ᕿᒥᕐᕈᓇᒃᑕᐅᑲᓐᓂᕐᓂᖓ ᐅᒥᖕᒪᑦ ᓇᔪᕐᕼᕐᕼᑎᖀᑦᑐᑦ ᐅᓅᕐᖏᑕ
ᖃᓄᐃᓐᓂᖏᑦ ᕿᑎᕐᒥᐅᓂ, ᓄᓇᕗᑦ

ᒫᑎᐅ ᑐᒫᓐᑦ
ᕿᑎᕐᒥᐅᓂ ᓂᕐᔪᑎᓂᒃ ᖃᐅᔨᓴᖅᑎ

ᐃᖅᑲᓇᐃᔭᐅᑎᒃᓴᒃ ᑎᑎᕋᖅᐊᓐᖓᐅᑎ - ᒪᐃ 2006

ᐸᐃᐸᐧᒃᑯᕕᖕᓅᕐᕼᖅᑕᐅᓂᖓᑕ ᐅᓂᒃᑳᑉ ᓈᓴᐅᑖ

ᓇᐃᓅᖅᓯᒪᔪᖅ:

ᑖᓐᓇ ᐅᓂᒃᑳᖅ ᕿᒥᕐᕈᓇᒃᑲᓐᓂᕈᑕᐅᔪᖅ ᖃᓄᐃᓐᓂᕆᓯᒪᔭᖏᓐᓂ ᑭᖑᓂᑦᑎᓐᓂ ᐅᒥᖕᒪᓕᕆᓂᕐᒧᑦ ᐊᐅᓚᑦᓯᖃᑦᑕᕐᓂᐅᔪᒥᒃ ᐊᒻᒪᓗ ᐆᒪᔪᑦ ᖃᓄᐃᑦᑐᑐᐃᓐᓇᐃᑦ ᖃᓄᐃᓐᓂᖏᓐᓂᒃ ᕿᑎᕐᒥᐅᓂ ᓄᓇᕗᒻᒥ. ᒫᓐᓇᐅᔪᖅ, ᕿᑎᕐᒥᐅᑦ 50,000-ᓃᑦᑐᓂᒃ ᐅᒥᖕᒪᖃᖃᑦᑕᖅᑐᖅ. ᐅᖃᐅᓯᕆᑐᐃᓐᓇᕐᓗᒍ, ᐅᒥᖕᒪᖃᕐᓂᖓ ᐅᓄᖅᓯᕙᓪᓕᖅᓯᒪᔪᖅ ᐅᑭᐅᖅᑕᖅᑐᒥ ᕿᑭᖅᑕᖓᓂ, ᐊᒻᒪᓗ, ᐅᓄᖅᓯᑲᓪᓚᓚᐅᖅᑎᓪᓗᒋᑦ, ᐃᓅᓵᓪᓕᕙᓪᓕᐊᑐᐃᓐᓇᓕᕐᒥᔪᑦ ᖃᑦᓲᓐᓇᐅᓂᖅᓴᐅᓕᖅᑎᓪᓗᒋᑦ ᕿᑐᕐᖏᐅᖅᑐᑦ ᐊᒻᒪᓗ/ᐅᕝᕙᓘᓐᓃᑦ ᐊᓐᓇᓯᒪᕐᑲᑦᑕᕐᓂᖏ. ᐃᓚᖓᒍᑦ ᑭᖑᓂᕆᖕᒌᖅᑕᑎᓐᓂ ᐊᒻᒪᓗ ᒫᓐᓇᐅᔪᖅ ᐊᐅᓚᑦᓯᔾᔪᓯᐅᔪᑦ ᐋᔩᕈᑕᐅᕐᑲᑦᑕᐃᓇᖅᐳᑦ ᐊᒻᒪᓗ ᐃᓚᖏᑦ ᐊᑐᓕᕐᑯᔾᔪᑏᑦ ᓴᖅᑭᖅᑎᑕᐅᕙᑦ.

ᕿᔭᒋᔭᐅᔪᑦ

ᕿᔭᓐᓇᒦᒃ ᒥᑦᓴ ᑳᒻᕗ ᐊᒻᒪᓗ ᒪᐃᒃ ᓯᑐᕆᖕᑕᓐ ᐅᖃᐅᓯᖃᕿᖃᕈᓐᓇᕐᓂᕆᓚᐅᖅᑕᖏᓐᓄᑦ ᐊᒻᒪᓗ ᐃᓱᒪᒃᓴᖅᓯᐅᕈᑎᒃᓴᓂᒃ ᑐᓂᓯᔪᓐᓇᓚᐅᕐᓂᖏᓐᓄᑦ ᑖᒃᑯᓄᓐᖓᖓᔪᓂᒃ ᑎᑎᕋᕆᐊᓐᖓᐅᑎᓄᑦ. ᐋᔩᕋᕐᑲᑎᒋᔪᓐᓇᓚᐅᖅᑕᕗᑦ ᐋᓐ ᒐᓐ ᓇᓗᓇᐃᖅᓯᒋᐊᓚᐅᖅᑐᖅ ᐃᓚᖏᓐᓅᖓᔪᑦ ᑖᒃᑯᐊ ᐅᒥᖕᒪᓕᕆᓂᕐᒧᑦ ᐊᐅᓚᑦᓯᓂᐅᖃᑦᑕᖅᓯᒪᔪᓂᒃ ᑕᒫᓂ ᓄᓇᖓᓐᓂ.

ᑐᑭᓯᒋᐊᒃᑲᓂᕐᕕᒃᓴᖅ: ᐊᕙᑎᓕᕆᔨᒃᑯᑦ, ᑎᑎᖅᑲᖃᐅᑖ 377, ᖁᕐᓗᖅᑐᖅ, ᓄᓇᕗᑦ X0B 0E0
Dept. of Environment, Box 377 Kugluktuk NU X0B 0E0
ᐅᖄᓚᐅᑖ: (867) 982-7440 / ᓱᒃᑲᔪᒃᑯᑦ: (867) 982-3701 / ᖃᕆᓴᐅᔭᒃᑯᑦ: mdumond@gov.nu.ca

1.0. ᐱᔾᔪᑖ:

ᑖᓐᓇ ᐅᓂᒃᑳᖅ ᓇᐃᓈᖅᓯᒪᔭᐅᓪᓗᓂ ᖃᓄᐃᓐᓂᕆᔭᐅᔪᓂᒃ ᐊᒻᒪᓗ ᒫᓐᓈᖓᔪᓄᑦ ᐊᐅᓚᕝᓯᓂᐅᖃᑦᑕᖅᓯᒪᔪᑦ ᐅᒥᖕᒪᓕᕆᓂᕐᒧᑦ ᕿᑎᕐᒥᐅᓂ ᓄᓇᕗᑦ (ᓇᓗᓇᐃᖅᓯᒋᐊᔾᔪᑦ 1.1). ᓇᐃᓈᖅᓯᒪᓗᑎᒃ ᐅᓂᒃᑳᓕᐊᖑᓯᒪᔪᑦ ᐅᒥᖕᒪᑦ ᓇᔪᕐᖃᕐᖃᑎᒌᑦᑐᑦ ᐅᓄᕐᓂᖏᑦ ᓄᓇᕗᓕᒫᒥ ᑖᒃᑯᓇᓃᑉᐳᑦ ᕗᐊᓂᐃ ᐊᒻᒪᓗ ᒐᓐ (1998). ᑖᓐᓇ ᑎᑎᕋᖅᑕᐅᓚᐅᖅᑐᖅ ᐋᖅᑭᓱᖅᑕᐅᓪᓗᓂ ᐊᑐᖅᑕᐅᓪᓗᑎᒃ ᐱᙱᐅᔪᓐᓇᖅᑐᓂᒃ ᐅᓂᒃᑳᓕᐊᒥᓂᕐᓂᒃ, ᐸᐃᐸᐄᒃᑯᕕᖏᓂᒃ, ᐊᒻᒪᓗ ᑎᑎᖅᑲᓃᑦᑐᓂᒃ.

ᓇᓗᓇᐃᖅᓯᒋᐊᒃᑲᓂᕈᑦ 1.1: ᖃᐅᔨᒪᔭᐅᔪᑦ ᐅᒥᖕᒪᖃᕐᓂᐅᔪᑦ ᓄᓇᕗᒻᒥ 1997-ᒥᓂᓴᑦ (ᐱᔭᐅᔪᖅ: ᕗᐊᓂᐃ ᐊᒻᒪᓗ ᒐᓐ 1998) ᐊᒻᒪᓗ ᐅᐸᓗᒥᒨᖓᓕᖅᑎᑕᐅᓗᑎᒃ ᓄᑖᓂᒃ ᐃᓕᐅᖅᑲᐃᖓᖅᓱᑎᒃ ᐊᑐᐃᓐᓇᐅᔪᓂᒃ

2.0. ᓇᓗᓇᐃᔭᐃᔾᔪᑏᑦ

ᐅᒥᖓᑦ (ᐆᕖᐸᒃ ᒍᔅᑦᓴᑕᔅ) ᓇᓗᓇᐃᒃᑯᑕᐅᒻᒪᕆᑉᐳᑦ ᐅᑭᐅᖅᑕᖅᑐᒥ. ᐊᓇᓯᒪᔪᓇᖅᓯᒪᓪᓗᑎᒃ ᐅᑭᐅᖅᑕᖅᑑᑉ ᓯᓚᖓᓂ ᐊᑦᓱᕈᕐᓇᖅᑐᒦᓇᕈᓇᖅᑐᒥ ᐊᒻᒪᓗ ᐆᒪᔪᑕᐅᓯᒪᓪᓗᐊᑕᖅᑐᑎᒃ ᐊᓇᓯᒪᒍᓇᖅᑲᑦᑕᖅᓯᒪᔪᓄᑦ ᓂᕿᑐᖅᑐᓄᑦ, ᑕᒫᓂᒥᐅᓄᑦ ᐊᒻᒪᓗ ᑎᑭᕚᓄᑦ ᑕᒪᐅᓈᖃᑦᑕᖅᓯᒪᔪᓄᑦ ᖃᐅᔾᓇᓱᐊᖅᑎᕐᔪᐊᖑᖃᑦᑕᖅᓯᒪᔪᓄᑦ, ᐊᒻᒪᓗ ᐱᓪᓗᐊᑕᕆᔭᐅᕗᑦ ᐆᒪᔪᓄᑦ ᓇᔪᖓᕐᒋᓈᓪᓗ ᐆᒪᔾᔪᑕᐅᓪᓗᑎᒃ (ᐱᕈᖅᑐᑦ ᐱᕈᕈᓇᓪᓴᐱᐊᓗᓈᓂᖏᑦ, ᒃᔮᐅᑦ ᐃᓚᖏᓪᓗ 2002). ᐅᒥᖓᑦ ᑲᒪᒋᔭᐅᖃᑦᑕᖅᓯᒪᔫᒪᕆᐅᕙᑦ ᐱᔭᒻᒪᕆᐊᑑᓪᓗᑎᒃ ᐊᒥᖅᓂᒃ ᑕᐅᖅᓲᖃᑦᑕᓂᕐᒧᑦ 1800-ᐃᑦ ᐃᓱᓕᑉᐸᓪᓕᐊᓕᖅᑎᓪᓗᒋᑦ 1900-ᖏᑕ ᐱᒋᐊᖅᐸᓪᓕᐊᓂᖏᓐᓄᑦ ᑎᑭᑦᑐᓂ (ᕙ 1991). ᐊᖑᓇᓱᒃᑕᐅᓗᐊᖃᑦᑕᖅᓯᒪᓂᖏᓐᓄᑦ ᐱᔾᔪᑕᐅᓪᓗᐊᑕᖅᓯᒪᕗᖅ ᓄᖑᐸᓪᓕᐊᓂᕆᓚᐅᖅᑕᖏᑦ ᐅᒥᖓᖕᓄᑦ ᑭᓯᐊᓂᓕ ᑖᒃᑯᓐᓇᖏᒻᒪᕆᑦᑐᑦ ᐊᒻᒪᓗ ᓯᓚᐅᑉ ᐊᓱᔾᔨᐸᓪᓕᐊᓂᖓᓄᑦ ᐊᒻᒪᓗ ᐊᐅᓚᓂᖃᑦᑕᕗᖏᓐᓄᑦ ᐅᑎᖅᑕᕿᖏᓐᓄᑦ ᑕᒪᓇ ᐱᓪᓗᐊᑕᐅᔫᓴᐅᒋᕗᖅᑕᐅᖅ ᓄᖑᐸᓪᓕᐊᓂᖏᓐᓄᑦ ᐊᒻᒪᓗ ᐅᑎᖅᐸᓪᓕᐊᖃᑦᑕᕐᓂᕆᔭᖏᓐᓄᑦ (ᒐᓐ 1990a).

ᐊᔾᔨᐅᖏᑦᑐᓂᒃ ᑕᐸᐃᕐᓇᑐᕐᔪᐊᓂᒃ ᐃᓕᖅᑯᓱᖃᖃᑦᑕᑎᓪᓗᒋᑦ, ᑎᓂᐊ (1965 *ᒐᓐᒦᖓᖅᑐᓂᒃ 1982)* ᓇᓗᓇᐃᖅᑕᐅᓯᒪᔪᖅ ᒪᕈᓕᖅᑲᖓᒋᐊᖏᑦ ᑖᒃᑯᓄᓐᖓᖓᔫᒃ ᐆᒪᔪᓄᑦ ᐆᕖᐸᒃ ᒍᔅᑦᓴᑕᔅ ᒍᔅᑦᓴᑕᔅ ᐃᓗᐃᓕᕐᒥᐅᑕᑦ ᓄᓇᒥ ᐊᒻᒪᓗ ᐆᕖᐸᒃ ᒍᔅᑦᓴᑕᔅ ᕗᐊᑦ ᐅᑭᐅᖅᑕᖅᑑᑉ ᕿᑭᖅᑕᖏᓐᓂ (ᕿᑭᖅᑖᓗᖕᒥ ᐱᑕᖃᖏᑦᑐᑐᐊᖅ). ᓇᕿᖖᒋᖅᓯᒪᓂᖏᓐᓂᒃ ᖃᐅᔨᔭᐅᓯᒪᔪᑦ ᓇᓗᓇᐃᖅᓯᓯᒪᒍᑕᐅᕙᑦ ᓱᖅᑯᐃᒪᒍᑕᐅᓪᓗᑎᒃ ᐊᔾᔨᒌᖖᒋᓐᓂᖏᓐᓂᒃ ᐅᑭᐅᖅᑕᖅᑐᒥ ᕿᑭᖅᑕᖏᓐᖑᖅᑐᓂᒃ ᐊᒻᒪᓗ ᐃᓗᐃᓕᕐᒥ ᐅᒥᖓᑦ (ᕚ ᑯᐃᕚᑕ ᑎ ᔫᑦ 2001). ᑭᓯᐊᓂᓕ, ᕚ ᑯᐃᕚᑕ ᑎ ᔫᑦ (2001), ᐊᔾᔨᒋᖏᓐᓂᖏᓐᓂᒃ ᖃᐅᔨᓇᓱᐊᕐᓂᕐᒧᑦ 14-ᓂᒃ ᓈᓚᐅᑎᓕᖅᑐᐃᓯᒪᓂᒃᑯᑦ ᖃᖓᑦᑕᖅᑎᑕᐅᓯᒪᔫᒃᑯᑦ ᖃᐅᔾᔪᑎᒃᓴᓂᒃ ᓇᓃᓐᓂᖏᓐᓂᒃ, ᖃᐅᔨᓚᐅᖅᑐᖅ ᐅᑭᐅᖅᑕᖅᑐᒥ ᐅᐊᖓᓇᖓᓂ ᕿᑭᖅᑕᐃᑦ, ᓂᒋᖅᐸᓯᐊᓃᑦᑐᑦ ᐅᑭᐅᖅᑕᖅᑑᑉ ᕿᑭᖅᑕᖏᓐᓂ ᐊᒻᒪᓗ ᐃᓗᐃᓕᕐᒥ ᐅᒥᖓᑦ ᐊᔾᔨᒌᖖᒋᒻᒪᑕ ᓇᕿᖖᒋᖅᓯᒪᓂᖏᓐᓂᒃ ᐊᒻᒪᓗ ᐃᓗᐃᓕᕐᒥᐅᑕᑦ ᐅᒥᖓᑦ ᖁᑦᓯᓂᖅᐹᒥ ᓱᖅᑯᐃᕐᓇᓚᐅᖅᐳᑦ ᐊᔾᔨᒋᖏᓐᓂᖏᓐᓂᒃ. ᑕᐃᒪᐃᒐᓗᐊᖅᑎᓪᓗᒍ, ᖃᐅᔭᖅᑕᐅᓯᒪᓂᖏᑎᒍᑦ ᓇᕿᖖᒋᖅᓯᒪᒻᒪᖖᒋᑕ ᐊᔾᔨᒋᖏᓐᓂᖏᑦ ᓱᓕ ᓈᖓᒃᓯᓯᒪᖏᓕᖅ ᐅᖃᐅᓯᓚᒻᒪᑎᒋᐊᖓ ᓇᕿᖖᒋᖅᓯᒪᒻᒪᑎᓇᓂᖏᓐᓂᒃ ᐅᒥᖓᑦ ᓇᓗᓇᐃᖅᑐᑎᐊᖏᑦ ᐊᔾᔨᒋᖏᓐᓂᖏᓐᓂᒃ ᐊᒡᒍᑐᕐᓗᒋᑦ (ᒐᓐ ᐊᒻᒪᓗ ᐋᑕᓪᔫᔅᑭ, 2003).

3.0. ᐅᒥᖓᑦ ᖃᓄᐃᓐᓂᕆᓯᒪᔭᖏᑦ ᐊᒻᒪᓗ ᖃᓄᐃᓐᓂᕆᔭᖏᑦ ᕿᑎᕐᒥᐅᓂ:

ᑕᐃᒪᖓᓂᒃ ᓄᖑᐸᓪᓕᖅᓯᒪᔫᒪᕆᐅᓚᐅᖅᓯᒪᖓᑕ ᐅᒥᖓᑦ 1800-ᖏᓐᓂᒃ ᐊᒻᒪᓗ 1900 ᐱᒋᐊᖅᐸᓪᓕᐊᓂᖏᓐᓄᑦ ᐅᑭᐅᖅᑕᖅᑐᓕᒫᒥ ᐊᒻᒪᓗ ᐅᑭᐅᖅᑕᖅᑐᒨᖓᔪᒥ ᐊᒃᑐᐊᔪᒥ, ᐊᒻᒪᓗ ᓴᐳᑎᔭᐅᓯᒪᐃᓇᕋᓱᐊᕐᓂᕆᓯᒪᔭᖏᑦ ᐆᒪᔪᑦ (1917), ᐅᒥᖓᑦ ᐅᑎᖅᐸᓪᓕᐊᓯᒪᕗᑦ ᓇᕿᖖᒋᖅᓯᒪᓂᓕᒫᐸᓗᖏᓐᓂ ᑲᓇᑕᒨᖓᔪᒥ ᐊᒻᒪᓗ ᒫᓇ ᐱᕙᓪᓕᐊᖏᓐᓇᖅᐳᖅ ᐊᒥᓱᕐᖑᐸᓪᓕᐊᒃᑲᓂᖅᓯᒪᓕᖅᑐᑎᒃ ᑲᓇᖕᓈᓂ ᐊᒻᒪᓗ ᓂᒋᖅᐸᓯᖏᓐᓂ ᐃᓂᒋᖃᑦᑕᖅᓯᒪᔭᒥᓄᑦ ᑕᐃᒪᖓᓂᑐᖃᑲᓪᓚᒃ (ᕙ 1991). 1967-ᒥ, ᐅᒥᖕᖓᑦ ᓇᔪᖃᑎᒌᑦᑐᑦ ᐅᓄᕐᓂᖏᑦ ᓄᓇᕗᒻᒥ ᐊᒻᒪᓗ ᓄᓇᑦᓯᐊᕐᒥ ᓇᓚᐅᑦᓴᖅᑕᐅᓯᒪᓚᐅᖅᐳᑦ 9,896-ᖑᒋᐊᖏᑦ (1,500 ᐃᓗᐃᓕᕐᒥᐅᑕᑦ ᐊᒻᒪᓗ 8,396 ᐅᑭᐅᖅᑕᖅᑑᑉ ᕿᑭᖅᑕᕋᓴᖏᓐᓂ) (ᐅᖅᑯᕼᐊᑦ 1980). ᕚᓐᕖᐅᑦ (1977) ᐅᓂᒃᑳᖏᓐᓂᓚᐅᖅᑐᑦ ᐅᒥᖓᖃᕐᓂᐅᔪᑦ ᑲᓇᑕᒥ ᑕᒫᓂᒐᓛᓕᓇᐊᖏᑦ 10,000 ᐅᖃᐅᓯᐅᓯᒪᓪᓗᓂᑦᑕᐅᖅ 1,500 ᐃᓗᐃᓕᕐᒥᐅᑕᐅᒋᐊᖏᑦ (ᑕᒫᓂᒐᓚᒃ 33% ᑕᒫᓂᒐᓚᒃ ᑲᖏᕐᔪᐊᒥ ᑎᖕᒥᐊᓄᑦ ᐃᕐᓂᐅᕐᕕᖕᒥ ᓴᐳᑎᔭᐅᓯᒪᕗᕕᐅᔪᒥ) ᐊᒻᒪᓗ 8,500 ᐅᑭᐅᖅᑕᖅᑐᒥ ᕿᑭᖅᑕᕋᓴᖏᓐᓂ. 13 ᐅᑭᐅᑦ ᓈᓕᖅᑎᓪᓗᒋᑦ (1980), ᓄᓇᑦᓯᐊᕐᒥ ᐅᒥᖓᖃᕐᓂᖏᑦ ᓇᓚᐅᑦᓴᖅᑕᐅᓯᒪᓚᐅᖅᑐᑦ 45,055-ᖑᒋᐊᖏᑦ ᐅᒥᖓᑦ (ᐅᖅᑯᕼᐊᑦ 1980). ᐅᒥᖓᖃᕐᓂᐅᔪᑦ ᑲᓇᑕᒥ ᓇᓚᐅᑦᓴᖅᑕᐅᓯᒪᓚᐅᖅᑐᑦ 108,600-ᖑᓚᐅᕆᐊᖏᑦ 1991-ᒥ (ᕖᒋᓴ ᐊᒻᒪᓗ ᒨᑦᓯᐃ 1992).
2001-ᒥ, ᓇᓚᐅᑦᓴᖅᑕᐅᓯᒪᓂᖏᑦ ᓇᔪᖃᑎᒌᑦᑐᑦ ᐅᓄᕐᓂᖏᑎᒍᑦ ᐊᒥᓱᓂᖏᑦ ᓄᓇᑦᓯᐊᕐᒥ ᐊᒻᒪᓗ ᓄᓇᕗᒻᒥ ᑲᑎᓪᓗᒋᑦ 134,000-ᓂᒃ 144,000-ᒫᖓᓚᐅᖅᑐᑦ ᐆᒪᔪᑦ (ᓄᓇᕗᒻᒥ ᑕᕆᐅᕐᒥᐅᑕᓄᑦ ᐆᒪᔪᓄᑦ ᑲᑎᒪᔨᕋᓛᑦ 2001). ᒫᓇᐅᔪᕐᓕ, ᐅᒥᖓᖃᕐᓂᐅᔪᑦ ᕿᑎᕐᒥᐅᑦ ᐊᓯᖏᓐᓂᐅᖏᑦᑐᖅ ᓇᓚᐅᑦᓴᖅᑕᐅᓯᒪᔪᑦ ᑕᒫᓂᒐᓛᒋᐊᖏᑦ 50,000 ᐆᒪᔪᑦ. ᐅᒥᖓᖃᐅᖅᑐᑦ ᓄᓇᕗᑦ ᐃᓗᐃᓕᖓᓂ ᓄᓇᒥ ᑖᒃᑯᓇᓂᐅᖖᒋᑐᑐᐊᖅ ᐅᐊᖓᓇᖅᐸᓯᖓᓂ ᑲᓇᖓᓂ ᐊᒻᒪᓗ ᐱᖓᓇᕐᒥ, ᐊᒻᒪᓗ ᑕᒪᐃᓐᓂᒐᓚᒃ ᐅᑭᐅᖅᑕᖅᑐᒥ ᕿᑭᖅᑕᖏᓐᓂ ᑖᒃᑯᐊ ᐱᑕᖃᖖᒋᑦᑐᑑᓪᓗᑎᒃ ᕿᑭᖅᑖᓗᒃ ᐊᒻᒪᓗ ᓴᓪᓕᐅᑉ ᕿᑭᖅᑕᖓᓂ (ᑕᑯᓗᒍ ᖃᐅᔨᒋᐊᒃᑲᓂᕈᑎᒃᓴᖅ 1.1). ᑕᒫᓂᒥᐅᓂᒃ ᐅᖃᐅᓯᐅᖃᑦᑕᖅᓯᒪᔪᑐᖃᑦ ᐃᓱᒪᒋᔭᐅᕗᖅ ᐅᒥᖓᖃᕈᓐᓃᖅᑐᒥᓂᐅᒋᐊᖓ ᕿᑭᖅᑖᓗᒻᒥ ᐅᐊᑦᑎᐊᕈᐊᓗᒃ 1500-ᖏᓐᓂ (ᕙ 1991). ᒫᓇᐅᔪᖅ ᓇᓗᓇᐃᖅᑕᐅᓯᒪᔪᑐᐊᖅ ᐅᒥᖓᑦ ᕿᑭᖅᑖᓗᖕᒥ 8-ᖑᓪᓗᑎᒃ ᑕᑯᔭᐅᓚᐅᖅᓯᒪᔪᑦ ᑲᖏᖅᑑᐱᐅᑉ ᓂᒋᐊᓂ 1968-ᒥ (ᕙ 1991). ᑕᐃᒪᖓᓂᒃ ᑕᑯᔭᐅᔪᖃᓚᐅᖅᓯᒪᒋᐊᖏᓐᓂᒃ ᓇᓗᓇᐃᖅᑕᐅᓯᒪᔪᖃᓚᐅᖅᓯᒪᖕᒋᓚᑦ, ᓱᓕᔪᓂᔭᐅᓯᒪᕗᑦ ᑖᒃᑯᐊ ᐅᒥᖓᑦ ᑕᒫᖖᒑᖅᑐᒥᓂᐅᒋᐊᖏᑦ ᐅᑭᐅᖅᑕᖅᑐᒥ ᕿᑭᖅᑕᖏᑕ ᐃᓚᖏᓐᓂᒃ ᐊᒻᒪᓗ ᑕᐃᒪᖓᓂᒃ ᑐᖁᓯᒪᔪᓂᔭᐅᓕᖅᑐᑦ ᐅᕝᕙᓅᓐᓃᑦ ᓅᓯᒪᓕᓂᐊᖏᑦ ᕿᑭᖅᑕᓗᖕᒥᒃ.

