

NUNAVUT WILDLIFE MANAGEMENT BOARD

PUBLIC HEARING TO CONSIDER THE GOVERNMENT OF NUNAVUT
PROPOSAL FOR DECISION TO THE BOARD CONCERNING
THE TOTAL ALLOWABLE HARVEST FOR THE
WESTERN HUDSON BAY POLAR BEAR SUBPOPULATION

January 10, 2018

PAGES 201 TO 467

HELD AT THE SINIKTARVIK HOTEL

RANKIN INLET, NUNAVUT

VOLUME 2

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1 (Proceeding commenced at 8:30 a.m.)

2 THE CHAIR: Good morning, everyone. Thank you
3 very much for coming back to our hearing.

4 So we're going to start off this morning.

5 Charlie, would you say a prayer for us, please.

6 (PRAYER)

7 THE CHAIR: Thank you, Charlie.

8 So just to do a refresher that the channels on
9 your microphones have stayed the same, so zero is the
10 floor, one is English, and two is Inuktitut. Nothing's
11 changed there.

12 We're going to start off this morning as we
13 agreed to with Environment Canada presentation to the
14 Board. So Rachel and Nick are up. And, Rachel, I think
15 you're going to start off with the letter submission, and
16 then Nick is going to give us some additional information.
17 The floor is yours. Go ahead.

18 **SUBMISSION BY ENVIRONMENT AND CLIMATE CHANGE CANADA**

19 MS. VALLENDER: Okay. Well, thank you very much.
20 So I'd like to start by thanking the NWMB and everyone else
21 here for giving us the opportunity attend this public
22 hearing. And we will, as Dan mentioned, be presenting sort
23 of two parts.

24 The first was a verbal overview of the letter we
25 submitted to the NWMB. I won't go over all the details

1 just because we have provided that written version which
2 everybody can read, but I will present our opinion, and
3 then Nick will give a presentation, and then we'd be happy
4 to take questions.

5 THE CHAIR: Rachel, I'll just let everyone
6 know it's on tab 13 in the binder.

7 MS. VALLENDER: Okay. Tab 13.

8 THE CHAIR: Okay. Thank you. Tab 13.

9 MS. VALLENDER: So I would like to first start by
10 saying that Environment and Climate Change Canada recognizes
11 that indigenous traditional knowledge indicates that this
12 population of bears has increased in the 1980s, and this
13 finding was based upon sightings of more bears in and near
14 communities. And we also heard this during presentations
15 yesterday.

16 It's noteworthy, because we rely on this
17 committee, that the available indigenous traditional
18 knowledge has been assessed by the Polar Bear Technical
19 Committee which classified the population has increased
20 based on this source. Furthermore, Environment and Climate
21 Change Canada recognizes that there is concern about an
22 increase in polar bear-human interactions that poses a
23 safety concern. We know that human-bear interactions and
24 conflict must be taken seriously and that appropriate
25 measures must be taken to ensure the safety of people,

1 their property, possessions, as well as the bears.

2 We recognize that the Government of Nunavut has
3 a robust and effective polar bear deterrence program and
4 that recent partnerships with organizations such as World
5 Wildlife Fund and especially the active participation and
6 cooperation of communities has decreased the number of
7 bears that have needed to be killed in defence of life and
8 property in some communities. That said, we echo the
9 sentiment that has been expressed by the NWMB that the
10 Government of Nunavut should continue to work with
11 communities and other parties as appropriate to ensure that
12 the program continues to be effective.

13 So regarding the scientific knowledge, the new
14 population estimate, as we discussed yesterday, from the
15 survey conducted in 2016 indicated an 18 percent downward
16 adjustment from the previous aerial survey that was
17 conducted in 2011. As you know, both of these surveys were
18 led by the Government of Nunavut, and we understand that
19 local communities were involved in the planning and
20 logistics associated with the survey and that local
21 community members participated in the survey themselves.
22 We would like to note that our department is supportive of
23 the collaborative approach to monitoring, and we were
24 pleased to contribute financially to this effort.

25 So it's important to note that the 2016 survey

1 for Western Hudson Bay was conducted during the same season
2 as the Southern Hudson Bay aerial survey and that
3 preliminary results of the Southern Hudson Bay survey
4 showed a 17 percent downward adjustment from the previous
5 estimate, which was 2011-12. So combined, to us, these new
6 population estimates indicate cause for concern as it
7 relates to the population trajectory for these two
8 subpopulations of bears occurring within Hudson Bay.

9 So we recognize that a trend can't be inferred
10 from the two aerial survey data points, that the population
11 estimate of 842 is currently the best available scientific
12 estimation of population size for Western Hudson Bay. We
13 also note that the 2016 aerial survey results will be
14 considered by the Polar Bear Technical Committee at their
15 annual meeting which will be taking place in early February
16 2018.

17 So Nick will elaborate upon the next couple of
18 points in his presentation which will follow me, but just a
19 few notes about other scientific research results.

20 So this research has indicated decreased
21 reproductive performance compared to other Canadian
22 subpopulations, declines in body condition and survival in
23 association with sea ice decline and previous declines in
24 numbers.

25 So work of research scientists, including

1 Dr. Lunn from my department, have contributed to this
2 scientific understanding of the population, and declines in
3 body condition and survival have also been noted for bears
4 in the Southern Hudson Bay subpopulation.

5 Work by Department of Fisheries and Oceans
6 colleagues has indicated declines in density and blubber
7 thickness of ring seals in Hudson Bay which, of course, are
8 considered to be the preliminary food source for polar
9 bears, although we do recognize that bears eat a variety of
10 other marine and terrestrial food sources.

11 So concern over the population estimate for
12 Western Hudson Bay is further exacerbated by documented
13 declines in sea ice in this region of the Canadian arctic.
14 As we heard yesterday, breakup of sea ice has advanced by
15 22 days, and freeze-up has been prolonged by 15 days since
16 1979. So this equates to about an additional month that
17 polar bears need to spend on land, and this increased time
18 on land increases the probability of interaction with
19 humans and decreases the amount of time that polar bears
20 are able to hunt from the sea ice platform.

21 So considering all that information, the
22 Government of Canada position on total allowable harvest is
23 that, following results of the previous population estimate
24 in 2011, Environment and Climate Change Canada indicated
25 support for the Government of Nunavut's recommendation at

1 that time, which was for a removal of 24 bears per year
2 which equated to 2.3 percent of the population at that
3 time, which was 1,030.

4 The bulk of available scientific evidence
5 indicates that the arctic ecosystem is changing and that
6 bears are expected to be negatively impacted over the
7 coming years. That said, we recommend that the NWMB
8 consider a precautionary approach when making a decision on
9 a new total allowable harvest for this subpopulation.
10 Furthermore, we recommend that the NWMB consider exploring
11 the option of having the impact of various harvest
12 scenarios in consideration of other factors such as the
13 changing arctic habitat on the Western Hudson Bay
14 population. This exercise was recently undertaken to guide
15 management in Baffin Bay and Kane Basin subpopulations and
16 proved to be very informative.

17 So as a final comment, it's worth noting -- and
18 this is at the conclusion of our letter -- that in order
19 for polar bear parts and/or pelts to enter international
20 trade, a CITES export permit must be issued. So it's the
21 legal obligation of the CITES scientific authority to be
22 able to prove that trade is sustainable, meaning that the
23 harvest must also be sustainable. So the level of
24 sustainability takes into account multiple sources of
25 information, so including the available science, the

1 available traditional knowledge, as well as the management
2 objective for this subpopulation of bears.

3 So I know Paul talked about this very briefly
4 yesterday, but just to note that the nondetriment finding
5 has been positive to date, and trade has been permitted
6 from Western Hudson Bay and that, as when any new decision
7 on total allowable harvest is made, the CITES scientific
8 authority will look at all the information in carrying out
9 their assessment. So I'm not a CITES expert, but if anyone
10 has questions about that, I would be happy answer them as
11 well.

12 And now I will turn it over to Nick.

13 DR. LUNN: I would like to thank the NWMB for
14 providing this opportunity to provide some additional
15 information that we hadn't submitted, but clearly,
16 listening to the talk around the table yesterday there was
17 some more information that we could provide that wasn't
18 because it didn't seem relevant at the time to the letter
19 from the NWMB about the actual aerial survey number. Next
20 slide, please.

21 So distribution -- I heard someone asking about
22 a tab. There isn't. We didn't put this presentation --
23 but we will provide this presentation both in English and
24 translated. So the distribution abundance of bears are
25 around the world. There are estimated to be approximately

1 26,000 polar bears worldwide, and they occur in 19
2 relatively discrete subpopulations, and those
3 subpopulations range in size from a few hundred to a few
4 thousand individuals, and Canada has about 60 percent of
5 all the world's polar bears. So some people say Canada has
6 sort of an additional responsibility for the conservation
7 and management of polar bears because we have so many of
8 the world's polar bears.

9 People have asked, and it came up yesterday, how
10 those lines on the map were drawn. How do we know we have
11 19 or so relatively discrete subpopulations? For those
12 that can't see, Western Hudson Bay is at the centre bottom
13 of the map. There it is. And these lines were drawn on
14 the maps when we started talking about quotas and harvests
15 and management units, and that was stuff done way back in
16 the 1960s, way before my time. And they were based -- a
17 lot of it was based on barriers to movement where people
18 thought bears could or could not move, geographical
19 barriers. It was based on tag returns, where people were
20 harvesting bears, had they been tagged before, where they
21 were tagged. More recently it's been based on things such
22 as satellite movement of bears, telemetry, where the bears
23 are generally going.

24 So the lines on the map aren't fixed, they're
25 not final. The bears can obviously cross them. We all

1 know that. In Hudson Bay there are three subpopulations
2 that will use Hudson Bay in the wintertime. That's Western
3 Hudson Bay, Southern Hudson Bay, and Foxe Basin. And a
4 little later on I'll show some movement information to show
5 you just how far and where the bears, at least in
6 Hudson Bay, are travelling and using the bay. Next.

7 So sea ice in Hudson Bay. If you start at the
8 upper left frame, in the middle of winter the bay isn't
9 completely ice covered. There's always areas of open
10 water, leads and polynyas. So even at maximum ice cover
11 there's areas of open water.

12 Moving to the upper right, during breakup the
13 winds primarily come out of the northwest, and I think
14 we're experiencing those today. Although I haven't been
15 outside to experience them, I'm told they're quite strong.
16 And the currents move counterclockwise in the bay.

