒋᐊᖅᓯᒪᓂᕐᒥᒃᑎᒍᑦ ᑖᒃᑯᓇᙵᑦ ᑲᑎᓐᓂᖅᑲᖅᑐᓂᑦ.	ᓈᒻᒪᒋᔭᐅᔪᑦ	ᑎᖨᓱ ᒐᕙᒪᖓᑦ (TG) ᐊᒻᒪᓗ ᓄᓇᕗᐊᑉ ᒐᕙᒪᖓᑦ (GNWT) ᑖᒃᑯᓂᖓ ᐃᓱᒪᓕᐅᕈᑎᐅᓯᒪᔪᓂᒃ ᕗᐃᑮᓰᒧᑦ ᓈᒻᒪᒃᓴᐃᓯᒪᕗᑦ. ᒪᓕᒃᑎᑕᐅᓯᒪᓪᓗᓂ ᐊᒃᑐᖅᓯᒪᓂᖏᑦ 12.9-ᒥ ᐅᖃᐅᓯᖅᑕᐅᓯᒪᔪᓄᑦ ᑎᖨᓱ ᐊᖏᕈᑎᖏᑦ, ᑎᖨᓱ ᒐᕙᒪᖓᑦ (TG) ᐱᓕᕆᐊᖃᖅᓯᓐᓇᐊᖅᑐᑦ ᓴᓂᕐᕙᖅᑕᐅᓯᒪᔪᓄᑦ ᓵᑎ ᐃᐊᒃᕗ ᑑᑦᑐᖁᑎᖏᓐᓄᑦ ᐱᔾᔪᑎᖃᖅᑐᓂᒃ ᐱᓕᕆᖃᑎᒋᓗᒋᑦ ᑎᖨᓱ ᓄᓇᓕᒌᖏᑦ. ᓱᕐᓗ ᐃᓱᒪᓕᐅᕈᑎᐅᓯᒪᓪᓚᑦ ᐊᑐᓕᖅᑎᑕᐅᑦᑕᕐᓗᒋᑦ ᕗᐃᑮᓰ ᓄᓇᒥᐅᑕᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔨᖏᑦ (WRRB), ᓄᓇᕗᐊᑉ ᒐᕙᒪᖓᑦ (GNWT) ᓴᓂᕐᕙᐃᓯᒪᓕᕐᓂᐊᖅᑐᑦ ᐊᒥᐊᒃᑯᖏᓂᒃ ᐊᖑᓇᓱᒃᑕᐅᔪᓐᓇᖅᑐᓂᒃ ᐊᓯᖏᓂᑦ ᓄᓇᖃᖅᑳᕐᓯᒪᔪᓂ ᐊᑐᖅᐸᒃᑐᑦ ᑲᑎᓐᓂᖅᑲᖅᑐᓂᒃ ᐃᓅᖅᑲᑎᒌᓂᑦ ᓵᑎ ᐃᐊᒃᕗ ᐊᒥᕐᕋᑎᖏᓂᑦ.	ᑎᖨᓱ ᒐᕙᒪᖓᑦ ᐊᒻᒪᓗ ᓄᓇᕗᐊᑉ ᒐᕙᒪᖓᑦ (GNWT)	2019-2020/2020-2021	ᐱᔭᕇᖅᓯᒪᔪᑦ

ᐊᑐᓕᖅᑎᑕᐅᖁᔭᐅᓪᓗᑎᒃ

ᓱᓇᐅᓂᖓ	ᐱᓕᕆᐊᒃ/ᐱᓕᕆᐊᖑᔪᒃ	ᑭᐅᔾᔪᑎᖏᑦ	ᑭᐅᔾᔪᑎᐅᔪᓄᑦ ᐱᔾᔪᑎᒋᔭᐅᔪᑦ	ᓯᕗᓕᖅᑎᐅᓪᓗᑎᒃ ᐱᓕᕆᐊᒃᓴᖅᓃᑦ	ᐱᓕᕆᓚᐅᒃᓴᖅᑎᑕᐅᓂᕐᓄᑦ ᑐᑭᒧᐊᒍᑎᒃᓴᐃᑦ	ᖃᓄᐃᓕᖓᓕᕐᓂᖏᑦ
ᓵᑎ ᐃᐊᒃᕗ ᐊᒥᕐᕋᕐᑎᖏᓐᓂᑦ ᐊᖑᓇᓱᐊᖅᑕᐅᕙᑦᑐᓂᒃ ᓇᐅᑦᓯᖅᑐᐃᓂᖅ						
ᕗᐃᑦ ᓄᓇᒥᐅᑕᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔨᖏᑦ (WRRB) ᐃᓱᒪᓕᐅᕈᑎᖏᑦ ᐊᑐᓕᖅᑎᑕᐅᓪᓗᑎᒃ #1-2019 (ᓵᑎ ᐃᐊᒃᕗ)	ᑲᑎᓪᓗᒋᑦ ᐊᖑᓇᓱᐊᖅᑕᐅᔪᓐᓇᖅᑐᓂᒃ ᒪᓕᑦᓯᐊᖅᑕᐅᑎᑦᓯᔪᒪᓪᓗᑎᒃ, ᐊᒻᒪᓗ ᐊᑐᖅᑕᐅᓕᕐᑯᓪᓗᒋᑦ ᐊᖑᓇᓱᒃᑏᑦ ᖃᐅᔨᒪᓂᒻᒪᕆᖕᖏᑦ ᑎᓕᓯ ᒐᕙᒪᖓᓐᓂ (TG) ᐋᒃᑭᒋᐊᖅᓱᒪᓕᕐᓂᐊᖅᑐᑦ ᐱᓕᕆᐊᖃᕈᓯᒥᓐᓂᒃ ᓵᑎ ᐃᐊᒃᕗ ᐊᒥᕐᕋᕐᑎᖏᓐᓂᑦ ᐊᖑᓇᓱᐊᖅᐸᓐᓂᐅᔪᓄᑦ ᓇᐅᑦᓯᖅᑐᐃᓂᐅᓂᐊᖅᑐᓄᑦ 2019/2020 ᐅᑭᐅᖓᓂ, ᐊᒻᒪᓗ 2020/2021 ᐅᑭᐅᖓᓂ ᐊᖑᓇᓱᐊᕐᕕᐅᕙᑦᑐᑦ ᐃᓚᖃᖅᑎᑕᐅᑎᓪᓗᒋᑦ: · ᑐᑭᓯᒋᐊᕐᕕᒃᓴᖁᑏᑦ ᑲᑎᖅᓱᐊᖑᓯᒪᔪᑦ ᐊᖑᓇᓱᒃᑎᖏᑦ, ᒥᑭᓂᖅᐸᐅᓗᐊᕈᑎᒃ, ᐃᓚᖃᖅᑎᑕᐅᔪᒃᓴᐅᕗᑦ ᖃᓄᓂᒃ ᐊᒻᒪᓗ ᓇᓂ ᐱᑕᓚᐅᕐᓂᖏᑦ, ᐊᕐᓇᓐᓂᖓᓂᒃ ᐊᖑᓴᓐᓂᖓᓂᒃᓘᓐᓃᑦ, ᐋᓐᓂᐊᖃᖅᑦᑎᓚᖓᑦ, ᐊᒻᒪᓗ ᑎᒥᖓᑕ ᖃᓄᐃᓕᖓᓐᓂᖓᓂᒃ ᐆᒪᔫᑉ, ᐊᒻᒪᓗ ᖃᓄᖅ ᐅᖓᓯᒃᑎᒋᔪᒥᑦ ᐊᖑᓇᓱᑎᑦ ᐃᖏᕐᕋᓇᐊᖃᑕᐅᕐᓂᖏᓐᓄᑦ ᑎᑎᕋᖅᓯᒪᔪᓂᒃ; · ᐊᖑᓇᓱᒃᑕᐅᔪᓄᑦ ᑐᑭᓯᒋᐊᕐᕕᒃᓴᖁᑏᑦ ᑐᓂᔾᔭᕐᕕᒋᐊᖃᖅᑐᑦ ᐱᓇᓱᐊᕈᓯᖅᑖᓕᑦ ᑎᓕᓯ ᒐᕙᒪᖓᓐᓂ (TG) ᕗᐃᑦ ᓄᓇᒥᐅᑕᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔨᖏᑦ (WRRB), ᐊᒻᒪᓗ ᐅᑭᐅᑕᒫᑦ ᐊᖑᓇᓱᐊᕐᓂᖏᓐᓄᑦ ᐊᒻᒪᓗ ᓇᐅᑦᓯᖅᑐᐃᓂᕐᒧᑦ ᓇᐃᓴᐅᑎᒋᔭᐅᓗᑎᒃ ᐅᓂᒃᑳᓕᐊᖑᓯᒪᔪᑦ ᓄᓇᕗᑦ ᒐᕙᒪᖓᓐᓄᑦ (GNWT) ᐊᒻᒪᓗ ᑎᓕᓯ ᒐᕙᒪᖓᓐᓄᑦ (TG) ᐊᒻᒪᓗ ᓴᖅᑭᑕᐅᓯᒪᓕᖅᑐᓂᒃ ᑭᖑᓪᓕᖅᐸᐅᓂ ᓯᕗᓂᖓᓂ ᔪᓐ 30 ᐊᑐᓂ ᐅᑭᐅᑉᐸᓂ; ᐊᒻᒪᓗ · ᐱᔭᕇᖅᑐᓯᒪᓕᕐᓗᓂ ᐱᓕᕆᐊᖑᔪᑦ ᐊᒥᕐᕋᐅᓯᒪᓕᕐᓂᖏᑦ ᐃᐊᒃᕗ (ᐃᐊᒃᕗ) ᑐᑭᓯᔪᑦ ᖃᐅᔨᒪᔭᐅᓂᖏᑦ ᓄᓇᕐᔪᐊᓗᒃ, ᑎᑭᓪᓗᒋᑦ ᓯᑕᒪᓂ ᓄᓇᓕᖕᓂᑦ ᓇᐅᑦᓯᖅᑐᐃᓂᒃ ᐃᖅᑲᐃᓯᒪᓂᕐᓄᑦ ᑲᑎᖅᓱᐃᔩᑦ ᐱᓕᕆᐊᒃᓴᖅᓯᐅᑏᑦ, ᐊᒻᒪᓗ ᓴᖅᑭᔮᕐᓂᖏᑦ ᐊᖑᓇᓱᐊᕐᓂᖏᓐᓄᑦ ᑐᑭᓯᒋᐊᕐᕕᒃᓴᖁᑎᓂᒃ ᐱᓇᓱᐊᕈᓯᖅᑖᓕᑦ ᑕᒃᑯᐊᖓ.	**ᐊᔾᔨᒌᙱᓐᓂᖅᑯᐃᔪᑦ** – ᐊᑐᓕᖅᑎᕐᓂᐅᓪᓗᓂ #1-2019 (ᓵᑎ ᐃᐊᒃᕗ): ᓵᑎ ᐃᐊᒃᕗ ᐊᒥᕐᕋᕐᑎᖏᓐᓂᑦ ᐊᖑᓇᓱᐊᖅᑕᐅᕙᑦᑐᓂᒃ ᓇᐅᑦᓯᖅᑐᐃᓂᖅ: ᑲᑎᓪᓗᒋᑦ ᐊᖑᓇᓱᐊᖅᑕᐅᔪᓐᓇᖅᑐᓄᑦ ᐅᓇᓂᖅᑕᐅᓯᒪᓂᖏᑦ ᒪᓕᒃᑕᐅᑎᑦᓯᐊᖅᑎᑕᐅᓪᓗᒋᑦ, ᐊᒻᒪᓗ ᐊᑐᖅᐸᓪᓗᒋᑦ ᐊᖑᓇᓱᒃᑏᑦ ᖃᐅᔨᒪᓂᒻᒪᕆᖕᖏᓐᓂᒃ ᒪᓕᒃᑕᐅᓂᖏᓐᓂᒃ, ᑎᓕᓯ ᒐᕙᒪᖓᓐᓂ (TG) ᐋᒃᑭᒋᐊᓇᐊᖅᑎᑕᐅᔪᒃ ᐱᓕᕆᐊᖃᕈᓯᒥᓐᓂᒃ ᓵᑎ ᐃᐊᒃᕗ ᐊᒥᕐᕋᕐᑎᖏᓐᓂᒃ ᐊᖑᓇᓱᐊᖅᑕᐅᕙᑦᑐᓂᒃ ᓇᐅᑦᓯᖅᑐᐃᓂᕐᒥᓐᓂᒃ 2019/2020 ᐅᑭᐅᖓᓂ, ᐊᒻᒪᓗ 2020/2021 ᐅᑭᐅᖓᓂ ᐊᖑᓇᓱᐊᕐᕕᐅᓕᖅᑎᓐᓂ ᐃᓚᖃᖅᑎᑕᐅᑎᓪᓗᒋᑦ ᒪᑯᓇᖓ: · ᑐᑭᓯᒋᐊᕐᕕᒃᓴᖁᑏᑦ ᑲᑎᖅᓱᐊᖑᓯᒪᔪᑦ ᐊᖑᓇᓱᒃᑎᖏᑦ, ᐃᓚᖃᖅᑎᑕᐅᔪᒃᓴᐅᕗᑦ ᖃᓄᓂᒃ ᐊᒻᒪᓗ ᓇᓂ ᐱᑕᓚᐅᕐᓂᖏᑦ, ᐊᕐᓇᓐᓂᖓᓂᒃ ᐊᖑᓴᓐᓂᖓᓂᒃᓘᓐᓃᑦ, ᐋᓐᓂᐊᖃᖅᑦᑎᓚᖓᑦ, ᐊᒻᒪᓗ ᑎᒥᖓᑕ ᖃᓄᐃᓕᖓᓐᓂᖓᓂᒃ ᐆᒪᔫᑉ, ᐊᒻᒪᓗ ᖃᓄᖅ ᐅᖓᓯᒃᑎᒋᔪᒥᑦ ᐊᖑᓇᓱᑎᑦ ᐃᖏᕐᕋᓇᐊᖃᑕᐅᕐᓂᖏᓐᓄᑦ ᑎᑎᕋᖅᓯᒪᔪᓂᒃ; · ᐊᖑᓇᓱᒃᑕᐅᔪᓄᑦ ᑐᑭᓯᒋᐊᕐᕕᒃᓴᖁᑏᑦ ᑐᓂᔾᔭᕐᕕᒋᐊᖃᖅᑐᑦ ᐱᓇᓱᐊᕈᓯᖅᑖᓕᑦ ᑎᓕᓯ ᒐᕙᒪᖓᓐᓂ (TG) ᕗᐃᑦ ᓄᓇᒥᐅᑕᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔨᖏᑦ (WRRB), ᐊᒻᒪᓗ ᐅᑭᐅᑕᒫᑦ ᐊᖑᓇᓱᐊᕐᓂᖏᓐᓄᑦ ᐊᒻᒪᓗ ᓇᐅᑦᓯᖅᑐᐃᓂᕐᒧᑦ ᓇᐃᓴᐅᑎᒋᔭᐅᓗᑎᒃ ᐅᓂᒃᑳᓕᐊᖑᓯᒪᔪᑦ ᓄᓇᕗᑦ ᒐᕙᒪᖓᓐᓄᑦ (GNWT) ᐊᒻᒪᓗ ᑎᓕᓯ ᒐᕙᒪᖓᓐᓄᑦ (TG) ᐊᒻᒪᓗ ᓴᖅᑭᑕᐅᓯᒪᓕᖅᑐᓂᒃ ᑭᖑᓪᓕᖅᐸᐅᓂ ᓯᕗᓂᖓᓂ ᔪᓐ 30 ᐊᑐᓂ ᐅᑭᐅᑉᐸᓂ; ᐊᒻᒪᓗ · ᐱᔭᕇᖅᑐᓯᒪᓕᕐᓗᓂ ᐱᓕᕆᐊᖑᔪᑦ ᐊᒥᕐᕋᐅᓯᒪᓕᕐᓂᖏᑦ ᐃᐊᒃᕗ ᑐᑭᓯᔪᑦ ᖃᐅᔨᒪᔭᐅᓂᖏᑦ ᓄᓇᕐᔪᐊᓗᒃ, ᑎᑭᓪᓗᒋᑦ ᓯᑕᒪᓂ ᓄᓇᓕᖕᓂᑦ ᓇᐅᑦᓯᖅᑐᐃᓂᒃ ᐃᖅᑲᐃᓯᒪᓂᕐᓄᑦ ᑲᑎᖅᓱᐃᔩᑦ ᐱᓕᕆᐊᒃᓴᖅᓯᐅᑏᑦ, ᐊᒻᒪᓗ ᓴᖅᑭᔮᕐᓂᖏᑦ ᐊᖑᓇᓱᐊᕐᓂᖏᓐᓄᑦ ᑐᑭᓯᒋᐊᕐᕕᒃᓴᖁᑎᓂᒃ ᐱᓇᓱᐊᕈᓯᖅᑖᓕᑦ ᑕᒃᑯᐊᖓ.	ᑎᓕᓯ ᒐᕙᒪᖓᓐᓂᑦ (TG) ᐊᖏᖅᓯᒪᒍᑦ ᑐᑭᓯᒋᐊᕐᕕᒃᓴᖁᑎᓂᒃ ᑲᑎᖅᓱᐃᕙᓐᓂᐊᕐᓂᐊᕐᓂᖏᓐᓂᒃ ᐊᒻᒪᓗ ᐋᖅᑭᒋᐊᕐᓂᐊᕐᓂᕐᒥᒍᑦ ᐱᓕᕆᐊᖃᕈᓯᕐᒥᓂᒃ ᓵᑎ ᐃᐊᒃᕗ ᐊᒥᕐᕋᕐᑎᖏᓐᓂᒃ ᓇᐅᑦᓯᖅᑐᐃᕙᓐᓂᕐᒥᓄᑦ. ᑎᓕᓯ ᒐᕙᒪᖓᓐᓂᑦ (TG) ᐃᓱᒪᒃᓴᖅᓯᐅᕈᑎᖃᕈᓐᓇᖅᓯᒪᒍᑦ ᓱᓇᓂᒃ ᐃᑲᔪᕈᑎᒃᓴᓂᒃ ᐱᓯᒪᓕᕆᐊᖃᕐᒪᖔᕐᒥᓂᒃ ᐊᑐᓕᖅᑎᑦᓯᓂᐊᕐᒪᑕ ᕗᐃᑦ ᓄᓇᒥᐅᑕᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔨᖏᑦ (WRRB) ᐃᓱᒪᓕᐅᕈᑎᒥᓯᒪᔭᖓᓂᒃ ᐱᓇᓱᐊᕈᓯᖅᑖᓕᑦ ᓴᖅᑭᖅᑎᑦᓯᐊᖃᑦᑕᕐᓂᐊᕐᒪᑕ ᐊᒻᒪᓗ ᐃᓱᒪᓕᕆᐅᑎᓯᒪᓕᖅᓱᒍ ᑕᒪᓐᓇ ᒪᓕᒃᑎᑕᐅᓯᐊᕐᑐᒍ ᐃᓱᒪᓕᐅᕈᑎᐅᓯᒪᓕᖅᑐᓄᑦ, ᓂᕈᐊᖅᓱᓯᒪᓕᕐᒪᑕ ᑲᔪᓯᑎᑦᓯᓚᕐᓂᕐᒥᓂᒃ ᑕᖅᑭᑕᒫᑦ ᓴᖅᑭᖅᑎᑦᓯᓂᐊᕐᓂᕐᒥᓂᒃ. ᕗᐃᑦ ᓄᓇᒥᐅᑕᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔨᖏᑦ (WRRB) ᐃᓱᒪᓕᐅᕐᕕᐅᑦ ᑐᑭᓯᒋᐊᕐᕕᒃᓴᖁᑏᑦ ᑲᑎᖅᓱᐊᖑᓯᒪᔪᑦ ᐊᖑᓇᓱᒃᑎᖏᑦ, ᒥᑭᓂᖅᐸᐅᓗᐊᕐ ᐱᑎᒃ, ᐃᓚᖃᖅᑎᑕᐅᔪᒃᓴᐅᕗᑦ ᖃᓄᓂᒃ ᐊᒻᒪᓗ ᓇᓂ ᐱᑕᓚᐅᕐᓂᖏᑦ, ᐊᕐᓇᓐᓂᖓᓂᒃ ᐊᖑᓴᓐᓂᖓᓂᒃᓘᓐᓃᑦ, ᐋᓐᓂᐊᖃᖅᑦᑎᓚᖓᑦ, ᐊᒻᒪᓗ ᑎᒥᖓᑕ ᖃᓄᐃᓕᖓᓐᓂᖓᓂᒃ ᐆᒪᔫᑉ, ᐊᒻᒪᓗ ᖃᓄᖅ ᐅᖓᓯᒃᑎᒋᔪᒥᑦ ᐊᖑᓇᓱᑎᑦ ᐃᖏᕐᕋᓇᐊᖃᑕᐅᕐᓂᖏᓐᓄᑦ ᑎᑎᕋᖅᓯᒪᔪᓂᒃ. ᑎᓕᓯ ᒐᕙᒪᖓᑦ (TG) ᐱᓇᓱᐊᖅᓯᒪᓇᓱᑦᑕᓇᓐᓂᐊᖅᑐᑦ ᐱᑕᖃᖅᑎᑦᓯᐊᖅᐸᓐᓂᓂᒃ ᑖᒃᑯᓂᖓ ᑐᓴᐅᒪᔾᔪᑎᓂᒃ ᑭᓱᐊᓂᓗ ᑎᓕᓯ ᒐᕙᒪᖓᑦ (TG) ᐊᐅᓚᑦᓯᓂᖃᕈᓐᓇᖅᑎᓪᓗᑕ ᖃᓄᐃᑦᑐᓂᒃ ᑐᓴᐅᒪᔪᓂᒃ ᐊᖑᓇᓱᐊᖅᑎᑦ ᐊᒥᖅᑲᕈᑎᖃᖃᑦᑕᕐᓂᐊᕐᒪᖔᑕ ᐊᖑᓇᓱᐊᖅᓯᒪᓕᐊᓂᖃᕈᒥ ᐊᒻᒪᓗ ᑕᐃᒪᓐᓇᐃᑎᓪᓗᒍ ᓇᓗᓇᐃᖅᓯᓯᒪᓕᕈᓐᓇᖅᑐᑦ ᐃᓱᒪᓕᐅᕈᑎᐅᓯᒪᓕᖅᑐᑦ ᒥᑭᓂᖅᐸᐅᑎᒍᑦ ᐱᑦᑕᖅᑎᑦᓯᐅᑎᓕᕐᓂᐊᕐᓂᐊᖅᑐᑦ ᑐᑭᓯᒋᐊᕐᕕᒃᓴᖁᑎᐅᔪᑦ ᐃᓗᓕᕆᓕᕐᓂᐊᖅᑕᕐᕆᓐᓄᑦ.	ᑎᓕᓯ ᒐᕙᒪᖓᑦ (TG)	2019-2020/2020-2021	ᑲᔪᓯᑎᑕᐅᓯᒪᔪᑦ

ᓱᓇᐅᓂᖓ	ᐱᓕᕆᐊᖅ/ᐱᓕᕆᐊᕐᔪᐊᖅ	ᑭᐅᔾᔪᑎᖏᑦ	ᑭᐅᔾᔪᑎᐅᔪᓄᑦ ᐱᔾᔪᑎᒋᔭᐅᔪᑦ	ᓱᕗᓕᖅᑎᐅᓪᓗᑎᒃ ᐱᓕᕆᐊᒃᓴᖃᖁᑦ	ᐱᓕᕆᓚᐅᒃᓴᖃᖅᑎᑕᐅᓂᕐᓄᑦ ᑐᑭᓯᐊᒍᑎᒃᓴᐃᑦ	ᖃᓄᐃᓕᖓᓕᕐᓂᖓᑦ
ᐱᐅᓯᕆᐊᖅᑎᑕᐅᓯᒪᔪᑦ ᓄᐊᒃ ᓯᓚᐃᕝ ᑎᒍ ᐊᖑᓇᓱᐊᖅᐸᓐᓂᕐᒧᑦ ᐱᓕᕆᐊᕐᔪᐊᖅ						
ᠫᐃᑉᐲ ᓄᓇᒥᐅᑕᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔨᖏᑦ ᐊᑐᓕᖁᔭᐅᓪᓗᑎᒃ #2-2019 (ᓵᑎ ᐃᐊᒃᕗ)	ᑐᑭᓯᒪᔭᐅᓕᖁᓪᓗᑎᑦ ᖃᓄᖅ ᐃᖏᕐᕋᓯᐊᕐᑎᒋᖕᒫᑦ ᐆᒃᑐᕐᕆᑎᐅᓪᓗᓂ ᐅᑭᐅᒥ ᐱᐅᓯᕆᐊᖅᑎᑕᐅᓯᒪᔪᑦ ᓄᐊᒃ ᓯᓚᐃᕝ ᑎᒍ ᐊᖑᓇᓱᐊᖅᐸᓐᓂᕐᒧᑦ ᐱᓕᕆᐊᕐᔪᐊᒧᑦ, ᓄᓇᕐᔪᐊᑉ ᒐᕙᒪᖓᑦ (GNWT) ᐱᑕᖅᑲᖅᑎᕐᓯᕙᕆᐊᓖᑦ ᓇᓂ ᐊᒻᒪᓗ ᖃᔅᓯᓂᒃ ᑎᒍ ᐱᑕᖅᓯᒪᓂᕐᓄᑦ ᐱᔾᔪᑎᖃᖅᑐᓂᒃ, ᐃᓚᖏᔭᐅᑎᓪᓗᒋᑦ ᐱᓕᕆᐊᒧᑦ, ᠫᐃᑉᐲ ᓄᓇᒥᐅᑕᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔨᖏᑦ (WRRB) ᓱᕗᕐᖓᓂ ᔪᓚᐃ 26, 2019.	**ᓈᒻᒥᒋᔭᐅᔪᑦ**	ᓄᓇᕐᔪᐊᑉ ᒐᕙᒪᖓᑦ (GNWT) ᒫᓐᓇᐅᔪᖅ ᐋᖅᑭᓱᐃᕌᓂᒃ ᐸᓪᓕᐊᓪᓚᑕ ᐅᓂᒃᑳᓕᐊᖑᕙᓂᒃ ᐅᑭᐅᖓᓄᑦ 2018-2019-ᒥ ᐱᐅᓯᕆᐊᖅᑎᑕᐅᓯᒪᔪᑦ ᓄᐊᒃ ᓯᓚᐃᕝ ᑎᒍ ᐊᖑᓇᓱᐊᖅᐸᓐᓂᕐᒧᑦ ᐱᓕᕆᐊᕐᔪᐊᒧᑦ. ᓱᕗᓪᓕᖅᐸᕐᓯᐅᑎᑦ ᐅᓂᒃᑲᓕᐊᖑᓯᒪᕙᒃᑐᑦ ᐊᒥᖅᑭᖅᑎᐅᓚᐅᕐᒪᑕ ᠫᐃᑉᐲ ᓄᓇᒥᐅᑕᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔨᖏᑦ (WRRB) ᔪᓚᐃ 15, 2019-ᒥ. ᐊᔾᔨᓪᓕᒋᔭᖏᓂᒃ ᐅᓂᒃᑲᓕᐅᖅᓯᒪᕙᓂᐊᖅᑐᑦ ᐅᑭᐅᑕᒫᑦ ᓄᓇᕐᔪᐊᑉ ᒐᕙᒪᖓᑦ (GNWT).	ᓄᓇᕐᔪᐊᑉ ᒐᕙᒪᖓᑦ (GNWT)	ᔪᓚᐃ 15, 2019	ᐱᔭᕇᖅᓯᒪᔪᑦ
ᠫᐃᑉᐲ ᓄᓇᒥᐅᑕᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔨᖏᑦ ᐊᑐᓕᖁᔭᐅᓪᓗᑎᒃ #3-2019 (ᓵᑎ ᐃᐊᒃᕗ)	ᖃᐅᔨᔭᐅᓯᒪᓕᖁᓪᓗᑎᑦ ᓱᕗᓂᒥ ᐊᑐᖅᑕᐅᕙᓪᓚᔭᖅᑐᓄᑦ ᐱᐅᓯᕆᐊᖅᑎᑕᐅᓯᒪᔪᑦ ᓄᐊᒃ ᓯᓚᐃᕝ ᑎᒍ ᐊᖑᓇᓱᐊᖅᐸᓐᓂᕐᒧᑦ ᐱᓕᕆᐊᕐᔪᐊᑦ ᐊᐅᓚᓯᓂᖃᕐᓂᕐᓂ ᓵᑎ ᐃᐊᒃᕗ ᐊᒥᕐᕌᑦᑎᖏᓐᓂᒃ ᐊᒻᒪᓗ ᐊᓱᖏᓂᒃ ᐃᐊᒃᕗ ᐊᒥᕐᕌᑦᑎᖏᓐᓂᒃ, ᓄᓇᕐᔪᐊᑉ ᒐᕙᒪᖓᑦ (GNWT) ᐊᒻᒪᓗ ᑎᕝᓯ ᒐᕙᒪᖓᑦ (TG) ᐋᖅᑭᓱᐃᓯᒪᓕᕆᐊᖃᖅᑐᑦ ᑐᙵᕕᖁᑎᒃᓴᐅᓂᐊᖅᑐᓂᒃ ᖃᐅᔨᕆᐊᕈᑎᐅᕙᓂᐊᖅᑐᓄᑦ Ꮳᒃᑯᐊ ᐱᓕᕆᐊᕐᔪᐊᑦ ᐊᑐᕐᓂᖅᑲᖕᓚᑦ ᐃᐊᒃᕗ ᐊᒥᕐᕌᑦᑎᖏᑕ ᒥᐊᓂᕆᔭᐅᓯᒪᓕᕐᓂᒃᓴᖏᑕ ᑐᕌᕝᕚᒃᓴᖅᑎᐅᔪᓄᑦ, ᕿᒥᕐᕈᔭᐅᔪᒃᓴᓂᒃ ᐊᒻᒪᓗ ᓈᒻᒥᒋᔭᐅᓯᒪᓕᖅᑐᖅᑐᑦ ᠫᐃᑉᐲ ᓄᓇᒥᐅᑕᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔨᖏᑦ (WRRB), ᓱᕗᕐᖓᓂ ᓯᑎᐱᕆ 30, 2019.	**ᐊᔾᔨᒌᙱᓐᓂᖃᕐᕕᐅᔪᑦ** – ᑎᑖᓯ ᒐᕙᒪᖓᑦ (TG) ᐊᒻᒪᓗ ᓄᓇᕐᔪᐊᑉ ᒐᕙᒪᖓᑦ (GNWT) ᐊᔾᔨᙱᑕᖏᑎᒍᑦ ᐅᖃᖅᓯᒪᕗᑦ "ᐊᑐᓕᖁᔭᐅᓪᓗᑎᒃ #3-2019"-ᒧᑦ ᐃᒪᓐᓇ ᐅᖃᖅᓯᒪᓪᓗᑎᑦ: ᐊᑐᓕᖁᔭᐅᓪᓗᑎᒃ #3-2019 (ᓵᑎ ᐃᐊᒃᕗ): ᐱᐅᓯᕆᐊᖅᑎᑕᐅᓯᒪᔪᑦ ᓄᐊᒃ ᓯᓚᐃᕝ ᑎᒍ ᐊᖑᓇᓱᐊᖅᐸᓐᓂᕐᒧᑦ ᐱᓕᕆᐊᕐᔪᐊᖅ: ᖃᐅᔨᔭᐅᓯᒪᓕᖁᓪᓗᑎᑦ ᓱᕗᓂᒥ ᐊᑐᖅᑕᐅᕙᓪᓚᔭᖅᑐᓄᑦ ᐱᐅᓯᕆᐊᖅᑎᑕᐅᓯᒪᔪᑦ ᓄᐊᒃ ᓯᓚᐃᕝ ᑎᒍ ᐊᖑᓇᓱᐊᖅᐸᓐᓂᕐᒧᑦ ᐱᓕᕆᐊᕐᔪᐊᑦ ᐊᐅᓚᓯᓂᖃᕐᓂᕐᓂ ᓵᑎ ᐃᐊᒃᕗ ᐊᒥᕐᕌᑦᑎᖏᓐᓂᒃ ᐊᒻᒪᓗ ᐊᓱᖏᓂᒃ ᐃᐊᒃᕗ ᐊᒥᕐᕌᑦᑎᖏᓐᓂᒃ, ᓄᓇᕐᔪᐊᑉ ᒐᕙᒪᖓᑦ (GNWT) ᐊᒻᒪᓗ ᑎᑖᓯ ᒐᕙᒪᖓᑦ (TG) ᐋᖅᑭᓱᐃᓯᒪᓕᕆᐊᖃᖅᑐᑦ ᑐᙵᕕᖁᑎᒃᓴᐅᓂᐊᖅᑐᓂᒃ ᖃᐅᔨᕆᐊᕈᑎᐅᕙᓂᐊᖅᑐᓄᑦ Ꮳᒃᑯᐊ ᐱᓕᕆᐊᕐᔪᐊᑦ ᐊᑐᕐᓂᖅᑲᖕᓚᑦ ᐃᐊᒃᕗ ᐊᒥᕐᕌᑦᑎᖏᑦ ᒥᐊᓂᕆᔭᐅᓯᒪᓕᕐᓂᒃᓴᖏᑦ ᑐᕌᕝᕚᒃᓴᖅᑎᐅᔪᓄᑦ, ᕿᒥᕐᕈᔭᐅᔪᒃᓴᓂᒃ ᐊᒻᒪᓗ ᓈᒻᒥᒋᔭᐅᓯᒪᓕᖅᑐᖅᑐᑦ ᠫᐃᑉᐲ ᓄᓇᒥᐅᑕᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔨᖏᑦ (WRRB), ᓱᕗᕐᖓᓂ ᔮᓄᐊᕆ 10, 2020.	ᑎᑖᓯ ᒐᕙᒪᖓᑦ (TG) ᐊᒻᒪᓗ ᓄᓇᕐᔪᐊᑉ ᒐᕙᒪᖓᑦ (GNWT) ᐃᓱᒪᓕᐅᖅᐳᑦ ᐋᖅᑭᓱᐃᓯᒪᓕᕐᓂᖅ ᑐᙵᕕᖁᑎᒃᓴᓂᒃ ᖃᐅᔨᕆᐊᕈᑎᐅᕙᓂᐊᖅᑐᓂᒃ ᐊᑐᕐᓂᖅᑲᖕᓚᑦ ᐱᐅᓯᕆᐊᖅᑎᑕᐅᓯᒪᔪᑦ ᓄᐊᒃ ᓯᓚᐃᕝ ᑎᒍ ᐊᖑᓇᓱᐊᖅᐸᓐᓂᕐᒧᑦ ᐱᓕᕆᐊᕐᔪᐊᖅ ᐱᓕᕆᐊᕐᔪᐊᖅᑯᑦ ᐃᓚᐅᑎᑕᐅᓪᓗᑎᒃ ᐊᕐᕕᓂᖅᓴᐅᓪᓗᑎᒃ ᑎᒍ ᐊᐅᓚᓯᓂᖅᑲᖅᑲᖅᑲᖅᑲᖅᑲᖅᑲᖅ	ᑎᑖᓯ ᒐᕙᒪᖓᑦ ᐊᒻᒪᓗ ᓄᓇᕐᔪᐊᑉ ᒐᕙᒪᖓᑦ (GNWT)	ᔮᓄᐊᕆ 10, 2020	ᐱᔭᕇᖅᑕᐅᓯᒪᙱᑦᑐᑦ

ᓱᓇᐅᓂᖓ	ᐱᓕᕆᐊᖅ/ᐱᓕᕆᐊᖑᔪᖅ	ᑭᐅᔾᔪᑎᖏᑦ	ᑭᐅᔾᔪᑎᐅᔪᓄᑦ ᐱᔾᔪᑎᒋᔭᐅᔪᑦ	ᓯᕗᓕᖅᑎᐅᓪᓗᑎᒃ ᐱᓕᕆᐊᒃᓴᖃᕐᓂᑦ	ᐱᓕᕆᕝᕕᒃᓴᖃᖅᑎᑕᐅᓂᕐᓄᑦ ᑐᑭᒧᐊᒍᑎᒃᓴᐃᑦ	ᖃᓄᐃᓕᖓᓕᕐᓂᖏᑦ
Nǫgha (ᓈᒡᕼᐊ [ᖃᕝᕕᑦ])						
ᖽᐃᑮᕀ ᓄᓇᒥᐅᑕᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔨᖏᑦ ᐊᑐᓕᕐᑯᔭᐅᓪᓗᑎᒃ #4-2019 (ᓵᑎ ᐃᐊᒃᖽ)	ᖃᐅᔨᔭᐅᓯᒪᓕᕐᑯᓪᓗᒋᑦ ᒫᓇᐅᓕᖅᑐᒥ ᐊᒥᓰᓂᕆᔭᐅᔪᓄᑦ ᖃᓄᐃᓕᖓᓕᖅᓯᒪᓂᐅᔪᑦ ᐊᒻᒪᓗ ᓯᐊᒻᒪᒃᑎᖅᓯᒪᓂᖏᑕ ᓵᑎ ᐃᐊᒃᖽ ᐊᒥᕐᕋᕐᑯᑎᓂᒃ ᐆᒪᔪᐃᑦ ᓂᕿᒃᖅᐸᒃᑐᑦ, ᓄᓇᕐᓯᐊᑉ ᒐᕙᒪᖓᑦ (GNWT) ᐊᒻᒪᓗ ᑎᓯᓱ ᒐᕙᒪᖓᑦ (TG) ᓇᐅᕐᓯᖅᑐᐃᔨᐅᕙᓂᐊᖅᑐᑦ ᓈᒡᕼᐊ ᐊᒥᓲᓂᕆᔭᕆᓂᒃ ᖽᐃᑮᕀᒥ, ᐱᒋᐊᕐᓗᑎᒃ ᐃᐳᓗ 1, 2020. ᓇᐅᕐᓯᖅᑐᐃᕙᓂᕐᓄᑦ ᑐᓴᒃᓴᕐᑯᑏ ᐊᒥᖅᑲᕈᑎᒋᔭᐅᕙᕆᐊᖃᖅᑐᑦ ᖽᐃᑮᕀ ᓄᓇᒥᐅᑕᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔨᖏᑦ (WRRB) ᐊᑐᐃᓐᓇᐅᓕᕐᖓᓚᑦ.	**ᐊᔾᔨᒌᙱᓐᓂᖃᖅᕝᕕᐅᔪᑦ** – ᑎᓵᓯ ᒐᕙᒪᖓᑦ (TG) ᐊᒻᒪᓗ ᓄᓇᕐᓯᐊᑉ ᒐᕙᒪᖓᑦ (GNWT) ᐊᔾᔨᒌᙱᑦᑕᖏᑎᒍᑦ ᐅᖃᖅᓯᒪᕗᑦ "ᐊᑐᓕᕐᑯᔭᐅᓪᓗᑎᒃ #4-2019"-ᒧᑦ ᐃᒪᓐᓇ ᐅᖃᖅᓯᒪᓪᓗᑎᑦ: ᐊᑐᓕᕐᑯᔭᐅᓪᓗᑎᒃ #4-2019 (ᓵᑎ ᐃᐊᒃᖽ): ᓈᒡᕼᐊ (ᖃᕝᕕᑦ): ᖃᐅᔨᔭᐅᓯᒪᓕᕐᑯᓪᓗᒋᑦ ᒫᓇᐅᓕᖅᑐᒥ ᐊᒥᓰᓂᕆᔭᐅᔪᓄᑦ ᖃᓄᐃᓕᖓᓕᖅᓯᒪᓂᐅᔪᑦ ᐱᓕᕆᓂᖃᓕᖅᐸᓐᓂᐊᖅᑐᑦ ᑕᐃᒪᐅᓕᐊᓂᒃᓯᑎᒃ ᓇᐅᕐᓯᖅᑐᒐᐅᓂᖏᓐᓂᒃ ᐊᒻᒪᓗ ᓯᐊᒻᒪᒃᑎᖅᓯᒪᓂᖏᑕ ᓵᑎ ᐃᐊᒃᖽ ᐊᒥᕐᕋᕐᑯᑎᓂᒃ ᐆᒪᔪᐃᑦ ᓂᕿᒃᖅᐸᒃᑐᑦ, ᓄᓇᕐᓯᐊᑉ ᒐᕙᒪᖓᑦ (GNWT) ᐊᒻᒪᓗ, ᐊᑐᓕᖅᑎᑕᐅᔪᓐᓇᕐᖓᓚᑦ, ᐊᕝᕙᒃᑐᖅᓯᒪᓂᐅᔪᓂᑦ ᓄᓇᖽᒥ ᓯᖽᕐᖓᓂ ᐃᐳᓗ 1, 2020. ᑖᒃᑯᐊ ᐊᑐᖅᑕᐅᓂᐊᕐᓚᑕ ᐃᓱᒪᒃᓴᖅᓯᐅᕈᑎᖃᕐᓂᕐᓂ ᓯᖽᓂᕐᒥ ᓇᐅᕐᓯᖅᑐᐃᓂᐅᓕᕈᓐᓇᖅᑐᓄᑦ ᖃᕝᕕᐊᓂᒃ. ᖃᓄᐃᑦᑐᑐᐃᓐᓇᐃᑦ ᑕᐃᒪᐅᓕᐊᓂᒃᑐᑦ ᓇᐅᕐᓯᖅᑐᐃᕙᓂᕐᒧᑦ ᑐᓴᒃᓴᐃᑦ ᐊᒥᖅᑲᕈᑎᐅᕙᕆᓂᐊᖅᑐᑦ ᖽᐃᑮᕀ ᓄᓇᒥᐅᑕᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔨᖏᑦ (WRRB).	ᑎᓵᓯ ᒐᕙᒪᖓᑦ (TG) ᐃᑲᔪᖅᑐᐃᖽᑦ ᐃᓱᒪᔾᔪᓯᕆᔭᐅᔪᓄᑦ ᑲᑎᖅᓯᐃᕙᕆᓂᕐᓂ ᓇᐅᕐᓯᖅᑐᐃᓂᕐᒧᑦ ᑐᓴᒃᓴᕐᑯᑎᓂᒃ ᐱᔾᔪᑎᒋᓪᓗᑎᑦ ᓈᒡᕼᐊ. ᑎᓵᓯ ᒐᕙᒪᖓᑦ (TG) ᑮᓇᐅᔭᕐᑯᑎᖃᙱᓪᓚᑕ ᐱᓕᕆᐊᕐᖃᖅᑎᑐᓕᕆᐊᒧᑦ ᖃᕝᕕᐊᓂᒃ ᓇᐅᕐᓯᖅᑐᐃᓂᒥ ᖃᐅᔨᔭᐃᓂᐅᓇᔭᖅᑐᓄᑦ, ᐊᒻᒪᓗ ᒫᓇᐅᔪᖅ ᓂᕈᐊᖅᓯᒪᓪᓗᑎᒃ ᐊᑐᓕᖅᑎᕐᓯᒥᐊᒥᓐᓂᒃ ᐊᓯᖏᓂᒃ ᓯᖽᓕᖅᐸᐅᑎᑕᐅᕐᑯᔭᐅᓪᓗᑎᒃ ᐅᖃᖅᑕᐅᓯᒪᔪᓂᒃ 2019-ᒥ ᐃᓱᒪᓕᐅᕈᑎᐅᓯᒪᔪᓄᑦ ᐊᑐᓕᕐᑯᔭᐅᓪᓗᑎᒃ ᐃᓚᖃᖅᑎᓪᓗᒋᑦ ᐱᔭᕇᖅᓯᓯᒪᓕᕆᐊᒥᓐᓄᑦ ᐃᓱᒪᓕᐅᕈᑎᐅᓯᒪᓕᓚᐅᖅᑐᓄᑦ ᐊᑐᓕᕐᑯᔭᐅᓪᓗᑎᒃ ᖽᐃᑮᕀ ᓄᓇᒥᐅᑕᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔨᖏᑦ (WRRB). ᑎᓵᓯ ᒐᕙᒪᖓᑦ (TG) ᐃᓱᒪᓕᐅᖅᐳᑦ ᐱᕕᒃᓴᖃᕐᓂᐅᑎᑕᐅᔪᒥ ᐱᓕᕆᓂᖃᖅᑭᕈᒪᓂᒥᓐᓄᑦ ᐋᖅᑭᒃᓯᐃᓂᕐᒧᑦ ᑲᑐᔾᔨᓂᖃᕐᓗᑎᒃ ᑐᙵᕝᕕᖃᕐᑎᐅᔪᒃᓴᓂᒃ ᐱᓕᕆᖃᑎᒋᓗᒋ ᓄᓇᕐᓯᐊᑉ ᒐᕙᒪᖓᑦ (GNWT) ᐊᒻᒪᓗ ᖽᐃᑮᕀ ᓄᓇᒥᐅᑕᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔨᖏᑦ (WRRB) ᓯᖽᒧᒋᐊᖅᑎᑕᐅᓯᒪᓕᕈᓐᓇᕐᑯᓪᓗᒍ ᑖᓐᓇ ᐃᓱᒪᓕᐅᕈᑎᐅᓯᒪᓕᖅ ᐊᑐᓕᕐᑯᔭᐅᓪᓗᓂ. ᓄᓇᕐᓯᐊᑉ ᒐᕙᒪᖓᑦ (GNWT) ᐅᔾᔨᕈᓱᒃᑐᑦ ᓱᓇᑐᐃᓐᓇᓂᒃ ᖃᐅᔨᓴᐃᔨᐅᔪᑦ ᓇᓗᓇᐃᖅᓯᒪᓕᖅᑕᖏᑦ ᒫᓇᒧᑦ ᓇᓗᓇᐃᖅᓯᓯᒪᓕᙱᒻᒪᑕ ᖃᕝᕕᐊᓄᑦ ᐱᔾᔪᑎᖃᖅᑐᓂᒃ ᐊᖏᖤᕐᓗᑎᒃ ᐱᑕᖅᐸᓐᓂᖏᑦᑕ ᓄᓇᐃᓐᓇᕐᒥ ᑐᒃᑐᕐᑯᑎᐅᔪᓂᒃ. ᖃᕝᕕᑦ ᐆᒪᔪᕐᑯᑎᐅᔪᑦ ᓯᖽᓕᕐᒥᒃ ᑐᕐᑯᖓᓕᖅᑐᓂᒃ ᓂᕿᑦᓯᔭᒃᓴᖅᓯᐅᖅᐸᓐᓂᖏᑦᑕ ᐊᒻᒪᓗ ᒫᓇᐅᔪᒥ ᓇᒍᓇᐃᖅᑕᐅᓯᒪᓕᔪᑦ ᓇᒍᓇᐃᖅᓯᓯᒪᓕᔫᔭᕐᓚᑕ ᐊᒥᓲᓂᕆᔭᖏᑦ ᕿᖓᒐᐅᑉ ᐊᒥᕐᕋᕐᑯᑎᖏᑕ ᓇᒧᖅᐸᑦᑕᖏᓂ ᐊᒥᓲᖓᓃᖅᐸᑉᐸᓕᐊᓯᒪᓂᖏᑦ ᐱᔾᔪᑎᒋᓪᓗᒍ ᐊᒥᕐᕋᕐᑯᑎᐅᔪᑦ ᐊᒥᓲᖓᓃᖅᐸᑉᐸᓕᐊᓯᒪᓂᖏᑦ. ᐱᓕᕆᔾᔪᓯᐅᕙᑐᓂ ᓇᐅᕐᓯᖅᑐᐃᓂᒥ ᖃᕝᕕᑦ ᐊᒥᓰᓂᖏᑦ ᐊᒻᒪᓗ ᓯᐊᒻᒪᒃᑎᖅᓯᒪᓂᖏᑦ ᐱᓕᕆᔾᔪᑎᖃᖅᑲᑦᑕᖅᓯᒪᓪᓚᑦ ᓇᕿᙳᖅᓯᒪᓂᖏᓄᑦ ᓇᓗᓇᐃᒃᑯᑕᒍᑦ-ᖃᐅᔨᓴᐃᓐᓴᓂᒃ ᐱᓯᒪᓕᕐᑲᓂᖅᐸᓂᖅᑎᒍᑦ, ᓄᓇᕐᓯᐊᑉ ᒐᕙᒪᖓᑦ (GNWT) ᓇᐅᕐᓯᖅᑐᐃᓂᒥ ᐱᓕᕆᓂᖅᑲᖅᓯᒪᓕᖅᑐᑦ ᑎᐊᕆᖕ ᓖᒃ ᑕᓯᐊᑕ ᐊᕙᑎᒋᔭᖓᓂ ᐊᒻᒪᓗ ᓯᑎᓂᖅᐹᓂᒃ ᐅᔭᖅᑲᓂᒃ ᐅᔭᖅᑕᕆᐊᖅᑎᒃᑯᑦ ᐊᔾᔨᓚᖏᓂᒃ ᐱᓕᕆᓂᖅᑲᖅᓯᒪᓕᕐᓯᑎᒃ ᐊᕙᑎᒋᔭᒥᓐᓂ. ᐊᕙᑎᓕᕆᔨᒃᑯᑦ ᓄᓇᒥᐅᑕᓕᕆᔨᒃᑯᓪᓗ ᐱᕈᒃᑲᓂᕈᓐᓇᖅᑐᓕᕆᔨᒃᑯᑦ (ENR) ᐱᑕᖃᖅᑎᓯᔪᓐᓇᕐᓚᑕ ᒫᓇᒧᑦ ᑎᑭᑎᑕᐅᓯᒪᔪᓂᒃ ᓇᐃᒡᓕᒋᐊᖅᓯᒪᓪᓗᑎᑦ ᖃᕝᕕᐊᓂᒃ ᓇᐅᕐᓯᖅᑐᐃᓐᓂᕐᓄᑦ ᓄᓇᕐᓯᐊᒥ, ᐃᓚᖃᖅᑎᓪᓗᑎᑦ ᖃᓄᐃᓕᖓᓕᕐᓂᐅᔪᓂᒃ ᓄᓇᖽᒥᑦ ᐊᑐᐃᓐᓇᐅᑎᑕᐅᒃᐸᑕ, ᑐᙵᕝᕕᐅᓕᕆᓐᓇᖅᑐᓂᒃ ᐃᓱᒪᒃᓴᖅᓯᐅᕈᑎᖃᕐᓂᕐᓂ ᓯᖽᓂᕐᒥ ᓇᐅᕐᓯᖅᑐᐃᓂᐅᓕᕋᔭᖅᑐᓄᑦ.	ᑎᓵᓯ ᒐᕙᒪᖓᑦ ᐊᒻᒪᓗ ᓄᓇᕐᓯᐊᑉ ᒐᕙᒪᖓᑦ (GNWT)	ᐄᐳᓗ 1, 2020	ᐱᔭᕇᖅᑕᐅᓯᒪᙱᑦᑐᑦ

ᓱᓇᐅᓂᖓ	ᐱᓕᕆᐊᖅ/ᐱᓕᕆᐊᖑᔪᖅ	ᑭᐅᔾᔪᑎᖏᑦ	ᑭᐅᔾᔪᑎᐅᔪᓄᑦ ᐱᔾᔪᑎᒋᔭᐅᔪᑦ	ᓯᕗᓕᖅᑎᐅᓪᓗᑎᒃ ᐱᓕᕆᐊᒃᓴᖃᕐᓂᑦ	ᐱᓕᕆᕝᕕᒃᓴᖃᖅᑎᑕᐅᓂᕐᓄᑦ ᑐᑭᒧᐊᒍᑎᒃᓴᐃᑦ	ᖃᓄᐃᓕᖓᓕᕐᓂᖏᑦ
ᓂᕿᑐᖅᐸᒃᑐᑦ ᐆᒪᔪᐃᑦ ᓄᕐᕋᖅᕝᕕᐅᕙᒃᑐᓂ						
ᖽᐃᑮᕀ ᓄᓇᒥᐅᑕᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔨᖏᑦ ᐊᑐᓕᕐᑯᔭᐅᓪᓗᑎᒃ #5-2019 (ᓵᑎ ᐃᐊᒃᖽ)	ᐊᒥᓱᕈᖅᓯᒪᓕᕈᓐᓇᕐᑯᓪᓗᑎᒃ ᓄᕐᖅᑖᖑᕙᒃᑐᓄᑦ ᑐᒃᑐᓂᑦ ᓵᑎ ᐃᐊᒃᖽ ᐊᒥᕐᕋᕐᑯᑎᖏᓂᑦ ᖁᑦᓯᓐᓂᕆᔭᐅᔪᑦ, ᓄᓇᕐᓯᐊᑉ ᒐᕙᒪᖓᑦ (GNWT) ᐊᒻᒪᓗ ᑎᓵᓯ ᒐᕙᒪᖓᑦ (TG) ᐱᓕᕆᖃᑎᒌᒃᑐᑎᒃ ᐱᓕᕆᖃᑎᖃᕆᐊᖃᖅᑎᑕᐅᖽᑦ ᐊᕙᑎᓕᕆᔨᒃᑯᓐᓂᒃ, ᓄᓇᖽᑦ ᒐᕙᒪᖓᓂ ᒥᐊᓂᕆᔭᐅᓯᒪᓕᕐᑯᓪᓗᒋᑦ ᓄᕐᕋᖅᕝᕕᐅᕙᒃᑐᑦ ᓄᓇᐃᑦ ᓵᑎ ᐃᐊᒃᖽ ᑐᒃᑐᖏᓂ ᑎᒐ, ᓵᐊᓲ, ᑎᐊᑦᐅᔅᓲ, ᐊᒻᒪᓗ ᓈᒡᕼᐊᓂᑦ. ᐱᒋᐊᕝᕕᒃᓴᕐᑯᑎᒃ 2020 ᐅᑭᐅᖓᓂ, ᓄᕐᕋᖅᕝᕕᐅᕙᒃᑐᑦ ᓄᓇᐃᑦ ᒥᐊᓂᕆᔭᐅᓯᒪᓕᕐᓂᖏᑦ ᐱᓕᕆᐊᖑᔪᓐᓇᕐᓚᑕ ᓇᐅᕐᓯᖅᑐᐃᕙᓂᕐᓂᒃ ᐊᕙᑎᒋᔭᖓᓂᒃ ᐊᒻᒪᓗ ᐱᒋᐊᖅᑎᑕᐅᓯᒪᕙᓕᐊᖅᓯᒪᓂᒃ ᐊᑕᐅᓯᕐᒥᒃ ᐱᓇᓱᐊᕈᓯᕐᒥᒃ ᓯᖽᖓᓕᖓᓂ ᓄᕐᕋᖅᑲᓕᖅᓯᒪᕙᓂᐅᔪᓂᑦ.	**ᐊᔾᔨᒌᙱᓐᓂᖃᖅᕝᕕᐅᔪᑦ** – ᑎᓵᓯ ᒐᕙᒪᖓᑦ (TG) ᐊᒻᒪᓗ ᓄᓇᕐᓯᐊᑉ ᒐᕙᒪᖓᑦ (GNWT) ᐊᔾᔨᒌᙱᑦᑕᖏᑎᒍᑦ ᐅᖃᖅᓯᒪᕗᑦ "ᐊᑐᓕᕐᑯᔭᐅᓪᓗᑎᒃ #5-2019"-ᒧᑦ ᐃᒪᓐᓇ ᐅᖃᖅᓯᒪᓪᓗᑎᑦ: ᐊᑐᓕᕐᑯᔭᐅᓪᓗᑎᒃ #5-2019 (ᓵᑎ ᐃᐊᒃᖽ): ᓂᕿᑐᖅᐸᒃᑐᑦ ᐆᒪᔪᐃᑦ ᓄᕐᕋᖅᕝᕕᐅᕙᒃᑐᓂ: ᐊᒥᓱᙱᓗᓇᐊᖅᓯᒪᓕᕐᑯᓪᓗᑎᒃ ᓄᕐᕋᐃᑦ ᐃᕐᓂᖓᓚᖑᔫᖅᑐᑦ ᐊᓐᓇᐅᒪᔪᓐᓇᕐᓂᖏᑦ ᐊᒻᒪᓗ ᐃᓐᓇᐅᓕᖅᑐᑦ ᑐᒃᑐᐃᑦ ᓵᑎ ᐃᐊᒃᖽ ᐊᒥᕐᕋᕐᑯᑎᖏᓂ, ᓄᓇᕐᓯᐊᑉ ᒐᕙᒪᖓᑦ (GNWT) ᐊᒻᒪᓗ ᑎᓵᓯ ᒐᕙᒪᖓᑦ (TG) ᑲᔪᓯᑎᑦᓯᓯᒪᔭᕆᐊᓖᑦ ᐃᓚᐅᕐᖃᑕᐅᑎᑦᓯᓂᕐᒥᓐᓂᒃ ᐊᕙᑎᓕᕆᔨᒃᑯᓐᓂᒃ, ᓄᓇᕐᓯᐊᑉ ᒐᕙᒪᖓᓂᑦ ᖃᐅᔨᓴᐃᓂᕆᔭᒥᓄᑦ ᐱᓕᕆᔾᔪᑎᐅᕙᒃᑐᓂᒃ ᐊᑐᖅᑕᐅᔪᓐᓇᖅᓯᒪᖅᑐᓂᒃ ᒥᑉᓕᒋᐊᖅᑎᑕᐅᓯᒪᓕᕐᑯᓪᓗᒋᑦ ᖁᑦᓯᓐᓂᕆᔭᐅᔪᑦ ᓂᕿᑐᖅᐸᒃᑐᑦ ᐆᒪᔪᐃᑦ ᓄᕐᕋᖅᕝᕕᒋᕙᒃᑕᖏᓂ ᓵᑎ ᐃᐊᒃᖽ ᐊᒥᕐᕋᕐᑯᑎᖏᑕ ᑎᒐ, ᓵᐊᓲ, ᑎᐊᑦᐅᔅᓲ, ᐊᒻᒪᓗ ᓈᒡᕼᐊ. ᓄᕐᕋᖅᕝᕕᐅᕙᒃᑐᑦ ᒥᐊᓂᕆᔭᐅᓕᕐᓂᖏᑦ ᐱᓕᕆᐊᖑᓕᕈᓐᓇᕐᓚᑕ ᓇᐅᕐᓯᖅᑐᐃᕙᓂᕐᒥᒃ ᐊᕙᑎᒋᔭᖓᓂᒃ ᐊᒻᒪᓗ ᐱᒋᐊᖅᑎᑕᐅᓯᒪᓕᕆᐊᖅᑕᐅᓪᓗᑎᒃ ᐊᑕᐅᓯᕐᒥᒃ ᐱᓇᓱᐊᕈᓯᕐᒥᒃ ᓯᖽᖓᓕᖓᓂ ᓄᕐᕋᖅᑲᓯᓯᒪᓕᕐᓂᐅᔪᓂᑦ.	ᑎᓵᓯ ᒐᕙᒪᖓᑦ (TG) ᐊᒻᒪᓗ ᓄᓇᕐᓯᐊᑉ ᒐᕙᒪᖓᑦ (GNWT) ᐅᔾᔨᕈᓱᒃᑐᑦ ᓄᕐᕋᖅᕝᕕᒋᕙᒃᑕᖏᑦ ᓵᑎ ᐃᐊᒃᖽ ᐊᒥᕐᕋᕐᓂᑦ ᓇᓂᔭᐅᓯᒪᓪᓚᑕ ᓄᓇᖽᒥ ᓯᓚᑖᓂᑦᑐᓂ ᑎᓵᓯ ᓄᓇᖏᓐᓂᑦ ᐊᒻᒪᓗ Mǫwhì Gogha Dè Nı̨ı̨tłèè (ᒪᐅᕼᐃ ᒍᒡᕼᐊ ᑎ ᓃᑦᑏ) ᐊᒻᒪᓗ ᓯᓚᑖᓂ ᓄᓇᕐᓯᐊᑉ ᒐᕙᒪᖓᑦ (GNWT) ᐊᐅᓚᑦᓯᓂᖃᕝᕕᒋᔭᖏᑕ. ᑎᓵᓯ ᒐᕙᒪᖓᑦ (TG) ᐊᖏᕈᑎᖃᖅᓯᒪᕗᑦ ᑐᕌᕝᕕᒃᓴᖁᑎᐅᔪᓂᒃ "ᐊᑐᓕᕐᑯᔭᐅᓪᓗᑎᒃ #5-2019"-ᒥ ᐊᒻᒪᓗ ᖁᕕᐊᓱᒃᐳᑦ ᐃᓚᒋᔭᖃᓕᕆᐊᒥᓐᓂ ᐱᓕᕆᐊᖑᔪᓄᑦ ᓄᓇᖽᒥ ᒐᕙᒪᖓᓂᒃ. ᑎᓵᓯ ᒐᕙᒪᖓᑦ (TG) ᐃᑲᔪᖅᑐᐃᓯᒪᓇᔭᖅᑐᑦ ᖃᓄᐃᑦᑐᑐᐃᓐᓇᓂᒃ ᐸᕐᓇᐅᑎᓕᐊᖑᓯᒪᔪᓂᒃ ᓄᓇᖽᒥ ᒥᐊᓂᕆᔭᐅᓯᒪᓕᕐᑯᓪᓗᒋᑦ ᓄᕐᕋᖅᕝᕕᐅᕙᒃᑐᑦ ᐊᑐᖅᐸᓐᓂᖅᑎᒍᑦ ᓇᐅᕐᓯᖅᑐᐃᓂᐅᔪᓄᑦ ᐊᕙᑎᒋᔭᐅᔪᓂ ᐊᑕᐅᓯᕐᒥᒃ ᐱᓇᓱᐊᕈᓯᕐᒥᒃ ᓯᖽᖓᓕᖓᓂ ᓄᕐᕋᖅᑲᓯᓯᒪᓕᕐᓂᐅᔪᓂᑦ. ᑖᒃᑯᐊ ᐃᑲᔪᖅᓯᓂᐅᔪᑦ ᓇᓗᓇᐃᖅᑕᐅᓯᒪᕗᑦ ᐊᖏᕈᑎᐅᓯᒪᔪᓄᑦ ᓄᓇᖽᒥᑦ. ᑕᐃᒪᓐᓇᐃᒃᑲᓗᐊᖅᑎᓪᓗᑎᑦ ᑖᒃᑯᐊ ᐃᑲᔪᖅᓯᓯᒪᓂᐅᔪᑦ ᑎᓵᓯ ᒐᕙᒪᖓᑦ (TG) ᓇᓗᓇᐃᖅᓯᓯᒪᓪᓚᑦᑖᕐᓂᖓᓐᖏᑦᑐᑦ 2020-ᒥ ᐊᑐᓕᖅᑎᑕᐅᓇᔭᕝᕕᖓᑕ ᐅᓪᓗᖓᓂᒃ. ᖃᓄᑐᐃᓐᓇᖅ ᐆᒪᔪᓂᒃ ᐊᐅᓚᑦᓯᓂᖃᕐᓂᒥ ᐱᓕᕆᐊᖑᔪᑦ ᓄᓇᖽᒥ ᒪᓕᒋᐊᖃᖅᑎᑕᐅᔭᖅᑐᑦ ᓈᒻᒪᒃᑐᓂᒃ ᐱᓇᓱᐊᕈᓯᐅᕙᒃᑐᓂᒃ ᐃᒪᓐᓇ ᐊᕝᕙᒃᑐᖅᓯᒪᓂᐅᔪᒥ ᐊᒻᒪᓗ ᐱᓕᕆᓂᖃᖅᑐᑦ ᑲᑐᔾᔨᖃᑎᒌᖕᒋᔭᐅᔪᑎᒍᑦ ᑕᐅᕙᓂ, ᐃᓚᖃᖅᑎᓪᓗᑎᑦ ᓄᓇᖽᑦ ᒐᕙᒪᖓᓂᒃ (GN), ᓄᓇᖽᒥ ᐆᒪᔪᓕᕆᔨᖏᑦ ᑲᑎᒪᔨᖏᑦ (NWMB), ᐊᒻᒪᓗ ᐊᕝᕙᒃᑐᖅᓯᒪᓂᐅᔪᒥ ᐊᒻᒪᓗ ᓄᓇᓕᐅᔪᒥ ᑲᑐᔾᔨᖃᑎᒌᖕᒋᔭᐅᔪᓂᒃ. ᓄᓇᕐᓯᐊᑉ ᒐᕙᒪᖓᑦ (GNWT) ᑲᔪᓯᑎᑦᓯᓯᒪᓂᐊᖅᑐᑦ ᑲᑐᔾᔨᓂᖃᕐᓗᑎᒃ ᐱᓕᕆᖃᑎᖃᕐᓂᕐᒥᓂᒃ ᓄᓇᖽᑦ ᒐᕙᒪᖓᓂᒃ (GN).	ᑎᓵᓯ ᒐᕙᒪᖓᑦ ᐊᒻᒪᓗ ᓄᓇᕐᓯᐊᑉ ᒐᕙᒪᖓᑦ (GNWT)	ᐅᓪᓗᖓ ᓇᓗᓇᐃᖅᑕᐅᓯᒪᙱᑦᑐᖅ	ᑲᔪᓯᑎᑕᐅᓯᒪᔪᑦ

ᓱᓇᐅᓂᖓ	ᐱᓕᕆᐊᖅ/ᐱᓕᕆᐊᖑᔪᖅ	ᑭᐅᔾᔪᑎᖏᑦ	ᑭᐅᔾᔪᑎᐅᔪᓄᑦ ᐱᔾᔪᑎᒋᔭᐅᔪᑦ	ᓯᕗᓕᖅᑎᐅᓪᓗᑎᒃ ᐱᓕᕆᐊᖃᖅᑏᑦ	ᐱᓕᕆᐊᒃᓴᖅᑕᖅᑎᑕᐅᓂᖏᑦ ᑐᑭᓯᐊᒍᑎᒃᓴᐃᑦ	ᖃᓄᐃᓕᖓᓕᖅᓂᖓᑦ
ᖁᑦᑎᒃᑐᒻᒪᕆᒻᒥᒃ ᓯᕗᓪᓕᖅᐸᐅᑎᑕᐅᖃᔭᐅᓯᒪᔪᑦ ᓇᔪᖅᑕᐅᕙᑦᑐᓄᑦ ᐆᒪᔪᓂᑦ ᓇᓗᓇᐃᔭᐃᓯᒪᓕᕐᓂᖅ						
ᑐᐃᑉᐹ ᓄᓇᒥᐅᑕᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔩᖏᑦ ᐊᑐᓕᖁᔭᐅᓚᐅᖅᑐᑦ #6-2019 (ᓵᑎ ᐃᐊᒃᕗ)	ᐱᓕᕆᓂᖅᑲᖅᑯᓚᐅᖅᑐᑦ ᑐᕌᒐᖃᖅᑲᐅᖅᑐᖅ ᒥᐊᓂᕆᔭᐅᓯᒪᓕᖅᓂᖅᓴᖏᑦᑕ ᓵᑎ ᐃᐊᒃᕗ ᐊᒥᖅᑯᖅᑎᖏᑦᑕ ᓇᕙᖅᐸᒃᑕᖏᑦ, ᑎᓕᓯ ᒐᕙᒪᖓ (TG) ᐱᓕᕆᖃᑎᖃᕐᓇᓂᐊᓕᑦ ᓄᓇᓕᐅᑉ ᓇᓗᓇᐃᔭᐃᓂᖅ ᖁᑦᑎᒃᑐᒻᒪᕆᒻᒥᒃ ᓯᕗᓪᓕᖅᐸᐅᑎᑕᐅᖃᔭᐅᓯᒪᕙᓪᓕᕈᑦ ᓇᔪᖅᑕᐅᕙᑦᑐᓄᑦ ᐆᒪᔪᓂᑦ ᒥᐊᓂᕆᔭᐅᓯᒪᓕᖅᑯᓚᐅᖅᑐᑦ. ᖁᑦᑎᒃᑐᒻᒪᕆᒻᒥᒃ ᓯᕗᓪᓕᖅᐸᐅᑎᑕᐅᖃᔭᐅᓯᒪᔪᑦ ᓇᔪᖅᑕᐅᕙᑦᑐᓄᑦ ᐆᒪᔪᓂᑦ ᐃᓚᒃᑲᖅᑎᑕᐅᔭᕆᐊᖃᖅᑐᑦ ᓇᔪᖅᑕᐅᕙᑦᑐᑦ ᐊᑐᖅᑕᐅᕙᓯᑎᒃ ᓵᑎ ᐃᐊᒃᕗ ᐊᒥᖅᑯᖅᑎᖏᓐᓂᑦ ᐊᒥᓱᙳᕆᑦᑑᑉᓗᑎᒃ. ᓇᓗᓇᐃᔭᖅᑕᐅᓯᒪᓕᖅᐸᑕ, ᖁᑦᑎᒃᑐᒻᒪᕆᒻᒥᒃ ᓯᕗᓪᓕᖅᐸᐅᑎᑕᖁᔭᐅᓯᒪᔪᑦ ᓇᔪᖅᑕᐅᕙᑦᑐᓄᑦ ᐆᒪᔪᓂᑦ ᐊᒥᖅᑲᖅᑎᐅᔭᕆᐊᖃᖅᐳᑦ ᑐᐃᑉᐹ ᓄᓇᒥᐅᑕᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔩᖏᑦ (WRRB).	ᓈᒻᒪᒋᔭᐅᔪᖅ	ᐱᓕᕆᐊᖑᓕᖅᓯᒪᔪᑦ ᒫᓐᓇᐅᔪᒥ ᑎᓕᓯ ᒐᕙᒪᖓᓂᑦ (TG) ᐃᖅᑲᓇᐃᔭᖅᑎᐅᔪᓂᑦ ᑐᕌᖓᔪᑦ ᑕᑖ ᐊᒻᒪᓗ ᐃᒪᒃᑯᑦ ᐃᑳᕝᕕᐅᕙᒃᑐᑦ. ᑎᓕᓯ ᒐᕙᒪᖓ (TG) ᐃᓄᑐᖃᕐᓇᔭᐅᕙᓂᒃ ᑲᑎᙵᑎᕐᓯᓚᐅᖅᐳᑦ ᔪᓇᐃᒥ ᐅᖃᓪᓚᐅᓯᖃᖃᑎᒋᓗᑎᒃ ᖁᑦᑎᒃᑐᒻᒪᕆᒻᒥᒃ ᓯᕗᓪᓕᖅᐸᐅᑎᑕᐅᖃᔭᐅᓯᒪᔪᑦ ᓇᔪᖅᑕᐅᕙᑦᑐᓄᑦ ᑐᑦᑐᓂᑦ, ᑐᙵᕕᒋᓪᓗᒋᑦ ᒫᓐᓇᐅᔪᒥ ᐃᑯᐊᓛᓕᕆᕕᐅᕙᒃᑐᑦ ᓄᓇᒥ (ᓄᓇᙳᐊᖅ); ᑎᓕᓯ ᒐᕙᒪᖓ (TG) ᐊᒥᖅᑲᖅᑎᖃᕐᓂᐊᖅᑐᑦ ᑐᓴᕐᕕᒋᓪᓗᓂᒃ ᓄᓇᕗᑦ ᒐᕙᒪᖓᓂᒃ (GNWT) ᓯᕗᓪᓕᖅᐸᐅᑎᑕᐅᖃᔭᓂᒃ ᐋᖅᑮᓯᓕᖅᑯᓚᐅᖅᑐᑦ ᐱᔾᔪᑎᐅᓗᐊᖅᓯᑎᒃ ᐅᑭᐅᒥ ᓇᔪᖅᑕᐅᕙᒃᑐᑦ ᐃᑯᐊᓛᓕᕆᓯᒪᓂᐅᔪᑦ ᖃᒥᑎᑕᐅᕙᓪᓕᐊᖁᓚᐅᖅᑐᑦ ᐊᒻᒪᓗ ᑐᓂᓯᓯᒪᓕᕆᓂᐊᖅᑐᑦ ᑖᒃᑯᓂᖓ ᑐᓴᕐᕕᒋᓪᓗᓂᒃ ᑐᐃᑉᐹ ᓄᓇᒥᐅᑕᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔩᖏᑦ (WRRB) ᓯᕗᓂᖓᓂ ᑎᓯᐱᕆ 1, 2019.	ᑎᓕᓯ ᒐᕙᒪᖓ (TG)	ᑎᓯᐱᕆ 1, 2020	ᑲᔪᓯᑎᑕᐅᓯᒪᔪᑦ

ᓱᓇᐅᓂᖓ	ᐱᓕᕆᐊᖅ/ᐱᓕᕆᐊᖑᔪᖅ	ᑭᐅᔾᔪᑎᖏᑦ	ᑭᐅᔾᔪᑎᐅᔪᓄᑦ ᐱᔾᔪᑎᒋᔭᐅᔪᑦ	ᓯᕗᓕᖅᑎᐅᓪᓗᑎᒃ ᐱᓕᕆᐊᖃᖅᑏᑦ	ᐱᓕᕆᐊᒃᓴᖅᑕᖅᑎᑕᐅᓂᖏᑦ ᑐᑭᓯᐊᒍᑎᒃᓴᐃᑦ	ᖃᓄᐃᓕᖓᓕᖅᓂᖓᑦ
ᒪᓕᒐᑎᒍᑦ ᒥᐊᓂᖅᓯᓯᒪᓕᕐᓂᖅ						
ᑐᐃᑉᐹ ᓄᓇᒥᐅᑕᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔩᖏᑦ ᐊᑐᓕᖁᔭᐅᓚᐅᖅᑐᑦ #7-2019 (ᓵᑎ ᐃᐊᒃᕗ)	ᓇᓗᓇᐃᔭᖅᑕᐅᓯᒪᓕᖅᐸᑕ ᖁᑦᑎᒃᑐᒻᒪᕆᒻᒥᒃ ᓯᕗᓪᓕᖅᐸᐅᑎᑕᐅᖃᔭᐅᓯᒪᔪᑦ ᓵᑎ ᐃᐊᒃᕗ ᐊᒥᖅᑯᖅᑎᖏᓐᓂᑦ, ᐊᒻᒪᓗ ᑕᒪᒃᑯᐊ ᓇᔪᖅᑕᐅᕙᑦᑐᑦ ᑕᐃᒪᐃᖕᖏᑦᑐᓐᓇᖅᑐᖅᑕᐅᓪᓗᑎᒃ, ᒪᓕᒐᒃᑦ ᐊᐅᓚᖅᑎᑕᐅᓇᖅᑐᖅ ᓇᔪᖅᑕᐅᕙᑦᑐᑦ ᒥᐊᓂᕆᔭᐅᓂᖅᓴᖅ ᐊᐅᓚᖅᑎᑕᐅᓇᖅᐳᖅ ᓄᓇᕗᑦ ᒐᕙᒪᒃᑯᑦ (GNWT) ᒪᓕᒐᒃᑦ ᐱᓕᕆᐊᕈᓐᓇᖅᑐᑦ ᒪᓕᒐᒃᑎᒃ ᐅᖃᐅᓯᖅ ᐱᓕᕆᔩᑦ ᓄᐃᑕᑎᑕᐅᕙᒃᑐᑦ ᒪᓕᒐᒃᑎᒃ ᓄᓇᕗᑦ (NWT). ᒫᓐᓇᐅᔪᒥ ᐱᓕᕆᐊᖑᓕᖅᓯᒪᔪᑦ, ᐅᖓᓯᒃᑐᑦ ᑐᑭᓯᐊᖅ ᒥᐊᓂᕆᔭᐅᓯᒪᓕᕐᓂᖅ ᒥᐊᓂᖅᓯᓯᒪᓕᕐᓂᖅ ᐊᑐᖅᑕᐅᕙᒃᑐᑦ ᐊᐅᓚᖅᑎᑕᐅᓇᖅᐳᖅ ᓄᓇᕗᑦ ᒐᕙᒪᒃᑯᑦ (GNWT) ᐊᒻᒪᓗ ᑎᓕᓯ ᒐᕙᒪᖓ (TG) ᓯᕗᓂᖓᓂ ᓯᑎᐱᕆ 2020.	**ᐊᔾᔨᒌᙱᑦᑐᖅ** – ᓄᓇᕗᑦ ᒐᕙᒪᖓ (GNWT) ᐊᔾᔨᒌᙱᑦᑐᓂᒃ ᐅᖃᐅᓯᖅ "ᐊᑐᓕᖁᔭᐅᓚᐅᖅᑐᑦ #7-2019"-ᒥ ᐃᒪᓐᓇ ᐅᖃᐅᓯᖃᓚᐅᖅᑐᑦ: ᐊᑐᓕᖁᔭᐅᓚᐅᖅᑐᑦ #7-2019 (ᓵᑎ ᐃᐊᒃᕗ): ᒪᓕᒐᑎᒍᑦ ᒥᐊᓂᖅᓯᓯᒪᓕᕐᓂᖅ: ᓇᓗᓇᐃᔭᖅᑕᐅᓯᒪᓕᖅᐸᑕ ᖁᑦᑎᒃᑐᒻᒪᕆᒻᒥᒃ ᓯᕗᓪᓕᖅᐸᐅᑎᑕᐅᖃᔭᐅᓯᒪᔪᑦ ᓵᑎ ᐃᐊᒃᕗ ᐊᒥᖅᑯᖅᑎᖏᓐᓂᑦ, ᐊᒻᒪᓗ ᑕᒪᒃᑯᐊ ᓇᔪᖅᑕᐅᕙᑦᑐᑦ ᑕᐃᒪᐃᖕᖏᑦᑐᓐᓇᖅᑐᖅᑕᐅᓪᓗᑎᒃ, ᒪᓕᒐᒃᑦ ᐊᐅᓚᖅᑎᑕᐅᓇᖅᑐᖅ ᓇᔪᖅᑕᐅᕙᑦᑐᑦ ᒥᐊᓂᕆᔭᐅᓂᖅᓴᖅ ᖃᐅᔨᓴᖅᑕᐅᔭᕆᐊᖃᖅᐳᑦ ᓄᓇᕗᑦ ᒐᕙᒪᖓᓐᓂ (GNWT) ᒪᓕᒐᒃᑦ ᐱᓕᕆᐊᕈᓐᓇᖅᑐᑦ ᒪᓕᒐᒃᑎᒃ ᐅᖃᐅᓯᖅ ᐱᓕᕆᔩᑦ ᓄᐃᑕᑎᑕᐅᕙᒃᑐᑦ ᒪᓕᒐᒃᑎᒃ (NWT). ᐊᒻᒪᓗ ᑲᔪᓯᑎᒃ, ᓄᓇᕗᑦ ᒐᕙᒪᖓ (GNWT) ᖃᐅᔨᓴᖅᓯᒪᓕᖅᑐᑦ ᐅᓐᓂᖅᑕᐅᓯᒪᔪᑦ ᐱᓕᕆᐊᖑᓂᖓᓐᓂ ᖃᐅᔨᓴᕈᑎᒋᓪᓗᑎᒃ ᐅᓐᓂᖅᑕᐅᓯᒪᔪᑦ ᒥᐊᓂᕆᔭᐅᓯᒪᓕᖅᑕᐅᓪᓗᑎᒃ ᒥᐊᓂᖅᓯᓯᒪᓕᖅᑐᑦ.	ᐃᓚᖏᑦ ᓄᐃᑕᓯᒪᔪᑦ ᐱᓕᕆᐊᖑᓕᖅᓯᒪᔪᑦ ᒪᓕᒐᒃᑎᒃ ᐊᒻᒪᓗ ᐱᓕᕆᐊᕈᓐᓇᖅᑐᑦ ᓄᐃᑕᑎᑕᐅᕙᒃᑐᑦ ᒪᓕᒐᒃᑎᒃ. [illegible]	ᓄᓇᕗᑦ ᒐᕙᒪᖓ (GNWT)	ᐅᓪᓗᖓ ᓇᓗᓇᐃᖅᑕᐅᓯᒪᙱᑦᑐᖅ	ᐱᔭᕇᖅᑕᐅᓯᒪᙱᑦᑐᑦ

ᓱᓇᐅᓂᖓ	ᐱᓕᕆᐊᖅ/ᐱᓕᕆᐊᕐᔪᐊᖅ	ᑭᐅᔾᔪᑎᖏᑦ	ᑭᐅᔾᔪᑎᐅᔪᓄᑦ ᐱᔾᔪᑎᒋᔭᐅᔪᑦ	ᓱᖃᓕᖅᑎᐅᓪᓗᑎᒃ ᐱᓕᕆᐊᒃᓴᖃᕐᓂᑦ	ᐱᓕᕆᕝᕕᒃᓴᖅᑎᑕᐅᓂᖏᓐᓄᑦ ᑐᑭᓕᐊᒍᑎᒃᓴᐃᑦ	ᖃᓄᐃᓕᖓᓕᕐᓂᖏᑦ
ᐊᓯᒥᔅᓯᖏᑦ ᐆᒪᔪᖁᑎᐅᔪᑦ						
ᕗᐃᑭᐟ ᓄᓇᒥᐅᑕᓕᕆᓂᕐᒧᑦ ᑲᑎᒪᔨᖏᑦ ᐊᑐᓕᖁᔭᐅᓯᒪᔪᑦ #8 (ᓵᑎ ᐃᐊᒃᕗ)	ᐃᑲᔪᖅᑕᐅᓯᒪᓕᖁᔨᓯᒪᔪᑦ ᐃᓅᓯᒃᑯᓯᐊᕌᐊᖁᓂᖏᑦ ᐃᓗᐊᓂ ᑏᐃ, ᐱᖃᓯᐅᑎᓯᒪᓗᑎᒃ ᓂᕈᕆᔭᒃᓴᓂᒃ ᐱᓯᒪᓕᕋᓯᐊᖃᕐᓇᓂᕐᓂᒃ, ᐊᒻᒪᓗ ᐃᓱᒪᒋᓗᑎᒃ ᑭᒡᓕᖃᕈᑎᖃᕐᓯᒪᓂᖏᑦ ᐊᖑᓇᓱᒍᓐᓇᕐᓂᐅᕚᑦ ᓵᑎ ᐃᐊᒃᕗ ᐊᒥᖅᑯᑎᖏᓐᓄᑦ, ᕗᐃᑭᐟ ᓄᓇᒥᐅᑕᓕᕆᓂᕐᒧᑦ ᑲᑎᒪᔨᖏᑦ (WRRB) ᐃᓱᒪᓕᐅᕐᕕᖏᑦ ᐊᑐᓕᖅᑎᑕᐅᓯᒪᔪᑦ ᑎᓴᓱ ᒐᕙᒪᖓᑦ (TG) ᐊᒻᒪᓗ ᓄᓇᕗᑦ ᒐᕙᒪᖓᑦ (GNWT) ᐃᑲᔪᖅᑐᐃᓯᒪᓕᖅᓯᒪᓂᖏᑦ ᓄᓇᓕᖕᓂ ᐊᖑᓇᓱᒃᐸᒌᕐᓂᖏᑦ ᐊᓯᒥᔅᓯᖏᓐᓂᒃ ᐆᒪᔪᖁᑎᐅᔪᓂᒃ ᓂᕈᕆᔭᒃᓴᒥᓂᒃ, ᐱᒋᐊᓪᓗᑎᒃ ᓯᑎᐱᕆ 2019-ᒥ.	ᓈᒻᒥᒋᔭᐅᔪᑦ	ᑎᓴᓱ ᒐᕙᒪᖓᑦ (TG) ᓴᖅᑮᖅᑲᖅᑕᕐᓂᐊᖅᑐᑦ ᕗᐃᑭᐟ ᓄᓇᒥᐅᑕᓕᕆᓂᕐᒧᑦ ᑲᑎᒪᔨᖏᑦ (WRRB), ᐱᒋᐊᖅᑐᒃ ᓯᑎᐱᕆ 2019, ᓱᓇᓂᒃ ᐱᓕᕆᖃᑦᑕᓯᒪᓂᖅᑕ ᑎᓴᓱ ᒐᕙᒪᖓᓂ (TG) ᐃᑲᔪᖅᑐᐃᓯᒪᓕᕐᓂᕐᒥᓄᑦ ᑎᓴᓱ ᓄᓇᓕᖕᒍᓂᒃ ᐊᖑᓇᓱᒃᐸᒌᖅᑐᑦ ᐊᓯᒥᔅᓯᖏᓐᓂᒃ ᐆᒪᔪᖁᑎᐅᔪᓂᒃ ᓂᕈᕆᔭᒃᓴᒥᓂᒃ, ᑭᓱᐊᓂᓗ ᐅᔾᔨᕈᓱᒃᐳᑦ ᓇᓗᓇᐃᖅᓯᓚᑦᑖᕈᓐᓇᖅᑐᒥᓪᓗᑕ ᖃᓄᐃᓕᖓᓕᕐᓂᐅᔪᓂᒃ ᐃᑲᔪᖅᑐᐃᓯᒪᓕᕈᑎᐅᔪᓄᑦ. ᑖᒃᑯᐊ ᐊᑐᓕᖁᔭᐅᓯᒪᔪᑦ ᐱᓕᕆᐊᖑᔪᓇᕐᒥᔪᑦ ᐊᑐᓕᖅᑎᑦᑎᓯᒪᓂᖅᑎᒍᑦ "ᐊᑐᓕᖅᑎᑕᐅᓯᒪᔪᑦ #1-2019", ᐃᒪᓐᓇ ᓇᐅᑦᑎᖅᑐᐃᓯᒪᓕᕐᓂᕈᓐᓂᕐᒥᒃ ᑐᓯᕋᕈᓐᓇᕐᑎᑕᐅᓪᓗᑎᒃ, ᐊᒻᒪᓗ ᐱᑕᖃᖅᑎᓯᕙᓪᓗᑎᒃ ᑐᓴᒃᓴᖅᑎᑦᑎᕙᓪᓗᓂ ᖃᓄᐃᑦᑐᓂ ᐊᓯᒥᔅᓯᖏᓐᓂᒃ ᐆᒪᔪᖁᑎᐅᔪᓂᒃ ᓂᕈᕆᕙᒃᑐᑦᑕᕐᒥᓂᒃ ᐊᑐᖅᐸᓪᓚᖓᓕᑦ ᑎᓴᓱ ᓄᓇᓕᖕᒍᑦ. ᓄᓇᕗᑦ ᒐᕙᒪᖓᑦ (GNWT) ᑲᔪᓯᑎᑦᓯᒪᓂᐊᖅᑐᑦ ᐃᑲᔪᖅᑐᐃᓂᕐᒥᓂᒃ ᑎᓴᓱ ᒐᕙᒪᖓᓐᓂᒃ (TG) ᑮᓇᐅᔭᖁᑎᒃᓴᖅᑕᖅᑎᑦᑎᔪᕙᓂᖅᑐᒍᑦ ᑕᐃᒪᐅᑎᑕᐅᕙᒃᑐᓂᒃ ᐊᓯᕐᕆᑎᒍᑦ ᓂᕈᕆᔭᐅᕙᒃᑐᖃᖅᑕᖅᓂᓂ ᐱᑕᖃᖅᑎᓯᓂᐅᕙᖅᑐᓄᑦ ᐃᓚᖃᖅᑎᓪᓗᒋᑦ, ᑭᓱᐊᓂᓗ ᑭᒡᓕᖃᕈᑎᒃ, ᑐᑦᑐᕙᓐᓂᒃ ᐊᖑᓇᓱᐊᖅᑲᓐᓂᖅᑕᖅᑐᓂᒃ, ᑎᒃᓯᓕᐅᑉ ᑐᑦᑐᖃᕐᕕᒋᔭᖏᑦ ᐊᖑᓇᓱᐊᖅᑲᓐᓂᖅᑕᖅᑐᓂᒃ, ᒪᑦᑎᑕᐅᑎᓄᑦ ᐃᖅᑲᓪᓚᐊᖅᑲᓐᓂᖅᑕᖅᑐᓂᒃ, ᐊᓯᖏᓐᓂᒃᓗ. ᑖᓐᓇ ᐃᓱᒪᓕᐅᕈᑎᐅᓯᒪᔪᖅ ᐊᑐᓕᖅᑎᑕᐅᖁᔭᐅᓂᕐᒥ ᐃᓚᖓᒍᑦ ᐱᓕᕆᐊᖑᓂᐊᖅᑐᖅ ᐊᑐᓕᖅᑎᑦᓯᓂᖓᓄᑦ ᐊᕙᑎᓕᕆᓂᕐᒧᑦ ᓄᓇᒥᐅᑕᓕᕆᓂᕐᒧᑦ ᐱᕐᕋᓂᕐᓂᕐᒧᑦ ᐊᓯᖓᓐᓂᒃᓯᓂᖅ (ENR) ᐊᓈᓄᑦ ᐆᒪᔪᖁᑎᐅᔪᑦ ᐱᓕᕆᐊᒧᑦ ᐸᕐᓇᐅᑎᖏᓐᓂᒃ ᑲᑐᔾᔨᓯᒪᔪᑦ ᐱᓕᕆᐊᒃᑲᓐᓂᕐᕕᒃᓴᖅᑐᓂ ᐊᒥᓱᓂᒃ ᐱᓕᕆᐊᒃᓯᒪᓂᐅᔪᓂ. ᐱᓕᕆᐊᖑᔪᖅᑐᐃᓂᖅ ᐸᕐᓇᐅᑎᓕᐅᕐᓯᒪᔪᖅ ᑖᓐᓇ ᓇᓗᓇᐃᔭᐃᓯᒪᔪᖅ ᐱᓕᕆᐊᖑᔪᓐᓇᖅᑐᓂ ᑐᓴᖅᑎᑦᑎᕙᖕᓂᖅ ᓂᕿᖃᕐᓂᐅᔪᖅ ᖃᐅᔨᓴᐃᓂᖅ, ᐊᕐᕌᒍᓄᑦ ᐃᓱᒪᓕᕆᕙᖕᓂᐊᕐᓂᖅ ᐊᖑᓇᓱᒃᑎᓂᒃ ᑐᑭᓕᐊᒍᑎᖃᕐᓂᖅ ᐊᒻᒪᓗ ᐱᓕᕆᓂᖅᑲᓐᓂᕐᒧᑦ ᐱᓕᕆᐊᖑᔪᑦ, ᐱᓕᕆᓂᖅᑲᐅᖅᐸᖅᑐᓂ ᒪᒃᑯᒃᑐᑦ, ᐊᒻᒪᓗ ᓄᓇᓕᐅᑉ ᓂᕿᖃᕐᓂᖓ ᐸᕐᓇᐅᑎᓕᐅᕐᓂᖅ, ᑕᐃᒪᓗ ᐃᓚᖅᑲᖅᑎᐅᕙᓐᓂᖅᓯᒪᕗᖅ ᑐᓴᖅᑎᑦᑎᓂᖅ ᐊᓯᐊᓂᒃ ᐃᓚᐅᕐᓂᕐᒧᑦ ᓂᕿᖃᕐᕕᖏᓐᓂᒃ ᓄᓇᓕᐅᑉ. ᓄᓇᕗᑦ ᒐᕙᒪᖓᑦ (GNWT) ᑲᔪᓯᑎᑦᓯᒪᓂᐊᖅᑐᑦ ᑮᓇᐅᔭᓂᒃ ᑎᓴᓱ ᒐᕙᒪᖓᓐᓄᑦ (TG) ᐊᒻᒪᓗ ᕗᐃᑭᐟ ᓄᓇᒥᐅᑕᓕᕆᓂᕐᒧᑦ ᑲᑎᒪᔨᖏᑦ (WRRB) ᐃᓱᓕᑦᑎᓂᖓᓄᑦ ᐅᑭᐅᖅ 2019 ᐅᖃᐅᓯᕆᓂᐊᖅᑐᑦ ᐋᖅᑭᒃᓱᐃᓂᐅᔪᑦ ᐊᒻᒪᓗ ᐊᑐᓕᖅᑎᑕᐅᓂᖏᑦ ᐱᓕᕆᐊᖑᔪᑦ ᑐᓴᖅᑎᑕᐅᔪᑦ ᑎᓴᓱ ᓄᓇᓕᖕᓄᑦ ᒪᓕᒐᖅᑐᑦ ᑖᒃᑯᐊ ᐱᓕᕆᐊᖑᔪᑦ ᐸᕐᓇᑦᑎᑦ.	ᑎᓴᓱ ᒐᕙᒪᖓᑦ ᐊᒻᒪᓗ ᓄᓇᕗᑦ ᒐᕙᒪᖓᑦ (GNWT)	ᐱᒋᐊᖅᑎᑕᐅᔪᖅ ᓯᑎᐱᕆ 2019	ᐱᔾᔪᑎᖅᑕᐅᓯᒪᓪᓚᕆᑦᑐᑦ