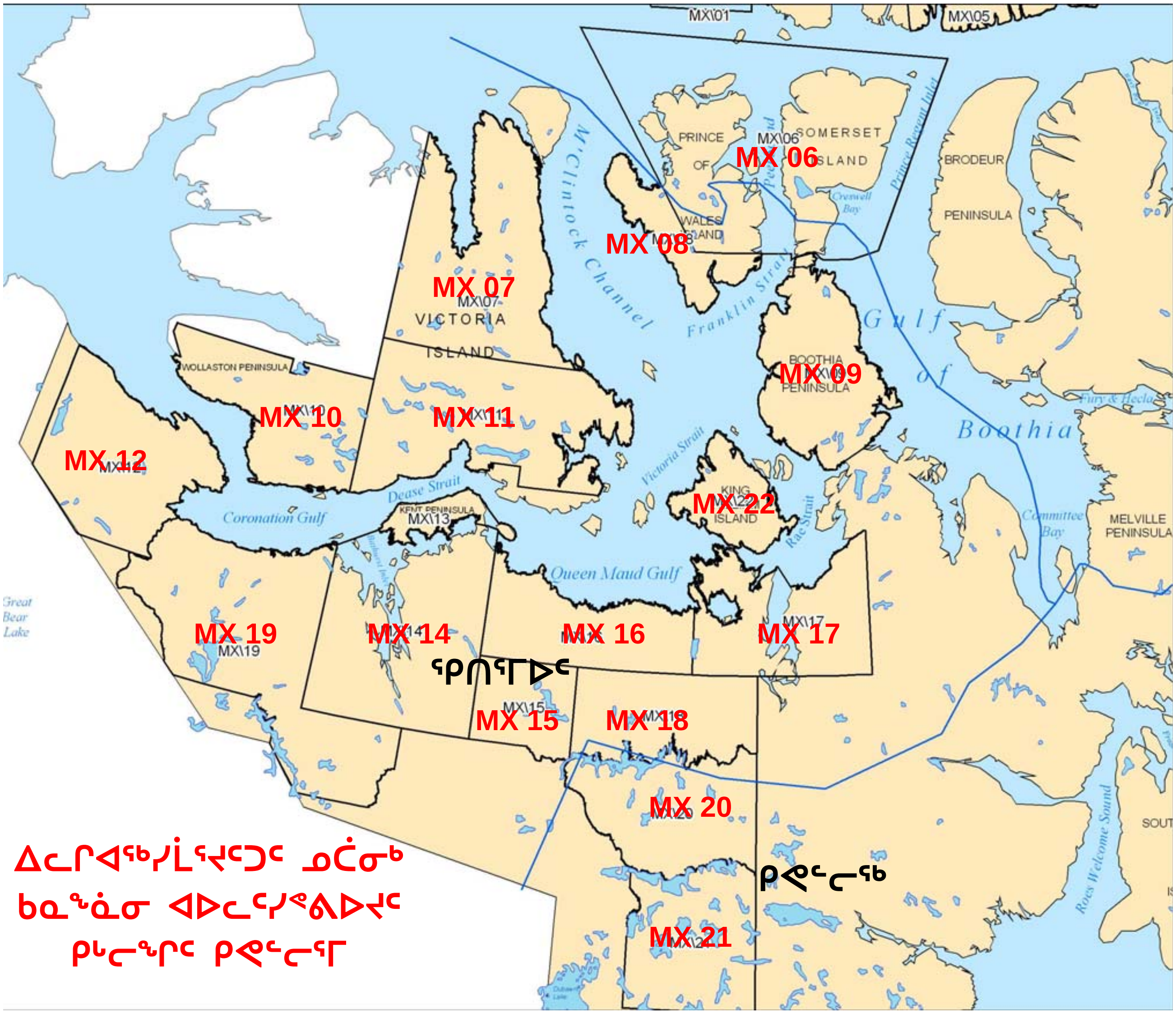
ᐅᖃᐅᓯᐅᖃᑦᑕᖅᓯᒪᔪᓂᒃ ᐱᔭᐅᓪᓗᑎᒃ ᓇᑭᑐᐃᓐᓇᖅ, ᕗᒋᓴᓐ ᐊᒻᒪᓗ ᒨᑦᓯᐃ (1992) ᓇᓗᓇᐃᖅᓯᓚᐅᖅᐳᑦ 17-ᖑᒋᐊᖅᑎᑦ ᓇᔪᒐᖃᖃᑎᒌᑦᑐᑦ ᐅᓄᕐᓂᖅᑎᑦ ᐅᒥᖕᒪᑦ ᑲᓇᑕᒥ. 14-ᖑᔪᐃᑦ ᑖᒃᑯᓈᖕᒐᑦ 17-ᓂᒃ ᓇᔪᒐᖃᖃᑎᒌᑦᑐᑦ ᓇᓗᓇᐃᖅᑕᐅᓯᒪᔪᑦ ᐃᓚᖓᓃᑦᑐᑦ ᓄᓇᕗᑦ ᐅᑳᓘᓐᓃᑦ ᓄᓇᕗᒻᒦᑦᑐᒦᒋᐊᖅᑎᑦ. ᐱᑕᖃᓗᐊᓐᖏᓐᓂᖓᓄᑦ ᑐᓴᕈᑎᓕᐊᖑᓯᒪᔪᓂᒃ ᐊᑐᐃᓐᓇᐅᔪᓂᒃ, ᑖᒃᑯᐊ ᓇᔪᒐᖃᖃᑎᒌᑦᑐᑦ ᒫᓐᓇᐅᔪᒧᑦ ᐊᐱᖅᑯᑕᐅᓯᒪᐃᓐᓇᖅᐳᑦ. ᕿᑎᖅᒥᐅᓂ, ᑖᒃᑯᐊ “ᓇᔪᒐᖃᖃᑎᒌᑦᑐᑦ” ᐅᑯᐋᓐᓃᑦ ᓄᐊᖕᒐᔪᖅᑕᓖᑦ ᐅᒥᖕᒪᖅᑑᒥᐅᑕᑦ, ᕋᐃ ᕆᑦᑐᑦᓴᒻᒦᑦᑐᑦ ᓄᐊᖕᒐᔪᑦ, ᐃᖃᓗᑦᑑᑦᑎᐊᑉ ᕿᑭᖅᑖᓗᐊᓂ (ᑭᓪᓕᓂᖅ), ᕿᑭᖅᑕᓃᑦᑐᑦ Queen Maud Gulf ᓄᐊᖕᒐᔪᑦ ᐊᒻᒪᓗ ᑭᓐᖓᐃᓚᖃᓃᑦᑐᑦ - ᑰᒐᓇᔫᑉ ᓄᓇᖕᒐᓃᑦᑐᑦ. 1980-ᖏᓐᓂ ᐃᓱᓕᑉᐸᓪᓕᐊᓕᖅᑎᓪᓗᒍ/1990-ᖏᑦ ᐱᒋᐊᖅᐸᓪᓕᐊᓕᖅᑎᓪᓗᒋᑦ, ᑖᒃᑯᐊ ᓄᐊᖕᒐᔪᑦ ᓇᓚᐅᑦᓵᖅᑕᐅᓯᒪᓚᐅᖅᑐᑦ ᑕᓕᓂᒐᓚᒋᐊᖅᑎᑦ 3420, 1800, 30650, 7600, ᐊᒻᒪᓗ 1130 ᐅᒥᖕᒪᖃᕐᓂᐅᔪᓂ ᑖᒃᑯᓄᓐᖕᒐᖕᒐᔪᑦ. (ᕗᒋᓴᓐ ᐊᒻᒪᓗ ᒍᑦᓯᐃ 1992). ᑖᒃᑯᐊ “ᓇᔪᒐᖃᖃᑎᒌᑦᑐᑦ” ᑲᑎᓪᓗᒋᑦ ᑕᒫᓂᒐᓚᒃ ᐅᓄᕐᓂᖃᓚᐅᖅᑐᑦ 45 000 ᐅᒥᖕᒪᑦ. ᑭᓯᐊᓂᓕ, ᑖᒃᑯᐊ ᐃᓚᖏᑦ 30 650 ᐅᒥᖕᒪᑦ ᐃᖃᓗᑦᑑᑦᑎᐊᑉ ᕿᑭᖅᑖᓗᐊᓃᑦᑐᑦ ᑖᒃᑯᓄᓐᖕᒐᖕᒐᓐᖏᓚᑦ ᓄᓇᕗᒻᒨᖕᒐᔪᓄᑦ, ᑭᓯᐊᓂᓕ ᑖᕙᓐᖕᒐᑦ ᓄᓇᑦᓯᐊᕐᒥ ᑕᑯᔭᐅᖃᑦᑕᓲᖑᕗᑦ. ᑖᒃᑯᐊᓕᒫᑦ ᓇᔪᒐᖃᖃᑎᒌᑦᑐᑦ ᓇᓗᓇᐃᖅᑕᐅᓯᒪᕗᑦ ᐅᓄᖅᓯᕙᓪᓕᐊᒋᐊᖅᑎᑦ, ᑭᓐᖓᐃᓚᖅ ᐱᓐᖏᑦᑐᑑᓪᓗᓂ - ᑰᒐᓇᔫᑉ ᓄᓇᖕᒐᓃᑦᑐᑦ ᓱᕋᐃᑦᑐᒋᐊᖅᑎᑦ ᓇᔪᒐᖃᖃᑎᒌᑦᑐᑦ ᐃᓱᒪᒋᔭᐅᓯᒪᓪᓗᓂ ᓱᓕᔪᓇᔭᐅᕗᖅ ᓄᖑᐊᑎᑉᐸᓪᓕᐊᒐᑎᒃ ᐅᓄᖅᓯᕙᓪᓕᐊᖏᒋᐊᖅᑎᑦ.

ᕿᑎᖅᒥᐅᓂ, ᑕᒪᖅᒥ ᕿᑭᖅᑕᒥᐅᑕᑦ ᐅᒥᖕᒪᑦ ᓇᔪᒐᖃᖃᑎᒌᑦᑐᑦ ᐅᓄᖅᓯᕙᓪᓕᐊᒋᐊᖅᑎᑦ ᐊᒥᓲᓂᖏᑎᒍᑦ. ᐃᓗᐃᓕᖅᒥᓕ, ᖃᐅᔨᓴᖅᑕᒻᒪᕆᐅᓚᐅᖅᑎᓪᓗᒋᑦ, ᐅᒥᖕᒪᖃᕐᓂᐅᔪᑦ ᓇᔪᒐᖃᖃᑎᒌᑦᑐᓂᒃ ᓄᖑᐊᑎᑉᐸᓪᓕᐊᑐᐃᓐᓇᖅᐳᑦ. ᖁᖅᓗᖅᑑᑉ ᐱᖕᒐᓈᓂ, ᓄᖑᑉᐸᓪᓕᐊᓂᖅᑎᑦ ᐊᒻᒪᓗ ᐅᑎᖅᐸᓪᓕᐊᓂᖃᖅᑑᔭᓐᖏᓐᓂᖅᑎᑦ ᐃᓱᒪᒋᔭᐅᓯᒪᕗᑦ ᓱᓕᔪᓇᔭᐅᔪᒥᒃ ᑕᕝᕙᓐᖓᓇᐊᖅᑎᑦ ᐋᓐᓂᐊᓇᖅᑐᓕᓐᓂᒃ: ᑕᐃᒎᓯᓕᖅᒥᒃ ᐅᒥᖕᒪᒃᓴᑐᕋᖖᖏᓚᔅ ᐸᓪᓕᑰᑭᓐᓯᔅ *Umingmakstrongylus pallikuukensis* (ᒐᓐ ᐊᒻᒪᓗ ᕗᐊᐲᓴ 1993, Hᐅᕚᒃᐃᓚᖏᓪᓗ 1995, **ᖃᐅᔨᒪᔾᔭᐅᔾᔪᑎᒃᓴᖏᓐᓃᖕᒑᖅᑐᑦ ᑖᒃᑯᓈᖕᒐᑦ ᑎᑎᕋᖅᑐᕕᓂᕐᓂᒃ**). ᐊᓯᖏᓐᓂᓕ ᓄᓇᓂ, ᓄᖑᐊᑎᑉᐸᓪᓕᐊᓂᖏᓐᓄᑦ ᐱᔾᔪᑕᐅᔪᑦ ᖃᐅᔨᒪᔭᐅᓐᖏᓚᑦ ᐊᒻᒪᓗ ᓇᓗᓇᐃᖅᑕᐅᖃᑦᑕᖅᓯᒪᓂᖅᑎᑦ ᐃᓱᒪᒋᔭᐅᑐᐃᓐᓇᖅᓯᒪᔪᓐᖕᒑᖅᑐᑦ. ᓄᐊᖕᒐᔪᑦ ᓇᑭᑐᐃᓐᓈᖅᑐᑦ ᐅᒥᖕᒪᖃᕐᓂᐅᔪᓂ ᓲᖃᓗ ᒫᓐᓇᐅᔪᖅ ᖃᓄᐃᓕᖕᒐᓂᕆᖃᑦᑕᖅᓯᒪᔭᖏᓐᓄᑦ ᐊᐅᓚᓂᐅᔪᑎᒍᑦ ᖃᖕᒐᐅᓕᕋᐃᒻᒪᑦ ᑕᐃᒪᐃᖃᑦᑕᓲᖑᓂᖏᓐᓂᒃ ᐊᕐᓯᑦᑑᓚᐅᕋᓗᐊᖅᓱᑎᒃ ᖁᕐᓯᓕᖅᐸᓪᓕᐊᕖᔭᖅᐳᑦ ᐅᒥᖕᒪᖃᕐᓂᐅᔪᑦ. ᑕᒪᓐᓇ ᐊᐅᓚᓂᐅᒐᔪᑦᑐᖅ ᖃᓄᐃᔾᔪᓯᐅᖃᑦᑕᓲᖑᔪᓄᑦ ᐅᓄᖅᓯᑲᓪᓚᒃᓯᒪᔪᒪᓇᐅᓱᓇᔭᐅᕗᖅ ᐅᒥᖕᒪᖃᕐᓂᐅᔪᑦ ᑭᖑᓂᐊᒍᑦ ᓄᖑᐊᑎᑲᓪᓚᓯᒻᒥᑦᓱᑎᒃ ᐊᒻᒪᓗ ᐅᑎᖅᐸᓪᓕᐊᓂᖅᑎᑦ ᑲᑦᓱᖕᒐᔪᒻᒪᓇᐅᓕᖅᓱᑎᒃ. ᑕᒪᓐᓇ ᖃᓄᐃᔾᔪᓯᖅᑎᑕ ᐊᐅᓚᓂᕆᖃᑦᑕᓲᖕᒐ ᖃᐅᔨᕚᓪᓗᕈᑕᐅᓯᒪᓂᖅᑎᑦ ᑎᑎᕋᖅᑕᐅᓯᒪᒋᕗᑦ ᐊᑖᓴᒃ ᑕᐃᒎᓯᓕᖕᓂ (ᕋᐃᓄᑦᓴ 1998).

4.0. ᐊᐅᓚᑕᐅᓯᒪᓂᖓ ᐱᒋᐊᕐᓂᖓᓂᒃ:

ᐊᐅᓚᑕᐅᓂᖏᑦ ᐅᒥᖕᒪᑦ ᐊᐅᓚᔅᓴᒋᐊᙵᓚᐅᖅᓯᒪᕗᑦ 1917-ᒥ ᓄᖅᑲᐃᓇᖅᑎᑕᐅᓪᓗᑎᒃ ᐊᖑᓇᓱᒃᑕᐅᕐᑲᑦᑕᕐᓂᖏᑦ ᓄᖑᐊᑎᑦᑐᒻᒪᕆᐅᓚᐅᖅᑎᓪᓗᒋᑦ ᐅᒥᖕᒪᕐᑲᕐᓂᐅᔪᑦ, ᐱᔾᔪᑕᐅᓗᐊᖅᓯᒪᔪᖅ ᐊᒥᖏᑦ ᓂᐅᕐᕈᑕᐅᓗᐊᕐᑲᑦᑕᑎᓪᓗᒋᑦ. 1969-ᒥ, ᑳᑕᓕᖅᑐᖅᑕᐅᓕᓚᐅᖅᑐᑦ ᐃᓚᖏᓐᓄᑦ ᐅᒥᖕᒪᕐᑲᕐᓂᐅᔪᓄᑦ ᐅᕝᕙᓘᓐᓃᑦ ᑲᑎᙵᔪᓄᑦ. ᑭᓯᐊᓂᓕ, ᑳᑕᐃᑦ ᑕᒪᕐᒥᒐᓚᒃ ᕿᑎᕐᒥᐅᓂ ᓴᖅᑭᖅᑕᐅᒋᐊᙵᖅᓯᒪᕗᑦ 1976-ᒥ. ᑕᑯᒋᐊᒃᑲᓂᕐᓗᒍ Urquhart (1980) ᓇᓗᓇᐃᖅᓯᒋᐊᒃᑲᓂᖅᓯᒪᔪᖅ. ᐊᐅᓚᑦᓯᓂᐅᒋᐊᙵᖅᓯᒪᔪᖅ ᕿᑎᕐᒥᐅᑦ ᐅᒥᖕᒪᒐᓱᕝᕕᐅᔪᓐᓇᖅᑐᑦ ᑮᓕᖏᑦ ᓇᓗᓇᐃᖅᓯᒋᐊᒃᑲᓐᓂᕈᒻᒦᑦᑐᑦ 4.1. ᑭᓯᐊᓂ ᐅᕐᑲᐅᓯᐅᒃᑲᓂᖅᓯᒪᙵᕿᐸᑕ, ᐊᑐᓚᐅᖅᑕᕋ ᒫᓐᓇᐅᓂᖅᐹᖅ (ᒪᐃ 2006-ᒥ) ᓇᓗᓇᐃᒃᑯᑕᖏᑕ ᑮᓕᕆᔭᐅᔪᑦ ᐊᑎᖏᑦ ᐅᒥᖕᒪᖕᓄᑦ ᐊᐅᓚᑦᓯᕝᕕᐅᔪᑦ (ᓇᓗᓇᐃᖅᓯᒋᐊᕈᑦ 4.2). ᑮᓕᕐᑲᖅᑕᑎᐅᓂᖏᑦ ᐊᔾᔨᕉᕐᑲᑦᑕᖅᓯᒪᙵᕆᓚᑦ ᐃᓚᖓᒍᑦ ᑕᐃᑦᓱᒪᓂᒋᐊᕐᓂᓴᓂᒃ ᐊᐅᓚᑦᓯᓂᕐᒧᑦ ᑮᓕᕆᔭᐅᔪᑦ ᑭᓯᐊᓂᓕ ᓇᓗᓇᙱᓂᖅᓴᐅᓚᐅᖅᑐᖅ ᐅᕙᓐᓄᑦ ᒫᓐᓇᐅᔪᖅ ᐊᑎᖏᑦ ᐊᑐᕐᑲᑦᑕᕆᐊᖏᑦ.

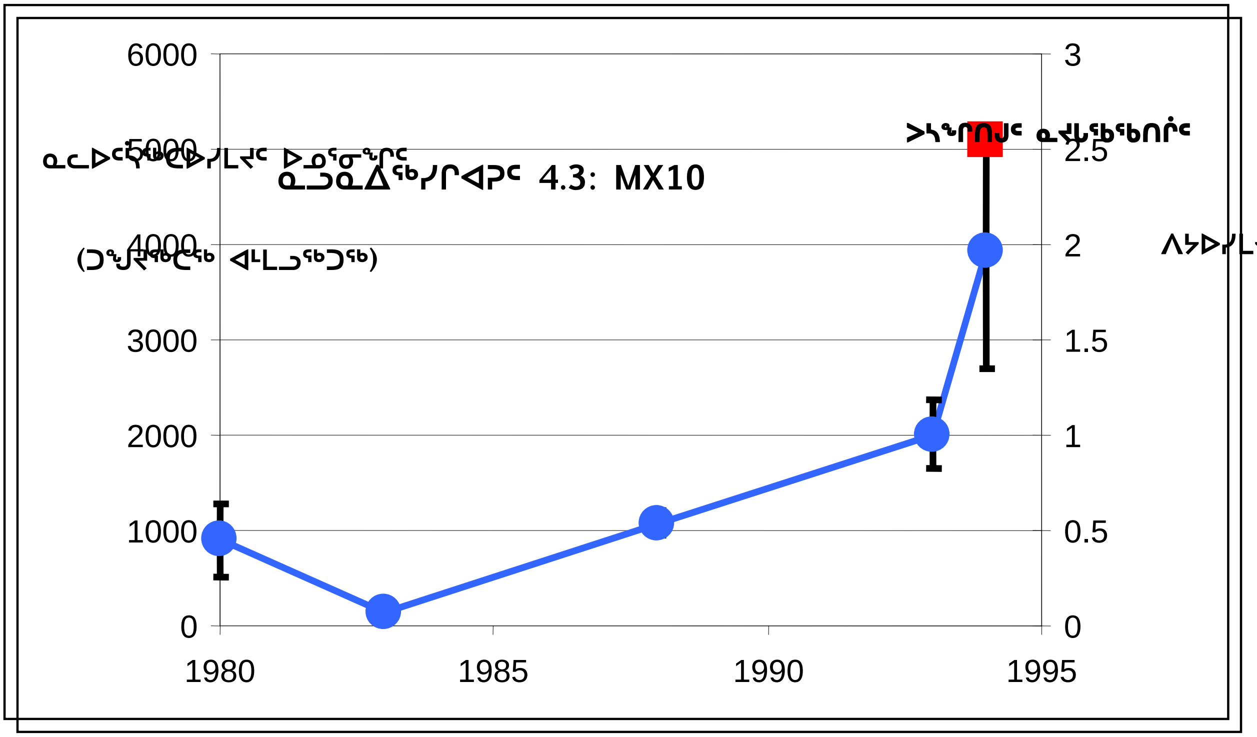
ᓇᓗᓇᐃᖅᓯᒋᐊᒃᑳᓂᕈᑦ 4.1: ᓄᓇᙳᐊᖅ ᐅᒥᖕᒪᐃᑦ ᐊᐅᓚᑕᐅᒋᐊᙵᕐᕝᕕᖏᓐᓂᒃ ᑮᓕᖏᑦ

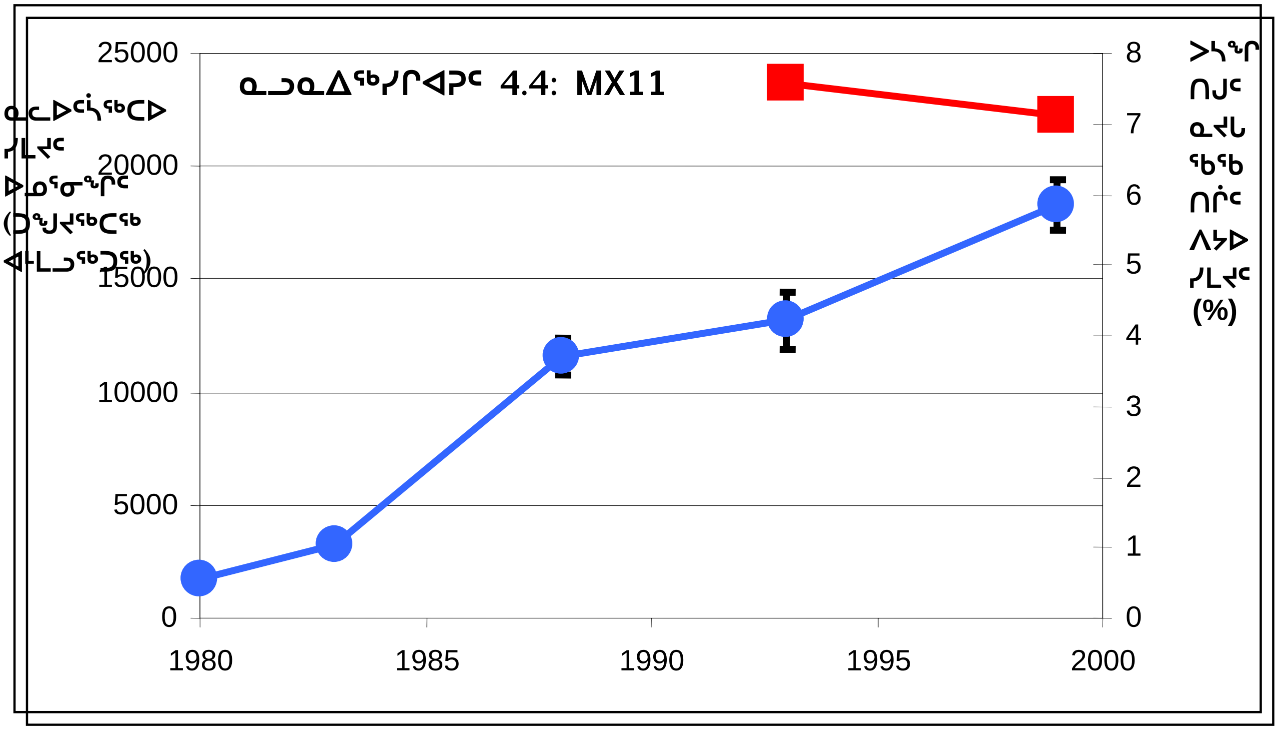


<u>ᓇᓗᓇᐃᖅᓯᒋᐊᕈᑦ 4.2:</u> ᐅᒥᖕᒪᓐᓄᑦ ᐊᐅᓚᑦᓯᕗᕕᐅᔪᑦ ᑭᒡᓕᖕᒋᑦ ᕿᑎᕐᒥᐅᓂ ᐊᒻᒪᓗ ᑭᕙᓪᓕᕐᒥ ᒪᐃ 2006-ᒥ.