17 So as the ice breaks up, the winds and the
18 currents generally tend to move the ice down along to the
19 southeast. And it ends up, if you go to the bottom left
20 corner, most of the last remaining ice in the summertime
21 ends up off the coast primarily of Manitoba and Ontario.
22 So generally that's where most of the bears, when the ice
23 is gone, spend the summer on shore in places like Ontario
24 and Manitoba. It doesn't mean they all do, but basically
25 it's the pattern of ice breakup that determines where the

1 bears are going to spend the summer.

2 Bears have strong sight fidelity to these
3 summering areas, where we research those. The bears that
4 we catch in Manitoba, year in and year out they continually
5 come back, not necessarily to the same spot of Manitoba but
6 to the same general area. Similarly with bears in Southern
7 Hudson Bay that spend the summer in Ontario, we get some.
8 We catch some bears from Ontario up in Manitoba, but by and
9 large, bears tagged in Ontario stay in Ontario, bears
10 tagged in Manitoba stay in Manitoba.

11 And then in the fall the sea ice re-forms first
12 in the northwest. So if you're at the bottom right panel,
13 in the northwest of Hudson Bay that's where the ice forms
14 first, and it then proceeds southward, expands southward.
15 And in late October, early November the bears generally
16 start moving northwards along the coast of Manitoba and
17 into Nunavut in anticipation of meeting the sea ice. So
18 where they meet the sea ice really depends on the times
19 when it re-forms. If it reforms early, a number of bears
20 may get on the sea ice before they even make it to Nunavut
21 or into communities like Arviat; however, if sea ice
22 formation is delayed the bears will continue moving north
23 looking for sea ice, and they could end up in communities
24 such as Arviat or further north. Next slide.

25 Our research in Western Hudson Bay. The

1 research started back in the late 1960s, and one of the
2 reasons is, at the time, was there was an international
3 agreement signed between the five polar bear countries, and
4 one of the commitments of which Canada committed to was
5 doing research. People really didn't know much about polar
6 bears from a scientific point of view, so Canada had
7 committed to start to do research. And so people looked
8 for places where that was going to be relatively
9 convenient. Rather than having to travel over large
10 expanses of sea ice, were there places where bears
11 congregated that you could do research in a relatively
12 small area that was logistically feasible. And Churchill,
13 because there was a military base through the 1940s and
14 1950s, there was a rail line, there was a port --
15 logistically it was far easier to get to a place like
16 Churchill, Manitoba, than it would have been to try to
17 initiate a project, say, out of Resolute Bay or on
18 Baffin Bay.

19 And so we started doing a research program
20 there. The bears were all ashore. Most of the work that
21 we did was focussed in this purple area, the main study
22 which is now Wapusk National Park, that protects what we
23 think is most of the denning area -- not all, but most of
24 the denning area -- of Western Hudson Bay. So our main
25 research focusses in that purple area, but from time to

1 time will go north, those blue areas. We'll work our way
2 up towards the Nunavut border and will also work eastward
3 towards Ontario. So we work there less frequently, but we
4 do go there periodically. Next slide.

5 So although the research in Western Hudson Bay
6 began in the late 1960s, that focussed really mainly in and
7 around the town from the limited road system, so they were
8 setting snares, what bears they could catch in and around
9 the town. Once we started using things such as
10 helicopters, it gave us greater access to the Manitoba, the
11 Churchill area. And so our current research really began
12 in about 1980 where we were able to get out and survey
13 bears not just in and around Churchill but in the denning
14 area along the coast, up the coast, so we could expand that
15 research.

16 And when we started, I mean, a lot of the stuff
17 we do now we tie into things such as climate change. When
18 this research started back in the 1980s, no one was talking
19 about climate change -- or, at least, not in the polar bear
20 world. And we knew nothing about polar bears. So we
21 started the program really to focus on broader ecological
22 questions that we thought were applicable to polar bears
23 across the circumpolar arctic. No one really knew anything
24 about polar bears, so we decided we would start. Let's get
25 some of the basic information.

1 So we started programs of studies that generally
2 lasted two to five years, and I've started, listed sort of
3 alphabetically some of the things we've looked at. We've
4 looked at polar bears' denning habitat, diet, energetics,
5 effects of disturbance, we've looked at genetics,
6 population delineation, dynamics, and seasonal movements.
7 Next slide.

8 And one of the common features of all that work
9 was a requirement to sort of capture and handle bears to
10 take measurements and/or take samples. So what do we do?
11 I think most people know we locate them from a helicopter,
12 they're immobilized, we put tattoos and tags so that each
13 individual is identified in case we capture them in
14 subsequent years. Or, if it's harvested in a subsequent
15 year, the hunters are very kind and they provide us with
16 information of a tagged bear that they've harvested.

17 We have taken a number of standard measurements
18 from every bear. And standard measurements are just things
19 like a straight line length, we measure -- take a rope and
20 measure its girth right behind its shoulders to get a
21 measurement there, we measure the skull, both the width and
22 the length, and we take a subjective fat index, and we feel
23 along the spine and hips for how much body fat is over
24 there, and on that we would give a score or fat index of
25 one to five. And a bear that we would score one would

1 virtually have no fat, and you would see -- you would
2 actually see the spine, you'd see the ribs, a very, very
3 thin, very poor condition bear. Or it could go up as high
4 as five, which would be an exceedingly obese typically fat
5 female, pregnant female. And I've got a slide a little bit
6 later that shows sort of the difference between the two.
7 And then all that data was recorded. Next slide.

8 And by handling, it also allowed us to take some
9 standard samples. So when we punch the ear to put a tag
10 in, we get that little tiny disk of skin, and from that we
11 can look at genetics of bears. So we're using it now to --
12 we know a lot about who the mothers of bears are because
13 you catch females with cubs. But we don't know a lot about
14 who the fathers are. Mating occurs out on the sea ice in
15 the springtime, and that's the end of it. We're not out
16 there catching bears, we don't see it, so we don't know who
17 the fathers are.

18 But through the genetics, we're starting to
19 build up a database to look at how many bears, how many
20 male bears are producing the cubs. Is it every bear has an
21 equal chance, or are there certain qualities? Are there
22 certain really big bears or some feature of bears, male
23 bears, that they get to produce most of the mating? So
24 it's a question of how many males do you need, and what are
25 the qualities of those males to produce cubs. So we can

1 start looking at that through things such as genetics.

2 We've taken blood samples in the past, and from
3 that we can look at whether or not a female bear is
4 pregnant. Obviously a very fat bear we can tell is
5 pregnant. But there are a number of bears that are thinner
6 that we don't really know. Looking at them, it would be a
7 guess. But we can take blood, and we can measure hormones
8 in the blood and determine if a female is likely pregnant
9 or not. And you can use the blood to look at things such
10 as disease in polar bears.

11 We do take hair. Where we take fat, we shave we
12 a little bit of hair off about the size of a Toonie. And
13 from that hair we can look at levels of mercury, what are
14 the levels of mercury doing. And we're starting to look at
15 things such as stress hormones, cortisol, looking at both
16 short-term and long-term stress. We take a tiny fat core
17 from the rump of the bear, and that allows us to look at
18 the diet of bears, the different types of marine mammals
19 that polar bears are eating, and the relative proportion of
20 those marine mammals in the diet. And for the Western
21 Hudson Bay, about 60 percent of the diet of polar bears in
22 Western Hudson Bay are ringed seals. So that's the
23 predominant prey species in Western Hudson Bay. That's not
24 necessarily the same proportions in bear species
25 everywhere. It just depends what's available. And we can

1 look at things such as contaminants, and we archive all
2 these specimens for our future study.

3 Next we take a vestigial premolar. It's a
4 little tiny tooth right behind the canine. It's very much
5 like our appendix; it doesn't really have a function that
6 we know of for polar bears anymore. It probably did for
7 ancestral bears, but polar bears today it has no function.
8 It's very shallow. It's got a very shallow root, and we
9 can pull that tooth in probably about five seconds. And we
10 get that tooth, and we can take it back to our lab or a lab
11 anywhere, and you can section it. And just like you count
12 rings in a tree, you can count similar rings in polar bear
13 teeth.

14 And there on that one there's a slide, and
15 that's got three distinct dark lines numbered one, two,
16 three, and a fourth one starting on the edge. So that bear
17 would be a three-year-old bear for us. And how do we know
18 that? Well, we catch bears as cubs of the year, so we know
19 how old they are. And later on in life if you catch them
20 again and pull a tooth, you can age that bear, and from
21 that we could determine that each one of those dark lines
22 matched exactly one year in the life of a polar bear.

23 So knowing the age of a polar bear is quite
24 powerful in terms of management looking at the age
25 structure; when do bears first reproduce, when do they stop

1 reproducing, how long do they live, those sorts of things.
2 Those are very powerful pieces of information, and that's
3 something we can get from our handling bears. And it's
4 also obtained from you guys when you harvest bears if you,
5 you know, turn in a tooth for aging purposes.

6 Next I've put this slide up -- I've tried it
7 once and failed miserably, but you can take milk -- you can
8 milk female bears just like you would milk a cow. You can
9 take a milk sample, and from that you can look at the fat
10 content of polar bear milk, and you can look at
11 contaminants. And this was done probably about 20 years
12 ago now, and it was done through the University of
13 Saskatchewan. And their concern was that polar bear cubs
14 who weren't feeding on their own, they were relying
15 entirely on mother's milk, were showing certain types of
16 contaminants in their bodies. And so the question was,
17 where were they getting these contaminants? And so we
18 collected some milk samples, and we determined that the
19 pathway for those contaminants was primarily coming through
20 the mother's milk. She would take her fat stores, use that
21 fat energy, produce milk, and those contaminants would be
22 incorporated into milk and transferred across to the cub.
23 We haven't done that for many years. I can't even do it.
24 So it takes a very special skill.

25 But those are the sorts of samples that we can

1 collect and the sorts of information we get by handling
2 bears. And some of these samples have proven to be very
3 valuable over time, and not because we analyze every single
4 sample every year, but new techniques are always being
5 developed, and people always want to know, well, what was
6 it like in the past?