ᓱᓇᐅᓂᖓ	ᐱᓕᕆᐊᖅ/ᐱᓕᕆᐊᕐᔪᐊᖅ	ᑭᐅᔾᔪᑎᖏᑦ	ᑭᐅᔾᔪᑎᐅᔪᓄᑦ ᐱᔾᔪᑎᒋᔭᐅᔪᑦ	ᓱᖃᓕᖅᑎᐅᓪᓗᑎᒃ ᐱᓕᕆᐊᒃᓴᖃᕐᓂᑦ	ᐱᓕᕆᕝᕕᒃᓴᖅᑎᑕᐅᓂᖏᓐᓄᑦ ᑐᑭᓕᐊᒍᑎᒃᓴᐃᑦ	ᖃᓄᐃᓕᖓᓕᕐᓂᖏᑦ
ᐋᖅᑭᐊᖅᑕᐅᓯᒪᓪᓗᑎᒃ ᐊᐅᓚᓯᓂᖅᑕᖅᑕᐅᓂᖏᓐᓄᑦ ᑐᖖᒐᕕᒋᔭᐅᔪᑦ						
ᕗᐃᑭᐟ ᓄᓇᒥᐅᑕᓕᕆᓂᕐᒧᑦ ᑲᑎᒪᔨᖏᑦ ᐊᑐᓕᖁᔭᐅᓯᒪᔪᑦ #9-2019 (ᓵᑎ ᐃᐊᒃᕗ)	ᕗᐃᑭᐟ ᓄᓇᒥᐅᑕᓕᕆᓂᕐᒧᑦ ᑲᑎᒪᔨᖏᑦ (WRRB), ᑎᓴᓱ ᒐᕙᒪᖓᑦ (TG) ᐊᒻᒪᓗ ᓄᓇᕗᑦ ᒐᕙᒪᖓᑦ (GNWT) ᑲᑐᔾᔨᓯᒪᓗᑎᒃ ᐱᓕᕆᓂᖅᑲᖅᑐᓂᖅᑐᑦ ᐋᖅᑭᒃᓱᐃᓂᐊᖅᑐᑦ ᐊᒥᖅᑯᑎᖏᓐᓄᑦ ᑐᕌᒐᖃᖅᑐᓂᒃ ᐋᖅᑭᐊᖅᑕᐅᓯᒪᓪᓗᑎᒃ ᐊᐅᓚᓯᓂᖅᑕᕐᓂᖓᓄᑦ ᑐᖖᒐᕕᒋᔭᐅᔪᑦ ᐊᑕᐅᓯᖅᑎᒍᑦ ᐱᓕᕆᐊᖑᓂᖏᑦ ᓇᓗᓇᐃᖅᓯᓂᖅᑐᑦ ᓱᕗᓂ ᔭᓄᐊᕆ 2020.	**ᐊᔾᔨᖑᙱᓐᓂᖃᖅᑐᑦ** – ᐊᑐᓕᖁᔭᐅᓯᒪᔪᑦ #9-2019 (ᓵᑎ ᐃᐊᒃᕗ): ᐋᖅᑭᐊᖅᑕᐅᓯᒪᓪᓗᑎᒃ ᐊᐅᓚᓯᓂᖅᑕᖅᑕᐅᓂᖏᓐᓄᑦ ᑐᖖᒐᕕᒋᔭᐅᔪᑦ: ᕗᐃᑭᐟ ᓄᓇᒥᐅᑕᓕᕆᓂᕐᒧᑦ ᑲᑎᒪᔨᖏᑦ (WRRB), ᑎᓴᓱ ᒐᕙᒪᖓᑦ (TG) ᐊᒻᒪᓗ ᓄᓇᕗᑦ ᒐᕙᒪᖓᑦ (GNWT) ᑲᑐᔾᔨᓂᖅᑲᖅᑐᑦ ᐱᓕᕆᓂᖅᑲᖅᑐᒍᑦ ᐋᖅᑭᐅᒪᓂᖓᓂᒃ ᐊᒥᖅᑯᑎᖏᓐᓄᑦ ᑐᕌᒐᖃᖅᑐᓂᒃ ᐋᖅᑭᐊᖅᑕᐅᓯᒪᓪᓗᑎᒃ ᐊᐅᓚᓯᓂᖅᑕᕐᓂᖓᓄᑦ ᑐᖖᒐᕕᒋᔭᐅᔪᑦ ᐊᕙᑎᓕᕆᓂᕐᒧᑦ ᐱᓕᕆᓂᖅᑕᖅᑐᒥ ᐊᑦᑕᓇᖅᑐᓕᕆᓂᕐᒧᑦ ᐊᑐᓕᖅᑎᑕᐅᓯᒪᔪᑦ ᐊᐅᓚᓯᓂᖅᑕᕐᓂᒥᒃ ᐱᓕᕆᐊᖑᔪᖅᓯᒪᓂᐊᖅᑐᖅ ᓱᕗᓂ ᔭᓄᐊᕆ 2020, ᕗᐃᑭᐟ ᓄᓇᒥᐅᑕᓕᕆᓂᕐᒧᑦ ᑲᑎᒪᔨᖏᑦ (WRRB) ᓱᕗᓕᖅᑎᑦᓯᓂᖅᑐᒍᑦ. ᑐᖖᒐᕕᒋᔭᐅᔪᑦ ᐃᓚᖅᑲᖅᑎᐅᔪᑦ ᐊᑐᓕᖅᑎᑕᐅᓂᖏᑦ ᑕᐃᒪᓐᓇᐊᖅᑐᓂ ᐊᐅᓚᓯᓂᖅᑕᕐᓂᖅ ᐸᕐᓇᐅᑎᒥᒃ ᐊᒻᒪᓗ ᐃᓱᒪᓕᐅᕈᑎᓕᐅᕐᓂᖅ ᐊᒻᒪᓗ ᐃᓱᒪᓕᐅᕈᑎᓕᐅᕐᓂᖅ ᐊᑐᓕᖅᑎᑕᐅᓯᒪᔪᑦ ᑲᑎᒪᔨᖏᓐᓄᑦ ᐊᒻᒪᓗ ᒐᕙᒪᒃᑯᓐᓄᑦ.	ᑎᓴᓱ ᒐᕙᒪᖓᑦ (TG) ᐊᒻᒪᓗ ᓄᓇᕗᑦ ᒐᕙᒪᖓᑦ (GNWT) ᐊᖏᕐᓱᒪᓇᒥᒃ ᐃᑲᔪᖅᑐᐃᓂᖃᖅᐳᑦ ᐱᒋᐊᖅᑎᑦᓯᓕᕋᓱᐊᕐᓂᕐᒧᑦ ᐋᖅᑭᐊᖅᑕᐅᓯᒪᓪᓗᑎᒃ ᐊᐅᓚᓯᓂᖅᑕᕐᓂᕐᒧᑦ ᑐᖖᒐᕕᒋᔭᐅᔪᑦ ᐊᒻᒪᓗ ᐊᖏᕐᓂᖅᓴᐅᕙᓪᓕᐅᕐᓗᒍ ᑲᑐᔾᔨᓂᖅᑲᓪᓚᑦᑖᕐᓂᖅᓴᕐᓂᖅᑐᑦ ᐱᓕᕆᖃᑦᑎᒌᖕᓂᖅᑕ ᑎᓴᓱ ᒐᕙᒪᖓᑦ (TG), ᓄᓇᕗᑦ ᒐᕙᒪᖓᑦ (GNWT) ᐊᒻᒪᓗ ᕗᐃᑭᐟ ᓄᓇᒥᐅᑕᓕᕆᓂᕐᒧᑦ ᑲᑎᒪᔨᖏᑦ (WRRB) ᐊᖏᕐᔪᐊᓗᒻᒥᒃ ᐱᓕᕆᐊᖃᖅᑐᓂ ᑲᑐᔾᔭᐅᓗᓂ ᐱᓕᕆᐊᖑᔪᔅᓇᐊᖅᑲᖅᑎᓂᐅᔪᖅ. ᓄᓇᕗᑦ ᒐᕙᒪᖓᑦ (GNWT) ᐅᔾᔨᕈᓱᒃᑐᖅ ᐃᓚᖕᒐᓂᖅᑲᖅᑎᖅᓯᒪᓕᖅᑐᑦ ᐋᖅᑭᐊᖅᑕᐅᓯᒪᓕᖅᑐᑦ ᐊᐅᓚᓯᓂᖅᑕᖅᑕᐅᓂᖏᓐᓄᑦ ᐃᓚᐅᓂᖅᑕᖅᑐᑦ ᐊᒥᖅᑯᑎᖏᓐᓄᑦ ᐊᑦᑕᓇᖅᑐᓕᕆᓂᕐᒧᑦ. CLᓐᓇ ᐊᓯᔾᔨᖅᓯᒪᓕᖅᑎᑕᐅᔪᕙᓐᓂᖅ ᐊᑯᓚᐃᓐᓂᖅᓴᒥᒃ ᐱᑕᖃᕐᕕᐅᑉᐸᖅᑕᖅᑐᖅ ᓄᑕᐅᓂᖅᐸᐅᔪᖅ ᑲᑐᔾᔨᓂᖅᑕᖅᑐᖅ ᐊᐅᓚᓯᓂᖅᑕᕐᓂᓄᑦ ᐃᓕᓴᕆᓂᕐᒧᑦ, ᐃᒪᓐᓇ ᓄᑖᑦ ᑐᓴᐅᒪᐃᑦ ᐊᑐᖅᑕᐅᓕᖅᑎᓐᓂᖅᑐᑦ ᕿᒥᕐᕈᐃᓂᕐᒧᑦ ᐊᐅᓚᓯᓂᖅᑕᐅᓯᒪᓂᖏᓐᓄᑦ ᐊᒻᒪᓗ ᓇᐅᑦᑎᖅᑐᐃᓂᐅᕙᒃᑐᓄᑦ ᐊᒥᖅᑯᑎᖏᓐᓄᑦ ᑖᒃᑯᓂᖓ. ᓄᓇᕗᑦ ᒐᕙᒪᖓᑦ (GNWT) ᐅᔾᔨᕈᓱᒃᑐᖅ ᐊᐅᓚᓯᓂᖅᑕᖅᑐᓄᑦ ᐸᕐᓇᐅᑎᓕᐅᕐᓂᐊᖅᑐᑦ ᑕᐃᔭᐅᔪᑦ ᑐᑦᑐᑦ ᑲᒪᔨᕐᒃᑲᐅᑎᖏᑦ ᐃᓚᖃᖅᑐᒥᒃ ᓵᑎ ᐃᐊᒃᕗ ᐊᒥᖅᑯᑎᖏᓐᓄᑦ ᐊᒻᒪᓗ ᐅᖃᐅᓯᕆᐊᖅᑎᑦ ᑲᑎᒪᕝᕕᒃ ᐱᓕᕆᐊᖅᑎᓐᓂᖅᑐᑦ ᐆᒪᔪᑦ ᐊᐅᓚᓯᓂᖅᑐᑦ (ACCWM) ᐅᑭᐅᑕᒫᑦ ᑲᑎᖕᒪᓂᖅᑲᖅᐸᓪᓚᑕ ᖃᐅᔨᓴᕈᑎᖃᕐᓂᐊᖅᓯᒪᖁᔨᓯᒪᓂᐊᖅᑐᑦ ᖃᓄᐃᓕᖓᓕᖅᑎᓪᓗᒋᑦ ᐱᖑᓱᓕᖅᑐᑦ ᑐᑦᑐᐃᑦ ᐊᒥᖅᑯᑎᖏᓐᓄᑦ ᐊᒻᒪᓗ ᓖᓐᓇᔪᑦ ᑎᑭᑎᑕᐅᓯᒪᓕᖅᑐᑦ ᐱᓕᕆᐊᖑᔪᖅᑐᐃᓂᐅᔪᖅ ᐸᕐᓇᐅᑎᓕᐅᕐᓂᐊᖅᓯᒪᔪᓄᑦ ᐊᑐᓂ ᐊᒥᖅᑯᑎᖏᓐᓄᑦ ᑐᕌᖑᔪᑦ. ᑖᒃᑯᐊ ᐸᕐᓇᐅᑎᖅᓯᒪᓂᐊᖅᑐᑦ ᐊᒻᒪᓗ ᐅᑭᐅᑕᒫᑦ ᑲᑎᖕᒪᓂᐅᕙᒃᑐᑦ ᐃᓱᒪᒃᓴᖅᓯᐅᕈᑎᐅᓂᐊᖅᑐᑦ ᐋᖅᑭᐊᖅᑕᐅᓯᒪᓪᓗᑎᒃ ᐊᐅᓚᓯᓂᖅᑕᕐᓂᖓᓄᑦ ᐊᐅᓚᓯᓂᖅᑕᖅᑕᐅᓕᖅᑐᓂ. CLᒃᑯᐊ ᑕᐃᒪᐃᓕᖓᓕᕐᓂᖏᑦ ᐃᓱᒪᒋᓕᖅᑐᑦ, ᑎᓴᓱ ᒐᕙᒪᖓᑦ (TG) ᐊᒻᒪᓗ ᓄᓇᕗᑦ ᒐᕙᒪᖓᑦ (GNWT) ᐃᓱᒪᓕᐅᖅᐸᒃᑐᑦ ᒪᕐᕉᖕᓄᑦ ᒐᕙᒪᒃᑯᓐᓄᑦ ᐊᒻᒪᓗ ᕗᐃᑭᐟ ᓄᓇᒥᐅᑕᓕᕆᓂᕐᒧᑦ ᑲᑎᒪᔨᖏᑦ (WRRB) ᑲᑐᔾᔨᓂᖅᑲᖅᑐᑦ ᐋᖅᑭᒃᓯᐃᓯᒪᓕᖅᑐᑦ ᐋᖅᑭᐊᖅᑕᐅᓯᒪᓪᓗᑎᒃ ᐊᐅᓚᓯᓂᖅᑕᖅᑕᐅᓂᖏᓐᓄᑦ ᑐᖖᒐᕕᒋᔭᐅᓯᒪᓕᖅᑐᑦ ᓵᑎ ᐃᐊᒃᕗ ᐊᒥᖅᑯᑎᖏᓐᓄᑦ, ᐊᒻᒪᓗ ᕗᐃᑭᐟ ᓄᓇᒥᐅᑕᓕᕆᓂᕐᒧᑦ ᑲᑎᒪᔨᖏᑦ (WRRB) ᓱᕗᓕᖅᑎᑦᓯᓂᖅᑐᒍᑦ ᐋᖅᑭᒃᓯᐃᓂᐊᕐᒥᒃ ᑖᓯᒥᖓ ᐋᖅᑭᐊᖅᑕᐅᓯᒪᓪᓗᑎᒃ ᐊᐅᓚᓯᓂᖅᑕᐅᑎᓐᓂᐅᓂᐊᖅᑐᓂ ᐱᓕᕆᐊᖑᔪᓂᒃ. ᑖᒃᑯᐊ ᐃᓚᖃᕆᐊᖃᖅᑐᑦ ᐋᖅᑭᒃᓯᐃᓯᒪᓕᖅᑐᓂᒃ ᖃᖓ ᑲᑎᒪᓂᖃᖅᑎᓐᓂᖅᑕᖅᑐᑦ ᐋᖅᑭᒃᓯᐊᖑᔪᓕᖅᑐᑦ ᐊᒻᒪᓗ ᐱᓕᕆᐊᖑᔪᖅᑕᐅᔭᖅᓯᒪᔪᓄᑦ ᐸᕐᓇᐅᑎᑦ ᓱᕗᓂᖓᓂ ᑎᓯᐱᕆ 30, 2019.	ᑎᓴᓱ ᒐᕙᒪᖓᑦ ᐊᒻᒪᓗ ᓄᓇᕗᑦ ᒐᕙᒪᖓᑦ (GNWT)	ᔫᓇ 2020	ᑲᔪᓯᑎᑕᐅᓕᔪᑦ

ᓱᓇᐅᓂᖓ	ᐱᓕᕆᐊᖅ/ᐱᓕᕆᐊᕐᔪᐊᖅ	ᑭᐅᔾᔪᑎᖏᑦ	ᑭᐅᔾᔪᑎᐅᔪᓄᑦ ᐱᔾᔪᑎᒋᔭᐅᔪᑦ	ᓱᕕᓕᖅᑎᐅᓪᓗᑎᒃ ᐱᓕᕆᐊᒃᓴᖅᑏᑦ	ᐱᓕᕆᐊᒃᓴᖅᑎᑕᐅᓂᖏᓐᓄᑦ ᑐᑭᒧᐊᒍᑎᒃᓴᐃᑦ	ᖃᓄᐃᓕᖓᓕᖅᓂᖏᑦ
ᖃᓯᐅᓂᖏᓐᓄᑦ ᐊᒥᓲᓂᖏᑦ ᖃᐅᔨᓴᐃᓃᑦ						
ᕗᐃᑉᐹ ᓄᓇᒥᐅᑕᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔩᖏᑦ ᐊᑐᓕᖅᑯᔭᐅᓪᓗᑎᒃ #10-2019 (ᓵᑎ ᐃᐊᒃᕗ)	ᑮᖑᕚᖅᑎᑕᐅᓯᒪᖅᑯᓇᒍ ᐋᖅᑭᐊᖅᑕᐅᓯᒪᓪᓗᑎᒃ ᐊᐅᓚᔪᓂᖅᓂᐅᓕᕐᔭᖅᑐᓄᑦ, ᓄᓇᕗᑦ ᒐᕙᒪᖓᑦ (GNWT), ᖃᓯᐅᓂᖏᓐᓄᑦ ᐊᒥᓲᓂᖏᑦ ᖃᐅᔨᓴᖃᑦᑕᖅᑯᔭᐅᕗᑦ ᓵᑎ ᐃᐊᒃᕗ ᐊᒥᖅᑯᑎᖏᑦ ᐅᑭᐅᑦ ᒪᕿᒃ ᓈᓯᒪᓕᑐᐊᕐᕕᓪᓚᑕ. ᑕᐃᒪᓗ ᖃᓯᐅᓂᖏᓐᓄᑦ ᐊᒥᓲᓂᖏᑦ ᖃᐅᔨᓴᖅᑕᐅᓯᒪᓕᕆᐊᖃᖅᑐᑦ ᔪᓂ 2020-ᒥ.	ᓈᒻᒪᒋᔭᐅᔪᑦ	ᑎᓖᓱ ᒐᕙᒪᖓᑦ (TG) ᐊᒻᒪᓗ ᓄᓇᕗᑦ ᒐᕙᒪᖓᑦ (GNWT) ᖁᔭᓐᓇᒦᖅᐳᑦ ᕗᐃᑉᐹ ᓄᓇᒥᐅᑕᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔩᖏᑦ (WRRB) ᐃᑲᔪᖅᑐᐃᓂᖏᓐᓄᑦ ᐃᓱᒪᓕᐅᕈᑎᓕᐊᕐᕈᓯᒪᔪᓂᒃ ᖃᓯᐅᓂᖏᓐᓄᑦ ᐊᒥᓲᓂᖏᑦ ᖃᐅᔨᓴᖅᑕᐅᕙᓪᓕᖅᑐᓂᖏᓐᓄᑦ ᐅᑭᐅᑦ ᒪᕿᒃ ᓈᓯᒪᓕᕌᖓᑕ.	ᓄᓇᕗᑦ ᒐᕙᒪᖓᑦ (GNWT)	ᔫᓂ 2020	ᑲᔪᓯᑎᑕᐅᓯᒪᔪᑦ
ᓅᕐᖃᖅᑐᓂᒃ ᓇᐅᑦᑎᖅᑐᐃᓂᖅ						
ᕗᐃᑉᐹ ᓄᓇᒥᐅᑕᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔩᖏᑦ ᐊᑐᓕᖅᑯᔭᐅᓪᓗᑎᒃ #11-2019 (ᓵᑎ ᐃᐊᒃᕗ)	ᐊᖏᓂᖅᓴᒥᒃ ᑐᑭᓯᐅᒪᓕᕈᓐᓇᖅᑐᓪᓗᒋᑦ ᐋᓂᐊᖃᓕᖅᑐᓇᒋᑦ ᓵᑎ ᐃᐊᒃᕗ ᐊᒥᖅᑯᑎᖏᑦ, ᓄᓇᕗᑦ ᒐᕙᒪᖓᑦ (GNWT) ᐊᒻᒪᓗ ᑎᓖᓱ ᒐᕙᒪᖓᑦ (TG) ᐊᑐᓕᖅᑎᑦᓯᓇᐊᖅᑕᖏᑦ ᓵᑎ ᐃᐊᒃᕗ ᐊᒥᖅᑯᑎᖏᓐᓂ ᓅᕐᖃᖅᑐᓂᒃ ᓇᐅᑦᑎᖅᑐᐃᔾᔪᑎᖏᓐᓂᒃ ᐊᓇᕐᕆᒋᓂᒃ ᑲᑎᓯᒪᓂᖏᓐᓂᒃ ᐅᑭᐅᖅᑕᖅᑐᒧᑦ ᑖᒃᑯᓇᙵᑦ, ᐱᒋᐊᖅᑎᑕᐅᓪᓗᑎᒃ ᔫᓂ 2020. ᐱᓕᕆᐊᒃᓴᖅᑎᓐᓂᐊᖅᑐᑦ ᑖᔅᓱᒪ ᐱᓕᕆᐊᒧᑦ ᐃᓚᒃᑲᖅᑎᑕᐅᓯᒪᓪᓗᑎᒃ ᓄᓇᓕᒃᑯᑦ ᖃᐅᔨᓴᖅᑎᖏᑦ ᐱᓯᒪᓕᖅᑕᖅᓂᖏᓐᓂᒃ.	**ᐊᔾᔨᒋᙱᑦᑐᓂᖅᑲᐅᔪᑦ** – ᑎᓖᓱ ᒐᕙᒪᖓᑦ (TG) ᐊᒻᒪᓗ ᓄᓇᕗᑦ ᒐᕙᒪᖓᑦ (GNWT) ᐊᔾᔨᒋᙱᑦᑕᖏᑦ ᐅᖃᖅᓯᒪᔪᑦ "ᐊᑐᓕᖅᑯᔭᐅᓪᓗᑎᒃ #11-2019"-ᒧᑦ ᐃᒪᓐᓇ ᐅᖃᖅᓯᒪᓪᓗᑎᒃ: ᐊᑐᓕᖅᑯᔭᐅᓪᓗᑎᒃ #11-2019 (ᓵᑎ ᐃᐊᒃᕗ): ᓅᕐᖃᖅᑐᓂᒃ ᓇᐅᑦᑎᖅᑐᐃᓂᖅ: ᐊᖏᓂᖅᓴᒥᒃ ᑐᑭᓯᐅᒪᓕᕈᓐᓇᖅᑐᓪᓗᒋᑦ ᐋᓂᐊᖃᓕᖅᑐᓇᒋᑦ ᓵᑎ ᐃᐊᒃᕗ ᐊᒥᖅᑯᑎᖏᑦ, ᓄᓇᕗᑦ ᒐᕙᒪᖓᑦ (GNWT) ᐊᒻᒪᓗ ᑎᓖᓱ ᒐᕙᒪᖓᑦ (TG) ᐊᑐᓕᖅᑎᑦᓯᓇᐊᖅᑕᖏᑦ ᓵᑎ ᐃᐊᒃᕗ ᐊᒥᖅᑯᑎᖏᓐᓂ ᓅᕐᖃᖅᑐᓂᒃ ᓇᐅᑦᑎᖅᑐᐃᔾᔪᑎᖏᓐᓂᒃ ᓇᓄᕐᓂᒃ ᑲᑎᓯᒪᓂᖏᓐᓂᒃ ᐅᑭᐅᖅᑕᖅᑐᒧᑦ ᑖᒃᑯᓇᙵᑦ, ᐱᒋᐊᖅᑎᑕᐅᓪᓗᑎᒃ ᔫᓂ 2020 ᐅᑭᐅᖅᑕᖅᑐᒧᑦ ᐊᒥᓱᓄᑦ ᐃᓚᒃᑲᖅᑎᑕᐅᓪᓗᑎᒃ ᖃᐅᔨᓴᖅᑎᑦ ᓄᓇᓕᒃᑯᑦ ᖃᐅᔨᓴᖅᑎᖏᑦ ᐱᓯᒪᓕᖅᑕᖅᓂᖏᓐᓂᒃ. ᐱᓕᕆᐊᒃᓴᖅᑎᓐᓂᐊᖅᑐᑦ ᑖᔅᓱᒪ ᐱᓕᕆᐊᒧᑦ ᐃᓚᒃᑲᖅᑎᑕᐅᓯᒪᓪᓗᑎᒃ ᓄᓇᓕᒃᑯᑦ ᖃᐅᔨᓴᖅᑎᖏᑦ ᐱᓯᒪᓕᖅᑕᖅᓂᖏᓐᓂᒃ.	ᑎᓖᓱ ᒐᕙᒪᖓᑦ (TG) ᐅᖃᐅᓯᕆᓚᕿ ᐊᓇᕐᕆᒃ ᑲᑎᓯᒪᓂᖏᑦ ᐱᓕᕆᐊᕆᔭᐅᓯᒪᔪᓐᓂ ᓄᓇᓕᖕᓂ ᖃᐅᔨᓴᖅᑎᓄᑦ ᐱᓕᕆᐊᖃᖅᑐᓂᒃ ᐊᐅᓚᔾᔪᑎᒃᓴᓕᐊᕆᓂᐊᖅᑐᑦ ᓂᕿᒃᓴᖃᖅᑎᑦᓯᓂᖅ ᓄᓇᓕᖕᓂ. ᑎᓖᓱ ᒐᕙᒪᖓᑦ (TG) ᐱᓕᕆᐊᖃᖅᑐᑦ ᐊᑐᓕᖅᑎᑦᑐᓂᑦ ᑐᑭᓯᐅᒪᔾᔪᑎᒃᓴᓂᑦ ᓇᓄᕐᓂᒃ ᑲᑎᓯᒪᓂᖏᑦ ᖃᐅᔨᓴᖅᑎᓄᑦ ᐱᓕᕆᐊᖃᖅᑐᓂᒃ. ᓄᓇᕗᑦ ᒐᕙᒪᖓᑦ (GNWT) ᓵᑎ ᐃᐊᒃᕗ ᐊᒥᖅᑯᑎᖏᓐᓂ ᓅᕐᖃᖅᑐᓂᒃ ᓇᐅᑦᑎᖅᑐᐃᓂᖅ ᐊᓇᕐᕆᒃ ᑲᑎᓯᒪᓂᖏᑦ ᐊᑐᓕᖅᑎᑦᓯᓂᖅ. ᑕᐃᒪᓐᓇ, ᓱᕗᓂᒥ, Ekwò Nàxoède K'è (ᐃᐊᒃᕗ ᓇᐅᑦᑎᖅᑐᐃᓂᖅ ᑲᓪᓚᐅᑦ ᓄᓇᒥ) ᐱᓕᕆᐊᖃᖅᑐᑦ ᐊᑐᓕᖅᑎᑕᐅᓯᒪᓕᖅᑐᑦ ᓵᑎ ᐃᐊᒃᕗ ᐊᒥᖅᑯᑎᖏᓐᓄᑦ ᐱᓕᕆᐊᖃᖅᑐᑦ, ᓄᓇᓕᖕᓂ ᓄᓇᒥᐅᑕᓕᕆᔨᒃᑯᑦ ᖃᐅᔨᓴᖅᑎᖏᑦ ᐱᓕᕆᐊᖃᖅᑐᓂᒃ ᐃᓚᒃᑲᖅᑎᑕᐅᓪᓗᑎᒃ ᓄᓇᓕᖕᓂ ᖃᐅᔨᓴᖅᑎᓄᑦ ᐱᓕᕆᐊᖃᖅᑐᓂᒃ. ᓄᓇᕗᑦ ᒐᕙᒪᖓᑦ (GNWT) ᑲᔪᓯᑎᑦᓯᓂᐊᖅᑐᑦ ᓅᕐᖃᖅᑐᓂᒃ ᓇᐅᑦᑎᖅᑐᐃᓂᖅ ᓵᑎ ᐃᐊᒃᕗ ᐊᒥᖅᑯᑎᖏᓐᓂ, ᐱᒋᐊᖅᑎᑕᐅᓪᓗᑎᒃ ᔫᓂ 2020, ᐱᓕᕆᐊᖃᖅᑐᑦ ᓈᒻᒪᒋᔭᐅᔪᑦ ᖃᐅᔨᓴᖅᑎᓄᑦ ᐊᒻᒪᓗ ᓈᒻᒪᒋᔭᐅᔪᑦ ᐊᑐᓕᖅᑎᑦᓯᓂᖅ ᐱᓕᕆᐊᖃᖅᑐᓂᒃ. ᓱᕗᓂᒥ ᑎᓖᓱ ᒐᕙᒪᖓᑦ (TG) ᑲᑎᓯᒪᓂᖏᑦ ᓅᕐᖃᖅᑐᓂᒃ ᑐᑭᓯᐅᒪᔾᔪᑎᒃᓴᓂᑦ ᖃᐅᔨᓴᖅᑎᓄᑦ ᓄᓇᓕᖕᓂ ᐱᓕᕆᐊᖃᖅᑐᑦ. ᑕᐃᒪᓐᓇ ᑲᑎᓯᒪᓂᖏᑦ ᐃᓚᒃᑲᖅᑎᑕᐅᓯᒪᓪᓗᑎᒃ ᑲᑎᓯᒪᓂᖏᑦ ᐊᑐᓕᖅᑎᑦᑐᓂᑦ ᐊᑐᓕᖅᑎᑦᓯᓇᐊᖅᑕᖏᑦ ᖃᐅᔨᓴᖅᑎᖏᑦ.	ᑎᓖᓱ ᒐᕙᒪᖓᑦ ᐊᒻᒪᓗ ᓄᓇᕗᑦ ᒐᕙᒪᖓᑦ (GNWT)	ᐱᒋᐊᓪᓗᑎᒃ ᔫᓂ 2020	ᐱᔭᕇᖅᑕᐅᓯᒪᓕᖅᑐᑦ
ᕿᒥᕐᕈᐃᓂᖅᑲᖅᓯᒋᑦ ᖃᐅᔨᓴᐃᓂᖅᑲᖅᐸᓐᓂᖅ						
ᕗᐃᑉᐹ ᓄᓇᒥᐅᑕᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔩᖏᑦ ᐊᑐᓕᖅᑯᔭᐅᓪᓗᑎᒃ #12-2019 (ᓵᑎ ᐃᐊᒃᕗ)	ᐃᐊᒃᕗ ᑐᒃᑐᐃᑦ ᐸᕝᕕᓭᖅᑕᐅᓕᖅᑯᓇᒋᑦ, ᐊᒻᒪᓗ ᑭᓯᐊᓂ ᖃᓂᒃᑕᓯᒪᓕᖅᐸᖅᑯᓪᓗᒋᑦ ᑐᒃᑐᓄᑦ ᐱᔭᕆᐊᖅᑲᓪᓚᕆᒃᑲᓪᓚᕐᒥᒃ, ᓄᓇᕗᑦ ᒐᕙᒪᖓᑦ (GNWT) ᐅᑭᐅᑕᒫᑦ ᕿᒥᕐᕈᐃᔭᖅᑐᖅᐸᓐᓂᕐᒥᒃ ᖃᐅᔨᓴᐃᓂᖅᑲᖅᓯᒋᑦ ᓵᑎ ᐃᐊᒃᕗ ᐊᒥᖅᑯᑎᖏᓐᓂ ᓄᖅᑲᖅᑎᑦᓯᓯᒪᓕᕆᐊᒃᑲᖅᑐᖅ.	ᓈᒻᒪᒋᔭᐅᔪᑦ	ᑎᓖᓱ ᒐᕙᒪᖓᑦ (TG) ᐊᒻᒪᓗ ᓄᓇᕗᑦ ᒐᕙᒪᖓᑦ (GNWT) ᐅᒃᐱᕈᓯᒻᒪᑕ ᐊᑐᓕᖅᑯᔭᐅᓪᓗᑎᒃ ᑐᕌᖓᑎᑕᐅᔭᕆᐊᖃᖅᑐᑦ ᓄᕋᖅᑲᖅᐹᐅᕙᑦᑐᓂᒃ ᕿᒥᕐᕈᐃᓂᖅᑲᖅᐸᓐᓂᕐᓄᑦ ᖃᐅᔨᓴᐃᓂᖅᑲᖅᓯᒋᑦ – ᑕᑯᓗᒋᑦ ᕗᐃᑉᐹ ᓄᓇᒥᐅᑕᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔩᖏᑦ (WRRB) ᐅᓂᒃᑲᐅᓯᕆᓯᒪᓪᓗᒋᑦ ᐅᖃᐅᓯᒃᓴᕆᔭᖏᑦ ᒪᒃᐱᕋᖓ 61-ᒥ ᕗᐃᑉᐹ ᓄᓇᒥᐅᑕᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔩᖏᑦ (WRRB) ᐱᔾᔪᑎᒋᓯᒪᔭᒥᓐᓄᑦ ᐃᓱᒪᓕᐅᕈᑎᒥᓂ ᐅᖃᐅᓯᒃᓴᓕᐊᕆᓯᒪᔭᖏᑦ. ᑎᓖᓱ ᒐᕙᒪᖓᑦ (TG) ᐊᒻᒪᓗ ᓄᓇᕗᑦ ᒐᕙᒪᖓᑦ (GNWT) ᐅᔾᔨᕈᓯᒃᑐᑦ ᐃᓱᒪᔾᔪᓯᕆᔭᐅᔪᑦ ᓄᖅᑲᖅᑎᑦᓯᓯᒪᓕᕐᒃᑯᔾᔪᑎᒃ ᓄᕋᖅᑲᐅᕙᑦᑐᓂ ᕿᒥᕐᕈᐃᓂᖅᑲᖅᓯᒋᑦ ᖃᐅᔨᓴᐃᓂᐅᕙᑦᑐᓄᑦ ᐱᔾᔪᑎᖃᕈᑎᖃᙱᓐᓂᖏᓐᓂᒃ ᑐᒃᑐᓂᒃ ᐸᕝᕕᓭᖅᐸᓐᓂᖏᓐᓂᒃ, ᑭᓯᐊᓂᓗ ᐊᑐᖅᓂᖅᑰᓂᖏᑦ ᑐᑭᓯᒋᐊᖅᑲᖅᓯᐅᑎᑦ ᓴᖑᓂᐊᕈᑎᐅᔪᓇᖅᓂᖏᓐᓂᒃ ᐱᔾᔪᑎᖃᖖᒑᖅᑕ.	ᓄᓇᕗᑦ ᒐᕙᒪᖓᑦ (GNWT)	ᐅᓪᓗᖓᓂᒃ ᐋᖅᑭᓯᒪᓕᖅᑲᐅᔭᕆᐊᖅᑲᖅᓯᒪᓗᑎᒃ	ᐱᔭᕇᖅᓯᒪᔪᑦ

ᓱᓇᐅᓂᖓ	ᐱᓕᕆᐊᖅ/ᐱᓕᕆᐊᕐᕕᖅ	ᑭᐅᔾᔨᑎᖏᑦ	ᑭᐅᔾᔨᑎᐅᔪᓄᑦ ᐱᔾᔪᑎᒋᔭᐅᔪᑦ	ᓯᕗᓕᖅᑎᐅᓪᓗᑎᒃ ᐱᓕᕆᐊᒃᓴᖃᕐᓃᑦ	ᐱᓕᕆᕝᕕᒃᓴᖃᖅᑎᑕᐅᓂᕐᓄᑦ ᑐᑭᒧᐊᒍᑎᒃᓴᐃᑦ	ᖃᓄᐃᓕᖓᓕᕐᓂᖏᑦ
ᐋᓕᑐᐃᓕᖅᑐᐃᓂᕐᒥᒃ						
ᐙᐃᑮᔾ ᓄᓇᒥᐅᑕᓕᕆᔾᔭᑦ ᑲᑎᒪᔨᖏᑦ ᐊᑐᓕᖁᔭᐅᓪᓗᑎᒃ #13-2019 (ᓵᑎ ᐃᐊᒃᕗ)	ᐊᖏᓂᖅᓴᒥᒃ ᑐᑭᓯᐅᒪᓂᖅᑕᖃᓕᖁᓪᓗᒍ ᐊᒥᖅᖁᑏᑦ ᓯᐊᒻᒪᒃᑎᖅᓯᒪᓂᖏᓐᓄᑦ, ᐃᖏᕐᕋᕝᓕᐊᕙᓂᖏᓐᓄᑦ, ᐊᒻᒪᓗ ᐊᓯᖏᓄᑦ ᐊᒥᖅᖁᑎᓄᑦ ᓄᒃᑎᖅᓯᒪᓕᕈᖅᐳᑉᐸᓂᖅᓄᑦ, ᓄᓇᕐᓯᐊᑉ ᒐᕙᒪᖓᑦ (GNWT) ᐊᒥᓱᒻᒧᕆᐊᖅᑎᑦᓯᔪᕆᐊᖃᖅᐳᑦ ᖃᔅᓯᐅᓂᖏᓂᒃ ᐆᓚᐅᑎᓕᖅᑐᐃᕙᓂᖏᓐᓂ ᓵᑎ ᐃᐊᒃᕗ ᐊᒥᖅᖁᑎᖏᓐᓂᒃ 50-ᓂᑦ 70-ᓄᑦ. ᐊᓯᒃᑲᓂᖏᓂᒃ ᖃᐅᔨᐊᖅᑕᐅᓯᒪᔪᓂᒃ ᑲᑎᖅᓯᐃᓯᒪᓂᖅ ᐆᓚᐅᑎᓕᖅᑐᒐᐅᓯᒪᔪᓂᑦ ᑐᓂᔭᐅᓯᒪᕆᐊᖃᖅᑐᑦ ᐙᐃᑮᔾ ᓄᓇᒥᐅᑕᓕᕆᔾᔭᑦ ᑲᑎᒪᔨᖏᑦ (WRRB) ᓄᓇᕐᓯᐊᑉ ᒐᕙᒪᖓᓂᑦ (GNWT) ᐅᑭᐅᑖᒦᑦ ᐃᓚᖃᖅᑎᓪᓗᒋᑦ ᑭᓯᐊᓂᓗ ᑭᒡᓕᖃᖅᑎᑕᐅᓇᑎᒃ ᒪᑯᓇᖓ: 1) ᓯᐊᒻᒪᒃᑎᑕᐅᓯᒪᓕᓪᓗᑎᒃ ᓄᕐᕋᖃᕐᕕᐅᔪᓄᑦ ᑐᕌᖓᑎᓪᓗᒋᑦ ᑕᐃᒪᙵᓂᑐᖃᒥᑦ ᑐᑭᓯᐊᕐᕕᒃᓴᖃᕐᑎᐅᔪᓄᑦ; 2) ᖃᖓᐅᑎᓪᓗᒍ ᓄᕐᕋᖃᓕᖅᓯᒪᕙᓂᕐᓂᒃ ᑐᕌᖓᑎᓪᓗᒋᑦ ᑕᐃᒪᙵᓂᑐᖃᒥᑦ ᑐᑭᓯᐊᕐᕕᒃᓴᖃᕐᑎᓄᑦ; 3) ᓄᕐᕋᐃᑦ: ᐊᕐᓇᓪᓗᐃᑦ ᖃᔅᓯᐅᓂᖏᑦ; ᐊᒻᒪᓗ, 4) ᑯᑎᖕᓂᕆᔭᐅᔪᑦ ᐊᒥᖅᖁᑏᑦ ᑭᐳᒃᓯᒪᓕᖅᐸᓂᖏᑦ ᐊᒻᒪᓗ ᓄᓕᐊᓕᖅᐸᓂᖏᑦ ᓇᓂ.	**ᐊᔾᔨᒌᙱᓐᓂᖃᕐᕕᐅᔪᑦ** – ᐊᑐᓕᖁᔭᐅᓪᓗᑎᒃ #-13-2019 (ᓵᑎ ᐃᐊᒃᕗ): ᐆᓚᐅᑎᓕᖅᑐᒐᐅᕙᓂᖏᑦ: ᐊᖏᓂᖅᓴᒥᒃ ᑐᑭᓯᐅᒪᓂᖅᑕᖃᓕᖁᓪᓗᒍ ᐊᒥᖅᖁᑏᑦ ᓯᐊᒻᒪᒃᑎᖅᓯᒪᓂᖏᓐᓄᑦ, ᐃᖏᕐᕋᕝᓕᐊᕙᓂᖏᓐᓄᑦ, ᐊᒻᒪᓗ ᐊᓯᖏᓄᑦ ᐊᒥᖅᖁᑎᓄᑦ ᓄᒃᑎᖅᓯᒪᓕᕈᖅᐳᑉᐸᓂᖅᓄᑦ, ᓄᓇᕐᓯᐊᑉ ᒐᕙᒪᖓᑦ (GNWT) ᐊᒥᓱᒻᒧᕆᐊᖅᑎᑦᓯᔪᕆᐊᖃᖅᐳᑦ ᖃᔅᓯᐅᓂᖏᓐᓂᒃ ᐆᓚᐅᑎᓕᖅᑐᐃᕙᓂᖏᓐᓂ ᓵᑎ ᐃᐊᒃᕗ ᐊᒥᖅᖁᑎᖏᓐᓂᒃ 50-ᓂᑦ 70-ᓄᑦ (50-ᐅᓪᓗᑎᒃ ᐊᕐᓇᓪᓗᐃᑦ ᐊᒻᒪᓗ 20-ᐅᓪᓗᑎᒃ ᐊᖑᓯᓪᓗᐃᑦ). ᐊᕙᑎᓕᕆᔾᔪᑦ ᓄᓇᒥᐅᑕᓕᕆᔾᔪᓪᓗ ᐱᕈᖅᑲᓂᕈᓐᓇᖅᑐᓕᕆᔾᔨᒋᑦ (ENR) ᐅᓂᒃᑳᓕᐊᕆᕙᑦᑕᖏᑦ ᐃᓚᖃᖅᑎᑕᐅᓯᒪᓪᓗᑎᒃ ᖃᐅᔨᓴᐃᓂᐅᓯᒪᔪᓂᒃ ᑐᙵᕝᕕᖃᖅᑎᑕᐅᓪᓗᑎᒃ ᐆᓚᐅᑎᓕᖅᑐᐃᕙᓂᕐᓂᑦ ᑐᑭᓯᐊᕐᕕᒃᓴᖁᑎᓄᑦ ᑐᓂᔭᐅᓯᒪᓕᕐᓂᐊᖅᑐᑦ ᐙᐃᑮᔾ ᓄᓇᒥᐅᑕᓕᕆᔾᔭᑦ ᑲᑎᒪᔨᖏᑦ (WRRB) ᐱᔭᕇᖅᑕᐅᓯᒪᓕᕚᖓᑕ.	ᑐᒃᑐᑦ ᐆᓚᐅᑎᓕᖅᑐᒐᐅᓯᒪᔪᓂᑦ ᑐᑭᓯᐊᕐᕕᒃᓴᖃᖅᑎᑕᐅᔪᑦ ᐊᑐᖅᑕᐅᕙᓪᓚᑕ ᐊᒥᓱᓄᑦ ᐱᓕᕆᔾᔪᑎᐅᕙᒃᓯᑎᒃ ᓄᓇᕐᓯᐊᑉ ᒐᕙᒪᖓᓂᑦ (GNWT) ᐊᒻᒪᓗ ᐊᓯᖏᓂᑦ ᑲᑐᔾᔮᖃᑎᒌᖑᕝᔪᓂᑦ ᖃᐅᔨᓴᐃᓂᕐᓂ ᐅᕝᕙᓘᓐᓃᑦ ᐊᑐᓕᖅᑎᑕᐅᓯᒪᓪᓗᑎᒃ ᐊᐅᓚᓯᓂᐅᓕᖅᓯᒪᔪᓄᑦ. ᓲᖑᓗ, ᐅᔭᕐᑕᕆᐊᑦ ᐊᑐᖅᐸᓪᓚᑕ ᐆᓚᐅᑎᓕᖅᑐᒐᐅᓯᒪᔪᓂᑦ ᑐᑭᓯᐊᕐᕕᒃᓴᖃᖅᑎᑕᐅᓯᒪᔪᓄᑦ. ᓲᖑᓗ, ᐅᔭᕐᑕᕆᐊᑦ ᐊᑐᖅᐸᓪᓚᑕ ᐆᓚᐅᑎᓕᖅᑐᒐᐅᓯᒪᔪᓂᑦ ᑐᑭᓯᐊᕐᕕᒃᓴᖃᖅᑎᑕᐅᓯᒪᔪᓂᑦ ᐅᔾᔨᕆᔭᐅᕙᓯᑦᑐᓗᑎᒃ ᖃᖓᑕᐅᓕᖅᑎᑦᓯᔪᒪᓂᖅᐳᑦ ᐊᕙᑎᕆᔭᖏᓐᓂᕐᓕᖅᐸᓐᓂᖏᑦ ᐊᒻᒪᓗ ᖃᓄᐃᓕᕿᑎᓯᑦᑕᐃᓕᔾᔪᑎᓂᒃ ᐱᓕᕆᓂᖃᓕᕈᓐᓇᖅᐸᒃᓯᑎᒃ. ᕿᖑᓚᐅᑦ ᐊᒥᖅᖁᑎᖏᓐᓄᑦ, ᐃᐊᒃᕗ ᓇᐋᔾᐅᐃᑎ ᑲᐟᐋ ᐱᓕᕆᐊᑦ ᐊᑐᖅᐸᒃᑐᑦ ᖃᐅᑕᒫᑦ ᐆᓚᐅᑎᓕᖅᑐᒐᐅᓯᒪᔪᑦ ᓇᓃᓐᓂᖏᓐᓂᒃ ᐸᕐᓇᐅᑎᓕᐅᕐᓂᐊᖅᓯᑎᒃ ᖃᐅᔨᓴᐃᓂᕐᓂ ᐱᓕᕆᓂᐅᕙᒃᑐᓄᑦ ᔪᓚᐃᒥ ᐊᒻᒪᓗ ᐋᒡᒌᓯᒥ. ᓄᓇᕐᓯᐊᑉ ᒐᕙᒪᖓᓂᑦ (GNWT) ᐅᔾᔨᕈᓯᒃᑐᑦ ᒪᑯᓂᖓ, ᑭᓯᐊᓂᓗ: · ᔫᓂ 2018-ᒥ ᖃᐅᔨᓴᐃᓂᐅᓚᐅᖅᑐᑦ ᐅᖃᖅᓯᒪᓚᐅᕐᒪᑕ ᓵᑎ ᐃᐊᒃᕗ ᐊᒥᖅᖁᑎᖏᑦ ᐳᓛᓐᔪᕐ ᐊᓯᖏᓂᓪᓗ ᐅᓂᒃᑳᓕᐊᕝᕙᓯᒪᔪᑦ (2019) ᐃᓚᖃᕐᓂᖏᑕ ᒪᓐᓇᒧᑦ ᑎᑭᓯᒪᓪᓗᑎᑦ ᖃᐅᔨᒋᐊᖅᓯᒪᓂᕐᓂᒃ ᐊᒥᖅᖁᑎᐅᔪᑦ ᓄᓇᙳᐊᑎᒍᑦ ᓇᓃᓕᓚᐅᕐᓂᖏᓐᓂᒃ ᑎᑭᑦᓯᒋᑦ 2018-ᒧᑦ. ᐃᓚᖃᖅᑐᑦ, ᓲᖑᓗ, ᖃᐅᔨᒋᐊᕈᑎᐅᓯᒪᔪᓂᒃ ᓄᕐᕋᖃᕝᕕᐅᔪᑦ ᐳᓘᓃᕐ-ᑲᓇᓐᓇᒥ ᑐᒃᑐᖏᓂ ᐆᓚᐅᑎᓕᖅᑐᒐᐅᓯᒪᓪᓗᑎᒃ ᐊᕐᓇᓪᓗᐃᑦ ᑲᑎᙵᐃᓐᓇᖅᐸᓪᓚᖕᓛᑕ ᐊᒥᖅᑲᓇᔭᐅᔪᓄᑦ ᐃᓚᖏᔭᐅᖃᑕᐅᕝᕙᓪᒥᓐᓄᑦ ᐊᒻᒪᓗ ᖃᓄᖅ ᖁᑦᓯᒃᑎᒋᓂᖃᕐᓂᖏᑦ ᐊᓯᔾᔨᖅᓯᒪᓕᖅᐸᓂᐅᔪᓄᑦ ᒪᕿᐦᓪᓗᑎᒃ ᐊᒥᖅᖁᑎᐅᔪᓄᑦ, ᖃᐅᔨᒋᐊᕈᑎᐅᓯᒪᔪᓂᒃ ᖃᖓ ᐊᒥᓲᓂᖅᐸᐅᓕᕝᕙᖃᕐᐸᓪᓚᖕᓛᑕ ᓄᕐᕋᖃᓕᕐᓯᒪᓂᐅᕙᒃᑐᑦ ᐊᒥᖅᖁᑎᐅᔪᓂ ᑐᙵᕝᕕᖃᖅᑎᓪᓗᒋᑦ ᓅᐸᑉᐸᓕᐊᓂᐅᕙᒃᑐᑦ ᖁᑎᖕᓂᕆᔭᖏᓐᓄᑦ ᐆᓚᐅᑎᓕᖅᑐᒐᐅᓯᒪᓪᓗᑎᒃ ᐊᕐᓇᓪᓗᓐᓂ, ᓇᐃᒡᓕᒋᐊᖅᓯᒪᓪᓗᑎᑦ ᒫᓐᓇᓵᖑᔪᓚᐅᖅᑐᒥ ᓄᕐᕋᐃᑦ-ᐊᕐᓇᓪᓗᐃᑦ ᖃᓄᑎᒌᓐᓂᖏᑦ ᐊᒥᓲᓂᖏᑎᒍᑦ ᐊᒥᖅᖁᑎᐅᔪᓂ, ᓇᐃᒡᓕᒋᐊᖅᓯᒪᓪᓗᑎᑦ ᐆᓚᐅᑎᓕᖅᑐᒐᐅᓯᒪᔪᓄᑦ ᑐᙵᕝᕕᖃᖅᑐᓄᑦᐊᒻᒪᓗ ᐱᓕᕆᔾᔪᑎᓄᑦ ᑐᙵᕝᕕᖃᖅᑎᑕᐅᔪᓄᑦ ᐊᕐᓇᓪᓗᐃᑦ ᑐᒃᑐᑦ ᐊᓇᐅᒪᓯᒪᔪᓄᑦ ᓇᓚᐅᑦᓵᖅᑕᐅᓯᒪᓂᖏᑦ, ᐊᒻᒪᓗ ᐊᕙᑎᒋᔭᖏᓐᓂᒃ ᖃᐅᔨᒋᐊᕐᓂᐅᓚᐅᖅᑐᑦ ᒫᓐᓇᓵᖑᔪᓚᐅᖅᑐᒥ ᒪᓕᒃᑐᖅᐅᑎᓪᓗᑎᒃ ᔫᓂᒥ ᓇᓐᓂᐅᓚᐅᖅᑐᓄᑦ ᓄᕐᕋᖃᕝᕕᐅᕙᒃᑐᓂ (ᓲᖑᓗ ᖃᓄᖅ ᐅᖓᓯᒃᑎᒋᓯᒪᓕᕐᓂᖏᑦ ᐅᑭᐅᒥᒃ ᐊᑕᐅᓯᕐᒥᒃ ᐆᓚᐅᑎᓕᖅᑐᒐᐅᓯᒪᔪᑦ ᐊᕐᓇᓪᓗᐃᑦ ᓇᓐᓂᓂᕆᓕᖅᑕᒥᓐᓄᑦ ᐅᑭᐅᖑᓚᐅᖅᑐᒥ ᓇᓐᓂᓂᕆᓚᐅᖅᑕᖏᓐᓂᑦ. ᓄᓇᕐᓯᐊᑉ ᒐᕙᒪᖓᑦ (GNWT) ᑲᔪᓯᑎᑦᓯᓯᒪᓂᐊᖅᑐᑦ ᐱᑕᖃᖅᑎᑦᓯᕙᓐᓂᖏᓐᓂᒃ ᑕᒪᒃᑯᓂᖓ ᓇᓗᓇᐃᔭᖅᑕᐅᓯᒪᓪᓗᑎᒃ ᖃᐅᔨᒋᐊᕐᓂᐅᓚᐅᖅᓯᒪᔪᓄᑦ ᐅᑭᐅᓂ ᓄᕐᕋᖃᕝᕕᐅᔪᓂᒃ ᐊᔾᔨᓕᐅᕆᕙᒃᓯᑎᒃ ᖃᐅᔨᓴᐃᓂᐅᓚᐅᖅᑐᓂᑦ. · ᐙᐃᑮᔾ ᓄᓇᒥᐅᑕᓕᕆᔾᔭᑦ ᑲᑎᒪᔨᖏᑦ (WRRB) ᐱᓕᕆᐊᖅᑲᖅᑎᐅᓕᕈᒪᒃᐸᑕ ᐊᓯᒃᑲᓂᖏᑎᒍᑦ ᖃᐅᔨᒋᐊᖅᐸᓐᓂᖏᓐᓂᒃ ᐆᓚᐅᑎᓕᖅᑐᒐᐅᓯᒪᔪᓂᑦ ᑐᑭᓯᒋᐊᕐᕕᖏᓐᓂᒃ, ᓄᓇᕐᓯᐊᑉ ᒐᕙᒪᖓᑦ (GNWT) ᑐᑭᓯᒋᐊᕐᕕᒃᓴᖏᓐᓂᒃ ᐊᑐᐃᓐᓇᐅᓕᖅᑎᑦᓯᓂᐊᖅᑐᑦ ᑐᑭᓯᒋᐊᕐᕕᒃᓴᖏᓐᓂᒃ ᐊᒥᖅᑲᖏᖃᑎᖃᕈᑎᖃᖏᓐᓂᖏ ᐊᖏᕈᑎᑎᒍᑦ. · ᐊᓯᖏᑦᑕᐅᖅ ᓇᓕᑐᐃᓐᓇᖏᑦ ᐱᔭᕇᖅᑕᐅᓯᒪᓪᓗᑎᒃ ᐅᓂᒃᑳᓕᐊᕝᕙᓯᒪᔪᑦ ᓄᓇᕐᓯᐊᑉ ᒐᕙᒪᖓᓂᑦ (GNWT) ᐊᑐᖅᑕᐅᕙᑦᑐᑦ ᓵᑎ ᐃᐊᒃᕗ ᐊᒥᖅᖁᑎᖏᓐᓂᑦ ᐆᓚᐅᑎᓕᖅᑐᐃᕙᓂᖏᓐᓂᒃ ᑐᑭᓯᒋᐊᕐᕕᒃᓴᖏᓐᓂᒃ ᐊᑐᐃᓐᓇᐅᓕᖅᑎᑕᐅᔭᕐᓇᒥᔪᑦ ᐙᐃᑮᔾ ᓄᓇᒥᐅᑕᓕᕆᔾᔭᑦ ᑲᑎᒪᔨᖏᑦ (WRRB). ᐊᑕᐅᓯᖅ ᐆᒃᑐᕋᐅᑎᐅᔭᕐᓇᖅᓯᓂ ᓇᐃᑑᓪᓗᓂ ᖃᐅᔨᓴᐃᓂᕐᒧᑦ ᐅᓂᒃᑳᓕᐊᕝᕙᒃᓯᓂ ᓄᓇᕐᓯᐊᑉ ᒐᕙᒪᖓᓂᑦ (GNWT) ᐅᑭᐅᖑᑎᓪᓗᒍ ᐆᓚᐅᑎᓕᖅᑐᐃᕙᓂᖏᓐᒥᒃ ᑐᒃᑐᓂ ᐱᔭᕇᖅᑕᐅᓯᒪᓕᕆᕗᑦ. ᓇᐃᓪᓕᒋᐊᖅᑕᐅᓯᒪᓪᓗᑎᒃ ᑐᒃᑐᓄᑦ ᑲᑎᑕᐅᓯᒪᓪᓗᑎᒃ ᖃᐅᔨᓴᐃᓂᐅᓯᒪᔪᓄᑦ ᔫᓂ, ᐅᑐᐱᕆ ᐊᒻᒪᓗ ᒫᕐᓯ/ᐋᐳᓗ ᑕᖅᑭᖏᓄᑦ ᐃᓚᖃᖅᑎᑕᐅᔪᑦ ᓄᓇᙳᐊᓕᐊᕝᕙᓯᒪᔪᓂᒃ ᓇᓗᓇᐃᔭᐃᓯᒪᓪᓗᑎᒃ ᐆᓚᐅᑎᓕᖅᑐᐃᓯᒪᓂᕐᓄᑦ ᖃᐅᔨᓴᐃᓂᖃᖅᑎᓪᓗᒋᑦ, ᐊᒻᒪᓗ ᑖᒃᑯᐊ ᐊᑐᐃᓐᓇᐅᓕᖅᑎᑕᐅᔪᓇᕗᑦ ᐙᐃᑮᔾ ᓄᓇᒥᐅᑕᓕᕆᔾᔭᑦ ᑲᑎᒪᔨᖏᑦ (WRRB). ᐳᓛᓐᔪᕐ, ᔾ. ᔾ. ᐋᑕᓯᐅᕐᑭ, ᔾ. ᓂᓯ, ᑏ. ᑲᓚᕝ, ᔾ. ᒍᐃᓕᐊᔅ, H. ᓴᐃᔾᓐ-ᑯᕋᕗᕐ, ᐊᒻᒪᓗ ᐃᐊᑦ. ᐃᒡ. ᓚᒃᓘᒃ. 2019–ᒥ. ᓇᓚᐅᑦᓵᖅᑕᐅᓯᒪᓪᓗᑎᒃ ᓄᕐᕋᓕᐅᖅᑐᑦ ᐊᕐᓇᓪᓗᐃᑦ ᐊᒻᒪᓗ ᐃᓐᓇᐅᓕᖅᑐᑦ ᐊᒥᖅᖁᑎᐅᔪᑦ ᐊᖏᓂᕆᔭᖏᓐᓂᒃ ᐊᒻᒪᓗ ᖃᐅᔨᒋᐊᕈᑎᐅᓯᒪᔪᓂᒃ ᓄᓇᙳᐊᑎᒍᑦ ᓇᓗᓇᐃᔭᐃᓂᕐᓂ ᐳᓘᓃᕐ-ᑲᓇᓐᓇᒥ ᐊᒥᖅᖁᑎᒋᔭᐅᔪᓂᒃ ᓄᓇᐃᓐᓇᒥᐅᑕᓄᑦ ᑐᒃᑐᓄᑦ: 2018 ᓄᕐᕋᖃᕝᕕᐅᔪᓂ ᐊᔾᔨᓕᐅᕆᓪᓗᑎᒃ ᖃᐅᔨᓴᐃᓂᖅ. ᐊᕙᑎᓕᕆᔾᔪᑦ ᓄᓇᒥᐅᑕᓕᕆᔾᔪᓪᓗ ᐱᕈᖅᑲᓂᕈᓐᓇᖅᑐᓕᕆᔾᔨᒋᑦ, ᓄᓇᕐᓯᐊᑉ ᒐᕙᒪᖓᓂᑦ (GNWT), ᔭᓘᓇᐃ, ᓄᓇᕐᓯᐊᒥ, ᑲᓇᑕ. ᑎᑎᕋᖅᑕᐅᓯᒪᔪᑦ ᐅᓂᒃᑳᓕᐊᑦ 278-ᖓ.	ᓄᓇᕐᓯᐊᑉ ᒐᕙᒪᖓᑦ (GNWT)	ᐱᒋᐊᕐᓗᑎᒃ 2019	ᑲᔪᓯᑎᑕᐅᓯᒪᔪᑦ

ᕗᐃᑭᔮ ᓄᓇᒥᐅᑕᓕᕆᔩᒃᑯᑦ ᑲᑎᒪᔨᖏᑦ ᐊᑐᓕᖅᑯᔭᐅᓪᓗᑎᒃ #14-2019 (ᓵᑎ ᐃᐊᒃᕗ)	ᑐᕌᖓᓂᖃᖃᑕᐅᓪᓗᓂ ᐃᓱᒪᒋᔭᐅᓂᕐᓂᑦ ᐃᓄᑐᖃᐅᔪᓂᑦ ᐊᒻᒪᓗ ᓇᓗᓇᐃᔭᖅᑕᐅᓯᒪᓕᕐᑯᓪᓗᒋᑦ ᓱᓇᓂᒃ ᖃᐅᔨᒋᐊᓇᐊᖃᖅᐸᓐᓂᐅᔪᑦ ᐊᖏᓂᖅᓴᐅᓪᓗᑎᒃ ᖃᐅᔨᓴᕈᑦᓴᓂᒃ ᐱᓯᒪᓕᕐᓇᐊᖃᖅᐸᓐᓂᕐᓄᑦ, ᑎᓖᓯ ᒐᕙᒪᖓᑦ (TG) ᐊᒻᒪᓗ ᓄᓇᑦᓯᐊᑉ ᒐᕙᒪᖓᑦ (GNWT) ᓴᖅᐱᕙᒋᐊᖃᖅᑐᑦ ᓇᓗᓇᐃᔭᖅᑕᐅᓯᒪᓪᓗᑎᒃ ᑐᑭᓯᐅᑎᑕᐅᔪᓄᑦ ᐃᓱᒪᒋᔭᐅᓯᒪᓪᓗᑎᒃ ᓈᓚᐅᑎᓕᖅᑐᐃᕙᓐᓂᕐᒥᓐᓂ ᐊᒥᓱᖕᒍᓇᐊᖅᓯᒪᓂᐅᔪᒃ ᕗᐃᑭᔮ ᓄᓇᒥᐅᑕᓕᕆᔩᒃᑯᑦ ᑲᑎᒪᔨᖏᑦ (WRRB). ᑖᒃᑯᐊ ᐱᔭᕇᖅᑕᐅᓯᒪᓕᕐᓂᐊᖅᑐᑦ ᐊᑐᕐᓗᑎᒃ ᓈᓚᐅᑎᓕᖅᑐᒐᐅᓯᒪᔪᓂᑦ ᐅᑭᐅᑕᒫᑦ ᐱᓕᕆᐊᖑᕙᓐᓂᐊᕐᓗᑎᒃ ᐃᓚᐅᑎᓪᓗᒋᑦ ᐋᖅᑭᒋᐊᖅᑕᐅᓯᒪᓪᓗᑎᒃ ᐊᐅᓚᔪᓂᖃᕐᓂᕐᓄᑦ	**ᐊᔾᔨᒌᙱᓐᓂᖅᑲᖅᕕᐅᔪᑦ** – ᑎᓖᓯ ᒐᕙᒪᖓᑦ (TG) ᐊᒻᒪᓗ ᐊᕙᑎᓕᕆᔩᒃᑯᑦ ᓄᓇᒥᐅᑕᓕᕆᔩᒃᑯᓪᓗ ᐱᕈᒃᑲᓐᓂᕈᓐᓇᖅᑐᓕᕆᓂᕐᒧᑦ (ENR) ᐊᔾᔨᒋᙱᑦᑕᖏᑎᒍᑦ ᐅᖃᖅᓯᒪᕗᑦ "ᐊᑐᓕᖅᑯᔭᐅᓪᓗᑎᒃ #14-2019"-ᒧᑦ ᐃᒪᓐᓇ ᐅᖃᖅᓯᒪᓪᓗᑎᑦ: ᐊᑐᓕᖅᑯᔭᐅᓪᓗᑎᒃ #14-2019 (ᓵᑎ ᐃᐊᒃᕗ): ᓈᓚᐅᑎᓕᖅᑐᒐᐅᕙᓐᓂᖏᑦ: ᑐᕌᖓᓂᖃᖃᑕᐅᓪᓗᓂ ᐃᓱᒪᒋᔭᐅᓂᕐᓂᑦ ᐃᓄᑐᖃᐅᔪᓂᑦ ᐊᒻᒪᓗ ᓇᓗᓇᐃᔭᖅᑕᐅᓯᒪᓕᕐᑯᓪᓗᒋᑦ ᓱᓇᓂᒃ ᖃᐅᔨᒋᐊᓇᐊᖃᖅᐸᓐᓂᐅᔪᑦ ᐊᖏᓂᖅᓴᐅᓪᓗᑎᒃ ᖃᐅᔨᓴᕈᑦᓴᓂᒃ ᐱᓯᒪᓕᕐᓇᐊᖃᖅᐸᓐᓂᕐᓄᑦ, ᑎᓖᓯ ᒐᕙᒪᖓᑦ (TG) ᐊᒻᒪᓗ ᓄᓇᑦᓯᐊᑉ ᒐᕙᒪᖓᑦ (GNWT) ᓴᖅᐱᕙᒋᐊᖃᖅᑐᑦ ᓇᓗᓇᐃᔭᖅᑕᐅᓯᒪᓪᓗᑎᒃ ᑐᑭᓯᐅᑎᑕᐅᔪᓄᑦ ᐃᓱᒪᒋᔭᐅᓯᒪᓪᓗᑎᒃ ᓈᓚᐅᑎᓕᖅᑐᐃᕙᓐᓂᕐᒥᓐᓂ ᐊᒥᓱᖕᒍᓇᐊᖅᓯᒪᓂᐅᔪᒃ ᕗᐃᑭᔮ ᓄᓇᒥᐅᑕᓕᕆᔩᒃᑯᑦ ᑲᑎᒪᔨᖏᑦ (WRRB).	ᓄᓇᑦᓯᐊᑉ ᒐᕙᒪᖓᑦ (GNWT) ᐱᑕᖃᖅᑎᑦᓯᓯᒪᓕᓚᐅᖅᑐᑦ ᕗᐃᑭᔮ ᓄᓇᒥᐅᑕᓕᕆᔩᒃᑯᑦ ᑲᑎᒪᔨᖏᑦ (WRRB) ᓇᓗᓇᐃᔭᖅᑕᐅᓯᒪᓪᓗᑎᒃ ᑐᑭᓯᐅᑎᑕᐅᔪᓄᑦ ᐃᓱᒪᒋᔭᐅᓯᒪᓪᓗᑎᒃ ᐊᒥᓱᖕᒍᓇᐊᖅᑎᑦᓯᓯᒪᓂᖏᓐᓄᑦ ᖁᒻᒧᐊᒃᑎᑕᐅᓯᒪᔪᑎᒨᖅᑐᓂᒃ ᓈᓚᐅᑎᓕᖅᑐᐃᓂᖏᓐᓄᑦ ᕿᖑᖓᐅᑦ ᐊᒥᖅᑕᖅᑯᑎᖏᓐᓂ (ᐋᑕᒻᓯᐅᔅᑭ ᐊᒻᒪᓗ ᔾᐸᓖᓐᔪᕐ, 2016). ᑐᑭᓯᐅᑎᑕᐅᔪᓄᑦ ᐃᓱᒪᒋᔭᐅᓯᒪᔪᑦ ᐱᑕᖃᖅᑎᑕᐅᔪᑦ ᐅᓂᒃᑳᓕᐊᖑᓯᒪᔪᓂ ᐊᑐᓕᖅᑎᑕᐅᔪᓐᓇᖅᑐᑦ ᓵᑎ ᐃᐊᒃᕗ ᐊᒥᖅᑕᖅᑎᖏᓐᓄᑦ. ᑖᒃᑯᐊ ᐅᓂᒃᑳᓕᐊᖑᓯᒪᔪᑦ ᐃᓱᒪᓕᐅᕈᑎᖃᖅᓯᒪᕗᑦ ᐊᑐᓕᖅᑎᑦᓯᖅᑯᔾᔭᐅᓪᓗᑎᒃ ᐊᒥᓱᖕᒍᓇᐊᑎᑕᐅᓯᒪᖅᑯᓪᓗᑎᒃ 65-ᓄᑦ ᓈᓚᐅᑎᓕᖅᑐᒐᐅᓯᒪᔪᑦ ᕿᖑᖓᐅᑦ ᐊᒥᖅᑕᖅᑯᑎᖏᓐᓂ, ᐃᓱᒪᒋᖅᑲᓯᐅᑎᓪᓗᑎᑦ ᖃᔅᓯᐅᔪᓂᒃ ᖁᒻᒧᐊᒃᑎᑕᐅᓯᒪᔪᑎᒍᑦ ᓈᓚᐅᑎᓕᖅᑐᒐᐅᓯᒪᓇᔭᖅᑐᑦ ᐊᒻᒪᓗ ᐃᓱᒪᓕᐅᕈᑎᐅᓯᒪᓪᓗᑎᒃ ᐊᑐᓕᖅᑎᑦᓯᖅᑯᔾᔨᓂᖅᓄᑦ ᖃᔅᓯᐅᔪᓂᒃ ᓈᓚᐅᑎᓕᖅᑐᐃᓂᐊᖅᓂᖅᒧᑦ ᑖᒃᑯᓄᖓ ᐊᑐᓕᖅᑎᑕᐅᔪᓄᑦ. 2015-ᒥ ᑎᓖᓯ ᒐᕙᒪᖓᑦ (TG) ᓈᒻᒪᒃᓴᐃᓯᒪᓕᓚᐅᖅᒪᑕ ᐊᒥᓱᖕᒍᓇᐊᖅᑎᑕᐅᔪᒪᔪᓂᒃ ᕿᖑᖓᐅᑦ ᐊᒥᖅᑕᖅᑯᑎᖏᓂ ᓈᓚᐅᑎᓕᖅᑐᐃᓂᖅᓄᑦ ᐊᒥᓲᓂᖓᔭᐅᔪᓂᒃ 30-ᓄᑦ ᐊᖅᓇᓪᓗᖅᓄᑦ ᐊᒻᒪᓗ 20-ᓄᑦ ᐊᖑᑦᓯᓪᓗᖅᓄᑦ (50-ᐅᓪᓗᑎᒃ ᑲᑎᓪᓗᒋᑦ), ᐊᒻᒪᓗ 2019-ᒥ ᑲᑐᔾᔨᓂᖅᑲᖅᓯᑎᒃ ᐊᐅᓚᔪᓂᖅᑲᖅᓂᖅᒧᑦ ᐃᓱᒪᓕᐅᕈᑎᐅᓯᒪᔪᑦ ᕿᖑᖓᐅᑦ ᐊᒻᒪᓗ ᓵᑎ ᐃᐊᒃᕗ ᐊᒥᖅᑕᖅᑎᖏᓐᓄᑦ ᑎᓖᓯ ᒐᕙᒪᖓᓂᑦ (TG) ᐊᒻᒪᓗ ᓄᓇᑦᓯᐊᑉ ᒐᕙᒪᖓᓂᑦ (GNWT) ᐃᓚᖅᑲᓚᐅᖅᑐᑦ ᐊᒥᓱᖕᒍᓇᐊᖅᑎᑦᓯᓂᖅᒥᒃ ᑎᑭᑦᓯᒋᑦ 70-ᓄᑦ ᓈᒪᐅᑎᓕᖅᑐᒐᐅᓯᒪᔪᓄᑦ (50-ᐅᓪᓗᑎᒃ ᐊᖅᓇᓪᓗᐃᑦ ᐊᒻᒪᓗ 20-ᐅᓪᓗᑎᒃ ᐊᖑᑦᓯᓪᓗᐃᑦ) ᐊᑐᓂ ᒪᕐᕈᐃᖑᓪᓗᑎᒃ ᐊᒥᖅᑕᖅᑎᐅᔪᓂ. 70-ᐅᓪᓗᑎᒃ ᓈᓚᐅᑎᓕᖅᑐᒐᐅᓯᒪᔪᑦ (50 ᐊᒻᒪᓗ 20) ᐃᓚᖓᒍᑦ ᑐᙵᕕᖃᖅᑎᑕᐅᓚᐅᖅᑐᑦ ᖃᐅᔨᒋᐊᕈᑎᐅᓚᐅᖅᑐᓂᑦ ᐋᑕᒻᓯᐅᔅᑭᒥᑦ ᐊᒻᒪᓗ ᔾᐸᓖᓐᔪᕐᒥᑦ, (2016) ᐊᒻᒪᓗ ᐃᓕᑕᖅᓯᓯᒪᓪᓗᑎᒃ ᐱᒻᒪᕆᐅᓂᖓᑕ ᑲᔪᓯᑎᑕᐅᓂᒃᓴᖓᓄᑦ ᓇᔪᓯᖅᑐᐃᓐᓂᐅᔪᑦ ᐊᖑᑦᓯᓪᓗᖏᓂᒃ ᑖᒃᑯᓇᙵᑦ ᐊᒥᖅᑕᖅᑎᐅᔪᓂᑦ. ᓄᓇᑦᓯᐊᑉ ᒐᕙᒪᖓᑦ (GNWT) ᐃᓱᒪᓕᐅᖅᐳᑦ ᐅᑭᐅᑕᒫᑦ ᖃᐅᔨᒋᐊᖅᑕᐅᕙᖅᑐᑦ ᓈᓚᐅᑎᓕᖅᑐᒐᐅᓯᒪᔪᓂ ᐊᒥᓲᓂᖓᔭᐅᔪᑦ ᐱᔭᐅᓯᒪᓕᖅᑕᐅᔭᕆᐊᖃᖅᐸᒃᓯᒪᑎᒃ ᐊᐅᓚᔪᓂᖅᑲᖅᓂᖅ ᐊᑐᓕᖅᑎᑦᓯᓂᖅᒧᑦ ᑲᔪᓯᑎᑕᐅᔭᕆᐊᖃᙱᓐᓂᖓᑕ, ᑭᓯᐊᓂᓗ ᓄᓇᑦᓯᐊᑉ ᒐᕙᒪᖓᑦ ᐱᑕᖃᖅᑎᑦᓯᕙᒍᓐᓇᖅᑐᑦ ᐅᑭᐅᑕᒫᑦ ᓇᐃᓪᓕᒋᐊᖅᑕᐅᓯᒪᓪᓗᑎᒃ ᖃᔅᓯᐅᓂᖓᓄᑦ ᓈᓚᐅᑎᓕᖅᑐᒐᐅᓯᒪᔪᓂᑦ ᒪᕐᕈᐃᖑᓪᓗᑎᒃ ᐊᒥᖅᑕᖅᑎᓂᑦ ᑎᑎᕋᖅᑕᐅᓯᒪᔪᓂᒃ, ᐊᒻᒪᓗ ᐅᕙᓯᐊᕈᙱᑦᑲᓐᓂᖅᒥᒃᐸᑦ ᖃᐅᔨᒋᐊᖅᑕᐅᒃᑲᓐᓂᕈᓖᓐᓇᓪᓗᑎᒃ ᓈᒻᒪᖕᒪᖓᑦ ᓈᓚᐅᑎᓕᖅᑐᒐᐅᓯᒪᔪᓂ ᖃᔅᓯᐅᓂᖓᔭᐅᔪᑦ ᐃᓱᒪᒃᓴᖅᓯᐅᕈᑎᐅᔪᓐᓇᖅᑕ ᒪᓕᒃᓗᒋᑦ ᐋᖅᑭᒋᐊᖅᑕᐅᓯᒪᓪᓗᑎᒃ ᐊᐅᓚᔪᓂᖅᑲᖅᓂᖅ ᑐᙵᕕᖃᖅᑎᑦᓯᓂᐅᔪᑦ ("ᐊᑐᓕᖅᑎᑕᐅᖅᑯᓪᓗᒋᑦ #9-2019"). ᐋᑕᒻᓯᐅᔅᑭ, ᔨ. ᐊᒻᒪᓗ ᔨ. ᔾᐸᓖᓐᔪᕐᒥ. 2016. ᓴᓇᕈᑎᓕᕆᓂᕐᒥ ᑐᑭᓯᐅᑎᑕᐅᔪᓄᑦ ᐃᓱᒪᒋᔭᐅᓯᒪᔪᑦ ᐊᒥᓱᖕᒍᓇᐊᖅᑎᑕᐅᖅᑯᓪᓗᒋᑦ ᖃᔅᓯᐅᓂᖏᑦ ᖁᒻᒧᐊᒃᑎᑕᐅᓯᒪᔪᑎᒨᖅᑐᑦ ᓈᓚᐅᑎᓕᖅᑐᒐᐅᓯᒪᔪᑦ ᕿᖑᖓᐅᑦ ᐊᒥᖅᑕᖅᑯᑎᖏᓐᓄᑦ. ᐊᕙᑎᓕᕆᔩᒃᑯᑦ ᓄᓇᒥᐅᑕᓕᕆᔩᒃᑯᓪᓗ ᐱᕈᒃᑲᓐᓂᕈᓐᓇᖅᑐᓕᕆᔩᖏᑦ, ᓄᓇᑦᓯᐊᑉ ᒐᕙᒪᖓᓂᑦ (GNWT), ᔭᓗᓇᐃ, ᓄᓇᑦᓯᐊᕐᒥ, ᑲᓇᑕ. ᑎᑎᕋᖅᑕᐅᓯᒪᔪᑦ ᐅᓂᒃᑳᓕᐊᑦ 254-ᖓ.	ᑎᓖᓯ ᒐᕙᒪᖓᑦ ᐊᒻᒪᓗ ᓄᓇᑦᓯᐊᑉ ᒐᕙᒪᖓᑦ (GNWT)	2019 ᑲᔪᓯᑎᑕᐅᓯᒪᔪᑦ

ᓱᓇᐅᓂᖓ	ᐱᓕᕆᐊᖅ/ᐱᓕᕆᐊᖑᔪᖅ	ᑭᐅᔾᔪᑎᖏᑦ	ᑭᐅᔾᔪᑎᐅᔪᓄᑦ ᐱᔾᔪᑎᒋᓗᐅᔪᑦ	ᓱᕗᓕᖅᑎᐅᓪᓗᑎᒃ ᐱᓕᕆᐊᒃᓴᖃᓐᓂᑦ	ᐱᓕᕆᕝᕕᒃᓴᖅᑎᑕᐅᓂᖓᓄᑦ ᑐᑭᓗᐊᒍᑎᒃᓴᐃᑦ	ᖃᓄᐃᓕᖓᓕᕐᓂᖏᑦ
ᓯᓚᐅᑉ ᐊᓯᔾᔨᖅᐸᓪᓕᐊᓂᖓ						
ᕗᐃᑉᐲ ᓄᓇᒥᐅᑕᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔨᖏᑦ ᐊᑐᓕᖁᔭᐅᓪᓗᑎᒃ #15-2019 (ᓵᑎ ᐃᐊᒃᕗ)	ᑲᑎᖅᓱᐃᓯᒪᓕᕐᑎᐊᕐᓂᕐᓂ ᓄᓇᒥᑦ ᓯᓚᐅᑉ ᐊᓯᔾᔨᖅᐸᓪᓕᐊᓂᖓᓂᑦ ᕿᒥᕐᕈᐃᓪᓗᑎᒃ ᖃᐅᔨᓴᐃᓂᕐᓂᑦ, ᑎᑖᓯ ᒐᕙᒪᖓᑕ (TG) ᐃᐊᒃᕗ ᓄᐋᔅᐅᐃᑎ ᑳᐃ ᐱᓕᕆᐊᖓᑦ ᐊᖏᒡᓕᒋᐊᖅᑎᐅᓯᒪᓕᕆᐊᒃᑲᖅᐳᑦ ᓄᕐᕋᒃᕚᐅᓚᐅᖅᑐᑦ ᐊᒻᒪᓗ ᐊᐅᔨᒥ ᓇᔪᖅᑕᐅᓚᐅᖅᑐᓄᑦ ᓵᑎ ᐃᐊᒃᕗ ᐊᒥᕐᕋᑦᑎᖏᕐᓂᑦ ᓱᕗᕐᖓᓂ ᐅᑐᐱᕆ 1, 2019. ᖃᐅᔾᔭᐅᓯᒪᓕᖅᑐᑦ ᓇᐅᑦᓯᖅᑐᐃᓂᕐᒥ ᐱᓕᕆᐊᒃᑯᑦ ᐋᖅᑭᓱᖅᑕᐅᓯᒪᔭᕆᐊᒃᑲᖅᐳᑦ ᐱᑕᖃᓕᕈᑎᐅᓂᐊᕐᓗᑎᒃ ᐋᖅᑭᒋᐊᖅᑕᐅᓯᒪᓪᓗᑎᒃ ᐊᐅᓚᑦᓯᓂᖃᕐᓂᕐᒥ ᑐᙱᕝᕙᕐᑎᓂᒃ.	**ᐊᔾᔨᒌᙱᖏᓐᓂᖃᖅᕕᐅᔪᑦ** – ᑎᑖᓯ ᒐᕙᒪᖓᑕ (TG) ᐊᔾᔨᙱᒋᑦᓴᖓᓂᒃ ᐅᖃᖅᓯᒪᓂᖃᖅᐳᑦ "ᐊᑐᓕᖅᑎᑕᐅᖁᓪᓗᒋᑦ #15-2019" ᐱᒋᐊᕝᕙᖃᖅᑎᑕᐅᓂᐊᕐᓗᑎᒃ ᐊᐅᔭᖓᓂ, 2020.	ᑎᑖᓯ ᒐᕙᒪᖓᑦ (TG) ᖁᔭᓐᓇᒦᖅᐳᑦ ᕗᐃᑉᐲ ᓄᓇᒥᐅᑕᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔨᖏᑦ (WRRB) ᐃᓕᑕᖅᓯᓯᒪᓂᖏᓐᓄᑦ ᑎᑖᓯ ᒐᕙᒪᖓᑕ (TG) ᐃᐊᒃᕗ ᓄᐋᔅᐅᐃᑎ ᑳᐃ (ᑲᒫᓘᒃ ᓄᓇᒥ) ᐱᓕᕆᐊᖓᓐᓂᒃ. ᑎᑖᓯ ᒐᕙᒪᖓᑦ (TG) ᐱᓕᕆᓂᖃᖅᐸᓪᓚᑕ ᐃᑎᔪᒥᒃ ᖃᐅᔨᕚᐊᕚᖃᖅᐸᓐᓂᖅᑎᒍᑦ ᐋᖅᑭᒃᓱᐃᓂᒥᓐᓂ ᐱᓕᕆᐊᖑᓂᐊᖅᑐᓂᒃ ᓲᖅᓗ ᐃᐊᒃᕗ ᓄᐋᔅᐅᐃᑎ ᑳᐃ ᐱᓕᕆᐊᒥᒃ. ᑎᑖᓯ ᒐᕙᒪᖓᑦ (TG) ᐃᓱᒪᒃᓴᖅᓯᐅᕈᑎᖃᖅᓯᒪᕗᑦ ᖃᓄᖅ ᐊᑯᓂᐅᑎᒋᔪᒥᒃ, ᐃᓱᒪᒋᔭᐅᓯᒪᔪᓄᑦ ᐱᕙᓪᓕᐊᔪᓕᕆᓂᐅᔪᑦ, ᐃᑲᔪᕈᑎᒃᓴᐅᓪᓗᑎᒃ ᕿᓇᐅᔭᑦᑐᑎᒋᔭᐅᔪᓇᐊᖃᖅᑐᓄᑦ ᐊᒻᒪᓗ ᐱᓪᒪᒃᓴᐃᓯᒪᓕᕈᑎᒃᓴᓂᒃ ᐱᓕᕆᐊᖃᑦᓴᕐᓂᕐᓄᑦ ᐊᑐᓕᖅᑎᕐᓯᒋᐊᕐᓂᕐᒥᓂ ᐃᐊᒃᕗ ᓄᐋᔅᐅᐃᑎ ᑳᐃ ᐱᓕᕆᐊᖑᔪᒥᒃ ᓄᕋᖃᕚᐅᓚᐅᖅᑐᓄᑦ ᐊᒻᒪᓗ ᐊᐅᔨᒥ ᓇᔪᖅᑕᐅᕙᒃᑐᓄᑦ ᓵᑎ ᐃᐊᒃᕗ ᐊᒥᕐᕋᑦᑎᖏᓐᓄᑦ ᐱᓕᕆᐊᖑᓕᖅᑎᓐᓂᐊᕐᓗᒍ, ᐊᒻᒪᓗ ᐃᓱᒪᓕᐅᖅᓯᒪᓕᓚᐅᖅᑐᑦ ᕿᓇᐅᔭᑎᒍᑦ ᐊᑐᕐᓂᖅᑲᔾᔪᒥᒻᒪᑦ ᐊᑐᓕᖅᑎᑕᐅᓇᔭᖅᐸᑕ ᑕᒪᒃᑯᐊ ᑖᕝᕙᓂ ᐅᑭᐅᓇᔾᑎᓐᓂ. ᐱᒋᐊᕈᑎᒋᓪᓗᒋᑦ ᐸᕐᓇᐅᑎᓕᐅᓕᕐᓂᕐᓂ ᐱᓕᕆᐊᖑᓕᕐᓂᐊᖅᑐᓄᑦ ᐃᐊᒃᕗ ᓄᐋᔅᐅᐃᑎ ᑳᐃ ᐱᓕᕆᐊᖑᔪᒍᑦ ᓵᑎ ᐃᐊᒃᕗ ᐊᒥᕐᕋᑦᑎᖏᑦ ᓄᕐᕋᖃᕐᕕᒋᓕᐅᖅᑕᖏᓐᓂ ᐊᒻᒪᓗ ᐊᐅᔨᒥ ᓇᔪᖅᐸᒃᑕᖏᓐᓂ ᐱᒋᐊᖅᑎᑕᐅᓯᒪᓕᕐᓚᑕ ᑐᕌᕝᕙᒃᓴᖅᑎᑕᐅᓯᒪᓪᓗᑎᒃ ᐱᒋᐊᖅᑎᑕᐅᓂᐊᕐᓂᖏᑦ ᐊᐅᔭᖓᓂ, 2020. ᑎᑖᓯ ᒐᕙᒪᖓᑦ (TG) ᐅᔾᔨᕈᓯᒃᐳᑦ ᖃᐅᔨᓴᕐᓂᐅᔪᒪᔪᑦ ᐊᑐᓕᖅᑎᑕᐅᓇᔾᔭᕐᓂᖏᑦ ᑐᙵᕕᖃᖅᑕᔾᔭᓪᓚᑕ ᐃᓱᒪᔾᔪᓯᐅᔪᓄᑦ ᐱᓕᕆᐊᒃᓴᒃᑦᓚᐅᕐᕌᓄᑦ, ᓯᓚᐅᑉ ᐋᓪᓚᒍᔭᕐᓂᖓᓄᑦ ᐃᓚᖃᖅᑎᑦᓗᒍ ᐅᒥᐊᕐᒥᒃ ᐊᑐᕈᓐᓇᕐᓂᕐᓄᑦ ᐊᑐᐃᓐᓇᐅᑎᑕᐅᔪᓄᑦ ᐊᒻᒪᓗ ᓄᓇᒃᑯᑦ ᑎᑭᑕᐅᔪᓐᓇᖅᑕᔾᔭᕐᓂᖏᓐᓄᑦ ᓵᑎ ᐃᐊᒃᕗ ᐊᒥᕐᕋᑦᑎᖏᑦᑕ. ᐃᖏᕐᕋᓯᐊᖅᑎᑕᐅᓯᒪᓂᖓᓄᑦ ᕿᖓᑕᐅᑦ ᐊᒥᕐᕋᑦᑎᖏᓐᓄᑦ ᐱᓕᕆᐊᑉ ᐃᓚᕐᑲᓪᒪᑦ ᓄᓇᒧᑦ ᐃᖏᕐᕋᕝᕕᐅᕙᓐᓂᖓ ᑐᒃᑐᑦ ᐊᒥᕐᕋᖏᓐᓄᑦ ᖃᐅᔨᓴᖅᑎᐅᔪᓂᑦ ᐅᒥᐊᒃᑯᑦ ᐊᔪᓇᙱᑦᓯᐊᖅᐳᔾᔪᓂᖓ ᑳᖕᕗᐃᑐ ᓚᐃᑦ ᑕᓯᐊᒍᑦ, ᕿᖓᑕᐅᑦ ᐊᒥᕐᕋᑦᑎᖏᑦᑕ ᓄᕋᖃᕐᕕᒋᓕᐅᖅᑕᖏᓐᓄᑦ ᐊᒻᒪᓗ ᐊᐅᔨᒥ ᓇᔪᖅᐸᒃᑕᖏᑦᑕ ᕿᑎᐊᓃᑦᑐᒍᑦ. ᐊᒻᒪᓗᒃᑲᓐᓂᖅ ᐃᓚᒋᔭᐅᑎᑦᓯᓂᖅ ᐃᓄᑐᖃᕐᔭᐅᔪᓐᓂ ᖃᐅᔨᒪᓂᖃᖅᑐᓂ ᓵᑎ ᐃᐊᒃᕗ ᐊᒥᕐᕋᑦᑎᖏᓐᓂ ᓇᔪᖅᑕᐅᕙᒃᑐᓄᑦ, ᐊᑐᕐᓂᖃᖅᑐᑎᒍᑦ ᐱᓕᕆᐊᒃᓴᓂᒃ ᐱᓕᕆᓂᖃᕐᓂᐊᕐᓗᑎᒃ ᖃᐅᔨᒥᐊᕈᑎᖃᕐᓂᕐᓂ ᓵᑎ ᐃᐊᒃᕗ ᐊᒥᕐᕋᑦᑎᖏᓐᓂ ᓈᓚᐅᑎᓕᖅᑐᒐᐅᓯᒪᔪᑦ ᐃᖏᕐᕋᕙᓪᓕᐊᕙᓐᓂᖏᓐᓂ (ᓄᕐᕋᒃᕚᐅᓚᐅᖅᑐᓐᓂ ᐊᒻᒪᓗ ᐊᐅᔨᒥ/ᐅᑭᐊᒃᓵᒥᓗ) ᑐᑭᓯᐅᒪᓕᕆᐊᕐᓂᐊᕐᓗᒋᑦ ᓇᓕᖏᑦ ᑕᒫᑦ ᐃᖏᕐᕋᕝᕕᐅᔭᕆᐊᖏᑦ ᖃᐅᔨᓴᕆᐊᖅᓯᒪᔪᑦ ᕿᒥᕐᕈᐃᕝᕕᒋᔪᓐᓇᕐᓂᐊᖅᑕᖏᓐᓄᑦ ᑐᒃᑐᓂᒃ. ᑎᑖᓯ ᒐᕙᒪᖓᑦ (TG) ᐱᓕᕆᖃᑎᖃᓕᕐᓂᐊᖅᐳᑦ ᕗᐃᑉᐲ ᓄᓇᒥᐅᑕᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔨᖏᑦ (WRRB) ᐊᔪᕐᓇᙱᒋᓐᓇᔭᕆᐊᖓᓄᑦ ᕗᐃᑉᐲ ᓄᓇᒥᐅᑕᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔨᖏᑦ (WRRB) ᐱᑕᖃᖅᑎᑦᓯᓯᒪᓕᕋᔭᕐᓂᖏᓐᓂᒃ ᐃᓚᖓᓂᒃ ᐆᒪᔪᓕᕆᔨᒃᑯᑦ ᐃᖅᑲᓇᐃᔭᖅᑎᖏᑦ ᐃᑲᔪᖅᑎᖃᖅᑎᑦᓯᓂᐊᕐᓗᑎᒃ ᐊᖏᒡᓕᒋᐊᖅᑎᑦᓯᓂᕐᓂ ᐃᐊᒃᕗ ᓄᐋᔅᐅᐃᑎ ᑳᐃ ᐱᓕᕆᐊᖑᔪᒥᒃ ᓄᕐᕋᖃᕐᕕᓯᒪᔪᓄᑦ ᐊᒻᒪᓗ ᐊᐅᔨᒥ ᓇᔪᖅᑕᐅᕙᒃᑐᓄᑦ ᓵᑎ ᐃᐊᒃᕗ ᐊᒥᕐᕋᑦᑎᖏᓐᓂ ᐱᓕᕆᐊᒍᑦ.	ᑎᑖᓯ ᒐᕙᒪᖓᑦ (TG)	ᐱᒋᐊᕐᓗᑎᒃ ᐊᐅᔭᖓᓂ 2020	ᐱᔭᕇᖅᑕᐅᓯᒪᙱᑦᑐᑦ

ᓱᓇᐅᓂᖓ	ᐱᓕᕆᐊᖅ/ᐱᓕᕆᐊᖑᔪᖅ	ᑭᐅᔾᔪᑎᖏᑦ	ᑭᐅᔾᔪᑎᐅᔪᓄᑦ ᐱᔾᔪᑎᒋᔭᐅᔪᑦ	ᓯᕗᓕᖅᑎᐅᓪᓗᑎᒃ ᐱᓕᕆᐊᒃᓴᖃᕐᓂᑦ	ᐱᓕᕆᓐᕕᒃᓴᖃᖅᑎᑕᐅᓂᕐᓄᑦ ᑐᑭᒧᐊᒍᑎᒃᓴᑦ	ᖃᓄᐃᓕᖓᓕᕐᓂᖏᑦ
ᑎᓕᓯ ᖃᐅᔨᓴᐃᓂᕐᒧᑦ ᐊᒻᒪᓗ ᓇᐅᑦᓯᖅᑐᐃᓂᕐᒧᑦ ᐱᓕᕆᐊᖑᔪᖅ						
ᕗᐃᑭᔩ ᓄᓇᒥᐅᑕᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔨᖏᑦ ᐊᑐᓕᕐᑯᔭᐅᓪᓗᑎᒃ #16-2019 (ᓵᑎ ᐃᐊᒃᕗ)	ᑕᒪᕐᒥᒃ ᐃᐊᒃᕗ ᐊᒥᕐᕋᖁᑎᖏᑦ ᐊᒻᒪᓗ ᐃᐊᒃᕗ ᐊᒥᕐᕋᖁᑎᖏᑕ ᓇᔪᖅᐸᒃᑕᖏᑦ ᓇᐅᑦᓯᖅᑐᒐᐅᓯᒪᕐᖁᓪᓗᒋᑦ ᐊᒻᒪᓗ ᖃᔅᓯᓪᓚᑦᑖᓂᒃ ᐊᖑᓇᓱᐊᖅᓯᒪᓂᐅᕙᑐᑦ ᑎᑎᕋᖅᑕᐅᓯᒪᓕᖅᐸᕐᑯᓪᓗᒋᑦ ᐱᐅᓯᑐᕐᑲᒃᑯᑦ ᓈᒻᒪᒋᔭᐅᔪᑎᒍᑦ, ᑎᓕᓯ ᖃᐅᔨᓴᐃᓂᕐᒧᑦ ᐊᒻᒪᓗ ᓇᐅᑦᓯᖅᑐᐃᓂᕐᒧᑦ ᐱᓕᕆᐊᖑᔪᖅ (TRMP) ᐊᑐᓕᖅᑎᑕᐅᔭᕆᐊᖃᖅᑐᖅ ᑎᓕᓯ ᒐᕙᒪᖓᓂᑦ (TG), ᐱᒋᐊᕐᓗᓂ ᓯᑎᐱᕆ 2019 (ᑕᑯᓗᒋᑦ ᐅᐃᒍᖏᑦ I).	**ᐊᔾᔨᒌᙱᓐᓂᖅᑳᐅᔪᑦ** – ᑎᓕᓯ ᒐᕙᒪᖓ (TG) ᐊᔾᔨᒌᙱᑕᖏᑎᒍᑦ ᐅᖃᖅᓯᒪᔪᑦ "ᓱᓕᓕᐅᕈᑎᑦ ᐊᑐᓕᕐᑯᔭᐅᓪᓗᑎᒃ #16-2019"-ᒧᑦ ᐃᒪᓐᓇ ᐅᖃᖅᓯᒪᓪᓗᑎᑦ: ᐊᑐᓕᕐᑯᔭᐅᓪᓗᑎᒃ #16-2019 (ᓵᑎ ᐃᐊᒃᕗ): ᑎᓕᓯ ᖃᐅᔨᓴᐃᓂᕐᒧᑦ ᐊᒻᒪᓗ ᓇᐅᑦᓯᖅᑐᐃᓂᕐᒧᑦ ᐱᓕᕆᐊᖑᔪᖅ (TRMP): ᑕᒪᕐᒥᒃ ᐃᐊᒃᕗ ᑐᒃᑐᑦ ᐊᒻᒪᓗ ᐃᐊᒃᕗᑦ ᑐᒃᑐᐃᑦ ᓇᔪᖅᐸᒃᑕᖏᑕ ᖃᐅᔨᓴᖅᑕᐅᕙᕐᑯᓪᓗᒋᑦ, ᐊᒻᒪᓗ ᖃᓄᐃᓪᓚᑦᓯᐊᕐᓂᖏᑎᒍᑦ ᐊᖑᓇᓱᒃᑕᐅᕙᒃᑐᑦ ᖃᔅᓯᐅᓂᖏᑦ ᑎᑎᕋᖅᑕᐅᓯᒪᓕᖅᐸᒃᑐᑦ ᐱᐅᓯᑐᕐᑲᒃᑯᑦ ᓈᒻᒪᒋᔭᐅᓯᒪᔪᑎᒍᑦ, ᑎᓕᓯ ᒐᕙᒪᖓ (TG) ᕿᒥᕐᕈᐃᓯᒪᓕᒃᑲᓂᕐᓂᐊᖅᐳᑦ 2007-ᒥ ᐅᓂᒃᑳᓕᐊᖑᓚᐅᖅᑐᓂᒃ ᐃ. ᓕᒫᒥᑦ ᑕᐃᔭᐅᓪᓗᑎᒃ "ᑎᓕᓯ ᖃᐅᔨᓴᐃᓂᕐᒧᑦ ᐊᒻᒪᓗ ᓇᐅᑦᓯᖅᑐᐃᔨᐅᓂᕐᒧᑦ ᐱᓕᕆᐊᖑᔪᖅ" ᐱᔾᔪᑎᒋᓪᓗᑎᒃ ᖃᐅᔨᒋᐊᖅᓯᒪᓕᕐᓂᐊᕐᓗᑎᑦ ᑐᕌᖅᓴᐅᑎᑕᐅᓪᓗᑎᒃ ᐅᖃᖅᑕᐅᓯᒪᓪᓚᐅᖅᑐᑦ ᑖᒃᑯᓇᖓ ᐊᑐᓕᖅᑎᑕᐅᓯᒪᙱᑦᑐᓂᑦ ᓱᓕ ᐊᑐᕐᓂᖅᓴᕐᓯᒪᖔᑕ.	"ᑎᓕᓯ ᖃᐅᔨᓴᐃᔨᐅᓂᕐᒧᑦ ᐊᒻᒪᓗ ᓇᐅᑦᓯᖅᑐᐃᔨᐅᓂᕐᒧᑦ ᐱᓕᕆᐊᖓᑦ" ᐃᓱᒪᒃᓴᖅᓯᐅᕈᑕᐅᓚᐅᕐᓚᑕ ᑎᓕᓯ ᒐᕙᒪᖓᓂᑦ (TG) ᐅᑭᐅᖏᑦ 2010-ᒥᑦ 2012-ᒧᑦ ᐊᑐᖅᑎᓪᓗᒋᑦ ᐊᒻᒪᓗ ᑖᒃᑯᐊ ᐱᔾᔪᑎᒋᓪᓗᒋᑦ ᐱᒋᐊᖅᑎᑦᓯᓯᒪᓪᓚᑦᑕᕐᓂᖏᑦᑕ ᑎᓕᓯ ᖃᐅᔨᓴᐃᔨᐅᓂᕐᒧᑦ ᑎᓕᓯ ᖃᐅᔨᓴᐃᓂᕐᒧᑦ ᐊᒻᒪᓗ ᐱᓕᒻᒪᒃᓴᐃᓂᕐᒧᑦ ᐃᖅᑲᓇᐃᔭᕐᕕᖓᓂᒃ (TRTI) ᐅᑯᐊᓘᓐᓃᑦ ᑎᑖᐃᑦᓴᐋ. Dedats'eetsaa (ᑎᑖᐃᑦᓴᐋ) ᐱᔾᔪᑎᒋᓪᓚᑦ ᐊᕐᕌᒍᓂ ᐅᑎᒧᐊᖅᑐᒥ ᐱᐅᓯᑐᕐᑲᒃᑯᑦ ᐅᔭᖅᑲᓂᒃ ᑎᓕᓯ ᓄᓇᖏᓐᓂ ᐃᓄᕐᑯᑎᖏᑦᑕ ᐃᓕᖅᑯᓯᑐᕐᑲᒥᓐᓂ ᐊᑐᖅᐸᒃᓯᒪᔭᑐᕐᑲᖓᓐᓂᒃ ᐱᕈᔾᔨᓂᐊᕐᕋᖓᒥᒃ ᐊᒻᒪᓗ ᐱᓯᒪᓕᒃᑲᓐᓂᕐᕕᒋᓂᐊᖅᓯᒋᑦ ᓱᓇᕐᑯᑎᒃᓯᒪᓐᓂᒃ/ᐱᕐᑯᑎᒃᓯᒪᓐᓂᒃ ᐅᐊᔭᕐᓗᑎᒃ ᓄᓇᐃᓐᓇᒧᑦ ᐊᒻᒪᓗ ᐅᑎᒧᑦ. ᐊᑎᖓ ᑖᓐᓇ ᑎᒍᔭᐅᓯᒪᓕᓚᐅᕐᒪᑦ ᑕᐃᔭᐅᔾᔭᔪᐅᓂᐊᖅᓯᓂ ᑎᓕᓯ ᖃᐅᔨᓴᐃᓂᕐᒧᑦ ᐊᒻᒪᓗ ᐱᓕᒻᒪᒃᓴᐃᓂᕐᒧᑦ ᐃᖅᑲᓇᐃᔭᕐᕕᖓᓄᑦ (TRTI) ᐱᔾᔪᑎᒋᓪᓗᒍ ᓇᓗᓇᐃᖅᓯᔾᔪᑎᐅᓂᖓᑕ ᐱᕐᑯᑎᖅᑲᕕᐅᕙᕐᑐᓄᑦ, ᐱᑖᕕᐅᒃᑲᓂᖅᐸᕐᑐᓄᑦ ᐊᒻᒪᓗ ᑭᖑᓂᐊᓂ ᐊᑐᖅᑕᐅᕙᓪᓚᐅᖅᓯᓂ ᑎᓕᓯ ᖃᐅᔨᒪᔾᔪᖅᑲᖏᓐᓄᑦ. ᑎᑖᐃᑦᓴᐋ (ᑎᓕᓯ ᖃᐅᔨᓴᐃᓂᕐᒧᑦ ᐊᒻᒪᓗ ᐱᓕᒻᒪᒃᓴᐃᓂᕐᒧᑦ ᐃᖅᑲᓇᐃᔭᕐᕕᖓ) ᐱᒋᐊᖅᑎᑕᐅᓪᓚᐅᖅᓯᒪᓪᓚᑦ ᐃᓱᒪᒃᓴᖅᓯᐅᕈᑎᖃᕐᓂᒥᑦ "ᑎᓕᓯ ᖃᐅᔨᓴᐃᔨᐅᓂᕐᒧᑦ ᐊᒻᒪᓗ ᓇᐅᑦᓯᖅᑐᐃᔨᐅᓂᕐᒧᑦ ᐱᓕᕆᐊᖓᓂᒃ". ᒥᔅ ᔫᑖᖅ ᓕᖁᑦ ᐱᓕᕆᐊᖏᑦ ᐱᑕᖃᖅᑎᑦᓯᓯᒪᓪᓚᐅᖅᐳᑦ ᑐᙵᕕᐅᔪᓂᒃ ᐅᓪᓗᒥ ᐱᓕᕆᐊᖑᓕᖅᑐᒧᑦ ᑕᐃᔭᐅᓪᓗᓂ ᑎᓕᓯ ᖃᐅᔨᓴᐃᓂᕐᒧᑦ ᐊᒻᒪᓗ ᐱᓕᒻᒪᒃᓴᐃᓂᕐᒧᑦ ᐃᖅᑲᓇᐃᔭᕐᕕᖓᑦ (TRTI), ᐊᒻᒪᓗ ᑭᖑᓂᐊᓂ ᐱᒋᐊᖅᑎᑕᐅᓯᒪᓪᓚᐅᖅᑐᒧᑦ ᑕᐃᔭᐅᓪᓗᓂ ᑎᑖᐃᑦᓴᐋ, ᐊᓯᔾᔨᕆᐊᖅᓯᒪᓂᖅᑲᓕᖅᑐᖅ ᑕᐃᒪᓐᓇ. ᑕᐃᒪᓗ, ᑎᓕᓯ ᒐᕙᒪᖓ (TG) ᐃᓯᒪᓂᖅᑲᓕᖅᑐᑦ ᐱᔾᔪᑎᐅᓗᐊᖅᑑᓪᓗᑎᒃ ᐃᓚᒋᔭᐅᔪᑦ "ᑎᓕᓯ ᖃᐅᔨᓴᐃᔨᐅᓂᕐᒧᑦ ᐊᒻᒪᓗ ᓇᐅᑦᓯᖅᑐᐃᔨᐅᓂᕐᒧᑦ ᐱᓕᕆᐊᖑᔪᖅ" ᐃᓗᐃᒃᑲᐅᑎᓪᓗᒍ ᖃᐅᔨᒋᐊᖅᑕᐅᓯᒪᓕᕆᐊᙳᕆᓚᑕ, ᐊᕐᕋᒍᒥᒃ ᐃᓱᒪᒃᓴᖅᓯᐅᕈᑕᐅᓯᒪᓕᐊᓐᓂᖓᑕ ᐊᒻᒪᓗ ᐊᑐᓕᖅᑎᑕᐅᕙᓪᓕᐊᓕᖅᓯᑎᒃ. https://research.tlicho.ca/ ᑐᙵᕕᒋᓗᒋᑦ ᑎᓕᐅᕈᑎᖏᑦ ᐃᓯᒪᑦᓚᒪᕆᑦ ᐃᓯᒪᑕᐃᑦ ᑲᑎᒪᔨᖏᑦ ᑎᓕᓯ ᒐᕙᒪᖓᓂ (TG), ᑎᑖᐃᑦᓴᐋ ᐱᓕᕆᐊᒃᓴᖏᑦ ᐅᑯᐊᖑᕗᑦ: ᑎᓕᓯ ᖃᐅᔨᓴᐃᓂᕐᒧᑦ ᐊᒻᒪᓗ ᐱᓕᒻᒪᒃᓴᐃᓂᕐᒧᑦ ᐃᖅᑲᓇᐃᔭᕐᕕᖓᑦ (TRTI) ᐱᓕᕆᐊᒃᓴᒥᓂ ᓯᕗᓪᓗᒋᐊᖅᑎᑦᓯᔭᕆᐊᖃᖅᑐᑦ ᖃᐅᔨᓴᐃᓂᐅᔪᓄᑦ ᑎᓕᓯ ᓄᓇᖁᑎᖏᓐᓂᒃ, ᐅᖃᐅᓯᖓᓐᓂᒃ, ᐱᐅᓯᑐᖃᖓᓐᓂᒃ ᐊᒻᒪᓗ ᐃᓅᓯᖏᓐᓂᒃ. ᑕᓐᓇ ᐱᓕᕆᐊᖑᓂᐊᖅᐳᖅ ᖁᕝᕙᖅᑎᑦᓯᓯᒪᓕᕆᐊᖃᓂᒃᑯᑦ ᖃᐅᔨᓴᐃᓂᖅᖃᐅᓂᖏᓐᓂᒃ, ᐊᒻᒪᓗ ᐊᑐᖅᑕᐅᕙᓐᓂᖏᓐᓂᒃ ᐱᓕᒻᒪᒃᓴᐃᓂᒥ, ᐃᓕᓐᓂᐊᖅᑎᑦᓯᓂᕐᓂ ᐊᒻᒪᓗ ᓇᐅᑦᓯᖅᑐᐃᓂᕐᓂ ᒐᕙᒪᒃᑯᑦ ᐃᓕᓐᓂᐊᒃᓴᕆᔭᖏᓐᓂᒃ ᐊᒻᒪᓗ ᐱᓕᕆᐊᖃᖅᑎᐅᓂᖏᓐᓄᑦ, ᑎᓕᓯ ᐱᐅᓯᑐᖃᓕᕆᓂᕐᒥ ᑐᙵᕕᖁᑎᖓᑎᒍᑦ. ᑎᓕᓯ ᒐᕙᒪᖓ (TG) ᕿᒥᕐᕈᐃᓯᒪᓕᒃᑲᓂᕐᓂᐊᖅᐳᑦ ᓱᕗᓪᓕᖅᐹᒥᒃ "ᑎᓕᓯ ᖃᐅᔨᓴᐃᓂᕐᒧᑦ ᐊᒻᒪᓗ ᓇᐅᑦᓯᖅᑐᐃᔨᐅᓂᕐᒧᑦ ᐱᓕᕆᐊᖑᔪᒥᒃ" ᐱᔾᔪᑎᒋᓪᓗᑎᒃ ᖃᐅᔨᒋᐊᖅᓯᒪᓕᕐᓂᐊᕐᓗᑎᑦ ᑐᕌᖅᓴᐅᑎᑕᐅᓪᓗᑎᒃ ᐅᖃᖅᑕᐅᓯᒪᓪᓚᐅᖅᑐᑦ ᑖᒃᑯᓇᖓ ᐊᑐᓕᖅᑎᑕᐅᓯᒪᙱᑦᑐᓂᑦ ᓱᓕ ᐊᑐᕐᓂᖅᓴᕐᓯᒪᖔᑕ.	ᑎᓕᓯ ᒐᕙᒪᖓ (TG)	ᐅᓪᓗᖓ ᓄᓇᐃᖅᑕᐅᓯᒪᙱᑦᑐᖅ	ᐱᔭᕇᖅᑕᐅᓯᒪᙱᑦᑐᑦ

Report on a Public Hearing
Held by the
Wek'èezhìı Renewable Resources Board
9-11 April 2019
Behchokǫ̀, NT

&

Reasons for Decisions Related to a Joint Proposal for the Management of the Sahtì Ekwǫ̀ (Bluenose-East Caribou) Herd

Wek'èezhìı
Renewable Resources Board

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LIST OF ACRONYMS

ACCWM	Advisory Committee for Cooperation on Wildlife Management
BGCTWG	Barren-ground Caribou Technical Working Group
CARC	Canadian Arctic Resources Committee
CIRNAC	Crown-Indigenous Relations and Northern Affairs Canada
DGG	Délı̨nę Got'ı̨nę Government
ENR	Environment & Natural Resources
GNWT	Government of the Northwest Territories
INAC	Indigenous and Northern Affairs Canada
IR	Information Request
NSMA	North Slave Métis Alliance
NT	Northwest Territories
SRRB	ʔehdzo Got'ı̨nę Gots'ę́ Nákedı/Sahtú Renewable Resources Board
TAH	Total Allowable Harvest
TG	Tłı̨chǫ Government
TK	Tłı̨chǫ Knowledge; traditional knowledge
WRRB	Wek'èezhìı Renewable Resources Board
YKDFN	Yellowknives Dene First Nation

LIST OF TŁĮCHǪ TERMS

dè	includes everything with whom Tłı̨chǫ have a relationship and that is responsive to their attention, action, and behaviour as everything has spirit. It is often translated as 'land', but it means much more than the English word land can convey. For Tłı̨chǫ elders, becoming knowledgeable and understanding the dè are about reaching outward while learning more, not about limiting thinking and understanding to a bounded area. Dè is about interconnectedness.
Dene béré	alternative harvest; hunting and gathering all kinds of different Dene foods
det'ǫcho	golden eagle
dìga	wolf
Ɂek'wahtı̨dǝ́	highest honest leader (Délı̨nę Got'ı̨nę dialect)
ɂekwǫ̀	barren-ground caribou
Kǫk'èetì	Contwoyto Lake
Kǫk'èetì Ekwǫ̀	Bathurst caribou
Mǫwhì Gogha Dè Nı̨ı̨tłèè	traditional area of the Tłı̨chǫ, described by Chief Monfwi during the signing of Treaty 11 in 1921
nǫ̀gha	wolverine
nǫɂokè	water crossings
sahcho	grizzly bear
Sahtì Ekwǫ̀	Bluenose-East caribou
tataa	corridors between bodies of water; land bridges
wedzıh	biggest male ɂekwǫ̀
Wek'èezhìı	management area; within the boundaries of
yaagoa	younger bull; third year male ɂekwǫ̀

1.0. Executive Summary

The Wek'èezhìı Renewable Resources Board (WRRB) is responsible for wildlife management in Wek'èezhìı and shares responsibility for managing and monitoring the *Sahtì Ekwǫ̀* (Bluenose-East Caribou) herd. In November 2018, the Department of Environment and Natural Resources (ENR), Government of the Northwest Territories (GNWT) reported that, in their view, the Sahtì ekwǫ̀ herd had continued to decline significantly and that further management actions were required.