ᐃᖃᓗ�福᙮

ᐃᖃᓗᑦᑑᑦᑎᐊ ᕿᑭᖅᑖᓗᐊ ᑭᓪᓕᓂᖅ ᑐᓂᔭᐅᓚᐅᖅᑐᖅ ᑰᑕᓂᒃ 1976-ᒥ. ᓇᔪᐊᖅᑲᖅᑲᑎᒌᑦᑐᑦ ᓇᓗᓇᐃᖅᑕᐅᓪᓗᑎᒃ ᐅᓄᖅᓯᕗᓪᓚᐊᓂᖏᑦ. ᑖᒃᑯᐊ ᑰᑕᐃᑦ ᐊᑐᖅᑕᐅᓚᐅᖅᑐᑦ ᐅᓗᖅᓴᖅᑑᒥ ᐊᒻᒪᓗ ᐃᖃᓗᑦᑑᑦᑎᐊᒥ (ᓯᑕᒪᐅᔪᖅᑐᑦ ᐊᖑᑏᑦ ᐊᒻᒪᓗ ᓯᑕᒪᑦ ᐊᕐᓇᐃᑦ, ᐊᒻᒪᓗ 9 ᐊᖑᑏᑦ ᐊᒻᒪᓗ 7 ᐊᕐᓇᐃᑦ ᒪᓕᒃᑎᒌᓐᓂᖏᑎᒍᑦ). 1983-ᒥ, Poole (1985) ᖃᐅᔨᓴᓚᐅᖅᑐᖅ ᓂᕆᐊᓂ ᐱᖓᓇᖅᐸᓯᐊᓂ ᕿᑭᖅᑕᐅᑉ ᐃᓚᖓᓂᒃ. 1984-ᒥ, ᑰᑕᐃᑦ 13-ᖑᓚᐅᖅᑐᑦ ᐱᖓᓐᓈᓄᑦ ᕿᑭᖅᑕᐅᑉ ᐊᒻᒪᓗ 65 ᑲᓐᓈᓄᑦ ᕿᑭᖅᑕᐅᑉ ᐊᖑᑕᐅᓂᖏᑦ ᐊᕐᓇᐅᓂᖏᑦ ᐱᔾᔪᑎᒋᐊᖃᕐᓂᖏᑦ ᓂᕈᐊᖅᑕᐅᓯᒪᓇᑎᒃ. 1992-ᒥ, ᐅᐊᖕᓈᓂ ᑲᓇᓐᓇᖅᐸᓯᖓᓂ ᐃᖃᓗᑦᑑᑦᑎᐊ ᕿᑭᖅᑖᓗᐊᓂ (MX07) ᑐᓂᔭᐅᓚᐅᖅᑐᑦ ᑰᑕᓂᒃ 100-ᓂᒃ 1990-ᒥ ᖃᐅᔨᓴᖅᑕᐅᓚᐅᖅᑎᓪᓗᒍ ᖃᐅᔨᓴᕈᑎᕕᓂᕐᓃᖓᖅᑐᓂᒃ (Gunn and Lee 2000). 1993-ᒥ, MX-11 (ᓂᕆᐊᓂ-ᑲᓇᖕᓈᓂ) ᖃᐅᔨᓴᖅᑕᐅᓚᐅᖅᑐᖅ (Gunn and Patterson 2000) ᐊᒻᒪᓗ ᑰᑕᖏᑦ ᐊᒥᓱᕐᖑᕆᐊᖅᑕᐅᓪᓗᑎᒃ 1000-ᒧᑦ. ᑕᐃᑲᓐᖕᓛᖅᓯᒪᔪᑦ ᖃᐅᔨᓴᕈᑎᕕᓂᕐᓂ 1999-ᒥ ᖃᖓᑕᓲᒃᑯᑦ (Gunn and Patterson 2000), ᑰᑕᖏᑦ MX-11 ᐊᒥᓱᕐᖑᕆᐊᖅᑕᐅᑲᓐᓂᓚᐅᖅᑐᑦ 2000-ᓄᑦ 1300-ᓂᒃ ᓂᕕᖓᑖᕐᑲᓕᖅᑐᑎᒃ. ᑰᑕᖏᑦ MX10 (ᓂᕆᐊᓂ ᐱᖓᓇᖅᐸᓯᐊᓂ) 100-ᓂᒃ ᓂᕕᖓᑖᕐᑲᖅᓯᒪᔪᑦ 1994-ᒥᓂᒃ. ᑕᑯᒋᐊᕐᓗᒍ ᓇᓗᓇᐃᖅᓯᒋᐊᕈᑦ 4.3 ᐊᒻᒪᓗ ᓇᓗᓇᐃᖅᓯᒋᐊᕈᑦ 4.4.

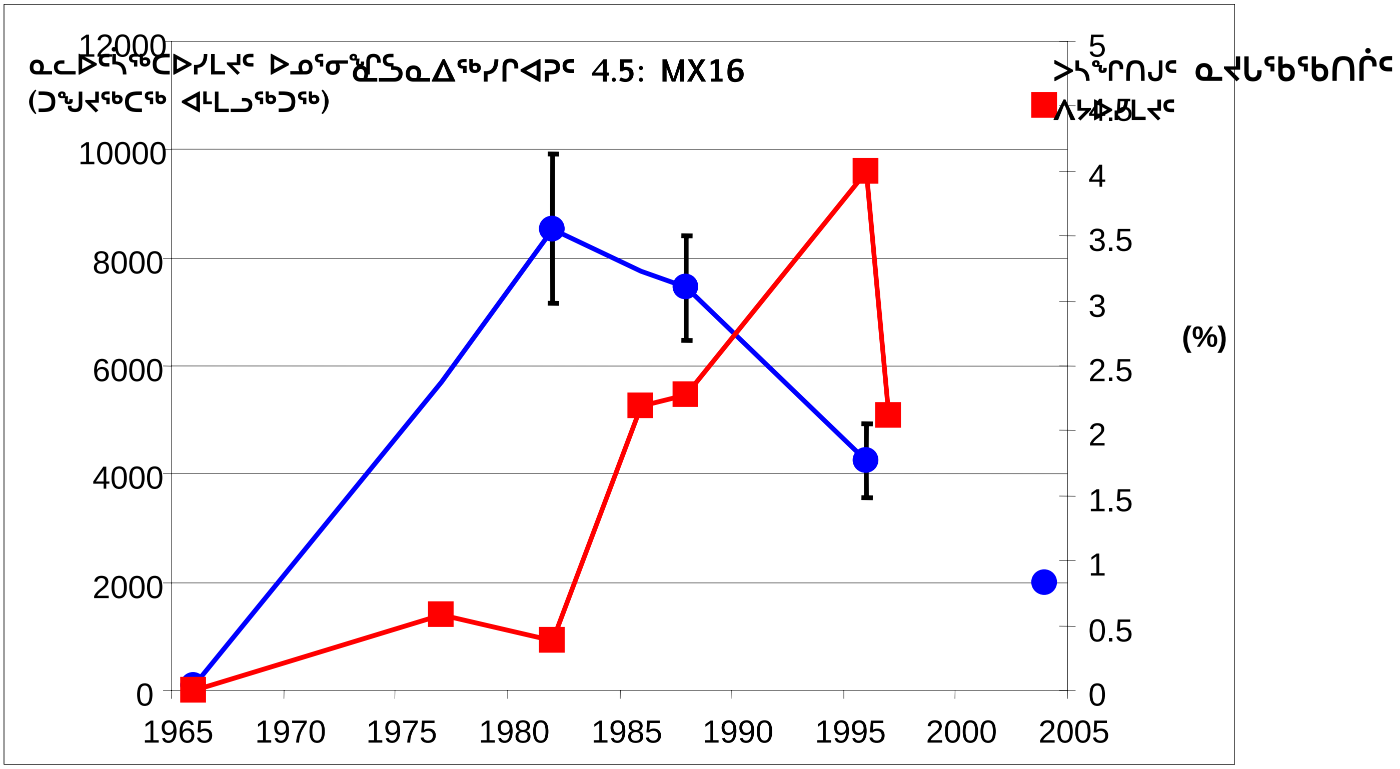


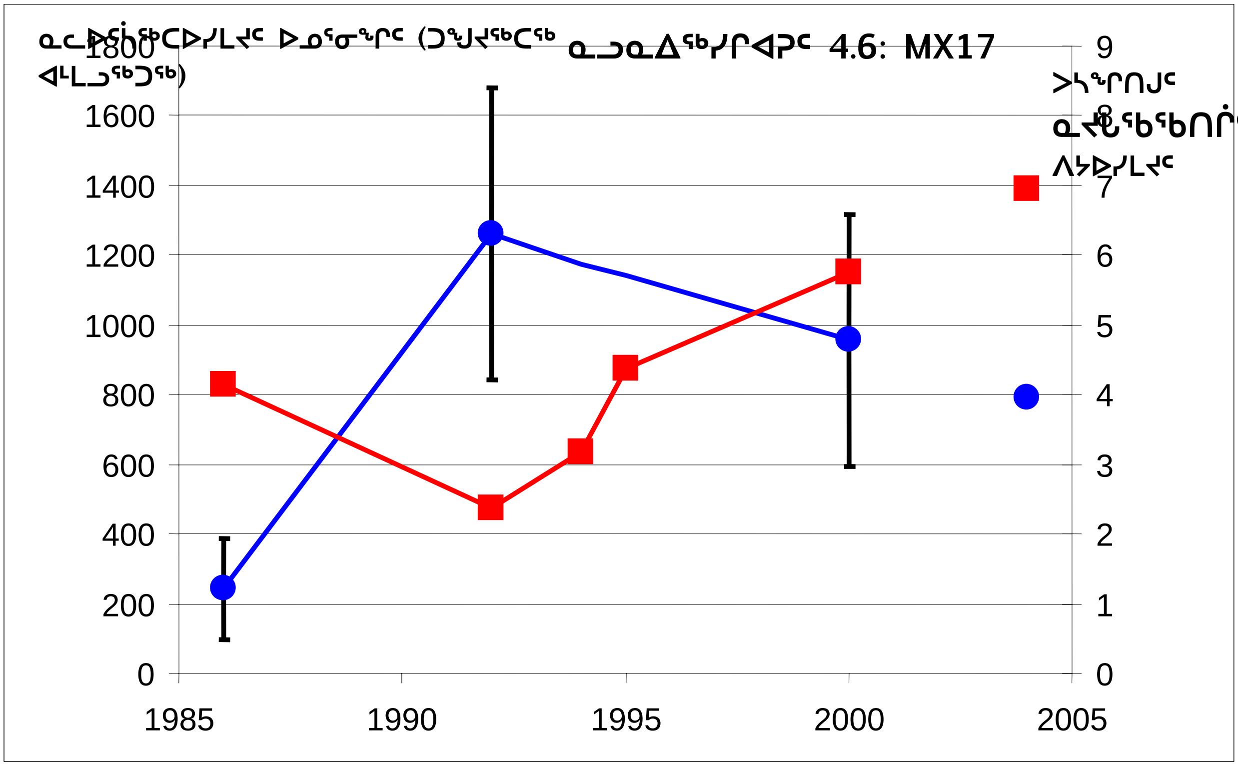


ᑭᓐᖓᓚᖅ ᑰᑕᑖᖅᑎᑕᐅᓚᐅᖅᑐᖅ 1976-ᒥ. ᓄᒃᑕᕐᓂᖓ ᖃᐅᔨᒪᔭᐅᓇᓂ. ᑰᑕᖏᑦ ᐊᑐᖅᑕᐅᓪᓗᑎᒃ ᖃᐅᓱᐃᑦᑐᒥᒃ ᐊᒻᒪᓗ ᑕᓗᕐᔪᐊᓂᒃ (ᓱᑕᒪᑦ ᐊᖑᑏᑦ ᐊᒻᒪᓗ ᐱᖓᓱᑦ ᐊᕐᓇᐃᑦ, ᐊᒻᒪᓗ ᒪᕐᕉᒃ ᐊᖑᑏᑦ ᐊᒻᒪᓗ ᐊᑕᐅᓯᖅ ᐊᕐᓇᖅ ᒪᓕᒃᑎᒌᓐᓂᖏᑎᒍᑦ). ᒦᓐᓇᐅᔪᖅ ᐊᐅᓚᑦᓯᕝᕕᐅᔪᖅ ᐊᕕᒃᓯᒪᓂᖓ MX06 ᐃᓚᒋᔭᐅᓪᓗᓂ ᑰᒐᓇᔫᑉ ᓄᓇᖓ ᐊᒻᒪᓗ ᑲᓇᖓᓄᑕ ᐃᓚᖓ ᑭᓐᖓᐃᓚᖅ, ᐊᒻᒪᓗ MX08 ᐱᖓᓐᓇᓕᒫᖓᓄᑲᔪᖅ ᑭᓐᖓᐃᓚᖅ (ᓇᓗᓇᐃᖅᓯᒋᐊᕈᑦ 4.1). ᐊᓯᔾᔨᓚᐅᕐᓂᖏᑦ ᑰᑕᐃᑦ ᒪᕐᕉᓐᓄᑦ ᕿᑭᖅᑖᓐᓄᑦ ᓇᓗᓇᐃᖅᓯᒪᑦᓯᐊᖏᑦᑐᖅ 1980-ᖏᓐᓂ. 1995-ᒥᓪᓕ, MX06

ᑐᓂᔭᐅᓚᐅᖅᑐᖅ ᑳᑕᓂᒃ ᐊᕙᑎᓂᒃ ᐊᒻᒪᓗ MX06 12-ᓂᒃ (ᖁᓕᑦᓗ ᒪᕿᑦᓗ) ᓄᓇᒃᑯᑦ-ᖃᕐᒐᑕᓰᒃᑯᑦ ᖃᐅᔨᓴᕐᓂᖅᑕᖃᓚᐅᖅᐳᖅ ᐂᐸ 2004-ᒥ (Ferguson 2005), ᑭᓯᐊᓂᓕ ᓄᑖᓂᒃ ᑳᑕᑦᓯᕐᑯᔭᐅᓂᖓᓂᒃ ᐊᑐᓕᖁᔮᔪᑎᑕᖃᖅᓯᒪᓐᖏᑦᑐᖅ.

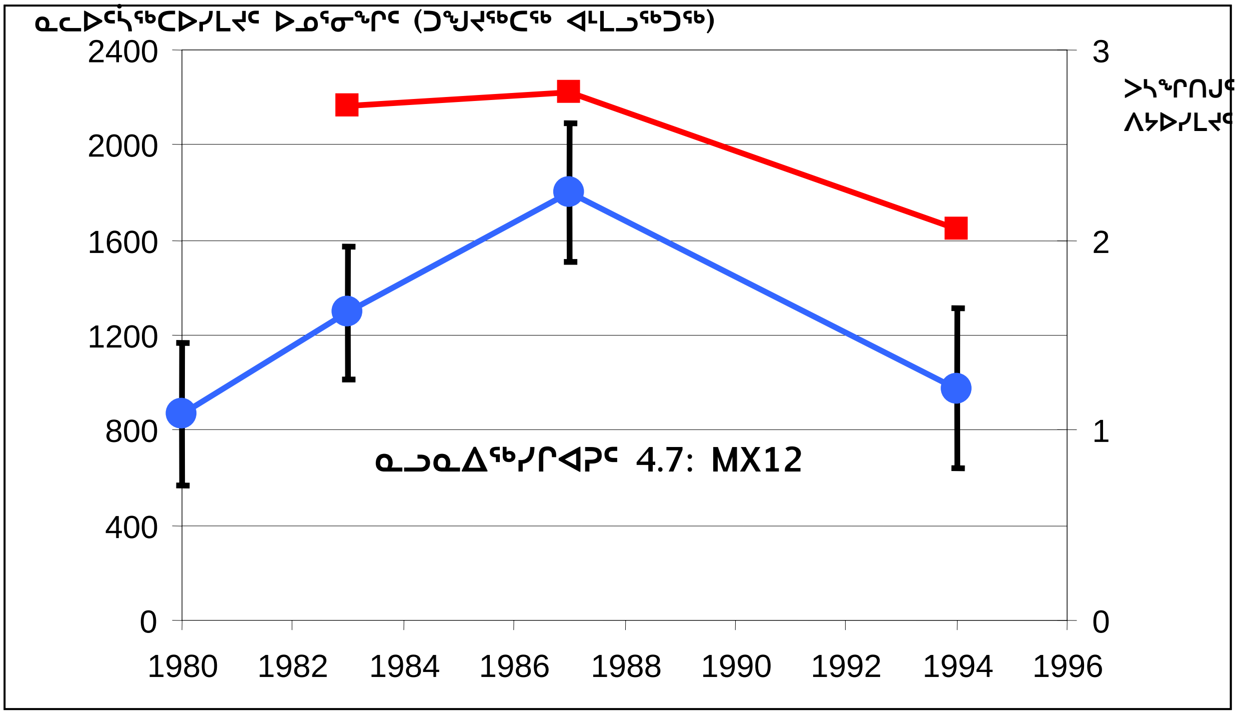
ᐃᑭᕋᓴᒃ ᕿᑎᕐᒥᐅᓂ ᑎᖕᒥᐊᖃᐅᓯᖂᒃ (Queen Maud Gulf Bird Sanctuary) ᓴᖅᑭᖅᑕᐅᓚᐅᖅᑐᖅ 1961-ᒥ. ᐃᑭᕋᓴᒃ ᕿᑎᕐᒥᐅᓂ (Queen Maud Gulf) ᓄᓇᖓᓄᑦ ᑳᑕᑖᖅᑎᑕᐅᓚᐅᖅᑐᑦ 1976-ᒥ. ᓇᔪᖃᖃᑎᒌᑦᑐᑦ ᐅᓄᖅᓯᖏᑦᓕᐊᓂᕋᖅᑕᐅᓚᐅᖅᑐᑦ. ᑳᑕᐃᑦ ᐊᑐᖅᑕᐅᑦᓗᑎᒃ ᐃᖃᓗᑦᑑᑦᑎᐊᒥ, ᐅᒥᖕᒪᒃᑑᖅ Ellice River-ᓗ, ᖃᒪᓂ'ᑐᐊᖅ, ᐊᒻᒪᓗ ᐅᖅᓱᖅᑑᖅ (ᑕᑦᓕᒪᑦ ᐊᖑᑏᑦ ᐊᒻᒪᓗ ᐱᖕᒐᓱᑦ ᐊᕐᓇᐃᑦ, ᑕᑦᓕᒪᑦ ᐊᖑᑏᑦ ᐊᒻᒪᓗ ᐱᖕᒐᓱᑦ ᐊᕐᓇᐃᑦ, ᒪᕿᒃ ᐊᖑᑏᒃ ᐊᒻᒪᓗ ᐊᑕᐅᓯᖅ ᐊᕐᓇᖅ, ᐊᒻᒪᓗ ᐊᕝᕙᓂᓖᑦ ᐊᖑᑏᑦ ᐊᒻᒪᓗ ᓯᑕᒪᑦ ᐊᕐᓇᐃᑦ ᒪᓕᒃᑎᕆᒃᓯᒪᓂᖕᒋᑦ ᐊᑐᕐᓗᒋᑦ). 1980-ᖏᑕ ᐱᒋᐊᓕᖅᑳᕐᓂᖕᒋᓐᓂ, ᑯᑕᖕᒋᑦ ᐅᓄᖅᓯᕆᐊᖅᑕᐅᓚᐅᖅᑐᑦ 65-ᓄᑦ ᐊᒻᒪᓗ 80-ᕈᖅᓱᑎᒃ 1986-ᒥ. 1991-ᒥ, ᖃᕐᒐᑕᓰᒃᑯᑦ ᖃᐅᔨᓴᕐᓂᖅᑕᖃᓚᐅᖅᑎᓪᓗᒍ ᑳᑕᐃᑦ ᐅᓄᖅᓯᕆᐊᖅᑕᐅᓚᐅᖅᑐᑦ 170-ᓄᑦ. 1996-ᒥ ᖃᐅᔨᓴᖅᑕᐅᓂᖓᓄᑦ ᐅᓂᒃᑳᓕᐅᖅᑐᖃᓚᐅᖅᑎᓪᓗᒍ ᐃᓅᓴᓪᓕᕙᓪᓕᖅᓯᒪᒋᐊᖏᑦ ᐅᒥᖕᒪᑦ ᓇᔪᖃᖃᑎᒌᑦᑐᑦ, ᑯᑕᖕᒋᑦ ᐃᓅᓴᓪᓕᒋᐊᖅᑕᐅᓚᐅᖅᑐᑦ 90-ᓄᑦ ᐊᒻᒪᓗ ᑕᐃᒪᓐᖓᓂᒃ 90-ᐅᖕᒋᓐᓇᖅᓯᒪᔪᑦ.





ᐅᒥᖕᒪᒑᓲᕙᐅᔪᖅ ᐊᕙᒃᓯᒪᓂᖓ ᓴᖅᑭᖅᑕᐅᓚᐅᖅᑐᖅ ᑭᒡᓕᓕᐅᖅᑕᐅᓪᓗᓂ ᐅᑭᐅᖅᑕᖅᑑᑉ ᕿᑎᐊᓂ (ᑭᓐᖓᐅᑦ, ᐅᒃᑯᓯᒃᓴᓕᒃ) 1977-ᒥ ᑑᑕᖕᒋᑦ ᑕᓪᓕᒪᐅᓚᐅᖅᑐᑦ (ᐱᖓᓱᑦ ᐊᖑᑏᑦ ᐊᒻᒪᓗ ᒪᕐᑹᒃ ᐊᕐᓈᒃ) ᑐᓂᔭᐅᓚᐅᖅᑐᑦ ᑭᓐᖓᐅᑦ ᐊᒻᒪᓗ ᐅᒥᖕᒪᖅᑑᖅ. 1984-ᒥ, ᑑᑕᖕᒋᑦ ᐅᓄᖅᓯᒋᐊᖅᑕᐅᓚᐅᖅᑐᑦ 10-ᒧᑦ, 30-ᒧᑦ 1987-ᒥ ᐊᒻᒪᓗ 40-ᓄᑦ 1988-ᒥ. ᑑᑕᐃᑦ ᐋᖅᑭᑦᑕᐅᓚᐅᖅᑐᑦ ᐊᕙᑎᑦ MX15 1993-ᒥ ᐊᒻᒪᓗ 2000-ᒥ, MX13 ᑐᓂᔭᐅᓚᐅᖅᑐᖅ ᑑᑕᓂ ᐊᕙᑎᓂᒃ. ᓱᓕ ᑐᓴᕈᑎᓂᒃ ᑲᑎᖅᓱᐃᑲᓐᓂᕆᐊᖃᕋᑦᑕ ᓄᐊᑦᓯᓗᑕ ᐊᐅᓚᑕᐅᓂᒻᒪᕆᓯᒪᔭᕐᒐᓄᑦ ᑕᐃᒪᓐᖓᓂᒃ ᑕᒪᑦᓱᒪ ᓄᓇᐅᑉ.