7 And one of the examples, you know, is the
8 genetics. Those little plugs of skin initially we used to
9 just throw on the tundra because genetics wasn't a big
10 science at the time, and anyone that did genetics was doing
11 it through blood so we didn't think there was any value in
12 keeping those little plugs of skin. Now it turns out that
13 that's a very valuable tissue for looking at genetics, and
14 we're kicking ourselves for throwing those little pieces of
15 skin and not storing them.

16 The fat we have been archiving, and that's been
17 very valuable in going back and comparing diets of polar
18 bears back in the '80s to what their diets are now and also
19 very valuable in looking at contaminant levels, because not
20 only do you get contaminants from bears, say, in the 1980s
21 and the 1990s, but you can get it from individual bears
22 because, when we catch a bear, again, we'll take another
23 fat sample. So if we caught her in 1985, we'll have a fat
24 sample. If we caught the bear again in 2000, you'd have
25 two fat samples, and you could look at contaminant levels,

1 and you could say, are contaminants stable in this bear,
2 increasing, decreasing? So archiving a lot of these
3 samples, as new techniques get developed, people are always
4 looking, well, what was it like 20 years ago?

5 And in addition to the samples, we have a lot of
6 baseline information just on the bears themselves; how old
7 they were, how heavy they were, what were some of the
8 measurements. So you can start building up these models
9 and start trying to explain a lot of things by having a lot
10 of historic baseline data of what it was like back in the
11 early 1980s. Next slide.

12 We talked a little bit about telemetry
13 yesterday. And we put collars on bears primarily to see
14 how polar bears use sea ice habitat. In conjunction with
15 researchers at the University of Alberta, we put out
16 10 to 12 of these GPS satellite-linked collars deployed
17 each year.

18 As I said yesterday, we can only put them on
19 adult females. Adult males have that traffic cone shape.
20 We can't get a collar to stay on a male, adult male. And
21 although we could on subadult bears, because they're still
22 growing, we're very concerned about putting a collar on
23 tightly so it won't come off and then having a subadult
24 bear grow and that collar won't expand, and cut into the
25 bear. So we don't put them on subadult bears.

1 The collars themselves, they weigh about 1.6
2 kilograms, which is less than 1 percent of the weight of an
3 adult female. So, yeah, if you were to hold one, it feels
4 heavy, but compared to the weight of an adult female, it's
5 very, very light relative to an adult female.

6 These collars provide us with the locations of
7 bears for up to two years without any disturbance. So
8 that's a benefit. We hear that people don't want bears --
9 they don't want all this work being done, they don't want
10 bears to be disturbed. Putting the satellite collar on
11 gives us up to two years to follow that bear and leave it
12 completely alone. We don't have to fly over the sea ice to
13 find it, we don't have to fly over it on land. We just
14 leave it alone. We know where it is because we're getting
15 the GPS locations.

16 And the collars have a release mechanism that we
17 set to release on a predefined date. And that's the bottom
18 picture. There's a collar that released, and it's just
19 sitting on the tundra in Churchill, and I can pick it up.
20 And it means that we only ever have to handle the bear once
21 just to put the collar. Or the collar releases on its own
22 and just drops off on the tundra. We don't have to -- as I
23 said, we don't have to disturb it over two years trying to
24 figure out where it is. We know that.

25 So it means if, you know, a bear happens to go

1 to a place where we're not working, the collar is going to
2 come off. We don't have to worry about bears having
3 collars on it forever. And that was some of the concerns
4 not only of people around this table but also of
5 researchers. You don't want to have a collar sitting on a
6 bear that doesn't come off and just stays on there forever.
7 So this is one way to help ensure that these collars come
8 off and the bears aren't encumbered with collars for life.
9 And that information provides information on how bears use
10 sea ice, where they feed, and how far and how fast they
11 might travel. Next slide.

12 And here's a map of 20 collared bears in a
13 two-year period. So Churchill is buried in the middle of
14 the left frame, and that's simply the one -- the big frame
15 on the left is simply all the tracks that we have the
16 information from 20 bears over two years. So Churchill is
17 buried there. You can see -- hopefully you can see Arviat.
18 So you can see, out of those 20, there's one or two that
19 moved up towards the coast, off the coast of Arviat. Some
20 made it up as far as Whale Cove, but none of those collared
21 bears went as far as Rankin Inlet. And then they moved out
22 across into the sea ice.

23 Most of the locations are within sort of what is
24 considered the management zone, that line on the map for
25 Western Hudson Bay. But, clearly, bears are moving right

1 into sort of the management zone of Foxe Basin there. It's
2 sort of the southern part of Coats Island, and they're
3 moving into Quebec, Southern Hudson Bay, so into Ontario.
4 One even went close to Wapusk -- to Wanisk (phonetic). And
5 so they moved across, and then they all come back into
6 Wapusk National Park the following summer.

7 And if we can sort of zoom back out to look at
8 the panels on the right, each of those panels is one bear
9 and what it did -- the different colours are what it did in
10 the two-year period. So the top bear, two years it headed
11 off into the north, sort of the northeast across into
12 Foxe Basin, into different areas and different the sort of
13 area that it moved. But that bear did something similar
14 two years in a row, headed out towards Quebec and
15 Foxe Basin.

16 If you look at the figure on the bottom there's
17 a female that did quite different things. One year she did
18 something similar going out towards -- went out towards
19 Foxe Basin, but another year she moved up the coast,
20 intended to spend a fair bit of time sort of up the coast
21 off Kivalliq.

22 So those colours give us a little bit of
23 information of individual changes, individual differences,
24 how the females are using the sea ice. And what we're
25 starting to look at or what we're interested in now is,

1 with changes in breakup dates and freeze-up dates, how does
2 that impact polar bears per se? Will they just sit on the
3 ice and just let it float, and they'll just come off
4 wherever the last ice remains? Will they walk sort of like
5 going up a down escalator? If a bear wants to be in
6 Manitoba for the summer, will it walk and spend extra
7 energy to keep itself off the coast of Manitoba despite the
8 ice continuing further south, or will they follow it
9 further south, get on shore and walk all the way up? We're
10 hoping that we'll get some answers from that, from the
11 satellite collars, sort of their rates of movements and
12 what their behaviours are. Next slide.

13 And this concern with how bears use sea ice in
14 climate change. This is dates of breakup and freeze-up.
15 These are determined from satellite imagery of sea ice
16 across the arctic. So we take those imagery and we put the
17 Western Hudson Bay, the line that are the boundaries of
18 Western Hudson Bay, and we look at the date at which the
19 sea ice cover in the spring gets to 50 percent. So it's
20 starting to melt. When does it get to 50 percent? And for
21 us and ice scientists, that's sort of a trigger for, quote,
22 "breakup."

23 So when we talk about breakup we're talking when
24 the sea ice cover is about 50 percent. And those dots, the
25 satellite record goes back to 1979. So that's as far back

1 as we can go. And those black dots are that 50 percent
2 breakup date over time through to 2016 when the last aerial
3 survey was done. And there are a couple of things to
4 notice.

5 Those dots are all over the place. One year
6 isn't worse than the year before and worse than the year
7 before or better. There's a lot of noise. There's ups and
8 downs. Sometimes it's early, sometimes it's later. But if
9 you look at the long-term trend, you look at the whole data
10 set from 1979 to 2016, there's that downward trend. And
11 that works out to be approximately a 22-day change.

12 So breakup is occurring -- in the early 1980s it
13 was occurring sometime in early to mid-July, and down at
14 the bottom right of that panel it's now somewhere in about
15 mid-June. And you can see in 2015 a very, very early
16 breakup in Western Hudson Bay, which was on the 18th of
17 May, so quite a very early breakup, 50 percent. But the
18 following year it bounced right back up. So a lot of
19 variability, long-term trend towards earlier and earlier
20 break-up.

21 The bottom, if we look at freeze-up, what are we
22 seeing in timing of freeze-up? A very similar sort of
23 pattern. Freeze-up is when is there 10 percent ice on
24 Hudson Bay. So that's what we call freeze-up. When is
25 there 10 percent cover on Hudson Bay.

1 If you look back at the early 1980s, that was in
2 early November. So there was 10 percent ice cover in early
3 November, and as you move along, again lots of noise. Some
4 years it comes early, some years it comes late. But over
5 time the trend is towards a later freeze-up, and it's about
6 14, 15 days later now than it was back in the 1980s. And
7 so now it's sort of more late November than it is early
8 November. And in 2016, it was the 7th of December. So
9 that was the latest freeze-up in that entire 1979-to-2016
10 period. So a very, very late freeze-up. Next slide.

11 And if you look at the difference between when
12 the ice begins to break up and when it starts to freeze up,
13 and you just take the difference between the two, you get
14 the number of days. And, again, if you look in the early
15 1980s, that period was somewhere on the order of, you know,
16 130 days to 140 days, and now over time it's closer to sort
17 of 165, 170. So there's about 35 days longer now, this
18 period between breakup and freeze-up than there was back in
19 the early 1980s, so a 35-day period of less ice that bears
20 have to deal with. Next slide.

21 So how does the condition -- there's a slide,
22 the top one -- these are just for exaggeration purposes.
23 The top one is a very, very thin male bar. We would say
24 that that's a one out of five. What does a bear that's a
25 one out of five look like? You can see, even at a

1 distance, you can see his hips, his spine. There's not a
2 lot of body fat on a bear like that. We don't see many
3 bears like that, but that's what a one out of five -- and
4 that actually has a cannibalistic -- it's got a cub in its
5 mouth there.

6 And the bottom is an exceedingly fat pregnant
7 adult female, and a bear like that we would say is a
8 five-out-of-five fat, exceedingly fat. And pregnant
9 females need to be fat. They're going into dens, they're
10 going to be on shore for eight months, they're going to
11 produce cubs and provide milk for those cubs, so they need
12 to be as fat as possible.

13 So, generally, once sea ice breakup occurs
14 earlier, the bears tend to come ashore with less body fat.
15 And when breakup occurs later in the year, they tend to
16 come ashore with more body fat, and that's simply a
17 function, you know, of how long they're out on the sea ice
18 hunting seals before they have to come across. If it
19 breaks up early, they don't have as much time to hunt
20 seals, so they don't have as much fat. Next slide.

21 And it also relates to survival. So the work
22 that we published in 2011 at the time of the first aerial
23 survey of 1,030, we did sort of a complex sophisticated
24 model with all our capture data, and one of the variables
25 we looked in was looking at survival of bears in relation

1 to date of sea ice breakup.