In January 2019, the Tłįchǫ Government (TG) and GNWT submitted the *Joint Proposal on Management Actions for the Bluenose-East ʔekwǫ̀ (Barren-ground caribou) Herd 2019-2021* to the Board, outlining proposed management actions for the Sahtì ekwǫ̀ herd in Wek'èezhìı. The management actions proposed by TG and GNWT in the Joint Proposal were grouped under the five categories: harvest, predators, habitat and land use, and education as well as research and monitoring. More specifically, TG and ENR proposed implementing a herd-wide total allowable harvest of 300 bulls only for the Sahtì ekwǫ̀ herd. The WRRB has determined that any specific numerical restriction of a harvest or a component of harvest constitutes a total allowable harvest (TAH). A proposal for a TAH requires a public hearing under Section 12.3.10 of the Tłįchǫ Agreement. The WRRB held a public hearing in Behchokǫ̀, NT on April 9-11, 2019.

The WRRB concluded, based on all available Indigenous and scientific evidence, that a serious conservation concern exists for the Sahtì ekwǫ̀ herd and that additional management actions are vital for herd recovery. In making its decision about harvest limitations, the WRRB considered the risks to the herd from a recent high rate of decline, uncertainties about the underlying mechanisms for the decline and the importance of *ʔekwǫ̀* (barren-ground caribou) for Tłįchǫ citizens to thrive – physically, spiritually, and culturally.

The WRRB determined that a TAH of 193 bulls only shall be implemented for all users of the Sahtì ekwǫ̀ herd within Wek'èezhìı for the 2019/20 and 2020/21 harvest seasons. Further, the Board determined that that the proportional allocation of the TAH of the Sahtì ekwǫ̀ herd for the 2019/20 and 20/2021 harvest seasons shall be as follows: Tłįchǫ Citizens – 39.29%, and Members of an Indigenous people who traditionally harvest Sahtì ekwǫ̀ (including Nunavut) – 60.71%.

As monitoring of the Sahtì ekwǫ̀ harvest is crucial for management decisions, the Board recommended that TG and ENR revise their approach to harvest monitoring for the 2019/20 and 2020/21 harvest seasons, including collecting demographic and health information and hiring additional community monitors.

The WRRB recommended 0that GNWT provide harvest information from its Enhanced North Slave *Dìga* (wolf) Harvest Incentive Program to allow the Board to determine the success of the program. Further, the Board recommended that GNWT and TG develop a framework to evaluate the effectiveness of the Enhanced North Slave Dìga Harvest Incentive Program in achieving ʔekwǫ̀ conservation goals. The WRRB also recommended that GNWT and TG monitor *Nǫ̀gha* (wolverine) populations in Wek'èezhìı and work cooperatively with the Government of Nunavut to protect the calving grounds of the Sahtì ekwǫ̀ from predators.

The WRRB recommended that high priority habitat for protection of the Sahtì ekwǫ̀ herd should be identified and legal protection measures should be implemented. In the interim, Mobile Caribou Conservation Measures should be implemented. Additionally, the Board recommended that TG and GNWT encourage Tłı̨chǫ citizens to harvest alternative country foods.

The Board recommended that TG and GNWT collaborate with the WRRB to develop a herd-specific adaptive management framework with thresholds linked to specific management actions. The WRRB also recommended the following monitoring actions for the Sahtì ekwǫ̀ herd: conduct population surveys every two years; implement pregnancy monitoring through fecal pellet collection in the winter months; cease annual reconnaissance surveys; and increase the number of collars from 50 to 70. Furthermore, the Board recommended that a detail rationale for the collar increase be provided.

The WRRB recommended that TG's Ekwǫ̀ Nàxoède K'è program should be expanded to the post-calving and summer ranges of Sahtì ekwǫ̀ to collect on-the-ground climate change observations. Finally, the Board recommended the Tłı̨chǫ Research and Monitoring Program should be implemented to ensure that both ʔekwǫ̀ and ʔekwǫ̀ habitat monitoring and realistic harvesting numbers are recorded in a culturally appropriate manner.

2.0. Introduction

The Sahtì ekwǫ̀ herd has declined at approximately 21% per year since 2010. This means the herd is shrinking by about 50% every 3 years and has declined from 103,000 in 2010 to about 19,300 in June 2018. In the WRRB's public hearing in Behchokǫ̀ on April 9-11, 2019, Chief Daniels called this a *"serious situation"* and a *"critical issue"*.[1] During the closing session, Grand Chief Mackenzie called the situation a *"crisis"*.[2]

[1] PR (BNE 2019): 173 – Transcript – April 9, 2019 (DAY 1) - 2019 Bluenose-East Caribou Herd Public Hearing. p 8.
[2] PR (BNE 2019): 175 – Transcript – April 11, 2019 (DAY 3) – 2019 Bluenose-East Caribou Herd Public Hearing. p. 136.

Superintendent Bruno Croft noted that *"the Bluenose-East herd is in a serious predicament"* and *"continues to decline at alarming rates"*.[3]
The extent of the decline, as of June 2018, is reported in the 2019 Joint Proposal, entitled *"Joint Proposal on Management Actions for the Bluenose-East ʔekwǫ̀ (Barren-ground caribou) Herd 2019-2021"* (the "Joint Proposal") (Appendix A). TG and GNWT submitted the Joint Proposal on January 14, 2019 and the WRRB implemented its review procedures, which lead to a public hearing in early April 2019.

The short-term goal of the Joint Proposal's proposed management actions is to slow the herd's decline and promote recovery over the period of 2019 to 2021. The recovery of the herd to a level where sustainable harvesting is once again possible within Mǫwhì Gogha Dè Nı̨ı̨tłèè and meets community needs is the long-term goal of the Joint Proposal.

In Board proceedings during 2010 and 2016, the WRRB made decisions about harvest and, then, subsequently a TAH, as well as recommendations to urge government actions to halt the Sahtì ekwǫ̀ herd's decline.[4] The 2010 and 2016 determinations and recommendations that were implemented were focused on harvest reductions to increase survival of adult ʔekwǫ̀ as well as predator and habitat management. Unfortunately, the herd's decline has continued. Restrictions on harvest have not been enough despite the hardships borne by harvesters. The WRRB is both conscious of and troubled by the rate of the herd's decline and finds that there is a clear need for an urgent response to this decline. Each year's delay in effective management action is predicted to result in a further 20% decline.

This report describes the WRRB's assessment of the evidence on the record. This assessment is the basis for the Board's determinations and recommendations. The specific management actions proposed by the TG and GNWT will, by the words in the Joint Proposal itself, not halt the decline.[5] This puts the herd in a perilous position. The WRRB notes that the governments acceptance and implementation of previous Board recommendations has been limited. Additionally, the WRRB is troubled by the time it has taken governments to implement approved Board recommendations given that the Sahtì ekwǫ̀ herd has been declining by half every 3 years since 2010.

[3] PR (BNE 2019): 175 – Transcript – April 11, 2019 (DAY 3) – 2019 Bluenose-East Caribou Herd Public Hearing. p. 176.
[4] PR (BNE 2019): 073 – Report on a Public Hearing Held by the Wek'èezhìı Renewable Resources Board, 22-26 March & 5-6 August 2010, Behchoko, NT; and PR (BNE 2019): 149 - 2016 Reasons for Decision Related to a Joint Proposal for the Management of the Bluenose-East ʔekwǫ̀ (Barren-ground Caribou) Herd - Part A.
[5] PR (BNE 2019): 001 - Joint Proposal on Management Actions for the Bluenose-East ʔekwǫ̀ (Barren-ground caribou) Herd: 2019 – 2021.

Based on a review of past proceedings by the Board, 60 recommendations were submitted in 2010 to TG and GNWT.[6] In 2016, the WRRB submitted 24 recommendations and two determinations to the two governments.[7] It appears to the Board that to date only the determinations and 20 of the recommendations have been fully implemented. Consequently, the WRRB is of the view that an adaptive management framework is required to fully capitalize on the collective efforts of the Board and governments. Adaptive approaches are common in other resource management settings, such as in land and water management. Given the urgency of decisive management action for the Sahtì ekwǫ̀ herd, it is the Board's opinion that adaptive management would lead to more timely and effective management actions, which will be essential to address the herd's decline.

3.0. The Board and Its Authorities

The WRRB is responsible for the wildlife management functions set out in the Tłı̨chǫ Agreement in Wek'èezhìı [8] and shares responsibility for the management and monitoring of the Sahtì ekwǫ̀ herd. The WRRB is a co-management tribunal established by the Tłı̨chǫ Agreement to exercise advisory and decision-making responsibilities related to wildlife, forest, plant and protected areas management in Wek'èezhìı (Figure 1). The Board's legal authorities came into effect at the time the Tłı̨chǫ Agreement was ratified by Parliament.[9] The WRRB's major authorities and responsibilities in relation to wildlife are set out in Chapter 12 of the Tłı̨chǫ Agreement.

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[6] PR (BNE 2019): 073 – Report on a Public Hearing Held by the Wek'èezhìı Renewable Resources Board, 22-26 March & 5-6 August 2010, Behchoko, NT.

[7] PR (BNE 2019): 149 - 2016 Reasons for Decision Related to a Joint Proposal for the Management of the Bluenose-East ʔekwǫ̀ (Barren-ground Caribou) Herd - Part A.

[8] Section 12.1.2 of the Land Claims and Self-Government Agreement Among the Tłı̨chǫ and the Government of the Northwest Territories and the Government of Canada, Indian Affairs and Northern Development, Ottawa, 2003 (hereinafter the "Tłı̨chǫ Agreement").

[9] Tłı̨chǫ *Land Claims and Self-Government Act*, S.C. 2005, c.1. Royal assent February 15, 2005. See s.12.1.2 of the Tłı̨chǫ Agreement.

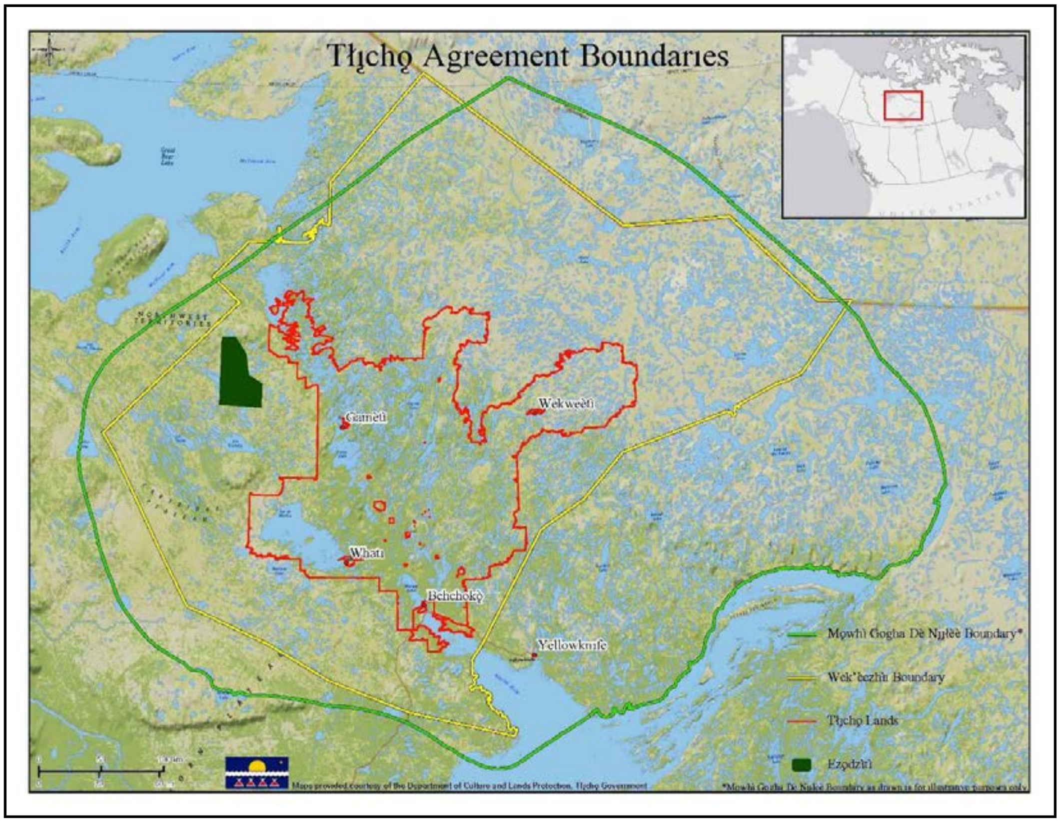

Figure 1. Wek'èezhìı Management Area.[10]

As required by Sections 12.5.1 and 12.5.4 of the Tłı̨chǫ Agreement, any Party[11] proposing a wildlife management action in Wek'èezhìı must submit a management proposal to the WRRB for review. This includes the establishment or adjustment of a total allowable harvest (TAH). Prior to making a determination or recommendation, the WRRB must consult with any body that has authority over that wildlife species both inside and outside of Wek'èezhìı. Under Section 12.5.5 of the Agreement, the WRRB has sole responsibility for making a final determination with respect to a total allowable harvest for Wek'èezhìı.

> ***12.5.5*** *The Wek'èezhìı Renewable Resources Board shall*
>
> *(a) make a final determination, in accordance with 12.6 or 12.7, in relation to a proposal*
>
> *(i) regarding a total allowable harvest level for Wek'èezhìı, except for fish,*

[10] Department of Culture & Lands Protection, Tłı̨chǫ Government. 2014.
[11] As defined in the Tłı̨chǫ Agreement, "Parties" mean the Parties to the Agreement, namely the Tłı̨chǫ, as represented by the Tłı̨chǫ Government, the Government of the Northwest Territories and the Government of Canada.

(ii) regarding the allocation of portions of any total allowable harvest levels for Wek'èezhìı to groups of persons or for specified purposes, or
(iii) submitted under 12.11.2 for the management of the Bathurst caribou herd with respect to its application in Wek'èezhìı; and
(b) in relation to any other proposal, including a proposal for a total allowable harvest level for a population or stock of fish, with respect to its application in Wek'èezhìı recommend implementation of the proposal as submitted or recommend revisions to it, or recommend it not be implemented.

The WRRB acts in the public interest. It is an institution of public government, which makes its decisions on the basis of consensus. The WRRB works closely with Tłı̨chǫ communities, TG, and GNWT. The Board also collaborates with other territorial government departments, such as Lands and Industry, Tourism and Investment, and federal government departments, such as Environment and Climate Change Canada, Fisheries and Oceans Canada, and Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC). In addition, the WRRB works with other wildlife management authorities, Indigenous organizations and stakeholders.

Wildlife management is a central and vital component of the Tłı̨chǫ Agreement.[12] The rights of Tłı̨chǫ citizens to use wildlife for sustenance, cultural, and spiritual purposes are protected by the Tłı̨chǫ Agreement and the Constitution[13], subject to the management framework set out in Chapter 12. The most important provisions in relation to the WRRB's role in the limitation of Tłı̨chǫ citizens harvesting are set out in the Tłı̨chǫ Agreement as follows:

12.6.1 *Subject to chapters 15 and 16, a total allowable harvest level for Wek'èezhìı or Mǫwhì Gogha Dè Nı̨ı̨tłèè (NWT) shall be determined for conservation purposes only and only to the extent required for such purposes.*

12.6.2 *Subject to 12.6.1 and chapters 15 and 16, limits may not be prescribed under legislation*

(a) on the exercise of rights under 10.1.1 or 10.2.1 except for the purposes of conservation, public health or public safety; or
(b) on the right of access under 10.5.1 except for the purposes of safety.

12.6.3 *Any limits referred to in 12.6.2 shall be no greater than necessary to achieve the objective for which they are prescribed, and may not be prescribed*

[12] See Section.12.1.1 of the Tłı̨chǫ Agreement.
[13] *Constitution Act.* 1982. Section 35.

where there is any other measure by which that objective could reasonably be achieved if that other measure would involve a lesser limitation on the exercise of the rights.

12.6.5 *In exercising its powers in relation to limits on harvesting, the Wek'èezhìı Renewable Resources Board shall give priority to*

(a) non-commercial harvesting over commercial harvesting; and
(b) with respect to non-commercial harvesting,
(i) Tłı̨chǫ Citizens and members of an Aboriginal people, with rights to harvest wildlife in Wek'èezhìı, over other persons, and
(ii) residents of the Northwest Territories over non-residents of the Northwest Territories other than persons described in (i).

The WRRB is bound by the Tłı̨chǫ Agreement if it is contemplating any limitation to Tłı̨chǫ citizens' harvesting, including any limitation to the harvesting of Sahtì ekwǫ̀. More specifically, Section 12.6.1 (see above) specifies that a total allowable harvest level shall be determined for conservation purposes only and only to the extent required for such purposes. The Tłı̨chǫ Agreement defines conservation as follows:

"conservation" means
(a) the maintenance of the integrity of ecosystems by measures such as the protection and reclamation of wildlife habitat and, where necessary, restoration of wildlife habitat; and
(b) the maintenance of vital, healthy wildlife populations capable of sustaining harvesting under the Agreement.

In addition to the substantive legal protection for Tłı̨chǫ citizens' harvesting rights set out in the Tłı̨chǫ Agreement, the WRRB is also bound by the requirements of fairness. Section 12.3.10 gives the Board the authority to order a hearing on a wildlife management proposal and makes it mandatory for the WRRB to hold a public hearing when it intends to consider establishing a TAH in respect of a species or a population such as the Sahtì ekwǫ̀ herd.

3.1. Advisory Committee for Cooperation on Wildlife Management

ʔekwǫ̀, including the Sahtì ekwǫ̀ herd, cross jurisdictional boundaries during their seasonal migrations. This inter-jurisdictional distribution is well-recognized and the Advisory Committee for Cooperation on Wildlife Management (ACCWM) was established in 2008 to exchange information, help develop cooperation and consensus, and make recommendations regarding wildlife and wildlife habitat issues that cross land claim and treaty boundaries. The committee is made up of the Chairpersons of the

Wildlife Management Advisory Council (NWT), Gwich'in Renewable Resources Board, Ɂehdzo Got'ı̨nę Gots'ę́ Nákedı/Sahtú Renewable Resources Board, WRRB, Kitikmeot Regional Wildlife Board, and Tuktut Nogait National Park Management Board.

These wildlife management boards have authority through their land claims or legislation to make recommendations and decisions on wildlife management issues. The ACCWM can make consensus-based recommendations to governments, land use regulators, and respective Boards on wildlife management actions. ACCWM recommendations are not binding on individual boards and do not prevent them from providing additional recommendations to governments.

The ACCWM developed a management plan for the Cape Bathurst, Bluenose-West, and Sahtì ekwǫ̀ herds, entitled *"Taking Care of Caribou – The Cape Bathurst, Bluenose-West, and Bluenose-East Barren Ground Caribou Herds Management Plan"*.[14] While the immediate need for the management plan was in response to reported declines in the herds, the intent is to address ɂekwǫ̀ management and stewardship over the long term. The management goals are to maintain herds within the known natural range of variation, conserve and manage ɂekwǫ̀ habitat, and ensure that harvesting is respectful and sustainable. The plan provides a framework for monitoring the herds, making decisions, and taking action. Five different categories of management actions are outlined in the plan, including Education, Habitat, Land Use Activities, Predators, and Harvest Management. The WRRB determinations and recommendations in this report are consistent with the ACCWM plan and follows the same categories of management actions.

4.0. Previous WRRB Ɂekwǫ̀ Determinations & Recommendations

Part 12.1 of the Tłı̨chǫ Agreement requires the coordination of the functions of governments (authorities whose responsibilities include wildlife management among other functions).**[15]** Section 12.1.5 of the Agreement also requires the Parties**[16]** to manage wildlife based on the principles of conservation, on an ecosystemic basis and in an adaptive fashion.**[17]** Chapter 12 of the Agreement sets out a comprehensive framework for wildlife management. WRRB determinations are final but recommendations made by the Board may be accepted, rejected or varied by the Party with the jurisdiction affected by the recommendation. However, once a recommendation is accepted, that Party doing so must implement it *"to the extent of its power under*

[14] PR (BNE 2019): 069 - Taking Care of Caribou: the Cape Bathurst, Bluenose-West, and Bluenose-East Barren-Ground Caribou Herds Management Plan. ACCWM. 2014.
[15] See Section.12.1.4 of the Tłı̨chǫ Agreement.
[16] This includes the Tłı̨chǫ Government, the Government of the Northwest Territories and the Government of Canada.
[17] See Section 12.1.5 paragraphs (a) and (d) of the Tłı̨chǫ Agreement.

legislation".**[18]** This framework and these relationships are central to effective wildlife management in Wek'èezhìı.

4.1. 2010 Proceeding

In June 2009, GNWT conducted a calving ground photographic survey and estimated the Sahtì ekwǫ̀ herd size was about 103,000 ʔekwǫ̀. On November 5, 2009, TG and GNWT submitted a *Joint Proposal on Caribou Management Actions in Wek'èezhìı*, which proposed nine management actions and eleven monitoring actions, including harvest limitations, for the Kǫ̀k'èetì, Sahtì and Beverly/Ahiak ʔekwǫ̀ herds. While TG and GNWT agreed on the majority of actions set out in the proposal, there was no agreement reached on the proposed levels of Indigenous harvesting.

Upon review of the proposal, the WRRB held that any restriction of harvest or component of harvest to a specific number of animals would constitute a TAH. Thus, the Board ruled that it was required to hold a public hearing. Registered Parties were notified on November 30, 2009 of the Board's decision to limit the scope of the public hearing to Actions 1 through 5 of the Joint Proposal, which prescribed limitations on harvest. All other proposed actions were addressed through written submissions to the Board. Originally scheduled for January 11-13, 2010, the public hearing took place March 22-26, 2010 in Behchokǫ̀, NT. Once the evidentiary phase of the proceeding was completed, TG requested the WRRB adjourn the hearing in order to give TG and GNWT time to work collaboratively to complete the joint management proposal.

On May 31, 2010, TG and GNWT submitted the *Revised Joint Proposal on Caribou Management Actions in Wek'èezhìı*. This revised proposal changed the original management and monitoring actions and incorporated an adaptive co-management framework and rules-based approach to harvesting. TG and GNWT were able to reach an agreement on Indigenous harvesting. Therefore, the WRRB reconvened its public hearing on August 5-6, 2010 in Behchokǫ̀, NT, where final presentations, questions and closing arguments were made.

On October 8, 2010, the WRRB submitted its final recommendations and reasons for decision report to TG and GNWT.[19] Many of the recommendations were related to the Kǫ̀k'èetì ekwǫ̀ herd and relevant management actions vital for herd recovery, including harvest restrictions. The Board also made harvest recommendations for the Beverly/Ahiak ʔekwǫ̀ herd.

[18] See Sections 12.5.11 and 12.5.12 of the Tłı̨chǫ Agreement.
[19] PR (BNE 2019): 073 - Report on a Public Hearing Held by the Wek'èezhìı Renewable Resources Board 22-26 March 2010 & 5-6 August 2010 Behchokǫ̀, NT.

The Board recommended a harvest target of 2800 (± 10%) Sahtì ekwǫ̀ per year for harvest seasons 2010/11, 2011/12, and 2012/13 in Wek'èezhìı. Further, the Board recommended that the ratio of bulls harvested to cows should be 85:15. Although the evidence suggested that the Sahtì ekwǫ̀ herd had not continued to decline, the Board concluded that a limited harvest of 2520-3080 Sahtì ekwǫ̀ with 420 or fewer cows was a cautious management approach based on the herd size and trend at the time. Additionally, the WRRB recommended that all commercial, outfitted and resident harvesting of the Sahtì ekwǫ̀ herd in Wek'èezhìı be set to zero.

The WRRB made additional ʔekwǫ̀ management and monitoring recommendations to TG and GNWT, specifically implementation of detailed scientific and Tłı̨chǫ knowledge monitoring actions and implementation of an adaptive co-management framework.

The WRRB also recommended to the Minister of CIRNAC (formerly Indian and Northern Affairs Canada) and GNWT to collaboratively develop best practices for mitigating effects on ʔekwǫ̀ during calving and post-calving, including the consideration of implementing mobile ʔekwǫ̀ protection measures, and for monitoring landscape changes, including fires, industrial exploration, and development, to assess potential impacts to ʔekwǫ̀ habitat.

The Board recommended that the harvest of dìga should be increased through incentives but that focused dìga control not be implemented. The Board understood if TG and GNWT were to plan for focused dìga control in the future, a management proposal would be required for WRRB consideration.

Of the 57 recommendations made in 2010 and accepted or varied by TG and GNWT, the Board has evidence that only 18 have been fully implemented. Specifically, the closure of commercial, outfitted and resident harvesting for the Kǫ̀k'èetì, Sahtì and Beverly/Ahiak ʔekwǫ̀ herds; the establishment and allocation of a harvest target for the Kǫ̀k'èetì ekwǫ̀ herd; the implementation of monitoring the density of cows on the calving grounds; the development and implementation of a scientific conservation education program; the establishment of the Barren-ground Caribou Technical Working Group; the ongoing discussions with the Government of Nunavut to identify opportunities for calving ground protection; the collaborative work to meet the obligations of Section 12.11 of the Tłı̨chǫ Agreement; the hiring of a TG Wildlife Coordinator to increase capacity to ensure full participation in monitoring and management of caribou; the removal of GNWT's Emergency Interim Measures following the implementation of recommendations by January 1, 2011; the consultation with Tlicho communities about Board recommendations prior to January 1, 2011; the development of a detailed implementation and consultation plan; and the development and implementation of an effective enforcement and compliance program.

Implementation of the remaining accepted recommendations appears to the WRRB to be incomplete, including the development of a government position regarding reinstatement of outfitting and resident harvesting in Wek’èezhìı; the negotiation of harvesting overlap agreements with the Sahtú and Nunavut; the implementation of the *Special Project, Using Tłı̨chǫ Knowledge to Monitor Barren Ground Caribou* of the overall Tłı̨chǫ Research and Monitoring Program; the implementation of TK and scientific caribou monitoring actions; the development of criteria to evaluate when management actions are to be revised; and the development of a land use plan for Wek’èezhìı.

Additional details of the 2010 proceeding can be found in Appendix B and a review of the 2010 WRRB Recommendations is found in Appendix C.

4.2. 2016 Proceeding

In June 2015, GNWT conducted a calving ground photographic survey and estimated the Sahtì ekwǫ̀ herd had declined to 38,600 ʔekwǫ̀. On December 15, 2015, TG and GNWT submitted the “*Joint Proposal on Management Actions for Bluenose-East Caribou 2016-2019”* to the Board outlining proposed management actions for the Sahtì ekwǫ̀ herd in Wek’èezhìı, including new restrictions on hunter harvest, predator management, and ongoing monitoring. More specifically, TG and GNWT proposed implementing a herd-wide total allowable harvest of 950 bulls only, allocation for the Sahtì ekwǫ̀ herd, and conducting a feasibility assessment of a full range of dìga management actions. The WRRB considered the proposed restriction of harvest as the establishment of a TAH and, therefore, was required to hold a public hearing. The public hearing took place April 6-8, 2016 in Behchokǫ̀, NT.

In anticipation of the proposal, the Ɂehdzo Got’ı̨nę Gots’ę́ Nákedı/Sahtú Renewable Resources Board (SRRB) and the WRRB signed a *“Memorandum of Understanding Regarding Collaborative Efforts for the Management of the Bluenose-East Caribou Herd”* in October 2015 to ensure management of proceedings related to the Sahtì ekwǫ̀ herd would be as effective as possible. Each Board conducted its own proceeding, including public hearings in both the Sahtú and Wek’èezhìı areas. Each Board submitted its own Reasons for Decision report.

In order to allow careful consideration of all the evidence on the record and to meet legislated timelines, the WRRB decided to prepare two separate reports to respond to the proposed management actions in the joint management proposal. The first report, Part A, dealt with the proposed harvest management actions that required regulation changes in order for new regulations to be in place for the start of the 2016/17 harvest season, as well as the proposed dìga feasibility assessment. The second report, Part B, dealt with additional predator management actions, biological and environmental monitoring, and cumulative effects.

On June 10, 2016, the WRRB submitted its final determinations and recommendations and Part A Reasons for Decision Report to TG and GNWT.[20] The WRRB determined that a TAH of 750 bulls only should be implemented for all users of the Bluenose-East ʔekwǫ̀ herd within Wek'èezhìı for the 2016/17, 2017/18, 2018/19 harvest seasons. Further, the Board determined that the proportional allocation of the TAH of the Sahtì ekwǫ̀ herd for the 2016/17, 2017/18, 2018/19 harvest seasons should be as follows: Tłı̨chǫ Citizens – 39.29%, and Members of an Indigenous people who traditionally harvest Sahtì ekwǫ̀ (including Nunavut) – 60.71%.

The Board recommended that TG and GNWT agree on an approach for designating zones for aerial and ground-based surveillance throughout the fall and winter harvest seasons from 2016 to 2019. Additionally, the WRRB recommended weekly communication updates, timely implementation of hunter education programs for all harvesters of the Sahtì ekwǫ̀ herd, and development of harvesting overlap agreements with the Sahtú and Nunavut.

The WRRB recommended that the dìga feasibility assessment set out in the proposal be led by the Board with input and support from TG and ENR. As well, if deemed successful, the Community-based Dìga Harvesting Project would be extended in 2016-2017 to the Sahtì ekwǫ̀ herd and incorporated into an adaptive wolf management approach.

On October 3, 2016, the WRRB submitted its final recommendations and Part B Reasons for Decision Report to TG and GNWT.[21] The WRRB recommended consultations with Tłı̨chǫ communities to determine a path forward for implementation of Tłı̨chǫ laws to continue the Tłı̨chǫ way of life and maintain their cultural and spiritual connection with ʔekwǫ̀.

In addition, the WRRB recommended several Tłı̨chǫ Knowledge (TK) research and monitoring programs focusing on dìga, *Sahcho* (grizzly bear), stress and other impacts on ʔekwǫ̀ from collars and aircraft over-flights, and an assessment of quality and quantity of both summer and winter forage.

The Board recommended a biological assessment of sahcho as well as requesting that the Barren-ground Caribou Technical Working Group (BGCTWG) prioritize biological monitoring indicators and develop thresholds under which management actions can be

[20] PR (BNE 2019): 149 - 2016 Reasons for Decision Related to a Joint Proposal for the Management of the Bluenose-East Ɂekwǫ̀ (Barren-ground Caribou) Herd - Part A.
[21] PR (BNE 2019): 075 - Reasons for Decisions Related to a Joint Proposal for the Management of the Bluenose-East Ɂekwǫ̀ (Barren-ground caribou) Herd - Part B. 2016.

taken and evaluated. All scientific and TK monitoring data will be provided to BGCTWG annually to ensure ongoing adaptive management.

The WRRB recommended the implementation of Tłı̨chǫ Land Use Plan Directives as well as completing a Land Use Plan for the remainder of Wek'èezhìı. The Board also recommended the development of criteria to protect key ʔekwǫ̀ habitat, including *Nǫʔokè* (water crossings) and *Tataa* (corridors between bodies of water), using the Conservation Area approach in the NWT's *Wildlife Act*, offsets and value-at risks in a fire management plan. Additionally, the WRRB recommended the development of monitoring thresholds for climate indicators.

Of the two determinations made by the Board and 24 recommendations accepted or varied by TG and GNWT, only the determinations and five recommendations have been fully implemented. Specifically, the establishment and allocation of a harvest target for the Sahtì ekwǫ̀ herd; the establishment and implementation of the Mobile Core Bathurst Caribou Conservation Area; the regular provision of updates on aerial and ground-based compliance surveillance of the Sahtì ekwǫ̀ herd; the implementation of the GNWT's Hunter Education Program; and the completion of a collaborative feasibility assessment of options for dìga management.

The remaining accepted recommendations appear to the Board to be incomplete, including providing regular harvest updates; negotiating harvesting overlap agreements with the Sahtú and Nunavut; conducting TK research on sahcho predation on ʔekwǫ̀, and their relationship with ʔekwǫ̀, other wildlife and people; conducting a collaborative sahcho biological assessment; conducting TK research about stress and impacts on ʔekwǫ̀ and people related to collars and aircraft over-flights; prioritizing biological monitoring indicators in order of need for effective management and developing thresholds under which management actions can be taken and evaluated; developing a land use plan for Wek'èezhìı; investigating the potential use of offsets for ʔekwǫ̀ recovery; conducting a TK monitoring project with elders to document how climate conditions have affected preferred summer forage and impacted ʔekwǫ́ fitness; and developing monitoring thresholds for climate indicators.

Additional details of the 2016 proceeding can be found in Appendix D and a review of the 2010 WRRB Recommendations are in Appendix E.

5.0. Summary of 2019 Wildlife Management Proposal and Board Process

5.1. Receipt of 2019 Joint Proposal

On January 14, 2019, the TG and GNWT submitted the *"Joint Proposal on Management Actions for the Bluenose-East Ɂekwǫ̀ (Barren-ground caribou) Herd 2019-2021"* to the

Board outlining proposed management actions for the Sahtì ekwǫ̀ herd in Wek'èezhìı. The management actions proposed by TG and GNWT in the Joint Proposal were grouped under the five categories defined in the ACCWM's *Taking Care of Caribou Management Plan*: harvest, predators, habitat and land use, and education as well as research and monitoring.[22]

More specifically, TG and GNWT proposed the following:

- Harvest: implementing a reduced herd-wide total allowable harvest of 300 bulls only and allocation for the Sahtì ekwǫ̀ herd; exploring ways of supporting harvesting of other wildlife; increasing on-the-land activities and cultural practices;
- Predators: increasing incentives for dìga harvesters in an area centered on the collar locations of wintering Sahtì ekwǫ̀; continuing to develop a program to train dìga harvesters using culturally acceptable methods on the winter range; submitting a separate TG-GNWT joint management proposal on reduction of *dìga* numbers on the Sahtì and Kǫ̀k'èetì ekwǫ̀ herd ranges;
- Habitat & Land Use: promoting the protection of the Sahtì ekwǫ̀ herd's calving grounds in Nunavut; participating in any environmental assessment and land use planning in the NWT and Nunavut; supporting ongoing TK and scientific research focused on identifying key ɂekwǫ̀ habitats, minimizing disturbance to key ɂekwǫ̀ habitats, and ensuring conservation of these habitats; supporting research on climate factors that may affect herd trend and studies of how a changing climate may be affecting vegetation and foraging conditions for ɂekwǫ̀;
- Education: continuing education initiatives such as sight-in-your-rifle, minimizing waste, and respecting traditional ways of harvesting; continuing annual visits to the four Tłı̨chǫ communities; and,
- Research & Monitoring: increasing biological monitoring of the Sahtì ekwǫ̀ herd, including conducting population surveys carried out at two-year intervals, increasing radio collars to 70, suspending June calving reconnaissance surveys in years between photo survey years, conducting annual composition surveys in June, October and March/April to assess productivity and mortality rates; continuing accurate harvest reporting and improving body condition assessment of harvested ɂekwǫ̀; supporting the expansion of the Tłı̨chǫ Ekwǫ̀ Nàxoède K'è (formerly the Boots on the Ground) program onto the Sahtì ekwǫ̀ range; supporting continued research into factors contributing to ɂekwǫ̀ declines.

The WRRB considered the proposed restriction of harvest as a proposal for the establishment of a TAH and, therefore, was required to hold a public hearing.

[22] PR (BNE 2019): 069 - Taking Care of Caribou: the Cape Bathurst, Bluenose-West, and Bluenose-East Barren-Ground Caribou Herds Management Plan. ACCWM. 2014.

The Board initiated its 2019 Bluenose-East Caribou Herd Proceeding on January 30, 2019 and established an online public registry: http://www.wrrb.ca/public-information/public-registry. On February 4, 2019, public notice of the WRRB decision to open a proceeding and conduct a public hearing concerning the possible setting of a reduced TAH for the Sahtì ekwǫ̀ herd was provided to potentially interested organizations in and out of Wek'èezhìı via email, WRRB website, social media and radio. Notifications of the revised proceeding schedules were posted publicly on February 12, March 4, 11 and 19, 2019.

The proceeding and hearing were conducted in accordance with the WRRB's *Rules of Procedures, June 14, 2017*.[23]

5.2. Registered Intervenors

Interested organizations or individuals were required to register as intervenors via the Board's website or to notify the WRRB in writing via email by February 15, 2019. Four organizations registered by the deadline date: the Canadian Arctic Resources Committee (CARC), the Délı̨nę Got'ı̨nę Government (DGG), the North Slave Métis Alliance (NSMA) and the Yellowknives Dene First Nation (YKDFN). Full intervenor status was granted to CARC, DGG, NSMA and YKDFN on February 15, 2019.

5.3. Information Requests

In order to obtain the information necessary for the WRRB to consider as part of the record of this proceeding, a series of Information Requests (IRs) were issued to the registered Parties. The IRs and responses are all available on the online public registry.

The first round of IRs was issued February 8, 2019, requesting that TG and GNWT provide additional Tłı̨chǫ knowledge and scientific information and rationale on the proposed management and monitoring actions. GNWT and TG provided their responses on February 18, 2019. On March 6, 2019, the Board requested consent from all Parties to post supporting documentation referenced by TG and GNWT in their management proposal and IR No.1 responses to the public registry. No concerns were raised, and documents were posted on March 12, 2019.

The second round of IRs was issued February 25, 2019, requesting all Registered Parties provide additional information related to range planning and bull harvest. Additionally, NSMA submitted five IRs for response by GNWT related to harvest, predator management, and habitat and land use. All Parties provided their responses on March 6, 2019.

[23] https://wrrb.ca/sites/default/files/WRRB%20Rules%20of%20Procedure%2014jun2017_1.pdf

5.4. WRRB Public Hearing, April 9-11, 2019

To ensure that procedural, legal and administrative items were addressed prior to the public hearing, the Board held a pre-hearing conference on March 18, 2019 in Yellowknife, NT. The WRRB issued public hearing instructions to the registered Parties as required and, further to recommendations made by Parties during the pre-hearing conference, a revised set of instructions was issued on March 19, 2019. The instructions also included the requirements for Party closing statements and final written arguments.

Hearing presentations from intervenors were requested for March 29, 2019; presentations from TG and GNWT were requested for April 1, 2019. All written submissions, hearing presentations and speaking notes were posted to the public registry.

During the April 9-11, 2019 hearing in Behchokǫ̀, NT, the registered Parties gave oral presentations and asked questions of the other Parties. The registered general public were also given a daily opportunity to address the WRRB in the hearing. A list of registered Parties and general public is in Appendix F. A full written transcript of each day's session was produced and is available on the public registry.[24] Recommendations provided by the Intervenors were summarized by Board staff (Appendix G).

The WRRB adjourned the hearing on April 11, 2019. Final written arguments were submitted by registered intervenors on April 24, 2019, and by TG and GNWT on April 26, 2019. It should be noted that CARC did not provide any written submissions or presentations nor did they attend the public hearing.

The public record was closed on April 26, 2019 and the WRRB's deliberations followed.

6.0. Is there a Conservation Concern for the Sahtì Ekwǫ̀ Herd?

Based on the WRRB's review of Sections 12.6.1 and 12.6.2 of the Tłįchǫ Agreement, the first question which must be answered is whether there is a conservation concern with respect to the Sahtì ekwǫ̀ herd. If the WRRB is not convinced that there is a Sahtì ekwǫ̀ management problem, it does not have the authority to recommend harvest limitations on Tłįchǫ citizens.

[24] http://wrrb.ca/public-information/public-registry

6.1. Evidence Presented

6.1.1. Evidence from Indigenous Parties

In his opening remarks, Chief Clifford Daniels highlighted the severity of the decline of the Sahtì ekwǫ̀ herd:

"*The decline of the herd is a serious situation. You will hear about the impacts of the herd on our well-being, our way of life, and land-based economy"* and *"This decline has separated us from the caribou. We want to be part of the caribou again"*.[25]

In their closing remarks, NSMA stated that they *"remain deeply concerned that the rate of decline of the BNE herd has not slowed down since the implementation of the last management proposal (2016-2018)"*.[26] YKDFN acknowledged the *"dire reality of the caribou decline"*.[27]

A main message from harvesters and elders was the need to sustain – care for and protect – ʔekwǫ̀, and to be careful how much you talk about them, especially in a negative way, which is disrespectful. Elder Alfred Taniton emphasized this:

> "*And so, when we speak of it [ʔeksǫ̀], we -- and the Elders used to say, And all the animals on this land is to be used by the people. It is not to be talked about. …Treat it well. Do not talk about it*".[28]

Elder Taniton went on to say the situation may worsen unless better solutions are found,

> *"And so, to this day -- to this day, the caribou still do exactly what it [story] says. It goes in its migration -- migratory route to the calving grounds, and this is the importance of what we are talking about today. He [prophet] said that when it disappear, it's going to be very -- very difficult for all of us. That may be true, but as an Elder from Délı̨nę, from a prophet Ayha who spoke -- and who spoke about the future, and he spoke about what was going to take place in the future. So, there's some people in here that probably know about the -- the words of our -- our prophet Ayha. And in the future, this is what is going to take place, he said. There is going to become a time when famine is going to be on this land. And what we are walking towards is really, really drastic -- will be very, very drastic. And -- and grandpa, this is how he showed the importance of what he was*

[25] PR (BNE 2019): 173 – Transcript – April 9, 2019 (DAY 1) - 2019 Bluenose-East Caribou Herd Public Hearing. p 8.
[26] PR (BNE 2019): 186 - North Slave Métis Alliance Final Written Argument.
[27] PR (BNE 2019): 189 - Yellowknives Dene First Nation Final Written Argument.
[28] PR (BNE 2019): 173 – Transcript – April 9, 2019 (DAY 1) - 2019 Bluenose-East Caribou Herd Public Hearing. p.144.

saying. And he said that when -- no food -- there is going to be no food on our land. It's going to become really, really drastic. The water will also disappear. … I wanted to -- I wanted to tell you about my comments about what I thought about the comment -- the presentations this morning. And our Elders killed as many caribou as they needed to survive. And -- and since -- and so we are the ones that are -- live on the -- on the people that live in the cold land, that decision should be up to us".[29]

Elders and harvesters know the rules associated with caring for the ʔekwǫ̀ and maintaining their relatedness with the animals. As is the Dene way, the most knowledgeable are listened to as well as listen to others. The most knowledgeable find solutions when ʔekwǫ̀ become scarce.[30] Elder Phillip Dryneck exemplifies this in his statement:

"*That's the reason why we, as Elders, always make a strong statement regarding the -- how we should protect our animals at the -- but as an Elder, I feel that maybe we are the ones that we should be the -- the people that most -- people -- main spokesperson for regarding those wildlife such as caribou but nonetheless to date I guess we pretty well have to depend only on our leaders* [who have chosen to limit our harvest]".[31]

6.1.2. Scientific Evidence

Herd Estimates and Vital Rates

A June 2018 calving ground photographic survey of the Sahtì ekwǫ̀ herd, conducted by the GNWT, resulted in a total estimate of 11,675 breeding cows (95% CI = 9971 – 13,670), which indicated that abundance of breeding females had decreased by about 32.9 % since the June 2015 estimate of 17,396 (95% CI = 12,780-22,012) (Figure 2).[32] The estimate of adult females in the survey area was 13,988 (95% CI=12,042-16,249). The proportion of adult females classified as breeding was higher in 2018 (83%) than in 2015 (63%).[33] The overall decline between 2015 and 2018 is 50% based on the total population estimate, which fell from 38,592 (95% CI = 33,859-43,325) in 2015 to 19,294 (95% CI = 16,527- 22,524) in 2018 (Figure 3).[34]

[29] PR (BNE 2019): 173 – Transcript – April 9, 2019 (DAY 1) - 2019 Bluenose-East Caribou Herd Public Hearing. p.147-148.
[30] PR (BNE 2019): 061 - Caribou migration and the state of their habitat. Legat et al. 2001.
[31] PR (BNE 2019): 174 - Transcript, April 10, 2019 (DAY 2) - 2019 Bluenose-East Caribou Herd Public Hearing. p.180.
[32] PR (BNE 2019): 201 – Undertaking #1, Part B, ENR to WRRB, 2019 Bluenose-East Caribou Herd Public Hearing
[33] Ibid.
[34] Ibid.

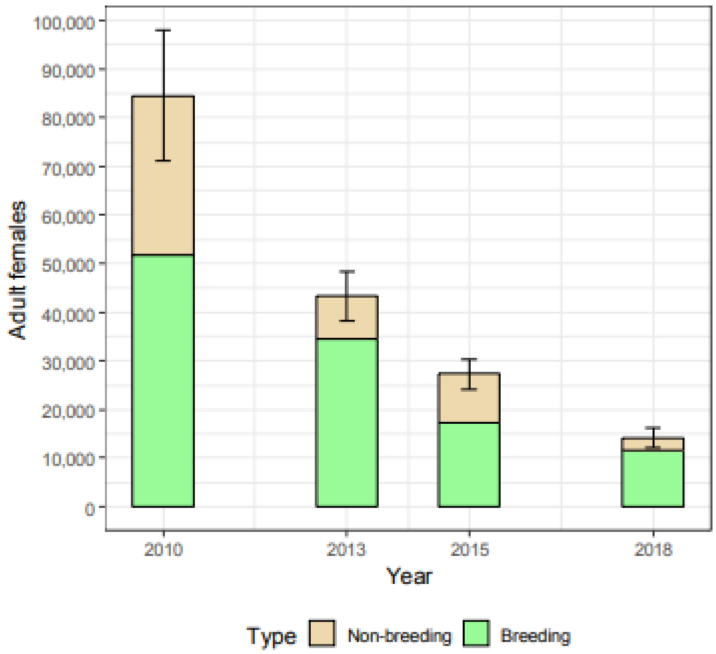

Figure 2. Sahtì ekwǫ̀ herd breeding cow estimates (± 95% CI), 2010-2018.[35]

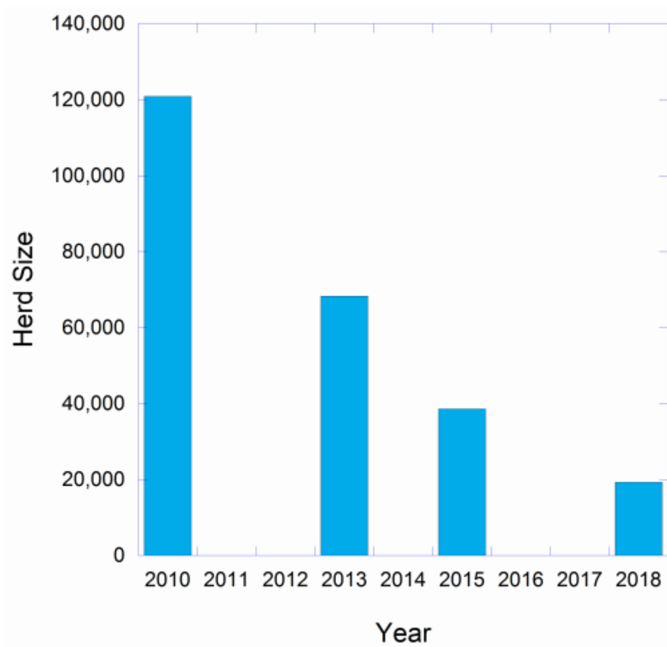

Figure 3. Sahtì ekwǫ̀ herd population estimates, (± 95% CI) (2010-2015).[36]

[35] PR (BNE 2019): 001 – Joint Management Proposal on Management Actions for the Bluenose-East Ekwǫ̀ (Barren-ground caribou) Herd: 2019-2021.
[36] PR (BNE 2019): 164 - ENR Public Hearing Presentation.

“A rapid and continuing decline”[37] is how TG and GNWT characterized the 2019 Sahtì ekwǫ̀ herd’s status. Based on the survey results, the herd has declined annually by about 20% from about 103,000 in 2010 to 19,300 in 2018. This equates to a total decline of 81%.[38]

The herd may be declining due to the low annual survival of cows (averaging 79%, 2010-2018, based on Table 1) and calves (averaging 36%, 2010-2018, based on Table 2).[39]The survival rate for adult cows needs to be at least 84-92% for a stable herd.[40] Calf survival rates, the ratio of calves to 100 cows, should be about 35-45 calves: 100 cows in a stable herd in October. In October 2018, the Sahtì ekwǫ̀ herd had a ratio of 25 calves: 100 cows.[41]

Table 1. Collar-based annual survival estimates of Sahtì ekwǫ̀ cows from 2010-2011 to 2017-2018. A caribou year begins in June and ends at the end of May.[42]

Caribou year	Survival	SE	95% Confidence Interval	
2010	0.67	0.16	0.33	0.89
2011	0.97	0.03	0.84	1.00
2012	0.60	0.08	0.45	0.74
2013	0.74	0.09	0.54	0.88
2014	0.79	0.08	0.60	0.90
2015	0.93	0.04	0.77	0.98
2016	0.84	0.07	0.67	0.93
2017	0.75	0.08	0.55	0.88

[37] PR (BNE 2019): 001 - Joint Proposal on Management Actions for the Bluenose-East ʔekwǫ̀ (Barren-ground caribou) Herd: 2019 – 2021.
[38] PR (BNE 2019): 201 – Undertaking #1, Part B, ENR to WRRB, 2019 Bluenose-East Caribou Herd Public Hearing.
[39] Ibid.
[40] Ibid.
[41] PR (BNE 2019): 165 - ENR Public Hearing Presentation Speaking Notes.
[42] PR (BNE 2019): 009 - TG and ENR Responses to Information Requests Round No.1.

Table 2. Annual Survival Estimates of Sahtì ekwǫ̀ calves from 2009-2018.[43]

Caribou Year	Survival	Standard Error	Lower 95% Confidence Interval	Upper 95% Confidence Interval
2009	0.46	0.017	0.427	0.495
2010				
2011				
2012				
2013	0.36	0.014	0.334	0.388
2014				
2015	0.347	0.015	0.318	0.376
2016	0.434	0.024	0.389	0.481
2017	0.435	0.019	0.401	0.475
2018	0.257	0.257	0.016	0.291

Pregnancy rates, based on testing the cows during collaring, are high. In healthy herds, the breeding-age cows usually have a pregnancy rate of 80% or more.[44] In June 2018, the proportion of breeding females in the BNE herd was 83%, which suggests a healthy pregnancy rate.[45]

Harvest was estimated to be about 1260 ʔekwǫ̀ per year between 1998 and 2005. Harvest rates increased between 2009/10 and 2013/14 (2009/10 – 3,466, 2010/11 – 2,918, 2011/12 – 1,766, 2012/13 – 2,562 and 2013/14 – 3,016). Harvest data from 2014/15 and 2015/16 are not published.[46] Harvest levels decreased dramatically in 2016/17 and 2017/18 to 373 and 323 ʔekwǫ̀, respectively, after a TAH of 750 bulls was implemented in 2016.[47]

In 2016, the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) assessed ʔekwǫ̀ in the NWT and Nunavut as Threatened. The status of ʔekwǫ̀ under federal Species at Risk legislation is currently under review. Within the NWT, ʔekwǫ̀ were assessed by the Species at Risk Committee as Threatened in 2017 and were later listed as Threatened under the NWT *Species at Risk Act* in 2018.

Guidance for the management and monitoring of the Sahtì ekwǫ̀ herd in the NWT is primarily found within the ACCWM's *Taking Care of Caribou Management Plan*. In

[43] PR (BNE 2019): 009 – TG and ENR Responses to Information Requests Round No. 1.
[44] PR (BNE 2019): 164 - ENR Public Hearing Presentation.
[45] Ibid.
[46] Ibid.
[47] Ibid.

2018, the Sahtì ekwǫ̀ herd was assessed by the ACCWM as being in the red zone.[48] A red status is assigned when the population level is low.[49] For the Sahtì ekwǫ̀ herd, a low population is under 20,000 animals.[50]

Movement of Collared ʔekwǫ̀ among Herds

GNWT assessed the movement of collared females between the Sahtì ekwǫ̀ and neighbouring Bluenose-West and Kǫ̀k'èetì ekwǫ̀ calving grounds from 2010-2018 and determined there was minimal movement of cows to or from neighbouring herds.[51] Figure 4 depicts the number of collared animals that have immigrated and emigrated from the Sahtì ekwǫ̀ herd from 2010-2014 and 2016-2018.

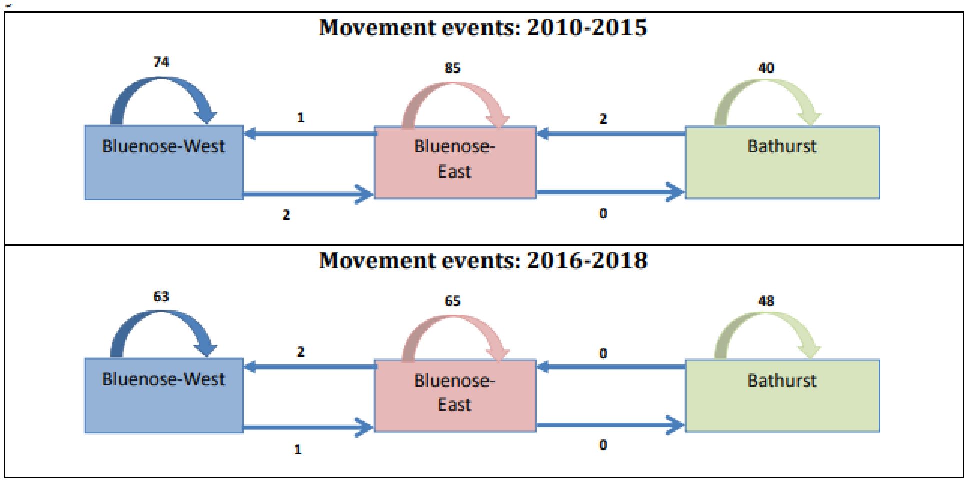

Figure 4. Movement of collared animals in and out of the Sahtì ekwo herd 2010-2015 and 2016-2018.[52]

State of the Habitat

The Joint Proposal stated that while harvest levels likely contributed to the herd's decline between 2010 and 2015, harvest was relatively low between 2015 and 2018 and thus other factors must be at play.[53] The proposal goes on to list predation, disturbance from industry, and adverse environmental conditions as being key to the Sahtì ekwǫ̀ herd's decline.[54]

[48] PR (BNE 2019): 080 - Advisory Committee for Cooperation on Wildlife Management. 2019. Action Plan for the Bluenose East Caribou Herd 2019-2020 – Red Status. Yellowknife, NT.
[49] PR (BNE 2019): 069- Taking Care of Caribou: the Cape Bathurst, Bluenose-West, and Bluenose-East Barren-Ground Caribou Herds Management Plan. ACCWM. 2014.
[50] Ibid.
[51] PR (BNE 2019): 201 – Undertaking #1, Part B, ENR to WRRB, 2019 Bluenose-East Caribou Herd Public Hearing.
[52] Ibid.
[53] PR (BNE 2019): 001 - Joint Proposal on Management Actions for the Bluenose-East ʔekwǫ̀ (Barren-ground caribou) Herd: 2019 – 2021.
[54] Ibid.

Boulanger and Adamczewski found that climate variables including summer warble fly index, summer drought index, and winter climate factors, including snow depth, can help statistically explain cow and calf survival, and pregnancy rates.[55] For example, a drought year in 2014 likely led to poor feeding conditions, poor cow condition and low pregnancy rate in 2014-2015.[56]

The Joint Proposal identified that predation may be a key limiting factor as harvest rates are low.[57] However, without survey information on predators, the effects of predation cannot be evaluated. The WRRB submitted recommendations for predator management to TG and GNWT on February 6, 2019. These recommendations included surveys of predators on the Sahtì ekwǫ̀ range including dìga, sahcho, and *Det'ǫcho* (eagle). The Governments accepted theses recommendations with some variations. This correspondence is in Appendix H.

6.2. Conclusion

The WRRB agrees with TG and GNWT's characterization of the herd's continuing and severe decline based on the aerial photographic calving ground surveys (2010-2018). It remains unclear what the causes of the decline may be. The WRRB notes that with the updated information on adult survival,[58] the average is 79% (2010-2018) and, while this varies annually, it is not as low as the 71% adult survival rate reported by the Joint Proposal.[59] The WRRB is also concerned by the low calf survival, which, while varying between years, is trending down and is lower during the summer than the winter (for the 4 years when it was measured both in the fall and the following late winter).[60] It is uncertain whether the average rate of adult cow and calf survival is sufficient to explain the rate of decline, as measured by the trend from the calving ground survey.

The completeness and reliability of the evidence available to the Board is variable. The calving ground survey, based on the Board's review of the resulting report,[61] was conducted to a high technical standard. The sex and age composition surveys are not reported in detail, but what detail there is, appears reliable. The WRRB does not agree that pregnancy rates are high since the follow-up evidence indicated that rates vary annually.[62] Relying on testing of the collared cows to measure pregnancy adds

[55] PR (BNE 2019): 041 - Analysis of environmental, temporal, and spatial factors affecting demography of the Bathurst and Bluenose-East caribou herds DRAFT June. Boulanger & Adamczewski. 2017.
[56] Ibid.
[57] PR (BNE 2019): 001 - Joint Proposal on Management Actions for the Bluenose-East Ɂekwǫ̀ (Barren-ground caribou) Herd: 2019 – 2021.
[58] PR (BNE 2019): 009 - TG and ENR Responses to Information Requests Round No.1.
[59] PR (BNE 2019): 001 - Joint Proposal on Management Actions for the Bluenose-East Ɂekwǫ̀ (Barren-ground caribou) Herd: 2019 – 2021.
[60] PR (BNE 2019): 009 - TG and ENR Responses to Information Requests Round No.1.
[61] PR (BNE 2019): 201 - Undertaking #1, Part B, ENR to WRRB, 2019 Bluenose-East Caribou Herd Public Hearing.
[62] PR (BNE 2019): 009 - TG and ENR Responses to Information Requests Round No.1.

uncertainty as it overestimates rates compared to fecal sampling or the percentage of breeding cows on the calving ground. The WRRB notes that in 2010 and 2015, the percentage of pregnant breeding cows was 61-63% compared to 80-83% in 2013 and 2018.[63]

The WRRB heard the GNWT express confidence in the reported harvest levels[64] and the department state that reduced harvest levels were a result of changes in winter distribution relative to the communities. There is a gap in the harvest information provided in the Joint Proposal, which only summarizes rates up to 2012/13 (average 2700-4000/year) and then for 2016-2018 (323-373 bulls).[65] The recent numbers constitute an abrupt 10-fold decrease in harvesting, well below the 2016 TAH level. However, GNWT and TG neither analysed winter distribution relative to neighboring herds nor included harvesters' information on location of harvest. This leaves the WRRB uncertain about the reliability of the harvest information.

The WRRB is concerned that TG and GNWT's Joint Proposal has not provided all the available information on predation. For example, the rate of predator sightings during aerial or ground-based surveys is not included. Although the WRRB issued an Information Request for the annual and seasonal rate of collar loss as an indicator of survival, only the annual rate of collar loss was provided.[66] It would have been helpful for the WRRB to know in which season and where the cows were dying to help determine if mortalities were due to predation.

The Joint Proposal did not offer any evidence to help the WRRB understand how the uncertainty and complexity of the effects of climate change can be addressed in halting the decline of the herd.

However, Petter Jacobson, TK Researcher for TG, did state

> *"The first thing we -- was -- that was easily noticeable by the Elders was the impact of climate change on caribou and its habitats. And because of the increasing temperatures and the melting summer snow, caribou are now engaging in new behaviours, like we see them standing in water for long time periods. And the photo on the bottom shows a herd we saw just standing a long time in the water to try to cool down. And last summer we saw for the first time herds running in circles. And the -- they're doing this to try to avoid heat and harassment by insects and they're trying to create wind. And this was the first*

[63] PR (BNE 2019): 009 - TG and ENR Responses to Information Requests Round No.1.
[64] PR (BNE 2019): 174 - Transcript, April 10, 2019 (DAY 2) - 2019 Bluenose-East Caribou Herd Public Hearing. pp. 34-36.
[65] PR (BNE 2019): 001 - Joint Proposal on Management Actions for the Bluenose-East ʔekwǫ̀ (Barren-ground caribou) Herd: 2019 – 2021.
[66] PR (BNE 2019): 009 - TG and ENR Responses to Information Requests Round No.1.

time that the Tłı̨chǫ monitors observed this behaviour and also it's the first time that their Inuit partners who we worked with observed this type of behaviour. … In relation to climate change, industrial development as well as harvesting restriction, the Tłı̨chǫ will often say, And sitting on the land with Elders and harvesters I often hear statements such as, caribou are not here because people are not here. And these type of statements demonstrate our program recommendations to support Indigenous people on the land activities to restore balances in 9 the ecosystem. Okay, so I'm going to move on from our results to some of our plans that we outlined in the management proposal. One (1) purpose of traditional knowledge research is to gather and use the Elders' knowledge, but also create space for that knowledge in decision-making and management". [67]

Nevertheless, the overall evidence available to the Board including that from Indigenous elders, and the trend in ʔekwǫ̀ numbers are clear and compelling. As such, the WRRB concluded that the preponderance of the Indigenous and scientific evidence submitted suggests that there is a serious conservation concern and increased monitoring actions are both warranted and urgently required. In addition to a limited bulls only harvest, additional management and monitoring actions that focus on reducing predation and disturbance to Sahtì ekwǫ̀ and their habitat are required.

7.0. WRRB's Determinations and Recommendations

7.1. Introduction

In developing determinations and recommendations to halt the decline of the Sahtì ekwǫ̀ herd, the WRRB was highly concerned about the need for effective and timely actions. This is in agreement with Dr. John B. Zoe, TG, who stated that:

"So, all I'm saying is that we need to help our Joint Management Proposal more than we have in the past with the Bathurst Joint Management Proposal. We've got to do something different…".[68]

and, the GNWT who stated that:

"Timely conservation-based management actions are needed to help the BNE herd recover so that it can once again provide sustainable harvests that meet the needs of traditional users and communities".[69]

[67] PR (BNE 2019): 173 – Transcript – April 9, 2019 (DAY 1) - 2019 Bluenose-East Caribou Herd Public Hearing. p 82.
[68] Ibid. p 119.
[69] PR (BNE 2019): 196 - ENR Final Written Argument.

Consistent with the requirements of the Tłı̨chǫ Agreement, the WRRB is taking a precautionary approach[70] as well as learning from the experience of the 2016 TAH, which did not on its own achieve the objective of halting the decline. Reducing harvest and predation are the two management actions that most directly and immediately affect ʔekwǫ̀ survival rates.

While the WRRB is most concerned about harvest and predation, the Board also recognizes the importance of a healthy habitat, efficient and effective monitoring that is able to rapidly inform management decisions (adaptive management), and the support and understanding of an informed public. Therefore, in addition to the urgency of actions to halt the decline, the WRRB has recommendations on habitat, adaptive management, and education.

7.2. Total Allowable Harvest

7.2.1. Introduction

In the Tłı̨chǫ Agreement, a TAH level is defined as *"in relation to a population or stock of wildlife, the total amount of that population or stock that may be harvested annually"* (i.e. a TAH is a specific number of ʔekwǫ̀ that can be harvested from a particular herd). As set out in Section 12.5.5(a)(i) of the Tłı̨chǫ Agreement, the WRRB has sole responsibility for making a final determination with respect to a TAH for Wek'èezhìı.

In 2016 the WRRB made a determination to implement a TAH of 750, bulls only for Sahtì ekwǫ̀. This was the first TAH for Sahtì ekwǫ̀ in Wek'èezhìı.

Increasing adult survival by reducing harvest rates is a first and, often, the only direct management action. The effectiveness of harvest reduction as a stand-alone action is dependent on the factors which are driving the decline and whether they have changed during the decline.

7.2.2. Proponent's Evidence

The Joint Proposal indicates that, even with a reduced harvest of 373 Sahtì ekwǫ̀ in 2016/17 and 323 Sahtì ekwǫ̀ in 2017/18, the herd still declined about 20% for each of those two years. GNWT has undertaken computer modeling to project the effectiveness of reducing harvests under different levels of calf and adult survival. GNWT concluded that if adult and calf survival increased to at least >85% and >40%, respectively, a harvest of 300 bulls would not hinder recovery.[71] GNWT's rationale for decreasing the

[70] Section 12.1.5(c) of the Tłı̨chǫ Agreement.
[71] PR (BNE 2019): 009 - TG and ENR Responses to Information Requests Round No.1.

harvest from 1.9% (TAH 750 bulls in 2016) to 1.6% (TAH 300 bulls in 2019) is to have minimal effect on the rate of decline while providing for cultural continuity.[72]

7.2.3. Other Parties' Evidence

NSMA supported the proposed action to lower harvest limits and recommended a variable TAH of up to 300 bulls only Sahtì ekwǫ̀ per season.[73] NSMA further recommended an annual review of the TAH based on cow and calf survival rates, using an adaptive management framework and response plan.[74] YKDFN did not support either the TAH of 300 bulls only Sahtì ekwǫ̀ or the six Sahtì ekwǫ̀ allocated for YKDFN, and they did not propose alternative numbers.[75]

DGG highlighted the continued implementation of their conservation plan *Belare wíle Gots'ę́ ʔekwę́ – Caribou for All Time*, in particular, the policy to increase *Dene Béré* (alternative harvest) traditions, harvesting what the land does provide in abundance. Elder Walter Bezha said

> *"But Délı̨nę is leading the plan. We're implementing, we're harvesting, we have -- we -- we're harvesting more fish, and more moose, and more woodland caribou than we ever have in the last ten (10) years. And we're not going to be harvesting something that's not [there] -- you've seen the -- the information from ENR yesterday about where the caribou have been the last year, the migration pattern"*.[76]

7.2.4. Analysis and Determination

In the preceding Section 6, the WRRB questioned whether monitoring of harvest levels is providing accurate information. The Joint Proposal provides no evidence to determine the effectiveness of the authorization cards compared to, for example, information collected at check stations or through officer patrols. Such a comparison could have supported the TG and GNWT assumption that the harvest levels are accurately measured.

The GNWT reported that recovery would not be hindered by a harvest of 300, if adult and calf survival increased to at least >85% and >40%, respectively.[77] This then, is a

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[72] PR (BNE 2019): 001 - Joint Proposal on Management Actions for the Bluenose-East ʔekwǫ̀ (Barren-ground caribou) Herd: 2019 – 2021.
[73] PR (BNE 2019): 186 - North Slave Métis Alliance Final Written Argument.
[74] Ibid.
[75] PR (BNE 2019): 189 - Yellowknives Dene First Nation Final Written Argument.
[76] PR (BNE 2019): 175 – Transcript – April 11, 2019 (DAY 3) – 2019 Bluenose-East Caribou Herd Public Hearing. pp. 53-54.
[77] PR (BNE 2019): 009 - TG and ENR Responses to Information Requests Round No.1.

question of how to increase survival. The WRRB notes that GNWT has not used its population model to explore how the 2016-2018 harvest levels influenced the current annual rate of decline under the measured rates of adult and calf survival.

Additionally, the proposal does not provide evidence to explain how reducing the bull harvest will increase the survival of cows. Increasing the survival rate of cows to between 86 and 90% is considered necessary for herd recovery. In other words, there is little or no evidence to suggest that the reduced harvest of 300 bulls will ensure that the Sahtì ekwǫ̀ herd will stabilize or recover. However, further harvest limitations could reduce any direct and/or indirect sources of mortality to Sahtì ekwǫ̀ cows caused by harvesters.[78]

Emphasis on bull harvest over cow harvest should be greatest in declining herds and/or herds at low numbers.[79] However, as noted by the Tłı̨chǫ elders, it is also important to protect the bulls in order for them to continue guarding the cows from dìga and providing strong genetic material for the future herd.[80] A limited harvest of *yaagoa* (younger bull; third year male ʔekwǫ̀) in the early spring, and *wedzıh* (biggest male ʔekwǫ̀) in the late spring and fall[81] will permit Tłı̨chǫ citizens to continue their relationship with the ʔekwǫ̀, slow the rate of herd decline, and ensure that cows can still be protected by the wedzıh. As Tammy Steinwand-Deschambeault explained:

> *"Our perspective is that with a focus on younger bulls, this total allowable harvest represents a low additive risk for the herd, which has been outlined in GNWT's presentation and modeling work"*.[82]

Harvesting ʔekwǫ̀ is about more than just food security[83] for the Tłı̨chǫ, it is about Tłı̨chǫ harvesters' connections within their culture, language and way of life. Tammy Steinwand-Deschambeault explained *"[*On the table in front of me, there are*] special artifacts carrying the spirit of the caribou. They will help us tell our story"*.[84]

Dr. John B. Zoe sums up the importance of Tłı̨chǫ thriving, when he said harvesting is

> *"… a way of life, in relation to the caribou is described in the Tłı̨chǫ Agreement, which is 12.1.1, which encompasses our livelihood and we try to capture that in our agreement to ensure that we always have a connection to the caribou, the*

[78] PR (BNE 2019): 009 - TG and ENR Responses to Information Requests Round No.1.
[79] Ibid.
[80] PR (BNE 2019): 061 - Caribou migration and the state of their habitat. Legat et al. 2001.
[81] Ibid.
[82] PR (BNE 2019): 173 – Transcript – April 9, 2019 (DAY 1) - 2019 Bluenose-East Caribou Herd Public Hearing. p.74.
[83] Food security is defined as "the state of having reliable access to a sufficient quantity of affordable, nutritious food". https://www.lexico.com/en/definition/food_security.
[84] PR (BNE 2019): 173 – Transcript – April 9, 2019 (DAY 1) - 2019 Bluenose-East Caribou Herd Public Hearing. p.68.

activity around the caribou and the ceremonial games that happen around the -- the caribou and the travel. Everything that we -- that we had was in relation to the caribou".[85]

And near the end of his presentation for TG, Dr. Zoe reiterated the importance of the Tłı̨chǫ way of life:

"And so the picture I'm trying to paint today is that going as far back as a hundred and fifty (150) years ago, we've been fighting against the current, fighting against a change, and that change is disenfranchising our ability to carry on our way of life, our knowledge that comes with that life, our kinship, our relation to the animals and the fish in the water and to the trees that provide the birch bark to go -- to go to where we're going. All these things that are there that people continue their way of life and kept the information alive until today; we still have it".[86]

Figure 5 shows an approach to how the harvest rate and sex ratio of harvest could be adjusted to the herd's risk status.[87] Indicators of a herd at high risk include low calf recruitment, low cow survival, poor condition as assessed by harvesters, and high dìga numbers. Harvest in high-risk herds is tolerable at 1% or less of the herd and may increase to 2, 3 and 4% of the herd in lower-risk herds. Emphasis on harvest of bulls only or a high percentage of bulls in the harvest would be greatest in high-risk herds. This approach is contingent upon ongoing reliable reporting of harvest by all harvesters, despite the herd's size or trend.

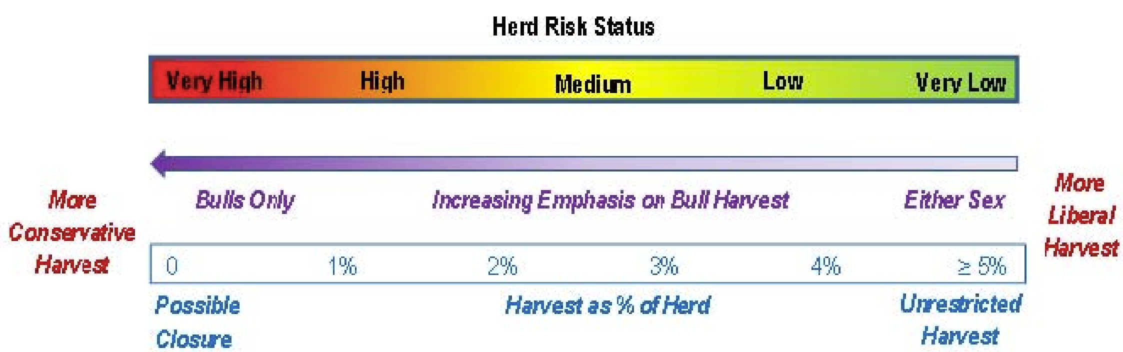


Figure 5. Suggested approach to recommending rate (% of herd) and sex ratio of harvest depending on a herd's risk status.[88]

GNWT and TG reported that in 2016/17 and 2017/18, 373 and 323 Sahtì ekwǫ̀ were harvested, respectively. This equates to a harvest rate of approximately 0.91% per year

[85] PR (BNE 2019): 173 – Transcript – April 9, 2019 (DAY 1) - 2019 Bluenose-East Caribou Herd Public Hearing. p.87.
[86] Ibid. p.109.
[87] PR (BNE 2019): 095 - Harvest recommendations for barren-ground caribou based on herd risk status: A rule of thumb approach. ENR. 2013.
[88] Ibid.

based on the 2015 population estimate of 38,000. However, the Sahtì ekwǫ̀ herd continued to decline by 20% between 2016-2018. The proposed TAH of 300 bulls only Sahtì ekwǫ̀ equates to an annual harvest rate of approximately 1.6% of the 2018 population estimate. Therefore, a TAH of 300 in 2019 results in more harvest pressure on the herd than during 2016-2018. The Board believes that an acceptable harvest would be 1%, i.e.193 Sahtì ekwǫ̀, bulls only.

Furthermore, the 20% rate of decline of Sahtì ekwǫ̀ is similar to rate of decline for the Kǫ̀k'èetì ekwǫ̀. Figure 6 compares the population estimates of the two herds through time.

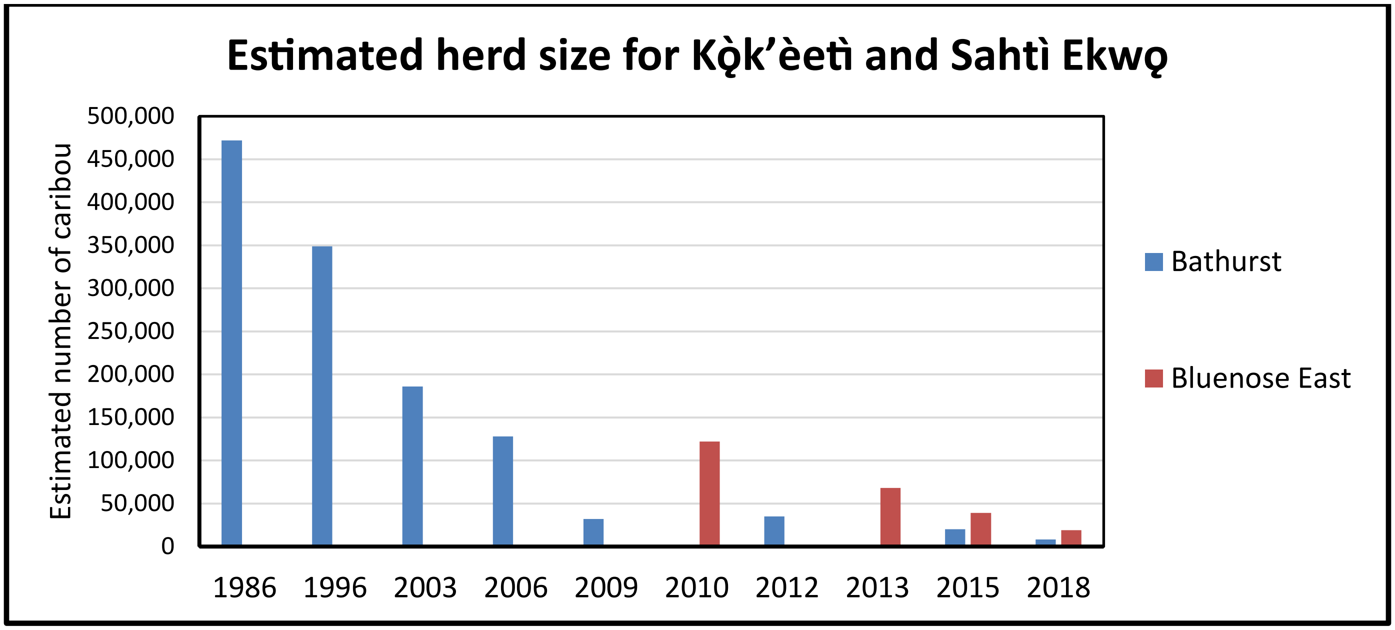


Figure 6. Comparison of Kǫ̀k'èetì ekwǫ̀ and Sahtì ekwǫ̀ estimates.[89]

Table 3 compares the population estimate of Kǫ̀k'èetì ekwǫ̀ and Sahtì ekwǫ̀, and the TAH which was determined at the time. The Board acknowledged the similar rate of decline between the herds in its decision making.

[89] https://www.enr.gov.nt.ca/en/services/barren-ground-caribou.

Table 3. Comparison of Kǫk’èetì ekwǫ̀ and Sahtì ekwǫ̀ population estimates and TAH.[90]

Kǫk’èetì Ekwǫ̀			Sahtì Ekwǫ̀		
Survey Year	Population	TAH (% of population)	Survey Year	Population	TAH (% of population)
2013	35,000	300 (0.86%)	2016	39,000	750 (1.9%)
2016	20,000	0	2018	19,300	193 (1%)
2018	8,200	0*			

* Proposed

As per Section 12.6.3 of the Tłı̨chǫ Agreement, any harvest limit *“shall be no greater than necessary to achieve the objective for which they are prescribed, and may not be prescribed where there is any other measure by which that objective could reasonably be achieved if that other measure would involve a lesser limitation on the exercise of the rights”*.

In making its determination about harvest limitations, the WRRB considered the risks to the herd given the recent high rate of decline, uncertainties about the underlying mechanisms for the decline, the importance of ekwǫ̀ for food security and cultural strength, and the comparison to the rate of decline of Kǫk’èetì ekwǫ̀.

Evidence from the public during the proceeding, as well as from Tłı̨chǫ elders during the 2007 TG workshop, suggest a willingness to restrict harvest, and leave the ʔekwǫ̀ alone.[91] Leaving ʔekwǫ̀ alone, to the elders, includes all activities that stress or bother those remaining. As Elder Leon Modeste summarizes:

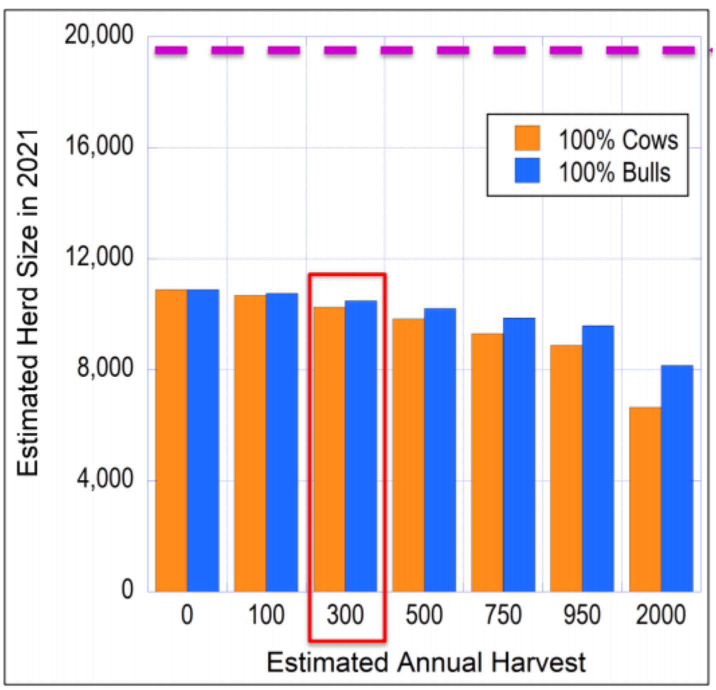
> *“We can -- it's really, really important not to talk about it for a little while and let's not talk about it, let's not follow them on planes, let's not hunt them, let's just leave them alone. I'm telling you what I'm thinking and because it's really, really important and -- and this is what the Walter said earlier, he says that I wonder -- I think my time is up but I'd like to say, like, whether you are non Aboriginal, Aboriginal people, it's really, really important to stand together on this and to have this approach together”.*[92]

[90] https://www.enr.gov.nt.ca/en/services/barren-ground-caribou.
[91] PR (BNE 2019): 145 - Transcript, Tłı̨chǫ Government Caribou Workshop, Whatì, NT – Day 2. 2007.
[92] PR (BNE 2019): 175 – Transcript – April 11, 2019 (DAY 3) – 2019 Bluenose-East Caribou Herd Public Hearing. p.31.

To slow the rate of decline, offset the effects of unreported harvest, and reduce the bulls only harvest to ensure the cows are protected, the Board believes a more conservative TAH is required. Therefore, a TAH of 193 Sahtì ekwǫ̀, bulls only, must be implemented without delay.

In making its decision, the WRRB considered Figure 7 provided by GNWT,[93] which models 2021 population estimates for Sahtì ekwǫ̀ with different harvest rates. This figure suggests that even a total harvest of zero would not halt the decline; however, lower harvest rates could *slow* the rate of decline.

Although the Board determined that a TAH of zero was appropriate when Kǫ̀k'èetì ekwǫ̀ was at a similar population level, there were other ʔekwǫ̀ herds, with no harvest restrictions, that could be utilized. The WRRB wishes to balance protection of the herd to encourage recovery with the nutritional and cultural needs of the Tłı̨chǫ, and other Indigenous people who rely on Sahtì ekwǫ̀. Figure 7 and the Joint Proposal suggest that harvest levels of 100-300 per year will likely result in minimal additional declines.[94]



Harvest	All Cows	All Bulls
0	10,898	10,898
100	10,685	10,760
300	10,260	10,486
500	9,834	10,212
750	9,303	9,869
950	8,878	9,595
2000	6,645	8,155

Figure 7. Impacts of harvest on the Sahtì ekwǫ̀ herd in 2021(adult cow survival 71% and average calf survival). The dashed line is the herd size in 2018; 19,300. The bars represent the numbers on the right.[95]

[93] PR (BNE 2019): 176 - Undertaking #2, ENR to WRRB, 2019 Bluenose-East Caribou Herd Public Hearing.
[94] PR (BNE 2019): 001 - Joint Proposal on Management Actions for the Bluenose-East ʔekwǫ̀ (Barren-ground caribou) Herd: 2019 – 2021.
[95] PR (BNE 2019): 176 - Undertaking #2, ENR to WRRB, 2019 Bluenose-East Caribou Herd Public Hearing.

Determination #1-2019 (Sahtì ekwǫ̀): Harvest of Sahtì ekwǫ̀
A total allowable harvest of 193, bulls only, for all users of the Sahtì ekwǫ̀ herd within Wek'èezhìı is to be implemented by the TG and GNWT for the 2019/20 and 2020/21 harvest seasons.

7.3. Harvest Allocation

7.3.1. Introduction

Section 12.5.5(a)(ii) of the Tłı̨chǫ Agreement states that *"the WRRB shall make a final determination about the allocation of portions of any TAH for Wek'èezhìı to groups of persons or for specified purposes"*.

7.3.2. Proponent's Evidence

Based on the 2018 population estimate and GNWT's recommended allocation from the 2014/15 harvest season, TG and GNWT proposed a herd-wide allocation for the Sahtì ekwǫ̀ herd as 300 ʔekwǫ̀, i.e. Tłı̨chǫ 118 (39.29%), Sahtú 52 (17.14%), Dehcho 5 (1.61%), Inuvialuit 2 (0.89%), Northwest Territories Métis Nation 5 (1.43%), Akaitcho 6 (2.14%), North Slave Métis Alliance 5 (1.79%), and Nunavut 107 (35.71%).[96] Although TG and GNWT have no authority over wildlife management in Nunavut, a consistent overall approach for Indigenous harvest of this migratory species is desired.[97]

The proposed allocation was based on the following:

- The results of the 2015 and 2018 calving ground surveys and the reported rate of decline of 20-21%;
- The *Taking Care of Caribou* management plan which places the Sahtì ekwǫ̀ herd in the red low population zone, where a TAH acceptable to ACCWM can be established;
- GNWT's harvest rule-of-thumb and associated modeling of harvest and ʔekwǫ̀ populations;
- The need to consider the Nunavut harvest;
- The WRRB recommendations of 2010 and 2016 for this herd, along with the herd's considerably reduced numbers, and its downward acceleration similar to the Kǫ̀k'èetì ekwǫ̀ herd's most rapid decline between 2006 and 2018.[98]

[96] PR (BNE 2019): 001 - Joint Proposal on Management Actions for the Bluenose-East Ɂekwǫ̀ (Barren-ground caribou) Herd: 2019 – 2021.
[97] Ibid.
[98] PR (BNE 2019): 149 - 2016 Reasons for Decision Related to a Joint Proposal for the Management of the Bluenose-East Ɂekwǫ̀ (Barren-ground Caribou) Herd - Part A.

7.3.3. Other Parties' Evidence

DGG and NSMA did not raise concerns about the ACCWM approach to allocation and that it has been used before by the Board also with no objections.