Great Bear ᐅᐊᕐᓈ ᑑᑕᑖᖅᑎᑕᐅᓚᐅᖅᑐᖅ 1976-ᒥ. ᓇᔪᖅᑲᖅᑎᒌᑦᑐᑦ ᓇᓗᓇᐃᖅᑕᐅᓪᓗᑎᒃ ᐅᓄᖅᓯᕙᓪᓚᐊᓂᕐᒋᓐᓂᒃ. ᑑᑕᐃᑦ ᑖᒃᑯᐊ ᐊᑐᖅᑕᐅᓪᓗᑎᒃ ᐸᐅᓚᑐ ᐊᒻᒪᓗ ᖁᖅᓗᖅᑐᖅ (ᓯᑕᒪᑦ ᐊᖑᑏᑦ ᐊᒻᒪᓗ ᓯᑕᒪᑦ ᐊᖅᓇᐃᑦ, ᐊᒻᒪᓗ ᐱᖓᓱᑦ ᐊᖑᑏᑦ ᐊᒻᒪᓗ ᐱᖓᓱᑦ ᐊᖅᓇᐃᑦ ᒪᓕᒃᑎᕈᓐᓂᕐᒋᑎᒍᑦ). ᐅᒥᖕᒪᑦ ᓄᖑᑲᕵᓚᐅᖅᑐᑦ ᑕᐃᒪᓂ 1918-ᒥᒃ 1930-ᒧᑦ. 1984-ᒥ, ᑑᑕᖕᒋᑦ ᐅᓄᖅᓯᒋᐊᖅᑕᐅᓚᐅᖅᑐᑦ 40-ᓄᑦ, ᐊᒻᒪᓗ 1988-ᒥ 50. ᑭᖑᓂᐊᓂᓕ ᐃᓅᓴᓪᓕᑲᓪᓚᑐᒻᒪᕆᐅᓚᐅᖅᑎᓪᓗᒋᑦ ᐅᒥᖕᒪᑦ ᓇᔪᖅᑲᖅᑎᒌᑦᑐᑦ ᑕᐃᒪᓂ (Nishi et al. ????), ᑑᑕᖕᒋᑦ ᐃᓅᓴᓪᓕᒋᐊᖅᑕᐅᓚᐅᖅᑐᑦ ᐊᕙᑎᓄᑦ ᐊᒻᒪᓗ ᑕᐃᒪᓐᖓᓂᒃ ᐊᕙᑎᐅᕐᒋᓐᓇᖅᓯᒪᕗᑦ.



<u>5.0. ᒫᓐᓇᐅᔪᖅ ᐊᐅᓚᑕᐅᓂᖏᑦ:</u>

ᐅᒥᖕᒪᑦ ᑰᑕᓕᖅᑕᐅᕆᐊᖕᖓᓚᐅᖅᓯᒪᔪᑦ ᓄᓇᕐᓯᐊᒥ ᐊᒻᒪᓗ ᓄᓇᕗᒻᒥ 1969-ᒥ. ᐋᖅᑭᕐᓯᒪᓂᕐᑲᕐᑯᓪᓗᒍ ᑰᑕᖏᓐᓄᑦ ᐋᖅᑭᑦᑕᐅᓯᒪᔪᒥᒃ, ᐊᐅᓚᕐᓯᕚᐅᔪᓂᒃ ᐊᕙᑦᑐᖅᓯᒪᓂᓕᐅᕆᐊᕐᑲᓚᐅᖅᑐᑦ ᐃᓕᖅᑯᓯᒃᑯᑦ ᐱᖅᑯᓯᕆᔭᐅᔪᑦ ᐊᖑᓇᓲᔫᑦ ᐋᖅᑭᕐᓯᒪᔾᔪᑕᐅᔪᓐᓇᕐᑯᓪᓗᕆᑦ ᑕᒦᓂᒥᐅᓄᑦ ᐊᑐᖅᑕᐅᕐᑲᑦᑕᖅᑐᑦ ᐊᒻᒪᓗ ᖃᐅᔨᒪᔮᕆᔭᐅᔪᑦ ᐅᒥᖕᒪᕐᑲᕐᓂᐅᔪᓂ (Gunn 1984, Figure 5.1.). ᐅᒥᖕᒪ ᓂᕐᑭᑦᓴᖅᓯᐅᖑᕙᑦᑐᑦ, ᑭᓯᐊᓂᓕ ᑐᒃᑐᕕᓃᑦ ᐱᔪᒪᔭᐅᓂᖅᓴᐅᓲᖑᔪᑦ. ᑕᐃᒪᐃᒐᓗᐊᖅᑎᓪᓗᒍ, ᕿᓇᐅᔭᓕᐅᕈᑕᐅᓇᓱᐊᕐᑲᑦᑕᓕᖅᐸᓪᓕᐊᑐᐃᓐᓇᖅᑐᑦ ᕿᓇᐅᔭᓕᕐᔪᐊᑦ ᐆᒪᔪᖅᓯᐅᕈᔾᔭᐅᓪᓗᑎᒃ, ᓂᕐᑭᓕᑎᕙᖕᓄᑦ, ᐊᒻᒪᓗ ᕿᕕᐅᖕᒋᓐᓄᑦ ᓴᓇᕝᕕᓐᓄᑦ.

ᓄᓇᕗᒻᒥ ᓄᓇᑖᕐᓂᕐᒧᑦ ᐊᖏᕈᑎᓂ, ᓄᓇᕗᒻᒥ ᐆᒪᔪᓕᕆᔩᕐᔪᐊᒃᑯᑦ ᑲᑎᒪᔩᖏᑦ (ᐆᒪᔪᓕᕆᔩᕐᔪᐊᒃᑯᑦ) *“...ᓴᖅᑮᔪᓐᓇᖅᑐᑑᕗᑦ, ᐋᖅᑭᒋᐊᕆᓗᑎᒃ ᐅᕙᓘᓐᓃᑦ ᐲᖅᓯᓗᑎᒃ, ᖃᖓᒃᑯᑐᐃᓐᓇᖅ ᐊᒻᒪᓗ ᒪᓕᓪᓗᑎᒃ ᐱᔭᕆᐊᖅᖅᓱᕆᓕᕈᑎᒃ ᑕᐅᑐᓪᓗᑦ ᐱᑕᕐᑲᕐᓂᖏᑦ ᐊᖑᔭᐅᔪᓐᓇᖅᑐᑦ [TAH] ᐅᕙᓘᓐᓃᑦ ᐊᖑᓇᓱᖕᓂᖅ ᓄᓇᕗᑦ ᓇᓗᓇᐃᖅᑕᐅᓯᒪᓂᖏᓐᓂ”* (ᓄᓇᕗᒻᒥ ᓄᓇᑖᕐᓂᕐᒧᑦ ᐊᖏᕈᑏᑦ (ᐊᖏᕈᑏᑦ) ᐃᓛᒃᑯᑦ 5.6.16). ᓄᓇᕗᒻᒥ ᐆᒪᔪᓕᕆᔩᕐᔪᐊᒃᑯᑦ ᐱᔪᓐᓇᐅᑎᖃᖅᐳᑦ ᑕᒪᐃᓐᓄᑦ ᑰᑕᕐᑲᓐᖏᑦᑐᓄᑦ ᑭᒡᓕᕐᑲᖅᑎᑕᐅᔪᓂᒃ ᐋᖅᕿᓯᒪᓂᕐᒥᒃ *(ᓲᕐᓗ,* ᖃᖓᒃᑯᑦ ᐊᖑᓇᓱᒃᑐᒃᓴᐅᓂᖏᑦ) ᓂᕐᔪᑎᓂᒃ ᓄᓇᕗᒻᒥ ᓇᓗᓇᐃᖅᑕᐅᓯᒪᔪᓂ (ᐊᖏᕈᑏᑦ 5.6.48). ᐅᒥᖕᒪᒐᓱᓐᓂᐅᕐᑲᑦᑕᖅᑐᖅ ᓄᓇᕗᒻᒥ ᐊᐅᓚᑕᐅᕐᑲᑦᑕᖅᑐᖅ ᑰᑕᑎᒍᑦ (ᐊᖑᔭᐅᔪᓐᓇᖅᑐᕈᖅᑎᑕᐅᓪᓗᑎᒃ) ᐊᒻᒪᓗ ᖃᖓᒃᑯᑦ ᐊᖑᓇᓱᒍᓐᓇᕐᓂᐅᔪᓂ ᐊᑐᓂᑦ ᐊᐅᓚᕐᓯᕚᐅᔪᓂ (ᓇᓗᓇᐃᖅᓯᒋᐊᕈᑦ 4.2). ᑰᑕᐃᑦ ᐊᒻᒪᓗ ᖃᖓᒃᑯᑦ ᐊᖑᓇᓱᒍᓐᓇᕐᓂᖅ ᐆᒪᔪᓕᕆᔩᕐᔪᐊᑯᓐᓄᑦ ᐋᖅᑭᑦᑕᐅᕐᑲᑦᑕᖅᑐᑦ ᑖᒃᑯᓇᖕᖓᕋᔪᐸᑦ ᐊᑐᓕᕐᑯᔩᔾᔪᑕᐅᓯᒪᔪᓂᒃ ᓄᓇᕗᑦ ᒐᕙᒪᒃᑯᖏᓐᓂᒃ (ᒐᕙᒪᒃᑯᑦ) ᐆᒪᔪᓂᒃ ᖃᐅᔨᓴᖅᑎᖏᓐᓂᒃ ᐊᒻᒪᓗ ᑎᒍᒥᐊᖅᑎᐅᔪᓂᒃ ᓄᓇᓕᓐᓂ, ᐊᒻᒪᓗ ᑭᖑᓪᓕᖅᐹᒥ ᐊᖏᕈᑕᐅᔭᕆᐊᖅᖅᑐᑎᒃ ᐊᐅᓚᕐᓯᔨᐅᔪᓄᑦ ᐊᐅᓚᑕᐅᓂᖏᑦ ᑲᒪᒋᔭᕆᕙᖏᑦ ᐊᕙᑎᓕᕆᔨᒃᑯᑦ ᒥᓂᔅᑖᑕ (ᐃᑯᐱᕝᕕᓕᕆᔨᒃᑯᑦ ᒥᓂᔅᑕᕆᓚᐅᖅᑕᖓ ᐋᑉᐳ 2004-ᒧᓄᑦ). ᑕᒪᓐᓇ ᐱᔾᔪᑕᐅᓪᓗᓂ ᐅᒥᖕᒪᑦ ᐱᓂᐊᕐᓂᕋᐅᑕᐅᔪᑦ ᐊᑖᓃᕐᑲᑕᐅᕗᑦ ᓄᓇᕗᒻᒥ ᐊᕙᑎᓕᕆᔨᒃᑯᓐᓄᑦ.

ᒫᓐᓇᐅᔪᖅ ᑰᑕᐃᑦ ᐊᒻᒪᓗ ᓇᔪᒐᕐᑲᖅᑎᕆᑦᑐᖅ ᓇᓚᐅᑦᓵᖅᑕᐅᓯᒪᓂᖏᑦ ᑕᑯᔭᒃᓴᐅᕗᑦ ᓇᓗᓇᐃᒃᑯᑕᖕᒐᓂ 5.1 ᐊᑐᓂᑦ ᐊᐅᓚᕐᓯᕚᐅᕐᑲᑦᑕᖅᑐᓂ ᑭᒡᓕᓕᐅᖅᑕᐅᓯᒪᔪᓂ ᕿᑎᕐᒥᐅᓂ (2005-ᒥᓂᓴᐃᑦ). ᐅᒥᖕᒪᑦ ᓇᔪᒐᕐᑲᖅᑎᕆᑦᑐᑦ

ᕿᑎᕐᒥᐅᓂ ᓇᓚᖅᑕᐅᓯᒪᓂᖏᑦ 50,000-ᒐᓚᓐᓃᑦᑐᑦ ᐆᒪᔪᑦ, ᑕᒪᐅᓇ ᑲᑎᓪᓗᒋ ᑦᑰᑕᕐᑲᕈᓐᓇᖅᑐᑦ 1965-ᓂᒃ ᓂᕙᖓᓛᕐᑲᕐᓗᑎᒃ. ᐊᖑᓇᓱᒃᑕᐅᔪᓐᓇᖅᑐᑦ ᑕᕝᕙᖔᕐᓗᑎᒃ 4%-ᖑᕗᑦ. ᐊᐅᓚᑦᓯᕖᕙᐅᔪᑦ ᑭᒡᓕᕐᑲᖅᑎᑕᐅᓂᖏᑦ ᒪᕐᕈᐃᑉᓘᑎᒃ ᖃᐅᔨᓴᖅᑕᒥᓂᐅᒍᑎᒃ , ᓯᑕᒪᐅᔪᖅᑐᓂᒃ ᑕᒪᕐᒥᒃ ᐅᓄᖅᓯᕙᓪᓕᖅᓯᒪᕗᑦ (MX06, MX08, MX09, MX10, MX11, MX14, MX19 ᐊᒻᒪᓗ MX22) ᐱᖓᓱᑦ ᑕᑯᓯᐅᓪᓗᑎᒃ ᒫᓐᓇᐅᔪᖅ ᐃᓅᓯᓪᓕᕙᓪᓕᖅᓯᒪᓂᖏᓐᓂᒃ (MX12, MX16, and MX17). ᐱᖓᓱᑦ ᐊᓯᖏᑦ ᐊᕙᑦᑐᖅᓯᒪᓂᐅᔪᑦ (MX07, MX13, ᐊᒻᒪᓗ MX15) ᖃᐅᔨᓴᖅᑕᐅᓚᐅᖅᓯᒪᓐᖏᒻᒪᑕ ᐅᕝᕙᓘᓐᓃᑦ ᐊᑕᐅᔫᑐᐃᓐᓇᖅᓱᑎᒃ ᖃᐅᔨᓴᖅᑕᐅᓯᒪᖕᒪᑕ. ᑕᒪᐃᓐᓅᖓᔪᓂ ᓇᓗᓇᐃᖅᑕᐅᓯᒪᓂᕐᑲᓐᖏᓚᖅ ᐊᔾᔨᒌᓐᖏᓐᓂᖏᓐᓂᒃ ᐊᖑᔭᐅᕐᑲᑦᑕᖅᑐᑦ ᓈᓴᖅᑕᐅᓯᒪᓂᖏᑎᒍᑦ (ᐊᑐᖅᑕᐅᓪᓗᑎᒃ ᑰᑕᐃᑦ ᑭᓯᐊᓂᓕ ᓈᓴᐃᔨᓄᑦ ᑲᑎᖅᓱᖅᑕᐅᓯᒪᓐᖏᑦᑐᓂᒃ ᐊᖑᔭᒥᓂᕐᓂᒃ) ᑕᒪᒃᑯᓇᓂ ᐅᒥᖕᒪᑦ ᐅᓄᖅᓯᕙᓪᓕᖅᓯᒪᓂᖏᑦ ᐅᕝᕙᓘᓐᓂᑦ ᐃᓅᓯᓪᓕᕙᓪᓕᖅᓯᒪᓂᖏᑦ (t=-0.384, df=8, p=0.7). ᑕᐃᒪᐃᓚᓗᐊᖅᑎᓪᓗᒍ, ᑲᔪᖏᖅᓴᐅᑎᓂᒃ ᐅᒥᖕᒪᑦ ᓇᔪᒐᕐᑲᕐᑲᑎᒋᑦᑐᑦ ᐊᓯᔾᔨᑕᕐᓂᖏᓐᓂᒃ, ᐊᖑᔭᐅᔪᓐᓇᖅᑐᑦ ᑲᑎᑕᐅᔪᓐᓇᓯᐊᖅᐳᑦ. ᐅᒥᖕᒪᑦ ᖃᐅᔨᓴᖅᑕᐅᕐᑲᑦᑕᕐᓂᖏᑦ ᐊᒻᒪᓗ ᓇᔪᒐᕐᑲᕐᑲᑎᒋᑦᑐᑦ ᓄᒃᑕᕐᑲᑦᑕᕐᓂᖏᓪᓗ ᖃᐅᔨᓴᖅᑕᐅᖄᓇᐊᕐᑲᖅᓱᓇᔭᐅᑉᐸᑕ ᓯᕗᓪᓕᐅᔾᔭᐅᓗᑎᒃ ᐅᑎᖅᑕᕐᓂᖏᑦ ᐊᐅᓚᑦᓯᔾᔪᑕᐅᔪᓐᓇᕐᑰᓪᓗᒋᑦ ᐅᒥᖕᒪᑦ ᓇᔪᒐᕐᑲᕐᑲᑎᒋᑦᑐᑦ. ᐃᓅᓯᓪᓕᕙᓪᓕᐊᔪᑦ ᓇᔪᒐᕐᑲᕐᑲᑎᒋᑦᑐᑦ ᑕᒪᕐᒥᒃ ᓄᓇᐃᓐᓇᒦᑦᑐᑦ ᐊᒻᒪᓗ ᐱᔾᔪᑎᕐᑲᕋᔭᖅᐳᖅ ᐊᒥᓱᒑᓂᒃ ᐃᓅᓯᓪᓕᕙᓪᓕᐊᓂᖏᑦ: ᓯᓚ/ᐊᕙᑎ, ᓂᕿᑦᓴᐃᑦ/ᐊᑐᐃᓐᓇᐅᓂᖏᑦ, ᐋᓐᓂᐊᓇᖅᑐᑦ, ᓂᕿᑭᐊᑦᑐᑦ, ᐃᓄᐃᑦ ᐊᐅᓚᑦᓯᓂᖏᓐᓄᑦ ᐊᒻᒪᓗ ᓂᕿᑦᓴᕆᔭᐅᕐᑲᑦᑕᓂᕐᒧᑦ. ᐅᒡᒍᕐᓇᕋᓗᐊᖅᐳᖅ, ᐱᓗᐊᖅᑐᒥ ᓄᖑᑲᒃᓚᐅᖅᓯᒪᑎᓪᓗᒋᑦ ᐆᒪᔪᑦ, ᑐᓴᕈᑎᑦᑲᑦᓯᐊᓐᖏᓗᐊᕐᓂᖓ ᐊᐅᓚᔾᔪᓯᕆᔪᓐᓇᑐᐃᓐᓇᕆᐊᓕᖏᓐᓂᒃ ᓴᓐᖏᔪᕈᖅᐸᓪᓕᕈᑕᐅᓇᔭᕐᓂᖓᓄᑦ ᐊᑐᖅᑕᐅᓇᔭᕐᓂᖓ. ᐊᓯᐊᑦᑕᐅᖅ ᐱᔾᔪᑕᐅᓗᐊᖅᑐᖅ ᓄᒃᑕᕐᓂᖏᓐᓄᑦ ᐅᒥᖕᒪᑦ ᓄᓇᒥᒃ ᐊᓯᐊᓄᑦ. ᐃᓚᖏᓐᓂ ᑕᐃᒪᐃᕐᑲᑦᑕᓲᖑᒻᒪᑕ, ᑕᒫᓂᒥᐅᓄᑦ ᖃᐅᔨᒪᔭᕆᔭᐅᔪᖅ ᓇᓗᓇᐃᖅᑕᐅᓯᒪᓂᖏᑦ ᐊᓯᔾᔨᕌᖓᑕ ᐱᑕᕐᑲᕐᓂᖏᑦ ᐊᓯᐊᒍᑦ ᐃᓅᓯᓪᓕᕙᓪᓕᖅᓯᒪᑐᐃᓐᓇᕋᑎᒃ ᓇᔪᒐᕐᑲᕐᑲᑎᒋᑦᑐᑦ.

ᑭᖑᓪᓕᖅᐹᒥ ᒫᓐᓇᒨᖓᓕᖅᑎᑕᐅᓂᕆᓚᐅᖅᑕᖓ *ᐆᒪᔾᒪᕆᓐᓂᒃ* ᐊᖑᓇᓱᓐᓂᕐᒧᑦ ᐊᐅᓚᑦᓯᔾᔪᑏᑦ R-118-98 (14 ᐊᐅᒡᒍᓯ, 1998) ᐊᒻᒪᓗ ᖃᐅᔨᒪᔾᔪᑕᐅᔭᕆᐊᓕᒃ ᑰᑕᓄᑦ, ᖃᖓᒃᑯ ᐱᔭᐅᔪᓐᓇᕐᒪᖕᓚᑕ ᐊᕐᕌᒍᒥ, ᐊᒻᒪᓗ ᓇᓗᓇᐃᖅᑕᐅᓯᒪᓂᖏᑦ ᐊᐅᓚᑦᓯᕖᕙᐅᔪᑦ ᐊᕙᑦᑐᖅᓯᒪᓂᐅᔪ. ᑭᓯᐊᓂᓕ, ᑕᐃᒪᓐᖓᓪᓗᑦ ᓴᖅᑭᖅᑕᐅᓚᐅᖅᓯᒪᑎᓪᓗᒍ ᓄᓇᕗᑦ ᐋᐸ 1999-ᒥ, ᓄᑖᓂᒃ ᑰᑕᓂᒃ ᓴᖅᑭᑎᑦᓯᕐᑲᑦᑕᖅᓯᒪᔪᑦ ᐊᓯᓐᖑᖅᑕᐅᓚᐅᕐᑎᒃ *ᐆᒪᔪᓕᕆᓂᕐᒧᑦ* ᐱᕐᑰᔭᑦ ᐊᐅᒪᑦᓯᔾᔪᑎᖏᓐᓂᒃ. ᒫᓐᓇᐅᔪᖅ ᓄᓇᕗᒻᒥ ᐆᒪᔪᓕᕆᓂᕐᒧᑦ ᐱᕐᑰᔭᑦ ᐊᑐᓕᖅᑎᑕᐅᓯᒪᓕᖅᑐᑦ ᐊᒻᒪᓗ ᐊᐅᓚᑦᓯᔾᔪᑎᖏᑦ ᒫᓐᓇᐅᔪᖅ ᐋᖅᑭᓱᖅᑕᐅᕙᓪᓕᐊᔪᑦ.

ᑕᒪᐃᓐᓅᖓᔪᓄᓪᓚ, ᓄᓇᓖᑦ ᑐᒃᓯᕋᕐᑲᑦᑕᖅᓯᒪᕗᑦ ᑰᑕᒥᓂᒃ ᐅᓄᖅᓯᒋᐊᕐᑯᔨᓪᓗᑎᒃ, ᐱᓗᐊᖅᑐᒥᒃ ᐱᕙᓪᓕᐊᑎᑦᓯᔪᒪᓂᕐᒧᑦ ᐊᒻᒪᓗ ᐊᖏᓕᕙᓪᓕᐊᑎᑦᓯᔪᒪᓂᕐᒧᑦ ᑮᓇᐅᔭᓕᐅᒃᑲᓐᓂᕈᑎᒃᓴᐅᓇᔭᖅᑐᓂᒃ ᓱᕐᓗ ᓂᕿᖏᓐᓄᑦ ᕿᕙᐅᖏᓐᓄᑦ ᓂᐅᕈᑕᐅᕐᑲᑦᑕᕈᒪᓪᓗᑎᒃ ᓇᖏᓂᕐᑯᑎᕆᔭᐅᔪᓄᑦ ᐅᕝᕙᓘᓐᓃᑦ ᑮᓇᐅᔭᓕᕐᔪᐊᓂᒃ ᐊᖑᓇᓱᒃᑎᑦᑎᓂᒃᑯᑦ. ᑕᒪᐃᓐᓅᖓᔪᓂᓪ, ᓄᓇᕗᑦ ᒐᕙᒪᒃᑯᖏᑕ ᐊᕙᑎᓕᕆᔨᒃᑯᖏᑦ ᓴᐳᔾᔨᕆᐊᕈᑎᒃᓴᓂᒃ ᐋᖅᕿᓯᒪᓕᖅᑐᑦ ᑖᒃᑯᓄᖓ ᑐᒃᓯᕋᕈᑕᐅᔪᓄᑦ ᐃᓱᒪᒋᔭᐅᓪᓗᑎᒃ ᓄᖑᑲᓴᓚᐅᖅᓯᒪᓂᖏᑦ ᐅᖓᒪᑦ 1900 ᐱᒋᐊᓕᕋᑖᕐᓂᖏᓐᓂ. ᓴᐳᔾᔭᐅᓯᒪᓂᖏᑦ ᓄᖑᐊᑦᑎᑎᑕᐃᓕᒪᓂᕐᒧᑦ ᐅᕝᕙᓘᓐᓃᑦ ᐅᓗᓇᐊᓇᖅᑐᒨᕐᑯᓇᒋᑦ ᐊᐅᓚᑦᓯᔾᔪᑕᐅᕗᖅ ᐃᓚᒋᔭᐅᓪᓗᑎᒃ ᐊᑦᓯᓂᖅᓴᐅᓗᑎᒃ ᑭᒡᓕᕐᑲᖅᑎᑕᐅᓂᖏᑦ ᐱᔭᐅᔪᓐᓇᖅᑐᑦ ᑕᐃᑲᓐᖕᒫᖅᓯᒪᔪᑦ ᖃᐅᔨᓴᕈᑕᐅᓯᒪᔪᓂᒃ ᓇᔪᒐᕐᑲᕐᑲᑎᒋᑦᑐᑦ ᓇᓚᐅᑖᖅᑕᐅᓯᒪᓂᖏᓐᓂᒃ, ᐊᒻᒪᓗ ᐃᓱᒪᒃᓴᖅᓯᐅᕈᑎᒃᓴᐅᕐᑯᔭᐅᓪᓗᑎᒃ ᑰᑕᐃᑦ 3% ᐅᖓᑖᓅᕈᓐᓇᖏᓪᓗᑎᒃ ᓇᔪᒐᕐᑲᕐᑲᑎᒋᑦᑐᑦ ᓇᓚᐅᑖᖅᑕᐅᓯᒪᓂᐅᔪᓂᒃ.