2 And the top panel is for young independent
3 female bears aged one to four -- subadults, teenagers,
4 whatever you want to call them, young bears -- and you
5 could see that in years when breakup is really early their
6 rate of survival is somewhere in the order of .75, but if
7 breakup is later they have a better chance of survival, and
8 it was closer to .85.

9 And if you look at the bottom panel, this is for
10 your prime adult females with cubs. Again, early breakup,
11 survival of those age groups of females was in the order of
12 .85, .86 and when breakup is later in the year. So more
13 time on sea ice, better condition when they come ashore,
14 they have much better survival, up at .95, .96. So
15 break-up has an impact on survival of bears. Next slide.

16 And that work also led to looking at the
17 demography and population trends, and it showed that
18 initially from sort of the late 1980s the population was
19 fairly high, somewhere around 1,200 bears, and then it
20 declined through to somewhere around the late 1990s. You
21 can see that decline, a period of decline. But afterwards
22 it seemed to stabilize, the population there. There were
23 the numbers, the point estimates from the simulations. You
24 know, they go up and down from year to year, but there's no
25 trend. It's not declining, it's not increasing. It's

1 stable. And that's the information that's being used
2 currently in, you know, status tables in a lot of these
3 management plans. This is sort of what we're suggesting is
4 why the polar bear population currently seems to be stable
5 at least through to 2011. Next slide.

6 So this is a series of slides, and this is from
7 our research work, and this is; how much do bears weigh
8 when we catch them? So this is the mean mass of adult
9 males from 1980 to 2016. And, again, there's lots of
10 variation, ups and downs. They're not always lighter or
11 heavier, depending on which year you look at. They were
12 heavier, sort of an initial pulse of very heavy bears in
13 the early 1980s and sort of a period of stability from the
14 late 1980s through to about 2000. And then we had some
15 good ice conditions, and the weights of bears went up of
16 adult males.

17 And since then, if you look at 2010 onwards, the
18 weights of adult males that we're catching have dropped
19 again. And those numbers are sort of in the 2000s, that
20 period of stability, roughly they were in the 400 to
21 420 kilogram range, and since then they're down to about a
22 range of about 375 kilograms. Next slide.

23 If you look at the mean mass of solitary adult
24 females -- so these are the bears that we presume are
25 pregnant and are going to produce cubs -- similar sort of

1 thing; long-term decline. They were heavier back in the
2 1980s than they are now, lots of noise. So you get a good
3 ice year, and they pick up their condition.

4 That dashed line, that's the minimum mass of a
5 female we've ever caught in the fall that we know produced
6 a cub the following spring. And that number is
7 189 kilograms. It doesn't mean that's the absolute
8 minimum, but we've never caught a bear lighter than
9 189 kilograms that we know produces cubs. So the purpose
10 on that is that at some point if a bear gets too light, is
11 not in good condition, an individual bear won't reproduce,
12 and that probably happens in most years that there's some
13 females that don't reproduce because they weren't a good
14 hunter that particular year, whereas most of the females
15 were.

16 But this line, this graph is showing that over
17 time more and more bears, the solitary adult females, are
18 getting lighter and lighter. And so you can see again in
19 that period of 2000 to 2010 this period of stability what
20 we think were probably good ice conditions, there was quite
21 a change in weights of adult females, quite high, well
22 above some of the other values earlier on in the '80s and
23 '90s. But since then, since 2011, since that first aerial
24 survey, those numbers are back down again. Next slide.

25 And, again, these are adult females that have

1 cubs of the year in September. So that's what this graph
2 shows. And this is their weights. And similar to the last
3 two slides, long-term downward trend in their weights in
4 the fall time in September when we're catching them. In
5 the 2000s, again, when their periods seem to be stable and
6 things seem to be good, the weights of females with cubs
7 were quite high, again, you can probably see exceeded some
8 of the weights back in the '80s and '90s. But since then,
9 they're down there. As you can see, in the bottom lower
10 right, they're down at the bottom end of that. They're
11 quite low. And for females with cubs in the 2000s, that
12 good period, they were sort of in the 200 to 220 kilograms,
13 and from 2011 onwards they're closer to the 175,
14 180 kilograms. So they're not as heavy as they were at the
15 time of that last aerial survey in 2011. Next.

16 Adult female productivity. How do these things
17 relate to productivity? Well, here's a table that has a
18 16-year period starting in 2001 and grouped into four-year
19 bins, 2001 to 2004 and, as you can see downwards how many
20 adult females there were. So in 2001 to 2004, there were
21 178 adult females captured. How many of those 178 had cubs
22 of the year with them? It was 92. So that's 51.7 percent
23 of the females in that period had at least one cub of the
24 year.

25 And then you can go and look at the next year or

1 the next bin: 131 females; 53 of them had cubs of the
2 year, and that works out to only 40.5 percent. The next
3 four years there were 127 females caught, 49 had at least
4 one cub. That's 38.6 percent of the females had cubs of
5 the year with them, and then the last four years,
6 2013-2016 -- so ending in the year of the recent aerial
7 survey -- we had 108 females. Only 36 had cubs, and that's
8 33.3 percent of the females. So a drop in the number of
9 females that had cubs of the year over time.

10 The mean litter size, that changes. It
11 fluctuates. The mean litter size was 1.533. It went up to
12 1.485, dropped to 1.469, 1.5. So it fluctuates, but
13 there's no real trend in litter size over time.

14 And then that last column simply is a sort of
15 crude measure of recruitment, and it's simply a
16 calculation. If you took all of those females in 2001-2004
17 that had cubs, if you count up all the cubs that they had
18 and divided them evenly amongst all those 178 adult
19 females, each adult female would have about .8, .792 of a
20 cub. And over time -- and you can do those calculations --
21 now the number of cubs out there for the females is down to
22 .5. So it's another way of showing that cub productivity
23 has declined. There aren't as many cubs being produced in
24 this population. Next slide.

25 Human-bear interactions. The bottom graph

1 handles Manitoba conservation activity in Churchill, how
2 many bears they have to handle in relation to the date of
3 sea ice breakup. And, again, there's lots of noise. Some
4 years it's good, some years it's bad. But the general
5 take-home message is, in years when sea ice breakup is
6 early -- which is on the left end of that axis -- they tend
7 to handle -- have more problem bears or they handle more
8 problem bears in and around the town of Churchill. When
9 breakup is later in the year, bears are out on the sea ice
10 longer, presumably coming ashore in better condition, they
11 don't seem to handle as many bears.

12 Now there's a lot of caveats associated with
13 that. There are different conservation officers over time,
14 how they respond to different policies. So it's not --
15 each year you can't compare directly, but it's sort of an
16 indication, and it's one of the reasons why Manitoba does
17 that coastal survey that we talked a little bit about
18 yesterday. Every September they fly that coast from the
19 Manitoba-Ontario border up the coast and just count how
20 many bears they see, and they use that as a crude sort of
21 indicator of what they might expect for bears in and around
22 the town of Churchill in the fall time.

23 So there are a number of reasons why we have
24 increase in safety concerns. And there's not going to be
25 one. There's not a single answer that's going to explain

1 it all because there will be numbers of variables. Some of
2 the bears that come into communities are in bad condition,
3 particularly subadults. Out on the sea ice, they might not
4 be as skilled a hunter as, say, an adult female or adult
5 male so they might have a harder time. And if they do hunt
6 and kill a seal, it might be taken away by a bigger bear
7 that comes along. They're growing, they have more energy
8 demands, so you might get some of those subadult bears
9 being in poor condition. So you might get some stressed
10 bears coming into town, some of them.

11 Bears are on shore longer, so there's a greater
12 probability of interacting with people -- not that you'll
13 get those interactions, but if bears are on shore, you
14 know, for an extra three, four weeks the chances of there
15 being an interaction just simply goes up because they're
16 there longer. How many times -- how often would you see me
17 in the town of Rankin if I'm here for one day? If I'm here
18 for a week? In one day you may never see me. If I'm here
19 for a week you might see me once, or you might not see me
20 at all. But the longer a bear is around on shore increases
21 the probability that an interaction could occur.

22 Delay in freeze-up may allow more bears. We
23 know that, you know, in the fall time bears start moving up
24 the coast trying to anticipate and intercept the sea ice as
25 it comes down. Well, if the sea ice is delayed and the

1 bears keep moving up the coast, in a community such as
2 Arviat, which is just up the road from Churchill, a lot of
3 bears may actually reach Arviat before there's sea ice to
4 get out. And then in Arviat we talked about there's things
5 like community attractants.

6 In Churchill they used to have an open garbage
7 dump. When I first went to Churchill in 1981 there was an
8 open-pit garbage dump right near the coast, and it was not
9 uncommon to see 30 to 40 bears at a time in the garbage
10 dump. It was a big tourist attraction. People could drive
11 to the Churchill garbage dump and look at polar bears just
12 like I used to do as a child with black bears. My parents
13 would drive to a garbage dump so I could see a black bear.

14 So community attractants; garbage dumps. We
15 heard about beluga harvesting in August, and, you know, the
16 incident is that you sink the beluga. But that doesn't
17 always happen. So if you have an attractant near a
18 community, that will bring bears in. So community
19 attractants.

20 And bears remember. Bears would come back to
21 the Churchill garbage dump even after it had been closed.
22 For a few years there were bears that would continually
23 come back anticipating there to be garbage there because
24 that's what they remember. So I know WWF -- and there have
25 been, you know, work done on diversionary feeding, maybe

1 bears are remembering that, hey, the last time I was there
2 there was these food resources for me. I'm going back
3 there. And they just walk to those areas. And if it's not
4 there, maybe they're going to go start looking somewhere
5 else, wander into communities, sites and smells.

6 And then another thing which I didn't put on,
7 communities are increasing. There are more people in a lot
8 of these communities, more people out on the land. So if
9 you have more people out on the land, bears are around
10 longer, people engaging in, you know, hunting, fishing
11 activities along the coast, again, bears are on shore
12 longer, more people out there just, you know, the
13 probability that you're going to get -- interactions are
14 going to increase.

15 So, you know, safety concerns are huge. They
16 are big, and no one is diminishing them. But there's lots
17 of reasons, you know, why bears -- and another one is, you
18 know, the perceptions that bears, the actual population is
19 increasing. So there's lots of explanations for why it's
20 going, why it's happening. And I don't think there's a
21 single one. I don't think you can say the only reason you
22 have problem bears is because they're all starving. We
23 know that's not true. You're telling us that. There are
24 bears that are nice and fat. Those might be bears that
25 remember Arviat or Whale Cove because they were there

1 before and there were beluga bone piles that they were able
2 to feed on.