While YKDFN did acknowledge the *"dire reality of caribou decline and that certain concessions are required"*, they stated they did not accept the allocation due to *"the belief that indigenous rights to harvest, cannot and should not be placed in such absolute terms"*.[99] Further, YKDFN noted concerns about how overlaps in calving areas and ranges between the Sahtì ekwǫ̀ and Kǫ̀k'èetì ekwǫ̀ herds will be addressed. They point out that there could be *"potential conflicts"* between traditional harvesters of the two herds; therefore, the Chiefs of YKDFN do not agree with the six bull per year quota.[100]

7.3.4. Analysis and Determination

As the Board does not have the evidence necessary to make specific allocations in Wek'èezhìı, the WRRB concluded that they would express the allocation proportionately, basing their determination on TG and GNWT's considerations above and its authority within Wek'èezhìı only. Considering the determination for a total allowable harvest of 193, the harvest allocation would thus be: Tłı̨chǫ 76 (39.29%), Sahtú 33 (17.14%), Dehcho 3 (1.61%), Inuvialuit 2 (0.89%), Northwest Territories Métis Nation 3 (1.43%), Akaitcho 4 (2.14%), North Slave Métis Alliance 3 (1.79%) and Nunavut 69 (35.71%).

Determination #2-2019 (Sahtì ekwǫ̀): Sahtì Ekwǫ̀ Harvest Allocation
The proportional allocation of the total allowable harvest of the Sahtì ekwǫ̀ herd for the 2019/20 and 2020/21 harvest seasons shall be as follows: Tłı̨chǫ Citizens: 39.29% (76 animals) Members of an Indigenous people who traditionally harvest Sahtì ekwǫ̀ (includes Nunavut): 60.71% (117 animals) TG should determine distribution of the allocation with Tłı̨chǫ communities, and GNWT should determine distribution of the allocation to members of an Indigenous people who traditionally harvest Sahtì ekwǫ̀ in consultation with those groups.

[99] PR (BNE 2019): 189 – Yellowknives Dene First Nation Final Written Argument.
[100] PR (BNE 2019): 172 - Yellowknives Dene First Nation Public Hearing Presentation.

7.4. Harvest Monitoring

7.4.1. Introduction

Harvest monitoring is critical for ensuring TAH compliance, documenting wounding and wastage, and herd health monitoring. Community monitors, GNWT Renewable Resource Officers, and aerial and ground-based surveys are utilized for harvest monitoring purposes.

7.4.2. Proponent's Evidence

TG and GNWT's Joint Proposal described the monitoring methods for harvest and annual harvest levels.[101] GNWT monitors harvesting activity in Wek'èezhìı through a check station at Gordon Lake and McKay Lake and by Tłı̨chǫ community monitors, hired by TG. The community monitors keep TG and GNWT updated on activities on the land and report any infractions.[102] In addition, aerial reconnaissance flights throughout the fall and winter harvest seasons are conducted to check for any harvesting activity within wildlife management zones and along winter roads.

Previously, in 2015, GNWT and TG stated that officer presence would be increased in the communities if hunting pressure increased, but the primary approach is to work with community harvesters to educate them about the management and conservation measures in place. Education and prevention are the primary tools used in achieving harvest compliance; prosecution will always be a tool of last resort.[103]

7.4.3. Other Parties' Evidence

NSMA was concerned about how *"the proposed 300 bull-only (or 118 for Tłı̨chǫ and 5 for NSMA) harvest opportunity may be for the continuation of traditional practices, as compared to the risk of driving the BNE herd population further downward"* [104] and requested harvest levels for the previous 3 years for neighboring herds. GNWT responded that the Beverly/Ahiak herd's winter distribution influenced its harvests, which were in the North Slave region, 0 (2015-16); 3000 (2016-17); and 500 (2017-18).[105]

[101] PR (BNE 2019): 001 - Joint Proposal on Management Actions for the Bluenose-East Ɂekwǫ̀ (Barren-ground caribou) Herd: 2019 – 2021.
[102] Ibid.
[103] PR (BNE 2019): 149 - 2016 Reasons for Decision Related to a Joint Proposal for the Management of the Bluenose-East Ɂekwǫ̀ (Barren-ground Caribou) Herd - Part A.
[104] PR (BNE 2019): 018 - TG and ENR Responses to Information Request No. 2.
[105] Ibid.

NSMA was also concerned about how the relative proportion of harvested younger and older bulls could affect the remaining population.[106] While GNWT provided additional information on the possible effects of harvest on the adult sex ratio, they did not have specific information on whether the age structure of the harvested bulls would affect the herd.[107]

YKDFN noted an overlap of Kǫk'èetì and Sahtì ekwǫ ranges and that it is unclear in the Joint Management proposal how the overlap will be treated (i.e. what will the impact of the overlap be on harvesting as generally harvesters do not make herd distinctions?).[108]

DGG noted that their community plan "*Belare wíle Gots'ę́ ʔekwę́ – Caribou for All Time"* sets out how the community will monitor harvest. Mr. Leonard Kenny, Deputy *ʔek'wahtı̨də́* (highest honest leader) said

> *"And so the way we keep track of our own harvesting -- harvesters is that it was, you know, when you actually tried something for the first time, it was kind of difficult, but at the time, the leadership was involved with it. We made sure that RRC -- people that went hunting had to report to RRC, or any of the hunters that are out there. You know, they have to be honest, just like what the proposal said. But at the end of the day, after the hunters went back, the -- the numbers that came -- came in were -- were pretty accurate"*.[109]

Mr. Kenny stated further

> *"And it's -- it's done by -- not by ENR themself. If they did it themself, people won't -- won't participate in their -- trying to give them the -- the numbers. It has to come from the – people like … -- from the RRC, and the leadership have to be involved"*.[110]

7.4.4. Analysis and Recommendations

TG and GNWT provided annual harvest levels but did not summarize or analyze monitoring effort (number of days at the check station, number of ground and aerial patrols). GNWT relies on the locations of the satellite-collared ɂekwǫ as the basis for assigning harvest to the different herds; however, there has been no analysis completed about how harvest is assigned to which herd. There was no analysis relating harvest

[106] PR (BNE 2019): 018 - TG and ENR Responses to Information Request No. 2.
[107] Ibid.
[108] PR (BNE 2019): 189 – Yellowknives Dene First Nation Final Written Argument.
[109] PR (BNE 2019): 175 – Transcript – April 11, 2019 (DAY 3) – 2019 Bluenose-East Caribou Herd Public Hearing. p.59.
[110] Ibid. pp.60-61.

effort (distances travelled, for example) to winter distribution of Sahtì ekwǫ̀ and its neighboring herds.

The WRRB is concerned about how the communities cope when ɂekwǫ̀ harvests appear to be so annually variable (Figure 8). In the last five years, Sahtì ekwǫ̀ harvests have varied from approximately 323 to 4000 when the winter distribution of the Sahtì ekwǫ̀, Kǫ̀k'èetì ekwǫ̀, and Beverly/Ahiak ɂekwǫ̀ herds are within the NWT.

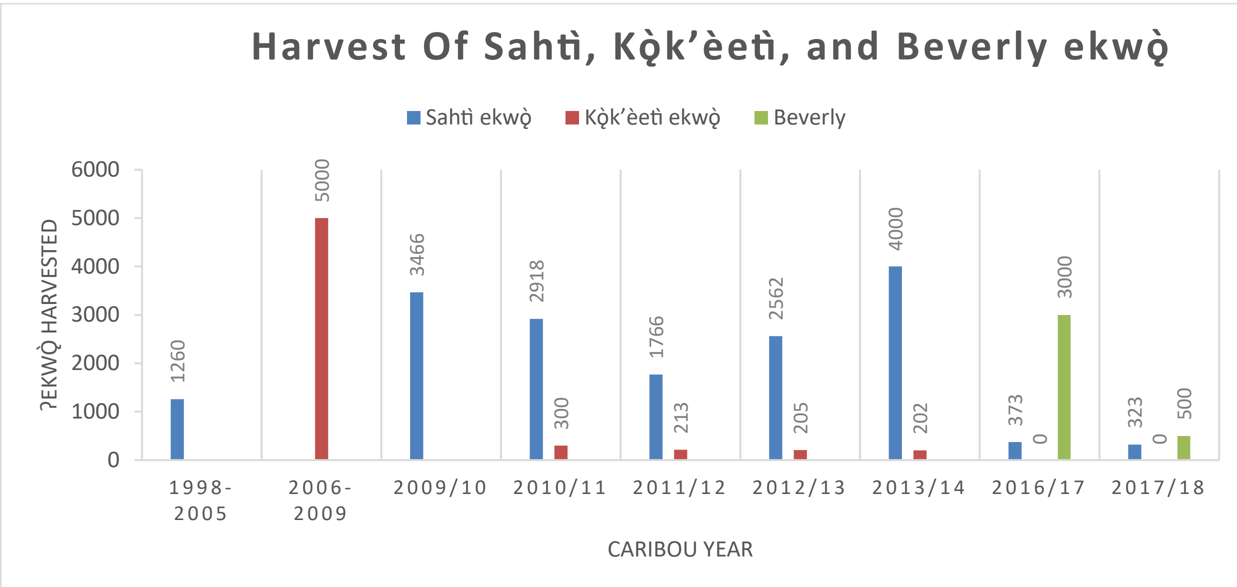


Figure 8. Ɂekwǫ̀ harvested from the Sahtì ekwǫ̀, Kǫ̀k'èetì ekwǫ̀ and Beverly/Ahiak ekwǫ̀ herds from 1998 to 2018.[111]

The uncertainty about the harvest levels and why they vary so much annually will not be solved simply by improved reporting and analyses. The reported variability also suggests that a better understanding of harvesting from the community perspective is essential. This can be achieved by an increase in community monitoring and more detailed reporting.

Harvest monitors not only provide critical information on harvest, but they are also a link between communities and responsible governments. Harvest monitors are on the front lines and can collect real-time information from harvesters on the health of the animals, and the herd. However, if ɂekwǫ̀ are abundant around the community, harvest monitors can be overworked, which can be a safety concern.

[111] PR (BNE 2019): 001 - Joint Proposal on Management Actions for the Bluenose-East Ɂekwǫ̀ (Barren-ground caribou) Herd: 2019 – 2021; and PR (BNE 2019): 009 - TG and ENR Responses to Information Requests Round No.1.

Recommendation #1-2019 (Sahtì Ekwǫ̀): Sahtì Ekwǫ̀ Harvest Monitoring
To ensure that the total allowable harvest is being adhered to, and to utilize the expertise of harvesters, TG is to revise their approach to Sahtì ekwǫ̀ harvest monitoring for the 2019/20, and 2020/21 harvest seasons to include: • Data collected from harvesters which, at minimum, should include the number and location of ʔekwǫ̀ harvested, sex, health, and body condition of the animals, and distance travelled by the harvesters; • Harvest data should be provided weekly by TG to the WRRB, and the annual harvest and monitoring summary reports prepared by GNWT and TG should be made public by June 30 of each year; and • Where necessary because of concentrations of ʔekwǫ̀ near a community, up to four community monitors should be hired to be able to collect, and report on harvest data weekly.

7.5. Predators

7.5.1. Introduction

As previously described, the Sahtì ekwǫ̀ herd decline is a serious conservation concern. Harvest restrictions alone have proven to be ineffective in halting this decline, and the evidence presented suggests that this will continue to be the case. As predators continue to put pressure on the Sahtì ekwǫ̀, predator management could aid in the short-term stabilization and recovery of the herd.

7.5.2. Proponent's Evidence

TG and GNWT's Joint Proposal identified that the Sahtì ekwǫ̀ herd decline continued despite the harvest reduction in 2016, and that low adult cow and calf survival rates suggest that predation may be a *"key limiting factor"*.[112] The Joint Proposal identified that the *Wolf Technical Feasibility Assessment: Options for Managing Wolves on the Range of the Bathurst Barren-ground Caribou Herd* could be applicable to dìga reduction options for the Sahtì ekwǫ̀ range.[113] These possible dìga reduction options will be submitted to the WRRB in a separate proposal. This proposal will recommend ways to ensure that dìga harvest is increased to a level where ʔekwǫ̀ survival rates will be measurably increased. During the public hearing, Dr. Jan Adamczewski suggested that a predator management proposal may be submitted in *"early May [2019]"*.[114] As of

[112] PR (BNE 2019): 001 - Joint Proposal on Management Actions for the Bluenose-East Ɂekwǫ̀ (Barren-ground caribou) Herd: 2019 – 2021.
[113] Ibid; and PR (BNE 2019): 078 - Wolf Technical Feasibility Assessment: Options for Managing Wolves on the Range of the Bathurst Barren-ground Caribou Herd. 2017.
[114] PR (BNE 2019): 174 – Transcript, April 10, 2019 (DAY 2) – 2019 Bluenose-East caribou Herd Public Hearing. pp.52-53.

the date of publishing this report, the Board has not yet received a predator management proposal.

The Joint Proposal also outlined an Enhanced North Slave Dìga Harvest Incentive Program, which was implemented in the 2018/19 harvest season to reduce predation and promote caribou recovery.[115] This Program increased the incentive of dìga harvested within a specified zone to up to $1650.[116]

7.5.3. Other Parties' Evidence

Elder Alfred Taniton stated

> *"There is a lot of animals that go through the wolf. We can't blame ourselves. We survive by killing by going by harvesting animals. That is how we go by things. And we have to decide on what we're going to do with the wolf. And that's another item that we need to talk about. We know we want to help the caribou. Maybe in a few years if there's a lot more caribou and then we want -- before that, we want to talk about the wolf. We have to really think about it"*.[117]

YKDFN noted that *"we fail to believe that predation is the main contributing factor, there are other factors at play which quite frankly we are yet to understand"*.[118] NSMA was concerned about a focus on predator management and stated that *"Currently, there are more discussions and commitments about predator removals than attempt to understand the predator ecology"*.[119]

NSMA argued that more thorough survey and assessment should precede any aggressive dìga/predator removal measures.[120] They reasoned that understanding the ecology of ʔekwǫ̀'s predators is essential in reinforcing the Sahtì ekwǫ̀ management plan and preventing unforeseen consequences to other ecologically important species.

NSMA also expressed concern that an increase in dìga harvesting could disturb ʔekwǫ̀ if the harvesting was from snow machines. Snow machines can create hard-packed trails that in turn would increase predation rates if dìga prefer the trails.[121]

[115] PR (BNE 2019): 001 - Joint Proposal on Management Actions for the Bluenose-East Ɂekwǫ̀ (Barren-ground caribou) Herd: 2019 – 2021.
[116] Ibid.
[117] PR (BNE 2019): 175 – Transcript – April 11, 2019 (DAY 3) – 2019 Bluenose-East Caribou Herd Public Hearing. p.184.
[118] PR (BNE 2019): 172 - Yellowknives Dene First Nation Public Hearing Presentation.
[119] PR (BNE 2019): 163 - North Slave Métis Alliance Public Hearing Presentation.
[120] PR (BNE 2019): 186 - North Slave Métis Alliance Final Written Argument.
[121] PR (BNE 2019): 018 - TG and ENR Responses to Information Request No. 2.

YKDFN noted in their closing remarks that dìga should be collared to provide data complimentary to caribou collar data, and traditional knowledge.[122]

7.5.4. Analysis and Recommendations

The Joint Proposal is short on evidence related to predation (e.g. it does not include trends in sighting rates of dìga and sahcho during aerial and ground surveys). This information would be useful in determining whether or not predator sightings are changing. An earlier analysis, which mapped seasonal ʔekwǫ̀ mortality (2010-2016), revealed that most collared ʔekwǫ̀ deaths are on summer and fall ranges and are least on calving ranges. The WRRB is perplexed that GNWT did not include evidence and the analyses that it has previously completed on dìga. The Joint Proposal notes that the Kǫk'èetì Wolf Management Feasibility Assessment 2017 can be applied to Sahtì ekwǫ̀ herd. There is no further indication of how and when such an action might be implemented.

Given that the Joint Proposal states that the limited harvest of bulls is not sufficient to halt the decline and given the low survival of the cows, the WRRB agrees that action is needed to improve cow survival.[123] While the WRRB understands the concerns expressed by NSMA and YKDFN, analysis of the Joint Proposal by the Board, and review of evidence about community concerns, reflects an immediate need for action to reduce predation on the herd. During the 2016 public hearing, the TG-GNWT Ɂekwǫ̀ consultations tours conducted January 21-23, 2019, and the 2019 public hearing, the WRRB has heard from Tłı̨chǫ community members that dìga are continuing to put pressure on ʔekwǫ̀ populations.

Mr. Jimmy Kodzin discussed the number of wolves he's seen on the tundra:

> *"When I think about the wolves, the predator such as the wolfs, we know that for the fact there are a lot of wolves out there. They usually go where the caribou are, and I did something that I have observed, something that I have seen. And one (1) time when I was out in the tundra, out in the -- and also I have seen a lot of wolf. It seems like nobody could be approach those predators such as the wolves. And also, this Elder that was with me, I told him what do we -- I never seen this amount of caribou, one lake I've been -- I have seen over five hundred (500) caribou -- five hundred 500 wolfs, sorry, five hundred (500). I told him -- he asked me what did I do? I didn't do -- and that Elder said, What did you do? I said nothing. Well it's a good thing, that Elder told me that wolf that you think -- you think you're on a snowmobile where there's lots, so it's a good thing you didn't do anything. They could attack you. If you at least killed one, you would have*

[122] PR (BNE 2019): 189 - Yellowknives Dene First Nation Final Written Argument.
[123] PR (BNE 2019): 001 - Joint Proposal on Management Actions for the Bluenose-East Ɂekwǫ̀ (Barren-ground caribou) Herd: 2019 – 2021.

not been here today, because they help each other to attack. But still -- but then I want something to be done. And also, I'm pretty sure there are some people that can -- we know for the fact that -- that the predator such as the wolves are killing off a lot of caribou, but we do not think alike. … And also, it's not a small animal, it's not a small – not a small animal".[124]

The WRRB submitted recommendations for predator management to TG and GNWT on February 6, 2019. The Governments accepted theses recommendations with some variations. This correspondence is in Appendix H. The Board strongly suggests that implementation of predator management actions should be a priority for both governments. Delayed action at this stage would not be in the public interest and would represent a failure in responsible management.

Although a priority for the TG, Tammy Steinwand-Deschambeault explained at the Hearing

> *"It* [dìga culling] *has been focused on Tłı̨chǫ knowledge and based on recommendations from the Elders, and a key aspect of the project is to utilize and follow traditional dìga harvesting laws and to enhance monitoring in partnership with GNWT. This work is ongoing and, as we knew from the outset, it would not be easy".*[125]

In 2018, the GNWT implemented the Enhanced North Slave Dìga Harvest Incentive Program as a pilot program. This program increased the incentive to up to $1650 for a dìga harvested in an area of the North Slave region centered on the collar locations of wintering ɂekwǫ̀. Dìga harvesters were required to check into and out of the dìga harvesting zone at winter road access point. The purpose of the program was to both increase interest in the TG dìga harvester training program and to reduce the number of predators on the ɂekwǫ̀ ranges.

The WRRB is aware that incentive programs can attract criticisms and may not be effective in reducing predation rates.[126] The WRRB wants to be able to see a linkage between the Enhanced North Slave Dìga Harvest Incentive Program and ɂekwǫ̀ conservation efforts.

[124] PR (BNE 2019): 175 – Transcript – April 11, 2019 (DAY 3) – 2019 Bluenose-East Caribou Herd Public Hearing. pp.117-118.
[125] PR (BNE 2019): 173 – Transcript – April 9, 2019 (DAY 1) - 2019 Bluenose-East Caribou Herd Public Hearing. p.76.
[126] PR (BNE 2019): 190 - Predator Bounties in Western Canada Cause Animal Suffering and Compromise Wildlife Conservation Efforts. Proulx and Rodtka. 2015.

The WRRB supports the accelerated implementation of TG's Dìga Harvester Training Program as described in the Joint Management Proposal as an education tool but the WRRB needs reporting about how many wolves are harvested and where.

Recommendation #2-2019 (Sahtì Ekwǫ̀): Enhanced North Slave Dìga Harvest Incentive Program
To understand the success of the pilot year of the Enhanced North Slave Dìga Harvest Incentive Program, GNWT is to provide the location and number of dìga harvested, as part of the Program, to the WRRB by July 26, 2019.

Recommendation #3-2019 (Sahtì Ekwǫ̀): Enhanced North Slave Dìga Harvest Incentive Program
To determine the future use of the Enhanced North Slave Dìga Harvest Incentive Program in managing Sahtì ekwǫ̀ and other ʔekwǫ̀ herds, GNWT and TG are to develop a framework to evaluate the effectiveness of this Program in achieving ʔekwǫ̀ conservation goals, for review and approval by the WRRB, by September 30, 2019.

Mr. Henry Gon emphasized the impact that predators including dìga, nǫ̀gha, and sahcho can have on ʔekwǫ̀.

> *"…at the same time too, I guess, we have to look at the predators that has a major role in the impact of the caribou decline. It could be the grizzly bear and sometimes they say bald eagle, and then there are some crazy wolves and wolverine. So -- and then the -- this has some problem with the total of the caribou decline and then maybe there are some other things that we shouldn't do that we're doing that cause the caribou decline. That we, as hunters, we as the hunters, we do hunt the caribou a lot for many years and we see the -- a lot of -- lot of wolves travelling around, they take a lot of caribou. One time I came across the caribou migrating across Hottah Lake and then there were a lot of -- a the big pack of wolf were following the caribou. So, the -- so very little has been said about the -- the pack of caribou, that amount of land that they don't take the -- how many -- how many caribou they would take. So if you justify that with the human hunter or hunters that are out on the land with the -- with allocations of the numbers that are allocated for the harvesting, you know, within the area compared to the amount that -- that to wolf in the hundreds and the -- how many caribou they take per day."*[127]

The Joint Proposal did not identify nǫ̀gha as a major ʔekwǫ̀ predator. Although they can take a ʔekwǫ̀, they are mostly known as scavengers. As such, declines in ʔekwǫ̀

[127] PR (BNE 2019): 175 – Transcript – April 11, 2019 (DAY 3) – 2019 Bluenose-East Caribou Herd Public Hearing. pp.107-108.

populations and implementing dìga control may have ecological implications for scavengers such as nǫ̀gha.

Recommendation #4-2019 (Sahtì Ekwǫ̀): Nǫ̀gha (wolverines)
To determine the current population trends and distribution of the Sahtì ekwǫ̀ predator, GNWT and TG are to monitor nǫ̀gha populations in Wek'èezhìı, beginning April 1, 2020. Monitoring information should be shared with the WRRB as available.

TG and GNWT's Joint Proposal included no evidence on predator sighting rates on the calving grounds nor did the 2018 calving ground survey report. But the report did recommend increased support for predator monitoring as well as for on-the-land traditional monitoring programs like the Tłı̨chǫ Ekwǫ̀ Nàxoède K'è (formerly the Boots on the Ground) program. GNWT's recommendation leads the WRRB to recommend monitoring predators on the calving grounds in collaboration with the Government of Nunavut. In an effort to reduce disturbance to ʔekwǫ̀, this work should be done on the ground, and not via aircraft.

Recommendation #5-2019 (Sahtì Ekwǫ̀): Predators on the Calving Grounds
To increase the birth rate of Sahtì ekwǫ̀, GNWT and TG are to work cooperatively with the Department of Environment, Government of Nunavut to protect the calving grounds of Sahtì ekwǫ̀ from dìga, sahcho, det'ǫcho, and nǫ̀gha. Starting in 2020, calving ground protection could take the form of monitors on the perimeter and should begin one week prior to calving.

7.6. Habitat and Land Use

7.6.1. Introduction

The range of Sahtì ekwǫ̀ encompasses land in the NT and Nunavut, which makes management more difficult; however, the herd will require intact habitat for recovery and sustained use.

7.6.2. Proponent's Evidence

TG and GNWT's Joint Proposal offered no evidence about the state of the Sahtì ekwǫ̀ habitat such as the cumulative winter range modified by fire or the total linear length of roads. The Joint Proposal does not describe seasonal distribution or indicate whether it is changing as the herd declines.

During TG's presentation, Tammy Steinwand-Deschambeault stated:

> *"Basically, the rationale for minimizing human cause disturbance to* ekwǫ̀*, caribou, and caribou habitat or dè is to provide the best conditions for caribou so that they may reach their reproductive potential, which is supported by environmental conditions and health of the land…. So, with respect to land use, the key steps in implementing, monitoring and management actions are to understand, identify and conserve important habitats and sensitive areas for* ekwǫ̀*".*[128]

Ms. Steinwand-Deschambeault then explained the importance of considering the relatedness of all that interconnects with ʔekwǫ̀ habitat:

> *" Dè has a broader meaning than land because it refers to a whole ecosystem or environment. However, where the word "ecosystem" is based on the idea that living things exist in association with non-living elements the Dogrib term "dè", it spans the meaning of association to encompass the knowledge that everything in the environment has life and spirit"*.[129]

Ms. Steinwand-Deschambeault further clarified

> *"that dè is not an independent object that's out there existing separate from culture and our daily lives, but rather is an all-encompassing holistic system of which Indigenous cultures is an integral part"*.[130]

One must look at the ecosystem in its entirety – physical, spiritual, cultural – to understand the impacts to ʔekwǫ̀ and its habitat.

In the 1990s, the Tłı̨chǫ elders initiated the research project, *Caribou Migration and the State of their Habitat*.[131] These elders wanted Tłı̨chǫ, in the future, to recognize the importance of understanding ʔekwǫ̀ habitat seasonally, annually and over time. This entailed becoming knowledgeable about various vegetation communities/ habitat-types necessary for ʔekwǫ̀ to remain healthy throughout their range. Between 1999 and 2007, these same elders worked with the research team to design a monitoring program that included not only ʔekwǫ̀ habitat but the dè. The monitoring is to be done by harvesters as they watch and use all that is within the dè. They are then to report this to Tłı̨chǫ researchers who keep track of the state of dè. Dr. John B. Zoe's presentation reflected

[128] PR (BNE 2019): 173 – Transcript – April 9, 2019 (DAY 1) - 2019 Bluenose-East Caribou Herd Public Hearing. p.77.
[129] Ibid. p.78.
[130] Ibid. p.79.
[131] PR (BNE 2019): 061 - Caribou migration and the state of their habitat. Legat et al. 2001.

the importance of being on the land, watching while using other species, and to demonstrate to ɂekwǫ̀ they are needed for more than just food security.[132]

All Dene who spoke at the public hearing stressed the importance of ɂekwǫ̀ for all aspects of their lives. Tammy Steinwand-Deschambeault said:

> *"I'd like [to] add a couple of things. Masi, for your question, Allice. I believe the short answer is yes. As Tłı̨chǫ people, we believe that we have a big part to play in the -- the whole ecosystem of -- of the North. And part of that in -- in terms of looking at the -- the caribou and, as you mentioned, the -- the belief that they hold their spirit back if they feel they're not needed by not seeing people out on the land"*.[133]

7.6.3. Other Parties' Evidence

Elder Leon Modeste talked about the importance of stories and place names,[134] adding to Dr. Zoe's discussion on the importance of places by constantly watching and walking trails and places, i.e. monitoring all habitat in the Dene way. Elder Modeste emphasized how stories guide Dene to know the dè through time, enabling harvesters to live with the animals by managing one's own behaviour while understanding the places and trails being travelled.[135]

Elder Walter Bezha spoke on habitat during his presentation for Délı̨nę:

> *"You know, there is a lot of -- I think today we probably have a lot of information on the size of habitat. You know, you showed the migration patterns there in that -- one (1) of the slides. It'll be nice -- and I've been to a lot of hearings and we don't spend very much time on -- on the impacts of -- of development. You know, even in the Nunavut area, I think there were some slides where the amount of -- of permits and a lot -- lot of things that are going on that we generally don't -- don't talk about very much, but in this case that's the question, you know, the size of our habitat. I mean, we all know that across Canada, and especially even up here, the habitats are -- are shrinking. We're using more and more land for other things. So that would be the question and then the development impacts."*[136]

[132] PR (BNE 2019): 173 – Transcript – April 9, 2019 (DAY 1) - 2019 Bluenose-East Caribou Herd Public Hearing. pp.99-121.
[133] PR (BNE 2019): 174 - Transcript, April 10, 2019 (DAY 2) - 2019 Bluenose-East Caribou Herd Public Hearing. p.66.
[134] PR (BNE 2019): 175 – Transcript – April 11, 2019 (DAY 3) – 2019 Bluenose-East Caribou Herd Public Hearing. pp.27-32.
[135] Ibid. pp. 27-32.
[136] PR (BNE 2019): 173 – Transcript – April 9, 2019 (DAY 1) - 2019 Bluenose-East Caribou Herd Public Hearing. pp.127-128.

7.6.4. Analysis and Recommendations

Although TG and GNWT state in the Joint Proposal that the recovery of Sahtì ekwǫ̀ will require healthy habitat on the herd's range in Nunavut and the Northwest Territories, they provided no metrics even as a baseline for the WRRB to assess the health of the habitat and the effectiveness of their proposed actions. It is also unclear if ɂekwǫ̀ habitats have been assessed as to their priority for management and conservation.

The WRRB acknowledges that these proposed activities will have no direct impact on herd size in the short term but are essential for the long-term health of the herd and thus measurable outcomes and deadlines should be determined. The WRRB acknowledges that ɂekwǫ̀ need all their habitat. However, habitat used at low population densities should be identified and classified as high priority.

'Important' or high priority habitat for Sahtì ekwǫ̀ are places on the range that caribou use for specific purposes during key times of their annual lifecycle. Calving areas, nǫɂokè, tataa, and key winter ranges are some general examples of important habitat. The concept of important habitat for ɂekwǫ̀ incorporates both specific place-based locations and areas known to Tłı̨chǫ elders, and their understanding of what characteristics and features makes those areas important to ɂekwǫ̀ and why.[137] The concepts of nǫɂokè and tataa reflect the Tłı̨chǫ's knowledge of the locations of key migratory corridors and their deep understanding of the importance of migratory movements and habitat connectivity for ɂekwǫ̀.[138]

Recommendation #6-2019 (Sahtì Ekwǫ̀): High Priority Habitat Identification
To work towards protecting Sahtì ekwǫ̀ habitat, TG should work with communities to identify high priority habitat for protection. High priority habitat should include habitat used by Sahtì ekwǫ̀ at low population densities. Once identified, the high priority habitat should be shared with the WRRB.

Protected areas, conservation areas or habitat designations are legally designated areas that describe restrictions on the types of activities that can occur. These restrictions can range from completely prohibiting human activity to identifying the types and timeframe of restricted activities.[139]

Recently available habitat protection and conservation provisions under the *Wildlife (NWT) Act* and *Species at Risk (NWT) Act* offer new tools to provide habitat conservation for identified high priority habitat areas. The specific legislative provisions

[137] PR (BNE 2019): 009 – TG and ENR Responses to Information Requests Round No. 1.
[138] Ibid.
[139] PR (BNE 2019) 048 - Bathurst Caribou Range Plan (Dec 2018 Draft). ENR. 2018.

to be further explored include: conservation area under Section 89 of the *Wildlife Act*; habitat protection under Section 93 of the *Wildlife Act*; habitat conservation under Section 152 of the *Species at Risk Act*; and, habitat designation under Section 80 of the *Species at Risk Act*.[140]

The Bathurst Caribou Range Plan points to Mobile Caribou Conservation Measures (MCCM) as a way of minimizing disturbance to ʔekwǫ̀ in areas of the range where ʔekwǫ̀ are particularly sensitive and at times when the herd is particularly vulnerable.[141] The purpose of developing MCCMs is to guide land use activities and operational practices in order to reduce disturbance of ʔekwǫ̀. MCCMs do not protect habitat from physical disturbance; habitat loss could still occur in areas where only MCCMs are used.

For success, detailed development of systems is required to prescribe how and when land use activity levels should be reduced or halted when wildlife is present or within an identified distance. Community members have called for this type of management response and traditional cultural rules help provide some of the context for guiding land use activity related to ʔekwǫ̀ and ʔekwǫ̀ habitat.[142] While this type of guidance is already implemented on an individual project basis, establishing a consistent approach for managing/restricting the timing and location of human land use activity would establish clearer guidelines for industry and provide a basis for improved habitat management at a range scale. Compliance and enforcement are critical.

Recommendation #7-2019 (Sahtì Ekwǫ̀): Legal Protections
Following identification of high priority habitat for Sahtì ekwǫ̀, and to ensure this habitat remains intact, legally enforceable habitat protection measures should be implemented by GNWT under the *Wildlife Act* or *Species at Risk Act (NWT).* In the interim, Mobile Caribou Conservation Measures should be implemented by GNWT and TG by September 2020.

7.7. Education

7.7.1. Introduction

Communication with and education of harvesters, Tłı̨chǫ citizens, and the public is crucial in the management of Sahtì ekwǫ̀. These initiatives aim to increase compliance, improve hunter practices, and reduce wounding and wastage.

[140] Wildlife Act, SNWT 2014, c 31, http://canlii.ca/t/5315s; and Species at Risk (NWT) Act, SNWT 2009, c 16, http://canlii.ca/t/5315r.
[141] PR (BNE 2019) 048 - Bathurst Caribou Range Plan (Dec 2018 Draft). ENR. 2018.
[142] Ibid.

Mrs. Lucy Lafferty, Tłı̨chǫ Language Culture Coordinator, Tłı̨chǫ Community Services Agency, stated

> *"We want the students in the school to be able to learn about the caribou, to be able to live with the caribou, to be able to hunt and eat the caribou if they want, but if other people are not making the right decision or proper decision, then how -- what are the students going to -- to do? They see people over-hunting, because the Dene laws that we're teaching the kids in the school, we're teaching them to share. We're teaching them to have respect. We're teaching them to only take what they need".*[143]

7.7.2. Proponent's Evidence

TG and GNWT's Joint Proposal offered no evidence about the frequency and effectiveness of education activities since the 2010 and 2016 proposals. The proposal did include a table listing proposed educational activities including annual and possible meetings, GNWT website updates, posters, and radio interviews. No firm plans were provided to the Board.

Both Dr. Zoe and Ms. Steinwand-Deschambeault talked about the importance of education if they are to monitor and manage the land to ensure the Tłı̨chǫ keep their voice. Dr. Zoe expressed the need to stop being *"herded [*like they've been] *for the last hundred and fifty years (150)".*[144] Tammy Steinwand-Deschambeault provided a solution, one that is reflected in the Tłı̨chǫ monitoring program designed by elders and researchers during the early 2000s. This program uses both story-telling and experiential knowledge of the land.

> *"We need to go back to the land ourselves with the Elders and with researchers who are trained to just write down what people see and what they hear, so that it's recorded and we can start using it for our own management because we have a say now, but how far -- how -- how do we exercise it in a way that -- that it helps the recovery. And one (1) of the things that we know is that we need to train 15 young people."*[145]

[143] PR (BNE 2019): 174 - Transcript, April 10, 2019 (DAY 2) - 2019 Bluenose-East Caribou Herd Public Hearing. p178.
[144] PR (BNE 2019): 173 – Transcript – April 9, 2019 (DAY 1) - 2019 Bluenose-East Caribou Herd Public Hearing. pp.111-112.
[145] Ibid. p.112.

7.7.3. Other Parties' Evidence

Elder Walter Bezha focused on Délı̨nę's plan, *Belare wíle Gots'ę́ ʔekwę́ – Caribou for All Time*, discussing the interconnectedness of all things and how a restricted harvest of ɂekwǫ̀ fits into this plan. He noted that DGG and the Délı̨nę Renewable Resources Council have started training people, working with them to understand the Plan.[146]

NSMA and YKDFN did not raise concerns about the proposed communication and education initiatives as presented in the Joint Proposal.

7.7.4. Analysis and Recommendations

Continuing efforts to increase awareness among Tłı̨chǫ communities and the public about the status of NWT ɂekwǫ̀ herds, the need for conservation actions and how harvesters can contribute to conservation, such as harvesting alternative species, is essential to promote recovery of the Sahtì ekwǫ̀ herd.

Tammy Steinwand-Deschambeault commented

> *"To the Tłı̨chǫ people's well-being, way of life and land-based economy with a focus on our people's connection to the caribou, the social and cultural effects of the decline. … Key messages on Tłı̨chǫ nawo (phonetic) or from the Tłı̨chǫ Agreement, Chapter 12.1.1 which is very important and talks about caribou and its habitat. To the Tłı̨chǫ people's well-being, way of life and land-based economy with a focus on our people's connection to the caribou, the social and cultural effects of the decline. And number, we'll finish up our presentation and talking about education and how we want to do better in terms of informing and working with and learning from our Elders and also sharing back information to the people that -- that we serve. How can we better work with the caribou? The traditional caribou laws that we need to continue to abide by, how do we share this knowledge with all?"*[147]

Tammy Steinwand-Deschambeault added to above statement to emphasize the fact that Dene thrive with ɂekwǫ̀.

> *"If our wise, late Tłı̨chǫ Chief's words are ignored and we are subject to a complete ban from harvesting the Sahtì Ekwo, we lose more than the meat [food security]. We lose our traditional way of life. Our identity as an Indigenous people very closely connected to the land is threatened. Mental health and wellness in*

[146] PR: (BNE 2019): 175 – Transcript, April 11, 2019 (DAY 3) – Bluenose-East Caribou Herd Public Hearing, pp.10-27.
[147] PR (BNE 2019): 173 – Transcript – April 9, 2019 (DAY 1) - 2019 Bluenose-East Caribou Herd Public Hearing. p.69.

> *our Elders will be affected. Our Elders will no longer be able to eat the food they love, the food they grew up on, the food that feeds their soul Mental health and wellness will be affected in our harvesters, who no longer will be able to provide for their family and community. Mental health and wellness will be affected in our women, who will no longer be able to contribute to the family by sharing the teachings of working on hides, making clothing, and preparing the meat for a shared meal. Our youth will be missing out on traditions and teachings that have been passed down for generation after generation. If we have no caribou to harvest, what will fill that void? What can fill that void with something as precious as caribou? There is nothing."*[148]

Tłı̨chǫ knowledge systems are well suited for learning, guiding behaviour, remembering past information, comparing past and present in relation to monitoring both human and animal behaviour and the habitat in which they thrive. Indigenous monitoring styles are particularly useful when solutions and decisions are required so actions can take place. The recommendation below came from the presentation made by Dr. John B. Zoe, who emphasized that one way in which to manage human interaction with ʔekwǫ̀ is to encourage Tłı̨chǫ citizens to be on the land harvesting, watching, and experiencing (monitoring) other wildlife resources.[149]

Recommendation #8-2019 (Sahtì Ekwǫ̀): Alternative Wildlife Species
To help people thrive within dè, including having food security, and in light of a limited harvest on Sahtì ekwǫ̀, the WRRB recommends that TG and GNWT encourage Tłı̨chǫ citizens to harvest alternative country foods, starting in September 2019.

7.8. Adaptive Management Framework

7.8.1. Introduction

The WRRB already utilizes adaptive management principles in its operations and decision-making. However, an adaptive management framework with clear thresholds may lead to specific management actions that could lead to timelier implementation of management and monitoring actions.

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[148] PR (BNE 2019): 173 – Transcript – April 9, 2019 (DAY 1) - 2019 Bluenose-East Caribou Herd Public Hearing. pp.123-124.
[149] Ibid. p.111.

7.8.2. Proponent's Evidence

Table 4 describes the biological monitoring proposed by TG and GNWT for 2019-2023.[150] These biological indicators all have corresponding adaptive monitoring options. When asked about the possibility of expanding and revising Table 4 to make it more

detailed and responsive, GNWT stated that they would need to discuss with their senior level management and pointed to the *Taking Care of Caribou Management Plan*.[151]

7.8.4. Analysis and Recommendations

The WRRB is concerned about avoiding delays in management actions. TG and GNWT acknowledge the need to speed up management, as in the Joint Proposal, they propose changing reviews of management actions from every three years to annually.[152] However, a mechanism is not proposed. During the public hearings, the WRRB asked GNWT about delays. GNWT stated that they considered the flow of information to the WRRB to be adequate.[153] An adaptive management framework could minimize delay in the implementation of management action and proposals. An adaptive management framework must involve the Board for the reasons set out in Section 12.2 of the Tłįchǫ Agreement. Such an approach provides for pre-identified management actions based on thresholds agreed to by management authorities.

Adaptive Management is now a standard part of management although in practice, it has sometimes struggled in the implementation phase.[154] The WRRB is of the view that such a framework can be developed in collaboration with governments. The Joint Proposal has already provided a rationale for specific monitoring thresholds and the management decisions that those thresholds trigger. An adaptive management framework would also be compatible with ACCWM's management plan but with more specific details and actions for the Sahtì ekwǫ̀ herd. The framework should also identify how to integrate ground observations and climate change into management activities. The WRRB is aware of examples integrating observations.[155] The strength of an adaptive management framework is to build it collaboratively, which is the basis of the WRRB recommendation.

[150] PR (BNE 2019): 001 - Joint Proposal on Management Actions for the Bluenose-East ʔekwǫ̀ (Barren-ground caribou) Herd: 2019 – 2021.
[151] PR (BNE 2019): 174 – Transcript, April 10, 2019 (DAY 2) – 2019 Bluenose-East caribou Herd Public Hearing. pp.42
[152] PR (BNE 2019): 001 - Joint Proposal on Management Actions for the Bluenose-East ʔekwǫ̀ (Barren-ground caribou) Herd: 2019 – 2021.
[153] PR (BNE 2019): 174 - Transcript, April 10, 2019 (DAY 2) - 2019 Bluenose-East Caribou Herd Public Hearing. p.37.
[154] PR (BNE 2019): 178 - Adaptive Management in the Courts. Fischman and Ruhl. 2010.
[155] PR (BNE 2019): 179 - Evaluating Success Criteria and Project Monitoring in River Enhancement Within an Adaptive Management Framework. O'Donnell and Galat. 2008; and PR (BNE 2019): 185 - Arctic Borderlands Ecological Knowledge Cooperative: can local knowledge inform caribou management? Russell et al. 2011.

Table 4: Biological Monitoring of Sahtì Ekwǫ̀.[156]

Indicator(s)	Rationale	Desired Trend	Adaptive Management Options	How Often	Notes
1. Estimate of breeding cows and extrapolated herd size from calving ground photo survey	Most reliable estimate for abundance of breeding cows and total number of cows & can be extrapolated to herd size based on sex ratio.	Stable or increasing trend in numbers of breeding cows and herd size in 2023.	If trend in breeding cows increasing, continue as before; if trend stable-negative, re-consider management.	Every 2 years	Last survey 2018, next surveys in 2020 and 2022. Trend in breeding females is most important for herd trend.
2. Cow productivity; composition survey on calving ground in spring (June)	Proportion of breeding females in June at peak of calving establishes initial productivity or approximate pregnancy rate.	Proportion of breeding cows at least 80%.	Low ratio indicates poor fecundity and suggests poor nutrition in previous summer; survey data integrates fecundity & neonatal survival.	Annual	Essential component of calving ground photographic survey. Proposed increase to annual survey to more closely monitor initial productivity and following calf survival
3. Fall sex ratio and calf:cow ratio; composition survey (October)	Tracks bull:cow ratio and fall calf:cow ratio. Fall calf:cow ratio provides an index of calf survival from birth through initial 4.5 months.	Bull:cow ratio above 30:100; calf:cow ratio of more than 40:100.	If bull:cow ratio below target, consider reducing bull harvest. Low fall calf:cow ratios suggest poor calf survival.	Annual	Sex ratio needed for June calving ground extrapolation to herd size.
4. Calf:cow ratio in late winter (March-April); composition survey	Herd can only grow if enough calves are born and survive to one year, i.e., calf recruitment is greater than mortality.	At least 30-40 calves:100 cows on average.	Sustained ratios ≤ 30:100, herd likely declining; may re-assess management.	Annual	Calf productivity & survival vary widely year-to-year, affected by several variables, including weather.
5. Caribou condition assessment from harvested animals	Condition assessment provides overall index of nutrition/environmental conditions and changes over time.	High hunter condition scores (average 2.5-3.5 out of 4); target 70 animals/year.	Sustained poor condition suggests unfavourable environmental conditions and possibly further decline.	Annual	Sample numbers to date limited (2010-2018). TG working to improve program, sampling.
6. Cow survival rate estimated from OLS model and annual survival estimates from collared cows	Cow survival estimated 75-78% in 2013 (from model). Need survival of 83-86% for stable herd. Increased collar number to 50 cows should improve annual estimation.	At least 83-86% by 2022.	If cow survival continues <80%, herd likely to continue declining.	Annual	Population trend highly sensitive to cow survival rate; recovery will depend on increased cow survival.
7. Total harvest from this herd by all users groups (numbers & sex ratio)	Accurate tracking of all harvest is essential to management and to knowing whether management actions are effective.	All harvest reported accurately and within agreed-on limits.	Re-assess recommended harvest annually; if herd continues to decline, re-assess harvest limit.	Annual	Multiple factors other than harvest may contribute to decline but harvest is one of the few factors humans control.
8. Maintain up to 70 satellite/GPS collars on herd (50 on cows, 20 on bulls)	Collar information is key to reliable surveys, tracking seasonal movements and ranges, monitoring survival and herd fidelity.	Additional collars added every March/April to maintain up to 70 collars on herd.		Annual additions to keep total of 70.	Information from collared caribou is essential to monitoring and management of all N. America caribou herds.
9. Wolf Harvest on BNE range	Several Indigenous governments and communities have expressed interest in increasing wolf harvest by hunters and trappers to increase caribou survival.	Increased harvest of wolves	If herd continues to decline, consider increased focus on wolf harvest to slow herd decline and increase likelihood of recovery.	Annual	Herd overlap in winter likely means mixing of wolves associated with those herds and may influence effectiveness of wolf removals.

[156] PR (BNE 2019): 001 - Joint Proposal on management Actions for the Bluenose-East ʔekwǫ̀ (Barren-ground caribou) Herd: 2019 – 2021.

Recommendation #9-2019 (Sahtì Ekwǫ̀): Adaptive Management Framework
WRRB, TG and GNWT to collaborate to develop a herd-specific adaptive management framework with the thresholds linked to specific management actions by January 2020.

7.9. Research and Monitoring

7.9.1. Introduction

Ongoing research and monitoring actions are required to make informed and timely management decisions for the Sahtì ekwǫ̀, including the proposed expansion of Ekwǫ̀ Nàxoède K'è onto the Sahtì ekwǫ̀ range.

7.9.2. Proponent's Evidence

TG and GNWT's Joint Proposal describes (a) biological monitoring; (b) an expansion of TG's Ekwǫ̀ Nàxoède K'è program and (c) support for research on causes of changes in ɂekwǫ̀ abundance.

(a) The biological monitoring included a change to calving ground surveys taking place every two years rather than every three years; an increase from 50 to 70 collars; an increase to annual monitoring of calf survival; continuation of harvest and body condition monitoring and dropping the calving ground reconnaissance surveys. Table 4 summarises the biological monitoring frequency, rationale, and thresholds for management actions.

(b) TG is proposing to extend the Ekwǫ̀ Nàxoède K'è program to include Sahtì ekwǫ̀ herd's summer range. TG is also proposing to monitor the area between the communities and to the barren lands.

> *"And we went there to the barren lands in 2014, I think three (3) of us here and a bunch of Elders and community people, and we didn't see one (1) caribou. We were there for three (3), four (4) days. We walked all over. We didn't see one (1) caribou, and that tell us something. That tells us something that our traditional monitoring of going back to the barren lands in the traditional way has to happen from here all the way to there"*.[157] (Dr. John B. Zoe)

[157] PR (BNE 2019): 173 – Transcript – April 9, 2019 (DAY 1) - 2019 Bluenose-East Caribou Herd Public Hearing. p.116.

(c) TG and GNWT recognize the need for research into the complexity of factors driving the declines of ʔekwǫ̀ herds using both traditional knowledge and science as well as university partners.

7.9.3. Other Parties' Evidence

YKDFN is not in favour of the radio collar monitoring program and would like to see a wider discussion around methods available for estimating the population of ʔekwǫ̀. In particular, YKDFN stated that:

> *"This is not how caribou monitoring has been done by Dene peoples. The best way to understand those species is right there on the land. You have to interact with them. You have to watch them daily. Watch what they eat. Watch what they do. Aboriginal people learn by watching the behavior of ekwǫ̀. We don't learn about wildlife remotely. We learn by being in the field, by being with ekwǫ̀ all the time"*.[158]

Additionally, YKDFN noted that there should be a general review of the methods for head counting caribou.

Elder Charlie Neyelle also noted concerns about satellite collars, stating

> *"And he says that to remove all that collar and leave it alone. Leave it alone for two (2) to four (4) years. Leave it alone. And he says that we have fish, moose, and muskox to help us sustain ourselves. He said that that is the only approach we have that would allow the caribou to come back to us..."*.[159]

NSMA supports the proposed increase in collar monitoring and annual composition surveys in June, October, and March/April, which will provide an annual update to cow and calf survival rates. NSMA noted the importance of the cow and calf survival rates in timely adaptive management of the herd.[160]

7.9.4. Analysis and Recommendations

The WRRB's approach to making monitoring and research recommendations is based on three requirements. Firstly, during delays in management actions, the decline in ʔekwǫ̀ numbers continues. This is the basis for the WRRB's recommendation to improve the implementation of adaptive management. Secondly, the WRRB is also concerned as to how traditional knowledge and community experience is used in monitoring and adaptive management. Third, there is the requirement to balance the

[158] PR (BNE 2019): 172 - Yellowknives Dene First Nation Public Hearing Presentation.
[159] PR: (BNE 2019): 177 – Transcript, April 11, 2019 (DAY 3) – Bluenose-East Caribou Herd Public Hearing, p.39.
[160] PR (BNE 2019): 186 - North Slave Métis Alliance Final Written Argument.

perspective of leaving the ʔekwǫ̀ alone against the need for monitoring information for management.

As a rationale for increasing the frequency of the calving ground estimates to every two years, the GNWT cites the rapid decline of the herd and possible dìga management implementation. The Board understands that increasing the frequency of calving ground surveys is potentially a mixed blessing as statistical differences in population numbers may be more difficult to detect. However, the WRRB considers that this possible disadvantage of the increased survey frequency can be reduced by using rates of adult and calf survival to also interpret trends.

Recommendation #10-2019 (Sahtì Ekwǫ̀): Population Surveys
To ensure timely adaptive management, GNWT should conduct population surveys for sahtì ekwǫ̀ every two years. The next population survey should thus take place June 2020.

While GNWT did refer to a change in tracking seasonal calf survival three times a year, they did not mention the need to increase sample size to reliably monitor pregnancy rates which is the first step in monitoring calf survival.[161] Hence, the need for WRRB's recommendation to monitor pregnancy rates through fecal pellet sampling. The WRRB also notes that pregnancy rates are a sensitive indicator to conditions including climate change on the summer ranges and thus can be related to observations from TG's Ekwǫ̀ Nàxoède K'è program.

Recommendation #11-2019 (Sahtì Ekwǫ̀): Pregnancy Monitoring
To better understand the health of the Sahtì ekwǫ̀ herd, GNWT and TG should implement Sahtì ekwǫ̀ pregnancy monitoring through fecal pellet collection in the winter months, starting January 2020. Methodology for this program should include community-based sampling.

Monitoring calf survival in June will require an annual presence of people and aircraft on the calving ground as does WRRB's recommendation to monitor predators. At the same time, however, WRRB acknowledges the sensitivity of calving cows and thus the need to be careful to minimize disturbance. In this context, then, WRRB agrees with GNWT's recommendation to minimize disturbance on the calving grounds by halting the Calving Ground Reconnaissance Surveys (leave the ʔekwǫ̀ alone). The Board understands that by not conducting the calving ground reconnaissance survey, the amount of information on trends in calving densities (ʔekwǫ̀/km^2) is reduced.

[161] PR (BNE 2019): 009 - TG and ENR Responses to Information Requests Round No.1.

Recommendation #12-2019 (Sahtì Ekwǫ̀): Reconnaissance Surveys
In an effort to leave the ʔekwǫ̀ alone, and only cause disturbance that is necessary, GNWT should cease the annual reconnaissance survey for Sahtì ekwǫ̀.

The importance of monitoring calving densities is that there is a potential for cows to shift calving grounds if their densities become too low for 'safety in numbers' to function.[162] GNWT initially provided no evidence on the relationship between declining calving densities and the likelihood of cows shifting calving grounds. GNWT did later release an analysis of calving densities as an undertaking during the public hearing.[163] In 2018, the densities of Sahtì ekwǫ̀ breeding females had declined to about two cows/km^2. This is similar to the Kǫ̀k'èetì ekwǫ̀ where 27% of the collared cows shifted to the Beverly/Ahiak herd's calving ground in 2018.

In the 2016 Sahtì ekwǫ̀ Joint Proposal, TG and GNWT wrote that *"50 collars should be sufficient for most applications of collar data, including population surveys"*.[164] Tłįchǫ elders have consistently objected to collars on a basis that they are disrespectful and have identified a need to leave the ʔekwǫ̀ alone.[165]

While the GNWT did not present any evidence to justify the proposed increase of 20 collars (from 50 to 70) on Sahtì ʔekwǫ̀, the WRRB believes that the additional collars will provide information necessary for herd distribution, movement and switching.

Recommendation #13-2019 (Sahtì Ekwǫ̀): Collars
To have a better understanding of herd distribution, movements, and switching, GNWT should increase the number of collars on the sahtì ekwǫ̀ herd from 50 to 70. Additional analysis gathered from the collars should be provided to the WRRB from GNWT annually including but not limited to: 1) Dispersal at calving in relation to historic data; 2) Timing of calving in relation to historic data; 3) Calf:cow ratios; and, 4) Rates of herd switching and rutting locations.

Recommendation #14-2019 (Sahtì Ekwǫ̀): Collars
Relative to the views of elders and to clarify what analyses require a larger sample size, TG and GNWT should present a detailed rationale for the collar increase to the WRRB. This will be completed using the collars on an annual basis as part of adaptive management.

[162] PR (BNE 2019): 045 - Assessing the Impacts of Summer Range on Bathurst Caribou's Productivity and Abundance since 1985. Chen et al. 2014.
[163] PR (BNE 2019): 188 - Undertaking #1, Part A, ENR to WRRB, 2019 Bluenose-East Caribou Herd Public Hearing.
[164] PR (BNE 2019): 149 - 2016 Reasons for Decision Related to a Joint Proposal for the Management of the Bluenose-East Ɂekwǫ̀ (Barren-ground Caribou) Herd - Part A.
[165] PR: (BNE 2019): 177 – Transcript, April 11, 2019 (DAY 3) – Bluenose-East Caribou Herd Public Hearing, p.39.

While the Joint Management Proposal mentioned the effects of climate change, it did not provide any evidence about options for including such information in management decisions. Under questioning, GNWT briefly described trends in climate, including an increase in summer droughts and in weather favorable for warble flies.[166] TG provided direct observations from the Ekwǫ̀ Nàxoède K'è Program (on the Bathurst herd's summer range) about hotter summers stressing ʔekwǫ̀.[167] TG also spoke to the need to incorporate their on-the-ground observations into adaptive management.[168] Throughout TG's presentation, they stressed the importance of having harvesters on the dè, and it is these harvesters that watch the land.[169]

The WRRB is aware that the effects of climate change are already being felt and that the changes on the ekwǫ̀ ranges are measurable. The question now is what can be done about the effects of climate change on ʔekwǫ̀, and their ecological relationships, including people. The WRRB sees this as best answered by having more observers on the ground[170] and then ensuring that their observations are integrated into adaptive management for the herd. An example of community-based monitoring for ʔekwǫ̀ is the Bathurst and Porcupine herds.[171] The WRRB believes that using more people on the ground (as indexed, for example by the number of observer days) is essential for adaptive management.

Recommendation #15-2019 (Sahtì Ekwǫ̀): Climate Change
To collect on-the-ground climate change observations, TG's Ekwǫ̀ Nàxoède K'è program should be expanded to the post-calving and summer ranges of Sahtì ekwǫ̀ by October 1, 2019. Results of the monitoring program should be designed to feed into an adaptive management framework.

Grand Chief Jimmy Bruneau directed the Tłı̨chǫ people to know both Western and Tłı̨chǫ knowledge so each Tłı̨chǫ citizen would be *"strong like two people"*.[172] This philosophy has been noted in oral narratives where Tłı̨chǫ leaders learned the knowledge and experiences of others to better prepare themselves for negotiating at trading posts to ensure the best return for their furs.[173]

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[166] PR (BNE 2019): 009 - TG and ENR Responses to Information Requests Round No.1.
[167] PR (BNE 2019): 174 - Transcript, April 10, 2019 (DAY 2) - 2019 Bluenose-East Caribou Herd Public Hearing. p.50.
[168] PR: (BNE 2019): 177 – Transcript, April 11, 2019 (DAY 3) – Bluenose-East Caribou Herd Public Hearing, p.82.
[169] PR (BNE 2019): 061 - Caribou migration and the state of their habitat. Legat et al. 2001; and PR: (BNE 2019): 177 – Transcript, April 11, 2019 (DAY 3) – Bluenose-East Caribou Herd Public Hearing, p.82.
[170] PR: (BNE 2019): 177 – Transcript, April 11, 2019 (DAY 3) – Bluenose-East Caribou Herd Public Hearing, p.93.
[171] PR (BNE 2019): 185 - Arctic Borderlands Ecological Knowledge Cooperative: can local knowledge inform caribou management? Russell et al. 2011.; and PR (BNE 2019): 181 - Calibration of Hunters' Impressions with Female Caribou Body Condition Indices to Predict Probability of Pregnancy. Lyver and Gunn. 2004.
[172] PR (BNE 2019): 073 - Report on a Public Hearing Held by the Wek'èezhìı Renewable Resources Board 22-26 March 20105-6 August 2010 Behchokǫ̀, NT. Appendix F.
[173] Ibid.

Tłįchǫ oral narratives stress the importance of understanding a problem, finding a solution and taking action.[174] Their approach to learning and knowing is evident in the manner in which past research projects were approached. The Tłįchǫ insist that they take an active part in research and monitoring.[175]

Today, it is vital that the Tłįchǫ lead by undertaking their own harvesting and monitoring studies as the impacts of development on Tłįchǫ lands and the environment are becoming ever more evident.

Dr Zoe emphasized this in his statement:

> *"All of the evidence in the form of stories and experiences and "the early evidence of how people lived in the landscape is in the place names that describe the … method of harvesting." tell the Tłįchǫ … and," they're using all their knowledge from last winter -- .the year – the year before, to try to use all that knowledge as to where they can greet that caribou at that time of the year in the fall time. … Nevertheless, to monitor to use the knowledge properly "It's in the heads of the people here. And we all hold pieces of our history, because it's a collective knowledge. Not everybody knows everything. … [So, to monitor the people must work together to understand what is happening across Wek'èezhìı]. We depend on each other. Not any -- any person can know everything. We rely on each other by telling each other stories."*[176]

Recommendation #16-2019 (Sahtì Ekwǫ̀): Tłįchǫ Research & Monitoring Program
To ensure that both ʔekwǫ̀ and ʔekwǫ̀ habitat monitoring and realistic harvesting numbers are recorded in a culturally appropriate manner, the Tłįchǫ Research and Monitoring Program should be implemented by TG, starting in September 2019 (See Appendix I).

7.10. Implementation of Recommendations from 2010, 2016 and 2019

As per the WRRB's Rule for Management Proposals,[177] the Board recommends that a summary report be submitted by TG and GNWT within one year of the acceptance or variance of the Board's recommendations on proposed management actions from the

[174] PR (BNE 2019): 073 - Report on a Public Hearing Held by the Wek'èezhìı Renewable Resources Board 22-26 March 20105-6 August 2010 Behchokǫ̀, NT. Appendix F.
[175] Ibid.
[176] PR (BNE 2019): 173 – Transcript – April 9, 2019 (DAY 1) - 2019 Bluenose-East Caribou Herd Public Hearing. pp.102-103.
[177] https://wrrb.ca/sites/default/files/REV%20FINAL%20Rule%20-%20Management%20Proposals%20-%2016oct18.pdf.

2019 Joint Proposal. This report should include an evaluation of the success of implementation of management actions.

While the Board submitted 60 recommendations in 2010 as well as two determinations and 24 recommendations in 2016, in the WRRB's opinion, only the determinations and 20 of the recommendations have been fully implemented (Appendix C and E).

The Board appreciates the information submitted by TG in Undertaking #3 to provide a summary on the progress on specific TK recommendations made in 2010 and 2016.[178] However, the Board notes that continued implementation of the TK recommendations is both mandatory and essential to ensure that the WRRB and other wildlife managers in Wek'èezhìı have appropriate information to make balanced decisions.

The WRRB is unable to comment on the extent of implementation on the remaining recommendations as a detailed report is not available and no measurable levels for implementation have been set. As such, the WRRB requests that TG and GNWT review the 2010 and 2016 recommendations and provide an updated implementation plan and evaluation for all outstanding recommendations.

8.0. Conclusion

With the Sahtì ekwǫ̀ herd in a critical state, there is a real sense of urgency to implement effective management actions to halt the decline as soon as possible. The decisions have been structured to have the least impact on ʔekwǫ̀ users and the greatest benefit to ʔekwǫ̀ that we can provide at this time.

> *"The process today is to try and put forth the best available information on the actions that will lead us into stabilization and recovery of the numbers that have dropped very visibly in the last number of years, but it's not a new story, but an ongoing story but with authorities that will make determinations on what we will do to -- to accommodate a recovery."*[179]
> ~ Dr. John B. Zoe

Users and managers must be willing to act now, in whatever ways possible, to protect the herd so future recovery may be possible.

> *"And one (1) thing we know is that despite all the years of having no say, we know that people survive because they never let the caribou go. They always hang on to it. Like Archie saying, we'll never let it go, because if we let it go, then*

[178] PR (BNE 2019): 200 - Undertaking #3, TG to WRRB, 2019 Bluenose-East Caribou Herd Public Hearing.
[179] PR (BNE 2019): 173 – Transcript – April 9, 2019 (DAY 1) - 2019 Bluenose-East Caribou Herd Public Hearing. p.86.

-- then that's the way it goes, because by not letting it go, we need to strengthen our relationship to the animals by doing things in the traditional way."[180]
~Dr. John B. Zoe

[180] PR (BNE 2019): 173 – Transcript – April 9, 2019 (DAY 1) - 2019 Bluenose-East Caribou Herd Public Hearing. p.115.

APPENDIX A 2019 Joint Proposal

Wek'èezhìi Renewable Resource Board
Management Proposal

1. Applicant Information
Project Title: Government of the Northwest Territories and Tłįchǫ Government Joint Proposal on Management Actions for the Bluenose-East ʔekwǫ (Barren-ground caribou) Herd 2019 – 2021
Contact Persons: **Organization Names:** **Addresses:** **Phone/Fax Numbers:** **Email addresses:** Michael Birlea Lands Protection and Renewable Resources Manager Department of Culture and Lands Protection Tłįchǫ Government Behchokǫ, NT. X0E 0Y0 Phone: 867-392-6381 Ext: 1355 Fax: 867-392-6406 MichaelBirlea@tlicho.com Bruno Croft Regional Superintendent North Slave Region Department of Environment & Natural Resources Government of the Northwest Territories 2nd Floor, ENR Main Building P.O. Box 2668 3803 Bretzlaff Drive Yellowknife, NT. X1A 2P9 Phone: 867-767-9238 Ext: 53234 Fax: 867-873-6260 Bruno_Croft@gov.nt.ca

2. Management Proposal Summary: provide a summary description of your management proposal (350 words or less).	
Start Date: July 1, 2019	**Projected End Date:** July 1, 2021
Length: 2 years	**Project Year:** 1 of 2
A June 2018 calving ground photographic survey of the Bluenose-East (BNE) herd of caribou resulted in estimates of 11,675 ± 2,040 breeding cows and 19,294 ± 4,729 adults, which indicated that the herd's rate of decline has continued at a relatively constant annual 20-21% since 2010. In June 2010 the herd was estimated at about 120,000 caribou, thus the 2018 estimate represents an 84% decline in 8 years. The Bluenose-East herd in 2018 should be considered as being in the red phase of low numbers as defined by the Advisory Committee for Cooperation on Wildlife Management (ACCWM) management plan of 2014 (pending	

confirmation from ACCWM boards). In view of this rapid continuing decline, the Tłı̨chǫ Government (TG) and Government of the Northwest Territories (GNWT) Department of Environment and Natural Resources (ENR) are proposing management actions to slow the herd's decline and promote recovery for a period of 2 years beginning in July 2019 (the start of the harvest season). Management actions should be reviewed annually as further information becomes available. Proposed actions are highlighted here and greater detail is provided in the main text. Actions are grouped under the 5 categories defined in the ACCWM plan: harvest, predators, habitat and land use, and education. In addition, revised monitoring and research are described.

(1) Harvest: TG and ENR propose that resident and commercial harvest from this herd remain at 0 and that Indigenous harvest be limited on a herd-wide basis to 300 bulls/year. This harvest is a substantial reduction from the 750 bulls determined by WRRB in 2016, but provides some continued opportunity for Indigenous harvesting and the maintenance of cultural practices. The allocation among Indigenous groups proposed retains the same proportions as in 2015 (Tłı̨chǫ 39.3%, Sahtú 17.2%, Dehcho 1.6%, Inuvialuit 0.8%, NWT Métis Nation [NWTMN] 1.5%, Akaitcho 2.1%, and North Slave Métis Alliance [NSMA] 1.8%, and Kugluktuk (NU) 35.8%. Although TG and ENR have no authority over wildlife management in NU, the NWMB in 2016 worked with the allocation formula used in NWT proposals of 2015 (340 of 950 or 35.8% for Kugluktuk). For clarity, the percentages and numbers of caribou are listed below.

Table 1. Proposed percent of harvest and numbers of BNE bulls for harvester groups, with allocation formula used as in 2015 and 2016, for harvest of 750 bulls and 300 bulls. WRRB determined herd-wide harvest of 750 bulls in 2016, recognizing that the board has no authority in the Sahtú region or Nunavut.

Harvester Group	% of Harvest	Harvest 750 Bulls	Harvest 300 Bulls
Tłı̨chǫ	39.3	295	118
Sahtú	17.2	129	52
Dehcho	1.6	12	5
Inuvialuit	0.8	6	2
NWTMN	1.5	11	5
Akaitcho	2.1	16	6
NSMA	1.8	13	5
Kugluktuk (NU)	35.8	268	107
Total	100	750	300

TG and ENR recognize that reduced caribou harvesting opportunities have serious implications for Tłı̨chǫ and other Indigenous communities, including expensive groceries replacing caribou harvest. TG and ENR will explore ways of supporting harvesting of other wildlife (e.g. moose, muskox and fish harvesting). In addition, TG and ENR will look for ways to increase on-the-land activities and cultural practices such as upkeep of old cabins, travel routes and trails.

(2) Predators: A separate TG-ENR joint management proposal to WRRB on reduction of wolf numbers on the Bluenose-East and Bathurst caribou ranges is under development. Demographic evaluation of the herd's trend suggests that recent

pregnancy rates have been healthy but survival rates of adults and calves have been low, which may indicate that predation is limiting recovery. Methods will draw on a collaborative wolf reduction feasibility assessment completed in 2017 for the Bathurst herd. To date, GNWT incentives for wolf harvesters since 2010 have not resulted in any substantive increases in numbers of wolves taken in the North Slave region. In 2019, the GNWT is proposing to increase incentives for wolf harvesters in an area centered on the collar locations of wintering Bluenose-East and Bathurst caribou. TG will continue to develop a program of training wolf harvesters using culturally acceptable methods on the winter range.

(3) Land Use and Habitat: Recovery of the Bluenose-East herd will require a healthy habitat on the herd's range in NU and in the NWT. Currently, there are no active mines and overall there has been limited development on the Bluenose-East range. However, proposed actions to support healthy habitat include the following: promotion of protecting the herd's calving grounds in NU, identifying key unburned winter ranges and increasing fire management on these areas, participation in development of the wildlife management plan for the Tibbett-to-Contwoyto winter road, and participation in any environmental assessments and land use planning in NWT and NU that may affect this herd. In addition, TG and ENR support ongoing TK and scientific research focused on identifying key caribou habitats, such as ekwò no'oke (water crossings), tataa (land crossings), important unburned winter habitat, and the herd's core range used at low numbers, and ensuring conservation of these habitats, including minimizing disturbance.

TG and ENR will continue to support research on climate factors that may affect herd trend and studies of how a changing climate, including forest fires, may be affecting vegetation and foraging conditions for caribou.

(4) Education: ENR and TG recognize the importance of continued communication and engagement with communities and harvesters about the status of the caribou herds and about management actions underway, and the importance of accurate harvest reporting by all harvesters. Initiatives such as sight-in-your-rifle, minimizing wastage and respecting traditional ways of harvesting will be continued. Annual visits to the 4 Tłı̨chǫ communities will be continued and enhanced, beginning with visits in January 2019. The ENR On-The-Land unit and North Slave staff will support and promote these efforts. A key area of emphasis will be providing information about caribou and conservation to affected communities.

(5) Monitoring & Research: Biological monitoring of the herd is proposed to increase, particularly to maintain closer monitoring of calf and adult caribou survival rates. Population surveys would be carried out at 2-year intervals. Annual composition surveys would be carried out in June, October, and March/April to assess initial productivity or pregnancy rates and mortality rates of calves to the fall and late-winter periods. Radio-collars would be increased to 70 in total (50 cows and 20 bulls) with annual additions, to increase monitoring of cow survival rates and better define seasonal distribution and herd fidelity to calving grounds. Reconnaissance surveys on the calving grounds in years between population surveys would be suspended as recent results suggest they are not always reliable trend indicators. Accurate monitoring of harvest will continue to be important; TG and ENR will seek to improve condition assessment of harvested caribou.

TG and ENR support expansion of the Traditional Knowledge caribou monitoring program Boots on the Ground. To date this TG program has been focused on Bathurst caribou on their summer range in July and August. TG and ENR will explore ways to expand the program to the Bluenose-East range and to other seasons.

TG and ENR support continuing scientific and TK research into factors contributing to caribou declines. This includes monitoring and research focused on caribou health, parasites and other diseases, and diseases and parasites from the south that may be expanding into the NWT.

Please list all permits required to conduct proposal.

Renewable Resource Boards (WRRB, SRRB and NWMB) may hold public hearings to review proposals involving a Total Allowable Harvest (TAH) for the BNE herd, as included in this proposal.

NWT and NU Wildlife Research Permits will be required annually to conduct monitoring recommended in this proposal.

3. Background (Provide information on the affected wildlife species and management issue)

A. Bluenose-East Caribou Status in 2018

A June 2018 calving ground photographic survey of the Bluenose-East (BNE) herd of caribou resulted in estimates of 11,675 ± 2,040 breeding cows and 19,294 ± 4,729 adults, which indicated that the herd's rate of decline has continued at a relatively constant annual 20-21% since 2010 (Boulanger 2018a). In June 2010 the herd was estimated at about 120,000 caribou (Adamczewski et al. 2017), thus the 2018 estimate represents an 84% decline in 8 years. Both the herd and the estimated number of adult cows have declined by about half since 2015 (Fig. 1, Boulanger et al. 2016).

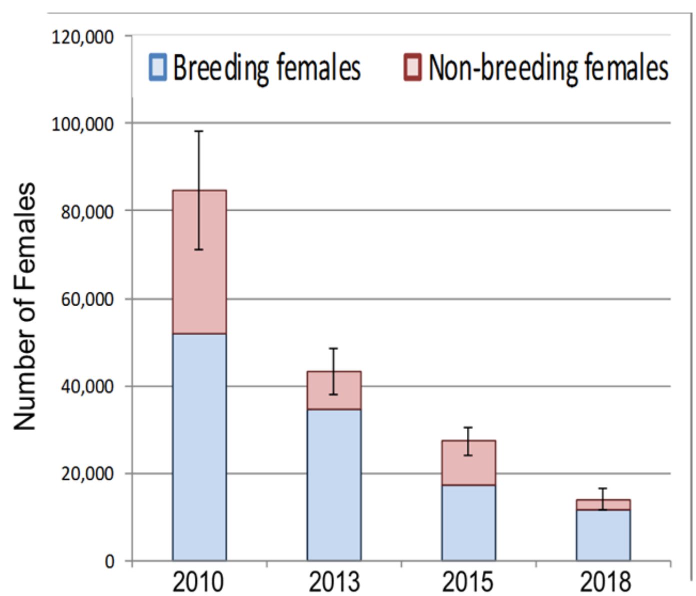

Fig. 1a. Trend of Bluenose-East herd breeding and non-breeding cows 2010-2018 based on photographic calving ground surveys (Means ± 95% Confidence Intervals).

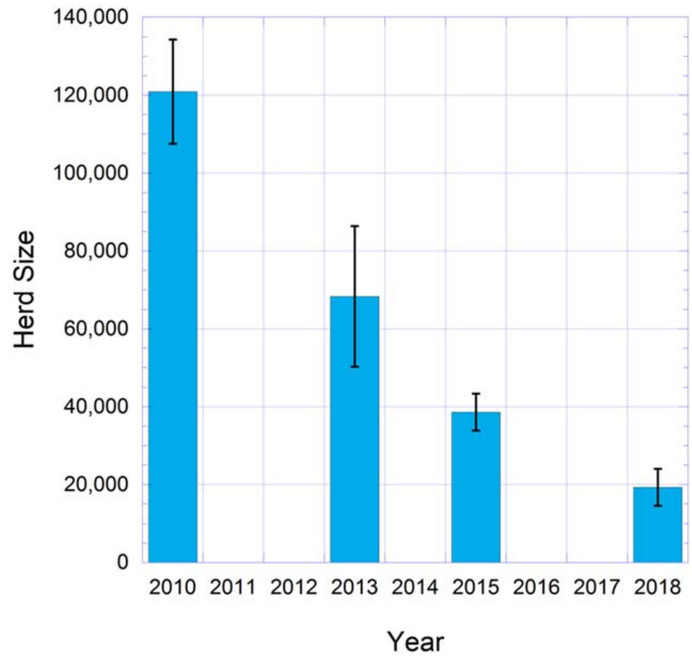

Fig. 1b. Trend of Bluenose-East herd estimates 2010-2018 based on photographic calving ground surveys (Means ± 95% Confidence Intervals).

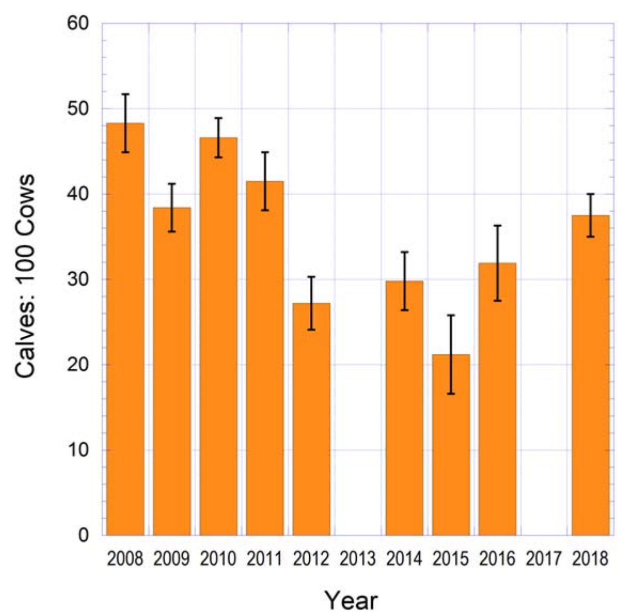

Fig. 2. Bluenose-East caribou late-winter (March/April) calf:cow ratios 2008-2018.

Population trend in caribou herds can in part be understood by examining vital rates like the pregnancy rate and survival rates of calves and adults. Cow survival was estimated 2013-2015 for the BNE herd at 71% (Boulanger et al. 2016), well below the 83-86% needed for a stable herd (Boulanger et al. 2011). An updated cow survival estimate will be generated for 2015-2018, and it will likely be similar to the 71% given that annual rates of change have been relatively constant. The pregnancy rate in 49 cows captured for collar placement 2013-2015 was 94% (46/49) and the proportion of breeding females on the Bluenose-East calving ground in 2018 was 83.4%. These results suggest that pregnancy rates have been healthy for this herd in the last few years. Late-winter calf:cow ratios provide an index of the number of the previous year's calves that survived their first 9-10 months. The last calf:cow ratio for the herd was 37.5 ± 2.5 calves: 100 cows, higher than the 21-31 calves: 100 cows observed 2014-2016. A ratio of 30 calves: 100 cows has been considered a benchmark of a stable herd, however this depends on adult survival rates being healthy (83-86%). If adult survival rates are 71% as in the BNE herd 2013-2015, then these calf:cow ratios are insufficient for a stable herd. Overall, the vital rates for the BNE herd suggest that recent pregnancy rates have been healthy but adult survival rates remain well below those associated with a stable herd and calf survival has not been sufficient for a stable herd.

The average estimated/reported Bluenose-East harvest in winters 2009-2010 to 2012-2013 was about 2700 caribou/year, and likely at least 65% cows (Adamczewski et al. 2016; BGTWG 2014). These estimates are considered minimums; wounding losses were not included, some harvest was un-reported and the true harvest may have been at least 4000/year (Adamczewski et al. 2016).

Reported harvest for the BNE herd has been as follows for 2016-2017 and 2017-2018 (Table 2).

Table 2. Bluenose-East harvest by region for 2016-2017 and 2017-2018. Numbers should be considered preliminary until confirmed with ACCWM status reports. Kugluktuk numbers from Government of NU staff, Délı̨ne harvest as reported by Délı̨ne, Wek'èezhìı harvest as reported by TG and ENR wildlife officers.

Harvest by Region	2016-2017	2017-2018
Wek'èezhìı	15 bulls	142 bulls
Délı̨ne	93 bulls, 33 cows	7 bulls
Kugluktuk	232 caribou	174 caribou
Total	373 caribou	323 caribou

The overall totals of 373 and 323 caribou were well below the harvest limits established in 2016 and reflect in part limited access to the herd, particularly in winter. These relatively limited harvest numbers likely contributed proportionately little to the herd's most recent decline 2015-2018.

B. Management Context for the Bluenose-East Caribou Herd

Guidance for the management and monitoring of the Bluenose-East herd is primarily found within the ACCWM's management plan for the Cape Bathurst, Bluenose-West and Bluenose-East herds, finalized in November 2014 (ACCWM 2014). In 2017 the ACCWM developed an Action Plan for the Bluenose-East herd and this plan was updated in 2018. The ACCWM held annual status update meetings in November for the three herds in 2016, 2017 and 2018. In 2017 the BNE herd was assessed as being in the orange phase (declining), and in 2018 the herd was assessed as being in the red zone (low numbers and below 20,000 – pending confirmation from ACCWM boards).

As a result of hearings in 2016 of the WRRB, SRRB and NWMB, harvest limits for this herd were established, respectively, as 750 bulls (intended to be herd-wide) under the WRRB, 150 (80% bulls) under the SRRB for Délı̨ne, and 340 caribou (no gender) under the NWMB for Kugluktuk. The allocation among Indigenous harvester groups established in 2015 based primarily on previously documented harvest levels was Tłı̨chǫ 39.3%, Sahtú 17.2%, Dehcho 1.6%, Inuvialuit 0.8%, NWT Métis Nation [NWTMN] 1.5%, Akaitcho 2.1%, and North Slave Métis Alliance [NSMA] 1.8%. This would leave an allocation of 35.8% BNE caribou for Nunavut.

4. Description of Proposed Management Action

Goal of Management Actions

The short-term goal of the management actions proposed is to slow the herd's decline and promote recovery. Over the longer-term, the goal is to enable sustainable caribou harvesting that addresses Indigenous community needs levels across this herd's range. In particular within Wek'èezhìi, the goal is to allow the exercise of Tłı̨chǫ rights to harvest caribou throughout Mǫwhì Gogha Dè Nı̨ı̨tłèè.

1. Harvest management

In view of the continuing rapid decline in the BNE herd and its status assessment in 2018 by the ACCWM as being in the red phase (low numbers and below 20,000, pending confirmation from ACCWM boards), TG and ENR recommend that harvest be reduced further from the limits established in 2016. Resident and commercial harvest from this herd should remain at 0. Aboriginal harvest should be limited on a herd-wide basis to 300 caribou/year with the harvest being 100% bulls.

	Harvest Sex Ratio	
	100% Cows	100% Bulls
Harvest Number	Herd Size	Herd Size
0	9923	9923
100	9702	9731
250	9370	9443
500	8818	8963
750	8266	8484
950	7824	8100
2000	5504	7086

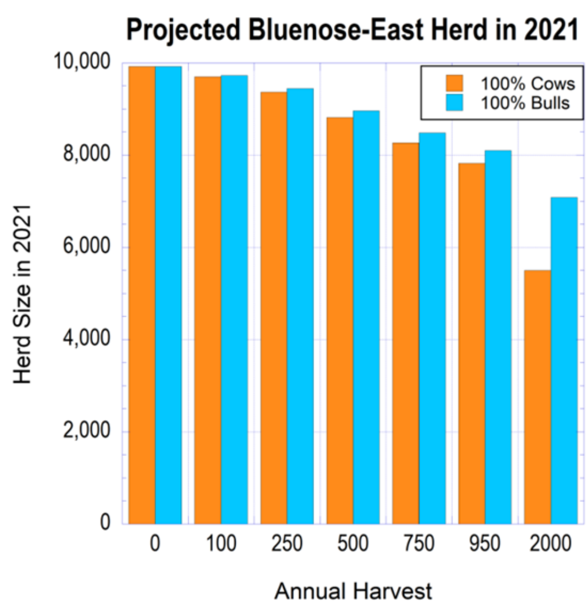

Table 3 and Figure 3. Projected herd size in the Bluenose-East herd in 2021 with various levels of harvest and harvest sex ratio. Key assumptions: Cow survival rate at 71% with no harvest, and average calf recruitment.

Modeling of the herd's likely trend over the next 3 years by J. Boulanger (2018b) suggests that if the 2015-2018 trends continues, the herd will be near or below 10,000 caribou in 2021 (Table 3 and Figure 3). Any harvest would reduce projected herd size further, but harvest levels of 100-300/year would result in limited additional decline. As harvest level increases, the incremental effect on herd decline increases. The effects of cow harvest (compared to bull harvest) are most noticeable at higher harvest levels. A larger range of modeling outcomes and details are provided by Boulanger (2018b). Estimated/reported harvest in the 2016/2017 (373 caribou) and 2017/2018 (323 caribou) seasons was relatively limited and well below the 750 caribou determined by WRRB in 2016, but harvest reduction remains one of the actions that can help support recovery.

The proposed harvest is a substantial reduction from the 750 bulls herd-wide determined by WRRB in 2016, but provides some continued opportunity for Indigenous harvesting and the maintenance of cultural traditions. TG and ENR recognize that the closure of Bathurst caribou harvest greatly reduced Tłįchǫ caribou harvesting opportunities, thus allowing for a limited BNE harvest is important for these communities.

Unless a revised allocation formula accepted by all user groups is determined, the proposed allocation among Indigenous groups retains the same proportions as in 2015 (Tłįchǫ 39.3%, Sahtú 17.2%, Dehcho 1.6%, Inuvialuit 0.8%, NWT Métis Nation [NWTMN] 1.5%, Akaitcho 2.1%, and North Slave Métis Alliance [NSMA] 1.8%, and 35.8% BNE caribou for Kugluktuk in Nunavut (NU). Although TG and ENR have no authority over wildlife management in NU, the NWMB in 2016 worked with the allocation formula used in NWT proposals (340 of 950 for Kugluktuk, or 35.8%). TG and ENR will continue to work with management authorities in NWT (Sahtú and Wek'èezhìi regions) and NU (Kugluktuk, NWMB and GN) to ensure a consistent approach to harvest management for this herd. For clarity, the percentages and numbers of caribou are listed below for three levels of harvest. The 118 authorization cards (caribou bulls) for Tłįchǫ communities are for Tłįchǫ harvesters to continue cultural practice on the land and the harvest will be allocated to the elders.

Table 4. Proposed percent of harvest and numbers of BNE bulls for harvester groups, with allocation formula used as in 2015 and 2016, for harvest of 750 bulls and 300 bulls. WRRB determined herd-wide harvest of 750 bulls in 2016, recognizing the board has no authority in Sahtú region or Nunavut (WRRB 2016 a, b).

Harvester Group	% of Harvest	Harvest 750 Bulls	Harvest 300 Bulls
Tłįchǫ	39.3	295	118
Sahtú	17.2	129	52
Dehcho	1.6	12	5
Inuvialuit	0.8	6	2
NWTMN	1.5	11	5
Akaitcho	2.1	16	6
NSMA	1.8	13	5
Kugluktuk (NU)	35.8	268	107
Total	100	750	300

ENR will create and print new authorisation cards to harvest Bluenose-East caribou males in July of each year and make them available to all Indigenous groups as per their allocations in August prior to the beginning of the fall hunt.

ENR will consider adding mobile patrol stations at key locations along the winter roads, if there is an increased need for enforcement and compliance resulting from a change in the winter caribou distribution and obvious evidence of potential illegal caribou harvesting, as resources allow.

TG with ENR support will take a lead role in reporting on Bluenose-East caribou harvest by Tłı̨chǫ harvesters, based on authorization cards, and on increasing reporting of caribou condition by harvesters.

Support for harvest of other wildlife and on-the-land activities:

TG and ENR recognize that reduced caribou harvesting opportunities have serious implications for Tłı̨chǫ and other Indigenous communities, and that limitations on hunting have negative impacts on the continuity of Tłı̨chǫ culture, language and way of life. Lack of caribou harvesting opportunities means real hardships in Indigenous communities that have depended on caribou. TG and ENR will explore ways of supporting other harvesting initiatives - for example, moose, muskox and fish harvesting, as well as supporting traditional on-the-land activities that help maintain cultural practices.

The Tłı̨chǫ Government plans to continue and expand programs focused on cultural practices on the land. These programs include: sustain TG-owned hunting and trapping cabins; traditional canoe trails from the communities to cultural and harvesting locations; and winter skidoo trails to caribou hunting areas, along with other programs currently operated by the Tłı̨chǫ Government. The long-term aim is continuation of projects that teach Traditional Knowledge of the land and caribou by bringing elders, youth and community members together on the land. By maintaining traditional trails and TG-owned cabins, community members share knowledge of these important cultural and environmental locations, thus re-visiting and maintaining these sites are important to maintain the Tłı̨chǫ knowledge base. Such activities are important for the practice of the hunting culture, and maintaining cultural identify and continuity as a hunting people, ultimately, to condition people with skills and knowledge of the land, for when caribou return.

ENR's new On-The-Land unit, in collaboration with Wildlife Division and North Slave region, will play an active role working with Tłı̨chǫ Government and Tłı̨chǫ communities to identify appropriate cultural activities and harvest of other wildlife and fish, and sources of support for them.

2. Predators

The continued rapid decline in the BNE and Bathurst herds 2015-2018 occurred despite a very limited harvest of both herds between the NWT and NU. Low adult and calf survival rates in the BNE herds suggest that predation may be a key limiting factor for the BNE herd. A number of actions are proposed for more comprehensive management of predators that may assist with recovery of the Bluenose-East herd.

(a) Bathurst Wolf Management Feasibility Assessment 2017:

A collaborative feasibility assessment of wolf management options for the Bathurst caribou range led by the WRRB, ENR and TG was completed in 2017 (Wolf Feasibility Assessment Technical Working Group 2017). The assessment considered 11 options including lethal and non-lethal methods, their potential effectiveness, costs and humaneness. While this feasibility was focused on the Bathurst range, the assessment can also be applicable to possible wolf reduction options for the Bluenose-East range.

(b) Continued TG program to train wolf harvesters:

A separate proposal to WRRB from TG described the approach that has been initiated to train Tłı̨chǫ wolf hunters from the 4 communities in harvesting wolves using culturally appropriate methods. This program will be continued and will likely form a key component of the larger wolf management proposal being developed.

(c) Increased GNWT incentives for wolf harvesters:

In 2010, GNWT increased incentives for wolf harvesters to reduce predation and promote caribou recovery. The incentives were increased in 2015 and at that time, the incentives included $200 for an intact unskinned wolf, $450 for a wolf pelt skinned to traditional standards and up to $800 for a wolf pelt skinned to taxidermy standards. Overall, wolf harvest levels across the NWT and in the North Slave region showed no real increase in wolf harvest as a result of these incentives. A substantial portion of the wolves that were taken were near community landfills, thus not from caribou winter ranges. Recognizing that the incentives to date have been ineffective, GNWT is proposing to increase them to $900 for an unskinned wolf, $1300 for a wolf pelt skinned to traditional standards and $1650 for a pelt skinned to taxidermy standards (Fig. 4). These higher incentives would apply in an area in the North Slave region centered on the collar locations of wintering BNE and Bathurst caribou. Wolf hunters would be required to check into and out of the wolf harvesting zone with increased incentives at winter road access points. This would ensure that wolves taken under the higher incentives are associated with the two caribou herds. The incentives are proposed in part to help increase interest in the TG program to train wolf harvesters from the Tłı̨chǫ training program described above.

(d) Wolf management proposal for BNE and Bathurst ranges:

In addition to joint management proposals for the two caribou herds (including this document), a separate joint proposal wolf management is currently under development that will include the ranges of both herds. Efforts to date to increase wolf harvest in the North Slave region, including GNWT incentives for wolf harvesters and the TG program to train wolf harvesters in culturally appropriate ways to hunt wolves, have not resulted in a meaningful increase in numbers of wolves taken. The new proposal will recommend ways to ensure that wolf harvest is increased to a level where caribou survival rates will be measurably increased. This will require more intensive wolf removal programs because small-scale wolf removals are generally ineffective at increasing caribou survival rates.

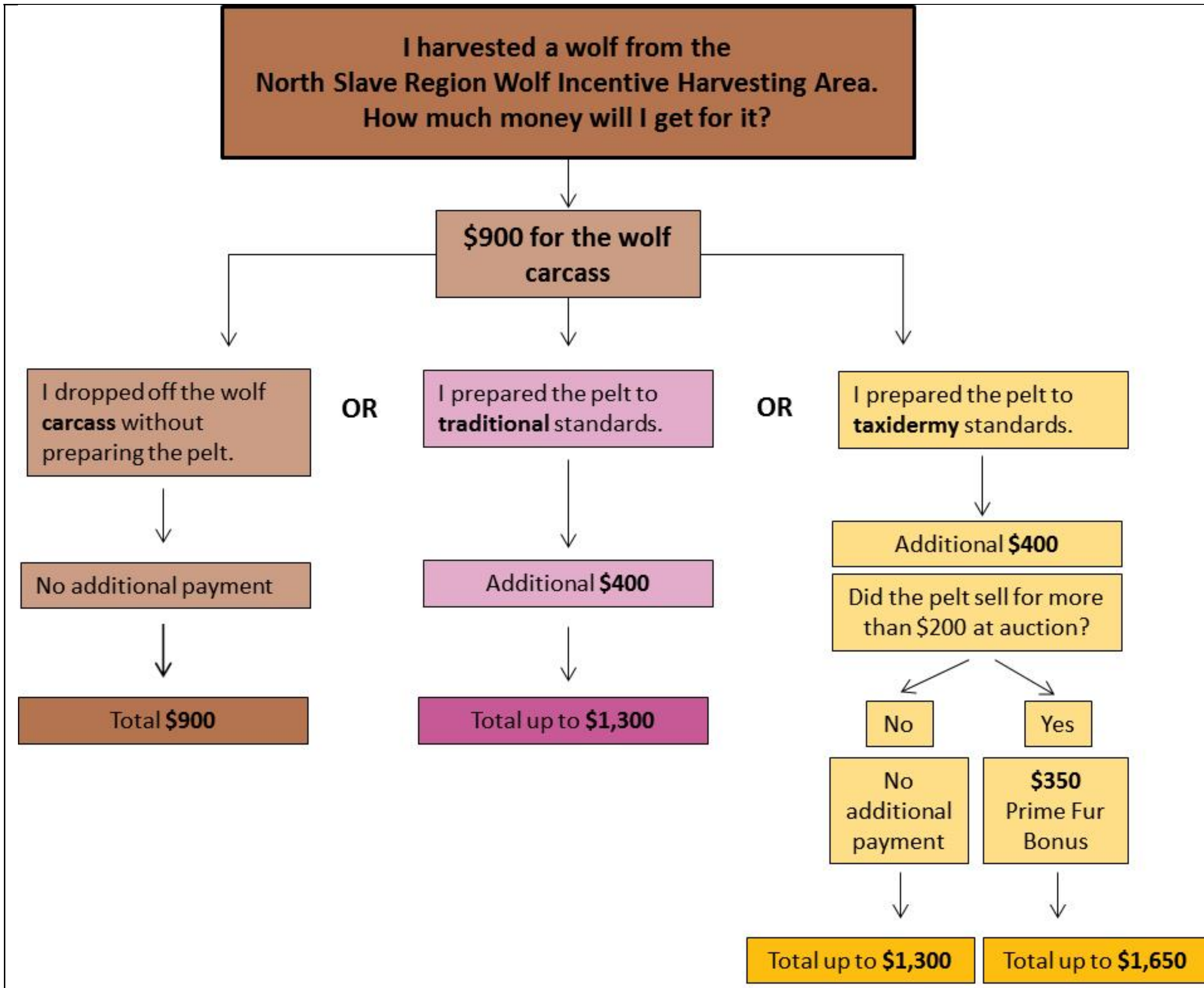

Fig. 4. Proposed new incentives for wolf harvesters in North Slave region in areas with BNE and Bathurst caribou.

(e) Collaboration between NWT and NU managers about predator management:
The calving grounds and a large portion of the summer ranges of the BNE and Bathurst caribou herds are in Nunavut. At these times of year (June-August), the herds are generally well separated and their ranges well-defined spatially. In contrast, winter ranges tend to be larger and more variable from year to year, but they are also more accessible to hunters and trappers. Range overlap of wintering caribou herds has often included extensive overlap between neighbouring herds; for example, the BNE, Bathurst and Beverly/Ahiak collared caribou were well mixed in December 2018. Wolf removals on calving and summer ranges would affect the target caribou herds directly. Wolf removal on the winter range is challenged by the overlap of caribou herds and mixing of the wolves associated with these herds; in this situation the overall number of wolves associated with the caribou herds will be larger and likely require more wolf removals to be effective.

There has been a series of discussions involving GNWT and GN wildlife staff and more senior officials (ministers and deputy ministers) about the potential for collaboration centered on predator reduction on the NU ranges of the BNE and Bathurst herds. As with harvest management or other possible management actions in NU, the GNWT, TG, WRRB and other management organizations in the NWT have no authority in NU and potential predator management would need to respect NU processes and be approved by the NWMB. However, coordinated harvest and wolf management actions across jurisdictional boundaries are key to effectiveness and likelihood for caribou recovery. Harvesters associated with the Kugluktuk Hunters and Trappers Organization have expressed interest in contributing to recovery of the BNE and Bathurst herds by reducing predator numbers. GNWT and TG will pursue these discussions further to develop and implement coordinated predator removals across the BNE and Bathurst herd ranges.

3. Habitat and Land Use

Recovery of the Bluenose-East herd will require a healthy habitat on the herd's range in NU and the NWT. Currently, there are no active mines and overall there has been limited development on the Bluenose-East range. However, proposed actions to support healthy habitat include the following:

- Promotion of protecting the herd's calving grounds in NU;
- Participation in development of the wildlife management plan for road access into herd range, as the Tibbitt-to-Contwoyto winter road (limiting speed limits, traffic and other mitigations for caribou);
- Participation in any environmental assessments and land use planning in NWT and NU that may affect this herd's range;
- Identifying key unburned habitat on the winter range to be included in the Values at Risk hierarchy, and increased fire management activity in these areas during the fire season.
- Continuation of ongoing TK research focused on identifying and conserving key caribou habitat:
    - Ekwò no'oke (water crossings),
    - Tataa (land crossings), and
    - Important unburned winter habitat.

For the Bathurst Caribou Range Plan (BCRP), the TG conducted TK research and identified valuable caribou habitat as Ekwò no'oke (water crossings), tataa (land crossings), migration routes and seasonal ranges. The BCRP process can serve as a model for identifying key habitat for the BNE herd by using scientific data and traditional knowledge to identify the Bluenose-East core range (centre of habitation) and other important areas. This model can be followed to identify key BNE caribou habitat, by combining recent years of collar data and Tłı̨chǫ traditional knowledge to identify critical habitat. The Bluenose-East fall and winter ranges overlap with the Bathurst herd, thus parts of its range will be included in the habitat protection recommendations in the Bathurst Caribou Range Plan. Continuation of ongoing research can lead to further identification of important habitats for potential protection on the full Bluenose-East range.