ᒫᓐᓇᐅᔪᕐᓕ, ᓄᓇᕗᑦ ᒐᕙᒪᒃᑯᖏᑕ ᐊᕙᑎᓕᕆᔨᒃᑯᖏᑦ ᐊᑐᓕᕐᑯᔨᔾᔪᑎᓕᐅᓚᐅᖅᑐᑦ ᐊᖑᓇᓱᒃᑕᐅᔪᓐᓇᖅᑐᑦ ᑰᑕᖏᑦ ᐅᒥᖕᒪᓐᓄᑦ ᑭᕙᓪᓕᕐᒥᒃ 3%-ᒐᓚᐅᒐᔭᕐᓂᖏᓐᓂᒃ ᓇᔪᒐᕐᑲᕐᑲᑎᒋᑦᑐᑦ ᓇᓚᐅᑖᖅᑕᐅᓯᒪᓂᖏᓐᓂᒃ (ᑖᒃᑯᓇᓐᖓᕐᓗᓂ ᐊᑦᓯᓂᖅᓴᐅᔪᓂᒃ ᓱᓕᔪᓇᔭᐅᓯᒪᔪᓂᒃ ᐃᓱᓕᕝᕙᕐᑲᕐᓗᑎᒃ ᓇᔪᒐᕐᑲᕐᑲᑎᒋᑦᑐᑦ ᓇᓚᐅᑖᖅᑕᐅᓯᒪᓂᖏᓐᓂᒃ) ᖃᐅᔨᓴᕈᑎᕙᓂᕐᓃᖓᖅᓯᒪᔪᑦ 1999-ᒥ ᐊᒻᒪᓗ 2000-ᒥ (Campbell and Setterington 2001). ᐋᖅᑭᐊᖅᑕᐅᓯᒪᓂᖓᒍᑦ “3% ᒪᓕᒃᑕᐅᕐᑯᔭᐅᔪᖅ” ᐃᓕᖓᑎᑕᐅᔪᖅ ᐅᑎᖅᐸᓪᓕᐊᒍᓐᓇᕐᑯᓪᓗᒋᑦ ᐊᒻᒪᓗ ᑲᑎᑉᐸᓪᓕᒍᓐᓇᕐᑯᓪᓗᒋᑦ ᓇᔪᖓᕐᑲᕐᑲᑎᒋᑦᑐᑦ. ᑖᓐᓇ ᑭᒡᓕᒋᔭᐅᔪᖅ ᑐᕐᑲᖅᑐᖅ ᐱᕙᓪᓕᐊᓂᕐᑲᕐᑯᓪᓗᒋᑦ ᐅᒥᖕᒪᑦ ᓯᐊᒻᒪᓕᖓᓂᖅᓴᐅᔪᓐᓇᕐᑯᓪᓗᒋᑦ ᑕᐃᑲᓐᖓᕐᓂᓴᓂᒃ ᑭᒡᓕᒋᔭᐅᓯᒪᔪᓂᒃ ᑕᒪᐅᓇ ᐊᖑᓇᓱᒃᑕᐅᕐᑲᑦᑕᖅᑐᑦ ᖃᓂᓐᓂᖅᓴᐅᕐᑲᑦᑕᕋᔭᖅᑐᑦ ᓄᓇᓖᑦ ᐃᓚᖏᓐᓄᑦ. ᐃᓚᖏᓐᓂ ᐅᒥᖕᒪᑦ ᐋᖅᑭᑦᓯᒪᑦᓯᐊᓂᖅᓴᐅᓕᖅᑎᓪᓗᒋᑦ ᐱᑕᕐᑲᕐᓂᖏᑦ, ᑕᒪᓐᓇ ᐊᑐᖅᑕᐅᔪᒪᔪᖅ ᐱᑐᕐᑲᐅᓗᐊᑐᐃᓐᓇᓇᓚᐊᒃ ᐊᒻᒪᓗ ᐃᓕᖓᑎᑕᐅᔪᓐᓇᑐᓴᐅᔪᖅ ᐃᓚᖏᓐᓂ ᐊᖑᓇᓱᕝᕙᐅᕐᑲᑦᑕᖅᑐᓂᒃ ᐱᕝᕙᐅᓂᖅᓴᐅᔪᓐᓇᕐᓗᑎᒃ. ᑭᓯᐊᓂᓕ, ᐅᕐᑲᐅᓯᐅᕆᐊᒃᑲᓐᓂᕐᑲᑦᑕᖅᓯᒪᔪᖅ ᐅᒥᖕᒪᑦ ᓇᔪᒐᕐᑲᕐᑲᑎᒋᑦᑐᑦ ᐊᔾᔨᒌᓐᖏᑦᑐᓂᒃ ᐊᕙᑎᐅᑉ ᖃᓄᐃᓐᓂᕆᕐᑲᑦᑕᖅᑕᖏᓐᓂᒃ ᐱᔾᔪᑎᕐᑲᕐᑲᑦᑕᖅᑑᔭᕆᐊᖏᑦ ᑕᒪᐅᓇ ᑕᒪᐃᓐᓄᒐᓚᒃ ᐃᖏᒃᑰᖓᔪᓂᒃ ᐃᓄᖕᓄᑦ ᐊᖑᔭᐅᔪᓐᓇᕐᑲᑦᑕᕐᓂᖏᓐᓄᑦ. ᓇᔪᒐᕐᑲᕐᑲᑎᒋᑦᑐᑦ ᐃᓅᓯᓪᓕᕙᓪᓕᐊᓂᖏᑦ ᓱᒃᑲᓕᔪᒻᒪᕆᐊᓘᔪᓐᓇᖅᑐᑦ, ᐃᖏᒃᑯᑦ ᐊᖑᓇᓱᓐᓂᐅᔪᒃᑯᑦ (ᓲᕐᓗ, ᓂᕿᑭᐅᑎᓂᖏᓐᓄᑦ, ᕐᑯᐱᕈᓄᑦ/ᐋᓐᓂᐊᓇᖅᑐᓄᑦ,

ᐊᒻᒪᓗ/ᐅᕝᕙᓗᓐᓃᑦ ᓯᓚᒧᑦ), ᓵᕐᓗ ᑕᒪᐅᓇ ᐋᑑᑎᑦᑐᑎᑦ, ᐊᖑᓇᓱᒍᓐᓇᕐᓂᐅᔪᖅ ᕐᑯᕝᕙᓯᐊᖅᑕᐅᓯᒪᓗᐊᖅᑐᐊᓘᑉᐸᑦ ᓱᒃᑲᓕᑎᑦᓯᔪᓐᓇᖅᑐᖅ ᐃᓅᓯᑦᓕᕙᑦᓕᐊᓂᖏᓐᓂᒃ ᐊᒻᒪᓗ ᐊᒃᑐᐃᓂᕐᓗᒃᓯᒪᓗᓂ ᐅᑎᖅᐸᑦᓕᐊᓂᕆᓇᔭᐅᖅᑕᕋᓗᐊᖏᓐᓂᒃ. ᐊᖑᓇᓱᓐᓂᐅᕐᑲᑦᑕᖅᑐᑦ ᐋᖅᑭᑦᓯᒪᔭᐅᑦᓯᐊᕆᐊᕐᑲᖅᐳᑦ ᑖᕝᕙᐃᓇᕐᓗ ᐋᖅᑭᑦᑕᐅᔭᕆᐊᕐᑲᖅᐳᑦ ᓱᒃᑲᓕᓗᐊᖅᑐᐊᓗᒻᒥᒃ ᓄᖑᑉᐸᑦᓕᐊᓂᖏᑦ ᐅᓂᒃᑳᕆᔭᐅᓕᑐᐊᖅᐸᑕ ᐊᒻᒪᓗ ᐊᐅᓚᑦᓯᔾᔪᑕᐅᔪᕗᑦ ᑐᕌᕈᑕᐅᓇᓱᐊᖅᑐᑦ ᕐᑲᐅᔨᓴᖅᑕᐅᑲᓐᓂᓕᕐᓗᑎᒃ ᓄᓇᓕᓐᓂ ᐊᒃᑐᖅᑕᐅᓯᒪᓂᐊᖅᑐᓂ .

ᕐᑭᑎᕐᒥᐅᓂᓕ, ᐊᖑᓇᓱᖕᓂᐅᕐᑲᑦᑕᖅᑐᑦ ᐊᔾᔨᕆᕐᑲᑦᑕᓲᖑᓐᖏᓚᑦ ᐊᐅᓚᑦᓯᔾᔪᑎᒃᓴᕐᑲᓐᖏᓗᐊᕋᒥᒃ ᑐᑭᒧᐊᒍᑎᒃᓴᓂᒃ ᐊᒻᒪᓗ ᐊᓯᔾᔨᕐᑲᑦᑕᕐᓂᖏᓐᓄᑦ ᐊᔾᔨᕆᓐᖏᑦᑐᑦ ᑰᑕᐃᑦ ᐊᑐᖅᑕᐅᓯᕐᑲᑦᑕᕐᓂᖏᑦ ᑖᒃᑯᓇᓐᖓᖅᓯᒪᓐᖏᑦᑐᑦ ᕐᑲᐅᔨᓴᕈᑕᐅᓯᒪᔪᓂᒃ. ᑭᓯᐊᓂᓕ ᑰᑕᐃᑦ ᑐᓂᔭᐅᓯᒪᔪᑦ ᐅᒥᖕᒪᓐᓄᑦ ᓇᓕᐊᓐᓅᕙᓗᐊᖅᐸᑦ ᐊᖑᔭᐅᕐᑲᑦᑕᖅᑐᓄᑦ, ᐊᖑᔭᐅᕐᑲᑦᑕᕐᓂᖏᑦ ᑲᑎᖅᓱᖅᑕᐅᕐᑲᑦᑕᓇᐊᕐᑲᖅᐳᑦ ᐊᖅᑭᑦᓯᒪᑦᓯᐊᕐᓗᑎᒃ ᕐᑲᐅᔨᖅᑕᐅᓯᐊᕐᓗᑎᑦᓗ. ᒫᓐᓇᐅᔪᖅ ᑲᑎᖅᓱᖅᑕᐅᓯᒪᔪᓕᒫᑲᓴᑦ ᑐᖅᑯᖅᑐᖅᑕᐅᓯᒪᕗᑦ ᐸᐃᑉᐹᓅᖅᑲᖅᑕᐅᓯᒪᑐᐃᓐᓇᖅᑐᑎᒃ ᐊᒻᒪᓗ ᔭᒐᑐᐃᓐᓇᓇᐊᖅᑲᖅᑐᑎᒃ ᐊᐅᓚᔾᔭᕆᐊᖅᑕᐅᖕᒋᑐᐊᖅᐸᑕ. ᕐᑲᐅᔨᓴᖅᑕᐅᓂᖏᑦ ᐊᖑᔭᐅᕐᑲᑦᑕᖅᑐᑦ, ᐃᓄᐃᑦ ᐃᓕᖅᑯᓯᖏᑦ ᕐᑲᐅᔨᓴᖅᑕᐅᕐᑲᑕᐅᓗᑎᒃ, ᐊᑐᖅᑕᐅᔭᕆᐊᕐᑲᓲᖑᕗᖅ ᐊᐅᓚᑦᓯᔾᔪᑕᐅᓗᑎᒃ ᐊᖑᓇᓱᒍᓯᐅᔪᓂᒃ ᐊᒻᒪᓗ ᐋᖅᑭᑦᑕᐅᓯᒪᓗᑎᒃ ᐊᖑᔭᐅᔪᓐᓇᖅᑐᑦ ᑭᒡᓕᓕᐊᖑᓂᖏᑦ ᐅᑎᖅᑕᕈᓐᓇᑐᒃᑯᑦ ᐋᖅᑭᑦᓯᒪᓂᕐᑲᕐᑯᑦᓗᒍ. ᑭᓯᐊᓂᓕ, ᐊᖑᔭᐅᕐᑲᑦᑕᖅᑐᓂᒃ ᕐᑲᐅᔨᓴᕐᓂᖅ ᐊᐅᓚᓯᔾᔪᑎᕐᑲᓐᖏᓚᖅ ᐋᖅᑭᑦᑕᐅᓯᒪᔪᒥᒃ ᐊᒻᒪᓗ ᐊᑐᐃᓐᓇᐅᓵᖑᕗᖅ ᑭᓯᐊᓂ ᐸᐃᑉᐹᓂ ᑖᒃᑯᒪᓂᓐᓂᒃ ᓈᓴᖅᑕᐅᓯᒪᔪᓂᒃ. ᐱᔾᔪᑎᒋᑦᓗᒍ ᑰᑕᐃᑦ ᐃᓚᖏᑦ ᐋᖅᑭᑦᓯᒪᓐᖏᓐᓂᖏᓐᓄᑦ, ᐊᔪᕈᑎᒋᔭᖕᖓ ᕐᑲᐅᔨᓴᕋᓱᒋᐊᖕᖓ ᐊᖑᔭᐅᔪᓐᓇᖅᑐᓂᒃ ᐋᖅᑭᑦᓯᓯᒪᖓᓱᐊᓇᐊᒃᓴᖅ ᐅᑎᖅᑕᕐᓂᖏᓐᓄᑦ ᓈᖕᒪᖓᔭᖅᑐᓂᒃ ᐅᕝᕙᓘᓐᓃᑦ ᐃᓅᓯᑦᓕᕙᑦᓕᐊᒍᑕᐅᑐᐃᓐᓇᕋᔭᕐᓂᖕᖓᓄᑦ ᐃᑲᔫᑎᐅᕙᑦᓕᑐᐃᓐᓇᕋᔭᕐᓂᖕᖓ ᐅᒥᖕᒪᑦ ᓇᔪᖓᕐᑲᕐᑲᑎᕆᑦᑐᑦ. ᕐᑲᐅᔨᓴᕐᓂᐅᔪᑦ ᐊᖑᓇᓱᓐᓂᕐᒥᒃ ᐃᑦᓘᑉ ᐃᓄᖏᑎᒍᑦ ᐊᑐᖅᑕᐅᕐᑲᑦᑕᓇᐊᕐᑲᖅᐳᑦ ᐋᖅᑭᑦᓯᒪᑦᓯᐊᑐᒃᑯᑦ ᐊᑐᕈᓐᓇᕐᓂᓕᒫᖑᓐᖏᓐᓄᑦ ᐊᑐᖅᑕᐅᕐᑲᑦᑕᕈᓐᓇᕐᑯᑦᓗᒋᑦ ᐱᓕᕆᔾᔪᑎᒃᓴᐅᔪᑦ ᐋᖅᑭᑦᓯᒪᑦᓯᓯᓐᓇᕈᑕᐅᓗᑎᒃ ᐅᑎᖅᑕᕐᑲᑦᑕᕐᓂᖏᓐᓂᒃ ᐊᖑᓇᓱᒃᑕᐅᕐᑲᑦᑕᕐᓂᖏᑎᒍᑦ.

ᓇᓗᓇᐃᒃᑯᑕᖅ 5.1: ᓇᓚᐅᑦᒌᖅᑕᐅᓯᒪᔪᖅ ᒫᓐᓇᐅᓂᖅᐹᒃᑯᑦ ᐊᒻᒪᓗ ᑰᑕᐃᑦ ᐅᒥᖕᒪᖕᒋᓐᓄᑦ ᕿᑎᕐᒥᐅᑦ ᐊᐅᓚᑦᓯᕝᕕᐅᔪᓂ ᐊᕙᒃᓯᒪᓂᖅᓂ. ᑭᖑᓪᓕᖅᐹᖅ ᑖᒃᑯᓇᓂ ᑎᑎᖅᑕᐅᓯᒪᔪᓂ ᑰᑕᖏᑦ ᐳᓴᖏᑎᒍᑦ ᐊᑦᓯᓂᖅᐹᖑᓯᒪᔪᓂ ᓇᔪᖅᑲᖅᑎᕇᑦᑐᓂ ᓇᓚᐅᑦᒌᖅᑕᐅᓯᒪᓂᖏᑦ.

	ᑭᖑᓪᓕᖅᐹᒥ ᖃᐅᔨᓴᕈᑎᕕᓂᖅ	ᓯᕗᓂᐊᓂ	ᓇᓚᐅᑦᒌᖅᑕᐅᓯᒪᒧᖅ	ᑰᑕᐃᑦ	% ᐊᑦᓯᓂᖅᐹᖅ
MX07	1992	?	6720±790	ᐃᖃᓗᑦᑑᑦᑎᐊᖅ 100	1.69
MX08-MX06	1995[a]	1980, 1979, 1976, 1975, 1974	5259±414	ᕿᑭᖅᑖᓗᒃ 20	0.66
				ᑕᓗᕐᔪᐊᖅ 12	
MX09	1995	1985	555±205	ᑕᓗᕐᔪᐊᖅ 20	5.71
MX10	1994	1993, 1988, 1983, 1980	3934±1225	ᖁᕐᓗᖅᑐᖅ 100	3.69
MX11	1999	1993, 1988, 1983, 1980, 1979, 1976	18290±1100	ᐃᖃᓗᑦᑑᑦᑎᐊᖅ 1300	7.56
MX12	1994	1987-88, 1983, 1980, 1979	974±336	ᖁᕐᓗᖅᑐᖅ 20	3.13
MX13	?	?		ᐅᒥᖕᒪᑦᑑᖅ 20	?
MX14	1986	1979, 1976, 1975, 1970	2192±494	ᐅᒥᖕᒪᑦᑑᖅ 20	2.36
				ᕿᖕᒐᐅᑦ 20	
MX15	?	?		ᐅᒥᖕᒪᑦᑑᖅ 10	?
				ᕿᖕᒐᐅᑦ 10	
				ᐃᖃᓗᑦᑑᑦᑎᐊᖅ 70	
MX16	1996	1988, 1982, 1979, 1976, 1966	4255±680	ᐅᖅᓱᖅᑑᖅ 80	2.52
				ᑰᒑᕐᔪᒃ 5	
				ᑕᓗᕐᔪᐊᖅ 5	
MX17	2000	1992, 1986, 1979, 1957	956±361	ᐅᖅᓱᖅᑑᖅ 45	9.24
				ᑰᒑᕐᔪᒃ 5	
				ᑕᓗᕐᔪᐊᖅ 5	
MX19	1991 (ᐃᓚᐃᓐᓇᖓ)	1986 (ᐃᓚᐃᓐᓇᖓ)	1400	ᐅᒥᖕᒪᑦᑑᖅ 20	4.29
				ᕿᖕᒐᐅᑦ 20	
				ᖁᕐᓗᖅᑑᖅ 20	
MX22	2002 (ᓄᓇ)	1986	147	ᐅᖅᓱᖅᑑᖅ 8	5.44
Total			ᑕᒫᓂᒐᓚᒃ 50000	1965	ᑕᒫᓂᒐᓚᒃ 4%

[a] ᖃᐅᔨᓴᕐᓂᐅᓚᐅᖅᑐᖅ ᐋᑉᕈ 2004-ᒥ. 1070 ᐊᒻᒪᓗ 1530 ᐅᒥᖕᒪᑦ ᑕᑯᔭᐅᓚᐅᖅᑐᑦ ᑭᓐᖓᐃᓚᕐᒥ ᐊᒻᒪᓗ ᑯᓚᓇᔫᑉ ᓄᓇᖓᓂ ᒪᓕᒃᑎᕇᑦᑐᑎᒃ. ᐅᒥᖕᒪᑦ ᓇᔪᖅᑲᖅᑎᕇᓐᓂᖏᑦ ᓇᓚᐅᑦᒌᖅᑕᐅᓯᒪᔪᑦ ᑖᒃᑯᓈᖓ ᒪᕐᕘᓐᓄᑦ ᕿᑭᖅᑖᓄᑦ ᐊᑐᐃᓐᓇᐅᖏᑦᑐᑦ ᒫᓐᓇᐅᔪᖅ ᑭᓯᐊᓂᓚ ᖃᐅᔨᓴᖅᑕᐅᓯᒪᓂᖏᓐᓂ ᐃᓱᒪᒋᔭᐅᔪᖅ ᐅᓄᖅᓯᑎᐊᖅᑕᐅᓯᒪᓇᔭᖅᓂᖏᓐᓂᒃ 1995-ᒥᓂᒃ.

<u>ᓇᓄᓇᐃᒃᑯᑕᖅ 5.2:</u> ᖃᐅᔨᒪᔭᐅᔪᑐᖃᐅᔪᖅ ᐅᒥᖕᒪᑦ ᐊᐅᓚᑕᐅᖃᑦᑕᕐᓂᖏᑦ ᕿᑎᕐᒥᐅᓂ (ᑖᒃᑯᓈᖕᒫᖅᑐᖅ ᐆᒪᔪᓕᕆᔾᔪᐊᒃᑯᑦ ᑲᑎᒻᔪᑎᕙᓂᖏᓐᓂᒃ ᐊᒻᒪᓗ ᐅᓇᑕᖅᑐᕐᓴᔭᒃᑯᑦ ᐸᐃᑉᐹᖁᑎᖏᓐᓂᒃ) 1917-ᒥᓂᒃ 2005-ᒧᓄᑦ. ᐊᓚᒡᒐᐃᓕᕆᐊᖅᓯᒪᔪᑦ ᐋᖅᑭᒋᐊᕈᑕᐅᓯᒪᔪᑦ ᐊᐅᓚᑦᓯᔾᔪᑕᐅᓂᐊᖅᑐᒧᑦ ᐊᐅᓚᑦᓯᕝᕙᐅᔫᑉ ᐊᕙᒃᓯᒪᓂᐊᓄᑦ ᐊᐅᓚᑦᓯᕝᕙᐅᔫᑉ ᐊᕙᒃᓯᒪᓂᖕᖓᓄᑦ. X ᑖᒃᑯᓅᖕᒐᖕᒐᔪᖅ ᐊᐅᓚᑦᓯᕝᕙᐅᔪᑦ ᑭᒡᓕᖏᑕ ᐊᓯᔾᔨᕈᑎᖏᓐᓄᑦ. ᖃᐅᔨᒪᓂᐊᖅᑯᑎᑦ ᐊᐅᓚᑦᓯᕝᕙᐅᔪᑦ ᐊᕙᒃᓯᒪᓂᖏᑕ ᐊᓯᔾᔨᖅᓯᒪᓂᖏᑦ 1980-ᖏᓐᓂ ᐊᒻᒪᓗ 1990-ᖏᓐᓂ ᐊᓯᔾᔩᓚᐅᕐᒪᑕ. ᐊᑐᓚᐅᖅᑕᒃᑲ ᒫᓐᓇᐅᔪᖅ ᐊᕙᒃᓯᒪᓂᐅᔪᑦ ᑕᒪᕐᓄᑦ ᐋᖅᑭᑦᑕᐅᓯᒪᓂᐅᔪᓄᑦ ᓱᖅᑯᐃᒪᓇᕐᓂᖅᓴᐅᕐᑯᑦᑐᒍ.