3 So there's a number of reasons why, and I don't
4 think there's going to be a single one, which makes it hard
5 to manage. Next.

6 So what do we know about Western Hudson Bay
7 polar bears? A lot of this stuff is not new. You've been
8 telling people, you've been telling us that. Numbers of
9 bears in the 1940s and '50s were low. There weren't that
10 many bears. And probably one of the reasons is that there
11 was an unregulated harvest, there was a big military
12 presence, there was harvesting in Manitoba by Dene local
13 people. But there weren't any regulations. So you could
14 show what you wanted, when you wanted, how many. You could
15 go shoot females with cubs. You could do whatever you
16 wanted. So there was this large unregulated harvest, and
17 that probably kept bear numbers low.

18 And as we've heard around the table, people
19 found that, you know, things started to change, bears
20 started to increase in the '60s and '70s. Well, what are
21 some of reasons? Well, in the 1950s, Manitoba put in game
22 regulations that stopped harvesting in Manitoba,
23 essentially, so there was no more harvesting done in
24 Manitoba. The York Factory trading post was closed, so
25 there was no longer an economic market, that people weren't

1 being able to take hides to these trading posts. The
2 military base closed. So you know, 5,000 military
3 personnel who did manoeuvres all over the denning area and
4 all over that, they were gone. So you didn't have that
5 pressure from military people out on the land.

6 And then in the late 1960s was sort of the
7 initiation of the current quota system was instituted. And
8 I was looking through my notes just to see what I could
9 find, and the only reference I could find in my notes back
10 then was a recommended quota for Arviat of four. So back
11 in '67, '68, that's what people were talking about. But,
12 you know, quotas were introduced a long time ago, back in
13 the '60s '70s. So all those factors contributed to getting
14 this unregulated harvest under control. And that's likely
15 what led to an increase in bear numbers through the '60s
16 and '70s.

17 So the first scientific estimate how many bears
18 are there in Western Hudson Bay came from the late 1980s,
19 and that was 1,200 bears, and that's what the initial -- or
20 the quotas were then adjusted to. So heard around the
21 table people said they remember when it was 55 or 56.
22 That's true, and that was based on 1,200 polar bears.
23 That's where the quotas came from.

24 And the subsequent declines based on sort of
25 mark recapture work, recent ones, work that I've done back

1 in the early 2000s showed declines that were linked to
2 earlier breakup of sea ice. And I showed some of those
3 slides how survival is linked to timing of breakup. And
4 then we come to the two aerial surveys, the one in 2011
5 which was 1,030 and new one, 832, which is part of the
6 reason we're here, is 842. What do people think is a
7 suitable total allowable harvest? Next slide.

8 And we talked about this yesterday, a number of
9 people raised the question, and, you know, that we're just
10 just talking about polar bears. I mean, polar bears eat
11 seals; right? And what's happening to seals? And one of
12 the problems is that it's very expensive, it's a lot of
13 work to study these sort of huge ecosystems. People tend
14 to pick an apex predator, something at the top of the food
15 chain, because if you have healthy polar bear populations,
16 then it's likely everything underneath is probably healthy,
17 as well, because it's supporting healthy polar bear
18 populations.

19 If you start noticing a change in your polar
20 bears, whether it's numbers or the condition of bears, just
21 some change that they're no longer like they used to be,
22 that's an early warning sign that there's some change
23 somewhere in the system, but we don't necessarily know
24 where that is. It might simply be seals, but it could be
25 fish, it could be some of those invertebrates, it could be

1 the phytoplankton. We don't know where without having
2 these comprehensive long-term studies on an entire
3 ecosystem, and those aren't feasible. So we study polar
4 bears because it tells us something about the whole arctic
5 marine system. Next slide.

6 One of the concerns with climate change and the
7 loss of sea ice changes is you get a shift in species. So
8 arctic cod are adapted for living in the arctic under sea
9 ice, they're high energy, high fat content species. As you
10 lose -- if the climate continues to change and you lose sea
11 ice, that might allow other species to come into places
12 like Hudson Bay. And some of those subarctic species,
13 which we know are here -- things such as sand lance and
14 capelin. And then if you go even further, I mean, you get
15 into more temperate fish species, things such as rainbow
16 smelt. So the fish that are present in Hudson Bay will
17 have an impact on the seals because that's what they're
18 eating, and they in turn will have an impact on polar
19 bears. Next.

20 So recent changes in ring seals. And this is
21 not my data. This is data given to me by Steven Ferguson
22 at Fisheries and Oceans in Winnipeg who had been looking at
23 ring seals in Hudson Bay. And the top slide is simply from
24 the hunter harvests that he did with Kivalliq communities,
25 is looking at the percent blubber of the seals. And it's

1 over a period of time. And there's this downward trend in
2 how fat the ring seals are.

3 And it's about 55 percent in the early 2000s,
4 and when he stopped in 2011 -- so at the time of the first
5 aerial survey -- they were 48 percent fat, blubber. So
6 sort of look at the polar bears. Less fat, so too with the
7 seals, less fat. So for a bear, if you caught one seal in
8 the early 2000s, the amount of fat you got back was more
9 than you're going to get in 2011, so a decline in fat
10 content.

11 Spring hunting is the critical time for polar
12 bears. That's when seal pups are weaned, they're naive,
13 they're easy to catch. So most of the energy that polar
14 bears need for an entire year they get during the
15 springtime, sort of the order of 70 to 75 percent of the
16 energy. So springtime is important. So if they're doing a
17 lot of foraging and feeding on seals and the blubber
18 thickness is changing on seals so they're thinner -- so
19 they are thinner -- the bears aren't getting the same bang
20 for the buck. They have to catch more seals. And there
21 was some concerns in communities that they're not seeing as
22 many seals. The seals are gone.

23 And the bottom is some aerial surveys. They're
24 not every year so there are gaps and holes. We don't know
25 what happened in between, but these are some density

1 estimates of ring seals. And ring seals are very hard to
2 count because they're in the water most of the time, so you
3 can only count them when they're hauled out on the sea ice.
4 And so these surveys are typically done in the springtime
5 when the seals are molting, and they molt and they come out
6 on the sea ice and they're molting on the sea ice. So this
7 is sort of an index of the density. It's not an absolute
8 because we know there are a number of seals that aren't
9 there.

10 But back in the sort of mid 1990s their survey
11 suggested there was somewhere between 1 and 1.2 ring seal
12 per square kilometre, and over time down to 2013 that dot
13 at the very bottom right, that's about .2. So quite a
14 dramatic drop. Whether that's a one-year blip -- there's
15 lots of holes, as I said. There was not a lot of work
16 done, nothing from about 2001 to 2006. We can't fill in
17 the middle, and we can't fill out in what's happened since.
18 So we don't know if that was just one bad year for ring
19 seals and if we did it again, they would be up again, or
20 whether ring seals numbers are still low. But these data
21 suggest possible declines in numbers of ring seals in
22 Hudson Bay. Next slide.

23 Southern Hudson Bay polar bears. I mean, we saw
24 the movements. I mean, Hudson Bay is a single entity. We
25 know bears. Despite putting lines on the maps, bears

1 aren't stopping at the Western Hudson Bay and turning
2 around and going back. They're using the whole of
3 Hudson Bay. So what's happening to Southern Hudson Bay
4 seals?

5 When they look at sea ice they've noticed that
6 there's an increase as well. Just like we noticed in the
7 western half, they're seeing an increase of about 30 days
8 in the ice-free period on the eastern side of Hudson Bay
9 from 1980 to 2012.

10 In Ontario they don't do work every year, they
11 do it in chunks. So they have body condition of bears from
12 the mid 1980s, and then they did it again in 2000. And
13 when they looked at the body condition, bears of all age
14 and sex classes, their body condition declined between
15 those two periods of time. So they were in better
16 condition in the mid 1980s than they are in the 2000s.

17 The first real sort of estimate of bears in
18 Southern Hudson Bay; 2005, 900 to 1,000 bears. They did an
19 aerial survey. Just like there was an aerial survey done
20 here in 2011, there was an aerial survey done in Southern
21 Hudson Bay, but they did it in two years, 2011, 2012, and
22 they came up with a number of 943, which was not dissimilar
23 from what it was in 2005.

24 But in 2016, at the same time that the Western
25 Hudson Bay aerial survey was going on, they did another

1 complete aerial survey of Southern Hudson Bay. And they
2 came up with 780 bears. And, again, there's the confidence
3 intervals are quite large, and they overlap. But Southern
4 Hudson Bay declined by about 75 percent, the change, the
5 step change in those two -- five-year period, which is very
6 similar to what the aerial survey data seemed to suggest
7 for Western Hudson Bay.

8 That could be a coincidence, you know, just
9 happens to be. But from a science perspective, the weight
10 of evidence, there is a lot of changes that seem to be
11 going on in Hudson Bay with changing in breakup, breakups
12 occurring earlier, freeze-ups occurring later. Some
13 evidence that there aren't as many ring seals as they used
14 to be, they're not as fast as they used to be. We're
15 seeing changes in condition of bears, how fat are bears,
16 you know. And it does fluctuate, I agree. And there are
17 changes in, you know, some of these productivity things.

18 So we think that perhaps it's an indicator that
19 there's a bigger change happening in Hudson Bay. It's not
20 just something specific to Western Hudson Bay polar bears
21 in Churchill or Western Hudson Bay polar bears in the
22 Kivalliq community, but it's symptomatic of perhaps a
23 bigger change that is occurring in Hudson Bay in general
24 that's impacting at least Western Hudson Bay and Southern
25 Hudson Bay.

1 I don't have any information that I can provide
2 on Foxe Basin. There hasn't been a recent survey. I don't
3 know when the next one is, but we don't have recent
4 information for Foxe Basin on how that population is doing,
5 which uses sort of the northern part of Hudson Bay and
6 Foxe Basin. So we don't know about Foxe Basin. But what
7 we do know is Western Hudson Bay and Southern Hudson Bay
8 there are some strong signals that there are changes going
9 on, and each piece by itself may be not, but it's just this
10 growing weight of evidence that we're seeing, and some of
11 the things that people are commenting on around the table.
12 Next slide.