4. Education

TG and ENR recognize that continuing effort is needed to increase awareness among harvesters, communities and the public about the status of NWT caribou herds, the need for conservation actions to promote recovery and how people can contribute to conservation. The following actions are proposed to continue and increase public and hunter education:

The following are education/public awareness initiatives to improve hunter practices and reduce wounding and wastage:

- Continue to work with the communities, in particular more closely with schools, on promoting Indigenous laws and respecting wildlife, including how to prevent wastage; and

- Invite elders to work with the youth to teach traditional hunting practices and proper meat preparation.

Posters, pamphlets, media and road signs will be used to better inform the public about respecting wildlife, traditional hunting practices, wastage, poaching and promoting bull harvest. Table 5 below summarizes the TG and ENR objectives for increased public engagement and hunter education.

ENR has promoted sound hunter harvest practices, preventing meat wastage, harvesting bulls instead of cows, and implementing related conservation education in NWT communities for a number of years. In response to community requests, ENR has developed a Hunter Education program that is meant to be tailored to the needs of individual communities and organizations.

An important area to emphasize will be ensuring that information on the status and management of regional caribou herds is provided in appropriate ways and on an on-going basis to harvesters, elders and other community members.

Table 5. Summary of approaches and objectives for increased public engagement and hunter education for caribou in Wek'èezhìi.

General Approach	Description & Objective	Lead (Support)
Public hearings	A (likely) public hearing on wildlife management actions for BNE herd in 2019	WRRB & SRRB (TG, ENR)
Community meetings	1 meeting per year in each Tłįchǫ community to discuss and update wildlife management issues and actions	TG and ENR
Radio programs	When needed radio announcements, interviews and/or updates on wildlife management in Tłįchǫ language during winter hunting season (annual)	TG & ENR
Sight-in-your-rifle programs	Conduct community-based conservation education programs with an objective of 1 workshop / Tłįchǫ community / hunting season (annual)	ENR and TG; need to coordinate with community leaders
Boots on the Ground and other Traditional Knowledge programs	Highlight the programs and their results with Tłįchǫ communities and the public (annual)	TG and ENR

Outreach through internet and social media	Regular updates (10 updates per season) on government websites and social media during fall and winter hunting seasons (Facebook & Tłįchǫ website)	TG, ENR (WRRB)
Poster campaign	Produce posters for distribution in each Tłįchǫ community: posters to be developed annually as needed	TG and ENR

5. Monitoring and Research

Three aspects of monitoring and research are described in this section: (a) biological monitoring mostly led by ENR, (b) expansion of the Tłįchǫ Boots on the Ground caribou monitoring from Bathurst range to Bluenose-East range, and (c) support for biological or TK research that helps explain changes in caribou abundance.

(a) Biological monitoring:

Table 6 lists updated biological monitoring of the Bluenose-East herd, mostly led by ENR, proposed for 2019-2023. A key focus of the increased monitoring is to provide annual information on productivity and survival of caribou calves and adult cows, as well as increased surveys to estimate herd size. The increased monitoring in part anticipates more intensive wolf management, for which assessment of effectiveness in improving caribou survival rates will be needed. The table includes a rationale for changes from previous monitoring as in the 2015 joint proposal for this herd. Changes are also described and a brief rationale given for them below.

I. *Population surveys every 2 years*: In recent years, calving photo surveys for the BNE and Bathurst herds have been carried out every 3 years and the new population estimates have been benchmarks for revised management. The continued rapid decline of the two herds and expected increase in wolf management are the main rationale for proposing population surveys every 2 years for the two herds, i.e. in 2020 and 2022.

II. *Collar increase to 70 (50 cows and 20 bulls)*: A technical rationale for increasing the number of collars on the Bathurst herd to 65 (50 cows and 15 bulls) was provided by Adamczewski and Boulanger (2016). Some applications, such as monitoring cow survival rates with good precision, would require 100 collared caribou, while other applications can be addressed reliably with 50 or fewer collars. At this time, increasing the number of collars on cows to 50 would provide more reliable annual estimates of cow survival rates, as well as increasing confidence in defining distribution of caribou throughout the year, assigning harvest to herd reliably, and monitoring of herd fidelity to calving grounds. Range use by bulls shows patterns that vary from those of cows, thus maintaining the 20 bull collars used in recent years will also be important. The collars may also assist in determining where and when predators should be removed as well as in monitoring whether predator management actions are having an effect on the herd.

III. *Annual composition surveys in June, October and March/April*: To date composition surveys have been carried out on a nearly annual basis for the BNE herd in late winter, as an index of calf survival to 9-10 months of age. Composition surveys on the calving grounds have been carried out every 3 years as part of the calving photo surveys and provide a measure of initial productivity. Fall composition surveys have been carried out every 2-3 years to monitor the bull:cow ratio, which is needed to convert the estimate of cows from the June calving photo surveys to an overall herd estimate. Fall composition surveys also provide a calf:cow ratio that gives a measure of how many calves have survived the first 4-5 months. The recommended increase to annual June, October and late-winter composition surveys will provide annual information on initial productivity of young and the survival rates of calves to the fall and late-winter periods. Increased survival of adults and calves are the key changes that need to happen for this herd to stabilize and potentially increase. Increased survival will also be a key indicator of effectiveness of predator management.

IV. *Suspension of June calving reconnaissance surveys in years between photo surveys*: Reconnaissance surveys over the calving grounds have been used for the Bathurst and Bluenose-East herds in years between photographic population surveys as a way of tracking the numbers of cows on the calving grounds. In most years they have tracked trend from the more complete photo surveys well. However, the variance on these surveys has usually been high, which reduces confidence in the estimates. In June 2017 a recon survey of the BNE calving grounds suggested that the decline had ended and the herd had increased from 2015; the June 2018 survey showed that the herd had in fact declined further by about half. In view of the high variance on these surveys and the questionable 2017 results, these surveys are being discontinued.

V. *Harvest monitoring*: Accurate reporting of caribou harvest remains a priority for the Bluenose-East caribou herd. TG and ENR will work together to ensure that all harvest by Tłı̨chǫ harvesters is reported based on authorization cards and community monitors. ENR will continue overall monitoring of harvest via check-stations at Gordon Lake and McKay Lake, regular patrols by officers on the ground and periodic aerial monitoring. ENR will continue to monitor compliance within the Bathurst mobile no-harvest zone using the check-stations and patrols as in previous winters.

VI. *Condition Assessment and Visual Monitoring:* Limited sample numbers have somewhat constrained the reliability of the assessments of trends in condition of harvested BNE caribou (see Garner 2014). Reliable reporting of caribou condition with adequate sample numbers could improve understanding of the herd’s nutritional status and the influence of environmental conditions that are tracked through the drought index, oestrid (warble and bot fly) index and indices of snow conditions on herd condition. Condition sampling in winter from hunter-killed caribou will continue (led by TG with ENR support) with a focus on increasing sample sizes and completeness of monitoring, when and if funding allows. Training will be needed in each community to ensure qualified staff are available.

(b) Expansion of Boots on the Ground TK monitoring to Bluenose-East caribou range:

TG and ENR support expansion of the Traditional Knowledge caribou monitoring program Boots on the Ground, and will explore ways to expand the program to the Bluenose-East range. For three years, this TG program has been focused on Bathurst caribou on their summer range in July and August, by having Tłı̨chǫ monitors for six weeks, in July and August, on the summer range of the herd. The Tłı̨chǫ Government aims to expand the program in both time and space, but this will be dependent on availability of staff, elders and other resources.

The Tłı̨chǫ Government is considering plans to purchase boats to be placed on other larger lakes on the summer and fall range that are used by both herds. By placing boats on several larger lakes, monitoring teams can fly to these lakes, where it is possible to walk in proximity to the herds and monitor caribou. Currently, TG relies on two boats on Contwoyto lake and Fry Inlet. This gives access to a larger area around these two large water bodies. The monitoring has been successful for the Bathurst herd as the herd has remained around these large lakes during the last years. On the summer and fall range of the Bluenose-East herd, there are fewer large lakes where the herd tend to aggregate. Thus, Boots on the Ground monitoring of Bluenose-East caribou is conditional on the herd remaining relatively stable around larger waterbodies, such as Point Lake, and on sufficient resources, including qualified staff. The locations for the boats are not determined yet, and will be based on recent years of collar data and Tłı̨chǫ harvesters' local knowledge. The expansion will be phased in over the next monitoring seasons, as training new monitors and building capacity in the monitoring team is a key to the success of the program. On-the-land monitoring will continue to inform decision makers on herd demographics, behaviour and migration, quality of summer and fall range habitat, and cumulative effects of predators, mining activities, and climate change on caribou.

(c) Research on drivers of change in caribou abundance:

TG and ENR recognize that there are likely multiple factors that have contributed to the BNE herd's decline since 2010. While harvest levels of 3000 or more caribou annually likely contributed to the herd's decline between 2010 and 2015, harvest was relatively low 2015-2018, thus other factors including predation, disturbance like mining camps and roads, and climate factors may have been key to the herd's decline over that period. Adverse environmental conditions may be important in some years to the herd's vital rates. For example, a drought year in 2014 potentially led to poor feeding conditions, poor cow condition and a low pregnancy rate in winter 2014-2015. A study by Chen et al. (2014) suggested that spring calf:cow ratios in the Bathurst herd were correlated with indices of summer range productivity one and a half years earlier; the mechanism proposed was that cows with poor summer feeding conditions were likely to be in poor condition during the fall breeding season, leading to low pregnancy rates and low June calf:cow ratios. An assessment by Boulanger and Adamczewski (2017) of relationships between environmental climate variables from a remote sensing database and demographic rates of the BNE and Bathurst herds demonstrated that climate variables such as the summer warble fly index, summer drought index, and winter climate indicators such as snow depth can help explain trends in cow survival, calf survival and pregnancy rate.

The two governments support increased research into underlying drivers of change in herd abundance by partnership with academic researchers and remote sensing specialists, using both scientific and Traditional Knowledge approaches. There is a need to better understand predation rates and their significance to caribou, environmental factors affecting caribou condition and population trend, and on the effects of climate change on these relationships. A further area of importance is monitoring and research focused on caribou health, parasites and other diseases, and diseases and parasites from the south that may be expanding into the NWT. Research results may lead to expanded monitoring using scientific and TK approaches. Monitoring should focus on methods that involve community members and increase their knowledge and sense of involvement.

Table 6: Biological monitoring of Bluenose-East herd (ENR and/or TG lead)

Indicator(s)	Rationale	Desired Trend	Adaptive Management Options	How Often	Notes
1. Estimate of breeding cows and extrapolated herd size from calving ground photo survey	Most reliable estimate for abundance of breeding cows and total number of cows & can be extrapolated to herd size based on sex ratio.	Stable or increasing trend in numbers of breeding cows and herd size in 2023.	If trend in breeding cows increasing, continue as before; if trend stable-negative, re-consider management.	Every 2 years	Last survey 2018, next surveys in 2020 and 2022. Trend in breeding females is most important for herd trend.
2. Cow productivity; composition survey on calving ground in spring (June)	Proportion of breeding females in June at peak of calving establishes initial productivity or approximate pregnancy rate.	Proportion of breeding cows at least 80%.	Low ratio indicates poor fecundity and suggests poor nutrition in previous summer; survey data integrates fecundity & neonatal survival.	Annual	Essential component of calving ground photographic survey. Proposed increase to annual survey to more closely monitor initial productivity and following calf survival
3. Fall sex ratio and calf:cow ratio; composition survey (October)	Tracks bull:cow ratio and fall calf:cow ratio. Fall calf:cow ratio provides an index of calf survival from birth through initial 4.5 months.	Bull:cow ratio above 30:100; calf:cow ratio of more than 40:100.	If bull:cow ratio below target, consider reducing bull harvest. Low fall calf:cow ratios suggest poor calf survival.	Annual	Sex ratio needed for June calving ground extrapolation to herd size.
4. Calf:cow ratio in late winter (March-April); composition survey	Herd can only grow if enough calves are born and survive to one year, i.e., calf recruitment is greater than mortality.	At least 30-40 calves:100 cows on average.	Sustained ratios ≤ 30:100, herd likely declining; may re-assess management.	Annual	Calf productivity & survival vary widely year-to-year, affected by several variables, including weather.
5. Caribou condition assessment from harvested animals	Condition assessment provides overall index of nutrition/environmental conditions and changes over time.	High hunter condition scores (average 2.5-3.5 out of 4); target 70 animals/year.	Sustained poor condition suggests unfavourable environmental conditions and possibly further decline.	Annual	Sample numbers to date limited (2010-2018). TG working to improve program, sampling.
6. Cow survival rate estimated from OLS model and annual survival estimates from collared cows	Cow survival estimated 75-78% in 2013 (from model). Need survival of 83-86% for stable herd. Increased collar number to 50 cows should improve annual estimation.	At least 83-86% by 2022.	If cow survival continues <80%, herd likely to continue declining.	Annual	Population trend highly sensitive to cow survival rate; recovery will depend on increased cow survival.
7. Total harvest from this herd by all users groups (numbers & sex ratio)	Accurate tracking of all harvest is essential to management and to knowing whether management actions are effective.	All harvest reported accurately and within agreed-on limits.	Re-assess recommended harvest annually; if herd continues to decline, re-assess harvest limit.	Annual	Multiple factors other than harvest may contribute to decline but harvest is one of the few factors humans control.
8. Maintain up to 70 satellite/GPS collars on herd (50 on cows, 20 on bulls)	Collar information is key to reliable surveys, tracking seasonal movements and ranges, monitoring survival and herd fidelity.	Additional collars added every March/April to maintain up to 70 collars on herd.		Annual additions to keep total of 70.	Information from collared caribou is essential to monitoring and management of all N. America caribou herds.
9. Wolf Harvest on BNE range	Several Indigenous governments and communities have expressed interest in increasing wolf harvest by hunters and trappers to increase caribou survival.	Increased harvest of wolves	If herd continues to decline, consider increased focus on wolf harvest to slow herd decline and increase likelihood of recovery.	Annual	Herd overlap in winter likely means mixing of wolves associated with those herds and may influence effectiveness of wolf removals.

5. Consultation
Describe any consultation undertaken in preparation of the management proposal and the results of such consultation. A letter with results of the Bluenose-East and Bathurst June 2018 surveys was sent from ENR by email to Indigenous governments, boards and other key stakeholders on Nov. 20, 2018. In the letter, organizations were invited to speak to the minister or deputy minister of ENR in person or by phone. A letter was also sent to the minister of Environment with the Government of Nunavut on the same day with an offer of further discussion in person or by phone. Senior leadership from the Sahtú region (SSI and other organizations) met with the GNWT premier and other senior officials on Nov. 20 to discuss barren-ground caribou among other matters. A media briefing on the Bluenose-East and Bathurst survey results was also held at the NWT legislature on Nov. 20. ENR officials will present to the GNWT Standing Committee on Economic Development and the Environment (SCEDE) on the status and proposed management of the Bathurst and BNE herds on Jan. 16, 2019 to increase GNWT-wide understanding of the caribou herds' status and management. ENR staff presented on June 2018 survey results and other monitoring of the Bluenose-East herd on Dec. 21, 2018 at the annual ACCWM caribou herd status meeting in Yellowknife. This meeting was attended by representatives from Nunavut, including Kugluktuk, and all the boards making up the ACCWM. Staff from the Government of Nunavut (GN) and observers from Kugluktuk participated in the June 2018 surveys of the BNE and Bathurst herds. Staff from GN and Nunavut Tunngavik Incorporated (NTI) worked with ENR staff at a technical meeting Oct. 16 and 17, 2018 to review results of the GNWT-led surveys of the BNE and Bathurst herds and the GN-led survey of the Beverly herd in the Queen Maud Gulf in June 2018. This meeting was a continuation of collaboration between GN and GNWT staff on trans-border caribou issues. TG and ENR staff began to meet in late November 2018 and continuing into December 2018 and January 2019 to develop joint management proposals for the two caribou herds. Between these meetings, staff met with leaders and more senior staff of the two governments to discuss specific items to include in the management proposals. TG, ENR and WRRB staff met monthly in fall and winter 2018-2019 to talk about status and management of the Bluenose-East, Bathurst and Beverly/Ahiak caribou herds; these 3 groups comprise the Barren-Ground Caribou Technical Working Group. Meetings in the four Tłı̨chǫ communities are planned for January 2019. These will include the Tłı̨chǫ chiefs and senior officials from ENR to talk about the caribou herds and proposed management. ENR staff attended meetings of the Délı̨ne Renewable Resource Council Dec. 10-12, 2018 and Jan. 8, 2019 to participate in discussions of wildlife issues, including the status of the Bluenose-East herd and potential adjustments to the Délı̨ne caribou conservation plan.

6. Communications Plan
Describe the management proposal's communications activities and how the Tłı̨chǫ communities will be informed of the proposal and its results.

TG and GNWT leadership will, together, hold an information session in each of the 4 Tłı̨chǫ communities. Emphasis will be placed on visual aids that are easily understood and on hearing from community members.

Table 5 (listed earlier in this proposal) describes approaches and objectives for increased public engagement and hunter education for caribou in Wek'èezhìi.

7. Relevant Background Supporting Documentation

List or attached separately to the submission all background supporting documentation, including key references, inspection/incident reports and annual project summary reports.

Adamczewski, J., and J. Boulanger. 2016. Technical rationale to increase the number of satellite collars on the Bathurst caribou herd. Department of Environment and Natural Resources, Government of Northwest Territories. Manuscript Report 254.

Adamczewski, J., J. Boulanger, B. Croft, B. Elkin, and H. D. Cluff. 2016. Overview: monitoring of Bathurst and Bluenose-East caribou herds, October 2014. Environment and Natural Resources, Government of the Northwest Territories, Yellowknife, Northwest Territories, Canada. Manuscript Report 263.

Adamczewski, J., J. Boulanger, B. Croft, T. Davison, Heather Sayine-Crawford, and B. Tracz. 2017. A comparison of calving and post-calving photo-surveys of the Bluenose-East herd of barren-ground caribou in northern Canada in 2010. Canadian Wildlife Biology and Management 6(1): 4-30.

Advisory Committee for the Cooperation on Wildlife Management (ACCWM). 2014. Taking Care of Caribou – The Cape Bathurst, Bluenose-West, and Bluenose-East Barren Ground Caribou Herds Management Plan (Final). C/O Wek'èezhìi Renewable Resources Board, 102A, 4504 – 49 Avenue, Yellowknife, NT, X1A 1A7.

Barren-ground Technical Working Group (BGTWG). 2014. Barren-Ground Caribou 2013/14 Harvest & Monitoring Summary. Unpublished Report. Wek'èezhìı Renewable Resource Board, Tłı̨chǫ Government, and Government of the Northwest Territories. Yellowknife, NT. Online [URL]: http://wrrb.ca/sites/default/files/2013-2014%20BGC%20Harvest%20Summary%20Report%20_%20FINAL_Oct15_2015.pdf

Boulanger, J. 2018a. Notes on the analysis of the photo data for the Bluenose-East herd calving ground survey 2018. Draft Nov. 9, 2018. Environment and Natural Resources, Government of the Northwest Territories, Yellowknife, Northwest Territories, Canada. Unpublished draft report.

Boulanger, J. 2018b. Preliminary harvest simulations for the Bluenose-East herd 2018. Draft Jan. 2, 2019. Environment and Natural Resources, Government of the Northwest Territories, Yellowknife, Northwest Territories, Canada. Unpublished draft report.

Boulanger, J., A. Gunn, J. Adamczewski, and B. Croft. 2011. A data-driven demographic model to explore the decline of the Bathurst caribou herd. Journal of Wildlife Management 75:883-896.

Boulanger, J., B. Croft, J. Adamczewski, D. Lee, N. Larter, L.-M. Leclerc. 2016. An estimate of breeding females and analyses of demographics for the Bluenose-East herd of barren-ground caribou: 2015 calving ground photographic survey. Environment and Natural Resources, Government of the Northwest Territories, Yellowknife, Northwest Territories, Canada. Manuscript Report 260.

Boulanger, J., and J. Adamczewski. 2017. Analysis of environmental, temporal, and spatial factors affecting demography of the Bathurst and Bluenose-East caribou herds. Environment and Natural Resources, Government of the Northwest Territories, Yellowknife, Northwest Territories, Canada. Manuscript Report (draft contract report).

Chen, W., L. White, J. Z. Adamczewski, B. Croft, K. Garner, J. S. Pellissey, K. Clark, I. Olthof, R. Latifovic, G. L. Finstad. 2014 Assessing the Impacts of Summer Range on Bathurst Caribou's Productivity and Abundance since 1985. *Natural Resources*, **5**, 130-145. http://dx.doi.org/10.4236/nr.2014.54014

Garner, K. 2014. Tłı̨chǫ Caribou Health and Condition Monitoring Program. Final Report, Department of Culture and Lands Protection, Tłı̨chǫ Government, Behchokǫ̀, NT. 34 pp.

Wolf Feasibility Assessment Technical Working Group. 2017. Wolf Technical Feasibility Assessment: Options for Managing Wolves on the Range of the Bathurst Barren-ground Caribou Herd. Wolf Feasibility Assessment Technical Working Group, Yellowknife, Northwest Territories. C/O Wek'èezhìi Renewable Resources Board, 102A, 4504 – 49 Avenue, Yellowknife, NT, X1A 1A7.

WRRB 2016a. Report on a Public Hearing Held by the Wek'èezhìı Renewable Resources Board 6-8 April 2016 Behchokǫ̀, NT & Reasons for Decisions Related to a Joint Proposal for the Management of the Bluenose-East (Barren-ground caribou) Herd. Part A, June 13, 2016. Wek'èezhìı Renewable Resources Board, 102A, 4504 – 49 Avenue, Yellowknife, NT, X1A 1A7.

WRRB 2016b. Reasons for decisions related to a joint proposal for the management of the Bluenose-East (Barren-ground caribou) Herd. Part B, Oct. 3, 2016. Wek'èezhìı Renewable Resources Board, 102A, 4504 – 49 Avenue, Yellowknife, NT, X1A 1A7.

8. Time Period Requested

Identify the time period requested for the Board to review and make a determination or provide recommendations on your management proposal.

Management actions proposed here would apply from July 1, 2019 (start of the harvest season) until July 1, 2021 with the results of the next calving ground photo surveys of the BNE herd expected in 2020 and 2022. In recent years the term of management proposals was 3 years to match the interval between surveys. TG and ENR suggest that management actions, including the harvest and other actions, be reviewed annually or whenever key additional information is available (e.g. additional survey information or recommendations from ACCWM or boards).

9. Other Relevant Information

If required, this space is provided for inclusion of any other relevant project information that was not captured in other sections.

TG and ENR support efforts by the WRRB and other boards, through recommendations and public hearings, to address the possible multiple causes of the BNE decline and the implementation of the ACCWM management plan.

10. Contact Information

Contact the WRRB office today to discuss your management proposal, to answer your questions, to receive general guidance or to submit your completed management proposal.

Jody Pellissey
Executive Director
Wek'èezhìı Renewable Resources Board
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APPENDIX B Review of 2010 Proceeding & Decisions

B.1. Receipt of 2009 Joint Proposal

On November 5, 2009, TG and GNWT submitted the *Joint Proposal on Caribou Management Actions in Wek'èezhìı*, which proposed nine management actions and eleven monitoring actions, including harvest limitations, for the Bathurst, Bluenose-East and Ahiak ʔekwǫ̀ herds. While there was agreement on the majority of actions proposed, there was no agreement reached on the proposed levels of Indigenous harvesting.

Upon review of the proposal, the WRRB held that any restriction of harvest or component of harvest to a specific number of animals would constitute a TAH. Thus, the Board ruled that it was required to hold a public hearing. Registered Parties were notified on November 30, 2009 of the Board's decision to limit the scope of the public hearing to Actions 1 through 5 of the Joint Proposal, which prescribed limitations on harvest. All other proposed actions were addressed through written submissions to the Board.

On January 1, 2010, GNWT implemented interim emergency measures, which included the closure of ʔekwǫ̀ commercial, outfitted,[181] and resident harvesting in the North Slave regions. In addition, all harvest was closed in a newly established no-hunting conservation zone (Figure B-1). This decision was made by the Minister of GNWT under the authority of Section 12.5.14 of the Tłı̨chǫ Agreement. The Board was informed of the Minister's decisions on December 17, 2009.

[181] Non-residents and non-resident aliens require an outfitter to hunt big game (but not small game). Outfitters provide licenced guides for the hunters they serve. A non-resident is a Canadian citizen or landed immigrant who lives outside the NWT or has not resided in the NWT for 12 months; a non-resident alien is an individual who is neither an NWT resident nor a non-resident. GNWT. 2015. Northwest Territories Summary of Hunting Regulations, July 1, 2015 to June 30, 2016.

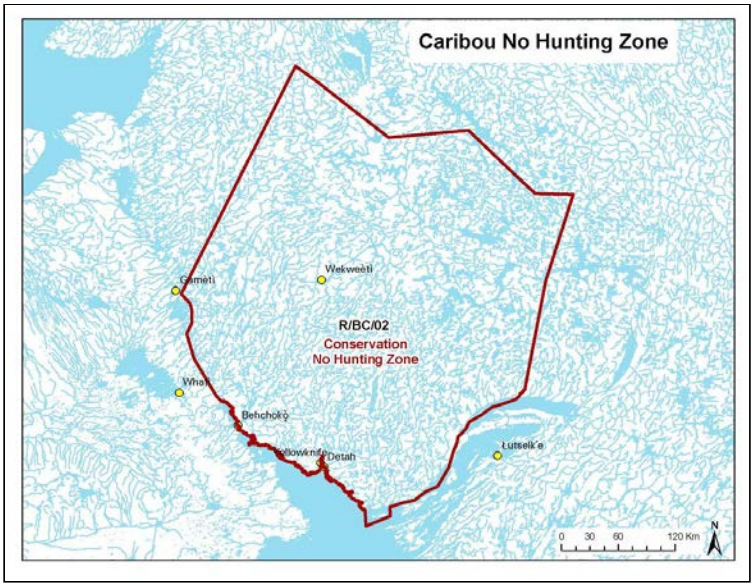

Figure B-1. No-Hunting Conservation Zone, R/BC/02, January 1, 2010 to December 8, 2010.[182]

Originally scheduled for January 11-13, 2010, the public hearing took place March 22-26, 2010 in Behchokǫ̀, NT. Once the evidentiary phase of the proceeding was completed, TG requested the WRRB adjourn the hearing in order to give TG and GNWT time to work collaboratively to complete the joint management proposal. The Board agreed to grant the application for adjournment with the condition that any revised proposal be filed by May 31, 2010 and that such a proposal address both harvest numbers and allocation of harvest for both the Bathurst and Bluenose-East ʔekwǫ̀ herds.

On May 31, 2010, TG and GNWT submitted the *Revised Joint Proposal on Caribou Management Actions in Wek'èezhìı*. This revised proposal changed the original management and monitoring actions and incorporated an adaptive co-management framework and rules-based approach to harvesting. TG and GNWT were able to reach an agreement on Indigenous harvesting. Following review of the information and comments from registered Parties, the WRRB accepted the revised proposal. Therefore, the WRRB reconvened its public hearing on August 5-6, 2010 in Behchokǫ̀, NT, where final presentations, questions and closing arguments were made.

B.2. 2010 Board Decision

On October 8, 2010, the WRRB submitted its final recommendations and Reasons for Decision Report to TG and GNWT. Many of the recommendations were related to the

[182] GNWT-GNWT 2010. http://www.GNWT.gov.nt.ca/_live/documents/content/No-Hunting_Conservation_Zone_Map.pdf

Bathurst ʔekwǫ̀ herd and relevant management actions vital for herd recovery, including harvest restrictions.

The Board recommended a harvest target of 2800 (± 10%) Bluenose-East ʔekwǫ̀ per year for harvest seasons 2010/11, 2011/12, and 2012/13 in Wek'èezhìı. Further, the Board recommended that the ratio of bulls harvested to cows should be 85:15. Although the evidence suggested that the Bluenose-East herd had not continued to decline, the Board concluded that a limited harvest of 2520-3080 ʔekwǫ̀ with 420 or fewer cows was a cautious management approach based on the current herd size and trend.

The Board recommended that all commercial, outfitted and resident harvesting of the Bluenose-East ʔekwǫ̀ herd in Wek'èezhìı be set to zero. The Board also made harvest recommendations for the Ahiak ʔekwǫ̀ herd.

The WRRB made additional ʔekwǫ̀ management and monitoring recommendations to TG and GNWT, specifically implementation of detailed scientific and Tłı̨chǫ knowledge monitoring actions and implementation of an adaptive co-management framework.

The WRRB also recommended to the Minister of CIRNAC (formerly Indian and Northern Affairs Canada (INAC)) and GNWT to collaboratively develop best practices for mitigating effects on ʔekwǫ̀ during calving and post-calving, including the consideration of implementing mobile ʔekwǫ̀ protection measures, and for monitoring landscape changes, including fires and industrial exploration and development, to assess potential impacts to ʔekwǫ̀ habitat.

The Board recommended that the harvest of dìga should be increased through incentives but that focused dìga control not be implemented. The Board understood if TG and GNWT were to plan for focused dìga control in the future, a management proposal would be required for WRRB consideration.

The Minister's emergency interim measures remained in effect until the WRRB's recommendations on ʔekwǫ̀ management in Wek'èezhìı were implemented on December 8, 2010. On January 13, 2011, TG and GNWT responded to the Board's recommendations, accepting 35, varying 22 and rejecting three of the 60 recommendations. TG and GNWT submitted an implementation plan to the WRRB on June 17, 2011, which the Board formally accepted on June 30, 2011.

APPENDIX C Review of 2010 WRRB Recommendations

Review of 2010 WRRB Recommendations				
No.	**WRRB Recommendation**	**TG/GNWT Response**	**Management Objective**	**Status**
1	TG and GNWT report annually on the overall success of the harvest target approach in meeting the objectives of effective collaborative management and the long-term recovery of the Bathurst caribou herd.	Accepted - GNWT and TG will provide a report on the overall success of the harvest target approach in June 2011.	Increase communication among the management authorities. Provide an opportunity to review the efficacy of management actions and make revisions if necessary.	Incomplete; no recommendations provided
2	All commercial harvesting of Bathurst caribou within Wek'èezhìı be set to zero for 2010-2013.	Accepted - As per changes to the Big Game Hunting Regulations made on January 1, 2010.	Reduce harvest of the Bathurst caribou herd and set priority to Aboriginal harvest.	Completed
3	All outfitted harvesting of Bathurst caribou within Wek'èezhìı be set to zero for 2010-2013.	Accepted - As per changes to the Big Game Hunting Regulations made on January 1, 2010.	Reduce harvest of the Bathurst caribou herd and set priority to Aboriginal harvest.	Completed
4	GNWT and TG, prior to the next survey of the Bathurst caribou herd, provide the Board and make public their positions with regard to the reinstatement of outfitting within Wek'èezhìı.	Varied - This will be addressed in the development of a long-term management plan for the Bathurst herd. The target date for the long-term management plan is the end of 2012.	Make criteria for reinstating Outfitted and Resident harvest public.	Incomplete; no criteria developed
5	All resident harvesting of Bathurst caribou within Wek'èezhìı be set to zero for 2010-2013.	Accepted - As per changes to the Big Game Hunting Regulations made on January 1, 2010.	Reduce harvest of the Bathurst caribou herd and set priority to Aboriginal harvest.	Completed
6	GNWT and TG, prior to the next survey of the Bathurst caribou herd, provide the Board and make public their positions with regard to the reinstatement of resident harvesting within Wek'èezhìı. In developing this position, the Governments will review, assess, and implement, where conservation permits, a limited-entry draw system to facilitate the reinstatement of resident harvesting at the earliest opportunity.	Varied - This will be addressed in the development of a long-term management plan for the Bathurst herd. The target date for the long-term management plan is the end of 2012.	Make criteria for reinstating Outfitted and Resident harvest public.	Incomplete; no criteria developed

7	Establishment of a harvest target of 300 Bathurst caribou per year for 2010-2013.	Accepted - This was implemented on December 8, 2010 through a regulation change that established limited harvest zones inside and outside of Wek'èezhìı to reflect the current wintering area for the Bathurst caribou herd.	Set a level of harvest that can be sustained by the Bathurst herd.	Completed
8	Allocating the annual harvest target of Bathurst caribou between Tłı̨chǫ Citizens (225) and members of an Aboriginal people with rights to hunt in Mǫwhì Gogha Dè Nı̨ı̨tłèè (75)	Varied - As per prior agreement with TG to share a limited harvest of Bathurst caribou equally (150 animals for Tłı̨chǫ citizens and 150 caribou outside of Wek'èezhìı)	Establish a sharing of harvest between the Tłı̨chǫ and other Aboriginal hunters that is equitable.	Completed
9	The harvest of Bathurst caribou should target an 85:15 bull/cow ratio, i.e. the annual harvest of Bathurst caribou cows should be less than 45	Varied - GNWT and TG both agree that the harvest should focus on bulls but would prefer to use a target ratio of 80:20 males: females as agreed in revised joint proposal (cow harvest of 60). The modeling projections suggest that small changes in the harvest sex ratio would have negligible impacts on the Bathurst herd's likely trend.	Set a harvest sex ratio that can be sustained by the Bathurst herd.	Incomplete (excludes unknowns); target exceeded in all three years
10	TG and GNWT have information to suggest that the harvest of Bathurst caribou has <u>or will in the near future</u> exceed the harvest target of 300 by 10% or more, then regulations should be put in place to close all harvesting in areas occupied by the Bathurst herd.	Accepted - GNWT and TG will be closely monitoring harvest levels throughout the fall and winter hunting seasons and will keep communities and the WRRB informed.	Closely monitor and report harvest such that if it exceeds the target, actions can be taken to ensure no further harvest occurs	Not required
11	TG and GNWT have information to suggest that the harvest of Bathurst caribou has <u>or will or in the near future</u> materially exceed 45 cows, then regulations should be put in place to close all harvesting in areas occupied by the Bathurst herd.	Varied (as per response #9) - GNWT and the TG will monitor the sex ratio of the harvest and work with hunters to target male caribou, wherever possible.	Closely monitor and report harvest such that if it exceeds the target, actions can be taken to ensure no further harvest occurs	Incomplete; targets exceeded, and no regulations implemented

12	GNWT should, in discussion with TG and other Aboriginal groups, identify and make public, prior to the annual fall hunt, areas within which the harvest will be attributed to the Bathurst caribou herd.	Accepted - There will be ads in the local newspaper to inform the public about the new management zones within which Bathurst caribou harvest is limited. Detailed information on recent locations of radio-collared caribou will not be publicized.	Ensure that the public know where the Bathurst and Bluenose-East caribou herds reside such that requirements for harvest restrictions and reporting are known.	Incomplete; information not consistently provided on time
13	GNWT should, in discussion with TG and other Aboriginal groups, identify and make public, prior to the annual winter hunt, areas within which the harvest will be attributed to the Bathurst caribou herd.	Accepted - There will be ads in local newspaper to inform the public about the new management zones where Bathurst caribou harvest is limited.	Ensure that the public know where the Bathurst and Bluenose-East caribou herds reside such that requirements for harvest restrictions and reporting are known.	Incomplete; information not consistently provided on time
14	All commercial, outfitted and resident harvesting from the Bluenose-East caribou herd within Wek'èezhìı be set to zero for 2010-2013.	Accepted - As per changes to the Big Game Hunting Regulations made on January 1, 2010.	Reduce harvest of the Bluenose-East caribou herd and set priority to Aboriginal harvest.	Completed
15	Establishment of a harvest target of 2800 Bluenose-East caribou per year for 2010-2013, with the annual harvest target and its allocation finalized in discussions between the existing wildlife co-management boards and Aboriginal governments in the Sahtú, Dehcho and Tłı̨chǫ.	Varied - Based on new 2010 estimate of the Bluenose-East herd's size, wildlife co-management boards are reviewing information and the proposed harvest targets recommended by the WRRB. GNWT and TG will be working together to promote harvest of bulls, monitor the harvest closely throughout the winter and keep the communities, as well as WRRB, SRRB and Nunavut informed.	Set a level of harvest that can be sustained by the Bluenose-East herd. Establish as sharing of harvest between the Tłı̨chǫ and other Aboriginal hunters that is equitable.	Incomplete
16	The harvest of Bluenose-East caribou should target an 85:15 bull/cow ratio, i.e. the annual harvest of Bluenose-East caribou cows should be less than 420 – Original recommendation varied to 80:20 bull/cow harvest (cow harvest of 560)	Varied (as per response #9 and #15) - GNWT and TG agree the harvest should focus on bulls but would prefer a target of 80:20 males: females as agreed to in the revised joint proposal.	Set a harvest sex ratio that can be sustained by the Bluenose-East herd.	Incomplete (excludes unknowns); target exceeded in 2 of 3 years

17	TG and GNWT have information to suggest that the harvest of Bluenose-East caribou has or will in the near future exceed the target by 10% or more, then regulations should be put in place to close all harvesting in areas occupied by the Bluenose-East herd.	Varied - Based on new 2010 estimate of the Bluenose-East herd, wildlife co-management boards and Aboriginal governments are reviewing information and the proposed target recommended by the WRRB and plan to develop a strategy which will be shared with affected wildlife co-management boards.	Closely monitor and report harvest such that if it exceeds the target, actions can be taken to ensure no further harvest occurs	Incomplete; targets exceeded, and no regulations implemented
18	TG and GNWT have information to suggest that the harvest of Bluenose-East caribou has or will or in the near future materially exceed 420 cows, then regulations should be put in place to close all harvesting in areas occupied by the Bluenose-East herd.	Varied (as per response #15) - Based on new 2010 estimate of the Bluenose-East herd, wildlife co-management boards are reviewing information and proposed harvest targets recommended by WRRB.	Closely monitor and report harvest such that if it exceeds the target, actions can be taken to ensure no further harvest occurs	Incomplete; targets exceeded, and no regulations implemented
19	GNWT should, in discussion with TG and other Aboriginal groups, identify and make public, prior to the annual fall hunt, areas within which the harvest will be attributed to the Bluenose-East caribou herd.	Accepted (as per response # 12)	Ensure that the public know where the Bathurst and Bluenose-East caribou herds reside such that requirements for harvest restrictions and reporting are known.	Incomplete; information not consistently provided on time
20	GNWT should, in discussion with TG and other Aboriginal groups, identify and make public, prior to the annual winter hunt, areas within which the harvest will be attributed to the Bluenose-East caribou herd.	Accepted (as per response #13)	Ensure that the public know where the Bathurst and Bluenose-East caribou herds reside such that requirements for harvest restrictions and reporting are known.	Incomplete; information not consistently provided on time

21	TG and GNWT do not provide harvester assistance and/or incentives to access the Bluenose-East herd.	Rejected - GNWT and TG agree that conservation measures for the Bluenose-East herd are required. However, GNWT had previously agreed to provide support to construct a winter road to Hottah Lake so that people from Wekweètì could access the Bluenose-East herd as a measure to reduce pressure on Bathurst caribou herd, whose numbers are still very low.	Allow for alternative harvest opportunities while not placing undo pressure on adjacent herds.	Recommendation rejected - CHAP funding provide to assist harvesters for fall hunts to access Bluenose-East caribou.
22	TG consider negotiating caribou harvesting overlap agreements with Nunavut and the Sahtú region to make certain that existing relationships endure.	Varied - TG will consider.	Ensure informal traditional harvest sharing agreements among Aboriginal groups continue to be respected into the future.	Incomplete; no agreements negotiated
23	All commercial, outfitted and resident harvesting from the Ahiak caribou herd within Wek'èezhìı be set to zero in order to prevent incidental	Accepted	Reduce harvest of the Ahiak caribou herd and set priority to Aboriginal harvest. Reduce incidental harvest of Bathurst caribou herd.	Completed

	harvest of Bathurst caribou for 2010-2013.			
24	TG and GNWT do not provide harvester assistance and/or incentives to access the Ahiak herd.	Rejected - GNWT and TG did not provide support for fall caribou harvests in 2010. However, for GNWT, it may be necessary to provide some assistance as part of accommodation for limiting harvest of the Bathurst herd. GNWT is working with harvesters to carefully monitor the harvest of the Ahiak herd.	Allow for alternative harvest opportunities while not placing undo pressure on adjacent herds.	Recommendation rejected - CHAP funding provide to assist harvesters for fall hunts to access Ahiak caribou.
25	TG consider negotiating caribou harvesting overlap agreements with Nunavut and the Akaitcho region to make certain that existing relationships endure.	Varied (as per recommendation # 22 for overlap agreements with Nunavut) - TG currently has a boundary agreement with Akaitcho.	Ensure informal traditional harvest sharing agreements among Aboriginal groups continue to be respected into the future.	Incomplete; no agreement negotiated with Nunavut; overlap agreement in place with Akaitcho.
26	GNWT should, in discussion with TG and other Aboriginal groups, identify and make public, prior to the annual <u>fall</u> hunt, areas within which the harvest will be attributed to the Ahiak caribou herd.	Accepted (as per response #12)	Ensure that the public know where the Ahiak caribou herd resides such that requirements for harvest restrictions and reporting are known.	Incomplete; information not consistently provided on time
27	GNWT should, in discussion with TG and other Aboriginal groups, identify and make public, prior to the annual <u>winter</u> hunt, areas within which the harvest will be attributed to the Ahiak caribou herd.	Accept (as per response #13)	Ensure that the public know where the Ahiak caribou herd resides such that requirements for harvest restrictions and reporting are known.	Incomplete; information not consistently provided on time
28	TG implement the Special Project, Using Tłįchǫ Knowledge to Monitor Barren Ground Caribou of the overall TK Research and Monitoring Program.	Varied - TG will be implementing the project based on its obligations and commitments pursuant to the provisions in the Tłįchǫ Agreement. Start date of the TK Research and Monitoring Program is anticipated in summer 2011.	Harvest monitoring to be controlled at community level and done in a manner that is consistent with Tłįchǫ cultures of sharing information and building knowledge.	Incomplete; not implemented

PREAMBLE: (#29-39) - The Tłı̨chǫ Government agrees with the recommendations 28-42 of the Recommendation Report related to the Revised Joint Proposal on Caribou Management Actions in Wek'èezhìı. We are committed to documenting and reporting on observations and trends observed by caribou harvesters and elders. Implementation of the Tłı̨chǫ Knowledge Research and Monitoring Program: Special Project, Using Tłı̨chǫ Knowledge (to Monitor Barren Ground Caribou' will take approximately eight months. The traditional monitoring system continues among the harvesters and elders. Nevertheless, the logistics of realizing a system that will rigorously and accurately document and report harvesters' observations and trends have yet to be initiated. The program requires trained Tłı̨chǫ researchers, offices, and equipment, all of which requires a realistic annual budget and extensive fundraising with those who will also benefit from Tłı̨chǫ knowledge research and monitoring.				
29	TG and GNWT implement the *spring calf survival* monitoring action as identified for TK and SK.	Scientific: Accepted - GNWT will provide the Board with a power analysis of how frequently spring composition surveys are required. GNWT has not recently used collars to assess cow mortality rate. GNWT would appreciate any suggestions from the Board on alternative methods to estimate cow mortality. Because the existing numbers of radio-collars on the Bathurst herd are insufficient to reliably monitor cow mortality rates, the joint proposal emphasized annual calving reconnaissance surveys to monitor the trend in the herd's numbers of breeding cows. High mortality rates in cows would translate to a declining trend in numbers of cows on the calving ground: low cow mortality rates would translate to increasing numbers of cows on the calving ground. TK – See Preamble	Ensure scientific monitoring of the Bathurst, Bluenose-East and Ahiak herds is conducted on an annual cycle such that management authorities can assess the status of the herd with the best available information at hand. This includes spring composition, calving reconnaissance, calving ground composition and fall composition. Calving or post-calving population surveys are to be completed in spring/summer 2012.	TK - Incomplete; Special Project not implemented SK - Completed

30	TG and GNWT implement the *health and condition* monitoring action as identified for TK and SK.	Scientific: Accepted - GNWT expects that some Bathurst cows will be taken by hunters; therefore, sample kits will be available to all hunters to record basic information on health, condition and pregnancy rates of cows. Details of samples to be collected will be provided to TG community caribou monitors and GNWT staff. Typically, community hunts are an opportune time to take such samples. TK – See Preamble	Monitor the health and condition of Bathurst, Bluenose-East and Ahiak caribou in a way that does not increase the harvest of cows or take away from community harvest of cows.	TK - Incomplete; Special Project not implemented SK -Incomplete; no systematic approach
31	TG and GNWT implement the *birth rate* monitoring action as identified for TK and SK.	Scientific: Varied - Birth rate information will be collected in different ways for different herds. - For example, the size of the Ahiak and Bathurst caribou herds is estimated using the calving ground photo census surveys. Birth rate is estimated from a composition survey that is conducted on the calving ground right after the photo census. - This photo census technique is not usually used for the Bluenose-East herd (rather, herd size is estimated from a post-calving ground photo census survey). Instead, pregnancy rates are based on information collected from harvested Bluenose-East cows, and indirectly from composition surveys that assess the calf:cow ratio. TK – See Preamble	Ensure scientific monitoring of the Bathurst, Bluenose-East and Ahiak herds is conducted on an annual cycle such that management authorities can assess the status of the herd with the best available information at hand. This includes spring composition, calving reconnaissance, calving ground composition and fall composition. Calving or post-calving population surveys are to be completed in spring/summer 2012.	TK - Incomplete; Special Project not completed SK - Completed

32	TG and GNWT implement the *adult sex ratio and fall calf survival* monitoring action as identified for TK and SK.	Scientific: Accepted - The result of the fall composition survey is one of the parameters used to determine a population estimate for the Bathurst and Ahiak herds. Fall adult sex ratio surveys for these herds are planned for 2011 and 2012 prior to photographic survey scheduled for 2011 (Ahiak/Beverly) and 2012 (Bathurst). The next Bluenose-East fall adult sex ratio survey is planned for 2011 to get more basic information on the number of bulls and cows for this herd. TK – See Preamble	Ensure scientific monitoring of the Bathurst, Bluenose-East and Ahiak herds is conducted on an annual cycle such that management authorities can assess the status of the herd with the best available information at hand. This includes spring composition, calving reconnaissance, calving ground composition and fall composition. Calving or post-calving population surveys are to be completed in spring/summer 2012.	TK - Incomplete; Special Project not implemented SK - Incomplete; survey not conducted annually
33	TG and GNWT implement the *estimate of herd size* monitoring action as identified for TK and SK.	Scientific: Accepted - GNWT will work with all partners to undertake the: • Bathurst calving ground photo survey in June 2012. • Ahiak calving ground photo survey in 2011. • Bluenose-East post calving ground survey in 2012 or 2013. TK – See Preamble	Ensure scientific monitoring of the Bathurst, Bluenose-East and Ahiak herds is conducted on an annual cycle such that management authorities can assess the status of the herd with the best available information at hand. This includes spring composition, calving reconnaissance, calving ground composition and fall composition. Calving or post-calving population surveys are to be completed in spring/summer 2012.	TK - Incomplete; Special Project not implemented SK - Completed

34	TG and GNWT implement the *wolf abundance (den occupancy)* monitoring action as identified by TK and SK.	Scientific: Varied - GNWT will continue with current wolf den surveys, which provide an index of wolf abundance. GNWT in consultation with the TG will provide a proposal with potential options and costings that are relevant to wolf monitoring, research, and management. The Parties will continue to explore new options with respect to monitoring and managing wolves. TK – See Preamble	Monitor wolf abundance as well as health and condition as it relates to productivity.	TK - Incomplete; Special Project not implemented SK - Completed
35	TG and GNWT implement the *wolf condition and reproduction* monitoring action as identified by TK and SK.	Scientific: Accepted - Through the Genuine Mackenzie Valley Fur Program the GNWT provides harvesters $200 for each intact wolf carcass and will provide a collection report to the WRRB and TG in June 2011 on the carcass collection. TK – See Preamble	Monitor wolf abundance as well as health and condition as it relates to productivity.	TK - Incomplete; Special Project not implemented SK - Completed, but no report
36	TG and GNWT implement the *wolf harvest* monitoring action as identified by TK and SK.	Scientific: Accepted - GNWT will provide a report to the WRRB and TG in June 2011 on wolf harvest data. TK – See Preamble	Monitor wolf harvest to assess if harvest incentives have led to changes in harvest.	TK - Incomplete; Special Project not implemented SK - Completed
37	TG and GNWT implement the *state of habitat* monitoring action as identified by TK and SK.	Scientific: Varied - GNWT will continue to provide an annual report to the WRRB and TG on fire activity. GNWT expects a number of research projects investigating the impact of fires on caribou habitat to be completed in 2012 and will provide an annual progress report to the WRRB and TG. GNWT will continue to explore new ways to monitor landscape change	Ensure the landscape is managed in such a way that considers the sustainability of the Bathurst, Bluenose-East and Ahiak caribou herds.	TK - Incomplete; Special Project not implemented SK - Incomplete; no report provided

		driven by industrial exploration and development with our partners (e.g., INAC). TK – See Preamble		
38	TG and GNWT implement the *pregnancy rate* monitoring action as identified by TK and SK.	Scientific: Accepted - Note: GNWT will make available, sample kits to hunters so that any Bathurst or Bluenose-East cows that are harvested can be tested to determine pregnancy rates. The community hunts are opportune times to do this work. TK – See Preamble	Monitor the health and condition of Bathurst, Bluenose-East and Ahiak caribou in a way that does not increase the harvest of cows or take away from community harvest of cows.	TK - Incomplete; Special Project not implemented SK -Completed
39	GNWT implement the *density of cows on calving ground* monitoring action as identified.	Scientific: Varied - GNWT will undertake these surveys for the Bluenose-East, Bathurst and Ahiak herd in 2011 and 2012. TK – See Preamble	Ensure scientific monitoring of the Bathurst, Bluenose-East and Ahiak herds is conducted on an annual cycle such that management authorities can assess the status of the herd with the best available information at hand. This includes spring composition, calving reconnaissance, calving ground composition and fall composition. Calving or post-calving population surveys are to be completed in spring/summer 2012.	Completed

40	TG implement the *caribou harvest* monitoring action as identified.	Varied - GNWT and TG will continue to work with harvesters to report harvests. Methods will be based on the last 2 years of harvest monitoring in the Tłįchǫ communities. A community-based program will be developed in the 2010/11 season.	Harvest monitoring to be controlled at community level and done in a manner that is consistent with Tłįchǫ cultures of sharing information and building knowledge.	Incomplete; information not consistently provided
41	TG and GNWT reporting on monitoring results to the WRRB and the general public a minimum of three times per year in April, September and December. April meeting changed to late-May.	Accepted -To make information available to the public, GNWT will also post reports provided to the WRRB on the GNWT website.	Share information in a timely manner with management authorities and the public.	Incomplete; information not consistently provided
42	TG develop and implement a TK conservation education program to support the relationship and respect Tłįchǫ have for caribou.	Accepted - TG has developed a Tłįchǫ Ekwo Working Group (TEWG) which held its orientation workshop on Dec 13-15. This group will assess and make recommendations for the TK conservation education program.	Ensure Tłįchǫ and other Aboriginal harvesters follow traditional practices with respect to appropriate harvest practices. Ensure that harvesters are not wasting or wounding animals that are not retrieved.	Incomplete; not implemented
43	GNWT develop and implement a scientific conservation education program to foster an increased appreciation of the resource.	Accepted - GNWT will undertake this work jointly with TG in Wek'èezhìı and with other Aboriginal groups outside of Wek'èezhìı. GNWT will prepare facts sheets that will be posted on the GNWT website. GNWT has developed an interactive Caribou Educational Program that can be used in schools for youth to learn about scientific management practices.	Ensure Tłįchǫ and other Aboriginal harvesters follow traditional practices with respect to appropriate harvest practices. Ensure that harvesters are not wasting or wounding animals that are not retrieved.	Completed

44	TG and GNWT implement a process of information flow, review and assessment.	Varied - The flow chart from the WRRB recommendation on page 44 suggests that the TK and scientific programs will be developed independently of one another. TG and GNWT would like to see a more integrated strategy between science and TK as discussed in the joint revised proposal.	Establish a process for sharing information in a timely manner among management authorities, to discuss the implementation of management actions and how well they are working. Increase communication among the management authorities. Provide an opportunity to review the efficacy of management actions and make revisions if necessary.	Completed: Barren-ground Caribou Technical Working Group created
46	Criteria be developed by TG and GNWT for assessing success or failure that would indicate when management actions are to be revised, including reinstatement of harvest for residents, outfitters and commercial tags.	Accepted - As per recommendations #4 and #6, these criteria will be developed as part of a long-term management plan.	Establish a process for sharing information in a timely manner among management authorities, to discuss the implementation of management actions and how well they are working. Increase communication among the management authorities. Provide an opportunity to review the efficacy of management actions and make revisions if necessary.	Incomplete; criteria not developed
47	GNWT continue discussions with the Government of Nunavut for identifying opportunities for calving ground protection.	Accepted - Note: This issue is also being raised in Nunavut by the Beverly and Qamanirjuaq Caribou Management Board (BQCMB). INAC is the primary land manager in the NWT and Nunavut. Discussion will need to take place with INAC and Nunavut.	Make progress on opportunities for minimizing impacts of development on the Bathurst, Bluenose-East and Ahiak caribou herds.	Completed; ongoing
48	GNWT and INAC collaboratively develop best practices for mitigating effects on caribou during calving and post-calving, including the	Varied - This can be tied into the long-term management plan. Discussion will be needed	Ensure development on calving and post-calving ranges of the Bathurst, Bluenose-East and Ahiak herds	Incomplete; not implemented

	consideration of implementing mobile caribou protection measures.	to take place with INAC and Nunavut.	does not unduly affect the sustainability of these herds.	
49	TG work towards development and implementation of a land use plan for Wek'èezhìı, including the consideration of thresholds for industrial land use.	Rejected - As per chapter 22.5 of the Tłı̨chǫ Agreement, it is the responsibility of Canada or GNWT to develop and implement a land use plan for Wek'èezhìı.	Ensure the landscape is managed in such a way that considers the sustainability of the Bathurst, Bluenose-East and Ahiak caribou herds.	Recommendation rejected - GNWT responsibility; Tłı̨chǫ Land Use Plan completed
50	GNWT and INAC monitor landscape changes, including fires and industrial exploration and development, to assess potential impacts to caribou habitat.	Varied (as per response #37) - GNWT has carried out some cumulative effects modeling to assess effects to date of diamond mines on the Bathurst herd, and will continue to build on this modeling.	Ensure the landscape is managed in such a way that considers the sustainability of the Bathurst, Bluenose-East and Ahiak caribou herds.	Incomplete; Bathurst Caribou Range Plan completed but not implemented
51	TG and GNWT assess the need for forest fire control in areas of important caribou habitat.	Accepted	Ensure the landscape is managed in such a way that considers the sustainability of the Bathurst, Bluenose-East and Ahiak caribou herds.	Incomplete; no assessment completed
52	Harvest of wolves should be increased through the suggested incentives, except for assisting harvesters to access wolves on wintering grounds.	Accepted	Increase harvest of wolves to reduce predation pressure on Bathurst caribou herd.	Incomplete; incentives unsuccessful
53	Focused wolf control should not be implemented. If TG and GNWT believe that focused wolf control is required, a management proposal shall be provided to the WRRB for its consideration.	Accepted	Allow for assessment and review of wolf harvest incentives on an annual basis.	Incomplete; feasibility assessment completed but no management proposal submitted
54	TG and GNWT submit a joint management proposal for wood bison in Wek'èezhìı by the fall of 2011 to substantiate the establishment of zones and quotas made through the Interim Emergency Measure.	Varied - 10-year Wood Bison Management Plans for the Nahanni, Slave River Lowland, and Mackenzie herds are set to be completed by the winter of 2012. Development of these plans will review current interim harvest measures	Allow for harvest of wood bison to offset hardship of reduced Bathurst caribou harvest. Ensure bison harvest is sustainable in the long term through a management planning process.	Incomplete; not submitted

		for Wood Bison in Wek'èezhìı. Draft plan will be provided to WRRB for approval. In December 2010, GNWT completed a regulation change to extend the season to September 1st.		
55	TG and GNWT work collaboratively to meet the obligations of Section 12.11 of the Tłįchǫ Agreement with support from WRRB staff as needed and a meeting be convened by January 2011.	Accepted	Develop guidance on managing caribou herds through abundance cycles by undertaking a collaborative management planning process.	Completed; ongoing
56	TG increase their capacity to ensure full participation in monitoring and management of caribou.	Accepted	Provide a forum for discussion of scientific and traditional ways of understanding caribou ecology. Allow for Tłįchǫ communities to be partners in management and decision-making.	Completed; Wildlife Coordinator hired
57	GNWT, TG and INAC implement its recommendations no later than January 1, 2011. GNWT's Emergency Interim Measures, put into effect on January 1, 2010, should remain in place until then.	Varied - Will be incorporated as part of the implementation plan.	Ensure timely implementation of management actions and that they are understood by Tłįchǫ and other Aboriginal harvesters.	Completed
58	TG and GNWT conduct consultations regarding the Recommendations Report prior to January 1, 2011.	Accepted	Ensure timely implementation of management actions and that they are understood by Tłįchǫ and other Aboriginal harvesters.	Completed
59	TG and GNWT develop a detailed implementation and consultation plan incorporating the WRRB's recommendations as soon as possible.	Accepted	Ensure timely implementation of management actions and that they are understood by Tłįchǫ and other Aboriginal harvesters.	Completed

60	GNWT develop and implement an effective and continuing enforcement and compliance program.	Accepted - The current protocol for GNWT enforcement and compliance program is effective. However, given the scope of the issues GNWT has enhanced its program to be a partnership with other affected Aboriginal organizations.	Ensure that harvest limits are respected, and that wastage and wounding loss is minimized.	Completed

APPENDIX D Review of 2016 Proceeding & Decisions

D.1. Request for Joint Proposal

On May 31, 2013, the WRRB reviewed and recommended continued implementation of Bathurst ʔekwǫ̀ herd recommendations made in its October 2010 Recommendations Report for the 2013/2014 harvesting season. The Board did not provide harvest recommendations for the Bluenose-East ʔekwǫ̀ herd as a separate management proposal for the herd was expected in the near future.

TG and GNWT submitted the *"Joint Proposal on the Caribou Management Actions in Wek'èezhìı (2014-2019)"* under separate cover on June 30, 2014. In the proposal, it was noted that for Bluenose-East ʔekwǫ̀ herd management, the draft *"Taking Care of Caribou"* management plan provided guidance and, if needed, a management proposal would be submitted separately. On July 16, 2014, the WRRB recommended that TG and GNWT begin developing a joint management response to the sharp decline in the Bluenose-East ʔekwǫ̀ population and number of breeding females.

Following the June 2014 reconnaissance survey of the Bluenose-East ʔekwǫ̀ herd, on August 27, 2014, the Minister of GNWT held a meeting of Indigenous leaders and wildlife management authorities to discuss the results, which suggested a continuing declining trend. The leadership agreed to create a technical working group that was tasked with reducing uncertainties regarding the causes behind the herd declines and developing a corresponding plan of action. Technical meetings were held in Yellowknife, NT on October 9-10, 2014 and October 22-23, 2014. Follow-up leadership meetings were held on November 7, 28 and December 4, 2014 in Yellowknife, NT to discuss the working group's proposed plan of action and reach agreement on implementation.

On November 5, 2014, based on the estimated 2013 herd size, the 2014 reconnaissance survey information and the principles stated in the *Taking Care of Caribou* management plan, the ACCWM proposed the herd status colour zone as orange and recommended NWT-specific orange management actions for the Bluenose-East ʔekwǫ̀ herd, related to education, habitat, land use activities, predators and harvest. Further, on November 19 and December 4, 2014, the ACCWM proposed an interim voluntary harvest target of 2800 Bluenose-East ʔekwǫ̀ per year (NWT overall harvest of 1800 ʔekwǫ̀), with a focus on a majority-bulls harvest, emphasizing younger and smaller bulls and not the large breeders and leaders. The ACCWM stated that if GNWT had evidence to suggest that the harvest target had been exceeded by 10% or more for the 2014/2015 harvesting season, then, after consultation with the ACCWM, regulations should be put in place to close all harvesting in areas occupied by the Bluenose-East ʔekwǫ̀ herd.

GNWT responded to the ACCWM on December 17, 2014 with a commitment to implement the *Taking Care of Caribou* management plan, ensuring that land claim processes are honoured. Further, GNWT requested advice from the ACCWM on a proposed overall approach for Bluenose-East ʔekwǫ̀ herd management, including a reduced harvest target for the NWT, mandatory harvest reporting, an allocation formula, and an increase in the number of satellite collars. On January 9, 2015, the ACCWM responded with its concerns about the proposed short-term management approach for the Bluenose-East ʔekwǫ̀ herd undermining the process set out in the management plan and setting unrealistic timelines for the development, community approval and implementation of a harvest allocation and harvest monitoring and reporting program. The ACCWM requested that GNWT respect the processes set out in the management plan for action planning, implement the previous recommendation of a voluntary harvest target of 2800 Bluenose-East ʔekwǫ̀ per year (NWT overall harvest of 1800 ʔekwǫ̀), and actively enforce a proposed 80:20 bull:cow harvest ratio.

On January 21, 2015, GNWT accepted the ACCWM's recommendation of a limit of 1800 Bluenose-East ʔekwǫ̀ for the NWT for the 2014/15 harvest season, including an 80:20 bull:cow harvest ratio, and proposed regulations to required authorizations to harvest bull-only barren-ground caribou in R/BC/01, R/BC/02 and R/BC/03. On January 26, 2015, the ACCWM supported GNWT's proposal to require bull-only authorization cards for harvest within R/BC/01, R/BC/02 and R/BC/03, with emphasis on younger and smaller bulls and not the large breeders and leaders. While GNWT also requested input on the harvest allocation of the 1800 Bluenose-East ʔekwǫ̀ for the Sahtú and Wek'èezhìı regions, the ACCWM felt that it was inappropriate to make any decisions on harvest allocation without input and approval from all Indigenous harvesters of the Bluenose-East ʔekwǫ̀ herd. Therefore, the ACCWM recommended that a meeting of all Indigenous users be held to determine the allocation of the Bluenose-East ʔekwǫ̀ herd and have clarity on any proposed regulations.

The SRRB sponsored the *Sahtú Gathering for the Caribou* on January 27-29, 2015 in Délı̨nę, NT. The meeting included representatives from the five Sahtú communities, the NWT Wildlife Management Advisory Council, the Inuvialuit Game Council, Kugluktuk Angoniatit Association, TG, and Parks Canada. At the gathering, GNWT requested feedback on the issues to be considered regarding harvest allocations for the Bluenose East ʔekwǫ̀. Following discussion, seven points of consensus were presented: 1) decisions are needed about how to share the caribou; 2) important matters require an in-person meeting of the parties; 3) timelines for discussions and decisions should not be imposed by the Minister; rather, they need to be agreed upon by the parties. Allocations should be arrived at and implemented for the 2015-2016 harvesting season as it is not feasible to accomplish this for the current harvesting season; 4) according to the best available information, the current status of the Bluenose East caribou does not constitute an emergency.; 5) the health of the caribou depends on the health of the

Indigenous peoples, their ability to *Dene Ts'įlį* (Be Dene); 6) the full range of actions, as presented by the Indigenous Caucus at the November 28, 2014 meeting with the Minister, and as outlined in the Bluenose Caribou Management Plan, is needed to address declining trends; and, 7) education is needed in the communities to prepare the ground for any decisions that will be made.

A conference call was convened on February 2, 2015 with all affected Indigenous organizations and wildlife management authorities of the Bluenose-East ʔekwǫ̀ herd to discuss a proposed harvest allocation for the remainder of the 2014/2015 harvest season. Unfortunately, many organizations were unable to participate in the call, and those able to call in were uncomfortable with supporting an allocation or criteria for allocation without all traditional users of the herd taking part in the discussion.

Taking into consideration the discussion during the February 2, 2015 conference call and the consensus points provided from the *Sahtú Gathering for the Caribou*, GNWT responded on February 6, 2015 with the following allocation of 1800 authorizations for the Bluenose-East ʔekwǫ̀ herd for the 2014/15 harvest season: Tłįchǫ: 1100; Sahtú: 480; Inuvialuit: 25; NWT Métis Nation: 40; Akaitcho Territorial Government: 60; and, NSMA: 50. In addition to caribou harvest measures, GNWT indicated additional approaches to be implemented would include predator management measures, such as increased payments for the wolf incentive program; monitoring actions; compliance and enforcement measures; enhanced education and communication activities; "sight in your rifle" events; and addressing impacts of disturbance on ʔekwǫ̀ herds with land use planners and industry.

On July 9 and September 24, 2015, GNWT provided updates to the WRRB about the Bluenose-East ʔekwǫ̀ herd calving group surveys conducted in June 2015. The results presented indicated a continued decline in the total number of breeding cows since the 2013 calving ground photo survey. The final population estimate would be provided by the end of October, following a composition survey to estimate the sex ratio.

On August 25, 2015 and September 22, 2015, respectively, TG and GNWT provided short-term ʔekwǫ̀ management recommendations for the 2015/16 harvest season. The Board responded to TG and GNWT, on September 25, 2016, with reasons for decisions and a list of recommendations for the 2015/16 harvest season, including agreeing on and implementing a reduction in the number of ʔekwǫ̀ harvested by subsistence users[183] of the Bluenose-East ʔekwǫ̀ herd. In addition, in order to implement determinations and/or recommendations by July 1, 2016, the WRRB requested the submission of a joint management proposal for the Bluenose-East ʔekwǫ̀ herd, for the 2016/17 harvest season and beyond, by no later than November 15, 2015. Due to

[183] Subsistence users include Tłįchǫ Citizens and members of an Aboriginal people, with rights to harvest wildlife in Wek'èezhìı, as per Section 12.6.5(b)(i) of the Tłįchǫ Agreement.

consultation requirements, TG and GNWT approached the Board on October 15, 2015 requesting an extension of the time for the submission of a joint management proposal for the Bathurst ʔekwǫ̀ herd until December 15, 2015. On October 21, 2015, the Board accepted the extension request despite concerns about future timing issues, including the implementation of management actions in the 2016/2017 harvest season.

On November 27, 2015, TG and GNWT accepted the WRRB’s recommendations and came to an agreement to implement, for the 2015/16 harvest season, a harvest target of 950 bulls only for Indigenous harvest of the Bluenose-East ʔekwǫ̀ herd (including Nunavut). Additionally, it was noted that work will continue with authorities in Nunavut towards implementing a consistent approach to harvest of Bluenose-East ʔekwǫ̀ in Nunavut and NWT.

A final update on the status and management of the Bluenose-East ʔekwǫ̀ herd was provided by GNWT on December 2, 2015, including the final population estimate and the suggestion that the Bluenose-East herd is close to the red zone, as per the *Taking Care of the Caribou* management plan.

On January 20, 2016, GNWT and representatives of traditional users and wildlife management authorities met to discuss and come to agreement on a proportional harvest allocation for the Bluenose-East herd for the 2016/17 harvest season and beyond. Meeting participants agreed that the proposed TG and GNWT harvest allocation formula is ‘close’ and should be seriously considered and consulted on by all groups.

D.2. Receipt of 2015 Joint Proposal

In June 2015, GNWT conducted a calving ground photographic survey and estimated the Sahtì ekwǫ̀ herd had declined to 38,600 ʔekwǫ̀. On December 15, 2015, TG and GNWT submitted the “*Joint Proposal on Management Actions for Bluenose-East Caribou 2016-2019”* to the Board outlining proposed management actions for the Sahtì ekwǫ̀ herd in Wek’èezhìı, including new restrictions on hunter harvest, predator management and ongoing monitoring. More specifically, TG and GNWT proposed implementing a herd-wide total allowable harvest of 950 bulls only and allocation for the Sahtì ekwǫ̀ herd and conducting a feasibility assessment of a full range of dìga management actions. The WRRB considered the proposed restriction of harvest as the establishment of a TAH and, therefore, was required to hold a public hearing. The public hearing took place April 6-8, 2016 in Behchokǫ̀, NT.

In anticipation of the proposal, the SRRB and the WRRB signed a *“Memorandum of Understanding Regarding Collaborative Efforts for the Management of the Bluenose-East Caribou Herd”* in October 2015 to ensure management of proceedings related to the Sahtì ekwǫ̀ herd would be as effective as possible. Each Board conducted its own proceeding, including public hearings in both the Sahtú and Wek'èezhìı areas. Each Board submitted its own Reasons for Decision report.

D.3. 2016 Board Decisions

In order to allow careful consideration of all the evidence on the record and to meet legislated timelines, the WRRB decided to prepare two separate reports to respond to the proposed management actions in the joint management proposal. The first report, Part A, dealt with the proposed harvest management actions that required regulation changes in order for new regulations to be in place for the start of the 2016/17 harvest season, as well as the proposed dìga feasibility assessment. The second report, Part B, dealt with additional predator management actions, biological and environmental monitoring, and cumulative effects.

On June 10, 2016, the WRRB submitted its final determinations and recommendations and Part A Reasons for Decision Report to TG and GNWT. The WRRB determined that a TAH of 750 bulls only should be implemented for all users of the Bluenose-East ɂekwǫ̀ herd within Wek'èezhìı for the 2016/17, 2017/18, 2018/19 harvest seasons. Further, the Board determined that the proportional allocation of the TAH of the Sahtì ekwǫ̀ herd for the 2016/17, 2017/18, 2018/19 harvest seasons should be as follows: Tłı̨chǫ Citizens – 39.29%, and Members of an Indigenous people who traditionally harvest Sahtì ekwǫ̀ (including Nunavut) – 60.71%.

The Board recommended that TG and GNWT agree on an approach to designating zones for aerial and ground-based surveillance throughout the fall and winter harvests seasons from 2016 to 2019. Additionally, the WRRB recommended weekly communication updates, timely implementation of hunter education programs for all harvesters of the Sahtì ekwǫ̀ herd, and development of harvesting overlap agreements with the Sahtú and Nunavut.

The WRRB recommended that the dìga feasibility assessment set out in the proposal be led by the Board with input and support from TG and ENR. As well, if deemed successful, the Community-based Dìga Harvesting Project would be extended in 2016-2017 to the Sahtì ekwǫ̀ herd and incorporated into an adaptive wolf management approach.

On October 3, 2016, the WRRB submitted its final recommendations and Part B Reasons for Decision Report to TG and GNWT. The WRRB recommended consultations with Tłı̨chǫ communities to determine a path forward for implementation of Tłı̨chǫ laws to continue the Tłı̨chǫ way of life and maintain their cultural and spiritual connection with ɂekwǫ̀.

In addition, the WRRB recommended several Tłı̨chǫ Knowledge (TK) research and monitoring programs focusing on dìga, sahcho, stress and other impacts on ʔekwǫ̀ from collars and aircraft over-flights, and an assessment of quality and quantity of both summer and winter forage.

The Board recommended a biological assessment of sahcho as well as requesting that the Barren-ground Caribou Technical Working Group (BGCTWG) prioritize biological monitoring indicators and develop thresholds under which management actions can be taken and evaluated. All scientific and TK monitoring data will be provided to BGCTWG annually to ensure ongoing adaptive management.

The WRRB recommended the implementation of Tłı̨chǫ Land Use Plan Directives as well as completing a Land Use Plan for the remainder of Wek'èezhìı. The Board also recommended the development of criteria to protect key ʔekwǫ̀ habitat, including water crossings and tataa, using the Conservation Area approach in the NWT's *Wildlife Act*, offsets and value-at risks in a fire management plan. Additionally, the WRRB recommended the development of monitoring thresholds for climate indicators.

APPENDIX E Review of 2016 WRRB Determinations and Recommendations

Recommendation #	WRRB Recommendations	TG/GNWT Responses	Status
WWRB Reasons for Decision Part A			
Determination #1-2016	• A total allowable harvest of 750 bulls only for all users of the Bluenose-East herd be implemented for the 2016/17, 2017/18, 2018/19 harvest seasons.		• Completed
Determination #2-2016	• The proportional allocation of TAH of the Bluenose-East herd for the 2016/17, 2017/18, 2018/19 harvest seasons shall be as follows: Tlicho citizens (39.2%); Members of an Aboriginal people who traditionally harvest Bluenose East (includes Nunavut) (60.71%). TG should determine distribution of the allocation within Tlicho communities, and GNWT should determine distribution of the allocation to members of an Aboriginal people who traditionally harvest Bluenose-East in consultation with those groups.		• Completed
Recommendation #1-2016	• TG and GNWT come to an agreement on the most effective wildlife management zone approach to differentiate herds, and then implement the approach with criteria for managing any overlaps between	• Appears to accept. In our response dated June 29, 2016 on WRRB determinations and recommendations for the Bathurst herd, TG and GNWT described a revised version of the Bathurst mobile no-harvest	• Completed, Mobile Core Bathurst Caribou Conservation Area implemented

Recommendation #	WRRB Recommendations	TG/GNWT Responses	Status
	herds, for the 2016/17, 2017/18, and 2018/19 harvest seasons.	zone that they had agreed on. Details of that option are set out in Appendix "A". We note that regulations required for the Bathurst mobile zone are already in place and will be modified as quickly as practicable to reflect the updated definition of mobile zone boundaries as listed in Appendix "A". GNWT will amend regulations to reflect the WRRB determination for BNE harvest within Wek'èezhìı as soon as practicable.	
Recommendation #2-2016	♦ TG and GNWT provide weekly harvest updates to the WRRB and the general public for the Bluenose-East herds throughout the fall and winter harvest seasons for the 2016/17, 2017/18, and 2018/19.	♦ Recommendations 2 and 3 – Vary. As noted in the June 29th, 2016 joint response to the WRRB on recommendations for Bathurst caribou, the GNWT is currently going through a period of severe fiscal restraint and budget reduction. It is not possible for GNWT to commit to weekly aerial monitoring of harvesting areas where Bluenose-East caribou are being harvested during winter. As in previous winters areas where Bluenose-East caribou are being harvested will be monitored by a combination of community monitors a game-check station on the winter road to the Tłįchǫ communities aerial reconnaissance	♦ Incomplete; inconsistent reporting

Recommendation #	WRRB Recommendations	TG/GNWT Responses	Status
		surveys, and ground patrols on winter roads and trails in Bluenose-East range. Weekly updates on any new monitoring information on harvest and compliance will be provided to the WRRB, and periodic updates can be provided to the general public.	
Recommendation #3-2016	♦ TG and GNWT provide weekly updates to the WRRB and the general public on aerial and ground-based compliance surveillance of the Bluenose-East herd throughout the fall and winter harvest seasons for the 2016/17, 2017/18, and 2018/19.	♦ Recommendations 2 and 3 – Vary. As noted in the June 29th, 2016 joint response to the WRRB on recommendations for Bathurst caribou, the GNWT is currently going through a period of severe fiscal restraint and budget reduction. It is not possible for GNWT to commit to weekly aerial monitoring of harvesting areas where Bluenose-East caribou are being harvested during winter. As in previous winters areas where Bluenose-East caribou are being harvested will be monitored by a combination of community monitors a game-check station on the winter road to the Tłı̨chǫ communities aerial reconnaissance surveys, and ground patrols on winter roads and trails in Bluenose-East range. Weekly updates on any new monitoring information on harvest and compliance will be	♦ Completed

Recommendation #	WRRB Recommendations	TG/GNWT Responses	Status
		provided to the WRRB, and periodic updates can be provided to the general public.	
Recommendation #4-2016	♦ TG and GNWT increase public education efforts and implement GNWT's recently developed Hunter Education program in Tlicho communities. GNWT should also implement the Hunter Education program for Aboriginal people who traditionally harvest Bluenose-East caribou.	♦ Recommendation 4 – Accept	♦ Completed
Recommendation #5-2016	♦ TG negotiate caribou harvesting overlap agreements with Nunavut and the Sahtú region to make certain that existing relationships endure.	♦ Recommendation 5 – This recommendation was addressed in previous discussions with WRRB and the Chief's Executive Council has authorized staff to initiate discussions with Nunavut and Sahtú.	♦ Incomplete; agreements not negotiated
Recommendation #6-2016	♦ If the Community-based wolf Harvesting Project is to be expanded to other Tlicho communities, a management proposal must be submitted to the WRRB for review and approval. Further, if the Project is to be expanded in scope, prior to the submission of a management proposal to the WRRB, an index of	♦ Accept	♦ Not required

Recommendation #	WRRB Recommendations	TG/GNWT Responses	Status
	changing wolf abundance must be available and research on habitat quality and quantity on the Bluenose-East herd range must be conducted.		
Recommendation #7-2016	♦ TG and GNWT support a collaborative feasibility assessment of options for wolf management, led by the Board.	♦ Appears to accept. A working group with representatives of GNWT, WRRB, TG, NSMA and YKDFN has been meeting in summer 2016 to collaboratively develop the wolf management feasibility assessment for the Bathurst range in the NWT. Łutsel K'e Dene First Nation (LKDFN) has been invited to participate in the working group. As noted in the TG and GNWT joint management proposal on the Bluenose-East herd, methods being developed for the feasibility assessment underway for the Bathurst herd could be extended to the Bluenose-East herd's range once the Bathurst assessment is complete. The working group that is developing the feasibility assessment for the Bathurst herd could be re-configured to consider wolf management in the range of the BNE herd.	♦ Completed
WWRB Reasons for Decision Part B			

Recommendation #	WRRB Recommendations	TG/GNWT Responses	Status
Recommendation #1B-2016	♦ TG consult with Tlicho communities by March 2017 to ensure Tlicho laws are implemented with respect to caribou harvesting practices to maintain the Tlicho way of life and the relationship with caribou.	♦ TG vary. TG agrees with recommendation insofar as it concerns consultation with Tlicho communities with respect to caribou harvesting practices and maintaining the Tlicho way of life and relationship with caribou. However, the passage and/or implementation of Tlicho laws is a matter outside the jurisdiction of the Board. This recommendation should be varied to remove that reference.	♦ Incomplete
Recommendation #2B-2016	♦ TG conduct TK research to define, from the Tlicho perspective, types of caribou, their behaviour, and their annual range, and their relationship with caribou and people by March 2017.	♦ TG vary. TG agrees that studies are needed. TG wants to combine Recommendations 2B, 3B, 5B, 15B and 21B into a comprehensive TK student.	♦ Incomplete
Recommendation #3B-2016	♦ TG conduct TK research on sahcho (grizzly bear) predation on caribou and their relationship with caribou, other wildlife and people by June 2017.	♦ TG vary. See recommendation 2B.	♦ Incomplete
Recommendation #4B-2016	♦ TG/GNWT conduct a collaborative grizzly bear biological assessment, following completion of the ongoing wolf feasibility assessment for the Bathurst herd. The assessment should include summarizing available information	♦ TG/GNWT appear to agree. NWT Species at Risk Committee to prepare species status report for grizzly bear in NWT and will address recommendation 4B.	♦ Incomplete

Recommendation #	WRRB Recommendations	TG/GNWT Responses	Status
	on sahcho (grizzly bear) abundance, movement and diet for the Bluenose-East herd's as well as including TK collected in Recommendation #3B-2016.		
Recommendation #5B-2016	♦ TG conduct TK research about stress and impacts on caribou and people related to collars and aircraft over-flights by September 2017, which should be considered in determining numbers of collars deployed in 2018 and beyond.	♦ TG vary. See recommendation 2B.	♦ Incomplete
Recommendation #6B-2016	♦ GNWT determine whether reconnaissance surveys should be conducted during non-photo survey years with renewable resource boards, Aboriginal governments and other affected organizations in the NWT and Nunavut prior to conducting the next reconnaissance survey in June 2017.	♦ GNWT vary. Suggests that Barren Ground Caribou Technical Working Group (BGCTWG) review value of reconnaissance surveys.	♦ Incomplete; no longer required
Recommendation #7B-2016	♦ Recommendation 7B – TG/GNWT provide a summary of scientific and TK monitoring data, including harvest and collar mortalities as soon as available each year, to the BGCTWG.	♦ TG/GNWT accept.	♦ Incomplete

Recommendation #	WRRB Recommendations	TG/GNWT Responses	Status
Recommendation #8B-2016	♦ TG/GNWT work with the BGCTWG to prioritize biological monitoring indicators in order of need for effective management and develop thresholds under which management actions can be taken and evaluated. Additionally, TG and GNWT should work with the BGCTWG to outline the trade-off between concerns about effects on and the collection of statistically credible information for both the number of collars and over-flights on the calving grounds. Implementation of this recommendation should be completed by no later than the end of March 2017.	♦ GNWT/TG vary. Suggest current monitoring of herds to be reviewed with BGCTWG during winter 2016-2017 to assess priorities for monitoring particularly if budget constraints limit resources.	♦ Incomplete
Recommendation #9B-2016	♦ TG refine and implement Tlicho Land Use Plan Directives, under Chapter 6 related to caribou, land use, and cumulative effects by March 2018.	♦ TG acknowledges suggestion and advises the Board that it intends to refine and implement the Tlicho LUP directives related to caribou. TG notes that land use planning in Wek’èezhìı is beyond the jurisdiction of the Board.	♦ Incomplete
Recommendation #10B-2016	♦ TG/GNWT initiate, develop and implement a land use plan for Wek’èezhìı by March 2019.	♦ GNWT vary. Suggests that GNWT work collaboratively with TG, federal government, and other Aboriginal Government Organizations and planning partners to initiate, develop and implement a	♦ Incomplete

Recommendation #	WRRB Recommendations	TG/GNWT Responses	Status
		government-led approach to land use planning for public lands in Wek'èezhìı. GNWT notes that this suggestion goes beyond the authority of the Board (should be a suggestion, not a recommendation). ♦ TG agrees in substance with GNWT.	
Recommendation #11B-2016	♦ TG/GNWT develop criteria under which Conservation Areas in the NWT's Wildlife Act will be used to protect key caribou habitat by March 2018.	♦ TG/GNWT vary. Suggest that TG, GNWT, and partners, through the Bathurst Range Planning Process, develop criteria to determine when to protect key caribou habitat by March 2018. Until the range plan assessment is complete, it is premature to assume that the Conservation Areas will be the best tool to achieve protection objectives. GNWT commits to ensuring that the Conservation Area approach will be considered.	♦ Incomplete; conservation areas noted as tool in Bathurst Caribou Range Plan
Recommendation #12B-2016	♦ TG/GNWT develop criteria to protect caribou water crossings from exploration and development activities in the NWT by 2018 to be included in the Tlicho and Wek'èezhìı Land Use Plans.	♦ TG/GNWT accept.	♦ Incomplete

Recommendation #	WRRB Recommendations	TG/GNWT Responses	Status
Recommendation #13B-2016	♦ TG/GNWT investigate and report to the WRRB and other stakeholders on the potential use of offsets for caribou recovery to compensate for losses caused by exploration and development activities by March 2018. A set of criteria should be developed to assess effectiveness of each type of offset as it is investigated.	♦ TG/GNWT accept.	♦ Incomplete
Recommendation #13B-2016	♦ TG/GNWT complete and implement a fire management plan with criteria identifying under which the key caribou habitat is defined as a value-at-risk by March 2018.	♦ TG/GNWT vary. Suggest recommendation is opportunity to involve community members in identifying important caribou habitat and to explain how fire management decisions are made and how wildland fires play a crucial role in the boreal ecosystem. GNWT is limited in its ability to control all fires on vast NWT landscape and total exclusion of wildland fire would not be ecologically healthy for the environment or wildlife. While caribou habitat is identified as a value at risk, it is lower in priority than the protection of life and property.	♦ Incomplete
Recommendation #16-2016	♦ TG conduct a TK monitoring project with elders to document how climate conditions have affected	♦ Recommendation 15B – TG vary. See response to Recommendation 2B.	♦ Incomplete

Recommendation #	WRRB Recommendations	TG/GNWT Responses	Status
	preferred summer forage and impacted caribou fitness by September 2018.		
Recommendation #16-2016	♦ TG conduct TK monitoring to assess the quality and quality of winter forage by September 2018.	♦ TG vary. See response to Recommendation 2B.	♦ Incomplete
Recommendation #17-2016	♦ TG/GNWT work with the BGCTWG to develop monitoring thresholds for climate indicators by March 2017.	♦ GNWT/TG vary. GNWT/TG are willing to review with the BGCTWG annual information on climate indicators and discuss thresholds for indicators relevant to caribou. GNWT/TG would support research that links climate indicators to caribou demography; at this point, linkage between climate indicators and caribou population trend is not well established. GNWT would request clarification of what WRRB is proposing on thresholds for climate indicators.	♦ Incomplete

APPENDIX F List of Registered Parties

Proponents
Tłįchǫ Government
Department of Environment & Natural Resources, Government of the Northwest Territories

Intervenors
Canadian Arctic Resources Committee
Délı̨nę Got'ı̨nę Government
North Slave Métis Alliance
Yellowknives Dene First Nation

Registered General Public
Louis Wedawin
Chief Charlie Football
Lucy Lafferty
Phillip Dryneck
Henry Gon
Jimmy Kodzin
Michel Moosenose
Bobby Pea'a
Pierre Tlokka
Jimmy Arrowmaker
Alphonse Apples
Charlie Apples
Joe Mantla

APPENDIX G Summary Table of Party Recommendations

Total Allowable Harvest		
Intervenor	**Recommendation**	**WRRB Response**
Délı̨nę Got'ı̨nę Government	Follow the Délı̨nę Got'ı̨nę Plan of Action for Caribou Conservation, entitled *"Belare wíle Gots'ę́ ʔekwę́ – Caribou for All Time"*	
North Slave Métis Alliance	Set a variable TAH of up to 300 bull-only BNE caribou per season.	Sec 7.2.4. Determination #1-2019 (Sahtì Ekwǫ̀)
Yellowknives Dene First Nation		
Harvest Allocation		
Party	**Recommendation**	**WRRB Response**
Délı̨nę Got'ı̨nę Government	Follow the Délı̨nę Got'ı̨nę Plan of Action for Caribou Conservation, entitled *"Belare wíle Gots'ę́ ʔekwę́ – Caribou for All Time"*	
North Slave Métis Alliance		
Yellowknives Dene First Nation	Do not agree with the proposed harvest allocation of 6 bulls for YKDFN	Sec 7.3.4., Determination #2-2019 (Sahtì ekwǫ̀)
Harvest Monitoring		
Intervenor	**Recommendation**	**WRRB Response**
Délı̨nę Got'ı̨nę Government	Follow the Délı̨nę Got'ı̨nę Plan of Action for Caribou Conservation, entitled "Belare wíle Gots'ę́ ʔekwę́ – Caribou for All Time"	
North Slave Métis Alliance		
Yellowknives Dene First Nation	TG and ENR need to outline within the management plan how exactly they will deal with the enforcement to ensure adherence.	Sec 7.4.4., Recommendation #1-2019 (Sahtì Ekwǫ̀)
	Consideration should be given to ensuring capacity building in the event thae ENR staff cannot already distinguish among caribou herds by appearance in the field	
Predators		
Party	**Recommendation**	**WRRB Response**
Délı̨nę Got'ı̨nę Government		
North Slave Métis Alliance	The ENR should undertake predator population surveys and collar monitoring programs immediately, starting in 2019. The surveys and monitoring should precede any aggressive programs (e.g., aerial shooting or ground shooting at den sites). At a minimum, the following data must be obtained before aggressive predator (wolf or grizzly) removal programs take place: - Population - Productivity - Pup survival rate - Main prey and its % of the diet - Satellite collar monitoring	Appendix H - WRRB Predator Management Recommendations and Government Response
Yellowknives Dene First Nation	Wolves should be collared to provide a dataset that can be matched against exisiting and future collared caribou data.	Appendix H - WRRB Predator Management Recommendations and Government Response

Habitat and Land Use		
Intervenor	**Recommendation**	**WRRB Response**
Délı̨nę Got'ı̨nę Government		
North Slave Métis Alliance		
Yellowknives Dene First Nation	Further analysis should be done on how caribou behaviour is affected by development and mines.	Sec 7.9 Research & Monitoring, Recommendation #15-2019 (Sahtì E)
Adaptive Management		
Intervenor	**Recommendation**	**WRRB Response**
Délı̨nę Got'ı̨nę Government		
North Slave Métis Alliance	TAH should be annually reviewed based on cow and calf survival rates, using an adaptive management framework and response plan.	Sec 7.8. Adaptive Management
Yellowknives Dene First Nation		
Research and Monitoring		
Intervenor	**Recommendation**	**WRRB Response**
Délı̨nę Got'ı̨nę Government		
North Slave Métis Alliance		
Yellowknives Dene First Nation	Caribou should not be monitored with collars.	Sec 7.9. Research and Monitoring, Recommendation #13-2019 (Sahtì Ekwǫ̀)
	Caribou should be monitored on the land.	Sec 7.9. Research and Monitoring, Recommendation #15-2019 (Sahtì Ekwǫ̀)
Other		
Intervenor	**Recommendation**	**WRRB Response**
Délı̨nę Got'ı̨nę Government		
North Slave Métis Alliance	"The management proposal on reduction of wolf numbers", GNWT should immediately invite the NSMA to the ongoing discussion, without waiting for the completion of the full draft	
	Identifying "appropriate cultural activities and harvest of other wildlife", the GNWT should invite the NSMA to the ongoing discussion or initiate a new bilateral discussion with the NSMA	
	The "monthly" staff meeting on the management of BNE, Bathurst, and Beverly/Ahiak caribou herds, GNWT should immediately invite the NSMA staff to the meetings.	
	"Supporting other harvesting initiatives", GNWT should invite the NSMA to the ongoing discussion or initiate a new bilateral discussion with the NSMA	
Yellowknives Dene First Nation	Management Proposals should be written with input from YKDFN and other Indigenous communities.	

APPENDIX H WRRB Predator Management Recommendations and Government Response

Wek'èezhìı Renewable Resources Board

February 6, 2019

Hon. Robert C. McLeod, Minister
Environment and Natural Resources
Government of the Northwest Territories
Box 1320
Yellowknife, NT X1A 2L9
Email: Robert_C_McLeod@gov.nt.ca

Via Email
Robert_C_McLeod@gov.nt.ca
georgemackenzie@tlicho.com

Grand Chief George Mackenzie
Tłı̨chǫ Government
Box 412
Behchokǫ̀, NT X1A 1Y0
Email: georgemackenzie@tlicho.com

Re: Section 12.5.6 of the Tłı̨chǫ Agreement – WRRB Predator Management Recommendations

Dear Minister McLeod & Grand Chief Mackenzie:

Background:
The *Kokètì Ekwǫ̀* (Bathurst caribou) and *Sahtì Ekwǫ̀* (Bluenose-East caribou) herds are both in a precipitous decline. The decline of the kokètì ekwǫ̀ herd was first documented in 1996 when the population was estimated at 349,000 animals, down from 420,000 in 1986. Management actions to date have failed to halt the decline and the herd's population was estimated at 8,200 animals in 2018. The decline of the sahtì ekwǫ̀ herd was first documented in 2013 when the herd's population was estimated at 68,000 animals, down from 121,000 in 2010. In 2018, the herd's population was estimated at 19,000 animals.

Range management, harvest restrictions and intensive study are being implemented or are already occurring in Wek'èezhìı for both herds. Previous joint management proposals for the kokètì ekwǫ̀ herd by the Department of Environment & Natural Resources (ENR), Government of the Northwest Territories (GNWT) and Tłı̨chǫ Government (TG) resulted in the Wek'èezhìı Renewable Resources Board (WRRB) holding public hearings in 2010 and again in 2016. A public hearing was also held to address management proposals for the sahtì ekwǫ̀ herd in 2016.

On January 14 and January 22, 2019 respectively, the WRRB received joint management proposals for the sahtì ekwǫ̀ and kokètì ekwǫ̀ herds. These management proposals propose a number of actions. However, despite WRRB recommendations for the implementation of predator control dating as far back as 2010, neither of the current management proposals includes a plan for predator management in either the sahtì ekwǫ̀ or kokètì ekwǫ̀ ranges. Instead your governments have indicated their intention to address the control of predators, more specifically *Dìga* (wolves), in a separate joint management proposal later in the spring of 2019.

<u>The Issue</u>:
The situation for both of these herds is dire. Analysis of the joint management proposals by the Board and its advisors indicates an immediate need for action to reduce predation on the herds. During its 2016 public hearings and most recently in the TG-ENR *Ekwǫ̀* (barren-ground caribou*)* consultation tours, conducted on January 21-23, 2019, the WRRB has heard from the community members that dìga are continuing to put pressure on ekwǫ̀ populations. Community members would like to see action taken now. The Board agrees.

<u>The Authority for WRRB Recommendations</u>:
Section 12.5.6 of the Tłı̨chǫ Agreement states:

> *The Wek'èezhìı Renewable Resources Board may, without waiting for a proposal from a Party, make the following recommendations or determinations, after consulting with any Party or body with powers to manage any aspect of the subject matter of its recommendation or determination:*
> *(a) Recommend actions for management of harvesting in Wek'èezhìı, including*
> *(i) A total allowable harvest level for any population or stock of fish,*
> *(ii) Harvest quotas for wildlife or limits as to location, methods, or seasons of harvesting wildlife, or*
> *(iii) The preparation of a wildlife management plan; …*

The WRRB has chosen not to wait for ENR and TG to submit their predator management proposal to the Board later this spring. The 20% rate of annual decline of the kokètì ekwǫ̀ and sahtì ekwǫ̀ herds is in the Board's opinion so serious that waiting any longer to act will make recovery of the herds even more difficult. The Board is convinced that early action is essential.

In consideration of the updated 2018 sahtì ekwǫ̀ and kokètì ekwǫ̀ herd estimates and recent consultations with Tłı̨chǫ communities the WRRB makes the recommendations set out below to GNWT and the TG:

Recommendation #1-2019 (Predator): The WRRB supports continuing the ENR's dìga harvest incentive program and the TG's Community Based Dìga Harvesting Project as an education tool.

Recommendation #2-2019 (Predator): The WRRB recommends that dìga monitoring be undertaken so that population estimates, or indexes are generated. In addition, as much information as possible, including condition, diet, and reproductive status, should be collected from each harvested dìga.

Recommendation #3-2019 (Predator): The WRRB recommends that dìga management be undertaken in Wek'èezhìı. TG and ENR should review the *"Wolf Technical Feasibility Assessment: Options for Managing Wolves on the Range of the Bathurst Barren-ground Caribou Herd"* submitted in November 2017 to determine the most effective, humane and cost-efficient methods that would have the least impact and disturbance on the ekwǫ̀ herds themselves.

Recommendation #4-2019 (Predator): The WRRB recommends that dìga management should be closely monitored for effectiveness of halting or slowing the decline of the sahtì ekwǫ̀ and kokètì ekwǫ̀ herds in order to provide future harvesting opportunities.

Recommendation #5-2019 (Predator): The WRRB recommends that the GNWT and TG work with the Government of Nunavut to enact predator management actions on the calving grounds of sahtì ekwǫ̀ and kokètì ekwǫ̀ in Nunavut.

Recommendation #6-2019 (Predator): The WRRB commits to striking a working group to begin work on a *sahcho* (grizzly bear) biological assessment by June 2019, specifically on the sahtì ekwǫ̀ and kokètì ekwǫ̀ herds herd ranges. This working group will include at minimum the GNWT, TG and the Government of Nunavut. WRRB staff recommend that sahcho are monitored in order to determine if pressures are increasing on ekwǫ**.**

Recommendation #7-2019 (Predator): WRRB staff recommend that *golden det'ǫcho* (golden eagle) are monitored in order to determine if pressures of golden det'ǫcho are increasing on ekwǫ̀. WRRB staff recommends that TG and the GNWT work with the Government of Nunavut to support golden det'ǫcho monitoring.

In addition, as per Section 12.5.8 of the Tłı̨chǫ Agreement, the Board requests a response to these recommendations by March 6, 2019.

Conclusion:
The WRRB believes that predator management must begin by May 2019 in order to promote recovery of the herds. This action is essential to ensure the potential for a future harvest of sahtì ekwǫ̀ and kokètì ekwǫ̀.

The WRRB will, in accordance with the Tłı̨chǫ Agreement participate in any consultations on these proposals that the ENR or TG decides to undertake.

If there are any questions, please contact our office at (867) 873-5740 or jpellissey@wrrb.ca.