ᐊᕐᕌᒍ	MX07	MX10	MX11	MX06	MX08	MX09	MX12	MX13	MX14	MX15	MX16	MX17	MX19	MX22	ᐊᑐᖅᑕᐅᔪᑦ/ᐅᖃᐅᓯᒃᓴᑦ
1980 ᓄᓇᖑᖏᓐᓂ	ᒪᑐᒪᔪᖅ ᒫᓯᒥᒃ ᐆᑦᑑᕙᒧᑦ														
1917	ᓄᖅᑲᖅᑎᑕᐅᔪᑦ ᑕᐅᖅᓲᒍᑕᐅᖃᑦᑕᕐᓂᖏᑦ ᐊᖑᓇᓱᒃᑕᐅᔪᓐᓇᕐᓂᖏᓪᓗ ᐊᓯᖏᓐᓄᑦ ᓄᓇᖃᖅᑳᖅᑐᕕᓃᑦ														ᐅᒥᖕᒪᑦ ᓇᔪᖃᖅᑲᑎᒌᑦᑐᑦ ᐊᑦᓯᑐᒻᒪᕆᐅᔪᑦ ᐱᑕᖃᕐᓂᖏᑦ
1924	ᓴᐳᑎᔭᐅᓯᒪᔪᑦ ᐱᔭᐅᑦᑕᐃᓕᒪᑎᑕᐅᒪᕆᑦᑐᑦ														ᐊᖑᔭᐅᖃᑦᑕᕐᓂᖏᑦ ᖁᑦᓯᓗᐊᕆᔭᐅᓕᓚᐅᖅᑐᑦ ᐊᒻᒪᓗ ᐅᒥᖕᒪᑦ ᓇᔪᖃᖅᑲᑎᒌᑦᑐᑦ ᐃᓅᓴᓪᓕᕙᓪᓕᐊᔪᒪᕆᐅᓪ ᓘᑎᒃ (+ ᒪᓕᒐᕐᓂᒃ ᓯᕐᑯᒥᑦᓯᓪᓗᑎᒃ ᓂᐅᕈᑎᖃᖃᑦᑕᖅᑐᑦ)
1976	**ᓴᖅᑭᖅᑕᐅᔪᖅ**				**ᓴᖅᑭᖅ ᑕᐅᔪᖅ**		**ᓴᖅᑭᖅ ᑕᐅᔪᖅ**				**ᓴᖅᑭᖅ ᑕᐅᔪᖅ**				
1977	?				?		?		**ᓴᖅᑭᖅ ᑕᐅᔪᖅ**		?				
1980	28				10		14		5		29				ᑰᑕᐃᑦ ᐅᕝᕙᓘᓐᓃᑦ ᐊᑐᓕᖁᔾᔪᑏᑦ??
1983		8	5	12	3		18		5		11	7			
1984		13?	65	12	3		40		**10**		65	10			ᐊᓯᙱᖅᑕᐅᑲᐃᓐᓇᖅᑐᑦ
1986							40		10		80	10			
1987							40		30		80	10	**ᓴᖅᑭ ᖅᑕᐅ ᔪᖅ (20)**		ᓴᖅᑭᖅᑕᐅᔪᑦ ᐊᐅᓚᓯᔾᔪᑎᒃᓴᐃᑦ ᐊᕙᒃᑐᖅᓯᒪᓂᖕᒐᓂ F2-2 (MX19)
1988							**50**		40		80	10	20		ᖃᐅᔨᓴᕐᓂᐅᔪᖅ 1987 (MX12)
1989-1991	ᐅᖓᕙᓇᐊᖅᑕᐅᔪᖅ ᐊᖑᓇᓱᙵᒃᓴᐅᔪᖅ ᐅᐱᕐᖔᒃᑯᑦ ᒫᓯ 31-ᒥᒃ ᐋᑉᐱ 15-ᒧᑦ. ᖃᐅᔨᒪᓈᖏᑦᑐᖅ ᑕᒪᐃᓐᓄᑦ ᑐᕌᖓᑎᑕᐅᓚᐅᕐᒪᖔᖅ ᐊᐅᓚᑦᓯᕝᕙᐅᔪᑦ ᐊᕙᒃᓯᒪᓂᖏᓐᓄᑦ ᑕᐃᑦᓯᒪᓂᐅᑎᓪᓗᒍ.														
1991				**S**			50		40		170	10	20		ᖃᐅᔨᓴᕐᓂᖅ 1991
1992	**100**						50		40		170	10	20		
1993	100						50		40	**20**	170	**30**	20		ᖃᐅᔨᓴᕐᓂᖅ 1992

1993	100		**1000**				50		40		170	30	20		ᖃᐅᔨᓴᕐᓂᖅ 1993
1994	100	100	1000				50		40		170	**40**	20		ᐊᓯᔾᔨᖅᑕᐅᑲᐃᓐᓇᖅᑐᖅ
1995	100	100	1000			**5**	50		40		170	40	20		ᖃᐅᔨᓇᓱᒃᓂᖅ/ᖃᐅᔨᓴᕐᓂᖅ
1995?	100	100	1000			5	50		40		170	**ᐅᖕᒐ ᕗᑎᐊ ᖅᑕᐅ ᔪᖅ ᑲᓇᖕ ᓇᖅᐸ ᓯᒪᒧᑦ**	20		ᖃᐅᔨᓴᕐᓂᖅ 1992
1995	100	100	1000	**20**		5	50		40		170	40	20		ᖃᐅᔨᓴᕐᓂᖅ 1995
1995	100	100	1000	20	**12**	5	50		40		170	40	20		ᖃᐅᔨᓴᕐᓂᖅ 1995
1996	100	100	1000	20	12	**10**	50		40		170	40	20		ᓄᓇᓕᖕᓂ ᐊᖑᓇᓱᒃᑐᓕᕆᔩᓄᑦ ᑐᑭᓱᕚᖅ
1996	100	100	1000	20	12	10	50		40		170	**55**	20		ᖃᐅᔨᓴᕐᓂᖅ 1992 ᐊᒻᒪᓗ ᐊᕕᑦᓯᒪᓂᖅ ᐊᖏᕐᕿᐊᖅᑕᐅᔪᖅ
1996	100	100	1000	20	12	10	50		40		170	55	30		ᖃᐅᔨᓇᓱᒃᓃᑦ
1996	100	100	1000	20	12	10	50		40		170	55	30	**Creation (5)**	ᖃᐅᔨᓇᓱᒃᓃᑦ
1996	100	100	1000	20	12	10	**20**		40		170	55	30	5	ᖃᐅᔨᓴᕐᓂᖅ 1994
1997?	100	100	1000	20	12	10	20		40		**90**	55	**60?**	5	ᖃᐅᔨᓴᕐᓂᖅ 1996
2000	100	100	1000	20	12	**20**	20	20	40		90	55	60	5	ᓄᓇᓕᖕᓂ ᐊᖑᓇᓱᒃᑐᓕᕆᔩᓄᑦ ᑐᑭᓱᕚᖅ
2000	100	100	**1300**	20	12	20	20	20	40		90	55	60	5	ᖃᐅᔨᓴᕐᓂᖅ 1999
2002	100	100	1300	20	12	20	20	20	40		90	55	60	**8**	ᓄᓇᒃᑯᑦ ᖃᐅᔨᓴᕐᓃᑦ 2002
ᒫᓐᓇᐅᔪᖅ	**100**	**100**	**1300**	**20**	**12**	**20**	**20**	**20**	**40**	**90**	**90**	**55**	**60**	**8**	

<u>ᓇᓗᓇᐃᒃᑯᑕᖅ 5.3</u>: ᒫᓐᓇᐅᔪᖅ ᓄᓇᓖᑦ ᑰᑕᖕᒋᑦ ᕿᑎᕐᒥᐅᓂ (ᐃᓚᖕᒋᓐᓂ ᓄᓇᓖᑦ ᐊᑕᐅᓯᕐᒥᒃ ᐊᑐᖃᑎᒌᖃᑦᑕᖅᑐᑦ ᐊᐅᓚᑦᓯᕙᐅᔪᒥ ᐊᕙᒃᓯᒪᓂᕐᒥᒃ ᐅᕝᕙᓘᓐᓃᑦ ᐊᖑᓇᓱᖃᑦᑕᖅᑐᑦ ᐊᑕᐅᓯᐅᓐᖏᑦᑐᒥ);

	ᑰᒎᕐᔪᒃ	ᑕᓗᕐᔪᐊᖅ	ᐅᖅᓱᖅᑑᖅ	ᐃᖃᓗᑦᑑᑦᑎᐊᖅ	ᐅᒥᖕᒪᒃᑑᖅ	ᕿᖕᒐᐅᑦ	ᖁᕐᓗᖅᑐᖅ
ᓂᕙᖕᒐᑖᑦ	10	42	133	1470	70	50	140

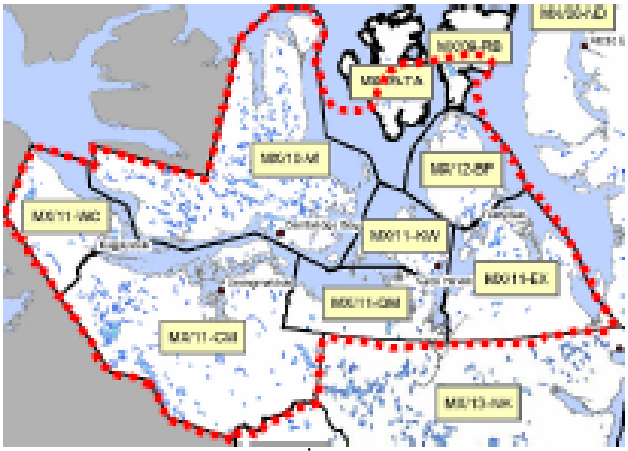
ᒫᓐᓇᐅᔪᖅ ᐊᐅᓚᑦᓯᕗᐅᔪᑦ ᐊᕙᒃᓯᒪᓂᖕᒋᑦ (ᓇᓗᓇᐃᖅᓯᒋᐊᕈᑦ 4.2) ᑕᑯᒃᓴᐅᔾᔪᑎᒋᕚ ᖃᐅᔨᒪᔭᐅᔪᑦ ᐅᒥᖕᒪᑦ ᑲᑎᓐᖓᔪᑦ ᐃᖏᑯᐊᖅᑎᖅᑑᔾᔭᖅᑐᑎᑐᑦ ᐊᐅᓚᓂᖃᖅᑐᑦ. ᐱᔾᔪᑎᒋᓪᓗᒍ ᐊᐅᓚᑦᓯᕙᐅᔪᑦ ᐊᕙᒃᓯᒪᓂᐅᔪᓂ ᑖᒃᑯᓇᓂ ᑖᒃᑯᓇᓐᖔᖅᓯᒪᓐᖏᓚᑦ ᓇᔪᖃᖃᑎᒌᑦᑐᑦ ᑐᓴᕈᑎᓂᒃ ᑲᑎᖅᓱᖅᑕᐅᓯᒪᓂᖕᒋᓐᓂᒃ ᐊᒻᒪᓗ ᐱᔾᔪᑎᒋᓪᓗᒍ ᐅᒥᖕᒪᑦ ᓇᔪᖃᖃᑎᒌᑦᑐᑦ ᐅᑎᖅᐸᓪᓕᐊᖃᑦᑕᖅᓯᒪᖕᒪᑕ ᑲᑎᐸᓪᓕᐊᓪᓗᑎᒃ ᐃᓂᑐᖃᕐᒥᓄᑦ ᑕᐃᑦᓱᒪᓂᒋᐊᖅ, ᑕᒪᒃᑯᐊ ᐊᓯᔾᔨᖃᑦᑕᖅᓯᒪᒻᒪᑕ ᐅᑭᐅᑦ ᖃᖕᒋᖅᐸᓪᓕᐊᔪᑦ ᒪᓕᓪᓗᒋᑦ. ᐅᒥᖕᒪᑦ ᐅᑎᖅᐸᓪᓕᐊᓯᒪᕗᑦ ᑲᑎᐸᓪᓕᐊᓪᓗᑎᒃ ᐃᓂᑐᖃᕐᒥᓄᑦ ᓄᓇᐃᓐᓇᕐᒧᑦ ᐊᒻᒪᓗ ᐃᓚᖕᒋᓐᓄᑦ ᐅᑭᐅᖅᑕᖅᑑᑉ ᕿᑭᖅᑕᖕᒋᓐᓄᑦ, ᓄᑖᑦ ᐊᐅᓚᑦᓯᕙᐅᔪᑦ ᐊᕙᒃᓯᒪᓃᑦ ᓴᖅᑭᖅᑕᐅᕙᓪᓕᐊᓂᓚᐅᖅᑐᑦ (ᓇᓗᓇᐃᒃᑯᑕᖅ 5.2).

ᓄᓇᓕᓐᓂ ᐊᒥᓱᓂᖅᐹᓂ ᑰᑕᖃᖅᑐᑦ ᐃᖃᓗᑦᑑᑦᑎᐊᖅ (1470 ᓂᕙᖕᒐᑖᑦ). ᐅᑭᐅᕋᓴᓐᓂ, ᓄᓇᓖᑦ ᐱᓇᓱᐊᖃᒃᑕᖅᓯᒪᕗᑦ ᑮᓇᐅᔭᓕᐅᒃᑲᓐᓂᕈᑎᒃᓴᓂᒃ ᐊᖑᓇᓱᖕᓂᒃᑯᑦ ᐋᖅᑭᑦᓯᔪᒪᓪᓗᑎᒃ ᓂᕿᓕᕆᕙᖕᒥᒃ ᐊᒻᒪᓗ ᕿᕙᐅᓕᕆᕙᖕᒥᒃ. ᑭᓯᐊᓂᓕ, ᒫᓐᓇᒧᑦ, ᑮᓇᐅᔭᓕᐅᒃᑲᓐᓂᕈᑎᒃᓴᐅᔪᑦ ᐊᖑᓇᓱᖕᓂᒃᑯᑦ ᐊᒥᓱᓂᒃ ᐊᐳᖅᑕᕙᖃᖃᑦᑕᖅᓯᒪᕗᑦ ᐊᒥᓱᓂᒃ ᐊᑲᐅᓐᖏᓪᓕᐅᕈᑎᓂᒃ ᐊᒻᒪᓗ ᓱᓕ ᐋᖅᑭᑦᑕᐅᓯᒪᓐᖏᓚᑦ ᐱᓇᓱᐊᖅᑕᐅᓂᖕᒐᓄᑦ.

<u>6.0. ᐊᐅᓚᑦᓯᔾᔪᑕᐅᔪᒪᔪᑦ ᐊᐅᓚᑦᓯᔾᔪᑎᓄᑦ ᒪᓕᒐᕆᔭᐅᓂᐊᖅᑐᒃ ᓄᓇᕗᒻᒥ ᐆᒪᔪᓕᕆᓂᕐᒧᑦ ᐱᖁᔭᓄᑦ</u>

ᑖᒃᑯᐊ ᐊᑐᓕᖁᔾᔨᔾᔪᑏᑦ ᑖᒃᑯᓇᓐᖔᖅᓯᒪᔪᑦ ᐆᒪᔪᓕᕆᓂᕐᒥᒃ ᐊᐅᓚᑦᓯᓂᕐᒧᑦ ᐊᑐᓕᖁᔾᔨᔾᔪᑏᑦ ᐅᓂᒃᑳᖕᒋᓐᓂᒃ ᑲᑎᒪᓂᐅᖃᑦᑕᖅᓯᒪᔪᓂᒃ ᐊᒻᒪᓗ ᑎᑎᕋᖃᑦᑕᐅᑎᒍᑎᒋᓯᒪᔭᖕᒋᓐᓂᒃ ᓄᓇᕗᑦ ᒐᕙᒪᒃᑯᖕᒋᑕ ᐆᒪᔪᓂᒃ ᖃᐅᔨᓴᖅᑎᖕᒋᓐᓂᒃ ᐊᒻᒪᓗ ᐃᓱᕐᕆᐅᑎᓕᕆᔩᖕᒋᓐᓂᒃ ᐊᒻᒪᓗ ᓱᓕ ᑲᑐᔾᔨᖃᑎᒌᒍᑕᐅᓪᓗᑎᒃ ᐊᐅᓚᑦᓯᖃᑎᒌᑦᑐᓄᑦ ᐊᐅᓚᑦᓯᓂᕐᒥᒃ.

6.1. ᓇᔪᒐᖃᖃᑎᒌᓐᓂᖕᒋᑦ



<u>ᓇᓗᓇᐃᖅᓯᒋᐊᕈᑦ 6.1.1</u>: ᑐᒃᓯᕌᖑᔪᑦ ᐅᒥᖕᒪᑦ ᐊᐅᓚᑦᓯᕙᖕᒋᓐᓂ ᑭᒻᓕᖕᒋᑦ ᕿᑎᕐᒥᐅᓂ

ᒫᓐᓇᐅᔪᖅ ᐃᓕᓴᖅᓯᐅᒪᔪᒧᑦ 12-ᓂᒃ ᓇᔪᒐᖃᖃᑎᒌᑦᑐᓂᒃ/ᑲᑎᓐᖓᔪᓂᒃ ᐅᒥᖕᒪᓂᒃ ᑕᒫᓃᖃᑦᑕᖅᑐᓂᒃ ᐅᕝᕙᓘᓐᓃᑦ ᑕᒫᓂᓚᐅᓪᓚᖃᑦᑕᖅᑐᓂᒃ ᓄᓇᕗᒻᒥ, 9-ᖑᔪᑦ ᑕᒫᓃᖕᒋᓐᓇᖅᑐᑎᒃ ᐊᒻᒪᓗ ᐃᓚᖕᒐᓂ ᕿᑎᕐᒥᐅᓃᑲᐃᓐᓇᖃᑦᑕᖅᑐᑦ (ᓇᓗᓇᐃᖅᓯᒋᐊᕈᑦ 6.1.1, ᓇᓗᓇᐃᒃᑯᑕᖅ 6.2.1). ᓄᓇᓐᖑᐊᑎᒍᑦ ᑭᒡᓕᖃᖅᑎᑕᐅᓂᖕᒋᑦ ᕿᑎᕐᒥᐅᓂ ᐅᒥᖕᒪᖃᕐᓂᐅᔪᑦ ᓇᔪᒐᖃᖃᑎᒌᑦᑐᑦ (ᓇᓗᓇᐃᖅᓯᒋᐊᕈᑦ 6.1) ᖃᐅᔨᓴᖅᑕᐅᓚᐅᖅᓯᒪᔪᖅ ᓯᕗᓂᐊᓂ ᖃᐅᔨᓇᓱᒃᑕᐅᓪᓗᓂ ᐃᓄᐃᑦ ᖃᐅᔨᒪᔭᑐᖃᖕᒋᑎᒍᑦ, ᖃᐅᔨᓴᕈᑎᕙᓂᖅᑎᒍᑦ, ᓄᒃᑕᕐᓂᖕᒋᑎᒍᑦ ᖁᖓᓯᒍᑎᓂᒃ ᐃᓪᓕᕆᔭᐅᓯᒪᔪᑦ ᓈᓚᐅᑎᓕᓐᓂᒃ ᐆᒪᔪᑦ, ᐊᒻᒪᓗ ᖃᐅᔨᒪᔭᐅᓂᖕᒋᑦ ᓄᓇᖕᒋᓐᓂ ᐊᐳᖅᑕᕙᐅᔪᑦ (ᓲᕐᓗ, ᓯᕐᑮᑦ) ᐅᒥᖕᒪᑦ ᓄᒃᑕᕐᓂᕆᓇᔭᖅᑕᖕᒋᓐᓄᑦ. ᓇᑭᓐᖔᖅᓯᒪᓂᖕᒋᑦ ᖃᐅᔨᓐᓴᖑᔪᑦ ᒫᓐᓇᐅᔪᖅ ᓇᓗᓇᐃᖅᑕᐅᒋᐊᒃᑲᓐᓂᕈᑎᒃᓴᖕᒋᓐᓂᒃ ᓇᔪᒐᖃᖃᑎᒌᑦᑐᑦ ᓇᓗᓇᐃᖅᑕᐅᓯᒪᕐᑯᓪᓗᒋᑦ.

6.2. ᐊᖑᔭᐅᔪᓐᓇᖅᑐᑦ

ᐊᑐᓕᖁᔨᔾᔪᑏᑦ ᖁᑦᓯᓐᓂᖏᓐᓂᒃ ᐊᖑᔭᐅᔪᓐᓇᖅᑐᑦ, ᐊᑐᓕᖁᔭᐅᔪᑦ ᑰᑕᑦ ᓇᔪᒐᖃᖃᑎᒌᑦᑐᓂ, ᐊᒻᒪᓗ ᐋᖅᑭᒋᐊᕈᑎᒃᓴᑦ ᖁᑦᓯᓐᓂᖏᓐᓂᒃ ᐊᖑᔭᐅᔪᓐᓇᖅᑐᑦ ᐊᒻᒪᓗ ᑰᑕᐃᑦ ᓇᐃᓈᖅᓯᒪᓪᓗᑎᒃ ᖃᐅᔨᒋᐊᕐᕕᒃᓴᐅᔪᖅ ᓇᓗᓇᐃᒃᑯᑕᖅ 6.2.1

6.3. ᐊᖑᑕᐅᓂᖏᑦ/ᐊᕐᓇᐅᓂᖏᑦ - ᐊᖑᔭᐅᔪᓐᓇᕐᑯᔭᐅᔪᑦ

ᐊᑐᓕᖁᔨᔾᔪᑎᓕᐅᖅᑐᒍᑦ ᖃᑦᔫᓐᓇᐅᑉᐸᑕ ᓇᔪᒐᖃᖃᑎᒌᑦᑐᑦ ᐅᒥᖓᑦ, ᐊᕐᓇᐃᑦ ᓴᐳᑎᔭᐅᓯᒪᕐᑯᓪᓗᒋᑦ ᐃᓅᓴᓪᓕᕙᓪᓕᐊᕐᑯᓇᒋᑦ ᐊᒃᑐᖅᑕᐅᓂᕆᖃᑦᑕᖅᑕᖏᑦ ᐱᔭᕆᔭᐅᖃᑦᑕᖅᑐᑎᒍᑦ, ᓇᔪᒐᖃᖃᑎᒌᑦᑐᑦ ᐊᒻᒪᓗ ᓄᖑᐊᑎᑉᐸᓪᓕᐊᕐᑯᓇᒋᑦ ᓇᔪᒐᖃᖃᑎᒌᑦᑐᑦ ᓈᓴᐅᑎᖏᑦ ᓄᖑᑉᐸᓪᓕᐊᕐᑯᓇᒋᑦ. ᓄᓇᕗᒻᒥ ᒥᑭᓐᓂᖅᐹᑦ ᓇᔪᒐᖃᖃᑎᒌᑦᑐᑦ ᐅᒥᖓᑦ ᐅᐊᖓᕐᒥ. ᕿᑎᕐᒥᐅᓂ, ᐊᑐᓕᖅᑎᑕᐅᕙᓪᓕᐊᓂᖓ ᐊᖑᑕᐅᓂᖓ/ᐊᕐᓇᐅᓂᖓ ᐊᖑᔭᐅᔪᓐᓇᕐᑯᔭᐅᔪᑦ ᐊᑐᖅᑕᐅᒋᐊᖃᖅᑑᔮᓐᖏᑦᑐᖅ ᒫᓐᓇᐅᓂᖓᓂ.

6.4. ᖃᖓᒃᑯᑦ ᐊᖑᓇᓱᒃᑕᐅᖃᑦᑕᑎᑦᓯᔪᓐᓇᕐᓂᖅ

ᐊᐅᔭᒃᑯᑦ, ᐅᒥᖓᑦ ᖃᑦᔫᓐᓇᐅᓂᖅᓴᐅᓲᖑᔪᑦ ᑲᑎᓐᖓᔪᑦ, ᓯᕗᓕᖅᑕᐅᒐᔪᒃᑐᑎᒃ, ᐊᑕᐅᓯᕐᒥᒃ ᐊᖑᔾᔪᐊᒍᑦ (ᓰᕐᓗ ᐊᖑᑎ ᐊᒻᒪᓗ ᐊᕐᓇᒐᓴᓐᓄᑦ ᒪᓕᒃᑕᐅᓪᓗᓂ ᐅᒥᙱᓕᓐᓄᑦ; Banfield 1974). ᓱᓕᔪᖅᓴᖅᐳᒍᑦ ᐅᓗᕆᐊᓇᕈᓐᓇᕐᓂᖓᓂᒃ ᓄᖑᑕᐅᓐᓂᖅᐸᑕ ᐊᖑᔾᔪᐊᑦ ᒫᓐᓇᐅᔪᖅ ᓄᖑᑐᐃᓐᓇᓇᕆᐊᖃᕐᓂᖏᓐᓂᒃ ᐅᒥᙱᓖᑦ ᖃᐅᔨᒪᔭᕆᔭᐅᔪᑦ, ᑭᓯᐊᓂᓕ ᖁᑦᓯᓂᖅᓴᐅᔪᖅ ᓂᕿᒋᐅᑎᓂᖏᑦ, ᐊᖑᔾᔪᐊᑦ ᓯᕗᓕᖅᑎᑕᐅᖃᑦᑕᖅᓱᕆᔭᐅᒪᑕ ᐊᒻᒪᓗ ᐋᖅᑮᓯᒪᖃᑦᑕᖅᓱᕆᔭᐅᓪᓗᑎᒃ ᐊᕐᓇᕐᑯᑎᒥᓂᒃ ᓴᐳᔾᔨᓯᒪᔨᕆᔭᐅᓂᕐᒥᓄᑦ ᓂᕿᒋᐅᑎᓂᖏᓐᓄᑦ (Urquhart 1982). ᓱᓕᒃᑲᓐᓂᖅ, ᐊᖑᔾᔪᐊᑦ ᓱᓕᔪᕆᔭᐅᒻᒥᔪᖅ, ᐱᖓᕆᕐᔪᐊᕌᓗᕆᔭᐅᔭᕆᐊᖏᓐᓂᒃ ᓯᕗᓕᖅᑎᐅᓂᖏᓐᓄᑦ ᐊᕐᓇᓄᑦ ᐊᒻᒪᓗ ᐅᒥᙱᓄᑦ ᓂᕿᑦᓴᖃᑦᓯᐊᕆᐊᖃᕐᓂᖏᓐᓄᑦ ᐊᐅᔭᒃᑯᑦ. ᐊᐅᔭᖅ ᓂᕆᖃᑦᑕᕐᓂᖏᓐᓄᑦ ᑎᒥᖏᓐᓄᑦ ᐊᑐᖅᑐᒃᓴᓂᒃ ᐱᖓᕆᐅᒻᒪᑦ (Tedesco et al. 1993): ᖃᐅᔨᔭᐅᓯᒪᔪᖅ ᓇᔾᔨᓕᖃᑦᑕᕐᓂᖏᓐᓂᒃ ᐊᒻᒪᓗ ᐃᕐᓂᓂᕐᒥᓄᑦ ᑎᑭᐅᑎᖃᑦᑕᕆᐊᖏᑦ ᖁᐃᓂᖃᑦᑕᕐᓂᖏᓐᓄᑦ ᑎᒥᖏᓐᓈᑐᒃᓴᓂᒃ ᓂᕿᑦᓴᔾᔭᖏᓐᓂᒃ ᑎᒥᖏᑕ ᓴᓂᕐᕙᖅᑕᐅᓯᒪᕕᖏᓐᓂ (ᑐᓐᓄᖅ), ᐊᒻᒪᓗ ᐆᒪᔾᔪᑎᒃᓴᖏᑦ ᓴᓂᕐᕙᖅᑕᐅᓯᒪᔪᑦ ᑎᒥᖏᓐᓂ ᐱᕙᓪᓕᐊᓂᖃᓲᖑᕗᑦ ᐊᐅᔭᒃᑯᑦ ᐊᒻᒪᓗ ᐅᑭᐊᒃᓵᒃᑯᑦ (Adamczewski et al. 1997, Adamczewski et al 1998). ᐅᑭᐅᒃᑯᑦ, ᐊᕐᓇᖁᑎᕆᔭᐅᔪᑦ ᑲᑎᓐᖓᔪᓐᓇᐃᑉᐸᓪᓕᐊᓲᖑᕗᑦ ᐊᒻᒪᓗ ᐅᒥᖓᑦ ᐊᒥᓲᓂᖅᓴᕈᖅᑐᑎᒃ ᐅᒥᖓᑦ ᑲᑎᓐᖓᔪᑦ, ᐊᖑᑎᒐᓴᐃᑦ ᐊᕐᓇᒐᓴᐃᑦ ᑲᑎᓐᖓᓕᖅᑐᑎᒃ (Banfield 1977), ᑕᐃᒪᐃᓕᖅᑎᓪᓗᒋᑦ ᐊᖑᑏᑦ ᐃᓚᓐᖓᐅᑕᐅᒐᓗᐊᖅᐸᑕ ᑲᑎᓐᖓᓕᖅᑎᓪᓗᒋᑦ ᐊᒃᑐᐃᓂᖃᒐᓱᒋᔭᐅᓐᖏᑦᑐᖅ ᓂᕿᒋᐅᑎᓂᖏᓐᓄᑦ ᓴᐳᔾᔭᐅᓯᒪᔭᕆᐊᖃᕐᓂᕐᒧᑦ ᓂᕿᑦᓴᖅᓯᐅᖃᑦᑕᕐᓂᖏᓐᓄᓪᓗ.