13 And with that, I don't know if I went over our
14 allotted time slot, but I'm happy to answer what questions
15 I can around the table or at coffee break or whenever. And
16 as I've said, we will be providing this presentation to the
17 Board and to everyone here at the table so they'll have
18 that same document, and we will be getting it translated.
19 So you are going to have that.

20 And again I would really like to thank the NWMB
21 and the others around this table for allowing us to make
22 this presentation when we had not submitted it as part of
23 the package.

24 Thank you.

25 THE CHAIR: Thank you very much, Rachel and

1 Nick. And thank you for that valuable information.

2 And, Nick, I'll just say on behalf of Board,
3 it's nice that you're here, and know you're sort of the
4 lead researcher on the Western Hudson Bay and have been for
5 many, many years, so it's valuable to have you here in
6 person presenting this information to us. Thank you very
7 much.

8 I'll open it up for questions, then, to Nick. I
9 think don't worry about going over in your presentation.
10 We might go over on the question period here. There's
11 going to be lot of questions, I think, so I'll open it up
12 for questions from Board members first.

13 **NUNAVUT WILDLIFE MANAGEMENT BOARD QUESTIONS AND COMMENTS**

14 THE CHAIR: Jorgen.

15 MR. BOLT: Thank you, Mr. Chair.

16 Just some questions here. You mentioned about
17 your collar there. What kind of information are you
18 getting from these collars? Like, where they're going,
19 direction? Because I know in some of the -- I've read some
20 research around the world where in Africa they're using
21 collars on some of these lions that they put the
22 accelerometers on them to see how often these lions are
23 hunting, stalking, eating, and they can tell how much
24 hunting a lion's been doing during that week or during the
25 day with this accelerometer on their collar. I just want

1 to know what kind of information you guys are getting from
2 these collars.

3 Thank you, Mr. Chair.

4 DR. LUNN: Thank you, Jorgen.

5 THE CHAIR: Go through the Chair, Nick. Go
6 ahead.

7 DR. LUNN: These satellite collars, they
8 come as sort of a Chevette version with basic features, and
9 you can get and build on these things such as
10 accelerometers, and you can add as many various devices and
11 pieces of equipment to monitor a number of variables and
12 things in the environment. The ones that we put on, our
13 interest is more where the bears are and getting
14 information on whether they're active or not active. So
15 there's just a mercury switch that, when they're not
16 active, it gives a reading; when they're active it sort of
17 counts how many times the mercury switch switches.

18 We don't have accelerometers. There are people
19 in the U.S. that are putting that on polar bears. They're
20 more interested in things such as swimming, you know, in
21 the Beaufort Sea. Polar bears could do a lot of
22 long-distance swimming. We can't get some of that
23 information ourselves simply because of the positioning of
24 the transmitter is underneath. So when the bear's in the
25 water it can't transmit to a satellite. So when we get no

1 information from the satellite on the bear, we're assuming
2 that that bear is in the water.

3 But what we're basically getting are GPS
4 locations where the bear is, so we get a lat and a long,
5 and from that we're plotting it out to the sea ice. We're
6 looking at what are the features of sea ice where the bear
7 is, and then we can look at rates of movement because we'll
8 then have the next location, and we can calculate the
9 distance, we can calculate how quickly the bear moved from
10 point A to point B and get rates of movement.

11 So we're not -- we're not deploying collars
12 really that give us a greater glimpse into things such as
13 hunting, the frequency of hunting, that type of
14 information. We assume that if they're in a localized
15 spot -- so we're not getting lots of movements and great
16 distances -- that they're probably hunting. But we don't
17 have the sophistication to determine that. There are
18 collars that actually have cameras on, and some people are
19 starting to deploy those collars. We're not deploying
20 them. We haven't put them out, but that would be, I think,
21 a very interesting thing to be able to look at video feed
22 of a bear out in the middle of Hudson Bay or wherever and
23 what it's doing.

24 So long answer to your question, no, we're not
25 looking at that stuff. We're just getting basically

1 locational data, and then we're using that to look at rates
2 and activity switches.

3 Thank you.

4 THE CHAIR: Thank you, Nick.

5 Jorgen, any other questions? Noah.

6 MR. MAKAYAK: I would like to ask regarding I
7 saw one of the collars on the bears. What kind of effect
8 does this have on the bear? Sometimes they have -- they
9 have to sometimes jump and attack seals through a very
10 small hole. This is their hunting technique, and no doubt
11 these collars can scratch, damage their necks. Just in
12 their hunting techniques, how much damage is done on the
13 bears with these collars?

14 THE CHAIR: Thank you, Noah.

15 Nick.

16 DR. LUNN: Thank you. That's a very good
17 question. A lot of concerns of hunters, and it's a concern
18 to researchers as well. We don't want to put a device --
19 we want to study an animal in its natural behaviour. We
20 don't want to put a device on an animal that's going to
21 change the way it behaves or injures the bear. So the
22 collars themselves, again, one of the reason we just put
23 them on adult females, we can't put them -- we don't put
24 them on smaller bears is because those smaller bears will
25 grow into them and they will cut. We know that, so we

1 don't do that. So we restrict to adult females.

2 There's a bit of an art to fitting the collar.

3 So you don't want to put it on really tight, because you
4 can really cinch them up, if you want. But that leads to
5 the concern that you raised of cutting in. So for us, we
6 can get a collar on, and I can fit my fist this way, so
7 there's that much room, whatever that is, three inches of
8 room for the collar to move. And that allows the female,
9 you know, to change weight, to put a bit of weight on if
10 she needs to once she gets back out on the sea ice.

11 And when we do recapture them in the future we
12 can usually see that they've worn a collar because there's
13 a bit of compressed hair around, so you can sort of see.
14 Sort of like if you, you know, take a belt off, you can see
15 sort of where there was a belt. We can sort of see where
16 there was a collar, and over time that disappears as the
17 bear molts.

18 In terms of injuries, over the years we have had
19 one female where there was a slight cut, and by slight I
20 mean maybe an inch long, very superficial just right behind
21 the ear, and we think what happened is the collar just got
22 pushed up and cut a little bit behind the ear.

23 We don't see a lot of injuries. We don't see
24 that in the bears that we put collars on. I know that they
25 have had problems other places where some bears have come

1 with cuts, and we think that's just a method of how tightly
2 they put the collar on, or maybe the bear grew.

3 Does it have any effect on hunting ability,
4 being able to feed cubs? Well, we don't see it. We're not
5 out on the sea ice, so we can't actually see a bear hunting
6 and how that collar may or may not impact a female. But
7 what we do have is, when we catch those bears again, we can
8 get their weights, and we can look at the weights of adult
9 females and their cubs that have had collars versus females
10 that have not had collars, and we don't see any change. We
11 don't see that any female that's worn a collar is always
12 lighter than a female that's never worn a collar. We
13 can't -- we haven't been able to pick up, really, any real
14 negative impact of the collars. After three or four
15 days -- once we drug them, after they've sort of come out
16 of the drug three or four days later, their behaviour seems
17 to be similar to other bears.

18 The only negative impact that we were able to
19 detect with our handling, and it was sort of aided by the
20 use of collars, was in the early days to catch pregnant
21 females in dens we used to land on the dens. If we saw a
22 bear in a den, we would land on the den. That's what
23 people did to get a bear out of the den. And then when it
24 popped out, you'd tag it and put a collar on and leave it
25 alone.

1 What we found was that, in the springtime when
2 we came back to the places that we caught them they weren't
3 anywhere near that. So although they were in the den in
4 the fall time, where they ended up actually denning and
5 producing cubs was someplace completely different, and we
6 felt that was an impact of us landing a helicopter, getting
7 them out of a den. So we don't do -- we haven't done that
8 for 25 years.

9 So that's sort of an impact of our research that
10 the collars helped. But we really don't have any
11 information, good information that there's a real negative
12 impact. I know it's a concern of hunters, you know, of
13 bears going in crashing through holes and how would that
14 impact. The collar itself, you know, it doesn't stick out
15 way outside of the neck to make their neck a lot wider.
16 The bulk of the device is hanging low, so their head would
17 go in first and break that hole.

18 So we don't -- the answer is we don't have any
19 good information to say that it doesn't, but looking at
20 things such as weights of adult females and cubs with or
21 without collars, there doesn't seem to be any change in
22 weight, which to us suggests that there's probably not --
23 it's not impeding their ability to hunt.

24 THE CHAIR: Okay. Thank you, Nick.

25 David K.

1 MR. KRITTERDLIK: Thank you, Mr. Chair.

2 I understand that research into polar bear began
3 in 1980, and I am thinking that collar used -- of course,
4 research started from that time, too, on polar bears. I'm
5 just curious about number of collars that were used on
6 polar bears and if there were any loss, and if there were
7 any unrecovered collars.

8 And the other question is that I think you said
9 that, to release the collar can be done by technical from
10 your office actually or from somewhere on the land or on
11 the ice. Those are some of my questions.

12 Thank you.

13 THE CHAIR: Thank you, David.

14 Nick.

15 DR. LUNN: To answer the first part, collars
16 have been used periodically from the start to now. Not
17 every year. It depends on the research question, what
18 people wanted to know.

19 In the early days of collars, at least for
20 affordability -- I mean, GPS satellite-type collars did not
21 exist when the work started, so the very first collars that
22 went out were smaller devices, and they were VHF. So you
23 found them by putting antennas on aircraft, and so we had
24 to disturb the bear every time we wanted to find out where
25 it was. We had no other way of tracking it. So these

1 collars would be put on, and people that were doing the
2 work would fly once a week through the area, you know,
3 listening for those signals and then zeroing in.

4 So those collars back then, they did not have
5 release mechanisms, and the release mechanisms that we use
6 now those are a recent innovation, and they're programmed
7 by the manufacturer. We tell them what date we want them
8 to set it to, and they set it for us. And so it's -- there
9 is the technology that, if we saw a bear, you could release
10 it. We don't have those types of release mechanisms, but
11 they do exist that you could fly around, and if you saw a
12 collar and wanted to release, you could hit a button and,
13 poof, it would open and drop. That's not what we're using.