Sincerely,

Joseph Judas, Chair
Wek'èezhìı Renewable Resources Board

Cc Dr. Joe Dragon, Deputy Minister, ENR-GNWT
Rita Mueller, Assistant Deputy Minister, Operations, ENR-GNWT
Bruno Croft, Superintendent, North Slave Region, ENR-GNWT
Laura Duncan, Tłı̨chǫ Executive Officer, TG
Tammy Steinwand-Deschambeault, Director, Culture and Lands Protection, TG
Michael Birlea, Manager, Culture and Lands Protection, TG

Tłı̨chǫ Ndek'àowo
Tłı̨chǫ Government

Government of Northwest Territories Gouvernement des Territoires du Nord-Ouest

MAR 07 2019

Mr. Joseph Judas, Chair
Wek'èezhìi Renewable Resources Board
4504 49TH AVENUE
YELLOWKNIFE NT X1A 1A7

Dear Mr. Judas:

Re: Section 12.5.6 of the Tłı̨chǫ Agreement – WRRB Predator Management Recommendations

Thank you for your letter dated February 6, 2019 providing the Wek'èezhìı Renewable Resources Board's (WRRB) recommendations to the Tłı̨chǫ Government (TG) and the Department of Environment and Natural Resources (ENR), Government of the Northwest Territories.

TG and ENR are providing the attached joint response to the WRRB's recommendations.

Sincerely,

Grand Chief George Mackenzie
Tłı̨chǫ Government
Behchokǫ̀, NT

Robert C. McLeod, Minister
Environment and Natural Resources
Yellowknife, NT

Attachment

c. Dr. Joe Dragon, Deputy Minister
Environment and Natural Resources

Ms. Rita Mueller, Assistant Deputy Minister, Operations
Environment and Natural Resources

Dr. Brett Elkin, Director, Wildlife
Environment and Natural Resources

Mr. Bruno Croft, Superintendent, North Slave Region
Environment and Natural Resources

Ms. Laura Duncan, Tłı̨chǫ Executive Officer
Tłı̨chǫ Government

Ms. Tammy Steinwand-Deschambeault, Director, Culture and Lands Protection
Tłı̨chǫ Government

Mr. Michael Birlea, Manager, Culture and Lands Protection
Tłı̨chǫ Government

Ms. Jody Pellissey, Executive Director
Wek'èezhìi Renewable Resources Board

WRRB Predator Management Recommendations

Recommendation #1-2019 (Predator): The WRRB supports continuing the ENR's dìga harvest incentive program and the TG's Community Based Dìga Harvesting Project as an education tool.

Response:

ENR and TG accept this recommendation.

ENR thanks the WRRB for their support of the Enhanced North Slave Wolf Harvest Incentive Program and notes that the program will continue until the prime fur season for wolves ends on May 31.

TG acknowledges and thanks the WRRB for its support of the Tłı̨chǫ Community-Based Dìga Harvesting Project, which is still under development. Tłı̨chǫ elders have been key proponents for developing and implementing a training program for Tłı̨chǫ hunters to become knowledgeable and effective harvesters of dìga. The training program engages Tłı̨chǫ elders directly so that Tłı̨chǫ knowledge and practices for hunting dìga are maintained and transmitted to the next generation of hunters. TG staff are working with selected Tłı̨chǫ hunters to provide them with additional training on harvesting and skinning methods through workshops that will be held in collaboration with ENR.

Recommendation #2-2019 (Predator): The WRRB recommends that dìga monitoring be undertaken so that population estimates, or indexes are generated. In addition, as much information as possible, including condition, diet, and reproductive status, should be collected from each harvested dìga.

Response:

ENR and TG accept this recommendation. ENR and TG agree that important aspects for assessing wolf management actions will be to a) monitor the relative abundance of dìga based on indices as removal actions are undertaken and b) evaluate health and condition of dìga including age, sex, diet, and reproductive status.

ENR and TG will develop and pilot a protocol for monitoring relative abundance of dìga in an adaptive manner to evaluate feasibility of sampling and robustness of results.

For each wolf carcass ENR receives, basic data on age, sex, diet, and reproductive status will be collected.

<u>Recommendation #3-2019 (Predator):</u> The WRRB recommends that dìga management be undertaken in Wek'èezhìı. TG and ENR should review the *"Wolf Technical Feasibility Assessment: Options for Managing Wolves on the Range of the Bathurst Barren-ground Caribou Herd"* submitted in November 2017 to determine the most effective, humane and cost-efficient methods that would have the least impact and disturbance on the ekwǫ̀ herds themselves.

Response:

ENR and TG accept this recommendation, and will use the feasibility assessment to develop the program.

ENR's Enhanced North Slave Wolf Incentive Program encourages harvesters to undertake ground-based shooting and/or snaring on the winter range of the Bluenose-East and Bathurst barren-ground caribou herds. The program is an extension of the previous program and was implemented to address requests from Indigenous hunters for further incentives to harvest wolves. This pilot project includes monitoring; ENR will track the number of dìga harvested and the observations of dìga reported by hunters as well as hunters' feedback on the logistics of harvesting dìga on the winter range. ENR will adaptively manage this program; if it is clear that this program is not resulting in a significant number of harvested dìga, enhancements will be made to the program and/or other options outlined in the feasibility assessment will be considered.

<u>Recommendation #4-2019 (Predator):</u> The WRRB recommends that dìga management should be closely monitored for effectiveness of halting or slowing the decline of the sahtì ekwǫ̀ and kokètì ekwǫ̀ herds in order to provide future harvesting opportunities.

<u>Response:</u>

ENR and TG accept this recommendation. ENR and TG are working together to develop management actions to help recover caribou and developing a joint proposal on dìga management. Monitoring will be included as part of the implementation of any wolf management program. At the same time, ENR and TG have proposed to increase the monitoring of both the sahtì ekwǫ̀ and kokètì ekwǫ̀ herds as outlined in the *Joint Proposal on Management Actions for the Bluenose-East ʔekwǫ̀ (Barren-ground caribou) Herd: 2019-2021* and the *Joint Proposal on Management Actions for the Bathurst ʔekwǫ̀ (Barren-ground caribou) Herd: 2019-2021.*

Recommendation #5-2019 (Predator): The WRRB recommends that the GNWT and TG work with the Government of Nunavut to enact predator management actions on the calving grounds of sahtì ekwǫ̀ and kokètì ekwǫ̀ in Nunavut.

Response:

As neither ENR nor TG have law-making jurisdiction in Nunavut we are unable to accept the recommendation as worded. ENR and TG would like to vary this recommendation, as the GNWT and TG can discuss potential predator management actions on the calving grounds of sahtì ekwǫ̀ and kokètì ekwǫ̀ with the Government of Nunavut.

Recommendation #6-2019 (Predator): The WRRB commits to striking a working group to begin work on a *sahcho* (grizzly bear) biological assessment by June 2019, specifically on the sahtì ekwǫ̀ and kokètì ekwǫ̀ herds herd ranges. This working group will include at minimum the GNWT, TG and the Government of Nunavut. WRRB staff recommend that sahcho are monitored in order to determine if pressures are increasing on ekwǫ**.**

Response:

ENR and TG accept the first half of this recommendation. ENR and TG will participate in a collaborative process to work on a sahcho biological assessment led by WRRB staff. ENR can provide information on sahcho from the Northwest Territories. In April 2017, the Northwest Territories Species at Risk Committee released the "Species Status Report for Grizzly Bear (*Ursus arctos*) in the Northwest Territories", which includes both traditional knowledge and science. This status report provides a thorough biological assessment of sahcho within the NWT and should form a basis for the biological assessment.

As neither ENR nor TG have jurisdiction in Nunavut we are unable accept the second half of this recommendation as worded. Despite this, ENR can discuss potential sahcho monitoring in order to determine if pressures are increasing on ekwǫ with the Government of Nunavut. ENR and TG recognize that sahcho are an important predator on the calving and post-calving grounds of ekwǫ. As the majority of the calving grounds and post-calving ranges of the sahtì ekwǫ̀ and kokètì ekwǫ̀ herds are in Nunavut, monitoring the pressures of sahcho on ekwǫ will occur in Nunavut and be the responsibility of the Government of Nunavut.

The TG Boots on the Ground program is one method of tracking sahcho on the Bathurst range and in the future on the Bluenose-East range. Sahcho have been observed during the TG Boots on the Ground program.

<u>Recommendation #7-2019 (Predator):</u> WRRB staff recommend that *golden det'ǫcho* (golden eagle) are monitored in order to determine if pressures of golden det'ǫcho are increasing on ekwǫ̀. WRRB staff recommends that TG and the GNWT work with the Government of Nunavut to support golden det'ǫcho monitoring.

<u>Response:</u>

As neither ENR nor TG have jurisdiction in Nunavut we are unable accept the recommendation as worded. ENR and TG would like to vary this recommendation, as TG and ENR can discuss potential options for monitoring both golden det'ǫcho and bald eagles with the Government of Nunavut.

ENR and TG recognize that eagles and in particular golden det'ǫcho have been identified as a significant predator of caribou calves in other barren-ground caribou herds.

The TG Boots on the Ground program is one method of tracking eagles on the Bathurst range and in the future on the Bluenose-East range. Bald eagles have been observed during the TG Boots on the Ground program.

APPENDIX I Tłı̨chǫ Research and Monitoring Program

Tłįchǫ Research and Monitoring Program

By
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2007

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Tłı̨chǫ Philosophy

Grand Chief Jimmy Bruneau directed the Tłı̨chǫ people to know both Western and Tłı̨chǫ knowledge so each Tłı̨chǫ citizen would be strong like two people. Bruneau's philosophy and direction was not new to the Tłı̨chǫ people, who have always been interested in the ways and knowledge of others. This philosophy has been noted in both their oral narratives and the journals of the trading post factors. Each tells of Tłı̨chǫ leaders learning the knowledge and negotiating techniques of trading post factors to ensure the best return for their people's furs. This philosophy is also evident - in oral narratives telling of activities leading up to discussions with the Federal Commissioner in 1921 when Mӧwhì signed Treaty 11. The stories explain that Tłı̨chǫ were aware of the European perspective based on information they acquired from the Slavey and Chipewyan further south. Upon learning from the experience of their southern neighbours they were better prepared to deal with the Treaty Party.

Tłı̨chǫ oral narratives stress the importance of understanding a problem, finding a solution and taking action. Their approach to learning, knowing and taking action is evident in most Tłı̨chǫ oral narratives, as well as the manner in which past research projects were approached. The Tłı̨chǫ have rarely allowed others to do research to address a problem they wish to know about themselves. They insist that they take an active part in research and monitoring. Specifically the Tłı̨chǫ:

- Explained to the managers of Rayrock Mine (1950s) that their observations were indicators of serious problems in the environment. They identified problems that they observed with plants and wildlife –such as beaver, marten and fish. These problems were particularly evident to those Tłı̨chǫ who either used the area frequently or worked at the mine.
- Insist research focus on their needs and priorities – take for example the priorities set by the Dogrib Renewable Resources Committee during the early 1990s: where caribou, habitat, water and heritage were of greatest concern.
- Insist on adequate funding to ensure Tłı̨chǫ researchers were employed as permanent, full time employees for the life of research projects – take for example the Traditional Justice and Traditional Medicine project in Whatì (1987-92); the Traditional Governance project in Gamètì (1993-1996); and the caribou and place names projects in all the Tłı̨chǫ communities (1996-2001).
- Use the participatory action research (PAR) method that includes researcher training; an elders – both male and female elders – committee/s; rigorous research methods carried out by Tłı̨chǫ researchers and overseen by the elders' committee; and verification of shared information. The PAR process ensures accurate understanding of the traditional knowledge that is

documented and ensures it leads to positive actions based on the recommendations.

Today, it is vital that the Tłı̨chǫ lead by undertaking their own harvesting and monitoring studies as the impacts of development on Tłı̨chǫ lands and the environment are becoming ever more evident. The Tłı̨chǫ Government and agencies have been given the authority to manage the land in the Tłı̨chǫ Agreement, but to do this effectively requires a system of research and monitoring that will feed into management decisions.

The Tłı̨chǫ Knowledge Research and Monitoring Program, which includes the collection of harvest information, outlined below is based on Tłı̨chǫ philosophy. First, the current issues for which this TK program was designed to solve are discussed, followed by a summary of the discussion with Tłı̨chǫ citizens that helped formulate the solutions. Thirdly, the program structure is described. There are five appendices that outline activities, outputs, and the evaluation questions so the TK Research and Monitoring Program can be improved through time. Appendices are as follows:

- Appendix I consists of the Program Design and Implementation Plan.
- Appendix II outlines the Evaluation Frameworks for both the on-going program activities and for the implementation activities.
- Appendix III is the Tłıcho Research and Monitoring Program Using Tłıcho Knowledge to Monitor Barren-ground Caribou.
- Appendix IV is a draft Tłıcho Knowledge Policy.

It should be noted that evaluation is done to ensure the best possible TK is being documented for future monitoring, education and understanding of the Tłı̨chǫ perspective.

Current Issue

The Tłįchǫ Agreement directs Boards, Agencies and the Tłįchǫ Government to i)use traditional knowledge, ii) promote cultural perspectives, and iii) select Board members that have knowledge of Tłįchǫ way of life. Yet the current systems – most of which are based on Western perspectives and the British legal system – make it difficult for Tłįchǫ knowledge (TK) to be used in a manner that is consistent within the Tłįchǫ cultural perspective and way of life.

The Agreement states that:

Section 12.1.6

> *In exercising their powers under this chapter, the Parties and the Wek'èezhìi Renewable Resources Board shall take steps to acquire and use traditional knowledge as well as other types of scientific information and expert opinion.*

Section 13.1.5

> *In exercising their powers in relation to forest management, the Government of the Northwest Territories, the Tłįchǫ Government and the Wek'èezhìi Renewable Resources Board shall take steps to acquire and use traditional knowledge as well as other types of scientific information and expert opinion.*

Section 14.1.4

> *In exercising their powers in relation to the management of plants, the Government of the Northwest Territories, the Tłįchǫ Government and the Wek'èezhìi Renewable Resources Board shall take steps to acquire and use traditional knowledge as well as other types of scientific information and expert opinion.*

Section 22.1.7

> *In exercising their powers, the Mackenzie Valley Environmental Impact Review Board and the Wek'èezhìi Land and Water Board shall consider traditional knowledge as well as other scientific information where such knowledge or information is made available to the Boards.*

Furthermore, Section 12.5.5 of the Tłįchǫ Land Claim and Self-government Agreement (the Agreement) states that the Wek'èezhìi Renewable Resources Board (WRRB) shall:

> *(a) Make a final determination, in accordance with 12.6 or 12.7, in relation to a proposal*
>
> *i. Regarding a total allowable harvest level for Wek'èezhìi, except for fish,*

ii. Regarding the allocation of portions of any total allowable harvest levels for Wek'èezhìi to groups of persons or for specified purposes, or

iii. Submitted under 12.11.1 for the management of the Bathurst caribou herd with respect to its application in Wek'èezhìi;

The Tłįchǫ Agreement authorizes the WRRB responsibility for total allowable harvest (TAH) for wildlife, forests and plants and authorizes the Minister of Fisheries and Oceans (DFO) responsibility for fish conservation and the establishment of TAH for fish stocks. Both WRRB and DFO have an obligation under terms of the Agreement to determine TAH through assessment studies and other research.

For WRRB and DFO to have information necessary for sustainable management it is imperative that the Tłįchǫ undertaken their own monitoring by documenting their observations and harvesting information to ensure they contribute to the process. If allocations are to be made among users of the resource it will be necessary to determine basic needs levels of the beneficiaries of the claim. Allocations of fisheries and wildlife resources will be difficult without this basic harvest information from the harvesters themselves.

For the Agreement to be honoured three activities need to occur:

1. Baseline information must be gathered from elders on known trends as harvest, wildlife and vegetation distribution.

2. Information gathered through Tłįchǫ traditional methods of monitoring needs to be documented on an on-going basis.

3. Realistic harvest studies need to be ongoing.

Although scientific information is readily available, most Tłįchǫ knowledge is in the minds of the elders and harvesters. For this reason, a program is needed so Tłįchǫ researchers can work with elders and harvesters to document their knowledge in a manner that does not lose the Tłįchǫ perspective. This is usually detailed knowledge of past conditions that they share with their descendants while sharing their current observations of wildlife and wildlife habitat. And, as is the traditional mode of sharing, numbers of species observed and harvested, are shared with others in the community along with other information such as behaviour of wildlife and the people harvesting. All information available is used to make management decisions.

One of the important features of Tłįchǫ knowledge is that it is acquired, enhanced and communicated on the land while people are engaged in land-based activities. It is also communicated after harvesters return to the community through oral narratives.

Modern harvest studies often ask harvesters to fill out survey forms in English, or to provide limited information that can be taken out of context. These studies may fail because they are not compatible with how Tłįchǫ knowledge, including information about harvest, is transmitted through oral narratives.

This project was designed to ensure that both monitoring and realistic harvesting numbers can be recorded in a culturally appropriate manner. This will help alleviate the problem that many respondents choose not to answer correctly harvest study questions posed by non-community members. (see Harvest Study Report, 2009).

Finding a Solution

In 1999-2000, the Tłįchǫ Regional Elders' Committee – under the direction of *K'àowo*[1] Jimmy Martin – requested Dogrib Treaty 11 staff who were working with the elders to bring male and female harvesters from each community to discuss a Tłįchǫ monitoring program. Funding for this meeting was secured from Cumulative Impacts and Monitoring Program, Environment Canada. The elders and harvesters directed staff to initiate monitoring around the diamond mines – with research/hunting camps located in strategic locations around the mines that would enable harvesters to observe the behaviour of caribou in relation to the mines. They also suggested a camp be located at Gots'ôkàtì and Deèzhàatì so caribou behaviour could be compared with non-mining areas.

In September 2008 the Wek'èezhìi Renewable Resources Board (WRRB) and the Tłįchǫ Government started work towards implementing a Tłįchǫ monitoring program. Also at that time members of the Wek'èezhìi Forum requested that work be done to develop TK policy.

The TK program design with associated policy guidelines were developed based on discussions held during the household visits made by the Project Team between April 2009 and December 31, 2009. All households in the three fly-in communities of Gamètì, Wekweetì and Whatì were contacted. Behchokö has a significant population therefore only those households with active harvesters and elders were contacted. During these visits Tłįchǫ researchers, along with Dr. Allice Legat, explained the importance of Tłįchǫ knowledge in the Tłįchǫ Agreement and the possibility of establishing a monitoring program as originally laid out by the elders and harvesters in 1999. Two Tłįchǫ researchers – Ms. Camilla Nitsiza and Ms. Madelaine Chocolate - did conducted the household visits, although Ms. Mary Adele Wetrade did assist Madelaine Chocolate in

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[1] Translated as 'boss'. The role is significantly different than the Western concept for 'chair'.

Gamètì. Household visits took longer than anticipated because i) individuals wished to express their views after hearing the role of the WRRB as it is mandated in the Tłı̨chǫ Agreement; and ii) individuals were delighted to expound on the potential for harvesters and elders working together with Tłı̨chǫ researchers to monitor the land as first set out by the elders in 1999-2000. Their excitement at building on their traditional management practices was clear.

After completing household visits and analyzing Tłı̨chǫ responses, it became clear that it would be culturally appropriate to develop interview guidelines that allowed harvesters to share information in a manner similar to how they normally explain their harvest and observations to one another and to their elders. The Tłı̨chǫ researchers found harvesters would prefer to discuss their activities – both observations (monitoring) and harvesting – in either a home or office setting, but at their own convenience. Finally, they found that harvesters thought if Tłı̨chǫ were doing the documenting and report writing they could then be assured: i) individual harvest numbers would remain confidential; ii) their information would be documented realistically; and iii) their observations would remain in the context within which their observations were made.

Following the household visits, the next step was to hold community meetings, and establish Community Elders' and Harvesters' Committees to assist with the final design of the program and program guidelines.

After the first community meeting in Gamètì, the elders met to select a committee. The Gamètì Committee met four times with the TK staff, Rita Wetrade, and Allice Legat to discuss what had been heard at the household level and to hear more specific views. During the fourth meeting, the Committee recommended a Regional TK Elders/Harvesters Working Group (TK Regional Working Group) be established to complete the work. Gamètì Committee members thought that it would be better if Tłı̨chǫ from all four communities worked together from the start so they could address all issues together. Six (6) members on the TK Regional Working Group had been active on the TK Regional Elders Committee from 1996-2002 while the remaining ten (10) harvesters and elders were named by the Tłı̨chǫ WRRB members. The Working Group meetings were held between January and March 31, 2010: three in Gamètì,[2] one in Wek'weetì, and one in Behchokö.

[2] Under the direction of John B. Zoe, TEO, a TK Office has been established in Gametì. However office furniture and computers have yet to be purchased and staff has yet to be hired.

The following is a summary of how discussions at the household level and at community and TK Regional Working Group meetings have informed key components of the program design.

Species Important to Local Harvesters

Caribou and fish are always cited as the most important. Nevertheless, all Tłı̨chǫ elders and harvesters explain – as is consistent with members of hunting and gathering societies – that all species are important, including human. They also explained that if one is to understand trends and impacts within Wek'èezhìi, human behaviour should be monitored noting what is being harvested by both male and female harvesters and whether or not all is used or if resources are wasted. [3]

Everyone agreed that all harvested animals should be documented as it would demonstrate a more realistic flow of events and levels during the annual cycle, and a more accurate account of their observations and land use.

Tłı̨chǫ Citizens to be Interviewed

During conversations at the household level, it became apparent that many younger people felt they did not know enough about the environment to speak with the researchers, but did think that they could report what they had harvested and observed as long as older, more experienced elders and harvesters were present to help them to understand their observations. Specifically younger people thought that if elders and harvesters were present they would gain a better understanding of how their observations were similar or different than the past and how their own knowledge and behaviour impacts on their observations.

During past discussions – prior to this project - elders thought that all individuals should be encouraged to report their observations and harvest – even if observations are made while 'picnicking' or traveling with family members and harvesting is not the main goal.

Most of the elders and harvesters participating in the TK Regional Working Group thought leaders should tell harvesters to report their observations and harvest.

During discussions after the meetings, the Project Team thought that once the Community Elders' Committees are established the elders – specifically the *k'aawo* on those committees - would encourage individuals to visit the Tłı̨chǫ Knowledge Research and Monitoring office and report their observations and harvest.

[3] Although not discussed during the household visits or during the meetings, most elders and active harvesters suggest that human activities associated with industrial development and exploration should be monitored by stewards of the land.

Researchers documenting the information would be trained to note whether the individual is an experienced or inexperienced harvester, and whether or not they are a full-time or part-time harvester; and whether or not their main activity at the time of sighting resources was harvesting.

Sharing Information

Throughout all discussions it became clear that community members would be more open about sharing their harvesting information as well as their observations if they understood that their oral narratives and their observations - 'raw data' - would remain with and be safeguarded by the Tłı̨chǫ Government, and kept in the Tłı̨chǫ communities.

Several individuals expressed that they feel they are being "checked-up on" when non-Tłı̨chǫ ask questions and are worried that it can be used against them.

Schedule of Discussions wıth Households

Based on the manner in which Dene pass information, it was made abundantly clear during household visits and during the TK Regional Working Group meetings, that oral narratives are the process for sharing detailed information. (see also Basso, Cruikshank, Goulet, and Sharp on the importance of oral narratives among all Dene). For this reason the researchers/interviewers will be trained to use an 'gathering oral narratives guide' while documenting information shared by harvesters.

The TK Regional Working Group thought the office should be open at least five days a week so harvesters could report when convenient and on an ongoing basis so numbers and observations are recorded quickly.

Expectations of Harvesters and Elders

All Tłı̨chǫ citizens with whom the researchers spoke liked the idea that monitoring skills and harvesting information would be given back to the community every few months – by the Tłı̨chǫ researchers. They thought the communities could benefit from hearing this information and verifying the researchers' interpretations so misunderstandings could be clarified.

The TK Regional Working Group thinks that reporting back to the community at public meetings is extremely important. If the researchers share a summary of what they have heard with the community, then harvesters will be more likely to provide their observations and harvest numbers. They reasoned that the harvesters would know they were being heard and that their knowledge and information was being documented accurately. For example,

2. Their observations of the environment about health of animals and state of habitat, etc - are being heard;
3. Harvesters will feel secure that harvesting data is correct and their elders and leaders can use the information for management decisions.

Compensation for Harvesters

This has not been discussed with harvesters during the household visits or at the elders and harvesters meetings. During past discussions with elders, it was thought that harvesters should report on a volunteer basis, but should be compensated when attending the verification and sharing meetings when more information on their observations can be noted. Only those harvesters who participated on a volunteer basis would be compensated at the verification and working group meetings.

It is proposed that this is a decision for the Tłįchǫ leadership after being discussed at a Tłįchǫ Assembly, recognizing that availability of resources may be a constraint.

Reporting

Since using Tłįchǫ knowledge in environmental management is important to Tłįchǫ, it is recommended that after the verification meetings with elders and harvesters, report/s – annual or bi-annual - should be written for the Chief Executive Council that would then be released to the public – Boards, agencies, Industry, Federal and Territorial governments.

Duration of Harvest Study within Monitoring Program

During the household visits, the community meeting and the TK Regional Working Group meetings, the vast majority (young people did not speak to this topic) of Tłįchǫ citizens thought the harvest study within the monitoring program should be on-going.

Program Structure

The Tłı̨chǫ Knowledge Research and Monitoring Program is designed to capture knowledge in a manner that is compatible with the Tłı̨chǫ cultural perspective. It is also designed to acknowledge the continued importance of oral narratives as the medium with which to share information and the importance of Tłı̨chǫ land-based activities in learning and being able to apply and promote Tłı̨chǫ knowledge.

Program Goals

A Tłı̨chǫ Knowledge Research and Monitoring Program will support goals that assist the Tłı̨chǫ Government, and the boards and agencies under the Tłı̨chǫ Agreement, to fulfill their mandate within the co-management regimes. It will also provide direction to industry and non- Tłı̨chǫ researchers on expectations and costs. This program will support the following program outcomes:

1. Tłı̨chǫ knowledge and perspectives are utilized in management and decision-making.
2. The Tłı̨chǫ Government and its boards and agencies have the information they need to play a strong role in co-managing the environment, and to support programs such as education.
3. The Tłı̨chǫ Government has the information it needs to play a strong role in managing caribou and other wildlife, plants and forests; and has its own information and reports to support bargaining and negotiations.
4. Harvesting maintains its role as a respected and important economic and social endeavour.
5. Tłı̨chǫ knowledge, perspective and language are strengthened through oral narratives and land-based activities.
6. Integrated knowledge transfer is occurring across generations.
7. Tłı̨chǫ place names are documented accurately to express bio-geographical information, and to support the process of acquiring official place name status.

Social Impacts

If the program successfully achieving the above goals, it will help to support broader social impacts such as the following:

- Tłı̨chǫ citizens will fulfil their traditional stewardship responsibilities to care for the land.
- TK is transmitted in a manner that is compatible with Tłı̨chǫ culture and social structure.

- Tłı̨chǫ language is strong and used in daily conversations.
- Tłı̨chǫ citizens are emotionally and spiritually healthy.
- There is a structured process for Tłı̨chǫ youth to learn land-based skills and knowledge.
- Tłı̨chǫ place names become official.

Program Design and Implementation

The establishment of a fully developed, effective Tłı̨chǫ Knowledge Research and Monitoring Program is a necessary but ambitious undertaking. It will require substantial resources and careful planning. It will also require investment in training and in information technology. The program will take approximately two years to implement, and five years to become fully operational. It will take at least two years to develop TK policies, guidelines and directives that are consistent with the Tłı̨chǫ perspective and the Tłı̨chǫ Agreement, and provide direction and clarity for boards, agencies and TG departments that is both practical and respectful of Tłı̨chǫ knowledge. Guidelines and directives developed for boards, agencies and TG departments will reflect Tłı̨chǫ Government policy on access and use of Tłı̨chǫ knowledge.

There are several activities that need immediate attention if the program is going to provide information for caribou management, for the Environmental Assessment of the proposed highway route within Wek'èezhìi, and for Fortune Mineral's mining venture, with respect to impacts on land, wildlife and water.

To ensure harvesters' and elders' observations, knowledge and harvest are documented and used, the following activities will be undertaken within the next two years when initiated in November 2010:

1. Establish a comprehensive database to support the organization and storage of Tłı̨chǫ monitoring and harvest data in a manner that is consistent with oral narrative and protocol;
2. Digitize and enter existing information into the database;
3. Establish operating procedures for the program, including human resource policies and procedures, compensation policies, and development of research methods;
4. Establish training programs for researchers and data entry clerks;
5. Hire and train staff;
6. Undertake promotion and outreach to ensure that communities understand and support the program, and that harvesters participate;
7. Establish community Elders' Committees;

8. Develop a Tłı̨chǫ Knowledge Policy[4] for approval by the Tłı̨chǫ Government.

Appendix I contains a more detailed outline of the proposed structure of the program, including a comprehensive list of proposed activities required to implement the program and a comprehensive list of program activities over the longer term, together with anticipated outputs from those activities.

Appendix II contains a draft evaluation framework for implementation evaluations in Year 2, and a more fulsome outcome evaluation in Year 5. These evaluations will help to measure whether the program is on track to achieve the goals/outcomes outlined above.

The Tłı̨chǫ are faced with two urgent issues that require immediate attention: **i)** the need for caribou monitoring in the face of current concerns about the integrity and health of the Bathhurst caribou herd and harvest numbers; and ii) the Fortune Minerals and all-weather road proposal**s**. It is proposed that program implementation be fast-tracked with specific regard to these two issues. More detail on the activities required for the Special Project: Caribou Monitoring and Harvest Study can be found in Appendix III. Special Project Design for Environmental Assessments TK baseline research associated with Fortune Minerals and the proposed road will be completed in the near future.

In addition, the Tłı̨chǫ Government requires knowledge of several areas that are being proposed as protected areas.

[4] See Draft policy in Appendix IV.

Tłı̨chǫ Knowledge Research and Monitoring Program
Summary Table of Proposed Structure

SOCIAL IMPACTS

- Tłı̨chǫ citizens will fulfil their traditional stewardship responsibilities to care for the land.
- Tłı̨chǫ knowledge is transmitted in a manner that is compatible with Tłı̨chǫ culture and social structure.
- Tłı̨chǫ language is strong and used in daily conversations.
- Tłı̨chǫ citizens are emotionally and spiritually healthy.
- There is a structured process for Tłı̨chǫ to youth learn land-based skills and knowledge.
- Tłı̨chǫ place names become official

GOALS

- Tåîchô knowledge and perspectives -are utilized in management and decision-making.
- The Tåîchô Government and its boards and agencies have the information they need to play a strong role in co-managing the environment, and to support programs such as education.
- The Tåîchô Government has the information it needs to play a strong role in managing caribou and other wildlife, plants and forests; and has its own information and reports to support bargaining and negotiations.
- Harvesting maintains its role as a respected and important economic and social endeavour.
- Tåîchô knowledge, perspective and language are strengthened through oral narratives and land-based activities.
- Integrated knowledge transfer is occurring across generations.
- Tåîchô place names are documented accurately to express bio-geographical information, and to support the process of acquiring official place name status.

ACTIVITIES

- Establish a comprehensive database to support the organization and storage of Tłı̨chǫ monitoring and harvest data in a manner that is consistent with oral narrative and protocol.
- Digitize and enter existing information into the database.
- Establish operating procedures for the program, including human resource policies and procedures, compensation policies, and development of research methods.
- Hire and train staff – research, data entry, etc.
- Undertake promotion and outreach to ensure that communities understand and support the program, and that harvesters participate.
- Establish an Elders' Committees to guide the programme.
- Develop a Tłı̨chǫ Knowledge Policy[1] for approval by the Tłı̨chǫ Government.
- Evaluate the program to make sure it is achieving the goals.
- Implement culturally appropriate research and monitoring activities.

Appendix I
Program Design and Implementation

By Allice Legat
Gagos Social Analysts, Inc

Program Design and Implementation
Tłįchǫ Knowledge Research and Monitoring Program

Program Structure: Implementation Phase

	ACTIVITIES (What needs to be done)	*OUTPUTS (What we hope to achieve)*
Data Base	Design and develop database to compile and retain Tłįchǫ knowledge and to follow oral narrative protocol Copy tapes and photos in digital format. Enter photo information into photo data base	• Comprehensive and functioning database completed and operational • Tapes and photos can be used via computer and internet
Tłįchǫ Knowledge Policy	Comprehensive TK policy approved by TG	• WLWB and WRRB policies can complement TG • Industry knows TG's expectations • TK staff understand role of TK for future
Training	Identify staff training requirements and design training plans	• Staff will have the skills required to make the program a success • Training programs are designed for all aspects of program operations

	ACTIVITIES *(What needs to be done)*	*OUTPUTS* *(What we hope to achieve)*
TK Elders' Committee/s	Elders Committee are established and functioning as per the Terms of Reference	• Terms of reference are established and approved by TG • Elders Committee is operational • Elders are guiding the design and implementation of the program • Elders are working with community residents to know their traditional roles and responsibilities
Promotion and Outreach	Promote and explain the program to Tłı̨chǫ citizens	• Community residents are aware of the TKRM program • Tłı̨chǫ citizens support the program
	Describe steps taken to develop program in academic setting	• Tłı̨chǫ knowledge program gains credibility with a broader audience • Success in external fund-raising
Program Administration	Develop operating procedures for the program Develop comprehensive guidelines for program including issues such as harvester compensation, participation criteria Develop activity outline for pilot projects: Main office established Budget finalized Funding is secured for program start-up and fund-raising plans are developed	• Job descriptions are written and staff are hired • Required policies and procedures are in place • Compensation policy for participating harvesters is implemented • Concept of "harvester" is defined for the purposes of the program • Protocol for community meetings is established • Protocol for producing and distributing reports is established • caribou monitoring and harvest study • Baseline for Fortune minerals and proposed road • Office space secured • Archival section established • Core funding requirements for six years determined • Final budget approved by TG • Effective fund-raising approach results in external funding support (industry, GNWT, DFO, WLWB, WRRB)

	ACTIVITIES *(What needs to be done)*	*OUTPUTS* *(What we hope to achieve)*
Research and Monitoring Methodology	Implement culturally appropriate process for harvesters to share observations and harvest Describe program development process in academic paper and present at conference	• Harvesters are comfortable with the process • Tłįchǫ knowledge is transmitted in a culturally appropriate manner • Papers written • Conference attended

Program Design and Implementation
Tłı̨chǫ Knowledge Research and Monitoring Program

Program Structure: Ongoing

	ACTIVITIES (What needs to be done)	*OUTPUTS (What we hope to achieve)*
Data Base	Maintain and update database regularly after each information exchange with harvesters and elders. Produce reports regularly and review at community meetings and with Elders' Committee Produce reports in response to requests	• Database is up to date and capable of creating reports upon demand • Baseline information is available for environmental assessments, and environmental management • The store of Tłı̨chǫ knowledge is expanded as new information is entered into the database
Tłı̨chǫ Knowledge Policy	The policy and associated directives provide appropriate guidance for TG elected representatives and staff, and external agencies	• The role of Tłı̨chǫ knowledge is understood • Industry is clear about TG expectations • Boards are clear about TG expectations • Federal and Territorial Governments are Clear on TG expectations
Collaborate with TG Departments	Sharing of information and expertise established through inter-department guidelines	• Process for intra-TG access to data base. • Information on TCSA tapes entered in data base. • Information on TK tapes storied in Land Department entered in data base. • Tłı̨chǫ language training schedule. • Land Department uses TK information and reports for management of land, wildlife and associated habitat.

	ACTIVITIES *(What needs to be done)*	OUTPUTS *(What we hope to achieve)*

Training	On-going training for program staff to ensure they are effective cultural interpreters	• Process for on-going training established.
		• Process for inter-department training to access and use data base to complete land, wildlife and other applications and permits.
		• Trained TK community researchers are available to work with harvester and elders.
		• Database administrator is trained to maintain the database.
		• Staff have the skill to:
		  ○ Efficiently document interviews.
		  ○ Use interview guidelines.
		  ○ Maintain archives and produce reports.
		  ○ 'Go after' concepts of Tłı̨chǫ and English terms.
		  ○ Write Tłı̨chǫ.
		  ○ Identify similarities and differences between Tłı̨chǫ and western management ideals.

TK Elders' Committee/s	Tłı̨chǫ elders provide on-going guidance to the program	• Elders' Committee is functioning effectively • Elders play a meaningful role in all phases of program • Elders work with Tłı̨chǫ citizens to know their traditional roles and responsibilities
Promotion and Outreach	Elders and leaders promote and explain the program to Tłı̨chǫ citizens Community meetings are held to promote program and review information. Establish network with WRRB and WLWB to ensure they have information needed for environmental management decision. Describe program in academic papers and settings.	• Community residents are aware of the program and its importance for Tłı̨chǫ knowledge • Tłı̨chǫ citizens support the program • A majority of harvesters participate in the program by providing information • Biannual reports are released publicly • Tłı̨chǫ knowledge program gains credibility with a broader audience • Success in external fund-raising

	ACTIVITIES ***(What needs to be done)***	*OUTPUTS* ***(What we hope to achieve)***
<u>Culturally appropriate research, monitoring and harvest study</u>	Implement culturally appropriate process for researchers to interview and receive information from elders and harvesters Establish protocols for providing monitoring and harvesting reports to appropriate agencies Conduct field camps with elders and Tłįchǫ researchers (including those in Land Department) to review data, expand database and build skills of researchers Collaborate with TCSA to link youth to the program	• Harvesters and elders are comfortable with the interview process • Tłįchǫ knowledge is transmitted in a culturally appropriate manner • Tłįchǫ place names are effectively documented • Three field camps are held annually, with 50 participants including youth • Field camps include participation across four generations • Information compiled by researchers is verified and expanded upon • Harvesters are fairly and appropriately compensated for their contribution. • Trends are made available to agencies on a timely basis
<u>Research and Monitoring Methodology</u>	Program operates efficiently and effectively Participatory Action Research method utilized • Interview guidelines utilized • Information organized • Team members understand final goals • On-going training accomplished Program is successful in achieving goals	• Useful information being collected and analyzed • Working within budget • Evaluation frameworks are established • Evaluation reports are completed • Program changes are made as required based on evaluation

Appendix II
Evaluation Frameworks

By

Allıce Legat
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Evaluation Frameworks
Tłįchǫ Knowledge Research and Monitoring Program

Evaluation Framework: Five-Year Outcome Evaluation

Evaluation Issue	*Evaluation Question*	*How Will we Measure It?*	*What information will be needed and where will we find it?*	*Who will collect this Information for Evaluations and When?*
Goal #1: Tłįchǫ knowledge and perspectives are used in environmental management and decision-making	Is Tłįchǫ knowledge used by the Tłįchǫ Government, Boards, other governments to inform environmental management and decision-making? Is industry aware of Tłįchǫ Government expectations regarding use of Tłįchǫ knowledge? Is this reflected in development proposals? Are harvester observations being used to flag emerging trends and issues for regulatory agencies?	# of reports requested by all government agencies and Boards # of regulatory decisions that incorporate Tłįchǫ knowledge in written decisions # of times Tłįchǫ knowledge is reflected in government plans and policies # of reports requested by industry # of emerging issues flagged through harvester observations	Program files – TKRMP, TG, WRRB, WLWB Information requests will be entered into the database on an on-going basis Information from external agencies, e.g. federal and territorial departments, MVEIRB, MVLWB Database reports	Program management in consultation with other agencies Contractor or Program Management to conduct interviews with external agencies, file research as required

Evaluation Issue	*Evaluation Question*	*How Will we Measure It?*	*What information will be needed and where will we find it?*	*Who will collect this Information for Evaluations and When?*
Goals #2 and #3: **The Tłı̨chǫ Government and its boards and agencies have the information they need to play a strong role in co-managing the environment and to support programs such as education.** **The Tłı̨chǫ Government has the information it needs to play a strong role in managing caribou and other wildlife, plants and forests; and has its own information and reports to support bargaining and negotiations**.	Is the level of information available sufficient to meet the needs of government agencies for management decisions? Is the program documenting information on all aspects of harvesting, including harvest data, observations about trends, observations from women's as well as men's processing of products? Is the database working as an effective tool to access information? Have Tłı̨chǫ government agencies and boards used the information in reports? Are boards and agencies satisfied with the information that has been provided?	# of information requests received # of requests turned down because information not available # of reports produced in response to requests Compliance with established reporting protocols Reflection of information provided in regulatory and environmental decision-making Level of satisfaction with reports provided Incorporation of TKRMP information incorporated into curriculum development	Database Program files Review of regulatory and environmental decisions and reports Consultation with other TG agencies	Archivist and database manager Program management External contractor to conduct file review, consult clients

	Is information being used to inform curriculum development?			
Evaluation Issue	***Evaluation Question***	***How Will we Measure It?***	***What information will be needed and where will we find it?***	***Who will collect this Information for Evaluations and When?***
Goal #4: **Harvesting maintains its role as a respected and important economic and social endeavour**	Is the proportion of Tłı̨chǫ citizens involved in harvesting activities increasing, decreasing or staying stable? What role does harvesting play in providing food to Tłı̨chǫ households? How many Tłı̨chǫ citizens are earning an income from harvesting activities? Are young people requesting time with harvesters so they can learn harvesting skills, including use of resources through production of crafts?	# of residents involved in harvesting and related activities # of harvesters participating in the TKRMP Amount of country food consumed by Tłı̨chǫ citizens Income from trapping Income from production of traditional crafts (including clothing)	Baseline information on participation in harvesting activities Participation and consumption rates from database Income information from census, GNWT	Baseline information - program management to compile as soon as possible Community researchers to enter results of harvester debriefs daily Program management to work with external contractor to compile

Evaluation Issue	*Evaluation Question*	*How Will we Measure It?*	*What information will be needed and where will we find it?*	*Who will collect this Information for Evaluations and When?*
Goal #5: Tłįchǫ knowledge, perspective and language are strengthened through oral narratives and land-based activities	Is TKRMP information being shared in a manner that is culturally appropriate? Is the program utilising the expertise of families with knowledge in specific geographical areas? Is the Elders' Committee effective in providing guidance to the program and participating in on-going evaluation? Is the program achieving recognition and credibility outside the Tłįchǫ area?	# of citizens participating in TKRMP review meetings, and trends # of participants who are comfortable with the process, and trends # of harvesters visiting the offices or requesting home visits, and participation trends Effectiveness of research methodology in acquiring enhanced Tłįchǫ knowledge Role of the Committee in influencing program operations and reports Number of presentations to external agencies or academic conferences External requests for information	Database Program files Interviews with program participants and clients (using appropriate methods) to determine effectiveness Focus groups and file research Elders' Committee evaluation	Community researchers through regular data inputs Program management External contractor

Evaluation Issue	*Evaluation Question*	*How Will we Measure It?*	*What information will be needed and where will we find it?*	*Who will collect this Information for Evaluations and When?*
Goal #6: Integrated knowledge management and transfer is occurring across four generations	Are field camps being held on a regular basis? How effective are the field camps in providing a forum for knowledge and values transfer? Is the knowledge of elders being transmitted successfully to younger generations? Is information from the TKRMP being used to educate youth and inform school curricula?	# and regularity of field camps Field camp participation rates and level of knowledge acquired by participants Satisfaction levels of field camp participants Ability of youth and elders to communicate about Tłįchǫ knowledge in the Tłįchǫ language Youth awareness of program and understanding of Tłįchǫ knowledge Incorporation of TKRMP information and methods into school programs	Program files Field camp pre- and post-tests Field camp evaluation results Explore partnership with TCSA to monitor TCSA program files and staff	Pre- and post-tests to be designed in Year 2 and administered by program staff at all field camps Field camp evaluation format to be designed in Year 1 and administered by program staff at all field camps Program management and external contractor

Goal #7: Information on Tłı̨chǫ place names is documented accurately to express bio-geographical knowledge, and to support the process of official place names	Is place name information being compiled and documented through research process? Are place names translated and spelled correctly to ensure accuracy of meaning? Is information being used to support the process of establishing Tłı̨chǫ names as official place names?	# of place names identified through research methods Review place names for accuracy and satisfaction # of official place names processed based on TKRMP information	Database Researchers and Elders' Committee to conduct regular review. Tłı̨chǫ Government toponymy files?	Community researchers to update database daily Program management to establish process in Year 2 External contractor to compile

Evaluation Frameworks
Tłįchǫ Knowledge Research and Monitoring Program

Evaluation Framework: Implementation Evaluation

Evaluation Issue	*Evaluation Question*	*How Will we Measure It?*	*What information will be needed and where will we find it?*	*Who will collect this Information for Evaluations and When?*
Database	Is the database operational and adequate to meet program needs? Have past records been digitized and entered into the database? Have existing photos been digitized and entered into the data base? Are researchers using the database and regularly updating it? Does database follow oral narrative and protocol? Is information accessible on the internet?	# of tapes digitized # of photos digitized # of new entries made per month relative to harvesters' oral narrations and observations Volume of backlogged data entry being accomplished by staff	- Baseline assessment of existing data to be digitized - Data base - Program files - Researchers	Baseline information - program management as soon as possible Program director in consultation with researchers, at end of first and second years

Evaluation Issue	*Evaluation Question*	*How Will we Measure It?*	*What information will be needed and where will we find it?*	*Who will collect this Information for Evaluations and When?*
<u>Tłįchǫ Knowledge Policy</u>	Has the comprehensive TK policy approved by CEC? Has the TK policy been forwarded to Boards and Agencies, GNWT and Federal Departments? Have TG departments and agencies developed associated guidelines and protocols? Is industry aware of Tłįchǫ Government expectations?	Status of policy and guidelines Is policy publicly available on TG web page # of Boards, agencies, Government and business receiving policy TG and agency communications with industry	- TG, WLWB and WRRB records - Web page - TG and agency program files - Discussions with TG and agency program staff	Program management at end of first and second years

Evaluation Issue	*Evaluation Question*	*How Will we Measure It?*	*What information will be needed and where will we find it?*	*Who will collect this Information for Evaluations and When?*
Training	Have training plans been developed? Has schedule for training workshops been set? Have training programs been developed for : - Literacy in two languages - TK concepts and perspectives - Interview techniques - Report writing - Archival skills Is further training required?	# of training workshops designed and delivered # of staff who successfully complete training Degree of staff turnover(link to reason) #of staff with literacy in English and Tłįchǫ Staff use of interview techniques (guidelines) when listening to harvesters and elders #of documented material with correct numbering Staff acquisition of the necessary skills	- Training evaluation sheets - Personnel files - Program files - Program management observations	Training providers to ensure evaluations are completed of training sessions Program management, in consultation with trainers, harvesters and Elders' Committee; at end of first and second years

Evaluation Issue	*Evaluation Question*	*How Will we Measure It?*	*What information will be needed and where will we find it?*	*Who will collect this Information for Evaluations and When?*
Operation of Elders' Committee	Is the Committee operating as it was intended? Has the Elders Committee replaced the Working Group? Did Regional working Group develop Terms of Reference for elders' committee? Are the elders satisfied with the research results and interactions of program staff with the community?	Status of Terms of Reference Extent to which committee operations are consistent with TOR # of community meetings held Attendance at meetings Satisfaction of Committee members with process and support	- Program files (attendance and committee minutes) - Survey of Committee members	Program management, at end of first and second years

Evaluation Issue	*Evaluation Question*	*How Will we Measure It?*	*What information will be needed and where will we find it?*	*Who will collect this Information for Evaluations and When?*
Promotion and Outreach	Are elders and leaders encouraging participation? Are harvesters aware of the program? Are harvesters fairly and adequately compensated for their participation? Are program goals and achievements being shared with a broader audience?	# of community residents who are aware of program # of introductory meetings held # of home visits Degree of expressed support for the program Degree of participation by harvesters Degree of satisfaction with compensation Number of presentations to external agencies or academic conferences External requests for information	Comparative information with household visits 2008-2010 Program files and data base Program files	Baseline information - program management as soon as possible Community researchers to enter results of harvester debriefs daily Program management to compile annually Program management to compile annually

Evaluation Issue	*Evaluation Question*	*How Will we Measure It?*	*What information will be needed and where will we find it?*	*Who will collect this Information for Evaluations and When?*
Research and Monitoring Methodology	Are harvesters comfortable with the process? Is Tłįchǫ knowledge transmitted in a culturally appropriate way? Has a methodology been established to ensure an effective role for elders in program evaluation?	# of harvesters sharing observations and harvest information through the program Harvester participation rates by category (i.e. women, youth, children) degree of harvester comfort with research methodology rate of participation in community meetings success of discussions at community meetings	- Data base - List of harvesters - Comments to researchers - Elders Committee evaluation	Community researchers to enter results of harvester debriefs daily Elders' Committee to provide input Program management, at end of first and second years

Evaluation Issue	*Evaluation Question*	*How Will we Measure It?*	*What information will be needed and where will we find it?*	*Who will collect this Information for Evaluations and When?*
<u>Program administration</u>	Do all staff have job descriptions? Are required policies and procedures in place? Has a space been secured for TK office? Are training and procedure manuals available for staff? Funding: Has core funding been established Has a funding raising plan been developed Does program have adequate funding	% of job descriptions completed % of policies, procedures, manuals and guidelines completed status of compensation guidelines and number of issues raised by harvesters or program administrators Funding: Status of budget development Availability of funding Success of external fund-raising efforts	Program files TG, WRRB and WLWB program files	Program management, at end of first and second years

Appendix III

Tłı̨chǫ Research and Monitoring Program

Using Tłı̨chǫ Knowledge to Monitor Barren-ground Caribou

Consultation, Verification and Program Design
Allice Legat
Camilla Nitsiza
Madeline Chocolate-Pasquayak

August 30, 2010

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Tłı̨chǫ Philosophy

Grand Chief Jimmy Bruneau directed the Tłı̨chǫ people to know both Western and Tłı̨chǫ knowledge so each Tłı̨chǫ citizen would be strong like two people. Bruneau's philosophy and direction was not new to the Tłı̨chǫ people, who have always been interested in the ways and knowledge of others. This philosophy has been noted in both their oral narratives and the journals of the trading post factors. Each tells of Tłı̨chǫ leaders learning the knowledge and negotiating techniques of trading post factors to ensure the best return for their people's furs. This philosophy is also evident - in oral narratives telling of activities leading up to discussions with the Federal Commissioner in 1921 when Möwhì signed Treaty 11. The stories explain that Tłı̨chǫ were aware of the European perspective based on information they acquired from the Slavey and Chipewyan further south. Upon learning from the experience of their southern neighbours they were better prepared to deal with the Treaty Party.

Tłı̨chǫ oral narratives stress the importance of understanding a problem, finding a solution and taking action. This approach to learning, knowing and taking action is evident in most Tłı̨chǫ oral narratives, as well as the manner in which past research projects were approached. The Tłı̨chǫ have rarely allowed others to do research to address a problem they wish to know about themselves. They insist that they take an active part in research and monitoring. Specifically the Tłı̨chǫ:

- Explained to the managers of Rayrock Mine (1950s) that their observations were indicators of serious problems in the environment. They identified problems that they observed with plants and wildlife –such as beaver, marten and fish. These problems were particularly evident to those Tłı̨chǫ who either used the area frequently or worked at the mine.
- Insist research focus on their needs and priorities – take for example the priorities set by the Dogrib Renewable Resources Committee during the early 1990s: where caribou, habitat, water and heritage were of greatest concern.
- Insist on adequate funding to ensure Tłı̨chǫ researchers were employed as permanent, full time employees for the life of research projects – take for example the Traditional Justice and Traditional Medicine project in Whatì (1987-92); the Traditional Governance project in Gametì (1993-1996); and the caribou and place names projects in all the Tłı̨chǫ communities (1996-2001).
- Use the participatory action research (PAR) method that includes researcher training; an elders – both male and female elders – committees; rigorous research methods carried out by Tłı̨chǫ researchers and overseen by the elders' committee; and verification of shared information. The PAR process ensures accurate understanding of the traditional knowledge that is documented and ensures it leads to positive actions based on the recommendations.

Today, it is vital that the Tłı̨chǫ lead by undertaking their own harvesting and monitoring studies as the impacts of development on Tłı̨chǫ lands and the environment are becoming ever more evident. The Tłı̨chǫ Government and co-management boards have been given the authority to manage the land in the Tłı̨chǫ Agreement, but to do this effectively requires a system of Tłı̨chǫ knowledge (TK) research and monitoring that will feed into management decisions.

The *Special Project: Using Tłı̨chǫ Knowledge to Monitor Barren Ground Caribou* described below is based on Tłı̨chǫ philosophy and is part of the Tłı̨chǫ Knowledge Research and Monitoring Program. The description of this project follows the following format: first, the current issues, for which the TK program was designed to solve, are discussed. Second, the program structure, on which the caribou monitoring and collection of harvest information is a part, is described.

It should be noted that evaluation is done to ensure the best possible TK is being documented for future monitoring, education and understanding of the Tłı̨chǫ perspective. The purpose is not to pass judgment but to provide tools to fine tune the program to ensure TK is documented and used.

Current Issue

The Tłı̨chǫ Agreement directs co-management boards, government agencies and the Tłı̨chǫ Government to i) use traditional knowledge, ii) promote cultural perspectives, and iii) select Board members that have knowledge of Tłı̨chǫ way of life. Yet the current systems – most of which are based on Western perspectives and the British legal system – make it difficult for Tłı̨chǫ knowledge (TK) to be used in a manner that is consistent within the Tłı̨chǫ cultural perspective and way of life.

The Wek'èezhìi Renewable Resources Board in collaboration with the Tłı̨chǫ Government decided to develop and implement a program that would be a positive step towards using Tłı̨chǫ knowledge in manner that considers Tłı̨chǫ perspectives.

The Agreement states that:

Section 12.1.6

> *In exercising their powers under this chapter, the Parties and the Wek'èezhìi Renewable Resources Board shall take steps to acquire and use traditional knowledge as well as other types of scientific information and expert opinion.*

Section 13.1.5

> *In exercising their powers in relation to forest management, the Government of the Northwest Territories, the Tłı̨chǫ Government and the Wek'èezhìi Renewable Resources Board shall take steps to acquire and use traditional knowledge as well as other types of scientific information and expert opinion.*

Section 14.1.4

> *In exercising their powers in relation to the management of plants, the Government of the Northwest Territories, the Tłı̨chǫ Government and the Wek'èezhìi Renewable Resources Board shall take steps to acquire and use traditional knowledge as well as other types of scientific information and expert opinion.*

Section 22.1.7

> *In exercising their powers, the Mackenzie Valley Environmental Impact Review Board and the Wek'èezhìi Land and Water Board shall consider traditional knowledge as well as other scientific information where such knowledge or information is made available to the Boards.*

Furthermore, Section 12.5.5 of the Tłı̨chǫ Land Claim and Self-government Agreement (the Agreement) states that the Wek'èezhìi Renewable Resources Board (WRRB) shall:

> *(a) Make a final determination, in accordance with 12.6 or 12.7, in relation to a proposal*
>
> *i. Regarding a total allowable harvest level for Wek'èezhìi, except for fish,*

ii. Regarding the allocation of portions of any total allowable harvest levels for Wek'èezhìi to groups of persons or for specified purposes, or

iii. Submitted under 12.11.1 for the management of the Bathurst caribou herd with respect to its application in Wek'èezhìi;

The Tłı̨chǫ Agreement authorizes the WRRB the responsibility for total allowable harvest (TAH) for wildlife, forests and plants and authorizes the Minister of Fisheries and Oceans (DFO) responsibility for fish conservation and the establishment of TAH for fish stocks. Both WRRB and DFO have an obligation under terms of the Agreement to determine TAH through assessment studies and other research.

For WRRB and DFO to have information necessary for sustainable management it is imperative that the Tłı̨chǫ undertaken their own monitoring by documenting their observations and harvesting information to ensure they contribute to the process. If allocations are to be made among users of the resource it will be necessary to determine basic needs levels of the beneficiaries of the claim. Allocations of fisheries and wildlife resources will be difficult without this basic harvest information from the harvesters themselves.

For the Agreement to be honoured three activities need to occur:

1. Baseline information must be gathered from elders on known trends as harvest, wildlife and vegetation distribution.

2. Information gathered through Tłı̨chǫ traditional methods of monitoring needs to be documented on an on-going basis.

3. Realistic harvest studies need to be ongoing.

4. All collected information must be stored in such a way as to respect the provider of the knowledge.

5. Reports to co-management boards will be sent several times per year to insure it will inform their management decisions.

Although scientific information is readily available, most TK is in the minds of the elders and harvesters. For this reason, a program is needed so Tłı̨chǫ researchers can work with elders and harvesters to document their knowledge in a manner that does not lose the Tłı̨chǫ perspective. This is usually detailed knowledge of past conditions that they share with their descendants while sharing their current observations of wildlife and wildlife habitat. And, as is the traditional mode of sharing, numbers of species observed and harvested, are shared with others in the community along with other information such as behaviour of wildlife and the people harvesting. All information available is used to make management decisions.

One of the important features of Tłı̨chǫ knowledge is that it is acquired, enhanced and communicated on the land while people are engaged in land-based activities. It is also communicated after harvesters return to the community through oral narratives.

Modern harvest studies often ask harvesters to fill out survey forms in English, or to provide limited information that can be taken out of context. These studies may fail because they are not compatible with how Tłı̨chǫ knowledge, including information about harvest, is transmitted through oral narratives.

This project was designed to ensure that both monitoring and realistic harvesting numbers can be recorded in a culturally appropriate manner. This will help alleviate the problem that many respondents choose not to answer correctly the harvest study questions posed by non-community members.

Program Structure

The Tłı̨chǫ Knowledge Research and Monitoring Program is designed to capture knowledge in a manner that is compatible with the Tłı̨chǫ cultural perspective. It is also designed to acknowledge the continued importance of oral narratives as the medium with which to share information and the importance of Tłı̨chǫ land based activities in learning and being able to apply and promote Tłı̨chǫ knowledge.

Program Goals

A Tłı̨chǫ Knowledge Research and Monitoring Program will support goals that assist the Tłı̨chǫ Government, and the boards and agencies under the Tłı̨chǫ Agreement, to fulfill their mandate within the co-management regimes. It will also provide direction to industry and non- Tłı̨chǫ researchers on expectations and costs. The caribou monitoring and harvest study portion of this program will support the following program outcomes:

1. Tłı̨chǫ knowledge and perspectives are utilized in management and decision-making.
2. The Tłı̨chǫ Government and co-management boards have the information they need to play a strong role in co-managing the environment, and to support programs such as education.
3. The Tłı̨chǫ Government has its own information and reports to provide boards and government and information it needs to play a strong role in managing caribou and other wildlife, plants and forests.
4. Harvesting maintains its role as a respected and important economic and social endeavour.
5. Tłı̨chǫ knowledge, perspective and language are strengthened through oral narratives and land-based activities.
6. Integrated knowledge transfer is occurring across generations.
7. Tłı̨chǫ place names are documented accurately to express bio-geographical information, some of which are associated with caribou harvesting.

Social Impacts

If the program successfully achieving the above goals, it will help to support broader social impacts such as the following:

- Tłı̨chǫ citizens will fulfil their traditional responsibilities to care for the land.
- TK is transmitted in a manner that is compatible with Tłı̨chǫ culture and social structure.
- Tłı̨chǫ language is strong and used in daily conversations.
- Tłı̨chǫ citizens are emotionally and spiritually healthy.
- There is a structured process for Tłı̨chǫ youth to learn land-based skills and knowledge.
- Tłı̨chǫ place names become official.

Program Design and Implementation

The establishment of a fully developed, effective Tłı̨chǫ Knowledge Research and Monitoring Program is a necessary but ambitious undertaking. It will require substantial resources, careful planning and a long term commitment to allow it to be successful. It will also require investment in training and in information technology.

Using Tłı̨chǫ Knowledge to Monitor Barren Ground Caribou and document caribou harvest is a constructive first step towards the development of the program.

There are several activities that need immediate attention if the program is going to provide on-going information for caribou monitoring and management.

To ensure harvesters' and elders' observations, knowledge and harvest are documented and used, the following activities will be undertaken immediately when initiated in November 2010:

1. Establish a comprehensive database to support the organization and storage of Tłı̨chǫ monitoring and harvest data in a manner that is consistent with oral narrative and protocol;
2. Digitize and enter existing information into the database;
3. Establish operating procedures for the program, including human resource policies and procedures, compensation policies, and development of research methods;
4. Establish training programs for researchers and data entry clerks;
5. Hire and train staff;
6. Undertake promotion and outreach to ensure that communities understand and support the program, and that harvesters participate;
7. Establish community TK Elders' Committees;
8. Finalize the Tłı̨chǫ Knowledge Policy initiated through the Wek'eezhii forum for approval by the Tłı̨chǫ Government.

Tłı̨chǫ Knowledge Research and Monitoring Program
Summary Table of Proposed Structure

SOCIAL IMPACTS

- Tłı̨chǫ citizens will fulfil their traditional stewardship responsibilities to care for the land.
- Tłı̨chǫ knowledge is transmitted in a manner that is compatible with Tłı̨chǫ culture and social structure.
- Tłı̨chǫ language is strong and used in daily conversations.
- Tłı̨chǫ citizens are emotionally and spiritually healthy.
- There is a structured process for Tłı̨chǫ to youth learn land-based skills and knowledge.
- Tłı̨chǫ place names become official

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GOALS

- Tłı̨chǫ knowledge and perspectives are utilized in management and decision-making.
- The boards and agencies mandated under the Tłı̨chǫ Agreement have the information they need to play a strong role in co-managing the environment and to support programs such as education.
- The Tłı̨chǫ Government has the information it needs to play a strong role in managing caribou and other wildlife, plants, forests and protected areas; and has its own information and reports to support bargaining and negotiations.
- Harvesting maintains its role as a respected and important economic and social endeavour.
- Tåîchô knowledge, perspective and language are strengthened through oral narratives and land-based activities.
- Integrated knowledge transfer is occurring across generations.
- Tåîchô place names are documented accurately to express bio-geographical information, and to support the process of acquiring official place name status.

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ACTIVITIES

- Establish a comprehensive database to support the organization and storage of Tłı̨chǫ monitoring and harvest data in a manner that is consistent with oral narrative and protocol.
- Digitize and enter existing information into the database.
- Establish operating procedures for the program, including human resource policies and procedures, compensation policies, and development of research methods.
- Hire and train staff – research, data entry, etc.
- Undertake promotion and outreach to ensure that communities understand and support the program, and that harvesters participate.
- Establish an Elders' Committees to guide the programme.
- Develop a Tłı̨chǫ Knowledge Policy for approval by the Tłı̨chǫ Government.
- Evaluate the program to make sure it is achieving the goals.
- Implement culturally appropriate research and monitoring activities.

Caribou Monitoring and Harvest Study[1]

Section 12.5.5 of the Tłı̨chǫ Land Claim and Self-government Agreement (the Agreement) states that the Wek'èezhìi Renewable Resources Board (WRRB) shall:

(a) Make a final determination, in accordance with 12.6 or 12.7, in relation to a proposal

- *i. Regarding a total allowable harvest level for Wek'èezhìi, except for fish,*
- *ii. Regarding the allocation of portions of any total allowable harvest levels for Wek'èezhìi to groups of persons or for specified purposes, or*
- *iii. Submitted under 12.11.1 for the management of the Bathurst caribou herd with respect to its application in Wek'èezhìi;*

Tłı̨chǫ oral narratives tell of the annual cycles in which caribou and fish are key resources. For example, spring camp sites were and continue to be located along known caribou migration routes, good fishing locations and places known to have birch trees. Tłı̨chǫ waited for the caribou during spring migration back to the barrens but if caribou choose a different route, the people had fish while building canoes that were used to travel trails that led to the barrens making them ready to harvest caribou when they once again crossed paths. Even on the barren grounds Tłı̨chǫ camps continue to be located near good fishing locations that are known to be on caribou migration paths. Like traditional harvesting camps, current communities are located on or near fisheries and areas caribou are known to travel if they are in the area. Both resources continue to be important to the well-being of Tłı̨chǫ – psychologically as well as physically.

Tłı̨chǫ elders and harvesters who participated in the West Kitikmeot Slave Study (WKSS) research entitled, '*Caribou Migration and the State of their Habitat'*, (2001) and who originally participated in the design of the TK Monitoring Program in 1999-2000, think it is long past time to monitor barren ground caribou. The oldest Tłı̨chǫ elders know the WKSS researchers – Georgina Chocolate and Bobby Gon - focused on oral narratives from the past that provided baseline information.

They emphasize the importance of continuing to collect the most senior elders' knowledge (baseline) given the hiatus of 10 years (2001-2010). In addition they want the caribou monitoring program to:

1. Document current observations of the harvesters.
2. Research and data input and report writing to be done by adults that use both Tłı̨chǫ and English, and
3. Participation of young people through their school, during the summer and during other school or university breaks.

Elders, harvesters and other members of households – whether young or old – continue to want the Tłı̨chǫ people and their government to maintain their responsibility to watch and care for (monitor and manage) the land, water and resources they use, observe and enjoy. They want

[1] The Caribou Monitoring and Harvest Study Project is a special project within the TK Research and Monitoring Program.

Tłı̨chǫ citizens to use traditional values and rule associated with caribou to manage their resources.

The Tłı̨chǫ Agreement authorizes the WRRB's the responsibility for total allowable harvest (TAH) for wildlife, forests and plants. WRRB has an obligation under terms of the Agreement to determine TAH through assessment studies and other research for caribou. WRRB is recommending caribou harvesting targets rather than a TAH. The success of this approach is dependent on having the information necessary for sustainable management. It is, therefore, imperative that the Tłı̨chǫ undertaken their own monitoring by documenting their observations and harvesting information to ensure they contribute to the process. If the Chiefs use the TK Research and Monitoring Program to oversee the documentation of caribou harvesting among their citizens during this time of low caribou populations it will easier for the Land Protection Department, Tłı̨chǫ Government to maintain the target within a reasonable range and to allocate caribou resources to those in need, and for WRRB to receive reliable up to date information and to evaluate the success of the target approach. Furthermore, when caribou population numbers are higher, and allocations of this resource are more widespread, it will be necessary to determine basic needs levels of the beneficiaries of the claim.

For the Agreement to be honoured five activities need to occur:

1. Baseline information must be gathered from elders on known trends as harvest, wildlife and vegetation distribution. This information should be documented so it can be used to determine trends as well as indicators of change.
2. Information gathered through Tłı̨chǫ traditional methods of monitoring needs to be documented on an on-going basis.
3. Realistic harvest studies need to be ongoing.
4. All collected information must be stored in such a way as to respect the provider of the knowledge.
5. Reports must be provided to co-management boards to insure informed decisions can be made.

Most Tłı̨chǫ knowledge is in the minds of the elders and harvesters. For this reason, a program is needed so Tłı̨chǫ researchers can work with elders and harvesters to document their knowledge in a manner that does not lose the Tłı̨chǫ perspective. The process would include a detailed knowledge of past conditions that are compared to current observations of caribou behaviour, fitness and interactions with predators and pests as well as landscape and vegetation use. And, as is the traditional mode of sharing information, numbers of species observed and harvested, are incorporated into oral narratives that are told in the community. All information available is used to make management decisions and determine the number of caribou to be harvested in the near future.

One of the important features of Tłı̨chǫ knowledge is that it is acquired, enhanced and communicated on the land while people are engaged in land-based activities. It is also communicated after harvesters return to the community through oral narratives.

Modern harvest studies often ask harvesters to fill out survey forms in English, or to provide limited information that can be taken out of context. These studies may fail because they are not compatible with how Tłı̨chǫ knowledge, including information about harvest, is transmitted through oral narratives.

This project was designed to ensure that both monitoring and realistic harvesting numbers can be recorded in a culturally appropriate manner. This will help alleviate the problem that many respondents choose not to answer harvest study questions posed by non-community members.

Finding a Solution

In 1999-2000, the Tłı̨chǫ Regional Elders' Committee – under the direction of *K'àowo*[2] Jimmy Martin – requested Dogrib Treaty 11 staff who were working with the elders to bring male and female harvesters from each community to discuss a Tłı̨chǫ monitoring program. Funding for this meeting was secured from Cumulative Impacts and Monitoring Program, Environment Canada. The elders and harvesters directed staff to initiate monitoring around the diamond mines – with research/hunting camps located in strategic locations around the mines that would enable harvesters to observe the behaviour of caribou in relation to the mines. They also suggested a camp be located at Gots'ôkàtì and Deèzhàatì so caribou behaviour could be compared with non-mining areas.

In September 2008, the Wek'èezhìi Renewable Resources Board (WRRB) and the Tłı̨chǫ Government initiated work towards implementing a Tłı̨chǫ knowledge monitoring program that the Land Protection Department of the Tłı̨chǫ Government and co-management boards mandated under the Tłı̨chǫ Agreement could use in their decision making.

The TK program design with associated policy guidelines were developed based on discussions held during the household visits made by the Project Team between April 2009 and December 31, 2009. All households in the three fly-in communities of Gametì, Wekweetì and Whatì were contacted. Behchokö has a significant population therefore only those households with active harvesters and elders were contacted. During these visits Tłı̨chǫ researchers, under the direction of Allice Legat, explained the importance of Tłı̨chǫ knowledge in the Tłı̨chǫ Agreement and the possibility of establishing a monitoring program as originally laid out by the elders and harvesters in 1999. Two Tłı̨chǫ researchers – Camilla Nitsiza and Madelaine Chocolate - did conducted the household visits, although Mary Adele Wetrade did assist Madelaine Chocolate in Gametì. Household visits took longer than anticipated because i) individuals wished to express their views after hearing the role of the WRRB as it is mandated in the Tłı̨chǫ Agreement; and ii) individuals were delighted to expound on the potential for harvesters and elders working together with Tłı̨chǫ researchers to monitor the land as first set out by the elders in 1999-2000. Their excitement at building on their traditional management practices was clear.

After completing household visits and analyzing Tłı̨chǫ responses, it became clear that it would be culturally appropriate to develop interview guidelines that allowed harvesters to share information in a manner similar to how they normally explain their harvest and observations to

[2] Translated as 'boss'. The role is significantly different than the Western concept for 'chair'.

one another and to their elders. The Tłı̨chǫ researchers found harvesters would prefer to discuss their activities – both observations (monitoring) and harvesting – in either a home or office setting, but at their own convenience. Finally, they found that harvesters thought if Tłı̨chǫ were doing the documenting and report writing they could then be assured: i) individual harvest numbers would remain confidential; ii) their information would be documented realistically; and iii) their observations would remain in the context within which their observations were made.

Following the household visits a Regional TK Elders/Harvesters Working Group (TK Regional Working Group) was established to complete the work.[3] Gametì Committee members thought that it would be better if Tłı̨chǫ from all four communities worked together from the start so they could address all issues together. Six (6) members on the TK Regional Working Group had been active on the TK Regional Elders Committee from 1996-2002 while the remaining ten (10) harvesters and elders were named by the Tłı̨chǫ WRRB members or Chiefs in consultation with elders. The Working Group meetings were held between January and March 31, 2010: three in Gametì, [4] one in Wek'weetì, and one in Behchokö.

The following is a summary of how discussions at the household level and at the TK Regional Working Group meetings have informed key components of the TK caribou monitoring and harvest study approach.

Species Important to Local Harvesters

Caribou and fish are always cited as key species. Nevertheless, all Tłı̨chǫ elders and harvesters explain – as is consistent with members of hunting and gathering societies – that all species are important, including human. They also explained that if one is to understand trends and impacts within Wek'èezhìi, human behaviour should be monitored noting what is being harvested by both male and female harvesters and whether or not all is used. [5]

Tłı̨chǫ Harvesting information to be Documented

During conversations at the household level, it became apparent that many younger people felt they did not know enough about the environment to speak with their local researchers, but did think that they could report what they had harvested and observed as long as older, more experienced elders and harvesters were present to help them to understand their observations. Specifically younger people thought that if elders and harvesters were present they would gain a

[3] Members of the Regional Working Group are Romie Wetrade, Laiza Mantla, Louis Zoe and Mary Adele Wetrade (with Fred Mantla attending in place of Mary Adele Wetrade) from Gametì; Pierre Beaverhoe, Dora Nitsiza, Robert MacKenzie Sophia Williah, and Francis Simpson from Whatì; and Elizabeth Michel, Robert MacKenzie, Harry Mantla and Eddy Weyellan from Behchokǫ̀; and Jimmy Kodzin, Elizabeth Whane, Rosa P'ea, Elizabeth Arrowmaker. The Working Group members decided that since the working group was short term if someone missed a meeting – for any reason – they would not continue.

[4] Under the direction of John B. Zoe, TEO, a TK Office has been established in Gametì. However office furniture and computers have yet to be purchased and staff has yet to be hired.

[5] Although not discussed during the household visits or during the meetings, most elders and active harvesters suggest that human activities associated with industrial development and exploration should be monitored by stewards of the land.

better understanding of how their observations were similar or different than the past and how their own knowledge and behaviour impacts wildlife, particularly caribou.

Most of the elders and harvesters participating in the TK Regional Working Group thought leaders should tell harvesters to report their observations of caribou (and other wildlife) behaviour, fitness, number of young, etc as well as the number they harvested.

Discussion outside the formal structure of the TK Regional Working Group, the researchers discussed the importance of continuous 'watching caribou', and teaching the young about caribou behaviour and rules governing their behaviour around caribou; and, that caribou should be observed whether hunting is taking place or not.

Sharing Information

Throughout all discussions it became clear that community members would be more open about sharing their harvesting information as well as their observations if they understood that their oral narratives and their observations - 'raw data' - would remain with and be safeguarded by the Tłı̨chǫ Government, and kept in the Tłı̨chǫ communities.

Several individuals expressed that they feel they are being "checked-up on" when non- Tłı̨chǫ ask questions and are worried that it can be used against them.

Schedule of Interviews

Based on the manner in which Dene pass information, it was made abundantly clear during household visits and during the TK Regional Working Group meetings, that oral narratives are the process for sharing detailed information. (see also Basso, Cruikshank, Goulet, and Sharp on the importance of oral narratives among all Dene). For this reason the researchers will be trained to use an interview guide while documenting information shared by harvesters.

Researchers thought the oral narratives of the harvest and associated observations should be documented within two days of the harvester returning to the community.

Expectations of Harvesters and Elders

All Tłı̨chǫ citizens with whom the researchers spoke liked the idea that monitoring skills and harvesting information would be given back to the community every few months – by the Tłı̨chǫ researchers. They thought the communities could benefit from hearing this information and verifying the researchers' interpretations so misunderstandings could be clarified.

The TK Regional Working Group thinks that reporting back to the community at public meetings is extremely important. If the researchers share a summary of what they have heard with the community, then harvesters will be more likely to provide their observations and harvest numbers. They reasoned that the harvesters would know they were being heard and that their knowledge and information was being documented accurately. For example,

1. Their observations of the environment – health of caribou, state of the landscape and vegetation caribou use – are being heard and understood.
2. Harvesters will feel secure that harvesting data is correct, and their elders and leaders can use the information for management discussions with WRRB and the GNWT.

Compensation for Harvesters

This has not been discussed with harvesters during the household visits or at the elders and harvesters meetings. During past discussions with elders, it was thought that harvesters should report on a volunteer basis, but should be compensated when attending the verification and sharing meetings when more information on their observations can be noted. Only those harvesters who participated on a volunteer basis would be compensated at the verification and working group meetings.

It is proposed that this is a decision for the Tłįchǫ leadership after being discussed at a Tłįchǫ Assembly, recognizing that availability of resources may be a constraint.

Reporting

Since using Tłįchǫ knowledge in caribou management is important to Tłįchǫ, it is recommended that after the researchers hold verification meetings with elders and harvesters, reports be written for the WRRB as well as for the Chief Executive Council and the Territorial governments.

Reports will be sent to Boards, Governments and Land Protection Department at least three times per year.

Duration of Harvest Study within Monitoring Program

During the household visits and the TK Regional Working Group meetings, the vast majority (young people did not speak to this topic) of Tłįchǫ citizens thought the caribou harvest study within the TK monitoring program should be on-going. They also thought reporting on harvest should be on-going.

Activities Specific to Caribou Monitoring and Caribou Harvest Study

Basically the steps to traditional monitoring and documenting information on caribou are as follows:

- Harvesters have been taught since the time they were young to observe all that is around them and to consider their observations in relation to what they are harvesting, and in relation to all other aspects of their environment. It is these observations as well as information about their harvest that the researchers will document through digital recording and by entering key information into the data base.
- As researchers listen to harvesting accounts of the harvester, they will have an interview guide that they will use to mentally check off information, and as they enter key information into the data base. If necessary the researcher will ask the harvester for additional information, but only after they have shared their observations through a narration of their experience.
- Through hunting and through use of the caribou harvested both male and female harvesters will note the behaviour of caribou in various situations and note texture, smell and taste of meat and characteristics of hides, bones, etc. Researchers are responsible for acquiring and documenting all information of caribou.
- Researchers will mark the location of the harvester's observations and their harvest.
- Researchers will note number of caribou harvested, locations, age, sex, fitness, etc.
- Researchers will note information on wolf numbers associated with caribou as well as numbers harvested and fitness levels.
- Researchers will listen to the digital recording of the account and enter relevant information into the data base. They will also note additional questions for future reference, and, if necessary, they will visit the harvester for clarification.
- Researchers will search the data base for additional caribou information from that location, and begin developing a compilation of the information contained in the oral narratives.
- Harvesters will note and share through their oral narrative the condition of the environment, including landscape, vegetation, moist, snow depth, etc.
- If appropriate will compare their observations with reports available from the YK Dene, Kugluktuk and Lutselk'è who traditionally hunted in the region. Comparisons will be done by academic researcher in conjunction with community researchers.
- Since very few harvesters will be hunting caribou over the next several years the following activities are examples of information documented by researchers:

Autumn Migration

- Active male and female harvesters will travel to known water crossings
  - monitor caribou as they cross,
  - note number of calves, cows and bulls,
  - note direction of migration,
  - note number of wolves and other predators.
- Tłı̨chǫ citizens – elders, harvesters, researchers and youth – travel to Gotsak'atì to observe caribou
- Active male and female harvesters will travel to Æek'atì (Lac de Gras) area and observe caribou after leaving the Diavik and BHP claim blocks, around Æots'ik'è, Æek'atìtata

Wintering Areas

- Elders will select places to observe caribou behaviour in those areas, and to note additional aspects of fitness if harvesting caribou.
- Harvesters will also observe the state of the winter habitat

Spring Migration

- Active male and female harvesters will travel to places where caribou fences were located to observe the number of caribou (and gender and age) that travel through the area. In addition the harvesters will note fitness level. If caribou are taken, contents of their stomach and vegetation in mouths and in stools will be noted, as well as texture and smell of meat and state of hides, bones, and hair.
- Harvesters will do a visual appraisal for pregnancy and report pregnancy from the cow harvest.
- Harvesters will note number of wolves associated with the herds.
- Harvesters will note behaviour associated with pests.
- Active male and female harvesters should also travel to Gostak'atì, Dezaahtì to observe caribou at that stage of their migration.

Summer: Post Calving Area

- Elders will advise on where active male and female harvesters should travel to observe bull, cows and calf behaviour in their summer habitat assessing abundance at key locations.
- Harvesters also observe predators, insect levels, and other factors impacting caribou distribution, fitness and migration.

Project Structure: Activities and Products

	SPECIAL PROJECT ACTIVITIES ***(What needs to be done)***	***PRODUCTS*** ***(What we hope to achieve)***
<u>Data Base</u>	Researchers enter harvest information into database the same day they hear and document it Maintain and update database regularly after each interview Produce reports regularly and review at community meetings and with Elders' Committee Produce reports in response to requests	• Database is up to date and capable of creating reports upon demand • Baseline information is available for environmental assessments, and environmental management • The collections of Tłı̨chǫ knowledge is expanded as new information is entered into the database • Realistic and current Tłı̨chǫ information on caribou and their habitat • Understand annual resource use -when low numbers of caribou • Ability to compare current caribou information with past: -is there a trend? -are caribou being impacted – if so what from what?
<u>Training</u>	On-going training for program staff to ensure they are effective researchers and cultural interpreters	• Trained TK community researchers are available to work with harvester and elders. • Database administrator is trained to maintain the database. • Staff have the skills to: ○ Efficiently document interviews. ○ Use interview guidelines. ○ Maintain archives. ○ Produce reports. ○ Identify similarities and differences between the Tłı̨chǫ and western management concepts and terms.

	SPECIAL PROJECT ACTIVITIES ***(What needs to be done)***	***PRODUCTS*** ***(What we hope to achieve)***
<u>TK Elders' Committee/s</u>	Tłįchǫ elders provide on-going guidance to the program	• Elders' Committee is functioning effectively • Elders play a meaningful role in all phases of program operations • Elders work with Tłįchǫ citizens to reinstate their traditional roles and responsibilities
<u>Culturally Appropriate Research and Monitoring Methodology</u>	**Interview and community meeting guidelines** -specific to caribou monitoring , caribou harvest and caribou habitat and loss of habitat due to fires and development Monitoring by harvesters • While harvesting • Specific to water crossings, caribou fence area, visit fire areas • If not harvesting caribou, then a form of compensation. Training specific to project • Caribou terminology • Laws and rules • Caribou management plan Hold caribou meeting once every two months	• Realistic and current Tłįchǫ information on caribou and their habitat. • Ensure trends are well documented, not hearsay • Detailed current Tłįchǫ information on caribou and their habitat that can be discussed – in Tłįchǫ – between elders and harvesters with researchers documenting. • Ability to work efficiently • Realistic and current Tłįchǫ information on caribou and their habitat • Information available to write report on caribou observations

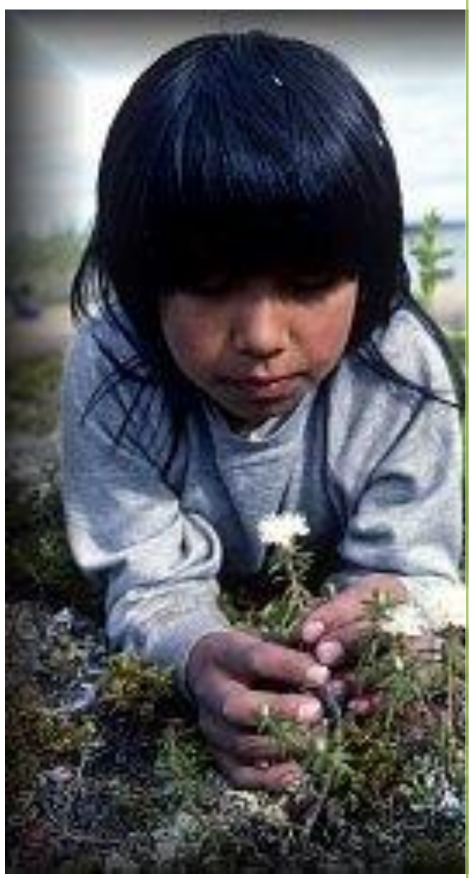
	SPECIAL PROJECT ACTIVITIES ***(What needs to be done)***	***PRODUCTS*** ***(What we hope to achieve)***
Promotion and Outreach	Elders visit households and explain what can be used in lieu of caribou	• Traditional use of resources due to ebb and flow of environment • Traditional sharing of information • More likely harvesters will visit and report harvest and observations
	Chiefs sit with Tłı̨chǫ Knowledge Research and Monitoring Elders' Committees to go over restriction on and allocations of caribou harvest	• Elders Committee supports Chiefs' allocation on caribou harvest and their decision to monitor using elders and harvesters
	Project Directors explains monitoring process to chiefs and council with elders present Academic paper for journal and presented at appropriate conference	• Unique methodology and process is shared • Researchers experience discussions on what they are doing outside their communities

	SPECIAL PROJECT ACTIVITIES *(What needs to be done)*	*PRODUCTS* *(What we hope to achieve)*
Program Administration	**Budget for this project** **Fundraising** **Protocol for sharing reports with WRRB etc,** **Guidelines for verifying information in reports** **Hire researchers**	• **Ability to carry out realistic fundraising** • **Sufficient money to monitor caribou and harvesting** • **Ensure research is rigorous** • • **Ensure results are not hearsay but based on Tłı̨chǫ knowledge and perspective** • **Special project will enhance long term goals of TK programme** • **Ensure use of information from Caribou migration and state of habitat project** • **Ensure data is collected and available to be used**

Appendix IV:

2011

Draft Tłı̨chǫ Knowledge Policy



Tłı̨chǫ Government

12/18/2011

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Preamble

To 'know something' implies knowing its origin as well as experiencing and observing. The body of Tłı̨chǫ knowledge has been acquired through thriving in a world of constant change. Tłı̨chǫ knowledge is constantly expanding, as the elders of each generation add their observations, experience, their wisdom and insights to what is already known. Tłı̨chǫ knowledge has been, and continues to be, preserved and shared with others through oral narratives.

The Tłı̨chǫ respect, honor and value living within Tłı̨chǫ neek'e – the place where Tłı̨chǫ belong –referred to in the Tłı̨chǫ Agreement as Mǫwhì Gogha Dè Nı̨ı̨tłèè in honor of Mǫwhì who valued Tłı̨chǫ knowledge and traveled Tłı̨chǫ nèèk'è observing all that was taking place and sharing with those who went on to negotiate the Tłı̨chǫ Land Claims and Self-Government Agreement.

Honoring brings with it a responsibility to learn and remember the knowledge that has been passed down while observing and experiencing all that is part of Mǫwhì Gogha Dè Nı̨ı̨tłèè so current and past oral narrative can be shared with other Tłı̨chǫ who will continue to care for the place where they belong.

Statement of Intent

Tłı̨chǫ Knowledge represents the collective intellect of the Tłı̨chǫ, and forms the foundation upon which all Tłı̨chǫ Government programs, services and activities are built. The knowledge and values of our ancestors should inform and influence all aspects of Tłı̨chǫ Government operations.

The Tłı̨chǫ Government will encourage and promote the continued acquisition, use and distribution of Tłı̨chǫ knowledge, and will work to ensure that Tłı̨chǫ knowledge is protected and safeguarded for future generations, in a manner that respects those who have shared their knowledge and to whom the knowledge belongs.

In accordance with the Tłı̨chǫ Agreement, the Tłı̨chǫ Government will encourage Government departments, boards and agencies, and the prıvate sector to take steps to acquire and use Tłı̨chǫ knowledge in exercising their powers in relation to the *dè*, including management of human activities, land and water management, wildlife management, forest management, and management of plants; as well as during the environmental impact and review process.

DRAFT

Principles

Tłįchǫ Knowledge and values represent the cumulative and collective experience of the Tłįchǫ, and their acquisition and expression cannot be separated from the practice of traditional Tłįchǫ activities and practices associated with the *dè*.

Tłįchǫ communities and harvesters are responsible for the use and preservation of Tłįchǫ Knowledge, in a manner that preserves the context, spirit and intent of oral narratives.

Tłįchǫ Knowledge belongs to the people who share their oral narratives, and all Tłįchǫ Knowledge that is documented will be safeguarded within Tłįchǫ communities.

Tłįchǫ elders are the experts about Tłįchǫ knowledge and values and are best qualified to understand what needs to be acquired, documented, interpreted, and how best to apply this knowledge; they will play a lead role in any initiatives dealing with Tłįchǫ knowledge.

Tłįchǫ Knowledge and values are necessary for management processes dealing effectively with protected areas, land, water, habitat and wildlife.

Tłįchǫ Knowledge and values should be preserved for future generations, and as the foundation for the continued accumulation of knowledge.

Tłįchǫ place names are indicators of valuable information and should be documented and used as an aspect of Tłįchǫ Knowledge.

Documentation of Tłįchǫ Knowledge should not replace the telling of oral narrative and experiencing Tłįchǫ *nèèk'è – Mǫwhì Gogha Dè Nįįtłèè* where knowledge is passed on in culturally appropriate manners.

Tłįchǫ Knowledge and values are best expressed in the Tłįchǫ language, and language enhancement and preservation is a critical component of Tłįchǫ Knowledge initiatives.

Holders of Tłįchǫ Knowledge have a critical role to play in monitoring the cumulative impacts and on-going health and integrity of the Tłįchǫ nèèk'è - *Mǫwhì Gogha Dè Nįįtłèè*.

Definitions

<u>*Dè*</u> – Often translated as 'land' but includes the understanding that all of Creation has spirit.

<u>External Institution</u> – Institutions, agencies and boards both mandated and not mandated under the Tłįchǫ Agreement. This includes but is not restricted to Governments, industry, universities and other educational facilities.

<u>Harvester</u> – Any Tłįchǫ individual who participates in harvesting activities.

<u>Harvesting activities</u> – refers to all activities in which the Tłįchǫ have traditionally participated, including but not limited to: hunting; trapping; fishing; cutting and gathering wood or branches; collecting snow and ice; gathering plants and berries for medicine and food.

Informed consent - a statement of oral agreement that may be recorded in audio or video formats or in writing between a researcher and a Tłı̨chǫ knowledge holder that explains the nature of the research, and the manner in which the information the knowledge holder is giving, and how it can be used and accessed.

Tłı̨chǫ Agreement, The Agreement, or the Red Book - refers to the Tłı̨chǫ Land Claims and Self-Government Agreement among the Tłı̨chǫ First Nation, the Government of the Northwest Territories and the Government of Canada.

Mǫwhì Gogha Dè Nı̨ı̨tłèè is the traditional area of the Tłı̨chǫ described by Chief Mǫwhì during the signing of Treaty 11 in 1921.

Wek'èezhii is the management area of the Agreement.

Tłı̨chǫ Lands are lands owned by the Tłı̨chǫ Government under the Agreement.

Tłı̨chǫ knowledge holders – Individuals recognized by elders as possessing either or both specialized or general knowledge that has been passed on from previous generations who have the ability to integrate their own learning and share this knowledge with others.

Elder - An older person who is at least 75 years of age who follows the Tłı̨chǫ traditional system and is recognized by their peers as having expertise and are qualified to advise leaders and others.

Tłı̨chǫ knowledge - knowledge that elders and other community members hold from past intergenerational experience and is passed down to the Tłı̨chǫ through the generations. It continues to grow and is brought forward through experience, and given to descendants through oral narratives. Tłı̨chǫ knowledge is not just from the past, but includes knowledge based on present experiences as it intertwines with knowledge of the past.

Scope

This policy applies to all departments and agencies of the Tłı̨chǫ Government and their staff and representatives. The guidelines attached to this policy provides direction to industry, co-management boards, other governments and agencies conducting operations on Tłı̨chǫ lands, and within the Wek'èezhìi and Môwhì Gogha Dè Nîîtåèè areas where the Tłı̨chǫ Agreement provides legislated mandates.

Implementation

It is imperative to have a meaningful role for Tłı̨chǫ elders in the implementation of this policy. A regional committee will provide broad advice on policy and programming while the community committees will oversee any local projects and staff. There will be an TK elders committee in each community whether the community has TK staff or not. The following sets out in general their roles and responsibilities, detailed Terms of Reference are set out in Appendix I.

Regional Tłı̨chǫ Knowledge Elders' Committee

- Reviews research and monitoring requests and applications. May make recommendations for modifications or conditions to the Chiefs Executive Council.
- Establishes traditional knowledge research and program priorities, and makes recommendations to Chief Executive Council for approval.
- Responsible for overseeing a regional monitoring program and interpreting information collected to identify cumulative impacts and research needs.
- Provides oversight to Tłı̨chǫ knowledge research.
- Proposes and/or reviews proposed revisions to the Policy.
- Assists with solving problems associated with implementing this policy

Community Tłı̨chǫ Knowledge Elders Committee

- Oversees staff in community offices
- Informs community of Tłı̨chǫ Knowledge activities in their areas – by visiting homes and reporting to community meetings
- Updates Chiefs and Council on activities.
- Oversees research and monitoring conducted on traditional lands
- Assists with solving problems associated with implementing this policy

Authority and Accountability

Chief's Executive Council

- Reviews policy recommendations from the Regional Tłı̨chǫ Knowledge Elders' Committee
- Reviews and recommends to Assembly revisions to the Policy.
- Monitors implementation of the Policy.
- Approves priorities for research and monitoring.

Tłı̨chǫ Assembly

- Approves policy
- Approves amendments to policy
- Formally appoints committee members recommended by elders

Grand Chief

- Responsible for overall implementation of the policy.
- The Grand Chief will meet at minimum of twice per year with the Tłįchǫ Knowledge Regıonal Elders Commıttee to report on decisions of the Tłįchǫ Government in relation to Tłįchǫ Knowledge.

Tłįchǫ Knowledge Research & Monitoring

The Tåîchô Agreement directs Boards, Agencies and the Tåîchô Government to i)use traditional knowledge, ii) promote cultural perspectives, and iii) select Board members that have knowledge of Tåîchô way of life. Yet the current systems – most of which are based on Western perspectives and the British legal system – make it difficult for Tåîchô knowledge (TK) to be used in a manner that is consistent within the Tåîchô cultural perspective and way of life.

The Agreement states that:

Section 12.1.6

> In exercising their powers under this chapter, the Parties and the Wek'èezhìi Renewable Resources Board shall take steps to acquire and use traditional knowledge as well as other types of scientific information and expert opinion.

Section 13.1.5

> In exercising their powers in relation to forest management, the Government of the Northwest Territories, the Tåîchô Government and the Wek'èezhìi Renewable Resources Board shall take steps to acquire and use traditional knowledge as well as other types of scientific information and expert opinion.

Section 14.1.4

> In exercising their powers in relation to the management of plants, the Government of the Northwest Territories, the Tåîchô Government and the Wek'èezhìi Renewable Resources Board shall take steps to acquire and use traditional knowledge as well as other types of scientific information and expert opinion.

Section 22.1.7

> In exercising their powers, the Mackenzie Valley Environmental Impact Review Board and the Wek'èezhìi Land and Water Board shall consider traditional knowledge as well as other scientific information where such knowledge or information is made available to the Boards.

Furthermore, Section 12.5.5 of the Tåîchô Land Claim and Self-government Agreement (the Agreement) states that the Wek'èezhìi Renewable Resources Board (WRRB) shall:

> (a) Make a final determination, in accordance with 12.6 or 12.7, in relation to a proposal
>
> i. Regarding a total allowable harvest level for Wek'èezhìi, except for fish,
>
> ii. Regarding the allocation of portions of any total allowable harvest levels for Wek'èezhìi to groups of persons or for specified purposes, or
>
> iii. Submitted under 12.11.1 for the management of the Bathurst caribou herd with respect to its application in Wek'èezhìi;

The Tåîchô Agreement authorizes the WRRB responsibility for total allowable harvest (TAH) for wildlife, forests and plants and authorizes the Minister of Fisheries and Oceans (DFO) responsibility for fish conservation and the establishment of TAH for fish stocks. Both WRRB and DFO have an obligation under terms of the Agreement to determine TAH through assessment studies and other research.

For WRRB and DFO to have information necessary for sustainable management it is imperative that the Tåîchô undertake their own research and monitoring by documenting their observations and harvesting information to ensure they contribute to the process. If allocations are to be made among users of the resource it will be necessary to determine basic needs levels of the beneficiaries of the claim. Allocations of fisheries and wildlife resources will be difficult without this basic harvest information from the harvesters themselves.

For the Agreement to be honoured three activities need to occur:

1. Baseline Tłįchǫ information must be gathered from elders on known trends on harvest, wildlife and vegetation distribution.

2. Information gathered, through Tåîchô traditional methods of monitoring, needs to be documented on an on-going basis.

3. Culturally appropriate harvest studies need to be ongoing.

Although scientific information is readily available, most Tåîchô knowledge is in the minds of the elders and harvesters. For this reason, a program is needed so Tåîchô researchers can

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work with elders and harvesters to document their knowledge in a manner that does not lose the Tåîchô perspective. This is usually detailed knowledge of past conditions that they share with their descendants while sharing their current observations of wildlife and wildlife habitat. And, as is the traditional mode of sharing, numbers of species observed and harvested, are shared with others in the community along with other information such as behaviour of wildlife and the people harvesting. One of the important features of Tåîchô knowledge is that it is acquired, enhanced and communicated on the land while people are engaged in land-based activities. It is also communicated after harvesters return to the community through oral narratives.

Modern harvest studies often ask harvesters to fill out survey forms in English, or to provide limited information that can be taken out of context. These studies may fail because they are not compatible with how Tåîchô knowledge, including information about harvest, is transmitted through oral narratives.

A program must be designed to ensure that research will acquire realistic harvesting numbers can be recorded in a culturally appropriate manner. This will help alleviate the problem that many respondents choose not to answer correctly, harvest study questions posed by non-community members.

The Tłı̨chǫ Government will conduct all of its own research under the guidance of the Tłı̨chǫ Knowledge Regional Elders Committee and through the establishment of a Tłı̨chǫ Knowledge Department. All outside researchers interested in conducting research in the Tłı̨chǫ settlement area are encouraged to contact this department to explore collaboration opportunities. Further guidance is provided in the Appended Guidelines.

Tłı̨chǫ Knowledge Department

A department of Tłı̨chǫ Knowledge will be established to facilitate the implementation of this policy and program. The head offices will be located in Gamètì. A Regional Director of Tłı̨chǫ Knowledge will oversee the program and implementation of the policy. A Research Director will oversee all research and research staff. A Data Base Manager will develop and maintain a data base in both Tłı̨chǫ and English . Each community will have a staff team of a minimum of two members who will carry out research and data collection and input.