ᓱᓕᔪᕆᔭᕗᑦ ᐊᑐᓕᖅᑎᑕᐅᕙᓪᓕᐊᓂᖓ ᐊᖑᓇᓱᑦᑕᐅᖃᑦᑕᑎᑦᓯᔪᓐᓇᕐᓂᖅ ᖃᖓᐅᓕᕗᖓᑦ ᐊᕐᕗᒍᒥ ᓴᐳᑎᔭᐅᓯᒪᕐᑯᓪᓗᒋᑦ ᐸᒡᕕᓵᖑᕐᑯᓇᒋᑦ ᐅᒥᖓᑦ ᑲᑎᓐᖓᑎᓪᓗᒋᑦ ᐊᐅᔭᒃᑯᑦ ᐊᑑᑎᖃᕋᔭᕆᐊᖓᓂᒃ ᓴᐳᑎᔭᐅᓯᒪᔭᕆᐊᖃᕐᓂᕐᒧᑦ ᑐᑭᒧᐊᒍᑎᒃᓴᓂ, ᐊᒻᒪᓗ, ᑕᒪᓐᓇᐅᑎᓪᓗᒍ, ᐊᑐᓕᖁᔭᕗᑦ ᐊᖑᓇᓱᖕᕕᐅᖃᑦᑕᕈᓐᓇᕐᑯᓪᓗᒍ ᐆᑦᑑᕆ 1-ᒥᒃ ᐋᐳ 15-ᒧᓄᑦ ᓂᒋᐊᓂᒥᐅᑕᕐᓂᖅ ᐅᒥᖓᐃᑦ ᓇᔪᒐᖃᖃᑎᒌᑦᑐᓂᒃ ᓇᔪᒐᖃᑦᑕᖅᑐᓂᒃ ᕿᑎᐸᓗᐊᓂ ᓄᓇᐃᓐᓇᖓᑕ ᕿᑎᕐᒥᐅᑦ (proposed MX/11), ᐊᕐᕖᖅᑑᖅ (ᑐᒃᓯᕌᖑᔪᖅ MX/12), ᐊᒻᒪᓗ ᓄᓇᐃᓐᓇᕐᒥ ᑭᕙᓪᓕᖅ (ᑐᒃᓯᕌᖑᔪᖅ MX/13). ᑕᒦᓂ, ᐊᐅᓚᑦᓯᓂᖅ ᐃᓕᖓᓂᐊᖅᐳᖅ ᐅᓄᖅᓯᕙᓪᓕᐊᔪᓐᓇᕐᑯᓪᓗᒋᑦ ᓇᔪᒐᖃᖃᑎᒌᑦᑐᑦ ᐱᕈᖅᐸᓪᓕᐊᕐᑯᓪᓗᒋᑦ ᐊᒻᒪᓗ ᓴᐳᑎᔭᐅᓯᒪᕐᑯᓪᓗᒋᑦ ᐊᖏᓕᕙᓪᓕᐊᓂᖏᑦ ᓇᔪᒐᖃᖃᑎᒌᑦᑐᑦ. ᒪᑐᐃᖓᑎᓪᓗᒍ ᐊᖑᓇᓱᓐᓇᖅ ᐊᕐᑯᓕᖁᔭᐅᔪᖅ ᐃᖃᓗᑦᑑᑦᑎᐊᐸ ᕿᑭᖅᑖᓗᐊᓂ (ᑐᒃᓯᕋᕈᑕᐅᔪᖅ MX/10), ᑕᐃᑲᓂ ᐅᒥᖓᑦ ᓇᔪᒐᖃᖃᑎᒌᑦᑐᑦ ᐊᖏᔫᒪᑦ ᐊᒻᒪᓗ ᐅᓄᖅᓯᕙᓪᓕᐊᓪᓗᑎᒃ ᒫᓐᓇᐅᔪᖅ ᐊᑐᑕᖅᐅᖃᑦᑕᖅᑐᑦ ᐊᖑᓇᓱᓐᓂᕐᒧᑦ ᐊᑐᖅᑕᐅᑎᓪᓗᒍ. ᒪᑐᐃᓐᖓᓐᓇᖃᕐᑯᔭᐅᒻᒥᔪᑦ ᐊᑐᓕᖁᔨᔾᔪᑎᒃᑯᑦ ᑕᒪᐃᑕ ᐅᑭᐅᖅᑕᖅᑐᒥ ᐅᒥᖓᑦ ᓇᔪᒐᖃᖃᑎᒌᑦᑐᑦ, ᐊᖑᓇᓱᒃᑏᑦ ᐊᐅᔭᒃᑯᑦ ᐅᐸᒍᑎᒃᓴᖃᕿᔪᐃᒻᒪᑕ ᐅᒥᖓᓐᓄᑦ ᑲᑎᓐᖓᔪᓄᑦ.

Table 3.1. Recommended levels of TAH, quotas, and basis of recommendations for managing Nunavut musk ox populations.

ᓇᓗᓇᐃᖅᓯᔾᔪᑎ 6.2.1:

Region	TAH	TAH Code	Area Code	Quota	Notes
Baffin	5	MX/01	BI	5	*Based on 3% of mean abundance estimate determined in 2001 (only 3% of mean because of marginal population growth since 1997).* TAH allows for population growth.
Baffin	0	MX/02	CI	0	Subject to revision pending data analysis. In all likelihood the most appropriate TAH is 3% of mean abundance estimate.
Baffin	70	MX/03	SF	70	Likely one population since fiords does not appear to be barriers to movements. TAH based on 5% of total abundance estimate of 70. Recommend allowing carry forward of maximum of TAH due to long history of unused tags and evidence suggesting an increasing population.
Baffin	27	MX/05	GF	27	*TAH based on 3% of mean abundance estimate and thought to be sustainable.*
Baffin	14	MX/06	ND	14	TAH based on 5% of minimum count of musk ox presented in survey data.
Baffin	4	MX/07	SD	4	Musk ox occur only periodically along the coast; TAH based on 5% of minimum count of musk ox presented in survey data.
Baffin	0	MX/08	WD	0	TAH level set due to very low abundance; however, a small TAH may be recommended after survey calculations are complete.
Baffin	32	MX/09	RB	20	Subject to revision; rationale for new TAH will be based on rates of population growth and the objective of Resolute Bay to reduce the population. *Quota will likely increase. Recommend carry forward of unused tag for MX/09 RB.*
Kitikmeot			IA	12	
Kitikmeot	No TAH	MX/10	VI	No TAH	*The current total harvest is far less than even conservative estimates of the TAH, so no TAH is required.*
Kitikmeot	356	MX/11	CM	240	MX11-CM, TAH of 240 based on 4% of population estimate. MX11-QM, population estimate (adult musk oxen): 2200 (projection from past aerial survey 1996 and 2000), current population status: decreasing (HTO, aerial surveys), recommended rate of harvest: 3% (TAH of 66). MX11-KW, population estimate (adult musk oxen): 317 (extrapolation from ground survey 2002), current population status: increasing (HTO), recommended rate of harvest of 4% (TAH of 12). MX11-LX, most recent estimate (adult musk oxen): 165 (aerial survey 2000), current population status: re-colonizing (HTO), recommended rate of harvest: 4% (but TAH of 10 to include unsurveyed areas until further information is gathered, e.g., through ground survey planned by Kugaaruk HTA). *The allocation of tags among the different communities in MX11 is the responsibility of the KHTA.*
Kitikmeot			QM	66	
Kitikmeot			KW	12	
Kitikmeot			LX	10	
Kitikmeot	20	MX/12	BP	20	
Kivalliq	101	MX/13	NK	41	TAH based on survey results, approximately 3% of the lower confidence interval of survey means. TAH level set to promote population growth. Division between the North Kivalliq (NK) and South Kivalliq (SK) based on muskox movements (being a non-migratory species) and a geographic separation in excess of known movements between NK and SK as identified in the 1999 muskox population survey.
Kivalliq			SK	60	
Kivalliq			TH	0	Thelon Game Sanctuary (no harvest allowed).

6.5. ᐃᓱᒫᓘᑕᐅᒃᑲᓂᖅᑐᖅ ᐅᕝᕙᓘᓐᓃᑦ ᐊᑐᓕᖅᑯᕚᕐᔪᑏᑦ

ᐊᑐᓕᖅᑯᔭᕗᑦ ᐊᑐᖅᑕᐅᖃᑦᑕᐃᓐᓇᖅᑯᓪᓗᒍ ᐊᖑᓇᓱᒃᑏᑦ ᖃᐅᔨᓴᒃᓴᓂᒃ ᐲᔭᐃᖃᑦᑕᖅᑯᓪᓗᒋᑦ ᒥᖅᑯᖏᓐᓂᒃ ᐊᒻᒪᓗ ᐊᒥᖏᓐᓂᒃ (tissue) ᐊᖑᔭᕕᓂᐅᔪᓂᒃ ᐅᒥᖕᒪᓐᓂᒃ ᐊᒻᒪᓗ ᐊᖅᓇᐅᒻᒪᖕᖖᖅ ᐊᖑᑕᐅᒻᒪᖕᖖᖅ ᐊᖑᔭᐅᔪᓐᓇᖅᑐᑦ ᐊᖅᓇᓅᖕᖓᒋᐊᖃᖅᒪᖕᖏᑦ ᐊᖑᑎᓄᓪᓘᓐᓃᑦ ᓇᓗᓇᐃᖅᑕᐅᓯᒪᔭᕆᐊᖃᖅᒪᖕᖏᑦ. ᐊᖑᓇᓱᒃᑏᑦ ᐅᑎᖅᑎᒃᓯᖃᑦᑕᕆᐊᓖᑦ ᓇᓂᓯᓐᓂᕈᑎᒃ ᓈᓚᐅᓯᖅᑕᐅᓯᒪᔾᔪᑎᕕᓂᐅᔪᓂᒃ ᖃᐅᔨᓴᕈᑎᓂᒃ ᐅᕝᕙᓘᓐᓃᑦ ᖁᖓᓯᕈᑎᕕᓂᖅᓂᒃ ᖃᖓᑦᑕᖅᑎᑕᐅᓯᒪᔪᒃᑯᑦ ᖃᐅᔨᓴᕈᑎᕕᓂᖅᒥᒃ ᐆᒪᔪᓕᕆᔨᒧᑦ. ᐊᖑᔭᐅᓚᐅᖅᑐᒧᑦ ᑐᓴᖅᑎᑦᓯᒍᑏᑦ (ᐅᑉᓗᖅ, ᓇᕿᑦ ᐱᓐᓂᒪᖕᖖᖅ, ᐊᖑᑎ/ᐊᖅᓇᖅ ᐊᒻᒪᓗ ᐅᑭᐅᖏᑎᒍᑦ ᓇᓗᓇᐃᖅᑕᐅᓂᖓ, ᖃᑦᓯᐅᓚᐅᖅᒪᖕᖓ ᑲᑎᓐᖓᔪᑦ ᐆᒪᔪᖅᕕᐅᔪᑦ, ᐊᒻᒪᓗ ᐅᒥᖕᒫᖅᑲᓚᐅᖅᒪᖕᖏᑦ) ᑕᒪᒃᑯᐊᓕᒫᑦ ᓇᓗᓇᐃᔭᐃᔾᔪᑎᒧᑦ ᐃᓕᐅᖅᑲᖅᑕᐅᖃᑦᑕᕆᐊᖃᖅᐳᑦ ᑎᑎᕋᖅᑕᐅᓗᑎᒃ ᑕᒪᖅᒥᒃ ᐅᒥᖕᒪᑦ ᑐᖅᑯᑕᐅᔪᑦ.

<u>7.0. ᐋᔩᕋᕈᑎᒃᓴᑦ ᐊᒻᒪᓗ ᐊᑐᓕᖅᑯᔾᔪᑏᑦ</u>

ᑕᒪᐃᓐᓅᖓᔪᓂᓕ, ᐅᒥᖕᒪᑦ ᓇᔪᖅᑲᖅᑲᑎᒌᑦᑐᑦ ᐅᓄᖅᓯᕙᓪᓕᖅᓯᒪᕗᑦ ᕿᑎᖅᒥᐅᓂ ᐅᑭᐅᓂ 30-ᓂ ᖃᓅᖏᖅᑐᓂ (Fournier and Gunn 1998). ᑭᓯᐊᓂᓕ, ᓄᓇᐃᓐᓇᖅᒥ, ᐅᓄᖅᓯᑲᐃᓐᓇᓚᐅᕋᓗᐊᖅᓱᑎᒃ ᐅᑭᐅᕋᓴᖁᓛᓂᒃ, ᓇᔪᖅᑲᖅᑲᑎᒌᑦᑐᑦ ᐱᑕᖅᑲᐅᖅᓂᖏᑦ ᓄᖑᑉᐸᓪᓕᐊᓘᔾᔭᓕᖅᒥᔪᑦ. MX12-ᒥ ᐊᒻᒪᓗ MX16-ᒥ, ᓇᔪᖅᑲᖅᑲᑎᒌᑦᑐᑦ ᐃᓅᓴᓪᓕᑲᓪᓚᑐᒪᓇᐅᓚᐅᖅᐳᑦ 1990 ᐱᒋᐊᖅᓂᐸᓗᖏᓐᓂ. ᒫᓐᓇᖅᓂᓴᖅᓂᒃ ᑐᓴᕈᑎᑦᖃᓐᖏᑦᑐᖅ MX13 ᐊᒻᒪᓗ MX15-ᒧᑦ. ᐊᒻᒪᓗ ᓱᓕ, ᖃᐅᔨᓴᕈᑎᕕᓂᖅᓂᒃ ᒫᓐᓇᖅᓂᓴᐅᓂᖅᐹᓂ (2000), ᐅᒥᖕᒪᖃᖅᓂᐅᓚᐅᖅᑐᑦ MX17 ᐃᓅᓴᓪᓕᓯᒪᒻᒥᔪᖅ. ᑖᒪᓂᒥᐅᓄᑦ ᖃᐅᔨᒪᔭᕆᔭᐅᔪᖅ ᓇᓗᓇᐃᖅᓯᓯᒪᕗᖅ ᐃᑭᕋᓴᒃ ᕿᑎᖅᒥᐅᓂ Queen Maud Gulf ᐊᒻᒪᓗ Adelaide Peninsula ᐅᒥᖕᒪᖏᑦ ᓄᖑᑉᐸᓪᓕᐊᓯᒪᓂᖏᓐᓂᒃ. ᐃᓅᓴᓪᓕᓯᒪᓂᖏᑦ ᐅᒥᖕᒪᑦ ᓇᔪᖅᑲᖅᑲᑎᒌᑦᑐᑦ ᐃᓚᖓᓂ ᐱᔾᔪᑕᐅᑐᐃᓐᓇᕆᐊᓕᒃ ᐃᓅᓴᓪᓕᓯᒪᒻᒪᕆᓐᓂᖏᓐᓂᒃ ᓇᔪᖅᑲᖅᑲᑎᒌᑦᑐᑦ ᐅᕝᕙᓘᓐᓃᑦ ᓅᓯᒪᑐᐃᓐᓇᖅᓗᑎᒃ ᓇᔪᕆᓱᒥᓂᒃ. ᐃᓄᐃᑦ ᖃᐅᔨᒪᓂᖏᑎᒍᑦ ᐅᖃᐅᓯᐅᓯᒪᒻᒥᔪᖅᑕᐅᖅ ᐅᒥᖕᒪᑦ ᓄᒃᑕᖅᓂᕆᔾᔫᖏᓐᓂᒃ ᓄᓇᐃᓐᓇᖅᒧᑦ ᐊᒻᒪᓗ ᐅᑭᐅᖅᑕᖅᑐᒥ ᖃᑭᖅᑕᖏᓐᓄᑦ ᐊᒻᒪᓗ ᐊᖅᕕᖅᑑᒧᑦ ᕿᑎᖅᒥᐅᑦ ᑲᓇᖕᓈᓄᑦ.

ᑖᒃᑯᓇᖕᖗᖅᓯᒪᔪᖅ ᑭᖑᓪᓕᐋᒥ ᖃᐅᔨᓴᖅᓂᐅᓚᐅᖅᑐᒥᒃ ᐊᑐᓂᑦ ᐅᒥᖕᒪᑦ ᐊᐅᓚᑦᑕᐅᕕᖏᓐᓄᑦ ᐊᕕᒃᓯᒪᓂᐅᔪᓄᑦ, ᓇᓚᐅᑦᓵᕈᓐᓇᖅᑐᒧᑦ ᐅᒥᖕᒪᑦ ᓇᔪᖅᑲᖅᑲᑎᒌᓐᓂᖏᑦ ᕿᑎᖅᒥᐅᓂ 50,000-ᓅᖓᒋᐊᖏᓐᓂᒃ ᐆᒪᔪᑦ (ᐃᓚᒋᔭᐅᓪᓗᑎᒃ 25-30,000 ᓄᓇᕗᑦ ᐃᓚᖓᓂ ᐃᖅᑲᓗᑦᑑᑦᑎᐊᑉ ᖃᑭᖅᑖᓗᐊᓂ).

ᑲᑎᓪᓗᒋᑦ ᑰᑕᐃᑦ ᒫᓇᐅᔪᖅ 465 ᕿᑎᖅᒥᐅᑦ ᓄᓇᐃᓐᓇᖓᓄᑦ ᐊᒻᒪᓗ 1500 ᐃᖅᑲᓗᑦᑑᑦᐊᑉ ᖃᑭᖅᑖᓗᐊᓄᑦ ᑖᓂᓚᓚᒃᑐᑦ 3.5% ᐊᒻᒪᓗ 5.8%-ᓇᒐᔭᖕᖑᐊᖅᑕᖏᑦ ᐊᑦᓯᓂᖅᐹᓂᒃ ᓇᔪᖅᑲᖅᑲᑎᒌᑦᑐᓂᒃ ᓇᓚᐅᑦᓵᖅᑕᐅᓯᒪᔪᓂ ᒪᓕᒃᓯᒪᓗᑎᒃ. ᐊᖑᔭᐅᖃᑦᑕᖅᑐᑦ ᑖᓂᒐᓛᒐᔭᖕᖑᐊᖅᑐᑦ 2.6% ᐊᒻᒪᓗ 4.7% ᖁᑦᓯᓂᖅᐹᓂ ᓇᓚᐅᑦᓵᖅᑕᐅᓯᒪᔪᓂ ᓄᓇᐃᓐᓇᖅᒥᒃ ᐊᒻᒪᓗ ᐃᖅᑲᓗᑦᑑᑦᑎᐊ ᖃᑭᖅᑖᓗᐊᓂ ᒪᓕᒃᓯᒪᓗᑎᒃ (ᑐᑭᖃᖅᑐᖅ 2.6%-ᒥᒃ 4.7%-ᒧᑦ <u>ᑕᐃᒪᐃᓪᓗᐊᖅᑐᑦ</u> ᐅᒥᖕᒪᑦ ᓇᔪᖅᑲᖅᑲᑎᒌᑦᑐᑦ ᐊᖑᔭᐅᖃᑦᑕᖅᑐᑦ ᐊᖅᑫᒍᑕᒫᖅ ᑰᑕᐃᑦ ᓄᖑᑕᐃᔭᕿᖕᖓᑕ-).

ᑕᒪᐃᓐᓅᖓᑎᓪᓗᒋᓪᓕ, ᐊᔾᔨᒌᖕᖏᓐᓂᖅᑲᖅᐳᑦ ᖁᑦᓯᓐᓂᖏᑎᒍᑦ ᐊᖑᔭᐅᖃᑦᑕᖅᑐᑦ (ᐊᔾᔨᒌᖕᖏᓐᓂᖏᑦ 0.7-ᒥᒃ 9.2%) ᑖᒃᑯᓇᖓᑦ ᐊᔾᔨᒌᖕᖏᑦᑐᓂᒃ ᐊᐅᓚᑦᓯᕝᕕᐅᔪᑦ ᐊᕕᒃᓯᒪᓂᖏᓐᓂ. ᐋᖅᑭᑦᓲᑎᐅᓯᒪᖁᓪᓗᒍ ᐊᔾᔨᒌᖕᖏᓐᓂᖏᓐᓄᑦ ᐋᖅᑭᑦᑕᐅᓯᒪᓂᖏᓐᓄᑦ ᑰᑕᐃᑦ, ᐊᐅᓚᑕᐅᑦᓯᐊᖅᓂᖅᑲᓇᐊᖅᑲᖅᐳᑦ ᓇᓗᓇᐃᖅᓯᒪᑦᓯᐊᖅᑐᒥ ᑐᕌᕈᑕᐅᓇᓱᐊᖅᑐᒥᒃ ᐋᖅᑮᓯᒪᓗᑎᒃ ᐊᒃᑐᐃᓂᖃᖅᓯᒪᔪᒥᒃ ᐊᑐᓂᑦ ᐊᖑᔭᐅᖃᑦᑕᖅᓂᐅᔪᑦ ᓈᓴᖅᑕᐅᓯᒪᓂᖏᓐᓂᒃ. ᓇᓗᓇᐃᖅᓯᒪᑦᓯᐊᕆᐸᑦ ᐊᐅᓚᑕᐅᑦᓯᐊᖅᓂᖓᓄᑦ ᑐᕌᕈᑕᐅᓇᓱᐊᖅᑐᑦ ᐱᓇᓱᐊᖅᑕᐅᔪᒧᑦ, ᑰᑕᐃᑦ ᓈᖓᒍᓐᓃᕈᓐᓇᖅᒪᑕ ᐊᒻᒪᓗ ᖃᖓᑐᐃᓐᓇᓱᐊᒃᑯᑦ ᐊᐃᕙᔾᔪᑕᐅᓕᕈᓐᓇᖅᑐᑦ.

ᓇᓗᓇᐃᖅᓯᒪᓂᖓᒍᑦ ᖃᐅᔨᓴᕈᑎᕕᓂᖅᓄᑦ ᑐᓴᕈᑏᑦ ᐊᑐᐃᓐᓇᐅᖏᒻᒪᑕ ᑲᓇᖕᓈᓄᑦ ᐅᑭᐅᑕᖅᑐᒥ ᓄᓇᐃᓐᓇᖓᓄᑦ ᐅᒥᖕᒪᑦ ᓇᔪᖅᑲᖅᑲᑎᒌᑦᑐᑦ ᐊᔪᖅᓇᕈᑎᒋᕚ ᐋᖅᑭᓇᓱᐊᓇᐊᒃᓴᖅ ᑰᑕᓂᒃ ᖃᐅᔨᓴᕈᑎᕕᓂᖅᑕᖅᑲᖅᑎᓐᓇᒍ ᖃᓄᐃᓐᓂᖏᓐᓂᒃ. ᑐᓴᕈᑎᓂᒃ ᐱᔪᓐᓇᑕᑦᑎᓐᓂ ᐱᐅᓂᖅᐹᖑᔪᑦ ᒫᓇᐅᑎᓪᓗᒍ ᖃᓄᐃᓐᓂᖏᓐᓂᒃ ᐅᒥᖕᒫᓅᖓᓂᖏᑦ ᐃᓐᓇᖅᓄᑦ ᑎᑭᓪᓗᒍ ᖃᐅᔨᓴᖅᑕᐅᓯᒪᔪᑦ ᖃᐅᔨᓴᖅᑕᐅᔾᔪᑎᑎᒍᑦ ᐊᒥᓱᓄᑦ ᐅᑭᐅᓄᑦ ᖃᐅᔨᓴᖅᑕᐅᖃᑦᑕᐃᓐᓇᕋᔭᖅᐸᑕ.
ᕿᑎᖅᒥᐅᑦ ᑲᓇᖕᓈᓂ ᐊᒻᒪᓗ ᑭᕙᓪᓕᐅᑉ ᕿᑎᐊᓂ, ᖃᑦᓯᒃᑲᓪᓚᓐᓂᒃ ᐊᔾᔨᐅᔪᖅᑯᑎᖅᑲᐅᖅᐳᖅ ᐃᑲᔪᖅᓯᓯᒪᔪᓐᓇᖅᑐᓂᒃ, ᐳᓇᖏᑎᒍᑦ ᔪᓚᐃᒥ ᐅᒥᖕᒫᑦ ᓇᔪᖅᑲᖅᑲᑎᒋᓚᐅᖅᓂᖏᑦ ≥ 15%, ᐱᔭᕆᔭᐅᖃᑦᑕᖅᑐᑦ 3% ᐅᑎᖅᑕᕈᓐᓇᑎᑦᓯᔪᖅ ᐊᒻᒪᓗ ᓱᒃᑲᐃᑦᑐᒥᒃ ᓇᔪᖅᑲᖅᑲᑎᒌᑦᑐᑦ ᐊᒥᓱᖕᖑᐸᓪᓕᐊᔪᓐᓇᖅᑐᑦ (ᑕᑯᓗᒍ Campbell ᐊᒻᒪᓗ Setterington 2001).