14 We using release mechanisms that are predefined.
15 And we set them for the 1st of September two years after we
16 put the collar on, and we do that because we want to make
17 sure the bears are on shore, because if we recover them,
18 any missing data we can download, it's stored on the
19 device. So we can send it back and get the complete data.
20 We might have misses that didn't get transmitted up to the
21 satellite, so we can get the complete data, and we can
22 reuse the collar. We can send it back, and they can strip
23 out, put in new batteries and give us that collar back for
24 cheaper than it would cost to buy a new one.

25 But back in the early days we didn't have those

1 technologies. We had to catch the bears again. So we had
2 to go back and drug the bear again to pull the collar off
3 when the work was done.

4 And I don't have the number, when you asked how
5 many didn't get picked up. We do keep track of that
6 because it's an important thing that people want to know.
7 You know, how many bears are out there with collars that
8 you never find again? And it's important. You don't
9 want -- that's one of the reasons we went to release
10 mechanisms. We don't want bears to have collars for the
11 rest of their life.

12 So for those VHF collars, the early-day one, I
13 would say we're probably at 90 to 95 percent recovery, and
14 that's because we had to -- we had to fly and find them to
15 get them to get the collar off. So there were some that we
16 never found again. And sometimes you catch the bear again
17 without the collar on, so you know that the collar came
18 off. I mean, they were designed -- the fabric would break
19 down in sunlight, so over time they would come apart and
20 fall off. And so you do catch some bears without collars,
21 and you never get the collar back. So we know at least the
22 collar's off. But I would say it's 90 to 95 percent we got
23 back in the early days.

24 For satellite collars, that's a little bit
25 different. We started putting satellite collars out in

1 about 1993, 1994, and for those collars that we put out in
2 our study area in the main Wapusk National Park, we got
3 them all back. But we did some work down in that area,
4 close to the Ontario-Manitoba border, because of the, you
5 know, information that there may be some denning going on.

6 So we put some collars out, and we put out
7 five -- I think it was five collars -- down in that area,
8 satellite collars. They didn't have release mechanisms,
9 and we never found -- I think we got two of the five back.
10 So there were three that we never heard of again from the
11 satellite collar, never caught the bear again without the
12 collar. We have no idea what happened to it. Those bears
13 now are so old that they're not even going to be alive
14 anyway, but they were bears we didn't know about.

15 With these release mechanisms, for the ones that
16 we've deployed in Western Hudson Bay we probably have or
17 close to knowing about 85 percent of the fate of them.
18 Sometimes it's the collar we find on the tundra, sometimes
19 we've -- we had one this year that failed early. We put it
20 on, and six months later it had stopped working. Well, we
21 found the bear in the fall time, and we were able to pull
22 the collar off the bear. Even though the release mechanism
23 still had another year to go, we weren't getting any useful
24 information. We pulled the collar off.

25 We found bears and not the collars. So, again,

1 the collars come off. We don't know if the release
2 mechanism worked on the day it was supposed to. We assume
3 it did because the bear doesn't have the collar on, but
4 we're at about 85 percent recovery of all those collars.

5 And we have -- because we're working every year,
6 there's a VHF beacon on those collars that lasts for five
7 years. So the satellite stuff goes for two years, and the
8 collar drops off. But the VHF beacon lasts for five years.
9 So even though we're not getting any more collar
10 information, we're scanning the old-fashioned way with
11 antennas, and we do pick up collars just sitting on the
12 tundra that we never found it before, and we found it
13 because the bears were still working in the area. And we
14 caught bears without collars, so we know the collar came
15 off, but we never recovered the collar itself.

16 Thank you.

17 THE CHAIR: Thank you, Nick.

18 David.

19 MR. KRITTERDLIK: Thank you.

20 Another simple question. The collars, were they
21 similar to the ones that they were using on caribou? And
22 the other part; is it possible to know that collar is not
23 from the polar bear when you're trying to find information
24 on caribou? Thank you.

25 THE CHAIR: Thank you, David.

1 Nick.

2 DR. LUNN: I'll answer the second part first.

3 The collars all have individual frequencies, and hopefully
4 there's sort of communication, at least within perhaps
5 government departments and researchers -- if you're going
6 on a big caribou collaring program and there's polar bear
7 collaring going on -- that the groups would talk together
8 to ensure that you don't have the same frequency. The idea
9 is that every animal would have a different frequency.

10 If that did happen, you hopefully might be able
11 to tell based on the location. So if there's a collar on a
12 bear and a collar on a caribou and you're getting locations
13 from the middle of Hudson Bay, probably a good chance that
14 that's the polar bear (verbatim), whereas if you've got it
15 on a polar bear and the collar seems to suggest it's in
16 northern Saskatchewan -- although there have been at least
17 one polar bear in Northern Saskatchewan -- you can probably
18 assume that it's on the caribou.

19 But we have had -- through mixups we've actually
20 put collars of the same frequency on two bears in the same
21 subpopulation. And so you can -- because you know where
22 you put the collar on you can sort of track the movements
23 and determine which bear is which. But if you're using the
24 VHF to locate it, all you're picking up is a signal of a
25 certain frequency. So if there are two with the same

1 frequency, you wouldn't know until you caught the bear or
2 there was some other information that allowed you to figure
3 out which one it was. But it happens very, very
4 infrequently.

5 In the polar bear world we coordinate that from
6 when we were putting collars on. A lot of organizations,
7 we would coordinate that. We would send a list and say,
8 okay, if you want ten collars, use these frequencies, we'll
9 use those frequencies.

10 THE CHAIR: Thank you, Nick.

11 Okay. I know there's more questions for sure
12 from the Board, but we're going to take a coffee break-up
13 for 15 minutes, and we'll all come back to the table.

14 (ADJOURNMENT)

15 THE CHAIR: Okay. Thank you all for coming
16 back. We'll continue, then, with questions from Board
17 members. Next on my list is Jorgen.

18 MR. BOLT: Thank you, Mr. Chair.

19 Yeah, just a couple questions. Have you ever
20 overdosed bears? Overdosages? Has there ever been
21 situations like that where you've overdosed a bear and you
22 can't bring it back around?

23 And then the other question is, do you drug
24 pregnant females, too? Because that's going to have some
25 kind of effect on the embryo. I'm sure it will.

1 Thank you, Mr. Chair.

2 THE CHAIR: Thank you, Jorgen.

3 Nick.

4 DR. LUNN: Yeah, overdosing of bears. Over
5 the years when we first started -- and I use the word "we"
6 loosely because I wasn't around when we first started. But
7 in the '60s when people started getting into polar bear
8 research, they had to come up; how do you immobilize, or
9 what drugs do you use? So in the early days there were
10 probably -- I couldn't give you a number, but there were
11 definitely bears that died because they were overdosed.
12 And a lot of the drugs used in the early days, you really
13 had to know how much a bear weighed. You really had to
14 measure it carefully. So if you misjudged you could easily
15 overdose a bear that didn't need as much. So that
16 definitely happened.

17 We now use a drug, and we have been since
18 probably '86, '87, somewhere around there -- a drug called
19 Telazol Zolatel, depending on when you buy it. And the
20 advantages of that drug are twofold. One, it's very safe
21 for the bears. And by that I mean, if I see a bear and I
22 say, hey, there's a big adult male, and I give it a dose
23 for an adult male and it turns out that it's actually an
24 adult female -- it's not as big as I thought it was -- all
25 that happens is I've given it more drug. It just takes a

1 little bit longer for it to metabolize. It doesn't
2 overdose and die. So it's very safe. I can underdose,
3 overdose -- safe for the bears from that perspective.

4 And from my perspective, it's very safe for me
5 and for my field crews because how the bears react to the
6 drug, it's very predictable. So the stages that they go
7 through are very clear, and they're well defined.

8 And so I know before I even land that a bear is
9 immobilized, and they start running, as you would expect,
10 from a helicopter. Once the dart is put in, we back off
11 and just watch from a distance, and eventually the bear
12 will just stop where it is, and its head will go down, so
13 it can't keep its head up. So its head starts to slump,
14 and then it sort of wobbles a bit, and it will sit down on
15 its behind end with his front legs keeping it up, and then
16 the front legs go down, and so the head is sort of moving
17 around. Eventually the bear goes down with no head
18 movement.

19 And when they come out of the drug, they come
20 out in the exact same opposite way. So the first thing
21 that happens is they're able to start moving their head
22 slightly. Then they'll be able to sort of stand up a bit
23 on their hind legs, their back legs, and then they walk
24 off.

25 So I know that the work that we do, when I land

1 in a helicopter, I'll know before I even approach it that
2 the bear is immobile. I don't have to worry about the bear
3 jumping up on me. And in reverse, I know how much time,
4 I've got lots of time by the time we're done. And we can
5 process, do what we need to do on a single bear in 30, 40
6 minutes. And if it's a family group, it's about an hour
7 just because there's more bears. We do the same things,
8 but it's just there's maybe three bears instead of one, so
9 it takes us a little bit longer.

10 So after about an hour, the cubs are already
11 coming out, so they're already sort of up and moving around
12 a bit, staying with mom, and the older bear, the mom is
13 lifting her head and looking around. So we have about an
14 hour, and then we're done. So it's a very good drug.

15 And I went on too long here that I forgot what
16 the second part of the question is. Oh, pregnant females.

17 Yes, we do. A lot of them we probably won't
18 know from the air. We'll say she looks fat, we think she's
19 pregnant. We'll still immobilize them.

20 In terms of impacts on cubs, the birth
21 weights -- we catch bears in springtime in March when
22 they're three months, and the weights of cubs from females
23 that have been handled multiple times and females handled
24 for the first time, the spring weights of their cubs aren't
25 too different. So they're similar. So what the impacts

1 are or what the effects are we don't have answers for, but
2 we don't think they're significant enough to have impacts
3 on the cub per se.

4 THE CHAIR: Thank you, Nick.
5 Jorgen.

6 MR. BOLT: Thank you, Mr. Chair.

7 My last question. If a female polar bear feels
8 that her body cannot sustain an embryo, can she discard
9 this embryo like a grizzly bear?

10 Thank you, Mr. Chair.

11 THE CHAIR: Thank you, Jorgen.
12 Nick.

13 DR. LUNN: Yes, we think that happens as well
14 in polar bears that they mate out on the sea ice, you know,
15 then they go hunting seals, and in the fall time that's
16 when the fertilized egg implants. They have delayed
17 implantation, and it implants in the fall time, and it's at
18 that time where hormonally they'd be able to assess what
19 condition they're in. And we think that if they're in
20 really, really poor condition it just won't implant and
21 they won't be pregnant. And if they are in certain
22 condition, they will. And they will either carry it
23 through to full term, come out with cubs, or carry it
24 partway through and come out of the denning area without
25 cubs.