Researchers will work with the Land Protection Department to present research results in a format for ease of use to the Tłı̨chǫ Government and within the regulatory framework.

Researchers will verify monitoring information with those who provided information – elders and harvesters - at public community meeting prior to making the report public.

In addition to conducting traditional knowledge research, the staff will work with active harvesters and the TK Community Elders' Committees to monitor trends and occurrences on the land. They will employ traditional monitoring practices and good documentation practices that include individual reporting of observations followed by group discussion and analysis.

Ownership and Confidentiality

Tłįchǫ Knowledge belongs to Tłįchǫ collectively. Original documents should be turned over to the Tłįchǫ government for archival management in the TK head office in Gamètì. High quality copies and wıll also be stored ın storage systems wıth one ın the NWT Archıves untıl an archıves ıs buıld ın Gamètì. Written permission must be obtained from informants and from local TK elders committee for the publication of Tłįchǫ *Knowledge.* In addition, researchers will record statements of purpose and permission in audio or video format at the beginning of each interview. See attached guidelines for more information.

Elders want their oral narratives to stay in their own language, and if others wish to listen to the stories of their experience then they should use those middle-aged persons who understand Tłįchǫ to tell them the story (after lıstenıng to the dıgıtal recordıng) – rather than translating the recording.

Provisions

- The Department of Tłįchǫ Knowledge will establish methodology and research procedures to guide the acquisition of Tłįchǫ oral narratives and knowledge.
- The Tłįchǫ Knowledge Department will take the lead and work with the Wek'eezhii Forum to establish procedures to guide the use of Tłįchǫ knowledge in each of their programs and services. Tłįchǫ researchers will work under the collective guidance of Tłįchǫ elders through the Regional and Community Committee in the design of research projects and writing reports.
- The Tłįchǫ Government will work in collaboration with the Wek'eezhii Land and Water Board and the Wek'èezhìi Renewable Resources Board to ensure that they have access to information about Tłįchǫ knowledge that is required to implement their mandates as specified in the Tłįchǫ Agreement.
- The Tłįchǫ Government will encourage the Wek'eezhii Land and Water Board and the Wek'eezhii Renewable Resources Board to work with the Department of Tłįchǫ Knowledge to establish procedures and guidelines for the use and incorporation of traditional knowledge in regulatory and management processes within their mandates.
- External institutions - including other governments, industry, and academia – who wish to conduct research on Tłįchǫ Knowledge will be encouraged to do so in accordance with the provisions of this policy and associated guidelines and protocols.
- The Tłįchǫ Government will develop regulations to guide the ownership and use of Tłįchǫ knowledge , including provisions for ensuring confidentiality when knowledge holders have requested it; recognition of Tłįchǫ knowledge holders when appropriate; the storage of Tłįchǫ *Knowledge* ; provisions for access; and publication and distribution. These regulations will complement existing research protocols established by the Government of the Northwest Territories, e.g.

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requirements under the NWT *Scientists Act* to acquire research licenses and the attached Guidelines.

- Tłįchǫ Knowledge brought forward for consideration in the regulatory processes administered by the WLWB and WRRB must be compiled in accordance with the provisions of this policy and associated directives.

The following Appendices form part of this Policy:

Appendix I:	Terms of Reference - Elders' TK Community and Regional Committees
Appendix II:	Guidelines for Developers
Appendix III:	Sample Protocol Agreement
Appendix IV:	Guıdelınes for Researchers
Appendix V:	Guidelines for Authors and Illustrators

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Appendix I
Tłı̨chǫ Knowledge Regional and Community Elders' Committees

Terms of Reference

Community Tłı̨chǫ Knowledge Elders Committee

- Each community will have an elders' committee overseeing their Tłı̨chǫ knowledge research and monitoring activities and providing advice to staff and researchers. These committees will be known as the Tłı̨chǫ Knowledge Communıty Elders' Committee.
- Informs community of Tłı̨chǫ Knowledge activities in their areas – by vısıtıng homes and reporting to community meetings
- Updates Chiefs and Councıl on activities.
- Oversees research and monitoring conducted on traditional lands
- Assists with solving problems associated with implementing this policy

The community of Wekweètì will have two members on their local committee, Gameti and Whati will have four elders, two female and two male elders representatives, and Behchokǫ̀ wıll have six members to reflect the size of each community. Where possible, one male and one female wıll be the oldest members of the communıty and two wıll be younger, who are chosen by the older elders. In Behchokǫ̀ two male and two females wıll be among the oldest elders , and two males and two females wıll be younger. Representative should be persons known to value Tłı̨chǫ knowledge and persons who know which individuals in their community has knowledge of specific places, events and wildlife, plants, forests and fish.

Tłı̨chǫ Knowledge Regıonal Elders Commıttee

- Reviews research and monitoring requests and applications. May make recommendations for modifications or conditions to the Chiefs Executive Council.
- Establishes traditional knowledge research and program priorities, and makes recommendations to Chief Executive Council for approval.
- Responsible for overseeing a regional monitoring program and interpreting information collected to identify cumulative impacts and research needs.
- Provides oversight to Tłı̨chǫ knowledge research.
- Proposes and/or reviews proposed revisions to the Policy.

- Assists with solving problems associated with implementing this policy

The Tłı̨chǫ Knowledge Regional Elders' Committee will consist of two of the oldest males and females from each community committee.

The elders' committees are participatory action committees who represent the collective interests of the elders and harvesters who continue to use the land and the resources from the land.

The elders on the committee will be chosen by the current committee elders based on skills and land-based knowledge.

Purpose of Committee

The primary purpose of the Elders Committees is to provide Tłı̨chǫ elders with the opportunity to offer the wealth of knowledge and wisdom they have accumulated for the benefit of the current and future generations in the management of the land they know and love.

Elders will be responsible to walk around and visit other members of the community to inform them of their activities and to identify individuals that should be interviewed on specific topics.

During community meetings and at the annual assembly the Committee Members will be responsible for demonstrating the value of their work by working with staff to make presentations relevant to the topics at hand.

Elders will ensure that time will be taken to do the research to their standards and will carry out activities that are aimed at solving problems and addressing challenges important to the communities and region.

To demonstrate the economic, social and cultural values of traditional land use.

Role of Members

a. Participate in local and regional Elders Committees as a way to help formulate, document and pass on traditional cultural knowledge for future generations.
b. Help make explicit and incorporate locally appropriate cultural values in all aspects of life in the community, while recognizing the diversity of opinion that may exist.
c. Make a point to utilize traditional ways of knowing, teaching, listening and learning in passing on cultural knowledge to others in the community.
d. Seek out information on ways to protect knowledge and retain copyright authority over all local knowledge that is being shared with others for documentation purposes.
e. Verify through translators of cultural information that has been written down to insure accuracy.
f. Follow appropriate traditional protocols as much as possible in the interpretation and utilization of cultural knowledge.

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g. Assist willing members of the community to acquire the knowledge and skills needed to assume the role of Elder for future generations.
h. To develop a vision statement that will enable all to understand the future that they wish to foster. To develop a mission statement to guide the work of the Tłı̨chǫ Knowledge Department

Payment to Elders

Since elders on these committees will act more as advisors the older elders (including the k'àowo) will be paid a consulting fee of $350/day, whereas the younger elders who are continuing to learn from the older elders will be paid $250/day.

Meeting Attendance

If a members misses meetings the k'àowo will speak to the individual and determine the cause, if two meetings are missed they will be replaced by an individual chosen by elders in their community.

If a person has been drinking they will be asked to leave and will not be paid their per diem or their honorarium.

Decision Making

Following Tłı̨chǫ traditional governance practices only one topic will be discussed until a direction of action is reached. Eldest members will be invited to speak first and last on the topic under discussion.

Members will strive to reach consensus on all matters before them. Every effort will be made to hear and clearly understand any dissenting views.

Staff Support

Decisions of the committee will be recorded by staff. Researchers will support Committee members by insuring that reports are written that reflect traditional information gathered. These reports will support the elders desire to influence decisions that are respectful and caring of all Tłı̨chǫ citizens, the land and the resources.

Researches will carry out rigorous verification procedures with the Committee and information providers to ensure the integrity of the Tłı̨chǫ knowledge gathered and analysed.

Appendix II

Guidelines for Developers

The Tłı̨chǫ government encourages developers to work with us, and to work to understand ınformatıon that comes from our traditional knowledge.

The Tłı̨chǫ Agreement states WLWB shall consider traditional knowledge, the Agreement does not specify how this will occur. This policy clarifies the way in which Tłı̨chǫ knowledge will be considered within the Wek'èezhìi area.

Consıder thıs policy as early as possible in the project planning cycle to avoid problems and conflicts before projects enter the formal regulatory process. This will also provide the Tłı̨chǫ with the opportunity to make positive contributions and build constructive relationships.

We concur with the following statements set out in the Mackenzie Valley Environmental Impact Review Board Guidelines for incorporating Traditional Knowledge:

- Traditional knowledge shared specifically about the environment and the use and management of the environment is important for establishing baseline conditions, predicting possible impacts and determining appropriate mitigation and monitoring methods. This is particularly beneficial where there is no land use plan, where there are social or cultural concerns or when scientific data is inadequate.
- Early dialogue and relationships between the developer and traditional knowledge holders may result in a sharing of knowledge about environmental phenomena unavailable elsewhere. Such information may allow for necessary project design changes to take place even before the Environmental Impact Assessment (EIA process begins.
- Traditional knowledge can add to the understanding of the critical requirements of and potential threats to valued components.
- Traditional knowledge can assist a preliminary screener in deciding whether a proposed development might have a significant adverse impact or might be a cause for public concern and
- Traditional knowledge is critical in the early stages of the process to help identify issues as part of the EIA scoping and later on at community and formal hearings (if any) to assist the Review Board in determining the significance of potential impacts.

The Tłı̨chǫ Land Claim and Self-government Agreement (Tłı̨chǫ Agreement) clause 22.1.7 gives the Mackenzie Valley Environmental Impact Review Board and the Wek'eezhii Land and Water Board their mandate within Wek*'èezhìı:*

> In exercising their powers, the Mackenzie Valley Environmental Impact Review Board and the Wek*'èezhìı* Land and Water Board shall consider traditional knowledge as well as other scientific information where such knowledge or information is made available to the Boards.

Tłı̨chǫ traditional knowledge is useful when considering how future development will impact on the environment and the people. Furthermore it can provide a more relevant and meaningful baseline to insure that the environmental effects of any project can be understood in the future. If Tłı̨chǫ knowledge research is done in a rigorous and methodological manner during the initial stages of a development planning, then it is more likely a development project will have minimal impact on the environmental and communities, especially if social issues and concerns are also considered.

General Principles

No two projects are the same; therefore, a one-size-fits-all approach to considering Tłı̨chǫ knowledge is not possible. Nevertheless a number of general principles have been identified with respect to the extent to which knowledge should be collected in relation to development proposals. These are presented below.

Where possible, the Tłı̨chǫ Knowledge Department (TKD) will conduct all traditional knowledge research and provide the proponent with a report. Expectations regarding the extent of the research and type of research varies with the type of development applications, interested parties will identify their needs and explore with TKD staff, the time and budget required to meet these needs.

Prior to research the Tłı̨chǫ government and the research team will be provided with clear and accurate information about the project proposal and the stage that it is at. If the proposal has already entered the EIA process, the Developer will be asked to share copies of such applications to ensure that the Tłı̨chǫ government can accurately assess the scope of Tłı̨chǫ Knowledge required and how it may be incorporated into the EIA process;

Following a review of the information provided by the Developer the Tłı̨chǫ government will outline a proposal for carrying out traditional knowledge research and ask the Developer to enter into a Protocol Agreement that would enable such research to proceed. A sample of such an agreement is set out in Appendix IV.

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Appendix III

Sample Protocol Agreement

Between: (the Proponent, Developer, Federal and Terrıtorıal Government Agencıes) herein referred to as ___________________

and

The Tłı̨chǫ Government

(hereinafter the "Parties")

WHEREAS the Tłı̨chǫ Government are the caretakers of Tłı̨chǫ knowledge that has been and will be documented within Mǫwhì Gogha Dè Nı̨ı̨tłèè, Wek'èezhii and Tłı̨chǫ Lands; and

WHEREAS the Tłı̨chǫ Government wishes to protect Tłı̨chǫ knowledge from misuse; and

WHEREAS most of this knowledge is woven within the tapestry of the Tłı̨chǫ oral narratives; and

WHEREAS the Parties wish to respect the wishes of the Tłı̨chǫ elders, who have shared and will continue to share their knowledge through oral narratives and to ensure that all information taken from the oral narratives remains with Tłı̨chǫ; and

WHEREAS the Parties would like to ensure Tłı̨chǫ knowledge is used in manner consistent with section 12.1.6 of the Tłı̨chǫ Agreement:

NOW THEREFORE THE PARTIES AGREE AS FOLLOWS:

A. INTRODUCTION

The Tłı̨chǫ oral narratives and traditional knowledge is first, and foremost, for the Tłı̨chǫ citizens, therefore it should be:

a. Tłı̨chǫ citizens who carry out research on what Tłı̨chǫ knowledge about any given topic; and

b. Tłı̨chǫ elders and active harvesters who will assist with the design of Tłı̨chǫ knowledge projects, and in the research and in the writing of reports.

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c. With respect for the Tłįchǫ Regional Elders' Committee request that their stories not be translated to ensure that:

1. Tłįchǫ citizens continue listening to and learning from the oral narratives that came from their ancestors in their own language;
2. Individuals – whether Tłįchǫ or non-Tłįchǫ – should work with a Tłįchǫ speaker, who has spent considerable time listening and experiencing with elders and harvesters the knowledge shared;
3. Their descendents, and those who work with them, understand the knowledge within the context of an occurrence (as it was told and brought to the present), and from the perspective of the Tłįchǫ;
4. Non - Tłįchǫ who work with Tłįchǫ speakers to understand the relevance of the oral narrative, and the knowledge it encompasses, within the context all other variables being discussed by the storytellers;
5. Tłįchǫ youth learn the oral narratives as well as to learn how to use these narratives to think with, and use that ability to write related reports.

B. COMMITMENTS OF THE PARTIES:

The Tłįchǫ Government Commits To:

1. Decide how, why and when Tłįchǫ the information is used.

2. Indicate what information is confidential and what is public.

3. Ensure that the requester of information has the information required to participate effectively in the Regulatory process.

(Proponent. Developer, Government Agency)____
Commits To:

Assist with the costs of research and of entering relevant information into the data base so the oral narratives and information can be managed, and used with Tłįchǫ Government GIS system as follows:

(enter budget info)

C. INTERPRETATION AND IMPLEMENTATION:

Entire Agreement

This Agreement constitutes the entire Agreement between Parties with respect to the subject matters set forth herein. There are no other collateral agreements or undertakings related to the subject matter hereof.

Further Acts

The Parties shall do all acts and execute and deliver all such documents as may from time to time be necessary in order to achieve the purpose and intent of this Agreement.

Applicable Laws

This Agreement shall be governed by and interpreted in accordance with Tłı̨chǫ laws, the laws of Canada, the Northwest Territories as applicable.

Notices

Any notices or communications required or permitted to be given pursuant to this Agreement shall be in writing and shall be delivered to, or sent by prepaid registered or certified mail, or confirmed facsimile, addressed as follows:

(a) in the case of a notice or communication to the **Proponent, Developer or Government Agency**:

____

Tel:

Fax:

(b) in the case of a notice or communication to the **Tłı̨chǫ Government**:

The Executive Officer

Tłı̨chǫ Government

____

Tel: (867) _________

Fax: (867) _________

or to such other address as either Party may notify the other in accordance with this section.

Assignment

The rights and privileges granted under this Agreement may not be assigned.

Amendment

This Agreement may be amended from time to time by consent of the Parties hereto by an instrument in writing.

Term

This Agreement shall come into effect on the date it is signed.

This Agreement shall be for an initial term of one year and may be renewed by mutual consent of the Parties.

Termination

This Agreement can be terminated upon 30 days notice in writing by either of the Parties.

Dispute Resolution

In the event that a dispute arises, the Parties will exercise all reasonable effort to resolve it amicably.

The Parties may resolve a dispute by mutual agreement at any time, and all such agreements shall be recorded in writing and signed by authorized representatives of the Parties.

Where there is a dispute that cannot be resolved amicably, either Party may give notice of termination of the Agreement.

IN WITNESS WHEREOF the Parties have caused this Agreement to be executed in their respective names by their duly authorized representatives.

Proponent or Developer	**Tłı̨chǫ Government**
per ____________________	**per _______________**

Dated: ______________, 20_____

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Appendix IV

Guidelines for Researchers

Researchers are ethically responsible for obtaining informed consent, accurately representing the Tłįchǫ *perspective and protecting the cultural integrity and rights of all participants in a research endeavor.*

Researchers may increase their cultural responsiveness through the following actions:

a. Enter into a Protocol Agreement with the Tłįchǫ Government
b. Effectively identify and utilize the expertise in participating communities to enhance the quality of information gathering as well as the information itself, and use caution in applying external frames of reference in its analysis and interpretation.
c. Explore ways in which to contribute to building local research capacity; all researchers whether the principle investigator or the local researchers should make a commitment to train those researchers with less skill.
d. Insure controlled access for sensitive cultural information that has not been explicitly authorized for general distribution, as determined by members of the local community.
e. Submit research plans as well as results for review by a Community or Regional Elders Committees and abide by its recommendations to the maximum extent possible.
f. Provide full disclosure of funding sources, sponsors, institutional affiliations and reviewers.
g. Include explicit recognition of all research contributors in the final report.

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Appendix V

Guidelines for Authors and Illustrators

Authors and illustrators should take all steps necessary to insure that any representation of cultural content is accurate, contextually appropriate and explicitly acknowledged.

Authors and illustrators may increase their cultural responsiveness through the following actions:

a. Enter into a Protocol Agreement with the Tłı̨chǫ Government
b. Make it a practice to insure that all cultural content has been acquired under informed consent and has been reviewed for accuracy and appropriateness by knowledgeable local people representative of the culture in question.
c. Arrange for copyright authority and royalties to be retained or shared by the person or community from whom the cultural information originated, and follow local protocols for its approval and distribution.
d. Insure controlled access for sensitive cultural information that has not been explicitly authorized for general distribution.
e. Be explicit in describing how all cultural knowledge and material has been acquired, authenticated and utilized, and present any significant differing points of view that may exist.
f. Make explicit the audience(s) for which a cultural document is intended, as well as the point of view of the person(s) preparing the document.
g. Make every effort to utilize traditional names for people, places, and items where applicable, adhering to local conventions for spelling and pronunciation.
h. Identify all primary contributors and secondary sources for a particular document, and share the authorship whenever possible.
i. Acquire extensive first-hand experience in a new cultural context before writing about it.
j. Carefully explain the intent and use when obtaining permission to take photographs or videos, and make it clear in publication whether they have been staged as a re-enactment or represent actual events.
k. When documenting oral narratives, recognize and consider the power of the written word and the implications of putting oral tradition with all its non-verbal connotations down on paper, always striving to convey the original meaning and context as much as possible.

DRAFT

ᓇᓗᓇᐃᔭᖅᓯᒪᓂᖅᑎᑦ Wek'èezhìı (ᕗᐃᑭᔩ) ᓄᓇᒥᐅᑕᓕᕆᔩᒃᑯᑦ ᑲᑎᒪᔩᖅᑎᑦ ᐅᓂᒃᑳᖅᑎᑦ ᐊᑎᖃᖅᑐᖅ *"ᐅᓂᒃᑳᑦ ᐃᓄᓐᓂᑦ ᑲᑎᒪᑎᕐᓂᕐᒧᑦ ᕗᐃᑭᔩ ᓄᓇᒥᐅᑕᓕᕆᔩᒃᑯᑦ ᑲᑎᒪᔩᖅᑎᑦ 9-11 ᐆᐳᓗ 2019 ᐱᐊᓲᑏ ᓄᓇᕗᐊᖅ ᐊᒻᒪ ᐱᔾᔪᑎᖅᑎᑦ ᐃᓱᒪᓕᐅᖅᑕᐅᔪᑦ ᐊᑐᐊᓂᓖᑦ ᑲᑐᑎᔪᓂᑦ ᑐᓴᕋᐅᒻᒥ ᐊᐅᓚᕐᑎᓂᕐᒧᑦ* Sahtì Ekwǫ̀ *(ᓵᑎ ᐃᐊᒃᕗ) (ᐳᓘᓅᔅ–ᑲᓇᓐᓇᒥ ᑐᑦᑐᖅᑎᑦ) ᑐᑦᑐᐃᑦ"*

ᕗᐃᑭᔩ ᓄᓇᒥᐅᑕᓕᕆᔩᒃᑯᑦ ᑲᑎᒪᔩᖅᑎᑦ (WRRB) ᑲᒪᒋᔭᖃᖅᑐᑦ ᐆᒪᔪᓂᑦ ᐊᐅᓚᑦᑎᓂᕐᒧᑦ ᐃᓗᐊᓂ ᕗᐃᑭᔩ ᐊᒻᒪ ᑲᒪᒋᔭᖃᖃᑦᖃᖅᑕᐅᑎᔪᑦ ᐊᐅᓚᑦᑎᓂᕐᒧᑦ ᐊᒻᒪ ᖃᐅᔨᓴᖃᑦᑕᓂᕐᒧᑦ ᓵᑎ ᐃᐊᒃᕗ (ᐳᓘᓅᔅ–ᑲᓇᓐᓇᒥ ᑐᑦᑐᖅᑎᑦ) ᑐᑦᑐᐃᑦ. ᓅᕕᐱᕆᒥ 2018, ᐱᓕᕆᕝᕙᐊᖓ ᐊᕙᑎᓕᕆᔩᒃᑯᑦ ᓄᓇᒥᐅᑕᓕᕆᔩᒃᑯᓪᓗ ᐱᕈᒃᑲᓐᓂᕈᓐᓇᖅᑐᓕᕆᔩᖅᑎᑦ (ENR), ᓄᓇᕗᐊᑉ ᒐᕙᒪᖓᑦ (GNWT) ᐅᓂᒃᑳᓚᐅᖅᑐᑦ ᑖᒃᑯᐊ, ᑕᑯᓐᓇᖅᑕᖅᑎᑎᒍᑦ, ᓵᑎ ᐃᐊᒃᕗ ᑐᑦᑐᐃᑦ ᖃᑦᑑᓐᓇᕈᖅᐸᓪᓕᐊᖅᑎᓐᓇᖅᑐᑦ ᐊᖅᑭᔪᒥᑦ. ᓵᑎ ᐃᐊᒃᕗ ᑐᑦᑐᐃᑦ ᐊᑦᑎᓪᓕᕆᐊᖅᓯᒪᔪᑦ ᖃᓂᒋᔭᐸᓗᖅᑎᓐᓂ 21% ᐊᕐᕌᒍᒥ ᐊᑕᐅᓯᕐᒥᑦ ᐅᕙᓐᖓᑦ 103,000 ᐊᕐᕌᒍᒥ 2010 ᑎᑭᑦᑐᒍ ᖃᓂᒋᔭᖓᓗ 19,300 ᐊᕐᕌᒍᖓᓂ 2018.

ᔫᓂ 2018 ᓄᕋᓕᐅᕝᕕᖅᑎᓐᓂ ᐊᔾᔨᓐᖑᐊᑎᒍᑦ ᖃᐅᔨᓴᕐᓂᖅ ᓵᑎ ᐃᐊᒃᕗ ᑐᑦᑐᐃᑦ, ᖃᐅᔨᓴᖅᑕᐅᓚᐅᖅᑐᖅ ᓄᓇᕗᐊᑉ ᒐᕙᒪᖓᑦ, ᓴᖅᑭᑎᑦᑎᔪᑦ ᑲᑎᑦᑐᒋᑦ ᒥᔅᓴᐅᓴᑦᑕᐅᔪᑦ 11,675 ᓄᕋᓕᐅᖅᑐᑦ ᐊᕐᓇᐃᑦ (95% CI = 9971 – 13,670), ᓴᓗᓇᐃᖅᓯᓚᐅᖅᑐᑦ ᐱᑕᖃᕐᓂᖅᑎᑦ ᓄᕋᓕᐅᖅᑐᑦ ᐊᕐᓇᐃᑦ ᐊᑦᑎᓪᓕᕆᐊᖅᓯᒪᔪᑦ ᖃᓂᒋᔭᖓᓂ 32.9% ᔫᓂᒥᓂᑦ 2015 ᒥᔅᓴᐅᓴᑦᑕᐅᔪᑦ 17,396 (95% CI = 12,780-22,012). ᑲᑎᑦᑐᒋᑦ ᐊᒥᓲᓂᖅᑎᑦ ᒥᔅᓴᐅᓴᑦᑕᐅᔪᑦ ᑲᑕᓐᓂᖃᓚᐅᖅᑐᑦ ᐱᒋᐊᖅᑐᑎ 38,592 (95% CI = 33,859-43,325) ᐊᕐᕌᒍᖓᓂ 2015 ᑎᑭᑦᑐᒍ ᒥᔅᓴᐅᓴᑦᑕᐅᔪᑦ 19,294 (95% CI = 16,527- 22,524) ᐊᕐᕌᒍᖓᓂ 2018 – ᖃᓂᒋᔭᐸᓗᐊᓂ 50% ᐊᑦᑎᓪᓕᕆᐊᖅᑐᑦ ᐱᖓᓱᓂᑦ ᐊᕐᕌᒍᓂᑦ.

ᔮᓐᓄᐊᕆᒥ 2019, Tłı̨chǫ (ᑎᓖᓱ ᒐᕙᒪᖓᑦ [TG]) ᐊᒻᒪ ᓄᓇᕗᐊᑉ ᒐᕙᒪᖓᑦ ᑐᓂᓯᓚᐅᖅᑐᑦ *ᑲᑐᑎᓪᓗᑎ ᑐᓴᕋᐅᑦ ᐊᐅᓚᑕᐅᓂᖅᑎᓐᓄᑦ ᖃᓄᐃᓕᓯᒋᐊᓂᕐᒧᑦ ᐳᓘᓅᔅ–ᑲᓇᓐᓇᒥ ᐃᐊᒃᕗ (ᓇᐹᖅᑐᖃᖅᑎᑦᑐᓂᑦ ᑐᑦᑐᖅᑎᑦ) ᑐᑦᑐᐃᑦ 2019-2021* ᑲᑎᒪᔩᓄᑦ, ᓇᓗᓇᐃᔭᐃᔪᑦ ᑐᓴᕋᖅᑕᐅᔪᑦ ᐊᐅᓚᑦᑎᓂᕐᒧᑦ ᖃᓄᐃᓕᓯᒋᐊᓂᕐᒧᑦ ᓵᑎ ᐃᐊᒃᕗ ᑐᑦᑐᐃᑦ ᕗᐃᑭᔩᒥ. ᐊᐅᓚᑦᑎᓂᕐᒧᑦ ᖃᓄᐃᓕᓯᒋᐊᕈᑏᑦ ᑐᓴᕋᖖᒍᔪᑦ ᑎᓖᓱ ᒐᕙᒪᖓᑦ (TG) ᐊᒻᒪ ᓄᓇᕗᐊᑉ ᒐᕙᒪᖓᑦ ᑲᑐᑎᓪᓗᑎ ᑐᓴᕋᐅᒻᒥᑦ ᑲᑎᖅᓱᖅᑕᐅᓚᐅᖅᑐᑦ ᑕᓪᓕᒪᐅᓪᓗᑎ ᖃᓄᐃᓕᖓᓂᖅᑎᑦ: ᐊᖑᓇᓱᑦᑕᐅᔪᑦ, ᑐᑦᑐᓂᑦ ᓂᕆᖃᑦᑕᖅᑐᑦ, ᓇᔪᖅᑕᖅᑎᑦ ᐊᒻᒪ ᓄᓇ ᐊᑐᖅᑕᐅᓂᖓ, ᐊᒻᒪ ᐃᓕᓐᓂᐊᕐᓂᖅ ᐊᒪᓗᑦᑕᐅᖅ ᖃᐅᔨᓴᕐᓂᖅ ᐊᒻᒪ ᖃᐅᔨᓴᖃᑦᑕᕐᓂᖅ. ᐱᓗᐊᖅᑐᒥᓪᓕ, ᑎᓖᓱ ᒐᕙᒪᖓᑦ ᐊᒻᒪ ᐱᓕᕆᕝᕙᐊᖓ ᐊᕙᑎᓕᕆᔩᒃᑯᑦ ᐊᒻᒪ ᓄᓇᒦᐅᑕᓕᕆᔩᒃᑯᑦ ᑐᓴᕋᓚᐅᖅᑐᑦ ᐊᑐᓕᖅᑎᑦᑎᓗᑎ ᑐᑦᑐᓕᒫᖅᑎᓐᓄᑦ ᑲᑎᑦᑐᒋᑦ ᑐᑦᑐᑕᐅᔪᓐᓇᖅᑐᑦ 300 ᐊᖑᑎᓂᑐᐊᖅ ᓵᑎ ᐃᐊᒃᕗ ᑐᑦᑐᖅᑎᓐᓄᑦ. ᕗᐃᑭᔩ ᓄᓇᒥᐅᑕᓕᕆᔩᒃᑯᑦ ᑲᑎᒪᔩᖅᑎᑦ ᓇᓗᓇᐃᖅᓯᓚᐅᖅᑐᑦ ᖃᓄᐃᑦᑐᑐᐃᓐᓇᐃᑦ ᓇᓗᓇᐃᖅᓯᒪᔪᑦ ᓈᓴᐅᑎᑎᒍᑦ ᑭᓪᓕᖃᖅᑎᑕᐅᔪᑦ ᐊᖑᓇᓱᑦᑕᐅᔪᓂᑦ ᐅᕝᕙᓘᓐᓂᑦ ᐃᓚᒍᑕᖓ ᐊᖑᓇᓱᓐᓂᕐᒧᑦ ᐃᓱᒪᒋᔭᐅᔪᑦ ᑲᑎᑦᑐᒋᑦ ᑐᑦᑐᑕᐅᔪᓐᓇᖅᑐᑦ (TAH). ᑐᓴᕋᖖᒍᔪᖅ ᑲᑎᑦᑐᒋᑦ ᑐᑦᑐᑕᐅᔪᓐᓇᖅᑐᑦ ᐱᑕᖃᕆᐊᖃᖅᑎᑦᑎᔪᖅ ᐃᓄᓐᓂᑦ ᑲᑎᒪᑎᑦᑎᓗᓂ ᐊᑖᓂ ᐃᓚᖓ 12.3.10 ᑎᓖᓱ ᐊᖏᕈᒻᒥᑦ. ᕗᐃᑭᔩ ᓄᓇᒥᐅᑕᓕᕆᔩᒃᑯᑦ ᑲᑎᒪᔩᖅᑎᑦ ᐃᓗᓐᓂᑦ ᑲᑎᒪᑎᑦᑎᓚᐅᖅᑐᑦ ᐱᐅᓲᑯᒥ, ᓄᓇᕗᐊᖅ ᐆᐳᓗ 9-11, 2019.

ᐱᒻᒪᕿᐊᓘᓂᖓ ᐊᑦᑎᓪᓕᕆᐊᕐᓂᖅᑎᑦ ᓵᑎ ᐃᐊᒃᕗ ᑐᑦᑐᐃᑦ ᑕᑯᔅᓴᐅᑎᑕᐅᓚᐅᖅᑐᑦ ᐃᓄᓐᓂᑦ ᑲᑎᒪᑎᑦᑎᓂᐅᔪᒥᑦ ᐊᖅᑭᔪᖃᒃᑲᒧᑦ ᑭᓕᕗᑦ ᑖᓐᓂᐅᔅ ᐅᕙᓐᖓᑦ ᐱᐅᓲᑏ:

> *"ᐊᑦᑎᓪᓕᕆᐊᕐᓂᖅᑎᑦ ᑐᑦᑐᐃᑦ ᐱᒻᒪᕆᐊᓘᔪᖅ ᖃᓄᐃᓕᖓᓂᖓ. ᑐᓴᕐᓂᐊᖅᑐᓯ ᐊᑐᖅᑕᐅᔪᓂᑦ ᑐᑦᑐᐃᑦ ᐅᕙᒍᑦ ᖃᓄᐃᖏᑎᐊᕐᓂᖅᑎᓐᓄᑦ, ᐃᓅᓯᕗᑦ, ᓄᓇᒦᖓᖅᑐᓂᑦ ᑮᓇᐅᔭᓕᕆᓂᖅ"* ᐊᒻᒪ *"ᑕᓐᓇ ᐊᑦᑎᓪᓕᕆᐊᕐᓂᐅᔪᖅ ᐅᕙᑦᑎᓐᓂ ᑲᑎᖓᑎᑦᑎᒍᓐᓃᖅᑐᖅ ᑐᑦᑐᓂᑦ. ᐃᓚᒋᔭᐅᒃᑲᓐᓂᕈᒪᔪᒍᑦ ᑐᑦᑐᓄᑦ".*

ᑕᐃᒪᐃᓐᓂᖓᓄᑦ, ᕗᐃᑭᔩ ᓄᓇᒥᐅᑕᓕᕆᔩᒃᑯᑦ ᑲᑎᒪᔩᖅᑎᑦ ᐱᓕᕆᓂᖃᓚᐅᖅᑐᑦ, ᑐᓐᖓᓂᖃᖅᑐᑎᑦ ᐊᑐᐃᓐᓇᐅᔪᓕᒫᓂᑦ ᓄᓇᖃᖅᑳᖅᓯᒪᔪᓂᑦ ᐊᒻᒪ ᖃᐅᔨᓴᖅᑎᓄᑦ ᖃᐅᔨᔭᐅᓯᒪᔪᑦ, ᐱᒻᒪᕿᐅᔪᒥᑦ ᐱᐅᖅᓱᐊᓂᕐᒧᑦ ᐃᓱᒪᓗᓐᓇᖅᑐᖃᕐᓂᖓᓄᑦ ᓵᑎ ᐃᐊᒃᕗ ᑐᑦᑐᖅᑎᑦ ᐊᒻᒪ ᐊᐅᓚᑦᑎᓂᕐᒧᑦ ᖃᓄᐃᓕᓯᒋᐊᒃᑲᓐᓂᕈᑏᑦ ᐱᑕᖃᕆᐊᖃᖅᑐᑦ ᑐᑦᑐᐃᑦ ᐅᑎᕐᓂᖅᑎᓐᓄᑦ. ᐃᓱᒪᓕᐅᕐᓂᖃᖅᑐᑎᑦ ᐱᔾᔪᑎᖃᖅᑐᓂᑦ ᐊᖑᓇᓱᑦᑕᐅᔪᓂᑦ ᑭᓪᓕᖅᑎᓐᓂ, ᕗᐃᑭᔩ

ᓄᓇᒥᐅᑕᓕᕆᔩᒃᑯᑦ ᑲᑎᒪᔩᖏᑦ ᐃᓱᒪᒋᔭᖃᓚᐅᖅᑐᑦ ᐊᑦᑕᓇᕈᑎᐅᔪᓐᓇᖅᑐᑦ ᑐᑦᑐᓄᑦ ᒫᓐᓇᕋᑕᒥ ᓱᑲᑦᑐᒥᑦ ᐊᑦᑎᓪᓕᒋᐊᕐᓂᖏᓐᓄᑦ, ᓇᑐᓇᕈᑕᐅᔪᑦ ᖃᓄᖅ ᐊᐅᓚᓂᖏᓐᓄᑦ ᖃᑦᑑᓐᓇᕈᓇᐊᕐᓂᖏᓐᓄᑦ ᐊᒻᒪ ᐱᒻᒪᓇᐅᓂᖓᓄᑦ *ᐃᐊᒃᕗ* (ᓇᐹᖅᑐᖃᖏᑦᑐᒥᑦ ᑐᑦᑐᐃᑦ) ᑎᓵᓯᒥᐅᑕᓄᑦ ᐱᑕᖃᑦᑎᐊᕐᓗᑎ – ᐱᑕᖃᕐᓂᖏᓐᓄᑦ, ᑕᕐᓂᒃᑯᑦ, ᐊᒻᒪ ᐱᖅᑯᓯᒃᑯᑦ.

ᕗᐃᑭᔩ ᓄᓇᒥᐅᑕᓕᕆᔩᒃᑯᑦ ᑲᑎᒪᔩᖏᑦ ᓇᓗᓇᐃᖅᓯᓚᐅᖅᑐᑦ ᑖᒃᑯᐊ ᑲᑎᑦᑐᒥᑦ ᑐᑦᑐᑕᐅᔪᓐᓇᖅᑐᑦ 193 ᐊᖑᑎᑐᐊᓂᑦ ᐊᑐᓕᖅᑎᑕᐅᔭᕆᐊᓕᒃ ᐊᑐᖅᑲᑦᑕᖅᑐᓕᒫᓄᑦ ᓵᑐ ᐃᐊᒃᕗ ᑐᑦᑐᕐᒥᑦ ᐃᓗᐊᓂ ᕗᐃᑭᔩ 2019/2020 ᐊᒻᒪ 2020/2021 ᑐᑦᑐᒐᓯᐊᕐᓇᐅᔪᒥᑦ. ᐃᓚᒋᐊᕐᓗᒍ, ᑲᑎᒪᔩᑦ ᓇᓗᓇᐃᖅᓯᓚᐅᖅᑐᑦ ᐊᖏᓂᖅᓴᓇᔭᖓ ᐃᓕᐅᖅᑲᖅᑕᐅᔪᑦ ᑲᑎᑦᑐᒥᑦ ᑐᑦᑐᑕᐅᔪᓐᓇᖅᑐᑦ ᓵᑎ ᐃᐊᒃᕗ ᑐᑦᑐᕐᒥᑦ 2019/2020 ᐊᒻᒪ 2020/2021 ᑐᑦᑐᒐᓯᐊᕐᓇᐅᔪᒥᑦ ᐃᒪᐃᓕᖓᔭᓇᐊᓖᑦ: ᑎᓵᓯᒥᐅᑕᐃᑦ – 39.29%, ᐊᒻᒪ ᐃᓚᒋᔭᐅᔪᑦ ᓄᓇᖃᖅᑳᖅᓯᒪᔪᑦ ᐊᖑᓇᓯᖃᑦᑕᕋᔪᑦᑐᑦ ᓵᑎ ᐃᐊᒃᕗ (ᐱᖃᓯᐅᑎᓪᓗᓂ ᓄᓇᕗᑦ) – 60.71%.

ᖃᐅᔨᓴᖃᑦᑕᕐᓂᖅ ᓵᑎ ᐃᐊᒃᕗ ᑐᑦᑐᓴᐅᕙᑦᑐᓂᑦ ᐱᒻᒪᕆᐅᔪᖅ ᐊᐅᓚᑦᑎᓂᕐᒧᑦ ᐃᓱᒪᓕᐅᓂᕐᒧᑦ, ᑲᑎᒪᔩᑦ ᐊᑐᓕᕐᑯᔨᔪᑦ ᑖᒃᑯᐊ ᑎᓵᓯ ᒐᕙᒪᖓᑦ ᐊᒻᒪ ᐱᓕᕆᕕᐊᖓ ᐊᕙᑎᓕᕆᔩᒃᑯᑦ ᐊᒻᒪ ᓄᓇᒦᐅᑕᓕᕆᔩᒃᑯᑦ ᐋᖅᑭᒋᐊᖅᓯᓗᑎ ᐊᑐᕐᓂᖏᓐᓄᑦᑐᑦᑐᑕᐅᕙᑦᑐᓂᑦ ᖃᐅᔨᓴᖃᑦᑕᓂᕐᒧᑦ 2019/2020 ᐊᒻᒪ 2020/2021 ᑐᑦᑐᒐᓯᐊᕐᓇᐅᔪᓂᑦ, ᐱᖃᓯᐅᑎᓗᑎ ᓄᐊᑕᐅᓂᖏᑦ ᑭᓪᓕᓯᓂᐊᖅᑕᐅᓯᒪᔪᑦ ᐊᒻᒪ ᖃᓄᐃᓐᓂᖏᓐᓄᑦ ᑐᑭᓯᒋᐊᕈᑏᑦ ᐊᒻᒪ ᐃᖅᑲᓇᐃᔭᖅᑎᑎᒃᑲᓂᓂᕐᒧᑦ ᓄᓇᓕᒻᒥ ᖃᐅᔨᓴᖅᑎᓂᑦ.

ᕗᐃᑭᔩ ᓄᓇᒥᐅᑕᓕᕆᔩᒃᑯᑦ ᑲᑎᒪᔩᖏᑦ ᐊᑐᓕᕐᑯᔨᔪᑦ ᑖᒃᑯᐊ ᓄᓇᑦᓯᐊᑉ ᒐᕙᒪᖓᑦ ᐱᑕᖃᖅᑎᑦᑎᓗᑎ ᑐᑦᑐᑕᐅᕙᑦᑐᓂᑦ ᑐᑭᓯᒋᐊᕈᑎᓂᑦ ᐱᐅᓯᒋᐊᖅᑎᑕᐅᓯᒪᔪᑦ ᓄᐊᒃ ᓯᓚᐃᕝ *ᑎᒐ* (ᐊᒪᕈᖅ) ᐊᖑᓇᓯᐊᖅᐸᓐᓂᕐᒧᑦ ᐱᓕᕆᐊᖑᔪᖅ ᐱᔪᓐᓇᑎᑦᑎᓗᑎ ᑲᑎᒪᔨᓂᑦ ᓇᓗᓇᐃᖅᓯᓗᑎ ᑲᔪᓯᑦᑎᐊᕐᓂᖓᓄᑦ ᐱᓕᕆᐊᖅ. ᐃᓚᒋᐊᕐᓗᒍ, ᑲᑎᒪᔩᑦ ᐊᑐᓕᕐᑯᔨᔪᑦ ᑖᒃᑯᐊ ᑎᓵᓯ ᒐᕙᒪᖓᑦ (TG) ᐊᒻᒪ ᓄᓇᑦᓯᐊᑉ ᒐᕙᒪᖓᑦ ᓴᖅᑭᑎᑦᑎᓗᑎ ᓴᓇᓯᒪᓂᖓᓂᑦ ᖃᐅᔨᓴᕐᓗᑎ ᐊᑐᑦᑎᐊᕐᓂᖓᓄᑦ ᐱᐅᓯᒋᐊᖅᑎᑕᐅᓯᒪᔪᑦ ᓄᐊᒃ ᓯᓚᐃᕝ ᑎᒐ ᐊᖑᓇᓯᐊᖅᐸᓐᓂᕐᒧᑦ ᐱᓕᕆᐊᖑᔪᖅ ᑎᑭᑦᑎᓂᐊᕐᓗᓂ ᐃᐊᒃᕗ ᐱᐅᖅᓯᐊᓂᕐᒧᑦ ᑐᕌᖓᓂᖕᓂ. ᕗᐃᑭᔩ ᓄᓇᒥᐅᑕᓕᕆᔩᒃᑯᑦ ᑲᑎᒪᔩᖏᑦ ᐊᑐᓕᕐᑯᔨᒻᒥᔪᑦ ᑖᒃᑯᐊ ᓄᓇᑦᓯᐊᑉ ᒐᕙᒪᖓᑦ ᐊᒻᒪ ᑎᓵᓯ ᒐᕙᒪᖓᑦ (TG) ᖃᐅᔨᓴᕐᓗᑎ *ᓅᔅᕼᐊ* (ᖃᕝᕕᒃ) ᐊᒥᓲᓂᖏᑦ ᕗᐅᐃᑭᔩᒥᑦ ᐊᒻᒪ ᐃᖅᑲᓇᐃᔭᖃᑎᖃᑦᑎᐊᖅᑐᖅ ᓄᓇᕗᑦ ᒐᕙᒪᒃᑯᖏᓐᓂ ᓴᐳᒻᒥᔭᐅᓗᑎ ᓄᕐᕋᓕᐅᕐᕕᖏᑦ ᓵᑎ ᐃᐊᒃᕗ ᑐᑦᑐᓂᑦ ᓂᓇᖃᑦᑕᖅᑐᓄᑦ.

ᕗᐃᑭᔩ ᓄᓇᒥᐅᑕᓕᕆᔩᒃᑯᑦ ᑲᑎᒪᔩᖏᑦ ᐊᑐᓕᕐᑯᔨᔪᑦ ᖁᑦᑎᓛᒥᑦ ᓯᕗᓪᓕᐅᔾᔭᐅᓗᓂ ᓚᔪᖅᑲᑦᑕᖅᑕᖏᑦ ᓴᐳᒻᒥᔭᐅᓂᖏᓐᓄᑦ ᓵᑎ ᐃᐊᒃᕗ ᑐᑦᑐᖏᑦ ᓇᓗᓇᐃᖅᑕᐅᔭᕿᐊᓕᒃ ᐊᒻᒪ ᒪᓕᒐᖅᑎᒍᑦ ᓴᐳᒻᒥᔭᐅᓂᖏᓐᓄᑦ ᐊᑐᓕᖅᑎᑕᐅᔭᕿᐊᓖᑦ. ᒫᓐᓇᐅᔪᒥᓪᓕ, ᐃᖏᕿᔾᔪᑦ ᑐᑦᑐᓂᑦ ᐱᐅᖅᓯᐊᓂᕐᒧᑦ ᐱᓕᕆᔾᔪᑏᑦ ᐊᑐᓕᖅᑎᑕᐅᔭᕿᐊᓖᑦ. ᐃᓚᒋᐊᕐᓗᒍ, ᑲᑎᒪᔩᑦ ᐊᑐᓕᕐᑯᔨᓚᐅᖅᑐᑦ ᑖᒃᑯᐊ ᑎᓵᓯ ᒐᕙᒪᖓᑦ (TG) ᐊᒻᒪ ᓄᓇᑦᓯᐊᑉ ᒐᕙᒪᖓᑦ ᑲᔪᖏᖅᓴᐃᓗᑎ ᑎᓵᓯᒥᐅᑕᓂᑦ ᐊᖑᓇᓯᓪᓗᑎ ᐊᓯᖏᓐᓂ ᐃᓄᐃᑦ ᓂᕿᖏᓐᓂ.

ᑲᑎᒪᔩᑦ ᐊᑐᓕᕐᑯᔨᔪᑦ ᑖᒃᑯᐊ ᑎᓵᓯ ᒐᕙᒪᖓᑦ (TG) ᐊᒻᒪ ᓄᓇᑦᓯᐊᑉ ᒐᕙᒪᖓᑦ ᐱᓕᕆᖃᑎᖃᕐᓗᑎ ᕗᐃᑭᔩ ᓄᓇᒥᐅᑕᓕᕆᔩᒃᑯᑦ ᑲᑎᒪᔩᖏᑦ ᓴᖅᑭᑎᑦᑎᓗᑎ ᑐᑦᑐᓄᑦ ᓇᓗᓇᐃᖅᓯᒪᔪᓄᑦ ᐊᑐᓕᖅᑕᐅᔪᓐᓇᖅᑐᒥᑦ ᐊᐅᓚᑦᑎᓂᕐᒧᑦ ᓴᓇᓯᒪᓂᖓᓂᑦ ᐊᒥᓲᓗᑎ ᑲᑎᓐᖓᓂᖅᑲᖅᑐᑦ ᓇᓗᓇᐃᖅᓯᒪᔪᒧᑦ ᐊᐅᓚᑦᑎᓂᕐᒧᑦ ᖃᓄᐃᓕᓯᒋᐊᕈᑏᑦ. ᕗᐃᑭᔩ ᓄᓇᒥᐅᑕᓕᕆᔩᒃᑯᑦ ᑲᑎᒪᔩᖏᑦ ᐊᑐᓕᕐᑯᔨᓚᐅᕐᒥᔪᑦ ᐅᑯᓂᖓ ᖃᐅᔨᓴᓂᕐᒧᑦ ᖃᓄᐃᓕᓯᒋᐊᕈᑏᑦ ᓵᑎ ᐃᐊᒃᕗ ᑐᑦᑐᖏᓐᓄᑦ: ᐊᒥᓲᓂᖏᓐᓄᑦ ᖃᐅᔨᓴᕐᓗᑎ ᐊᕐᕋᒍᓐᓂᒃ ᒪᕐᕉᓐᓂᑕᒫᑦ, ᐊᑐᓕᖅᑎᑦᑎᓗᑎ ᓇᔾᔨᔪᓂᑦ ᖃᐅᔨᓴᓂᕐᒧᑦ ᐊᓇᖏᑎᒍᑦ ᓄᐊᑕᐅᓂᖏᓐᓄᑦ ᐅᑭᐅᒃᑯᑦ ᑕᖅᑭᖏᓐᓂ; ᓄᖅᑲᑎᓪᓗᒍ ᐊᕐᕌᒍᑕᒫᑦ ᖃᐅᔨᓴᕐᓂᐅᔪᑦ, ᐊᒻᒪ ᐊᒥᓱᕈᓇᕐᓗᑎᑦ ᖁᖓᓯᕈᐃᑦ 50−ᓂᑦ 70−ᓄᑦ. ᐃᓚᒋᐊᕐᓗᒍ, ᑲᑎᒫᔩ ᐊᑐᓕᕐᑯᔨᓚᐅᖅᑐᑦ ᓇᓗᓇᐃᔭᖅᓯᒪᔪᑦ ᐱᔾᔪᑎᖓ ᖁᖓᓯᕈᐃᑦ ᐊᒥᓱᕈᓇᖅᑕᐅᓂᖏᓐᓄᑦ ᐱᑕᖃᖅᑎᑕᐅᓗᑎ.

ᕗᐃᑭᔩ ᓄᓇᒥᐅᑕᓕᕆᔩᒃᑯᑦ ᑲᑎᒪᔩᖏᑦ ᐊᑐᓕᕐᑯᔨᓚᐅᖅᑐᑦ ᑖᑯᐊ ᑎᓵᓯ ᒐᕙᒪᖓᑦ (TG) Ekwǫ̀ Nàxoède K’è (ᐃᐊᒃᕗ ᓇᕗᐅᐃᑎ ᑲ’ᐄ [ᑲᓖᔫᒃ ᓄᓇᒥ]), ᓇᓯᐃᑎ ᑲᐃ ᐱᓕᕆᐊᖅ ᐊᖏᓪᓕᒋᐊᖅᑕᐅᓗᓂ ᑭᖑᓂᐊᒍᑦ

ᓄᕿᓕᐅᓚᐅᖅᑎᓪᓗᒋᑦ ᐊᒻᒪ ᐊᐅᔾᔪᑦ ᓇᒧᙵᕝᕕᒋᔭᑦᑕᖏᑦ ᓵᑎ ᐃᐊᒃᑰ ᓄᐊᑦᑎᓗᑎ ᓗᓇᕌᑦᑐᓂᑦ ᓯᓚᐅᑉ ᐊᓯᔾᔨᕐᓂᖓᓄᑦ ᖃᐅᔨᔭᐅᔪᓂᑦ. ᑭᖑᓪᓕᖅᐹᒥᓕ, ᑲᑎᒫᓂᑦ ᐊᑐᓕᕐᑯᔨᔪᑦ ᑎᑦᓰ ᖃᐅᔨᓴᕐᓂᐅᔪᖅ ᐊᒻᒪ ᖃᐅᔨᓴᖃᑦᑕᓂᕐᔪᑦ ᐱᓕᕆᐊᖅ ᐊᑐᓕᖅᑎᑕᐅᔭᕆᐊᓕᒃ ᓇᓗᓇᐃᑦᑎᐊᕐᓗᒋᑦ ᑕᒪᒃᑭ ᐃᐊᒃᑰ ᐊᒻᒪ ᐃᐊᒃᑰ ᓇᔪᖃᑦᑕᖅᑕᖕᒋᑦᖃᐅᔨᓴᕐᓂᐅᔪᑦ ᐊᒻᒪ ᐱᓪᓚᕆᐅᔪᓂᑦ ᐆᒪᔪᖅᑕᐅᕙᑦᑐᓂᑦ ᑎᑎᕋᖅᑕᐅᓗᑎᑦ ᐱᖅᑯᓯᓄᑦ ᓈᒻᒪᑦᑐᓄᑦ.

ᓵᑎ ᐃᐊᒃᑰ ᑐᑦᑐᐃᑦ ᐱᒻᒪᕿᐅᔪᒥᑦ ᖃᐅᔨᓕᖓᓂᕐᑲᓕᖅᑐᑎᑦ, ᐃᑉᐱᒍᓱᙱᖅᓯᔪᖅ ᑐᐊᕕᕐᙳᖅᑐᕐᑲᖅᑐᓂ ᐊᑐᓕᖅᑎᑕᐅᓗᓂ ᐊᐅᓚᓂᕐᑲᑦᑎᐊᖅᑐᖅ ᐊᐅᓚᑦᑎᓂᕐᒧᑦ ᖃᐅᔨᓕᓯᒋᐊᕈᑏᑦ ᓄᖅᑲᖅᑎᑕᐅᓗᓂ ᖃᑦᑏᓐᓇᕈᖅᐸᓪᓕᐊᓂᖏᑦ ᕿᓚᒥᐅᔪᒃᑯᑦ. ᐃᓱᒪᓕᐅᖅᑕᐅᔪᑦ ᓴᓇᓯᒪᔪᑦ ᐊᑦᑐᐃᓂᕐᑲᖏᓛᖑᓗᑎ ᐃᐊᒃᑰ ᐊᑐᕐᑲᑦᑕᖅᑐᓂᑦ ᐊᒻᒪ ᐃᑲᔫᓯᐊᓛᓂᑦ ᐃᐊᒃᑰᒻᒧᑦ ᐱᑕᕐᑲᖅᑎᒍᓐᓇᖅᑕᕘᑦ ᒫᓐᓇᐅᔪᒥᑦ.

“ᐱᕙᓪᓕᐊᓂᖓ ᐅᓪᓗᒥ ᐱᓇᓱᐊᕐᓗᒋᑦ ᐊᒻᒪ ᓴᖅᑭᑎᓪᓗᒋᑦ ᐱᐅᓛᙳᔪᑦ ᐊᑐᐃᓐᓇᐅᔪᑦ ᑐᑭᓯᒋᐊᕈᏗᑦ ᖃᐅᔨᓕᓯᒋᐊᕈᑎᓂᑦ ᐅᕙᑦᑎᓐᓂ ᖃᐅᔨᓕᖓᒍᓐᓃᑎᑦᑎᓂᐊᖅᑐᑦ ᐊᒻᒪ ᐅᑎᕐᓗᑎ ᐊᒥᓲᓂᖏᑦ ᑲᑦᓯᒪᔪᑦ ᑕᑯᔅᓴᐅᑎᐊᖅᑐᒥᑦ ᐊᕿᒍᒐᓚᐅᓕᖅᑐᓂᑦ, ᑭᓯᐊᓂ ᓄᑖᙳᖏᑦᑐᖅ ᐅᓂᒃᑳᖅ, ᑭᓯᐊᓂ ᑲᔪᓰᓐᓇᖅᑐᖅ ᐅᓂᒃᑳᖅ ᑭᓯᐊᓂ ᐱᔪᓐᓇᐅᑎᕐᑲᖅᑐᓂᑦ ᑲᔪᖏᖅᓴᐃᓂᐊᖅᑐᑦ ᖃᐅᔨᒋᐊᓪᓚᖅᑕᕆᓪᓗᒋᑦ ᖁᕝᕙᖅᑕᑎᓐᓂ -- ᐱᓕᕆᐊᕆᓗᒍ ᐅᑎᕐᓂᖏᓐᓄᑦ.”
~ Dr. ᔮᓐ B. ᔩ

ᐊᑐᕐᑲᑦᑕᖅᑐᑦ ᐊᒻᒪ ᐊᐅᓚᑦᑎᔾᔨᑦ ᐱᔪᒪᓂᕐᑲᕿᐊᑖᑦ ᖃᐅᔨᓕᓯᒋᐊᕐᓗᑎ ᒫᓐᓇ, ᖃᐅᔨᒪᓐᓇᑦᑎᐊᖅ, ᓴᐳᒻᒥᓗᒋᑦ ᑐᑦᑐᐃᑦ ᓯᕗᓂᔅᓴᒥ ᑐᑦᑐᐃᑦ ᐅᑎᕆᓐᓇᓂᐊᕐᒪᑕ.

“ᐊᒻᒪ ᐊᑕᐅᓯᖅ (1) ᖃᐅᔨᒪᔭᕗᑦ ᐊᕿᒍᒐᓛᓗᓐᓂᑦ ᐅᖃᕆᓇᖅᓯᒪᕆᒃᑲᓗᐊᖅᑐᓂ, ᖃᐅᔨᒪᔪᒍᑦ ᐃᓄᐃᑦ ᐃᓅᓂᐊᕐᒪᑕ ᐱᔾᔪᑎᒋᓪᓗᒍ ᑐᑐᓂᑦ ᓴᒃᑯᐃᓚᐅᖅᓯᒪᕆᑦᑐᑦ. ᐱᓯᒪᐃᓐᓇᓂᐊᖅᑕᕆᑦ. ᓲᕐᓗ ᐋᕿ ᐅᖃᖅᑐᖅ, ᓴᒃᑯᓚᐅᖅᓯᒪᔾᔮᕆᑕᔪᑦ, ᐱᔾᔪᑎᒋᓪᓗᒍ ᓴᒃᑯᑯᑎᒍ, ᑕᐃᒪᓕ -- ᑕᐃᒪᓕ ᑕᐃᒪᒃᑲᔭᖅᑯᖅ, ᐱᔾᔪᑎᒋᓪᓗᒍ ᓴᒃᑯᐃᕆᓐᓂᕐᒧᑦ, ᓴᙳᑎᕆᐊᕆᐊᖅᑕᔪᑦ ᐱᓕᕆᖃᑎᒋᓂᖅᐳᑦ ᐆᒪᔪᓄᑦ ᖃᐅᔫᕆᓂᖃᕐᓗᑕ ᐱᖅᑯᓯᒃᑯᑦ.”
~ Dr. ᔮᓐ B. ᔩ

ʔehdzo Got'ı̨nę Gots'ę́ Nákedı - Sahtú Renewable Resources Board

ʔehdaı̨la ʔekwę́ Harvest Regulation and Reconciliation in the Sahtú Region

Submission to the Nunavut Wildlife Management Board
2020 Bluenose East Hearing
February 17, 2020

Background

The ʔehdzo Got'ı̨nę Gots'ę́ Nákedı (Sahtú Renewable Resources Board – SRRB) was established by the Sahtú Dene and Métis Comprehensive Land Claim Agreement with a mandate in wildlife, habitat and harvesting in the Sahtú Region, NWT. In 2016, the SRRB held a Bluenose East (BNE) Hearing in Délı̨nę, NWT. The Hearing Report contained 39 decisions that marked a shift in the Board's approach to implementing its mandate.

In 2019, faced with conservation concerns related to all three caribou ecotypes that live in the Sahtú, the Board decided to launch a series of five "Public Listening" (Hearing) Sessions. These Sessions are both broadly scoped and narrowly scoped. They are broadly scoped by encompassing the three caribou ecotypes, but also narrowly scoped by focusing on specific conservation "hot topics"[1]. All five Public Listening Sessions will together address key issues with respect to the central question, "What is the most effective way to *conserve* caribou?"

The SRRB envisions undertaking one Session per year in partnership with and located at each of the Sahtú communities. The first Session took place in Colville Lake on January 21-23, 2020, addressing the topic, "What is the most effective way to *regulate the harvest* of caribou?"[2] This is the third Public Hearing convened by the Board since its creation in 1993. All hearing documents, including proceedings, reports and responses from the Minister of NWT Environment and Natural Resources, can be found on the SRRB's online Public Registry[3].

The SRRB is currently preparing its report on the Colville 2020 Public Listening Session, and cannot at this time disclose the decisions in development. However, the Board can speak to decisions related to BNE caribou conservation made in 2016, caribou monitoring and action planning that has taken place since that time, and the Board's efforts at bringing together

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[1] The "hot topic" is a concept used in the ACCWM's *Taking Care of Caribou* plan for Cape Bathurst, Bluenose West and Bluenose East caribou (2014), referring to topics that are unresolved or remain controversial, for which finding agreement between different perspectives may be challenging.
[2] The topics for future sessions may evolve over the coming years, but currently are envisioned to include: Knowledge About Caribou and Landscapes; Wildfires and Climate Change; Predators; and the Mixed Economy.
[3] www.srrb.nt.ca.

conservation and reconciliation objectives by supporting community-driven conservation planning initiatives combined with public hearing proceedings.

Linked to these processes, the SRRB has prioritized support for interjurisdictional or community-to-community dialogue as a critical component of caribou conservation planning. The SRRB is grateful for the opportunity provided by the NWMB Bluenose East Hearing for an exchange of evidence regarding harvest regulation in light of conservation concerns. In this submission, the SRRB will address the four topics identified by the NWMB as priorities for consideration, focusing on the Board's efforts to implement our mandate in conservation through a reconciliation approach.

Reconciliation in the Big Picture

The Canadian Truth and Reconciliation Commission's (TRC) report, delivered in 2015[4], was focused on addressing the impacts of residential schools in Indigenous communities. However, the ripple effects of the report, viewed in light of the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP)[5], have been much broader. In 2017 the SRRB reviewed its strategic plan in the context of the TRC and UNDRIP, as well as the concept of "ethical space" developed by the Indigenous Circle of Experts[6] new developments in self-governance in the Sahtú Region. Over the subsequent year, the Board participated in a broader process to prepare a *Discussion Document and Calls to Action* related caribou conservation for discussion at the Indigenous Talking Circle at the 2018 North American Caribou Workshop (appended to this submission). The Board is now taking note of questions asked and insights offered in the recent publication by Dr. Graham White, *Indigenous Empowerment through Co-management*: *Land Claims Boards, Wildlife Management, and Environmental Regulation* (2020)[7].

Bluenose East Status

The community of Délı̨nę is recognized in the Sahtú Region as the main stewarding community for ʔehdaı̨la ʔekwę́ (Caribou Point or BNE caribou). The SRRB therefore works primarily with Délı̨nę to consider traditional knowledge and science about ʔehdaı̨la ʔekwę́ status. In November 2019, Délı̨nę provided monitoring information about the status of ʔehdaı̨la ʔekwę́ in preparation for the annual status meeting of the ACCWM (Advisory Committee for Cooperation on Wildlife Management)[8]. The Board has supported the ACCWM's current status assessment that BNE caribou are in the Red Zone (low and declining). The SRRB is participating in

[4] Truth and Reconciliation Commission of Canada. 2015. *What We Have Learned* and *Calls to Action*. Ottawa: Government of Canada. www.trc.ca.
[5] www.un.org/development/desa/indigenouspeoples/declaration-on-the-rights-of-indigenous-peoples.html.
[6] Indigenous Circle of Experts. 2018. *We Rise Together: Achieving Pathway to Canada Target 1 through the creation of Indigenous Protected and Conserved Areas in the spirit and practice of reconciliation.* Ottawa: Government of Canada. www.conservation2020canada.ca/ice
[7] Vancouver: UBC Press.
[8] See the ACCWM Bluenose East Monitoring Table, available on the SRRB's Colville 2020 Public Registry at www.srrb.nt.ca.

completion of the ACCWM's Action Plan for BNE caribou (forthcoming), in the context of a variety of initiatives identified by Délı̨nę within their *Belare Wíle Gots'ę́ ʔekwę́ – Caribou for All Time* community conservation plan. The Délı̨nę plan was approved by the SRRB in 2016, and was revised in the fall of 2019 to reflect reduced availability of ʔehdaı̨la ʔekwę́.

The Government of Nunavut's BNE Harvest Regulation Proposal

The SRRB appreciates the Government of Nunavut's (GN's) intention in supporting BNE caribou conservation actions, since BNE conservation in the Nunavut Region will clearly benefit both the herd and Sahtú harvesters. The Board supports any efforts in conservation that show evidence of achieving positive conservation effects. The SRRB has much to learn from different approaches and lessons learned elsewhere. Here we consider the two components of the GN's proposal in relation to decisions from the SRRB's 2016 BNE Hearing in Délı̨nę.

Total Allowable Harvest

In weighing evidence related to plans submitted by Délı̨nę and NWT Environment and Natural Resources (ENR) for the 2016 BNE Hearing, the SRRB was guided by the Sahtú Dene and Métis Comprehensive Land Claim Agreement provision that a Total Allowable Harvest (TAH) is a tool that should be used "only if required for conservation and to the extent necessary to achieve conservation" (Section 13.5.2). The Board found, based on the evidence, that the traditional Dene structures for caribou stewardship continue to be as or more effective than a TAH in meeting conservation needs. The Board also found that the Délı̨nę plan included a "better and more comprehensive list of conservation tools, compared to the two mechanisms offered in the ENR plan (TAH and predator control)."

The SRRB's 2016 Bluenose East Hearing Report consequently includes three linked decisions supporting a community conservation planning approach to harvest regulation, as follows[9]:

- An approach of community ɂedets'ę́ k'áots'erewe (self-regulation) is a culturally appropriate and effective mechanism for addressing Bluenose East ɂekwę́ conservation as required under the SDMCLCA (Decision 10).
- The SRRB will exercise its power under the SDMCLCA to review and approve community, regional and cross-regional BNE ɂekwę́ conservation plans, and to contribute to ɂełehé ɂeghálats'eda (collaborative) implementation of approved plans (Decision 15).
- … The SRRB accepts the principle that community-based monitoring and decisions are the most effective mechanism for ɂekwę́ management and conservation in the Sahtú region (Decision 24).

The SRRB's 2016 decisions indicate that community conservation plans are an alternative to a TAH mechanism for conservation. However, the SRRB's 2016 Hearing Report did commit to

[9] SRRB. 2016. *ʔekwę́ hé Dene Ts'ı̨lı̨ Sustaining Relationships: Bluenose East Hearing Report.* Tulít'a: SRRB. www.srrb.nt.ca.

assessing the need for a TAH limit “if an annual review and assessment of community conservation plans in the Sahtú region demonstrates that conservation concerns for Bluenose East ɂekwę́ are not being adequately addressed” (Decision 28). The SRRB is currently engaged with Déline̜ in reviewing their revised plan in the context of the Red Zone status of Ɂehdaı̨la Ɂekwę́.

Male-Only Harvest Non-Quota Limitation

With respect to the GN’s proposal for a male-only harvest non-quota limitation (NQL), the SRRB respects the scientific evidence that supports such a measure. However, in weighing both science and traditional knowledge evidence presented at the SRRB’s 2016 Bluenose East Hearing, the Board determined that “a certain balance of bedzıo [big males] and tsída [females] is required for ɂekwę́ to remain healthy, although there remain questions in the scientific world about the specific balance needed and the impact of yárégo kanáts’ezé [smaller bull harvest] as encouraged by the ENR plan.” In 2016 the Board found “that a tsída kanáts’ezé (female caribou harvest) is is not appropriate at this this time, but that a majority yárégo kanáts’ezé (smaller male caribou harvest) important in order to address conservation needs” (Decision 30).

However, the SRRB’s 2016 Report goes on to accept “the adaptive management principle that supports monitoring the effects of tsída gha máhsı ts’enı̨we on the population and ɂełehé ɂeghálats’eda (working together) with Ɂehdzo Got’ı̨nę to adjust the approach if BNE ɂekwę́ decline to the red zone (low population threshold) as defined in the Taking Care of Caribou plan.” Given current consensus that Ɂehdaı̨la Ɂekwę́ are in the Red Zone, Délı̨nę has revised its plan for tsída harvest to address conservation needs, and this revision is under consideration by the Board.

Dene and Inuit Knowledge (Qaujimajatuqangit)

The SRRB’s submission related to Indigenous knowledge focuses on approaches to accommodating Dene and Métis knowledge in caribou conservation decision-making, including community conservation planning and the SRRB’s recently adopted Public “Listening” (Hearing) process.

Community Conservation Planning

The community-led planning approach to caribou conservation, adapted from the Australian Indigenous Healthy Country Planning model and supported by the SRRB following the 2016 BNE Hearing, brings Dene and Métis knowledge directly into a governance or stewardship framework. Evidence presented at the 2016 BNE Hearing indicates that this framework is multi-faceted and holistic, considering the full range of conservation actions needed.

Délı̨nę’s 2016 plan is founded in Dene ɂeɂa (law) and Dene ts’ı̨lı̨ (who we are, the whole concept of what being Dene meant to our grandparents). The plan commits to ɂekwę́ gha máhsı ts’ı̨nı̨we (ceremonial caribou harvest) instead of a subsistence harvest, as well as support and planning for Dene béré kats'ı̨nı̨we (harvest of alternative species for food security). The plan also outlines actions related to ʔededáhk'ə́ (Habitat), ʔedets'é K'áots'erewe (Governance), and Dene Náowérə́ (Knowledge), which includes research, education, advocacy and communication.

The SRRB's 2016 Hearing Report includes a listing of components for a community conservation plan to be deemed complete. These components are considered to be inter-related as the basis for a coherent conservation system.

Since 2016, two additional community caribou conservation plans have been developed in the Sahtú Region. Of these, the *Dehlá Got'ı̨nę ʔədə Plan and Ts'ı̨duweh ʔeɂá (Harvest Law)* submitted by Colville Lake leaders is under consideration by the SRRB. The *Nío Nę P'ęnę́ – Trails of the Mountain Caribou* plan has been a joint effort by three communities, with Tulít'a and Norman Wells engaged in a cross-boundary collaboration with the Ross River (Tu Łidlini) Dena Council, Yukon. The plan is currently under review by community leaders.

Public Listening Sessions

In planning for the Colville 2020 Public Listening Session, the SRRB reviewed the experience of the Board's 2007 Bluenose West Caribou Hearing and the 2016 BNE Hearing. The Board adopted additional mechanisms for supporting a fair process for Dene and Métis to contribute evidence in a cross-cultural context. Key features of the Board's approach in 2020 included:

- Partnership with the hosting community in scoping and coordinating the Session, and reviewing Hearing Rules.
- "Train the trainer" and regional workshops in Community Conservation Planning, with a focus on preparing presentations for the Public Listening Session.
- Support for oral submissions, with staff assistance in preparing written versions.
- Pauses for documenting, translating and discussing key terminology and concepts during the Session.
- Graphic recording during the Public Listening Session, with time set aside for Parties to validate the recording of their presentation.
- Indigenous language audio recordings, made available on the Public Registry.
- Review of transcripts and inclusion of Indigenous language orthography.

Inter-Jurisdictional Considerations

The Board has strongly encouraged dialogue among co-management partners across regions to support coordination of community-driven planning initiatives and development of best practices. This has included:

- Facilitation of community-to-community meetings, encouragement of joint planning initiatives (eg the Nío Nę P'ęnę́ plan).
- Support for community delegates to participate in annual ACCWM status meetings.

- Support for delegations from neighbouring communities and regions to attend Sahtú Public Listening Sessions.
- Participation in Public Hearings and other caribou conservation activities in other regions.
- Facilitation of Indigenous forums associated with the North American Caribou Workshop (2010 and 2018).

The Board continues to seek ways to strengthen support and recognition for local, regional and cross-regional conservation planning activities as strong foundations for exercising its power to approve conservation plans.

Moving forward, a cross-regional forum for in-depth review of shared conservation objectives in relation to local and regional plans for BNE caribou could be of great value for all Parties. This could build on the ACCWM experience by providing enhanced space for community-to-community dialogue. The forum could provide an "ethical space" for concerned communities to share their respective conservation approaches and build consensus about objectives, evaluation and accountability with respect to action plans.

Conclusion

In 2016, the SRRB found measures identified in Délı̨nę's *Belare Wíle* Gots'ę́ *ʔekwę́* plan, including traditional Dene structures, to be as or more effective than a TAH in meeting conservation needs for ʔehdaı̨la ʔekwę́. However, the Délı̨nę plan is being reviewed in light of the recently determined Red Zone status of this herd, and a TAH continues to be an option provided for in the Sahtú Land Claim Agreement if conservation concerns are not being adequately addressed. The Board respects and celebrates the diversity of conservation approaches being undertaken by different communities and regions. At the same time, the SRRB views inter-jurisdictional dialogue, coordination and collaboration as central to the success of BNE caribou conservation. The Board proposes a future cross-regional forum including community-to-community dialogue to support collaborative planning for BNE caribou at different scales.

APPENDIX

INDIGENOUS TALKING CIRCLE

WORKING TOGETHER:
Indigenous Involvement in Caribou Stewardship

A Discussion Paper drafted by the Indigenous Statement Working Group

In 2010, for the first time ever, Indigenous Peoples came together from many parts of Canada to participate in an Aboriginal Talking Circle at the 13th North American Caribou Workshop. It was an opportunity to meet one another, to share knowledge and observations, and to discuss concerns regarding caribou and our shared future.

Since that time we have seen considerable change in our relationships with Canada. There is growing awareness of how past policies and actions have impacted Indigenous Peoples, and encouraging steps towards reconciliation that include recognition of our distinct cultures and values. Important developments like Article 8(j) of the Convention on Biological Diversity, the work of the Truth and Reconciliation Commission, and the Indigenous Circle of Experts are helping to create a new context in which the unique roles Indigenous Peoples play in conserving life on earth are being acknowledged and upheld.

At the same time, we are witnessing a worsening situation for caribou – an animal that defines our very lifeways and whose well-being and survival is intimately linked to our own. Since time immemorial we have sustained relationships with caribou, guided by our stories and traditions. Increasingly, living things like caribou and the lands and waters that sustain them are under threat. These problems were not created by Indigenous peoples, yet we are the ones most affected by them. Because of our deep connections with caribou, we see these as threats to our own languages, cultures, and ways of life. Still we are often excluded from important aspects of caribou conservation; our knowledge systems and ways of stewardship are not fully understood or accommodated, as management frameworks have not yet adapted to this new context. We have reached a critical point now and it is crucial that our voices be heard. It is time for us to shape the conservation dialogue. We are here to work in all levels of caribou stewardship – not only through contributing our knowledge, but as full partners. In order to develop a good collaborative relationship in caribou conservation, it is essential that the following points are understood:

RELATIONSHIPS WITH CARIBOU

For countless generations Indigenous Peoples have co-existed with caribou and sustained our relationships through a careful practice of respect and traditional life ways as defined by our stories. Caribou are central to our survival and well-being; our landscapes and languages, our cultures and economies are all shaped by caribou.

OUR RESPONSIBILITY

Indigenous Peoples feel a deep-seated responsibility to ensure our lands and waters remain healthy and abundant for future generations. We inherited this land and will also pass it on. We are thankful that animals like caribou have been provided for us and have a responsibility to ensure their continued well-being in a manner that is respectful to our spiritual and cultural understandings. We acknowledge that caribou live according to their own free will, so our responsibility includes a need to look after their home so that they can continue to live freely. We have a further responsibility to ensure that our original stories and teachings are not left behind. This means that our duty as stewards encompasses not just the caribou, but extends to the ecosystem and to our cultures, languages and lifeways.

GOVERNANCE

Indigenous law stems from natural law. Our governance is rooted in our values, our understandings of higher universal principles, our observations and experiences. As a result, we do not see ourselves as separate from the natural world. Knowing we are intimately connected to all living beings and spirits requires us to live within the bounds created by the natural world.

For the last two hundred years, imported governance models based on others' values and understandings have been imposed on Indigenous Peoples in Canada. They have shaped policies, practices, institutions, and decisions to form a management culture that effectively excludes us and has failed us as much as it has caribou. Collectively, we need to create more space for Indigenous-led stewardship. Adapting resource management frameworks in a way that better accommodates current understandings of Indigenous responsibilities, title, law, and knowledge systems will move caribou stewardship forward in a way that benefits us all.

GENDER ROLES

All Indigenous people have roles to play in caribou stewardship – women, men, and those who define their gender in a more fluid way – just as caribou herds are structured according to the roles of individual animals. We all depend upon each other. The skills involved in harvesting, preparing meat and hides, sharing, and feeding and clothing our families and communities are highly specialised. But these roles are also flexible, depending on circumstances and individual gifts or powers. Everyone in our communities should be respected for their contributions in maintaining practices and spirituality in relation to caribou.

YOUTH

Youth also have important roles to play as caribou stewards. We have listened to the stories from our Elders, we remain connected to our caribou cultures, and so we have a strong desire and inherent right to have a say in how our futures will take shape. We are excited about the possibility that Guardian programs could be a way of mobilizing youth; we want to be of service to our community and continue to build our abilities as leaders. We see potential when we come together and cooperate respectfully, but we need to act now. We need continued support and encouragement from our Elders to do this. Share your teachings. Help us to further our education, knowledge and skills.

INDIGENOUS KNOWLEDGE

Our knowledge and wisdom are embedded in the land and our stories are as relevant today as they were thousands of years ago. It is challenging for non-Indigenous people to understand these keys to our cultures. We are also learning, as we renew our traditional relationships to the land, the animals, and our ways of life. We invite others to accompany us, to learn from the land the way we do, and really listen to our stories, as they teach us not only about survival, but about how to understand ourselves and make good decisions as human beings. Together, we can gain wisdom as we learn to see through each other's eyes.

TIME FOR ACTION

We are past the time for talk and ready to work collectively to sustain this sacred relationship with caribou for future generations. We have developed eight ***Calls to Action*** that can guide each individual in ways to take responsibility within their personal and professional life to create the space that is needed.

Indigenous Calls to Action for Caribou

INDIGENOUS TALKING CIRCLE

WORKING TOGETHER
17th NORTH AMERICAN CARIBOU WORKSHOP
2018
Ottawa

Draft for discussion - October 22, 2018

As Indigenous Peoples and non-Indigenous Canadians are coming to terms with the dark parts of our history and taking steps towards **DECOLONIZATION** and **RECONCILIATION**;

We recognize that our shared landscapes and waters are increasingly unhealthy and some of our most valued animal relations are **UNDER THREAT**;

We take this opportunity to provide principles and actions that will help create an **ETHICAL SPACE** for working together;

A way of **MOVING FORWARD** that will support, reinforce and celebrate the diversity we bring through our differing cultural practices, beliefs and knowledge systems;

And builds on the strengths of both Western and Indigenous Knowledge systems to find new **SOLUTIONS** for caribou;

In order to achieve better **RELATIONSHIPS** amongst and between Indigenous Peoples and non-Indigenous Canadians that are based on a foundation of mutual **RESPECT**;

In the spirit of the Truth and Reconciliation Commission, and as a means of furthering and **MOVING BEYOND** those Recommendations, we call upon NACW participants and their affiliated organizations to take the following actions:

1. *CONSERVATION*

Support Indigenous-led conservation and stewardship initiatives in which Indigenous leaders, experts and community members have a defining role in protecting and conserving cultural keystone species like caribou, in ways that are based on the principles, values, laws, and protocols inherent in Indigenous cultures and knowledge systems.

2. *CULTURE*

Recognize and make room for the full expression of distinct cultural and socio-economic elements that characterize Indigenous Peoples' worldviews, including critical components such as deep spiritual connections to the land, a profound responsibility and respect towards animals like caribou, and all aspects of how we maintain our relationships with those animals, including harvesting.

3. *WELL-BEING*

Expand stewardship and conservation goals to include a more holistic definition of well-being that includes not just the health of caribou, but the health of our relationships with caribou, the land and each other. This encompasses our cultural, social, physical, mental and spiritual well-being.

4. *GOVERNANCE*

Uphold commitments to conservation in ways that elevate Indigenous rights, title and responsibilities and support cultural continuity on our lands and waters through acknowledging international agreements that are already in place, as well as embracing new initiatives that move a fuller understanding of Indigenous stewardship forward and are inclusive of all ages and genders.

5. *ECONOMICS*

Acknowledge, support and enable sustainable, mixed and/or land-based Indigenous economies and increasing stewardship opportunities so that our communities can renew and continue to uphold our relationships with each other, the land, animals like caribou, and our chosen ways of life.

6. *EDUCATION*

Assist in diversifying educational approaches and programs by supporting Indigenous language revitalization and the intergenerational transfer of knowledge, and by promoting respect for and restoration of Indigenous Knowledge systems, including land-based learning and Indigenous languages.

7. *RESEARCH*

Respect Indigenous systems regarding appropriate behaviours in knowledge acquisition, through the use of non-invasive research and monitoring techniques, and provide technical and financial support for research questions that are prioritized by Indigenous Peoples.

8. *COLLABORATION*

Create partnerships with Indigenous People on a basis of mutual respect and equality that do not perpetuate the imposition of foreign models or perspectives onto us, our knowledge or belief systems.

ʔehdzo Got'ı̨nę Gots'ę́ Nákedı

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Daniel Shewchuk, Chair
Nunavunmi Anngutighatigut Aulapkaijitkut Katimajiat
Nunavut Wildlife Management Board

Delivered via email

February 10, 2020

RE: ***Information Requests*: Nunavut Wildlife Management Board In-person Public Hearing to Consider the Government of Nunavut's Proposal to Modify the Total Allowable Harvest of Bluenose East Caribou From 340 to 107 and to Establish a Male-Only Harvest Non-Quota Limitation (NWMB Bluenose East Hearing)**

Dear Mr. Shewchuk:

The ʔehdzo Got'ı̨nę Gots'ę́ Nákedı (Sahtú Renewable Resources Board – SRRB) is thankful for the opportunity to contribute to – and learn from – the NWMB's Bluenose East Hearing on March 2-3, 2020. I will be attending on behalf of the SRRB. The SRRB would like to request some additional information as we prepare our written submission for the February 14 deadline, as follows:

1. Submissions are required in Inuktut language (and we understand if they're more than 10 pages, a summary only is required). We'd be grateful for some additional details to help us appropriately address this requirement:
    - Can you clarify whether the dialect should be Innuinaqtun since we understand this to be the dialect of the primary concerned community, Kugluktuk?
    - Must the translation be provided by the February 14 deadline for submissions? We are concerned about timing, since our Board will be meeting to discuss our submission immediately prior to the deadline (February 11-13). This does not leave much time for writing the submission, let alone translation.
    - Do you have a contact list or a recommendation for an individual who would be able to provide the required translation?

2. We have reviewed the Public Registries for the Bluenose East and Bathurst Hearings. With respect to the Bluenose East Hearing, is evidence provided for the Bathurst Hearing by the February 14 deadline also considered as part of the Bluenose East Hearing Record? We are interested in this because we note that five recognized Parties (the Government of Nunavut, the Kugluktuk Angoniatit Association. the Kitikmeot Inuit Association, the Kitikmeot Regional Wildlife Board, Nunavut Tunngavik Incorporated) share jurisdiction with respect to both herds, and thus perspectives with respect to one herd may be relevant to the other.

3. The NWMB's letter of October 7, 2016 regarding decisions concerning Bluenose East caribou harvest management includes two decisions that appear to provide relevant context for the 2020 NWMB Bluenose East Public Hearing, namely:

   3) Recommend that the Kitikmeot Regional Wildlife Board, Government of Nunavut Department of Environment and affected Hunters and Trappers Organizations, with assistance - as deemed necessary or advisable - from other qualified organizations and/or relevant Qaujimaniliit, complete the development of the draft Bluenose East Caribou Management Plan - including careful consideration of a potential predator control program - by no later than the end of September 2017; and

   4) Upon submission of the completed draft Bluenose East Caribou Management Plan for approval by the NWMB pursuant to the Nunavut Land Claims Agreement Sections 5.2.34(d)(i) and 5.3.3, promptly hold a public hearing in the Kitikmeot Region - ideally in the community of Kugluktuk - in order to make a decision or decisions concerning the ongoing harvest management regime for the Bluenose East caribou herd in the Nunavut Settlement Area.

   These two decisions are reflected in other evidence currently on the registry, namely the presentation of a plan by the Kugluktuk Hunters and Trappers Association (Kugluktuk Angoniatit Association) in the 2016 Hearing Transcript, and a reference to a planning process in the Government of Nunavut's (GN's) proposal to and accepted by the NWMB. Would it be possible for the full 2016 decision document to be available as part of the 2020 Bluenose East Hearing public record as context for submissions by the Parties?

4. The Government of Nunavut's (GN's) submission to the NWMB, provided with the December 13, 2019 letter of invitation to the NWMB Bluenose East Hearing, makes reference to the community-based management plan for the Bluenose-East herd developed by the Kugluktuk Hunters and Trappers Organization (HTO) and being finalized in collaboration with GN, with the intention of submitting a revised version by December. That document also summarizes key messages from the GN's community engagements (also documented in the HTO Consultations Report Bluenose East Caribou Management Recommendations, February-October 2019), to the effect that "some community members feel that there should not be any harvest restrictions for Kugluktuk harvesters of the BNE herd, and that the harvest could be managed through a community based management plan." The SRRB requests additional

details about how the GN's recommendation for harvest management (reduction of the TAH to 107) accommodates the input provided in community engagement and the collaborative planning process with Kugluktuk HTO.

Thank you for considering these information requests. We look forward to your response. Please don't hesitate to contact me if you have any questions about the requests.

Máhsı cho,

Deborah Simmons
Executive Director

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Nunavunmi Anngutighatigut Aulapkaijitkut Katimajiat
Nunavut Wildlife Management Board

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Tammaqtailinahuarniriit anngutighat atuqhugit Inuit qaujimajatuqangillu ilihimaniillu ilitquhiannin
Conserving wildlife through the application of Inuit Qaujimajatuqangit and scientific knowledge

Deborah Simmons
Executive Director
Sahtú Renewable Resources Board

February 12, 2020

RE: Response to your Information Request Sent to the Board on February 10, 2020

The Nunavut Wildlife Management Board (NWMB or Board) looks forward to the Sahtú Renewable Resources Board (SRRB) participation at the NWMB's upcoming public hearing on Bluenose-east caribou. Please find brief replies to your questions below.

<u>Inuktut and Inuinnaqtun translations</u>
The NWMB conducts its proceedings in both English and Inuktut. As this hearing will take place in a region where Inuinnaqtun is spoken, the NWMB will accept submissions in Inuinnaqtun. The SRRB may choose to provide submissions in both Inuktitut and Inuinnaqtun. If this is not possible, translations in one of Inuktitut or Inuinnaqtun will be acceptable. Please note that the NWMB will be providing simultaneous Inuktitut and Inuinnaqtun interpretation during the hearing.

There is a company that advertises in Nunatsiaq News called Parenty Reitmeier. They advertise that they provide translation services in both Inuktitut and Inuinnaqtun. Note the NWMB does not endorse or recommend Parenty Reitmeier, nor can we comment on the quality of their work.

<u>Submission deadline</u>
In order to satisfy our internal processes, we set a deadline for submissions of 5 p.m. Eastern Time on Friday, February 14. We are willing to accommodate receipt of SRRB submissions until 9 a.m. Eastern Time on Monday, February 17 considering the circumstances described in your letter. For the translated copy, please have it to the Board by February 21 by 5 p.m. Eastern Time.

<u>Sharing submissions between Bathurst and Bluenose-east hearing registries</u>
Submissions provided for the Bathurst caribou hearing will not be considered as part of the Bluenose-east caribou hearing record, and vice versa, unless parties provide their written submissions to both hearings. Submissions for both hearings are due by February 14. We understand that parties that use or manage both herds may have similar perspectives, but the NWMB's decisions about the Bluenose-east caribou total allowable harvest (TAH) and non-quota limitation (NQL) will be based on written and oral evidence (and arguments) provided during the Bluenose-east hearing only.

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<u>NWMB's letter of October 7, 2016</u>
The focus of the March 2-3, 2020, hearing in Kugluktuk is to consider the Government of Nunavut's (GN) proposal to modify the TAH of Bluenose-east Caribou from 340 to 107 and to establish a male-only harvest NQL. All submissions for the hearing, as well as other documents deemed relevant by the NWMB, will be made publicly available through the hearing registry.

<u>The NWMB hearing and the Kugluktuk community management plan</u>
Here is a short summary of recent developments in NWMB decision-making processes regarding the Bluenose-east caribou.

In June 2019, The Kugluktuk Angoniatit Association (KHTO) submitted a community caribou management plan (the Plan) for the Bluenose-east herd to the NWMB. The Board determined that additional information was needed and advised the KHTO to collaborate with the Government of Nunavut, the jurisdictional authority in this situation, and Nunavut Tunngavik Inc. to update the Plan. In December 2019, the KHTO and the Government of Nunavut (GN) informed the NWMB that they were working together to update the Plan. The NWMB will consider the Plan when it is resubmitted.

In December 2019, the GN submitted a proposal to change the harvest management of the Bluenose-east caribou herd (TAH & NQL) to the NWMB. The Board decided to hold an in-person public hearing in Kugluktuk to gather more information from Inuit, co-management partners, and other stakeholders prior to making a decision.

As a party to the Bluenose-east hearing, the SRRB will have the opportunity to seek any additional clarification from the GN about its recommendation for harvest management and plans to accommodate input provided by the community.

Sincerely,

Jason Akearok

Jason Akearok
Executive Director
Nunavut Wildlife Management Board

cc. Nick Sowsun, Legal Counsel, Sahtú Renewable Resources Board
Denis Ndeloh, Wildlife Director, Nunavut Wildlife Management Board
Bruce McRae, Legal Counsel, Nunavut Wildlife Management Board.

Délı̨nę Got'ı̨nę Government

Belare Wíle Gots'ę́ ʔekwę́ – Caribou for All Time

A Délı̨nę Plan for Neregha ʔekwę́ (Bluenose East Caribou)

Submitted by Walter Bezha
to the Nunavut Wildlife Management Board
Bluenose East Hearing
February 17, 2020

Background

This submission was prepared by the Délı̨nę Got'ı̨nę Government as a pre-Hearing submission to the Nunavut Wildlife Management Board (NWMB). The submission addresses the four key topics prioritized by the NWMB in its February 4, 2020 updated invitation to the Hearing.

Status of Neregha ʔekwę́ (Bluenose East Caribou)

My grandfather would not say anything about the status of caribou, he would be so sad. My people are no longer seeing ɂekwę́ (barren-ground caribou) in our traditional area. The saddest time is Christmas when we are no longer able to celebrate with feasting on caribou meat. For this reason, the community of Délı̨nę has agreed with the ACCWM (Advisory Committee for Cooperation on Wildlife Management) that Neregha ʔekwę́, the main herd that we have survived with, is now in the Red Zone (low and declining). Our community has harvested no Neregha ʔekwę́ for two years now. We are so concerned about ɂekwę́ that we developed a community conservation plan, *Belare Wíle Gots'ę́ ʔekwę́ – Caribou for All Time*, which includes a wide range of conservation measures. The elders tell us that if we behave appropriately, the caribou will come back.

Government of Nunavut's Harvest Regulation Proposal

Délı̨nę's comments on the Government of Nunavut (GN) harvest regulation proposal address the two parts of the proposal: Total Allowable Harvest (TAH) and male-only Non-Quota Limitation (NQL).

Total Allowable Harvest

The GN is proposing a reduction of Nunavut's TAH for Bluenose East Caribou from the allowance determined in 2016. GN mentions that they have been working with the Kugluktuk Angoniatit Association (KAA - Hunters and Trappers Organisation) on a conservation plan. We note that this plan was presented at the NWMB's 2016 Bluenose East Hearing. However, there is no reference to the relationship between the KAA's plan which we understand is already being implemented, and the GN's recommended harvest regulation measures. We find it very difficult to assess the GN's proposal without this important contextual information about the role of the community in caribou conservation.

We understand that some community members consider the plan to be an alternative to a Total Allowable Harvest, as noted in the GN's submission, but there is no discussion about why the GN has not accounted for this fact in arriving at their recommended TAH. Délı̨nę's *Belare Wíle Gots'ę́ ʔekwę́* planwas approved in 2016 as an alternative to a TAH in the Sahtú Region, given evidence that it provides for conservation measures that are as effective as or better than a TAH.

Male-Only Harvest

The GN is proposing a male-only NQL caribou harvest. Délı̨nę's *Belare Wíle Gots'ę́ ʔekwę́* plan contrasts with this in proposing a majority yárégo (smaller male) harvest, recognizing the importance of a small tsída gha máhsı ts'enı̨we (ceremonial female harvest) for the spiritual and cultural well-being of the community, especially our elders. The GN's submission notes that community members made a strong case for the importance of a female harvest for cultural and food security reasons. Délı̨nę is concerned that GN's proposed male-only harvest makes no allowance for this evidence provided by the community. Délı̨nę would benefit from learning more about the community knowledge regarding the potential biological and cultural impacts of a male-only harvest.

Dene Náowerǝ́ (Knowledge)

In this section, I describe the approach taken in Délı̨nę's *Belare Wíle Gots'ę́ ʔekwę́* plan from a Dene Náowerǝ́ (Knowledge) point of view.

The Délı̨nę plan addresses the following questions: What is the best way to rebuild our relationships with caribou, and in doing rebuild our relationships with other neighbours who share with us in caribou stewardship? How can we rebuild the relationships with caribou that our people had before contact?

While we all may think that we have some relation with wildlife, the tide, shifted to co-management board making decisions within our respective traditional areas usually supported by our governments of the day.

So much have changed the way we harvest today, and it is today that we bring forth the way our people have lived with the wildlife, the way our grand parents shared on our land. For thousands of years, they lived and shared on the land without interfering in the natural cycles of the land, without changing the ecosystems, without wiping out species and yet we are challenged today to follow their example.

The very principles that they lived by are the principles we all must follow to rebuild normal populations of wildlife and live as part of the environment not masters of it. What follows is an overview of our planning approach:

1) ***Harvest only what the land and water provides or makes available.*** This is a translation and statement of "Dene definition of Conservation." Why would you harvest wildlife or fish that is not available. (Example: present state of BNE caribou herd) There are many definitions of conservation. One can be found in our own land claim. It comes from this process and is guided by other definitions in Canada.

    All though it is simple it makes all the difference in an environment that is cold, we are cold climate people. That means that energy expanded to harvest must be kept as low as possible to get what we need. A very good example of this is the fact that our people did not go out in high winds and extreme cold weather to harvest. Yes, hunting moose, one may go out and hunt, but rare. People constantly moved around nomadic, this was to harvest in all areas on an equal basis, so that we do not deplete an area of all wildlife and fish. The book *As Long As This Land Shall Last* by Rene Fumuleau taught me that. I read the book many times before I realized why our people frowned on the way Métis harvested muskrat in the thirties, they were harvesting everything and not leaving any for future replenishments. Too often these are occurring without our knowledge, until it is too late. These practices in many cases in the pass have occurred, to hunt for the whole community, not individual. That is very different.

2) ***Harvest and Hunt like your Grandfathers and Grandmothers.*** I talk here about my own history of conservation education, as child by the time you are 12 years old, you learn not kill wildlife with clubs, Dene are humane people and they take pride in themselves to keep that way. You are taught to kill each animal humanely. To skin the most efficient methods and butcher in a manner that fits the situation. All Grandmothers make sure that all is used and preserved.

3) ***Respect all wildlife, land and water.*** This is the center of all other principles, that your goal on the land is to be Dene, that “Dene ts'įlį” (identity or way of life) is what you want. This means that you treat all things equally with respect to allow you to be part of the environment. You ask to be treated with fairness and not brought into a position of opposition. All is part of the environment, and you ask, and sometimes we do by symbol of giving. We cannot legislate this …. We can only teach it. The greatest respect is not to allow the blood of animals to drip anywhere but the kill site. Respect is part of everything you do as a hunter and harvester.

4) ***Sharing has been the basic common action an individual does when they harvest wildlife, to give so that you in turn receive.*** This has changed a great deal in our history and we need to find ways for people, to share and assist for the benefit of all. There are many ways we can share and the most basic starts with families sharing. That is very evident today.

5) Recognizing people that continue to practice these principles, that has been weak in our communities, we must find ways to ***celebrate and give thanks to those people that contribute in a significant way to our Dene conservation.*** That they are recognized, in this way we give guidance to others that would follow, our younger harvesters, they too must look forward too something.

6) ***Harvester Gatherings*** have always been part of history, when these events occurred in our history, all information about land, wildlife and water were shared and exchanged so that people made decisions about where they would go to harvest the following year. This has been poor in our communities today, we can do better, and have events in conjunction with celebrations to honour our harvesters and land.

7) One of the best ways to respect environment is to ***be out there on the land,*** this has been a challenge for our leadership and this year plans are underway to visit all our land once a year. Huge camps around the lake has been a big part of getting our people back on the land. Traditional Trade, what ever happen to this, this happens in a very small scale today. We can give that a boost, sharing available resources with each other can go a long way to limit use of unavailable species.

8) Wildlife Harvesting decisions can be shared within all our jurisdictions to support ***one overall plan that guides all other plans, a plan for this herd to recover.*** I am seeing that harvesting will cease in Délı̨nę. Not for any other reason, except for the very fact that their numbers are very low…that means you will not see them, they are not available.
9) ***The cycle of harvesting.*** Dene Conservation means you harvest as they become available, each month, soon we would welcome the migratory birds, beaver, muskrats and spawning fish.