ᐅᒥᖕᒪᑦ ᓇᔪᖅᑲᖅᑲᑎᒌᑦᑐᑦ ᖄᒪᒥᐊᓗᒃ ᓄᖑᐊᑎᓲᖑᔪᑦ ᐱᔭᕆᔭᐅᖃᑦᑕᓗᐊᓕᑐᐊᕿᖕᖓᒥᒃ ᖃᐅᔨᔭᐅᓯᒪᓂᖕᖓᒍᑦ 1800-ᖏᓐᓂ ᐊᒻᒪᓗ 1900 ᐱᒋᐊᖅᐸᓪᓕᐊᓂᖏᓐᓄᑦ (Gunn et al. 1984, Barr 1991). ᑭᓯᐊᓂᓕ, ᐃᓚᖏᑦ ᓇᔪᖅᑲᖅᑲᑎᒌᑦᑐᑦ

ᐅᓄᖅᓯᕙᑦᓕᐊᔪᑦ ᐅᕝᕙᓘᓐᓂᑦ ᐅᓄᖅᓯᕙᑦᓕᐊᔪᒪᓇᐅᔪᑦ ᐊᒻᒪᓗ ᐊᖑᓇᓱᓐᓂᐅᕐᑲᑦᑕᖅᑐᑦ ᑖᒃᑯᓇᓂ ᑕᐅᑐᙳᐊᕆᐅᔪᓂ ᖁᑦᓯᓂᖅᓴᒻᒪᕆᐅᓕᕈᓐᓇᖅᑐᑦ 3%-ᒥᒃ ᐊᑦᓯᓂᖅᐹᖅ ᓇᓚᐅᑦᓵᖅᑕᐅᓯᒪᓂᐅᔪᓂ.

ᓄᓇᕗᒻᒥ ᐅᒥᖕᒪᑦ ᐊᐅᓚᑕᐅᓂᖕᒋᓐᓄᑦ ᐸᕐᓇᐅᑏᑦ ᓯᕗᓪᓕᐅᔭᐅᔭᕆᐊᓖᑦ ᓱᖏᐅᑎᔭᐅᕐᑯᓪᓗᒋᑦ ᖃᐅᔨᓴᕐᓂᕐᒧᑦ ᐊᒻᒪᓗ ᖃᓄᐃᓐᓂᕆᓯᒪᔭᖏᑦ ᐱᑕᖃᕆᐊᖃᕐᓂᖏᓐᓄᑦ ᐊᒻᒪᓗ ᖃᓄᐃᓕᐅᕈᑕᐅᕐᑲᑦᑕᖅᓯᒪᓂᖏᑦ ᐊᐅᓚᑦᓯᓂᕐᒧᑦ ᐃᓱᒪᓕᐅᕈᑕᐅᓯᒪᓂᖏᑦ ᐊᐅᓚᔾᔭᑦᑕᐅᕐᑲᑦᑕᖅᓯᒪᓂᖏᓪᓗ. ᐊᐅᓚᑦᓯᔾᔪᑎᓴᑦ ᐸᕐᓇᐅᑏᑦ ᐃᓕᓴᖅᓯᒪᓂᖃᕆᐊᖃᖅᐳᑦ ᐊᕕᑦᑐᖅᓯᒪᓂᐅᔪᓂ ᓇᓗᓇᐃᔭᐃᓯᒪᓗᑎᒃ ᑕᐃᒨᓯᖏᑎᒍᑦ ᐊᕙᑎᐅᑉ ᖃᓄᐃᓐᓂᖓᓄᑦ, ᐅᒥᖕᒪᑦ ᖃᓄᐃᔾᔪᓯᖏᑦ ᐱᖁᓯᖏᑦ ᐊᒻᒪᓗ ᐆᒪᔪᑦ ᐊᕙᑎᖏᓐᓂᓪᓗ ᖃᐅᔨᓴᕐᓂᖅ, ᐊᒻᒪᓗ ᐊᖑᓇᓱᖑᓯᐅᔪᑦ. ᓇᔪᕆᕐᑲᕐᑲᑎᕆᑦᑐᑦ ᓇᓗᓇᐃᔭᖅᑕᐅᓯᒪᔭᓇᐊᕐᑲᕐᒥᔪᑦ ᐊᑐᖅᑕᐅᕙᓪᓕᐊᔭᓇᐊᕐᑲᖅᑐᓂ ᐊᑐᓕᖅᑎᑕᐅᕙᓪᓕᐊᓂᖓ ᑐᑭᕐᑲᑦᓯᐊᕐᑯᓪᓗᒍ ᐊᐅᓚᑦᓯᕝᕕᐅᔪᑦ ᐊᕕᒃᓯᒪᓂᖏᓐᓂ.

ᐊᖑᓇᓱᕐᓂᐅᕐᑲᑦᑕᖅᑐᑦ ᖃᖓᐅᓕᕌᖓ ᓱᖏᐅᔾᔭᐅᓯᒪᔭᓇᐊᓖᑦ ᓄᓇᐃᑦ ᖃᓄᐃᓲᖑᓂᖏᓐᓄᑦ ᐃᓕᖓᒍᓐᓇᕐᑯᓪᓗᒋᑦ ᑕᒪᒃᑮᓐᓄᑦ ᐅᒥᖕᒪᓐᓄᑦ ᐊᒻᒪᓗ ᖃᓄᐃᓐᓂᕆᓲᖏᓐᓄᑦ ᐊᒻᒪᓗ ᓱᓕ ᐊᖑᓇᓱᒃᑏᑦ ᐊᖑᓇᓱᕝᕕᒋᕐᑲᑦᑕᖅᑕᖏᓐᓄᑦ ᑎᑭᐅᑎᕐᑲᑦᑐᕈᓐᓇᕐᓂᖏᑦ. ᐊᐅᔭᐅᒻᒪᑦ ᐊᒻᒪᓗ ᒫᓐᓇ ᓄᓕᐊᕐᒪᑕ ᐊᕐᓇᓗᐃᓪᓗ ᑎᒥᒥᓅᖅᑲᐃᔪᑦ ᐆᒪᔾᔪᑎᒃᓴᒥᓂᒃ ᓂᕿᒋᒋᓕᐊᒥᓂᒃ (White et al 1989, Adamczewski 1995). ᓇᔾᔨᓕᕐᑲᑦᑕᕐᓂᖏᑦ ᓄᓕᐊᕐᓂᖏᑎᒍᑦ ᐊᒃᑐᐃᓂᕐᑲᖅᓯᒪᑐᐃᓐᓇᓇᐊᓕᒃ ᓂᓇᕐᑲᑦᑕᕐᓂᖏᓐᓄᑦ ᓂᕿᒋᒋᐊᓕᖏᓐᓂᒃ ᑎᒥᖏᑕ ᓄᓕᐊᖅᑎᓪᓗᒋᑦ ᐊᕐᓇᓪᓗᐃᑦ ᓄᐊᑦᓯᓯᒪᔪᓐᓇᕐᑯᓪᓗᒋᑦ (Adamczewski *et al.* 1998). ᑰᑕᑎᒍᑦ ᐊᒻᒪᓗ ᑰᑕᕐᑲᓐᖏᑦᑐᑦ ᑭᒡᓕᖅᑲᖅᑎᑕᐅᔪᑦ ᑲᑎᓐᖓᐅᑎᕘᒃ ᐃᖕᒥᓐᓄᑦ ᐊᒻᒪᓗ ᐊᖑᓇᓱᒃᑕᐅᕐᑲᑦᑕᖅᐸᑕ ᐸᕝᕕᓴᓗᐊᕐᑲᒃᓴᐅᒍᓐᓃᑎᓪᓗᒋᑦ ᐆᒪᔪᑦ ᑭᖑᕝᕕᐅᑎᔪᒃᓴᓂᒃ ᐅᒥᖕᒫᑕᕐᑲᑦᑕᕐᓂᖏᑎᒍᑦ, ᐊᓱᐃᓘᒃ ᑰᑕᖏᑦ ᐱᐅᖅᓱᐊᖅᑕᐅᕐᑲᑦᑕᓇᐊᕐᑲᖅᐳᑦ.

ᐊᒻᒪᓗ ᓱᓕ, ᓄᓇᓖᑦ ᐋᖅᑭᑦᓯᓯᒪᔪᑦ ᐅᒥᖕᒪᑦ ᑮᓇᐅᔭᓕᕐᔪᐊᓄᑦ ᐊᖑᓇᓱᒃᑕᐅᕐᑲᑦᑕᕈᓐᓇᕐᓂᖏᓐᓂᒃ, ᓇᓗᓇᐃᖅᑕᐅᓯᒪᑦᓯᐊᓇᐊᕐᑲᖅᐳᖅ ᑐᑭᓯᐅᒪᓇᑦᓯᐊᑐᒃᑯᑦ ᓅᑕᐅᕐᑲᑦᑕᖅᐸᑕ ᐊᖑᔾᔪᐊᑦ ᐊᐅᓚᑦᓯᔾᔨᐅᕐᑲᑦᑎᓪᓗᒋᑦ ᓇᔪᕆᕐᑲᕐᑲᑎᕆᑦᑐᓂᒃ ᐊᒃᑐᐃᓂᕐᑲᖅᓯᒪᔪᓐᓇᕐᓂᖓᓂᒃ ᐊᒻᒪᓗ ᐊᒃᑐᐃᓯᒪᓂᕐᑲᑐᐃᓐᓇᓇᐊᕐᑲᕐᓂᖓᓂᒃ ᐊᒻᒪᓗ ᐊᐅᓚᓂᓇᔭᐅᔪᖅ ᐊᑐᖅᑕᐅᓗᓂ ᐊᐅᓚᑦᓯᐊᕈᓇᕈᑕᐅᓗᓂ, ᑲᑎᓐᖓᓕᕆᐃᑉᐸᑕ ᐱᓇᓱᐊᖅᑕᐅᕐᑲᑦᑕᖏᓪᓗᑎᒃ (ᔪᓚᐃ) ᐊᒻᒪᓗ ᓄᓕᐊᓕᕌᖓᑕ (ᐊᐅᒡᒍᓯ). ᐊᐅᔭᒃᑯᑦ, ᐅᒥᖕᒪᑦ ᖃᑦᓲᓇᐅᓪᓗᑎᒃ ᑲᑎᓐᖓᓲᖑᕚᑦ ᓯᕗᓕᖅᑕᐅᓚᔪᒃᑐᑎᒃ, ᐊᑕᐅᓯᕐᒧᑦ ᐊᖑᔾᔪᐊᒧᑦ (ᓲᕐᓗ ᐊᖑᑎ ᐊᒻᒪᓗ ᐊᕐᓇᒐᓴᓐᓄᑦ ᒪᓕᒃᑕᐅᓪᓗᓂ ᐅᒥᖖᒫᓕᓐᓄᑦ; Banfield 1974). ᐊᖑᔾᔪᐊᑦ ᐱᔭᓇᔭᐅᔭᕌᖓᑕ ᑕᐃᒪᐃᑎᓪᓗᒍ ᐊᒃᑐᐃᓂᕐᑲᖅᓯᒪᔪᓇᖅᐳᖅ ᐅᒥᖖᒫᓕᓐᓂᒃ ᖃᐅᔨᒪᔭᐅᒍᓇᐃᓪᓗᑎᒃ, ᑭᓯᐊᓂᓕ ᖁᑦᓯᓂᖅᓴᐅᔪᖅ ᓂᕿᒋᐅᑎᓂᖏᑦ, ᐊᖑᔾᔪᐊᑦ ᓯᕗᓕᖅᑎᑕᐅᕐᑲᑦᑕᖅᓱᒋᔭᐅᒪᓚ ᐊᒻᒪᓗ ᐋᖅᑮᓯᒪᕐᑲᑦᑕᖅᓱᓇᔭᐅᓪᓗᑎᒃ ᐊᕐᓇᕐᑯᑎᒥᓂᒃ ᓴᐳᔾᔨᓯᒪᔨᒋᔭᐅᓂᕐᒥᓄᑦ ᓂᕿᒋᐅᑎᓂᖏᓐᓄᑦ (Urquhart 1982). ᓱᓕᒃᑲᓂᖅ, ᐊᖑᔾᔪᐊᑦ ᓱᓕᔪᓇᔭᐅᒻᒥᔪᖅ, ᐱᖕᒪᓇᕐᔪᐊᕌᓗᕆᔭᐅᔭᓇᐊᖏᓐᓂᒃ ᓯᕗᓕᖅᑎᐅᓂᖏᓐᓄᑦ ᐊᕐᓇᓄᑦ ᐊᒻᒪᓗ ᐅᒥᖖᒫᓄᑦ ᓂᕿᑦᓴᖅᑦᓯᐊᓇᐊᕐᑲᕐᓂᖏᓐᓄᑦ ᐊᐅᔭᒃᑯᑦ. ᐊᐅᔭᖅ ᓂᓇᕐᑲᑦᑕᕐᓂᖏᓐᓄᑦ ᑎᒥᖏᓐᓄᑦ ᐊᑐᖅᑐᒃᓴᓂᒃ ᐱᖕᒪᓇᐅᒻᒪᑦ (Tedesco et al. 1993): ᖃᐅᔨᔭᐅᓯᒪᔪᖅ ᓇᔾᔨᓕᕐᑲᑦᑕᕐᓂᖏᓐᓂᒃ ᐊᒻᒪᓗ ᐃᕐᓂᓂᕐᒥᓄᑦ ᑎᑭᐅᑎᕐᑲᓇᐊᖏᑦ ᖁᐃᓂᕐᑲᑦᑕᕐᓂᖏᓐᓄᑦ ᑎᒥᖏᓐᓅᑐᒃᓴᓂᒃ ᓂᕿᑦᓴᔭᖏᓐᓂᒃ ᑎᒥᖏᑕ ᓴᓂᕝᕙᖅᑕᐅᓯᒪᕕᖏᓐᓂ (ᑐᓐᓄᖅ), ᐊᒻᒪᓗ ᐆᒪᔾᔪᑎᒃᓴᖏᑦ ᓴᓂᕝᕙᖅᑕᐅᓯᒪᔪᑦ ᑎᒥᖏᓐᓂ ᐱᕙᓪᓕᐊᓂᕐᑲᓲᖑᕗᑦ ᐊᐅᔭᒃᑯᑦ ᐊᒻᒪᓗ ᐅᑭᐊᒃᓵᒃᑯᑦ (Adamczewski et al. 1997, Adamczewski et al 1998). ᐅᑭᐅᒃᑯᑦ, ᐊᕐᓇᕐᑯᑎᒋᔭᐅᔪᑦ ᑲᑎᓐᖓᓕᔾᔪᓇᐃᑉᓕᐊᓲᖑᕗᑦ ᐊᒻᒪᓗ ᐅᒥᖕᒪᑦ ᐊᒥᓲᓂᖅᓴᕈᖅᑐᑎᒃ ᐅᒥᖕᒪᑦ ᑲᑎᓐᖓᓕᔪᑦ, ᐊᖑᑎᓴᐃᑦ ᐊᕐᓇᓴᐃᑦ ᑲᑎᓐᖓᓕᖅᑐᑎᒃ (Banfield 1977), ᑕᐃᒪᐃᓕᖅᑎᓪᓗᒋᑦ ᐊᖑᑏᑦ ᐃᓚᓐᖓᐅᑕᐅᓗᐊᖅᐸᑕ ᑲᑎᓐᖓᓕᖅᑎᓪᓗᒋᑦ ᐊᒃᑐᐃᓂᕐᑲᓱᒋᔭᐅᓐᖏᑦᑐᖅ ᓂᕿᒋᐅᑎᓂᖏᓐᓄᑦ ᓴᐳᔾᔭᐅᓯᒪᔭᓇᐊᕐᑲᕐᓂᕐᒧᑦ ᓂᕿᑦᓴᖅᓯᐅᕐᑲᑦᑕᕐᓂᖏᓐᓄᓪᓗ. ᑕᐃᒪᐃᑎᓪᓗᒍ, ᐅᒥᖕᒪᑦ ᐊᖑᔾᔪᐊᖏᑕ ᓄᒃᑕᕐᓂᖏᑦ ᐱᔾᔪᑕᐅᓪᓗᐊᑕᖅᓱᓇᔭᐅᔪᑦ ᐊᓱᐊᓄᑦ ᓅᕐᑲᑦᑕᕐᓂᖏᑦ ᐊᒻᒪᓗ ᐊᓱᐊᓄᑦ ᓄᒃᑎᕐᑲᑦᑕᖅᓯᒪᓂᓇᔭᖏᑦ ᑕᐃᑲᓐᖓᓂᑲᓪᓛᓗᒃ (Smith 1989). ᐃᓱᒪᓇᖅᑐᖅ ᓄᒃᑕᕐᓂᖏᑦ ᐅᑎᖅᑕᕐᕕᖕᒥᒍᑦ ᐅᕝᕙᓘᓐᓂᑦ ᖃᐅᔨᓴᖅᑕᐅᓯᒪᓂᖏᑎᒍᑦ ᓄᒃᑕᕐᓂᖏᑦ ᐊᖑᔾᔪᐊᑦ ᐱᔾᔪᑎᖃᓗᐊᑐᐃᓐᓇᐊᓖᑦ ᐊᕐᓇᓂᒃ ᓵᓚᓴᕈᒪᓂᕐᒥᓄᑦ (ᐊᖑᔾᔪᐊᑦ ᐊᕐᓇᓂᒃ ᓇᓂᓯᒍᓐᓇᐃᓪᓕᕕᐃᒻᒪᑕ ᓄᒃᑎᓲᖑᔪᑦ ᓄᓖᒍᑦ ᓇᔪᕆᓇᓂᐊᓕᖅᑕᒥᓄᑦ). ᑕᒪᓐᓇ ᑐᑭᓕᒃ ᐊᖑᔾᔪᐊᑦ ᐊᓐᓇᓯᒪᔪᓐᓴᕐᓂᖏᓐᓄᑦ ᐱᔾᔪᑕᐅᓇᔭᓐᖑᐊᖅᑐᖅ ᓅᒃᑲᓐᓂᖅᑲᑦᑕᓇᐊᖅᓱᖑᓂᖏᓐᓂ.

ᒫᓐᓇᐅᔪᖅ, ᐊᕐᕋᒍᑉ ᐃᓗᐊᓂ ᓯᓚᐅᑉ ᐊᓯᔾᔨᑦᑕᕐᓂᖓ ᐊᔾᔨᒌᓱᖑᓐᖏᒻᒪᑦ ᐊᐅᓚᑦᓯᕝᕕᐅᔪᑦ ᐊᕕᑦᓯᒪᓂᖕᒋᓐᓂ ᐊᒻᒪᓗ ᐊᑐᕐᑲᑦᑕᖅᑐᑦ ᖃᓄᐃᑦᑑᓂᖏᑦ. ᓇᓗᓇᐃᖅᓯᒪᑦᓯᐊᖅᑐᒥ ᐱᑕᖃᓐᖏᓕᖅ ᖃᓄᐃᓕᐅᕈᓯᓇᔭᐅᕐᑲᑦᑕᖅᓯᒪᔪᓂᒃ ᐊᖏᕐᑲᑎᕈᑎᒍᑕᐅᓯᒪᓐᖏᑦᑐᒧᑦ ᐊᒻᒪᓗ ᐊᔾᔨᕈᓐᖏᑦᑐᑎᒍᑦ ᑭᓯᐊᓂ ᓴᐳᑎᓯᒪᕐᑲᑦᑕᕐᓗᑎᒃ ᑏᓇᑐᐊᓇᓕᒫᒥ ᐅᒥᖕᒪᑦ ᐊᐅᓚᑕᐅᓂᖕᒋᓐᓄᑦ ᑐᑭᒧᐊᒍᑎᒃᓴᑦ. ᐱᒋᐊᓕᕐᓂᖓᓂᒃ, ᕿᑎᕐᒥᐅᓂ, ᑮᓇᐅᔾᔪᐊᓖᑦ ᐊᖑᓇᓱᒍᓐᓇᖅᐳᑦ ᐆᑦᑑᕙ 1-ᒥᒃ ᒫᑦᓯ 31 ᐊᑐᖅᑕᐅᕐᑲᑦᓲᖑᔪᖅ ᐋᖅᑭᑦᓯᒪᑦᓯᐊᑐᒃᑯᑦ ᐊᖑᓇᓱᒃᑕᐅᓗᐊᕐᑲᑦᑯᔭᐅᓐᖏᓐᓂᖓᓄᑦ ᓄᓕᐊᓕᖅᑎᓪᓗᒋᑦ ᐊᒻᒪᓗ ᐊᖑᓇᓱᒃᑕᐅᑎᑦᓯᑦᑕᕐᓗᐊ ᖃᒧᑕᐅᔭᒃᑰᕕᒃᓴᐅᑎᓪᓗᒍ. (Gunn 1984).

ᐊᑦᓱᕈᕐᓇᖅᓯᙳᓪᓚᐊᑐᐃᓐᓇᖅᑐᖅ ᐋᖅᑭᑦᓱᐃᓇᓱᐊᕆᐊᒃᓴᖅ ᑮᓇᐅᔭᓕᐅᑲᓐᓂᕈᑎᒃᓴᓂᒃ ᐅᒥᖕᒪᕙᓂᕐᓂᒃ (ᓂᕿᑦ, ᐃᖃᖅᑎ, ᕿᕙᐅᖅ, ᑮᓇᐅᔭᓕᕐᔪᐊᑦ). ᑕᒪᒃᑯᐊ ᐱᙳᓪᓚᐊᑎᑕᐅᔪᑦ ᓄᑖᓂᒃ ᓴᖅᑮᓂᐊᖅᑐᑦ ᐊᐅᓚᓂᐅᔪᓂᒃ ᐅᒥᖕᒪᖕᓄᑦ ᓇᔪᕐᖃᖃᑎᕆᑦᑐᓄᑦ. ᐅᒥᖕᒪᑦ ᓇᔪᕐᖃᖃᑎᕆᑦᑐᑦ ᐊᒥᓲᕝᒍᓗᐊᖅᑐᐊᓘᓕᕐᓂᕐᐸᑕ, ᐅᓗᕆᐊᓇᕈᓐᓇᕐᓂᕆᒻᒥᔭᖓ ᐃᓅᓴᓪᓕᙳᓪᓚᐊᓂᖖᒋᓐᓄᑦ ᓱᒃᑲᓕᒃᑲᓐᓂᕈᑕᐅᑐᐃᓐᓇᕆᐊᕐᑲᕐᓂᖓ. ᓇᔪᕐᑲᑦᓯᐊᕈᓐᓃᖅᐸᑕ ᐊᒻᒪᓗ ᐊᒃᑐᖅᑕᐅᕐᑲᑦᑕᓕᖅᐸᑕ ᐸᒻᕙᓴᒃᑕᐅᕐᑲᑦᑕᕐᓂᐅᔪᑎᒍᑦ ᐊᑲᐅᓐᖏᓪᓕᐅᕈᑕᐅᑐᐃᓐᓇᕆᐊᓕᒃ ᐱᙳᓪᓚᐊᓂᐅᔪᑦ ᐅᓄᖅᓯᙳᓪᓚᐊᓂᖖᒋᓐᓄᑦ ᑏᕆᑐᐊᕆᒥ. ᑭᓱᐊᓂᓕ ᐃᓅᓴᓪᓕᙳᓪᓚᐊᓂᖖᒋᑦ ᐅᒥᖕᒪᑦ ᓇᔪᕐᖃᖃᑎᕆᑦᑐᑦ ᐱᑕᕐᑲᐅᕐᓂᖖᒋᑦ ᐊᒃᑐᐃᓂᕆᓇᔭᖅᑕᖖᒋᓐᓂᒃ ᑭᒡᓕᕐᑲᕈᑕᐅᑐᐃᓐᓇᕆᐊᓕᒃ ᐋᓐᓂᐊᓇᖅᑑᕋᔭᕐᓂᖖᒋᓐᓂᒃ ᐊᒻᒪᓗ ᓂᕿᒃᓴᒥᓂᒃ ᓄᕝᕠᓯᕐᑲᑦᑕᕐᓂᖖᒋᓐᓂᒃ ᓄᓇᐅᑉ ᐃᓚᖕᒐᓂ. ᓯᓚᕐᔪᐊᕐᒥ ᓯᓚᐅᑉ ᐊᓱᔾᕗᐸᓪᓚᐊᓂᖓ ᓄᑖᓂᒃ ᐋᓐᓂᐊᓇᖅᑐᓂᒃ ᑎᑭᐅᔾᕗᙳᓪᓚᐊᒻᒪᑦ ᐅᑭᐅᖅᑕᖅᑐᒧᑦ ᐊᒻᒪᓗ ᑕᒪᓐᓇ ᐅᓗᕆᐊᓇᖅᑐᒦᓕᕈᑕᐅᑐᐃᓐᓇᕆᐊᓕᒃ ᐅᑭᐅᖅᑕᖅᑐᒥ ᐆᒪᔪᖕᒋᓐᓄᑦ ᐃᓚᒋᔭᐅᓗᑎᒃ ᐅᒥᖕᒪᐃᑦ.

<u>ᐅᖃᓕᒫᒐᑦ ᐱᕝᕕᐅᓯᒪᔪᑦ ᐊᒻᒪᓗ ᐊᓯᖏᑦ ᑐᓴᕈᑏᑦ ᐊᑐᖅᑕᐅᓯᒪᔪᑦ</u>

(ᐊᕕᑦᑐᖅᓯᒪᓂᐅᔪᒥ ᐆᒪᔪᓕᕆᔾᑯᑦ ᐊᓪᓚᕝᕕᐊ ᖁᕐᓗᑐᕐᒥ ᑕᒪᐃᓐᓂᒐᓚᒃ ᐅᖃᓕᒫᒐᖃᐅᖅᐳᖅ ᑎᑎᕋᖅᓯᒪᔪᓂᒃ ᐊᑖᒍᑦ)

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