10) ***Make these resources available*** though our plans to provide these products packaged and ready to use by our people, using our mobile butcher shop.

11) ***Délı̨nę's Tsá Túé Biosphere Reserve*** provides for the understanding that Délı̨nę is on a path of sustaining its resources. The Water Conference held in Délı̨nę in 2013 reaffirms the visions of our ancestors. David Suzuki celebrated our approach with these words to this effect: *Continue what you are doing as a people of Great Bear Lake. You can still drink the water below your houses today, I can not add any more; you tell me what you are doing to conserve the land and water.*

12) ***Indigenous Protected and Conserved Areas project.*** This project allowed Délı̨nę to pursue and study further strategies in Sahtú watershed protection. We are moving forward on legislating "Dene Environmental Protection Laws." We are undertaking research on making Sahtú a legal person, to demonstrate how Dene Concepts of conservation have achieved true conservation. Studies and reviewing all protection laws in Canada and now other countries that have laws on (making a river a person), gives the Délı̨nę Got'ı̨nę Government comfort in progressing to an overall protection measure using all these tools to make decisions that would balance conservation and development.

13) ***The Sahtú Land Use Plan*** provides for the protection of Caribou Point for the use as habitat for caribou. As well as provide under the plan as to how the Sahtú watershed is protected to the extent of their authority.

14) ***The visions of our Grandfathers and Grandmothers*** are the guiding light, our language provides for true conservation interpretations and we have no major development since Port Radium (closed 1982) and Terra Mines (Closed 1982). Our Délı̨nę Got'ı̨nę Government was established in 2018, a first "Dene Community Government" that has the power to legislate laws. We have the legal tools and instruments to make Dene Laws today, the challenge comes with what Canada can accept.

Inter-Jurisdictional Considerations

Délı̨nę has a long history of relationships with Kugluktukmuit. Délı̨nę has organised at least two overland community trips to visit our friends in Kugluktuk in the recent past, and Kugluktuk community members have made one similar journey to Délı̨nę. These journeys were important in commemorating shared histories of caribou stewardship dating back many generations. Our parents still remember meeting Kugluktukmuit at ʔehdaı̨la (Caribou Point) on Sahtú (Great Bear Lake), and some of them even learned to speak Inuinnaqtun language. We believe strongly that community-to-community dialogue needs to be renewed in order that we are able to learn from our respective experiences in caribou stewardship. This is especially important now that we are both working to implement community caribou conservation plans.

Conclusion

The Délı̨nę Got'ı̨nę Government is grateful to be able to participate in the Bluenose East Hearing hosted by the NWMB in the community of Kugluktuk. We believe that we all share the same caribou conservation goals. By working together, we can build a strong coordinated plan for caribou conservation.

Deline Renewable Resource Council

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drrc_manager@gov.deline.ca

Dear Mr. Jason Skearok,

Please except our apologies for missing the February 14, 2020 submission deadline. As well as the February 17, deadline.

The day After our Elders Council meeting of Wednesday February 12, 2020, being the only person responsible for the office of the Deline Renewable Resources Council I had fallen ill with a bronchial and stomach infection and was not able to return to work until yesterday morning for a couple of hours to expedite a submission for the Deline Renewable Resources Council to meet the deadline of February 17, 2020.

Unfortunately, I was not able to accomplish a written submission within the time frame allocated due to unknown virus and was told to go home by our Director.

The ʔehdzo Got'ı̨nę (Renewable Resources Council) feels that the Délı̨nę Got'ı̨nę Government's submission Submitted by Walter Bezha to the Nunavut Wildlife Management Board Bluenose East Hearing on February 17, 2020 is in support of the Délı̨nę Got'ı̨nę Government's submission and send my apologies for missing the submission deadline.

Respectfully,

Edward Reeves

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February 14, 2020

Nunavut Wildlife Management Board
P.O. Box 1379
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Intervention Submission: NWMB Public Hearing to Consider a Modification of the Total Allowable Harvest for Bluenose East Caribou Population

The Yellowknives Dene First Nation (YKDFN) is pleased to provide this written intervention to the Nunavut Wildlife Management Board (the Board) regarding the proposed change in total allowable harvesting of Bluenose East Caribou.

Since time immemorial, generation after generation of the Yellowknives Dene have harvested and survived from the Caribou Herd. The Herd has provided us the sustenance we required to survive, especially in times of need when food was scarce. They are our lifeline to the land, they are our lifeline to our ancestors, and they are our lifeline to the creator. Today, the population of the Bluenose East Caribou is at an all-time low. We have never seen such low numbers. This is an unprecedented crisis and action must be taken by all parties to ensure the survival of the herd.

According to our Elders, the Yellowknives Dene and the Caribou have survived as one since creation. During the summer months we would survive on fish, plants, and berries around the Yellowknife area until fall time when ice begins to form. We relied on the Caribou to arrive in the early winter to begin our annual migration up to the Barren Lands (present day Nunavut). After following the herd north into the Barren Lands, we would survive until springtime, then make our way back south of the tree line. This harvesting migration is how we lived our nomadic lifestyle, and it's derived from the caribou migration.

Our traditions and cultural practices have been shaped by the Caribou. One of our most significant traditional objects is our drum. It's created from the hide of the Caribou, along with the sinew. The drum provides us with a connection to the Creator and has guided us spiritually from generation to generation. Many of our tools come from the bones of the Caribou. Our clothing for warmth and protection came from the Caribou's hide and sinew as well. These items have provided us with the necessities of survival.

Each part of Caribou has a use, and nothing is wasted. We take special care in ensuring that the life the Caribou has given us is used entirely. Much of who we are would have ceased to exist had it not been for the caribou to guide us.

As I'm sure the Board is aware, we, the Yellowknives Dene have overlap in land use and have formed long-standing relationships with our Inuit neighbors. This overlap is evident from the place names of lakes and areas presently in the Nunavut Territory. Contwoyto Lake for example is a Chipewyan word, given from our Dene ancestors.

The Dene people share with the Inuit a great respect for the animal that has kept us all healthy for generations. Now we must stand together to protect them, just as they have protected us. It is of the utmost importance to protect the Bluenose East Caribou Herd for both the future generations of Dene and Inuit.

Through our mutual relationship with caribou, both Dene and Inuit are rights-bearing Indigenous peoples with constitutionally protected relationships to the Caribou. We understand the difficulty in food security this proposed change may create for residents of Nunavut, and we know the Board will listen carefully to the thoughts of the Inuit and the Dene on this proposal.

It is our understanding that some of the total allowable harvest of Bluenose East Caribou of 193 bulls is used for big game hunting, including trophy hunting. This number must be reduced to 0. The YKDFN cannot support this unnecessary form of harvesting. We ask the Board to consider only allowing harvesting for sustenance as an immediate action. We look forward to reassessing and increasing the harvest of Bluenose East Caribou in the future when their population increases. However, the generation of today must protect the herd for the generation of tomorrow.

We reiterate the importance of Caribou and the absolute necessity to ensure their survival for the future generations. However, it is well known that Dene and Inuit harvesting is not the root cause of the decline of the Bluenose East Caribou herd. Changes in the Indigenous harvesting will not reverse the decline of the herd. Nonetheless, present day harvesters are limiting their traditional activities based on the necessity to protect the herd.

The YKDFN would greatly appreciate the Boards involvement in reducing disturbance to the Bluenose East Caribou regarding development projects proposed within both jurisdictions (Nunavut and NWT) as they will contribute to cumulative effects across the Bluenose East Herd range. It is all party's responsibility to ensure the Bluenose East Caribou recover; as such, industry must pay the toll that Traditional Harvesters continually have to pay. There must be action on all fronts to reduce the disturbance to the Bluenose East Caribou.

In addition to working with industry, we request the Board to continue to advocate for protection and perseverance of the Bluenose East Caribou herd with other Government of Nunavut (GN) agencies and public institutions such as the Nunavut Impact Review Board (NIRB). The YKDFN will continue to seek protection for the herd across its range, especially in the Northwest Territories.

To better mitigate the consequences of restricting harvesting and to ensure the protection and conservation of the Bluenose East Caribou Herd, the YKDFN would be pleased to meet with Nunavut and Northwest Territories rights holders and the respective Nunavut and Northwest Territories Governments and Industry to discuss potential traditional and scientific solutions to achieve these goals as a consortium. We also believe that by having ongoing Nation-to-Nation and inter-territorial meetings we would be able to join insights otherwise unavailable to us working independently. We look forward to initiating regular meetings to this end.

In addition to having meetings on harvesting and conservation, the YKDFN would like to support cultural exchanges between our peoples. The Dene and Inuit have lived side by side for many generations and historically we would exchange cultural items of significance. We are hopeful that we can build a stronger relationship between our peoples by reviving these activities in near future.

The Yellowknives Dene thank the Board and the other Intervenors for their time and effort in making a very important decision. The outcomes of the decisions we make today will have a significant impact on our future generations. As such, we trust that the board will stand true in preserving such a critical resource.

Mahsi Cho (Thank You),

CEO Jason Snaggs,
Yellowknives Dene First Nation

Chief Ernest Betsina
Yellowknives Dene First Nation

Cc.
Jason Snaggs, CEO, YKDFN
Johanne Black, Director of Governance, YKDFN
Sarah Gillis, Director Environment and Wildlife, YKDFN
William Lines, Community Liaison and Technical Advisor, YKDFN

ᑐᓴᕐᑎᑦᑎᔾᔪᑎᑦ ᓄᓇᕗᒻᒥ ᐆᒪᔪᓕᕆᔨᕐᔪᐊᑦ ᑲᑎᒪᔨᖏ ᓵᖓᖅᑎᕇᓪᓗᑎᒃ
ᐃᓄᓕᒫᓂᒃ ᓈᓚᓪᓗᑎᒃ

ᑐᓴᕐᑎᑦᑎᔾᔪᑎᕗᑦ ᑎᓯᐱᕆ 13, 2019 ᑖᒃᑯᐊ ᓄᓇᕗᑦ ᐆᒪᔪᓕᕆᔨᕐᔪᐊᑦ ᑲᑎᒪᔨᖏᑦ ᐃᓱᒪᓕᐅᕆᓂᐊᖅᑐᑦ ᓵᖓᖅᑎᖅᑲᖅᑐᑎᒃ ᖃᐃᑎᑦᑎᓯᒪᓗᑎᒃ ᐃᓄᓕᒫᓂᒃ ᓈᓚᒃᓗᑎᒃ ᐃᓱᒪᒋᔭᐅᖁᔪᓂᑦ ᓄᓇᕗᑦ ᓴᕙᒃᑯᑦ-ᐊᕙᑎᓕᕆᔨᒃᑯᑦ ᐱᓕᕆᕝᖓᑦᑕ *ᑐᒃᓯᕋᐅᑖ ᓄᓇᕗᒻᒥ ᐆᒪᔪᓕᕆᔨᕐᔪᐊᑦ ᑲᑎᒪᔨᖏᓐᓄᑦ ᐃᓱᒪᓕᐅᕆᖁᔪᓂᑦ ᒥᒃᓵᒋᐊᖅᑕᐅᖁᔪᓂᑦ ᑐᒃᑐᑕᐅᔭᓐᓇᖅᑐᑦ ᖁᖓᐅᑉ ᑲᓇᖕᓇᖕᒐᓂ ᑐᒃᑐᐃᑦ ᑕᒡᕙᖕᒐᑦ 340 ᑕᒡᕗᖓ 107 ᐊᒻᒪᓗ ᐋᕿᒃᓯᒧᑎᒃ ᐊᖑᓇᓱᖕᓂᕐᒧᑦ ᒪᓕᒐᖅᑲᖅᓱᑎᒃ* ᑖᔅᓱᒧᖓ ᓈᓚᖕᓂᖅᑲᖅᓱᑎᒃ ᑲᑎᒪᔫᖅᑐᑦ ᐃᓂᓕᐅᖅᓯᒪᕗᒍᑦ ᑕᐃᑲᓂ ᖁᕐᓗᖅᑑᖅ, ᓄᓇᕗᑦ ᑕᐃᑲᓂ ᖁᕐᓗᖅᑑᖅ ᐱᖕᖑᐊᕐᕕᖕᒐᓂ ᒫᔾᔨ 2-ᒥᑦ 3-ᒧᑦ, 2020, ᐱᒋᐊᕐᓗᑎᒃ 9:00 ᐅᓪᓛᒃᑯᑦ ᑎᑭᓪᓗᒍ 5:00 ᐅᓐᓄᒃᑯᑦ ᖃᐅᑕᒫᑦ. ᐅᑯᐊ ᓄᓇᕗᒻᒥ ᐆᒪᔪᓕᕆᔨᕐᔪᐊᑦ ᑲᑎᒪᔨᖏᑦ ᑲᑎᒪᑎᑦᑎᔪᓐᓇᕐᒥᔪᑦ 7:00 ᐅᓐᓄᒃᑯᑦ ᑎᑭᓪᓗᒍ 9:00 ᐅᓐᓄᒃᑯᑦ ᐅᕝᕙᓘᓐᓃᑦ ᐊᑯᓂᐅᒃᑲᓂᕈᓐᓇᖅᑐᑦ ᑎᑭᓪᓗᒍ ᐅᓪᓛᖑᓄᑦ ᒫᔾᔨ 4, 2020, ᑕᐃᒪᓐᓇᐅᓯᓇᐊᖅᐸᑦᑕ.

ᑐᒃᓯᕋᐅᑎᑦ ᐊᒻᒪᓗ ᐊᓯᖏᑦ ᑎᑎᖅᑲᑦ ᐊᑑᑎᖅᑲᖅᑐᑦ ᑕᒡᕗᖓ ᓈᓚᖕᓂᕐᒧᑦ ᐊᑐᐃᓐᓇᐅᔪᑦ ᖃᕆᓴᐅᔭᒃᑯᑦ ᐃᓕᔭᓐᓇᖅᑐᑦ ᑕᐃᑲᖓᑦ ᓄᓇᕗᒻᒥ ᐆᒪᔪᓕᕆᔨᕐᔪᐊᑦ ᑲᑎᒪᔩᑦ ᖃᕆᓴᐅᔭᒃᑯᑦ ᑐᑭᓯᒋᐊᕐᕕᖓᓂ (www.nwmb.com), ᐅᕝᕙᓘᓐᓃᑦ ᐅᖃᖅᑲᑎᒋᓗᒋᑦ ᓄᓇᕗᒻᒥ ᐆᒪᔪᓕᕆᔨᕐᔪᐊᑦ ᑲᑎᒪᔩᑦ ᑎᑎᕋᖅᓯᒪᔪᑦ ᐅᖃᓘᑎᖏᓐᓄ ᐊᑖᓂ ᑕᕝᕙᓂ ᑐᓴᕐᑎᑦᑎᔾᔪᑕᐅᔪᒥ.

ᑎᑎᖅᑲᓂᒃ ᑐᓂᓯᔭᕆᐊᖃᖅᐳᓯ:

ᐅᑯᐊ ᓄᓇᕗᒻᒥ ᐆᒪᔪᓕᕆᔨᕐᔪᐊᑦ ᑲᑎᒪᔩᑦ ᐃᓇᑦᑎᕗᑦ ᖃᐃᖁᔨᕗᑦ ᐊᐅᓚᑦᓯᔨᓂᒃ ᐅᕝᕙᓘᓐᓃᑦ ᐃᓄᑐᐃᓐᓇᓂᒃ, ᑖᒃᑯᐊᓗ ᐃᓚᒋᔭᐅᓗᑎᒃ ᐃᓄᑐᐃᓐᓇᐃᑦ, ᑎᑎᖅᑯᓯᑦ ᑭᐅᓯᔾᔪᑎᑦ ᑐᓂᔭᐅᓗᑎᒃ ᐊᒻᒪᓗ ᐃᑲᔪᖅᓯᖅᑐᑦ ᑎᑎᖅᑲᑦ ᐱᔾᔪᑎᒋᓗᒍ ᑐᒃᓯᕋᐅᑎ ᑎᑭᐅᑎᓚᐅᓐᖏᓐᓂᓗ **<u>5:00 ᐅᓐᓄᒃᑯᑦ ᐃᖅᑲᓗᐃᑦ ᓯᕿᓐᖑᔭᖓᑦᑎᒍᑦ ᕕᕝᕗᐊᕆ 14, 2020.</u>** ᑭᓯᐊᓂ ᐱᔾᔪᑎᖃᖅᑎᐊᖅᐸᑕ ᑎᑎᕋᖅᓯᒪᓗᑎᒃ ᑭᖑᕙᖅᓯᒪᒐᓗᐊᖅᑐᑎᒃ ᑐᓂᓯᔪᓐᓇᖅᑐᑦ ᑲᑎᒪᔨᓄᑦ, ᐅᑯᐊ ᓄᓇᕗᒻᒥ ᐆᒪᔪᓕᕆᔨᕐᔪᐊᑦ ᑲᑎᒪᔩᑦ ᐃᓱᒪᓕᐅᕈᑎᒋᓂᐊᖅᑕᖏᑦ ᑎᑎᖅᑲᑦ ᑕᒡᕗᖓ ᓈᓚᖕᓂᕐᒧᑦ ᑐᓂᔭᐅᓯᒪᔪᑦ ᑭᖑᕙᖅᓯᒪᒃᐸᑕ. ᐅᑯᐊ ᓄᓇᕗᒻᒥ ᐆᒪᔪᓕᕆᔨᕐᔪᐊᑦ ᑲᑎᒪᔩᑦ ᐃᓄᓕᒫᓄᑦ ᐊᑐᐃᓐᓇᐅᑎᓐᓂᐊᖅᑕᖏᑦ ᑕᒪᕐᒥᒃ ᑎᑎᖅᑲᑦ ᑐᓂᔭᐅᔪᑦ, ᐊᑑᑎᖅᑐᒥᒃ ᒪᓕᒃᓯᒪᓂᐊᖅᑐᑦ ᑲᖑᓇᖅᑐᓕᕆᓂᕐᒧᑦ ᒪᓕᒐᕐᓂᒃ.

ᐃᒪᓐᓇ ᑐᓴᒐᒃᓴᑲᓐᓂᕐᓂᒃ ᐱᔪᒪᒍᕕᑦ:

ᑐᑭᓯᑎᑕᐅᑲᓐᓂᕈᒪᓗᑎᑦ ᐱᔾᔪᑎᒋᓗᒍ ᑎᑎᕋᓚᓂᖅ ᑐᓂᓯᓂᕐᒧᑦ ᐅᕝᕙᓘᓐᓃᑦ ᑎᒍᓯᓂᕐᒧᑦ, ᐅᕝᕙᓘᓐᓃᑦ ᒪᓕᒋᐊᓕᑦ ᐊᑑᑎᖅᑐᑦ ᑕᐃᑲᓃᑎᓪᓗᑎᑦ ᐃᓄᓕᒫᓂ ᓈᓚᒃᑎᓪᓗᒋᑦ, ᐊᑏ ᐅᖃᖅᑲᑎᒋᓗᒋᑦ ᓄᓇᕗᒻᒥ ᐆᒪᔪᓕᕆᔨᕐᔪᐊᑦ ᑲᑎᒪᔨᖏᑦ:

ᓄᓇᕗᒻᒥ ᐆᒪᔪᓕᕆᔨᕐᔪᐊᑦ ᑲᑎᒪᔨᖏᑦ
ᑎᑎᖅᑲᑯᕕᒃ 1379, ᐃᖃᓗᐃᑦ, ᓄᓇᕗᑦ X0A 0H0
ᐅᖃᓘᑖ: (867) 975-7300
ᓱᒃᑲᔫᒃᑯᑦ: (888) 421-9832
ᖃᕆᓴᐅᔾᔭᒃᑯᑦ: receptionist@nwmb.com
ᖃᕆᓴᐅᔾᔨᕕᖓ: www.nwmb.com

ᑎᓯᒻᐱᕆ 13, 2019

ᓱᓕᔪᕐᓇᕐᑐᖅ ᔫᓇᑕᓐ ᕗᐃᐅᑦᑭᓐᓴᓐ
ᒥᓂᔅᑕᖓᑦ ᐊᕙᑎᓕᕆᔨᑦ ᐊᒻᒪᓗ
ᓱᓚᐅᑉ ᐊᓯᔾᔨᕐᓂᖓᓂᒃ ᑲᒪᔨᑦ ᑲᓇᑕᒥ,
ᒐᕙᒪᒃᑯᑦ ᑲᓇᑕᒥ

ᓱᓕᔪᕐᓇᕐᑐᖅ ᔫ ᓴᕚᑲᑖᖅ
ᒥᓂᔅᑕᖓᑦ ᐊᕙᑎᓕᕆᔨᑦ
ᒐᕙᒪᒃᑯᑦ ᓄᓇᕗᑦᒥ

ᐊᔪᑭ ᑰᑦᑎᖅ
ᐊᖓᔪᕐᖄᖅ ᐅᕙᓂ ᓄᓇᕗᑦ
ᑐᙵᕖᒃ ᑎᒥᖓᑦ

ᐹᐸ ᑭᓕᒡᒐᓐᑌᕐ
ᐃᑦᓯᕙᐅᑕᖅ ᐅᕙᓂ ᕿᑎᕐᒥᐅᓂ
ᐆᒪᔪᓕᕆᔩᑦ ᑲᑎᒪᔨᖏᑦ

ᓚᐅᕆ ᐊᑦᔪᓐ
ᐃᑦᓯᕙᐅᑕᖅ ᐅᕙᓂ ᖁᖅᓗᖅᑐᖅ
ᐊᖑᓂᐊᑏᑦ ᑲᑐᔾᔨᖃᑎᒌᖏᑦ

ᓱᑖᓐᓕ ᐊᓇᑉᓚᒃ
ᐊᖓᔪᕐᖄᖅ
ᕿᑎᕐᒥᐅᓂ ᐃᓄᐃᑦ
ᑲᑐᔾᔨᖃᑎᒌᖏᑦ

ᒥᔅᑕ ᔫᓯᕝ ᑲᐅᕐᓄᒍᖅᑭ, ᐃᑦᓯᕙᐅᑕᖅ
Wek’èezhìi ᓄᓇᒥᐅᑕᓕᕆᔩᑦ ᑲᑎᒪᔨᖏᑦ

ᒥᔅᑕ ᔪᐊᖅᓯ ᐸ̇ᕐᓇᐸᐱ, ᐃᑦᓯᕙᐅᑕᖅ
Sahtú ᓄᓇᒥᐅᑕᓕᕆᔩᑦ
ᑲᑎᒪᔨᖏᑦ

ᒥᔅ ᔩᑦᑎ ᐱᓪᓕᔅᔾ
ᐅᖃᐅᓯᕆᐊᕐᑏᑦ ᑲᑎᒪᔨᕋᓛᑦ
ᐃᑲᔪᕐᑎᕆᓪᓗᓂ ᐆᒪᔪᕐᓂᒃ
ᐊᐅᓚᑦᓯᓂᕐᒥᒃ

ᐱᓕᕆᖃᑎᒃᑲᐃ:

ᐱᓪᓗᒍ: ᓄᓇᕗᑦᒥ ᐆᒪᔪᓕᕆᔩᑦᔪᐊᑦ ᑲᑎᒪᔨᖏᑦ ᑕᑯᓐᓇᖃᑎᒋᓪᓗᑎᒃ ᑭᒃᑯᓕᒫᓂᒃ ᓈᓚᑦᑎᓯᓂᖏᑦ ᑲᒪᒋᓗᒋᑦ ᒐᕙᒪᒃᑯᑦ ᓄᓇᕗᑦᒥ ᑐᓯᕋᐅᑎᖓᑦ ᓄᑖᙳᕆᐊᕐᓗᒋᑦ ᑲᑎᑦᑐᒋᑦ ᐊᔪᙱᑕᑦ ᐊᖑᓇᓱᒃᑕᐅᓂᕐᒥᒃ CHAᐃᕐᐸᒃ ᑲᓇᓐᓇᖓᓂ ᑐᒃᑐᐃᑦ ᐅᕙᙵᑦ 340 ᐅᕗᖓ 107 ᐊᒻᒪᓗ ᐋᕿᓪᓗᒍ ᐊᖑᑏᓐᓇᕐᓂᒃ ᐊᖑᓇᓱᓐᓂᕐᒧᑦ ᐊᖑᓇᓱᓪᓗᓂ ᒪᓕᒐᖅ.

ᖃᐅᔨᒃᑲᐅᔾᔨᒍᑦ

ᐅᕙᓂ ᑎᓯᒻᐱᕆ 13, 2019, ᓄᓇᕗᑦᒥ ᐆᒪᔪᓕᕆᔩᑦᔪᐊᑦ ᑲᑎᒪᖏᔩᑦ (ᐆᒪᔪᓕᕆᔩᑦᔪᐊᑦ ᐅᑦᑕᕗᖅᑐᓐᓃᑦ ᑲᑎᒪᔩᑦ) ᑐᓂᓯᓚᐅᕐᒪᑕ ᑭᒃᑯᓕᒫᓂᒃ ᑐᓴᕐᑎᓯᒍᒻᒥᒃ ᐃᒫᒃ ᐊᑐᕇᕐᒥᒃ ᑕᑯᓐᓇᖃᑎᒋᓪᓗᑎᒃ ᑭᒃᑯᓕᒫᓂᒃ ᓈᓚᑦᑎᓯᓂᕐᒥᒃ ᑲᒪᒋᓗᒋᑦ ᒐᕙᒪᒃᑯᑦ ᓄᓇᕗᑦᒥ ᑐᓯᕋᐅᑎᖓ ᐃᓱᒪᓕᐅᕈᒻᒥᒃ ᐃᒫᒃ:

- ᓄᑖᙳᕆᐊᕐᓗᒋᑦ ᑲᑎᑦᑐᒋᑦ ᐊᔪᙱᑕᑦ ᐊᖑᓇᓱᒃᑕᐅᓂᕐᒥᒃ (ᐊᖑᓇᓱᒃᑕᐅᔪᓐᓇᕐᑐᑦ) CHAᐃᕐᐸᒃ ᑲᓇᓐᓇᖓᓂ ᑐᒃᑐᐃᑦ ᐅᕙᙵᑦ 340 ᐅᕗᖓ 107 ᐊᒻᒪᓗ;
- ᐋᕿᓪᓗᒋᑦ ᐊᖑᑏᓐᓇᕐᓂᒃ ᐊᖑᓇᓱᓐᓂᕐᒧᑦ ᐊᖑᓇᓱᓪᓗᓂ ᒪᓕᒐᑦ (ᐊᖑᓇᓱᓪᓗᓂ ᒪᓕᒐᑦ).

ᐆᒪᔪᓕᕆᔩᑦᔪᐊᑦ ᑕᐃᒪᐃᒻᒪᑦ ᐊᑐᐃᓐᓇᐅᑎᓯᕗᑦ ᐃᓕᓯ ᐱᓕᕆᕝᕕᖓᓄᑦ ᐅᑦᑕᕗᖅᑐᓐᓃᑦ ᑎᒥᖁᑎᖏᓐᓄᑦ ᑐᓂᓯᓂᕐᒥᒃ ᑎᑎᕋᕐᓯᒪᔪᓂᒃ, ᑐᑭᓕᐅᕐᓯᒪᔪᓂᒃ ᐅᓂᒃᑳᓂᒃ ᐊᒻᒪᓗ ᐃᑲᔪᕈᑎᓂᒃ ᑎᑎᖅᑲᓂᒃ ᐅᕗᖓ ᑕᑯᓐᓇᖃᑎᒋᓪᓗᑎᒃ ᑭᒃᑯᓕᒫᓂᒃ ᓈᓚᑦᑎᓯᓂᖅ.

ᑕᑯᓐᓇᖃᑎᒋᓪᓗᑎᒃ ᑭᒃᑯᓕᒫᓂᒃ ᓈᓚᑦᑎᓯᓂᐅᑉ ᖃᓄᐃᓕᖓᓂᖏᑦ

ᓄᓇᕗᑦᒥ ᐆᒪᔪᓕᕆᔩᑦᔪᐊᑦ ᑲᑎᒪᔨᖏᑦ
Nunavunmi Anngutighatigut Aulapkaijitkut Katimajiat
Nunavut Wildlife Management Board

ᐱᓗᐊᑦᑕᐃᓕᓂᖅ ᐆᒪᔪᓂᒃ ᐊᖅᑯᑎᒋᓗᒍ ᐊᑐᕐᑎᑕᐅᓂᖏᑦ ᐃᓄᐃᑦ ᖃᐅᔨᒪᔭᑐᖃᖏᑦ ᐊᒻᒪᓗ ᖃᐅᔨᓴᕐᑎᒻᒪᕇᑦ ᖃᐅᔨᒪᓂᖏᑦ
Tammaqtailinahuarniriit anngutighat atuqhugit Inuit qaujimajatuqangillu ilihimaniillu ilitquhiannin
Conserving wildlife through the application of Inuit Qaujimajatuqangit and scientific knowledge

ᓈᓚᑦᑎᓯᓂᖅ ᐱᑕᖃᓛᖅᑐᖅ ᖁᖅᖠᖅᑐᖅ, ᓄᓇᕗᒥ, ᐅᕙᓂ ᒫᓯ 2 ᐅᕗᖓ 3, 2020, ᐅᓐᓄᒃᑯᑦ ᑲᑎᒪᕙᓪᓗᑎᒃ ᑕᐃᒪᐃᖅᓴᓇᐊᖅᑲᖅᐸᑦ, ᑕᐃᑲᓂ ᖁᖅᖠᖅᑐᖅᒥ ᐱᙳᐊᖅᕕᒃᒥ. ᑕᐃᒪᐃᖅᓴᓇᐊᖅᑲᖅᐸᑦ, ᓈᓚᑦᑎᓯᓂᖅᑦ ᑲᔪᓯᕙᔾᔭᖅᑐᖅ ᐅᓪᓛᖓᓄᑦ ᒫᓯ 4, 2020.

ᐊᑐᖅᑐᑦ ᑐᓴᖅᓴᑦ ᐊᒻᒪᓗ ᐆᒪᔪᓕᕆᔩᑦᔪᐊᑦ ᓈᓚᑦᑎᓯᓂᖅᒧᑦ ᒪᓕᒐᖏᑦ

ᐃᓚᒋᓕᐅᓯᒪᔪᑦ ᐅᑯᑭᓄᖓ ᑎᑎᖅᑲᓄᑦ ᐊᔾᔨᖏᑦ ᐅᑯᐊ ᒐᕙᒪᖓᑦ ᓄᓇᕗᒥ *ᑐᓯᕋᐅᑦ ᐆᒪᔪᓕᕆᔩᑦᔪᐊᑦ ᐃᓱᒪᓕᐅᕈᑎᖓᓂᒃ ᐃᓄᐃᔭᓪᓕᒋᐊᖑᔨᑦ ᑲᑎᑐᔨᑦ ᐊᔪᙱᑦᑕᑦ ᐊᖑᓇᓱᒃᑕᐅᓂᖅᒥᒃ CHAᐃᖅᐸᒃ ᑲᓇᓐᓇᖓᓂ ᑐᒃᑐᐃᑦ ᐅᕙᙵᑦ 340 ᐅᕗᖓ 107 ᐊᒻᒪᓗ ᐋᖅᑭᑦᑐᒋᑦ ᐊᖑᓇᓐᓇᖅᓂᒃ ᐊᖑᓇᓱᓐᓂᖅᒧᑦ ᐊᖑᓇᓱᑦᑐᓂ ᒪᓕᒐᑦ* (ᐅᐃᒍᖓ A). ᐃᓚᒋᓕᐅᓯᒪᒻᒥᔪᑦ ᐅᑯᐊ ᐆᒪᔪᓕᕆᔩᑦᔪᐊᑦ ᓈᓚᑦᑎᓯᓂᖅᒧᑦ ᒪᓕᒐᖏᑦ (ᐅᐃᒍᖓ B). ᑖᒃᑯᐊ, ᐃᓚᖅᑐᑎᒃ ᐊᓯᒃᑲᓐᓂᖏᓐᓂᒃ ᑎᑎᕋᖅᓯᒪᔪᓂᒃ ᐱᑕᖃᕈᑕᐅᔪᓂᒃ ᓈᒻᒪᓂᖅᐹᑦ ᐊᑐᐃᓐᓇᐃᑦ ᑐᓴᖅᓴᑦ ᐅᑦᑐᒥᓯᒧᑦ ᐊᑐᐃᓐᓇᐅᕆᕗᑦ ᐱᔭᐅᒍᓐᓇᖅᑐᑎᒃ ᐅᕙᙵᑦ ᐆᒪᔪᓕᕆᔩᑦᔪᐊᑦ ᐃᑭᐊᓪᓇᕕᖓᑦ (www.nwmb.com), ᐅᕝᕙᓘᓐᓃᑦ ᐅᖃᖅᕕᒋᓗᒋᑦ ᐆᒪᔪᓕᕆᔩᑦᔪᐊᑦ ᐅᑯᓇᓂ ᑐᕌᒋᓂ:

ᓄᓇᕗᒥ ᐆᒪᔪᓕᕆᔩᑦᔪᐊᑦ ᑲᑎᒪᔩᖏᑦ
ᑎᑎᖅᑲᒃᑯᕕᒃ 1379, ᐃᖃᓗᐃᑦ, ᓄᓇᕗᑦ X0A 0H0
ᐅᖃᓚᐅᑦ: (867) 975-7300
ᓱᑲᑦᑐᒃᑯᑮᑦ: (888) 421-9832
ᖃᕆᓴᐅᔾᔪᑎᑦ ᑐᕌᒋᑖ: receptionist@nwmb.com

ᑲᒪᖃᑕᑦ ᓈᓚᑦᑎᓯᓂᕐᒥ ᐊᒻᒪᓗ ᐅᓂᒃᑳᑦ

ᑲᒪᖃᑕᑦ ᑖᒃᑯᓂ ᓈᓚᑦᑎᓯᓂᕐᒥ ᐃᓚᖃᖅᑐᑦ ᐅᑯᓂᖓ:

- ᒐᕙᒪᖓᑦ ᓄᓇᕗᒥ
- ᓄᓇᕗᑦ ᑐᙵᕕᒃ ᑎᒥᖓ
- ᕿᑎᕐᒥᐅᓂ ᐃᓄᐃᑦ ᑲᑐᔾᔨᖃᑎᒌᖏᑦ
- ᕿᑎᕐᒥᐅᓂ ᐆᒪᔪᓕᕆᔩᑦ ᑲᑎᒪᔩᖏᑦ
- ᖁᖅᖠᖅᑐᖅᒥ ᐊᖑᓂᐊᕐᑏᑦ ᐊᒻᒪᓗ ᒥᑭᒋᐊᖅᓂᐊᖅᑏᑦ ᑲᑐᔾᔨᖃᑎᒌᖏᑦ
- ᒐᕙᒪᖓᑦ ᑲᓇᑕᒥ
- Wek'èezhìı ᓄᓇᒥᐅᑕᓕᕆᔩᑦ ᑲᑎᒪᔩᖏᑦ
- Sahtu ᓄᓇᒥᐅᑕᓕᕆᔩᑦ ᑲᑎᑐᒪᔩᖏᑦ
- ᐅᖃᐅᔾᔨᒋᐊᖅᑏᑦ ᑲᑎᒪᔨᕋᓛᑦ ᐃᑲᔪᖅᑎᕆᓪᓗᓂ ᐆᒪᔪᖅ ᐊᐅᓚᔪᓂᕐᒥᒃ

ᑲᑎᒪᔩᑦ ᐊᑐᐃᓐᓇᐅᑎᔪᕗᑦ ᑖᒃᑯᓇᙵ ᑲᒪᖃᑕᓄᑦ ᑎᑎᕋᖅᑕᐅᒪᔪᓄᑦ ᖁᓪᓕᖅᓂ ᑐᓂᓯᓂᕐᒥᒃ ᑎᑎᕋᖅᓯᒪᔪᓂᒃ ᐅᓂᒃᑳᓂᒃ ᐊᒻᒪᓗ ᐃᑲᔫᕈᑎᓂᒃ ᑎᑎᖅᑲᓂᒃ ᐊᑕᔪᓂᒃ ᐅᑯᓄᖓ ᐊᖑᓇᓱᒃᑕᐅᒍᓐᓇᖅᑐᑦ ᐅᕝᕙᓘᓐᓃᑦ ᐊᖑᓇᓱᓐᓂᖅᒧᑦ ᒪᓕᒐᑦ CHAᐃᖅᐸᒃ ᑲᓇᓐᓇᖓᓂ ᑐᒃᑐᓂᒃ ᒫᓂ ᓄᓇᕗᒥ ᓄᓇᑖᖑᓯᒪᔪᖕ ᓇᓛᓂ. ᑎᒥᐅᔪᑦ ᑎᑎᕋᖅᑕᐅᒪᙱᑦᑐᑦᑎ ᖁᓪᓕᖅᓂ ᑐᓂᓯᒍᓐᓇᖅᑐᑦ ᑐᕌᖅᑐᒻᒥᒃ ᓈᓚᑦᑎᓯᓂᖅᒧᑦ ᑲᒪᖃᑕᐅᓂᖅᒧᑦ ᓇᓗᓇᐃᖅᓯᒍᒻᒥᒃ ᑲᑎᒪᔩᑦ ᑲᒪᒋᓂᐊᖅᑕᖓᑦ ᐅᕙᓂ <u>ᔮᓄᐊᕆ 31, 2020</u>. ᑐᓂᔭᐅᓗᓂ ᓈᓚᑦᑎᓯᓂᖅᒧᑦ ᑲᒪᖃᑕᐅᓂᖅᒧᑦ ᓇᓗᓇᐃᖅᓯᒍᒻᒥᒃ, ᐱᒐᓱᐊᖅᑐᑦ ᐊᓚᒃᑲᐃᒋᐊᓖᑦ ᐃᒫᒃ ᓇᒻᒥᓂᖅ ᐊᑦᑐᖅᑕᐅᓚᖓᕙᕙᒥᒃ ᐆᒧᖓ ᐆᒪᔪᓕᕆᔩᑦᔪᐊᑦ ᐃᓱᒪᓕᐅᖅᑯᑎᖓᑦ ᐱᑦᑐᒋᑦ CHAᐃᖅᐸᒃ ᑲᓇᓐᓇᖓᓂ ᑐᒃᑐᐃᑦ, ᐃᒪᐃᙵᒋᑦᑐᑦ ᓈᓚᑦᑎᓯᑎᓂᕐᒥ ᑲᒪᖃᑕᑦ

ᓄᓇᕗᒥ ᐆᒪᔪᓕᕆᔩᑦᔪᐊᑦ ᑲᑎᒪᔨᖏᑦ
Nunavunmi Anngutighatigut Aulapkaijitkut Katimajiat
Nunavut Wildlife Management Board

ᐱᓗᐊᕐᑕᐃᓕᓂᖅ ᐆᒪᔪᕐᓂᒃ ᐊᖅᑯᑎᒋᓗᒍ ᐊᑐᕐᑎᑕᐅᓂᖓᑦ ᐃᓄᐃᑦ ᖃᐅᔨᒪᓂᑐᖃᖏᑦ ᐊᒻᒪᓗ ᖃᐅᔨᓴᕐᑎᒻᒪᕆᑦ ᖃᐅᔨᒪᓂᖏᑦ
Tammaqtailinahuarniriit anngutighat atuqhugit Inuit qaujimajatuqangillu ilihimaniillu ilitquhiannin
Conserving wildlife through the application of Inuit Qaujimajatuqangit and scientific knowledge

ᑐᓂᓯᒍᓐᓇᕐᒥᔪᑦ ᑐᓴᖅᓴᓂᒃ/ᓇᓗᓇᙱᒍᑎᓂᒃ ᑲᑎᒪᔩᓄᑦ ᑲᒪᒋᔭᐅᓂᐊᕐᑐᓂᒃ ᒪᓕᓪᓗᒋᑦ ᐊᔾᔨᖏᑦ ᓅᕙᐃᓇ 14, 2020 ᑐᓂᓯᓯᒪᒃᑲᐅᒥᐊᓖᑦ ᒪᑯᓄᖓ ᑲᒪᖃᑕᑦ ᐅᓂᒃᑳᖏᑦ.

ᐃᓘᓐᓇᑎᒃ ᑎᑎᕋᕐᓯᒪᔪᑦ ᑐᓂᔭᐅᒥᐊᓖᑦ ᐆᒪᔪᓕᕆᔨᕐᔪᐊᓄᑦ – <u>ᐃᓄᒃᑎᑐᑦ ᐊᒻᒪᓗ ᖃᓪᓗᓈᑎᑐᑦ</u> – ᑎᑭᙱᓐᓂᖓᓂ <u>5:00 ᐅᓐᓄᓴᒃᑯᑦ (ᑲᓇᓐᓇᕐᒥ ᓯᕿᙲᔭᖓᑐᑦ) ᐅᓇ ᓅᕙᐃᓇ 14, 2020.</u> ᑎᑎᕋᕐᓯᒪᔪᑦ ᐊᒥᓲᓂᖅᓴᐅᐸᐸᑕ ᖁᓕᓂᒃ ᒪᐱᕐᑐᒐᕐᓂᒃ ᑐᑭᓕᐅᕐᑕᐅᖅᐃᓐᓇᓇᐊᖃᙱᑦᑐᑦ ᑭᓯᐊᓂ ᐃᓚᖃᓇᐊᓖᑦ ᓱᓕᔪᓂᒃ ᓇᐃᓈᕈᑎᓂᒃ ᐃᓄᒃᑎᑐᑦ ᐊᒻᒪᓗ ᖃᓪᓗᓈᑎᑐᑦ.

ᐊᑏ ᖃᐅᔨᒪᕆᒋᔪ ᐃᒫᒃ ᐆᒪᔪᓕᕆᔨᕐᔪᐊᑦ ᑭᓯᐊᓂ ᑲᒪᓖᕐᒪᑕ ᑎᑎᕋᕐᓯᒪᔪᓂᒃ ᑕᒡᕙᓂ ᓈᓚᑦᑎᖁᓂᕐᒥ ᑐᓂᔭᐅᐸᑕ ᓯᕗᓂᐊᒍᑦ ᑐᓂᓯᓯᒪᒃᑲᐅᒥᐊᓕᐅᑉ (ᓅᕙᐃᓇ 14, 2020) ᐃᒪᐃᙱᑉᐸᑦ ᓯᕗᖓᒍᑦ ᓱᓕᔪᓇᔭᐅᓕᕈᓐᓇᕐᑐᑦ ᐱᔾᔪᑕᐅᔪᑦ ᑐᓂᔭᐅᓗᑎᒃ ᐆᒪᔪᓕᕆᔨᕐᔪᐊᓄᑦ ᑎᑎᕋᕐᓯᒪᓗᒋᑦ ᑭᖑᕙᕐᑐᓂᒃ ᑐᓂᓯᓂᕐᒧᑦ.

ᐃᓱᒪᒋᓗᒋᑦ ᐊᑐᕐᑐᑦ ᒪᐅᖓᑐᐃᓐᓈᓇᐊᖃᙱᓐᓂᖏᑦ ᐅᕙᓘᓐᓃᑦ ᑲᙳᓇᕐᓂᖏᓐᓄᑦ ᐃᓱᒫᓗᒍᑏᑦ, ᐃᓘᓐᓇᑎᒃ ᐅᓂᒃᑳᑦ ᐊᒻᒪᓗ ᐃᑲᔪᕈᑏᑦ ᑎᑎᖃᑦ ᐃᓕᔭᐅᓂᐊᕐᑐᑦ ᐅᕗᖓ ᐆᒪᔪᓕᕆᔨᕐᔪᐊᑦ ᐃᑭᐊᕐᓇᕙᖓ ᐊᒻᒪᓗ ᐊᑐᐃᓐᓇᐅᓗᑎᒃ ᐱᔭᐅᒍᓐᓇᕐᓗᑎᒃ.

ᐅᓂᒃᑳᑦ ᐊᒻᒪᓗ ᑖᒃᑯᓄᖓ ᐃᑲᔪᕈᑏᑦ ᑎᑎᖅᑲᑦ ᑐᓂᔭᐅᒍᓐᓇᕐᑐᑦ ᑲᑎᒪᔩᓄᑦ ᓇᒻᒥᓂᖅ, ᐊᔾᔭᕐᓯᔮᒃᑯᑦ, ᑎᑎᖅᑲᓂᐊᕐᕙᒃᑯᑦ ᐅᕙᓘᓐᓃᑦ ᖃᕋᓴᐅᔭᒃᑯᑦ. ᑐᑭᓯᓇᕐᓯᐊᕐᑐᒥᒃ ᓇᓗᓇᐃᕐᓯᒪᔨᐊᓖᑦ ᐱᔾᔪᑎᖃᕐᓇᐊᖏᑦ ᐆᒪᔪᓕᕆᔨᕐᔪᐊᑦ ᑭᒃᑯᓕᒫᓂᒃ ᓈᓚᑦᑎᕐᓯᓂᖏᓐᓂᒃ ᐱᓪᓗᒋᑦ "ᑕHᐃᕐᐸᒃ ᑲᓇᓐᓇᖓᓂ ᑐᒃᑐᐃᑦ ᑲᑎᑦᑐᒋᑦ ᐊᔪᙱᑕᑦ ᐊᖑᓇᓯᒃᑕᐅᓂᕐᒥᒃ ᐊᒻᒪᓗ ᐊᖑᓇᓯᓐᓂᕐᒧᑦ ᒪᓕᒐᑦ ᐊᑐᓕᕐᑯᔭᑦ." ᑐᓂᓯᓂᖅ ᑎᑎᕋᕐᓯᒪᔪᓂᒃ ᐅᕝᕚᕈᓐᓇᕐᒥᔪᖅ ᓱᒃᑐᒃᑰᕈᑎᒃᑯᑦ, ᑭᓯᐊᓂ ᐱᓕᕆᒐᕙᓯ ᐅᕙᓘᓐᓃᑦ ᑎᒥᕐᑯᑎᓯ ᓇᓗᓇᐃᕐᓯᐸᑕ ᐆᒪᔪᓕᕆᔨᕐᔪᐊᓄᑦ – ᓯᕗᖓᒍᑦ ᑐᓂᓯᓯᒪᒃᑲᐅᒥᐊᓕᐅᑉ – ᐃᒫᒃ ᓈᓃᑦ ᐊᒻᒪᓗ ᑐᑭᓯᓇᕐᑐᑦ ᐊᔾᔨᖏᑦ ᑐᓂᔭᑦ ᐱᔭᐅᒐᓗᐊᕐᒪᖖᑕ ᑲᑎᒪᔩᓄᑦ. ᑎᑎᕋᕐᓯᒪᔪᑦ ᐃᓱᒪᒋᔭᐅᓂᐊᕐᐳᑦ ᑐᓂᔭᐅᒥᐊᖏᑕ ᑕᒡᕙᓂᓪᓚᓇᒃ ᐅᓪᓗᒥ ᐱᔭᐅᒐᖓᓂ ᐆᒪᔪᓕᕆᔨᕐᔪᐊᓄᑦ.

ᐱᒋᐊᖃᕈᓯ ᑐᓴᖅᓴᑲᓐᓂᕐᓂᒃ ᐱᓪᓗᒍ ᓈᓚᑦᑎᕐᓯᓂᖅ, ᐊᑏ ᖃᐅᔾᔭᖃᕐᑕᐃᓕᓂᐊᖅᓯᐅᒃ ᐆᒪᔪᓕᕆᔨᕐᔪᐊᑦ.

ᓱᓕᔪᒥᒃ,

Ḍavid Akeeagok

ᑖᓂᐊᓪ ᓯᐅᕐᓴᒃ
ᐃᕐᓯᔭᐅᑕᖅ ᐅᕙᓂ
ᓄᓇᕗᑦᒥ ᐆᒪᔪᓕᕆᔨᕐᔪᐊᑦ ᑲᑎᒪᔩᖏᑦ

ᐱᖃᑕᑦ:ᑐᓇᑲᔅ ᒋᓯᖕ, ᑐᑭᒧᐊᕐᑎᕐᓯᔨ ᐆᒪᔪᓕᕆᓂᕐᒧᑦ, ᒐᕙᒪᖏᑦ ᓄᓇᕗᑦᒥ, ᐱᓕᕆᕝᕕᖓᑦ ᐊᕙᑎᓕᕆᔩᑦ;
ᐹᓪ ᐃᕐᖓᐅᑦ, ᑐᑭᒧᐊᕐᑎᕐᓯᔨ ᐆᒪᔪᓕᕆᓂᕐᒧᑦ, ᓄᓇᕗᑦ ᑐᙵᕕᒃ ᑎᒥᖓᑦ;
ᐹᓪ ᐃᒥᙵᒃ, ᐊᐅᓚᕐᓯᔨ ᐊᓪᓚᕝᕕᒃᒥ, ᕿᑎᕐᒥᐅᓂ ᐃᓄᐃᑦ ᑲᑐᔾᔨᖃᑎᒌᖏᑦ;

ᑎᑎᖅᑲᒃᑯᕝ 1379
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ᓄᓇᕗᑦᒥ ᐆᒪᔪᓕᕆᔨᕐᔪᐊᑦ ᑲᑎᒪᔨᖏᑦ
Nunavunmi Anngutighatigut Aulapkaijitkut Katimajiat
Nunavut Wildlife Management Board

ᐱᓗᐊᑦᑕᐃᓕᓂᖅ ᐆᒪᔪᕐᓂᒃ ᐊᖅᑯᑎᒋᓗᒍ ᐊᑐᕐᑎᑕᐅᓂᖏᑦ ᐃᓄᐃᑦ ᖃᐅᔨᒪᓂᑐᖃᖏᑦ ᐊᒻᒪᓗ ᖃᐅᔨᓴᕐᑎᒻᒪᕇᑕ ᖃᐅᔨᒪᓂᖏᑦ
Tammaqtailinahuarniriit anngutighat atuqhugit Inuit qaujimajatuqangillu ilihimaniillu ilitquhiannin
Conserving wildlife through the application of Inuit Qaujimajatuqangit and scientific knowledge

ᑭᐅᕈᓚᐃᓐ ᓚᑦᑕᓇᐅᔅᑭ, ᑐᑭᒧᐊᕐᑎᑦᓯᔨ, ᐆᒪᔪᕐᓂᒃ ᐊᐅᓚᑦᓯᓂᕐᒧᑦ ᐊᒻᒪᓗ ᐊᐅᓚᑦᓯᒍᑎᓂᒃ ᑲᒪᔩᑦ,
ᑲᓇᑕᒥ ᐆᒪᔪᓕᕆᔨᕐᔪᐊᑦ, ᐊᕙᑎᓕᕆᔩᑦ ᐊᒻᒪᓗ ᓯᓚᐅᑉ ᐊᓯᔾᔨᕐᓂᖓᓂᒃ ᑲᒪᔩᑦ ᑲᓇᑕᒥ;
ᐋᒪ ᖃᖑᑕᖅ, ᐊᕕᑦᑐᕐᓯᒪᔪᓂ ᐋᕐᑭᑦᓱᐃᔨ, ᕿᑎᕐᒥᐅᓂ ᐆᒪᔪᓕᕆᔩᑦ ᑲᑎᒪᔨᖏᑦ;
ᐊᓖᓐᑕ ᑑᓖᓐᑦ, ᐊᐅᓚᑦᓯᔨ, ᖁᖅᓗᖅᑐᖅ ᐊᖑᓂᐊᑏᑦ ᑲᑐᔾᔨᕐᑲᑎᒌᖏᑦ;
ᔫᑦᑎ ᐱᓪᓕᔅᓰ, ᐊᐅᓚᑦᓯᔨ ᐊᓪᓚᒡᕕᒃᒥ, Wek'eezhii ᓄᓇᒥᐅᑕᓕᕆᔩᑦ ᑲᑎᒪᔨᖏᑦ;
ᑎᐊᑉᐳᕋ ᓯᒪᓐᔅ, ᐊᐅᓚᑦᓯᔨ ᐊᓪᓚᒡᑯᒃᒥ, Sahtú ᓄᓇᒥᐅᑕᓕᕆᔩᑦ ᑲᑎᒪᔨᖏᑦ;
ᐊᐃᒥ ᐋᒪᔅ, ᐊᐅᓚᑦᓯᔨ ᐊᓪᓚᒡᑯᒃᒥ, Gwich'in ᓄᓇᒥᐅᑕᓕᕆᔩᑦ ᑲᑎᒪᔨᖏᑦ;
ᓕᐊᓇ ᑳᕐᐸᓐᑐᕐ, ᐃᑦᓯᕙᐅᑕᖅ, ᐆᒪᔪᕐᓂᒃ ᐊᐅᓚᑦᓯᓂᕐᒧᑦ ᐅᕐᑲᐅᔾᔨᒋᐊᕐᑏᑦ ᑲᑎᒪᔨᖏᑦ;
ᐃᑦᕗᐊᕐᑦ ᓵᒍᕇ ᐊᒻᒪᓗ ᐃᖅᑭᓖᑦ ᑲᑎᒪᔨᖏᑦ, ᔩᐊᓗᓇᐃᕝᒥ ᐃᖅᑭᓖᑦ;
ᕗᐃᓕᐊᓪ ᐃᓐᒋ, ᐊᖓᔪᕐᑳᖅ, North Slave ᐊᓪᓚᖓᔪᑦ ᑲᑐᔾᔨᕐᑲᑎᒌᖏᑦ;
ᐃᐊᓱᓪ ᓕᔅᑭ, ADFN ᐋᔩᕐᑏᑦ ᐋᕐᑭᑦᓱᐃᔨᖓᑦ, ᐊᑲᐃᑦᓱ ᐃᖅᑭᓖᑦ;
ᐊᖓᔪᕐᑳᖅ ᑎᐅᕈᓪ ᒫᕐᓅ ᐊᒻᒪᓗ ᐃᖅᑭᓖᑦ ᑲᑎᒪᔨᖏᑦ, Lutsel K'e ᐃᖅᑭᓖᑦ;

ᓄᓇᕗᑦᒥ ᐆᒪᔪᓕᕆᔨᕐᔪᐊᑦ ᑲᑎᒪᔨᖏᑦ
Nunavunmi Anngutighatigut Aulapkaijitkut Katimajiat
Nunavut Wildlife Management Board

ᐱᓗᐊᕐᑕᐃᓕᓂᖅ ᐆᒪᔪᕐᓂᒃ ᐊᖅᑯᑎᒋᓗᒍ ᐊᑐᕐᑎᑕᐅᓂᖏᑦ ᐃᓄᐃᑦ ᖃᐅᔨᒪᓂᑐᕐᖃᖏᑦ ᐊᒻᒪᓗ ᖃᐅᔨᓴᕐᑎᒻᒪᕇᑕ ᖃᐅᔨᒪᓂᖏᑦ
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ᐳᕆᐊᑦ ᐃᐅᕐᑭᓐ, ᑐᑭᒧᐊᕐᑎᑦᓯᔨ ᐆᒪᔪᓕᕆᓂᕐᒧᑦ, ᐊᕙᑎᓕᕆᔩᑦ ᐊᒻᒪᓗ ᓄᓇᒥᐅᑕᓕᕆᔩᑦ, ᒐᕙᒪᖓᑦ ᓄᓇᓯᐊᖅᒥ;
ᐳᐲᓄ ᑯᕚᕝᑦ, ᐊᖓᔪᖄᖅ, North Slave ᓇᑖᓂ, ᐊᕙᑎᓕᕆᔩᑦ ᐊᒻᒪᓗ ᓄᓇᒥᐅᑕᓕᕆᔩᑦ, ᒐᕙᒪᖓᑦ ᓄᓇᓯᐊᖅᒥ;
ᒪᐃᑯᓪ ᐆᕐᑖ, ᐊᐅᓚᑦᓯᔨ, ᓄᓇᒥᒃ ᓴᐳᒻᒦᔩᑦ ᐊᒻᒪᓗ ᓄᓇᒥᐅᑕᓕᕆᔩᑦ, Tlicho ᒐᕙᒪᖏᑦ;
ᕘᕐᓇᓐ ᐋᒪᔅ, ᐃᑦᓯᕙᐅᑕᖅ, ᐃᓄᕕᐊᓕᐃᑦ ᐆᒪᔪᓕᕆᔩᑦ ᑲᑎᒪᔨᖏᑦ;
ᑏᕝ ᓕᑐᓪ, ᐊᖓᔪᖄᖅ ᐊᐅᓚᑦᓯᔨᓂ, Deline Got’ine ᒐᕙᒪᖏᑦ.

ᕕᕝᕗᐊᕆ 4, 2020

ᓱᓕᔪᕐᓇᕐᑐᖅ ᔫᓇᑕᓐ ᕗᐃᐅᑉᑭᓐᓴᓐ
ᒥᓂᔅᑕᖕᒐᑦ ᐊᕙᑎᓕᕆᔩᑦ ᐊᒻᒪᓗ ᓱᓚᐅᑉ
ᐊᓯᔾᔨᕐᓂᖕᖓᓂᒃ ᑲᒪᔩᑦ ᑲᓇᑕᒥ,
ᒐᕙᒪᖓᑦ ᑲᓇᑕᒥ

ᓱᓕᔪᕐᓇᕐᑐᖅ ᔫ ᓴᕕᑲᑖᖅ
ᒥᓂᔅᑕᖕᒐᑦ ᐊᕙᑎᓕᕆᔩᑦ,
ᒐᕙᒪᖓᑦ ᓄᓇᕗᑦᒥ

ᐊᓗᑭ ᑰᑎᖅ
ᐊᖓᔪᖄᖅ
ᓄᓇᕗᑦ ᑐᙵᕕᒃ ᑎᒥᖓᑦ

ᐹᐸ ᑭᓕᒃᒐᓐᔫᖕ
ᐃᓯᕙᐅᑕᖅ
ᕿᑎᕐᒥᐅᓂ ᐆᒪᔪᓕᕆᔩᑦ ᑲᑎᒪᔨᖏᑦ

ᓕᐊᕆ ᐊᑦᔪᓐ
ᐃᓯᕙᐅᑕᖅ, ᖁᑦᑎᒃᑐᖅᒥ
ᐊᖑᓂᐊᖏᑦ ᑲᑐᔾᔨᖃᑎᒌᖏᑦ

ᓱᑖᓐᓕ ᐊᓇᑉᓚᒃ
ᐊᖓᔪᖄᖅ
ᕿᑎᕐᒥᐅᓂ ᐃᓄᐃᑦ ᑲᑐᔾᔨᖃᑎᒌᖏᑦ

ᔩᓯᐅ ᔩᑦᑕᔅ
ᐃᓯᕙᐅᑕᖅ, Wek'èezhìi
ᓄᓇᒥᐅᑕᓕᕆᔩᑦ ᑲᑎᒪᔨᖏᑦ

ᔦᐊᕐᔅ ᐹᕐᓇᑉᐱ
ᐃᓯᕙᐅᑕᖅ Sahtú
ᓄᓇᒥᐅᑕᓕᕆᔩᑦ ᑲᑎᒪᔨᖏᑦ

ᔩᑦᑎ ᐱᑦᑕᔅᔾ
ᖃᐅᔨᒪᔩᑦ ᑲᑎᒪᔨᕋᓛᑦ ᐃᑲᔪᕐᑎᒌᑦᑐᓂ
ᐆᒪᔪᕐᓂᒃ ᐊᐅᓚᓯᔪᓂᕐᒥᒃ

ᐳᓇᑦ ᐃᐅᑉᑭᓐ, ᑐᑭᒧᐊᕐᑎᓯᔨ ᐆᒪᔪᓕᕆᓂᕐᒧᑦ,
ᐊᕙᑎᓕᕆᔩᑦ ᐊᒻᒪᓗ ᓄᓇᒥᐅᑕᓕᕆᔩᑦ,
ᒐᕙᒪᖓᑦ ᓄᓇᓯᐊᖅᒥ

ᑏᕙᑦ ᓕᑦᑐᑦ
ᐊᐅᓚᓯᔨ ᐊᑦᓚᒃᕕᒃᒥ,
Délı̨nę Got'ı̨nę ᒐᕙᒪᖏᑦ

ᐱᓕᕆᖅᑎᒃᑲᐃ:

ᐱᑦᑐᒍ: ᓄᓇᕗᑦᒥ ᐆᒪᔪᓕᕆᔨᕐᔪᐊᑦ ᑲᑎᒪᔨᖏᑦ ᑕᑯᓐᓇᖅᑎᕆᑦᑐᓂ ᑭᒃᑯᓕᒫᓂᒃ ᓈᓚᑦᑎᓯᓂᖏᑦ ᑲᒪᒋᓗᒋᑦ ᒐᕙᒪᖓᑦ ᓄᓇᕗᑦᒥ ᑐᓯᕋᐅᑎᖕᒐᑦ ᓄᑖᙳᕆᐊᕐᓗᒋᑦ ᑲᑎᑦᑐᒋᑦ ᐊᔪᙱᑕᑦ ᐊᖑᓇᓱᒃᑕᐅᓂᕐᒥᒃ CHᐃᕐᐸᒃ ᑲᓇᓐᓇᖕᒐᓂ ᑐᒃᑐᐃᑦ ᐅᕙᙵᑦ 340 ᐅᕗᖓ 107 ᐊᒻᒪᓗ ᐋᕿᑦᑐᒍ ᐊᖑᑏᓐᓇᕐᓂᒃ ᐊᖑᓇᓱᓐᓂᕐᒧᑦ ᒪᓕᒐᖅ

ᖃᐅᔾᔭᐃᒍᑏᑦ

ᐅᕙᓂ ᑏᓯᑉᐱᕆ 13, 2019, ᓄᓇᕗᑦᒥ ᐆᒪᔪᓕᕆᔨᕐᔪᐊᑦ ᑲᑎᒪᔨᖏᑦ (ᐆᒪᔪᓕᕆᔨᕐᔪᐊᑦ ᐅᕝᕙᓘᓐᓃᑦ ᑲᑎᒪᔩᑦ) ᑐᓂᓯᓚᐅᕐᒪᑕ ᑭᒃᑯᓕᒫᓂᒃ ᑐᓴᕐᑎᑦᓯᒍᒻᒥᒃ ᐃᒫᒃ ᐊᑐᖨᕋᒥᒃ ᑕᑯᓐᓇᖅᑎᕆᑦᑐᓂ ᑭᒃᑯᓕᒫᓂᒃ ᓈᓚᑦᑎᓯᓂᕐᒥᒃ ᑲᒪᒋᓗᒋᑦ ᒐᕙᒪᖓᑦ ᓄᓇᕗᑦᒥ ᑐᓯᕋᐅᑎᖕᒐᑦ ᐃᓱᒪᓕᐅᕈᒻᒥᒃ ᐃᒫᒃ:

- ᓄᑖᙳᕆᐊᕐᓗᒋᑦ ᑲᑎᑦᑐᒋᑦ ᐊᔪᙱᑕᑦ ᐊᖑᓇᓱᒃᑕᐅᓂᕐᒥᒃ (ᐊᖑᓇᓱᒃᑕᐅᒍᓐᓇᕐᑐᑦ) CHᐃᕐᐸᒃ ᑲᓇᓐᓇᖕᒐᓂ ᑐᒃᑐᐃᑦ ᐅᕙᙵᑦ 340 ᐅᕗᖓ 107 ᐊᒻᒪᓗ'
- ᐋᕿᑦᑐᒋ ᐊᖑᑏᓐᓇᕐᓂᒃ ᐊᖑᓇᓱᓐᓂᕐᒧᑦ ᒪᓕᒐᑦ (ᐊᖑᓇᓱᓐᓂᕐᒧᑦ ᒪᓕᒐᑦ).

ᓈᓚᑦᑎᓯᓂᖅ ᐱᑕᕐᑲᓛᕐᑐᖅ ᖁᖅᑐᖅᑐᖅ, ᓄᓇᕗᑦᒥ, ᐅᕙᓂ ᒫᓯ 2 ᐊᒻᒪᓗ 3, 2020, ᐅᓐᓄᒃᑯᑦ ᑲᑎᒪᕖᑦᑐᑎᒃ, ᐱᑕᕐᑲᓂᐊᕐᑲᕐᐸᑦ, ᑕᐃᑲᓂ ᖁᖅᑐᖅᑐᖅ ᐱᙳᐊᕐᕕᖕᒐᓂ. ᐱᑕᕐᑲᓂᐊᕐᑲᕐᐸᑦ, ᓈᓚᑦᑎᓯᓂᖅ ᑲᔪᓯᓛᕐᑐᖅ ᐅᑦᓛᖕᒐᓂ ᒫᓯ 4, 2020.

ᓄᓇᕗᑦᒥ ᐆᒪᔪᓕᕆᔨᖅᔪᐊᑦ ᑲᑎᒪᔨᖏᑦ
Nunavunmi Anngutighatigut Aulapkaijitkut Katimajiat
Nunavut Wildlife Management Board

ᐱᓗᐊᑦᑕᐃᓕᓂᕐᒃ ᐆᒪᔪᕐᓂᒃ ᐊᖅᑯᑎᒋᓗᒍ ᐊᑐᖅᑎᑕᐅᓂᖏᑦ ᐃᓄᐃᑦ ᖃᐅᔨᒪᓂᑐᖃᖏᑦ ᐊᒻᒪᓗ ᖃᐅᔨᓴᖅᑎᓪᓕᓂᖏᑦ ᖃᐅᔨᒪᓂᖏᑦ
Tammaqtailinahuarniriit anngutighat atuqhugit Inuit qaujimajatuqangillu ilihimaniillu ilitquhiannin
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ᑲᒪᖅᑲᑕᐅᔪᑦ ᓈᓚᖅᑎᓯᓂᕐᒥ ᐊᒻᒪᒪᓗ ᐅᓂᒃᑳᑦ

ᓯᕗᓪᓕᖅᓯ ᑎᑎᖅᑲᓂ ᐃᓕᖓ ᑎᒥᖕᒋᓐᓄᑦ ᐱᓪᓗᒍ ᑭᒃᑯᓕᒫᓂᒃ ᓈᓚᖅᑎᓯᓂᖅ ᑲᒪᒋᓗᒋᑦ ᒐᕙᒪᓐᑯᑦ ᓄᓇᕗᒥ ᑐᓯᕋᐅᑎᖕᒋᑦ ᓄᑖᙳᑎᐊᖅᑐᒋᑦ ᐊᖑᓇᓱᒃᑕᐅᒍᓐᓇᖅᑐᑦ ᐊᒻᒪᓗ ᐊᖑᓇᓱᓐᓂᕐᒧᑦ ᒪᓕᒐᑦ CHᐃᕐᐸᒃ ᑲᓇᓐᓇᖕᒐᓂ ᑐᒃᑐᓂᒃ, ᐆᒪᔪᓕᕆᔨᖅᔪᐊᑦ ᓇᓗᓇᐃᖅᓯᓚᐅᖅᑐᑦ ᑭᒃᑯᕝᕚᖅᓯᒪᙱᓚᑦ ᑎᑎᖅᓯᒪᔪᑦ ᓈᓚᖅᑎᓯᓂᕐᒥᒃ ᑲᒪᖅᑕᑦ ᐊᒻᒪᓗ ᐊᐱᕆᓪᓗᒋᑦ ᐊᓯᖏᑦ ᑎᒥᐅᔪᑦ ᑲᒪᖅᑕᐅᒍᒪᔪᑦ ᓈᓚᖅᑎᓯᓂᕐᒥ ᐱᒋᓯᐊᖅᑯᓪᓗᒋᑦ ᐆᒪᔪᓕᕆᔨᖅᔪᐊᓄᑦ ᑎᑭᙶᕐᓂᖓᓂ ᔫᓂᐊᓕ 31, 2020. ᑭᖑᓂᐊᒍᑦ ᑐᓂᓯᓯᒪᓕᕝᕕᐅᕆᐊᓕᐅᑉ, ᐆᒪᔪᓕᕆᔨᖅᔪᐊᑦ ᓄᑖᙳᐃᕆᐊᖅᓯᒪᓕᖅᑐᑦ ᑎᑎᖅᓯᒪᔪᓂᒃ ᑕᒃᑯᓂᖓ ᖃᓄᓕᒫᖅ ᑲᒪᖅᑕᐅᓂᕐᒧᑦ ᓇᓗᓇᐃᖅᑕᓂᒃ ᐃᓚᐅᓪᓗᑎᒃ ᐅᑯᐊ:

- ᒐᕙᒪᓐᑯᑦ ᓄᓇᕗᒥ
- ᖁᕐᓗᖅᑐᕐᒥ ᐊᖑᓂᐊᑏᑦ ᑲᑐᔾᔨᖃᑎᒌᖏᑦ
- ᕿᑎᖅᒥᐅᓂ ᐃᓄᐃᑦ ᑲᑐᔾᔨᖃᑎᒌᖏᑦ
- ᕿᑎᖅᒥᐅᓂ ᐆᒪᔪᓕᕆᔩᑦ ᑲᑎᒪᔨᖏᑦ
- ᓄᓇᕗᑦ ᑐᙵᕕᒃ ᑎᒥᖓᑦ
- ᒐᕙᒪᓐᑯᑦ ᓄᓇᓯᐊᕐᒥ
- Wek'èezhìı ᓄᓇᒥᐅᑕᓕᕆᔩᑦ ᑲᑎᒪᔨᖏᑦ
- Délı̨nę Got'ı̨nę ᒐᕙᒪᖏᑦ ᐊᒻᒪᓗ Délı̨nę ʔehdzo Got'ı̨nę
- ᐅᖅᑯᓯᒃᓴᓕᒥᐅᑏᑦ ᑲᑎᒪᔨᖁᑏᑦ ᐃᑲᔪᖅᑎᒌᓪᓗᓂ ᐆᒪᔪᓂᒃ ᐊᐅᓚᓯᓂᕐᒥᒃ

ᐆᒪᔪᓕᕆᔨᖅᔪᐊᑦ ᐊᑐᐃᓐᓇᐅᑎᓯᕗᑦ ᐃᓘᓐᓇᖕᓂᓐᓄᑦ ᑲᒪᖅᑕᓄᑦ ᐊᒻᒪᓗ ᖃᐅᔨᒪᔪᒪᔭᓄᑦ ᑲᒪᖅᑕᐅᙱᑦᑐᓄᑦ ᑐᓂᓯᓂᕐᒥᒃ ᑎᑎᖅᓯᒪᔭᓂᒃ, ᑐᑭᓕᐅᓯᒪᔭᓂᒃ ᐅᓂᒃᑳᓂᒃ ᐊᒻᒪᓗ ᐃᑲᔪᕈᑎᓂᒃ ᑎᑎᖅᓯᒪᔭᓂᒃ ᑕᑯᓐᓇᖅᑲᑎᒋᓪᓗᓂ ᑭᒃᑯᓕᒫᓂᒃ ᓈᓚᖅᑎᓯᓂᕐᒧᑦ. ᐃᓘᓐᓇᑎᒃ ᑎᑎᖅᓯᒪᔪᑦ ᑐᓂᔭᐅᕆᐊᓖᑦ ᐆᒪᔪᓕᕆᔨᖅᔪᐊᓄᑦ – ᐃᓄᒃᑐᑦ ᐊᒻᒪᓗ ᖃᓪᓗᓈᑎᑐᑦ – ᑎᑭᙶᕐᓂᖓᓂ **5:00 ᐅᓐᓄᓴᒃᑯᑦ (ᑲᓇᓐᓇᐅᑉ ᓯᕿᓐᓂᕐᒥᐅᔭᖕᖑᑐᖅ) ᐅᓇ ᐋᒡᒌᓯ 14, 2020.**

ᑎᑎᖅᓯᒪᔪᑦ ᐅᒥᓱᓂᖅᓴᓂᒃ ᖁᓕᓂᒃ ᒪᐸᖅᑐᓗᒐᖅᐸᓪᓕᑕ ᑐᑭᓕᐅᖅᓴᐃᓐᓇᕆᐊᖕᖑᐊᖅᑐᑦ ᑭᓯᐊᓂ ᐃᓕᖅᑲᐊᓕᓪᓗ ᓯᓕᔪᓂᒃ ᓇᐃᓈᕈᑎᓂᒃ ᐃᓄᒃᑐᑦ ᐊᒻᒪᓗ ᖃᓪᓗᓈᑎᑐᑦ. ᐊᑏ ᖃᐅᔨᒪᓂᐊᖅᐸᓯ ᐃᓛᒃ ᐆᒪᔪᓕᕆᔨᖅᔪᐊᑦ ᑭᓯᐊᓂ ᑲᒪᓂᐊᖅᒪᑕ ᑎᑎᖅᓯᒪᔪᓂᒃ ᑖᒃᑯᐊ ᓈᓚᖅᑎᓯᓂᕐᒥ ᑐᓴᐅᐸᒃᑕ ᓯᕗᓂᖕᖑᒍᑦ ᑐᓂᓯᓯᒪᓕᕝᕕᐅᕆᐊᓕᐅᑉ ᐃᓛᒃ ᓯᓚᔭᖅᓇᖅᑐᓂᒃ ᐱᔭᖅᑕᐅᔪᓂᒃ ᑐᓂᔭᐅᖕᖑᕐᐸᑕ ᑲᑎᒪᔨᑦ ᑎᑎᖅᓯᒪᔪᓂᒃ ᑭᖑᕙᖅᑐᓂᒃ ᑐᓂᓯᓛᖅᐸᒥ ᓯᕗᓂᖕᖑᒍᑦ ᑐᓂᓯᓯᒪᓕᕝᕕᐅᕆᐊᓕᐅᑉ. ᐃᓯᒥᖅᑐᒋᑦ ᐊᑐᖅᑐᑦ ᒪᐅᖕᖑᑐᐃᓐᓈᖅᑲᕐᒥᖅᑐᑦ ᐅᕙᖕᓄᐊᓐᓂᑦ ᑲᙳᓇᖅᓂᖕᖑᕐᓂᑦ ᐃᓱᓕᒍᑎᒋᑦ, ᐃᓘᓐᓇᑎᒃ ᐅᓂᒃᑳᑦ ᐊᒻᒪᓗ ᐃᑲᔪᕈᑏᑦ ᑎᑎᖅᓯᒪᔪᑦ ᐃᓕᔭᐅᓂᐊᖅᑐᑦ ᐆᒪᔪᓕᕆᔨᖅᔪᐊᑦ ᐃᑭᐊᖅᑭᕕᖕᖑᓄᑦ ᐊᒻᒪᓗ ᐊᑐᐃᓐᓇᐅᓗᑎᒃ ᐱᔭᐅᒍᓇᖅᑐᑎᒃ.

ᐱᔭᕇᖅᑐᑦ ᐃᓂᓪᓚᐅᑎᓂᖅ, ᐊᑏ ᓇᓗᓇᐃᖅᓯᓯ ᖃᓄᑎᒋ ᐊᑯᓂᐅᓂᓪᓚᕆᒃ ᐱᕙᓪᓕᐊᑎᑕᐅᓚᐅᖅᓯᐊᓂᖅ ᑐᓂᓗᒋᑦ ᐅᓂᒃᑳᑦ. ᖃᐅᔨᒪᓂᐊᖅᐸᓯ ᐃᓛᒃ ᐱᓕᕆᓂᐊᖅᑐᐊᖅᑐᒍᑦ ᐃᓂᖅᑎᓪᓗᒋᑦ ᐃᓘᓐᓇᑎᒃ ᑐᓯᕋᐅᑎᖕᒋᑦ, ᐆᒪᔪᓕᕆᔨᖅᔪᐊᑦ ᐃᓱᒪᖅᓱᕐᐳᑦ ᐃᓂᓪᓚᐅᑎᓂᖕᖑᒃ ᐱᑕᖃᓐᓂᖅᐸᑦ, ᐱᓗᐊᖅᑐᒥᒃ ᐃᓱᒪᒋᓗᒍ ᐃᓛᒃ ᐊᑐᓕᖅᑕ ᒪᓐᓇᓂᒃ ᑭᖑᓪᓕᖅᐹᓂᒃ ᓈᓚᖅᑎᓯᓂᖅᓂᒃ ᐸᖅᓇᑕᐅᔪᓂᒃ ᑕᒪᓐᓇᐃᓐᓇᖅ ᐱᓇᓱᐊᕈᓯᖅ.

ᐃᐸᒋᓗᒍ ᐃᓛᒃ ᐅᓂᒃᑳᑦ ᐃᓕᖅᑲᐅᑎᑦ ᐊᑐᖅᓯᐊᕐᓂᒃ ᑐᓴᕋᖅᓴᓂᒃ CHᐃᕐᐸᒃ ᑲᓇᓐᓇᖕᒐᓂ ᐊᖑᓇᓱᓐᓂᕐᒥᒃ ᐊᐅᓚᓯᓂᕐᒧᑦ, ᑲᔪᓯᑦᑎᓂᖕᒍᑦ ᑲᒪᖅᑕᓂᒃ ᑕᑯᓐᓇᕐᑯᑎᒋᓪᓗᒋᑦ ᑎᑎᖅᓯᒪᔭᒥᓂᒃ ᐊᒻᒪᓗ ᐅᖃᐅᓯᒃᑯᑦ ᐅᓂᒃᑳᓂᒃ ᐱᓪᓗᒋᑦ ᑎᑎᖅᓯᒪᔪᑦ ᐱᔪᓐᓇᐅᑎᑕ ᓇᓗᓇᐃᖅᑕᑦ ᐆᒪᔪᓕᕆᔨᖅᔪᐊᓄᑦ ᐃᓛᒃ ᐱᔪᓐᓇᖅᑎᑕᐅᔪᑦ ᒐᕙᒪᓐᑯᑦ ᓄᓇᕗᒥ ᑐᓯᕋᐅᑎᖕᒋᓂᒃ ᓄᑖᙳᑎᐊᖅᑐᒋᑦ ᐊᖑᓇᓱᒃᑕᐅᒍᓐᓇᖅᑐᑦ ᐊᒻᒪᓗ ᐊᖑᓇᓱᓐᓂᕐᒧᑦ ᒪᓕᒐᑦ CHᐃᕐᐸᒃ ᑲᓇᓐᓇᖕᒐᓂ ᑐᒃᑐᓂᒃ. ᑖᒃᑯᐊ ᐃᓚᒃᑐᑦ ᑭᓯᐊᓂ ᑖᒃᑯᓱᓪᓗᑎᒃ ᐅᑯᓂᖓ:

- ᑭᐅᔾᔪᑏᑦ ᐊᒻᒪᓗ ᐅᖃᐅᓯᐅᖃᑦᑕᕐᓂᖅᑐᑦ ᐱᓪᓗᒋᑦ ᓄᑖᙳᓂᖅᐸᑦ ᖃᐅᔨᓴᕐᑎᒪᓂᑦ ᖃᓄᐃᓪᓗᐊᕐᓂᖕᖑᓄᑦ ᒥᒃᓴᐅᓴᒍᑎᖕᖑᑦ CHᐃᕐᐸᒃ ᑲᓇᓐᓇᖕᒐᓂ ᑐᒃᑐᓂᒃ, ᐱᓗᐊᖅᑐᒥᒃ ᐱᔭᕇᖅᑐᑦ:

- ᒫᓐᓇᕈᓗᒃ ᐊᖏᔪᒥᒃ ᐃᓄᐃᓴᓪᓕᕙᓪᓕᕐᓂᖏᑦ ᐱᑕᖃᕐᑐᑦ ᖃᓄᐃᓪᓗᐊᕐᓂᖏᑦ (ᐊᒡᕕᓪᓗᐊᖓᓂᒃ ᒫᓂ 2015–2018)
- ᐅᖃᐅᑕᐅᒃᑲᓂᕐᑐᑦ ᐃᓱᒪᒋᔭᑦ ᐊᑕᒋᐊᖏᑕ ᑭᑎᖠᒍᑎᒃᑯᑦ ᐆᑦᑕᕋᐅᑏᑦ ᐊᑐᕐᑕᑦ ᒥᒃᓴᐅᓴᒃᑐᒋᑦ ᒫᓐᓇ ᐱᑕᖃᕐᑐᑦ ᖃᓄᐃᓪᓗᐊᕐᓂᖏᑦ
- ᓇᑖ ᓈᔭᒥᓂᖅ ᐊᒻᒪᓗ ᐊᑯᓂᐅᓂᖓ ᖃᐅᔨᓴᕐᓃᑦ
- ᓇᓗᓇᙱᒍᑏᑦ ᐊᕐᓇᐃᑦ ᐃᓅᒍᓐᓇᕐᓂᖏᓐᓂᒃ ᐊᒻᒪᓗ ᓂᖕᕋᓕᐅᕈᓐᓇᕐᓂᖏᓐᓂᒃ/ᐃᓅᒍᓐᓇᕐᓂᖏᑦ
- ᖃᓄᑎᒋ ᐃᓄᐃᑦ ᑲᒪᖃᑕᐅᓐᓂᕐᒪᖖᑕ ᖃᐅᔨᓴᕐᓂᕐᒥ ᐊᒻᒪᓗ ᐊᑐᕐᑕᐅᓂᖏᑦ ᐃᓄᐃᑦ ᖃᐅᔨᒪᓂᖏᑦ ᐱᑕᖃᕐᑐᓂᒃ ᖃᐅᔨᓴᕐᓗᓂ
- ᓇᔪᒪᐃᑦ ᖃᓄᐃᑦᑑᓂᖏᑦ ᐊᒻᒪᓗ ᐊᑦᑐᐃᒍᓐᓇᕐᓂᖏᑦ ᐃᓄᐃᑦ ᐊᐅᓚᓂᖏᑕ

- ᒐᕙᒪᒃᑯᑦ ᓄᓴᕗᕐᒥ ᑐᓯᕋᐅᑎᖓᑦ ᐱᓗᒋᑦ ᐊᖑᓇᓱᒃᑕᐅᒍᓐᓇᕐᑐᑦ ᐊᒻᒪᓗ ᐊᖑᓇᓱᓐᓂᕐᒧᑦ ᒪᓕᒐᑦ ᐊᒻᒪᓗ ᖃᓄᑐᐃᓐᓇᖅ ᐊᓯᐊᒍᑦ ᐊᑐᓕᕐᑯᔭᑦ, ᐱᑕᖃᕐᐸᑦ, ᐊᒻᒪᓗ ᓱᒪᑦ.

- ᐃᓄᐃᑦ ᖃᐅᔨᒪᔭᑐᖃᖏᑦ ᐱᓗᒋᑦ CHᐃᕐᐸᒃ ᑲᓇᓐᓇᖓᓂ ᑐᒃᑐᐃᑦ, ᐊᑕᔪᑦ ᐅᑯᓄᖓ:
  - ᐃᓄᐃᑦ ᑲᒪᒍᓯᖏᑦ ᑐᒃᑐᓂᒃ ᐊᐅᓚᓯᓂᕐᒧᑦ ᓇᓪᓕᐅᓯᒪᑎᓪᓗᒍ ᐃᓄᐃᓴᓪᓕᕙᓪᓕᐊᓂᖏᑦ
  - ᐃᓅᓯᕐᒧᑦ–ᐃᓕᖅᑯᓯᕐᒧᑦ ᓱᓕᔪᓇᔭᑦ CHᐃᕐᐸᒃ ᑲᓇᓐᓇᖓᓂ ᑐᒃᑐᐃᑦ ᐃᓄᓐᓄᑦ
  - ᖃᐅᔨᒪᓂᖅ ᑐᒃᑐᐃᑦ ᐃᓕᖅᑯᓯᖏᓐᓂᒃ, ᐱᓗᐊᕐᑐᒥᒃ ᐱᔾᔪᑕᐅᓪᓗᓂ ᓇᒦᓐᓂᖓ ᓄᖕᕋᓕᐅᕐᕖᑦ ᐊᒻᒪᓗ ᐊᓯᔾᔨᕐᓂᖏᑦ ᐊᑯᓂᐅᔪᒥᒃ

- ᐊᑕᐅᓯᐅᙱᑦᑐᑦ–ᐊᐅᓚᓯᔨᐅᔪᑦ ᐃᓱᒪᒋᔭᖏᑦ ᐋᕿᑦᓯᐃᓗᑎᒃ ᐊᐅᓚᓯᓂᕐᒧᑦ ᑲᒪᒋᔭᕆᐊᓕᓐᓂᒃ ᐊᒥᖅᑳᕐᑕᓂᒃ ᑐᒃᑐᓂᒃ.

ᓂᕆᐅᓐᓂᖅᑲᕐᐳᒍᑦ ᑕᑯᓂᕐᒥᒃ ᐃᓕᑦᓯᓐᓂᒃ ᖁᖅᓗᖅᑐᖅᒥ ᐊᒻᒪᓗ ᐱᓕᕆᓗᑕ ᑲᑐᔾᔨᖃᑎᒌᓪᓗᑕ ᓄᖑᑦᓯᕙᓪᓕᐊᖏᓪᓗᓂ ᐊᐅᓚᑦᓯᓂᕐᒥᒃ CHᐃᕐᐸᒃ ᑲᓇᓐᓇᖓᓂ ᑐᒃᑐᓂᒃ ᐊᑐᕐᓗᒋᑦ ᓈᒻᒪᓂᕐᐹᑦ ᐊᑐᐃᓐᓇᐃᑦ ᖃᓪᓗᓈᑦ ᖃᐅᔨᓴᕐᑎᒻᒪᕆᑦ ᖃᐅᔨᒪᓂᖏᑦ ᐊᒻᒪᓗ ᐃᓄᐃᑦ ᖃᐅᔨᒪᔭᑐᖃᖏᑦ.

ᐱᒋᐊᖅᑲᕈᓯ ᑐᓴᕐᕖᑲᓐᓂᕐᓂᒃ ᐱᓪᓗᒍ ᓈᓚᑦᑎᓯᓂᖅ, ᐊᑏ ᖃᐅᔨᒃᑲᓂᐊᕐᐸᓯᐅᒃ ᐆᒪᔪᓕᕆᔨᕐᔪᐊᑦ.

ᓱᓕᔪᒥᒃ,

David Shimbuk

ᑖᕕᑦ ᓯᐅᑦᓴᒃ,
ᐃᑦᓯᕙᐅᑕᖅ ᐅᕙᓂ
ᓄᓇᕗᑦᒥ ᐆᒪᔪᓕᕆᔨᕐᔪᐊᑦ ᑲᑎᔨᖏᑦ

ᐱᖃᑕᑦ: ᑐᓇᒃᐠ ᑭᓯᖕ, ᑐᑭᒧᐊᕐᑎᑦᓯᔨ ᐆᒪᔪᓕᕆᓂᕐᒧᑦ, ᒐᕙᒪᒃᑯᑦ ᓄᓇᕗᑦᒥ, ᐱᓕᕆᒡᕕᖓᑦ ᐊᕙᑎᓕᕆᔾᔪᑦ;
ᐋᓪ ᐃᖅᖓᐅᑦ, ᑐᑭᒧᐊᕐᑎᑦᓯᔨ ᐆᒪᔪᓕᕆᓂᕐᒧᑦ, ᓄᓇᕗᑦ ᑐᙵᕕᒃ ᑎᒥᖓᑦ;
ᐋᓪ ᐃᒥᙵᖅ, ᐊᐅᓚᑦᓯᔨ ᐊᓪᓚᒡᕕᒃᒥ, ᕿᑎᕐᒥᐅᓂ ᐃᓄᐃᑦ ᑲᑐᔾᔨᖃᑎᒌᖏᑦ;
ᑭᐅᕈᓚᐃᓐ ᓚᑦᑕᓇᐅᒡᑭ, ᑐᑭᒧᐊᕐᑎᑦᓯᔨ, ᐆᒪᔪᕐᓂᒃ ᐊᐅᓚᑦᓯᓂᕐᒧᑦ ᐊᒻᒪᓗ ᐊᐅᓚᑦᓯᒍᑎᓂᒃ ᑲᒪᔩᑦ, ᑲᓇᑕᒥ ᐆᒪᔪᓕᕆᔨᕐᔪᐊᑦ, ᐊᕙᑎᓕᕆᔩᑦ ᐊᒻᒪᓗ ᓯᓚᐅᑉ ᐊᓯᔾᔨᕐᓂᖓᓂᒃ ᑲᒪᔩᑦ ᑲᓇᑕᒥ;

ᐃᒫ ᖃᒡᒍᑕᖅ, ᐊᕙᑦᑐᕐᓯᒪᔪᓂ ᐋᕿᑦᓱᐃᔾ, ᕿᑎᕐᒥᐅᓂ ᐆᒪᔪᓕᕆᔩᑦ ᑲᑎᒪᔨᖏᑦ;
ᐊᓛᓐᑕ ᑑᓛᓐᑦ, ᐊᐅᓚᑦᓯᔾ, ᖁᖅᓗᖅᑐᖅ ᐊᖑᓂᐊᑏᑦ ᑲᑐᔾᔨᖃᑎᒌᖏᑦ;
ᔩᑦᑎ ᐱᓪᓕᔅᓘ, ᐊᐅᓚᑦᓯᔾ ᐊᓪᓚᒡᕙᒃᒥ, Wek’eezhii ᓄᓇᒥᐅᑕᓕᕆᔩᑦ ᑲᑎᒪᔨᖏᑦ;
ᑎᐊᑉᐳᕋ ᓯᒪᓐᔅ, ᐊᐅᓚᑦᓯᔾ ᐊᓪᓚᒡᑯᒃᒥ, Sahtú ᓄᓇᒥᐅᑕᓕᕆᔩᑦ ᑲᑎᒪᔨᖏᑦ;
ᐊᐃᒥ ᐃᒫᔅ, ᐊᐅᓚᑦᓯᔾ ᐊᓪᓚᒡᑯᒃᒥ, Gwich’in ᓄᓇᒥᐅᑕᓕᕆᔩᑦ ᑲᑎᒪᔨᖏᑦ;
ᓕᐊᓇ ᑳᕐᐸᓐᑐᕐ, ᐃᑦᓯᕙᐅᑕᖅ, ᐆᒪᔪᕐᓂᒃ ᐊᐅᓚᑦᓯᓂᕐᒧᑦ ᐅᖃᐅᔾᔨᒋᐊᕐᑏᑦ ᑲᑎᒪᔨᖏᑦ;
ᐃᑦᕗᐊᕐᑦ ᓵᒍᓃ ᐊᒻᒪᓗ ᐃᖅᑭᓖᑦ ᑲᑎᒪᔨᖏᑦ, ᔮᐊᓗᓇᐃᕝᒥ ᐃᖅᑭᓖᑦ;
ᕗᐃᓕᐊᒻ ᐃᓐᒋ, ᐊᖓᔪᖄᖅ, North Slave ᐊᓪᓚᖓᔪᑦ ᑲᑐᔾᔨᖃᑎᒌᖏᑦ;
ᐃᐊᓱᓪ ᓕᔅᑭ, ADFN ᐋᔾᔨᕐᑏᑦ ᐋᕿᑦᓱᐃᔾᖓᑦ, ᐊᑲᐃᑦᓱ ᐃᖅᑭᓖᑦ;
ᐊᖓᔪᖄᖅ ᑎᐅᕈᓪ ᒫᕐᔫ ᐊᒻᒪᓗ ᐃᖅᑭᓖᑦ ᑲᑎᒪᔨᖏᑦ, Lutsel K’e ᐃᖅᑭᓖᑦ;
ᐳᕘᓄ ᑯᕋᖪᑦ, ᐊᖓᔪᖄᖅ, North Slave ᓇᓘᓂ, ᐊᕝᑎᓕᓇᔩᑦ ᐊᒻᒪᓗ ᓄᓇᒥᐅᑕᓕᕆᔩᑦ, ᖓᕙᒪᓐᑯᑦ ᓄᓇᓯᐊᖅᒥ;
ᒪᐃᑯᓪ ᔿᕐᑖ, ᐊᐅᓚᑦᓯᔾ, ᓄᓇᒥᒃ ᓴᐳᒻᒥᔩᑦ ᐊᒻᒪᓗ ᓄᓇᒥᐅᑕᓕᕆᔩᑦ, Tlicho ᖓᕙᒪᖏᑦ;
ᕘᕐᓇᓐ ᐃᒫᔅ, ᐃᑦᓯᕙᐅᑕᖅ, ᐃᓄᕕᐊᓕᐃᑦ ᐆᒪᔪᓕᕆᔩᑦ ᑲᑎᒪᔨᖏᑦ;

ʔehdzo Got'ı̨nę Gots'ę́ Nákedı

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Daniel Shewchuk, Chair
Nunavunmi Anngutighatigut Aulapkaijitkut Katimajiat
Nunavut Wildlife Management Board

Delivered via email

February 10, 2020

RE: ***Information Requests*****: Nunavut Wildlife Management Board In-person Public Hearing to Consider the Government of Nunavut's Proposal to Modify the Total Allowable Harvest of Bluenose East Caribou From 340 to 107 and to Establish a Male-Only Harvest Non-Quota Limitation (NWMB Bluenose East Hearing)**

Dear Mr. Shewchuk:

The ʔehdzo Got'ı̨nę Gots'ę́ Nákedı (Sahtú Renewable Resources Board – SRRB) is thankful for the opportunity to contribute to – and learn from – the NWMB's Bluenose East Hearing on March 2-3, 2020. I will be attending on behalf of the SRRB. The SRRB would like to request some additional information as we prepare our written submission for the February 14 deadline, as follows:

1. Submissions are required in Inuktut language (and we understand if they're more than 10 pages, a summary only is required). We'd be grateful for some additional details to help us appropriately address this requirement:
    - Can you clarify whether the dialect should be Innuinaqtun since we understand this to be the dialect of the primary concerned community, Kugluktuk?
    - Must the translation be provided by the February 14 deadline for submissions? We are concerned about timing, since our Board will be meeting to discuss our submission immediately prior to the deadline (February 11-13). This does not leave much time for writing the submission, let alone translation.
    - Do you have a contact list or a recommendation for an individual who would be able to provide the required translation?

2. We have reviewed the Public Registries for the Bluenose East and Bathurst Hearings. With respect to the Bluenose East Hearing, is evidence provided for the Bathurst Hearing by the February 14 deadline also considered as part of the Bluenose East Hearing Record? We are interested in this because we note that five recognized Parties (the Government of Nunavut, the Kugluktuk Angoniatit Association. the Kitikmeot Inuit Association, the Kitikmeot Regional Wildlife Board, Nunavut Tunngavik Incorporated) share jurisdiction with respect to both herds, and thus perspectives with respect to one herd may be relevant to the other.

3. The NWMB's letter of October 7, 2016 regarding decisions concerning Bluenose East caribou harvest management includes two decisions that appear to provide relevant context for the 2020 NWMB Bluenose East Public Hearing, namely:

    3) Recommend that the Kitikmeot Regional Wildlife Board, Government of Nunavut Department of Environment and affected Hunters and Trappers Organizations, with assistance - as deemed necessary or advisable - from other qualified organizations and/or relevant Qaujimaniliit, complete the development of the draft Bluenose East Caribou Management Plan - including careful consideration of a potential predator control program - by no later than the end of September 2017; and

    4) Upon submission of the completed draft Bluenose East Caribou Management Plan for approval by the NWMB pursuant to the Nunavut Land Claims Agreement Sections 5.2.34(d)(i) and 5.3.3, promptly hold a public hearing in the Kitikmeot Region - ideally in the community of Kugluktuk - in order to make a decision or decisions concerning the ongoing harvest management regime for the Bluenose East caribou herd in the Nunavut Settlement Area.

    These two decisions are reflected in other evidence currently on the registry, namely the presentation of a plan by the Kugluktuk Hunters and Trappers Association (Kugluktuk Angoniatit Association) in the 2016 Hearing Transcript, and a reference to a planning process in the Government of Nunavut's (GN's) proposal to and accepted by the NWMB. Would it be possible for the full 2016 decision document to be available as part of the 2020 Bluenose East Hearing public record as context for submissions by the Parties?

4. The Government of Nunavut's (GN's) submission to the NWMB, provided with the December 13, 2019 letter of invitation to the NWMB Bluenose East Hearing, makes reference to the community-based management plan for the Bluenose-East herd developed by the Kugluktuk Hunters and Trappers Organization (HTO) and being finalized in collaboration with GN, with the intention of submitting a revised version by December. That document also summarizes key messages from the GN's community engagements (also documented in the HTO Consultations Report Bluenose East Caribou Management Recommendations, February-October 2019), to the effect that "some community members feel that there should not be any harvest restrictions for Kugluktuk harvesters of the BNE herd, and that the harvest could be managed through a community based management plan." The SRRB requests additional

details about how the GN’s recommendation for harvest management (reduction of the TAH to 107) accommodates the input provided in community engagement and the collaborative planning process with Kugluktuk HTO.

Thank you for considering these information requests. We look forward to your response. Please don’t hesitate to contact me if you have any questions about the requests.

Máhsı cho,

Deborah Simmons
Executive Director