1 Thank you.

2 THE CHAIR: Thank you, Nick.

3 Charlie.

4 MR. INUARAK: Thank you, Mr. Chair.

5 My question, the polar bears that you do
6 research on, when you had that map in your presentation,
7 you saw a number of polar bears that you counted, and when
8 you started counting again you counted them, one, two,
9 three and found out how many there are and a short decline.

10 My question: The polar bears travel very vast
11 distances. The ones with cubs don't go very far because
12 the young males go very far when they start travelling, and
13 the ones that are coming out of the dens or are going into
14 the dens, do you try and find out how many are leaving
15 their dens and coming back, how many are out of their dens?
16 Where you did your survey, do you include where they come
17 out of the dens and come back into the dens?

18 If you answer this question, I'll ask another
19 one.

20 THE CHAIR: Thank you, Charlie.

21 Nick.

22 DR. LUNN: Okay. In terms of long-distance
23 movements in bears and were we counting or do we think we
24 were counting all the bears, the different methodologies
25 that scientists use have different assumptions. And the

1 aerial surveys -- so the 842 and the 1,030 -- that's a
2 snapshot in time. So they fly, and they count and they see
3 what they see. And that would be very similar to someone
4 coming into this room right now and seeing who's here, and
5 they would come up with a number of people.

6 The work that we do by tagging -- there's
7 another way that you can get this information, population
8 estimates, and it's through a process of what we call mark
9 recapture. You have tagged animals in a year. You go out
10 and you catch in the second year, and you look at how many
11 tagged animals there were, and you do those over a number
12 of years.

13 And the assumption in that is a bear doesn't
14 have to necessarily be in that area in a particular year
15 that you're capturing so long as in some of the other years
16 that you're capturing it's there. So it has to be
17 available for capture at some point during that process in
18 the mark recapture.

19 If it's a bear that spent its entire life, say,
20 at Chesterfield Inlet, we would never catch that bear. It
21 would never be in Manitoba, and it would never be counted
22 as part of that survey. But if it was a bear that we
23 tagged in Manitoba and the next year it happened to be
24 spending the summer outside of Arviat where we never caught
25 it, never capture it, and then to the following year it's

1 back in Churchill and we capture it again, it's counted, it
2 does get counted.

3 So depending on which method you use will
4 determine whether or not -- or the implications of whether
5 a bear is in the area that we're working or not, whether
6 that's important or not. So that's the first part.

7 Bears in the denning area. Are the areas that
8 we survey? Yes, we will survey that entire denning area,
9 including dens. We don't get pregnant females out of dens
10 anymore, but very similar to what David said and what some
11 of you may -- if you were on the aerial surveys, you can
12 tell a bear in a den. You can either see it or you can see
13 the fresh peat diggings, so you know that's an active den.
14 So we would record that.

15 We will catch females with cubs in the denning
16 area if they're in dens. So a female with cubs, we will
17 catch them. They have to be in safe areas. Bears that
18 aren't in safe areas -- either they're in the middle of a
19 lake, we don't really try to push them out of the lake. We
20 just make a note that we saw a female with two cubs or a
21 single female. A lot of capture work has to be done in a
22 place that's safe, but bears that aren't in safe locations
23 we just make note that we saw them.

24 I don't know if that answers your question.

25 THE CHAIR: Thank you, Nick.

1 Charlie.

2 MR. INUARAK: Thank you, Mr. Chairman.

3 You answered part of my question. However, in
4 1970, '71 and '72 I started being on the board. When I
5 was young, I was on HTO. I don't know whether I was chair
6 right away or just a director. In the past when I first
7 started sitting as a director with, the government came to
8 our community, polar bear studies were done, and they were
9 talking to us about what their studies have been done. And
10 they showed us their work, and they said that our polar
11 bears are in a decline, and the population is -- because I
12 was young, I couldn't smile very -- I wasn't happy with
13 hearing that. We started thinking that we were decimating
14 our polar bears, and we really believed at the time that
15 that was what was happening.

16 And then once they said that they're declining
17 and are almost extinct, since then they've been always
18 declining, declining every year, and you're saying today we
19 hear your report saying the same thing. If another person
20 heard you that's been around the table for a long time, you
21 would probably think they're declining, the Hudson Bay's
22 polar bears there's only a few left.

23 In the past if it was the same that said that
24 the polar bears are in a crisis up to today, it's been like
25 that, and our Nunavut government and Canada, federal

1 government have been saying that the polar bears are in
2 decline. And I'm an Elder now, and they're still around,
3 there's still lots. Your reports that you see polar bears
4 coming out and coming in, I don't think you get the whole
5 picture, only what you see, and it's only a short period of
6 time that you're dealing with the polar bears, because I
7 think that's the reason why it's always in a decline.

8 And another thing. If we ever hear that the
9 polar bear are increasing, we would hear because our people
10 have been travelling by dog team. In the Kivalliq Region,
11 only travel by dog team. I know a person who used to live
12 in Arviat travelling to Churchill and Whale Cove, they're
13 still alive today, some of them. If they say that there
14 used to be lots of polar bears in the past and there's
15 nothing today, not as much today, I would believe that,
16 your reports.

17 Our hunters are the ones who are first to find
18 out, and they're saying the other thing. There used to be
19 no polar bears as much as there are today, but today
20 there's a lot more. And I know we don't have dog teams
21 anymore. If you have a machine, I know we get home faster
22 and travel faster. And they don't have food caches
23 anywhere else. Your reports that you report to us, it
24 would be a lot more beneficial to us if we heard the other
25 side of the story where there's more, not less.

1 Thank you, Mr. Chairman.

2 THE CHAIR: Thank you, Charlie.

3 Nick.

4 DR. LUNN: I don't know if there's a question
5 in there or a comment. But I think we -- I mean, while we
6 understand your concerns, what you're seeing -- you know,
7 you're seeing more bears on the land, you're seeing more
8 bears in the communities, you feel that the populations are
9 increasing.

10 As a scientist, I can only evaluate what I see
11 from a science perspective. And the work that we're
12 doing -- I mean, weighing bears, that type of stuff -- the
13 information that I get when I weigh a bear is showing that
14 the bears are lighter now than they were in the past. You
15 may or may not agree with that from what you see, but
16 that's what the science says. I weighed a bear back in the
17 1980s or in the 2000s that weighed a certain amount, and it
18 doesn't weigh that anymore.

19 I count cubs, how many -- what is the litter
20 size of cubs in Western Hudson Bay now compared to in the
21 past, and there now are declines.

22 So there is concern and expression that the
23 bears are in decline, and part of that is, I think, a time
24 frame. As scientists, we're looking out probably a lot
25 further than perhaps the hunters are. We're not sort of

1 looking out to tomorrow or next week. We're looking down
2 the road, 5, 10, 15 years. And we look at the data, and we
3 say, if these trends continue, if we see this, this is
4 where our concern is coming 5, 10, 15 years into the
5 future -- we're not talking about how many bears, you know,
6 be will there be tomorrow or next year. So there's a time
7 scale element.

8 In terms of, are we surveying the right places,
9 we know we are missing bears. I mean, one of the reasons
10 that things such as the aerial survey that was flown and
11 the work that we do is done when we do it, August-September
12 time, is that generally there's no sea ice on Hudson Bay.
13 So the bears, the majority of bears are on shore. There
14 may be some swimming about, and we saw that from the aerial
15 survey, there were some observations of bears swimming in
16 the bay. But there weren't that many. It didn't seem like
17 it from the aerial survey that there were lots of bears
18 spending the entire summer out in the bay.

19 So we think by working when we do -- and the
20 aerial surveys covers a lot more area than I do in my
21 work -- the aerial survey covered that entire what we call
22 the Western Hudson Bay subpopulation zone. And they did
23 their counts, and I think they based it a lot on what, you
24 know, community members, where they thought bears would be.
25 I mean, I heard talk about flying out to islands because

1 people say that's where bears spend the time.

2 So I think people -- the surveys were done to
3 reflect what people are saying, but you see what you see on
4 any particular time. And it goes without saying that you
5 might miss a bear. Are you're missing a large number of
6 bears? I don't think you're missing a large number of
7 bears, but undoubtedly you probably will miss a bear here
8 or there; right? It just happens to be. A bear that's
9 dived in the water is underwater at the precise time you
10 fly over it, you may not see that. So, yeah, you probably
11 miss a few, but I don't think that you're missing a lot.

12 And a lot of the science, that comes with these
13 confidence intervals. So when you do the analysis you end
14 up with first with what's called a point estimate, which is
15 the best number that comes out of the analysis. But it
16 comes with these what are called these 95 percent
17 confidence intervals. So we think the best number is this,
18 but it could be as low as this, or it could be as high as
19 that. We're not saying categorically from an aerial survey
20 that there are exactly 842 polar bears. What that says is,
21 from that survey and what we're seeing, that's the best
22 estimate, but it could be as high as this, or it could be
23 as low as that. There's some uncertainty, but that's the
24 best point estimate that we get.

25 So I'm not sure that that really answers your

1 question, per se, but concern for polar bears is longer
2 term than the next two or three years. It's looking at the
3 projections of what sea ice is projected to be doing 10,
4 15, 20 years into the future, how much sea ice there's
5 going to be in a place like Hudson Bay and what are bears
6 going to do if the sea ice isn't there long enough.

7 So the concern is more down the road than it is
8 necessarily today that the bears are all disappeared today
9 or they won't be here tomorrow. It's a time -- I think
10 it's a time scale. I think we're talking different time
11 scales.

12 Thank you.

13 THE CHAIR: Thank you, Nick.

14 Charlie.

15 MR. INUARAK: My final question. Just let me
16 reiterate, yes, I understand your comments, and they're
17 good.

18 I've been a Board member for a while. I have to
19 hear your concerns, and I will use those in my
20 deliberations; however, I want to say briefly, Inuit
21 traditional knowledge, it's not just tomorrow that we
22 consider. When there was no caribou on the northwest end
23 of the island, our grandfather used to say there's going to
24 be lots of caribou in the future. There was lots of
25 caribou in the past, there's going to be more caribou in

1 the future. And I became an adult without ever hardly
2 seeing caribou, and then they started coming into my area.
3 My grandfather's words came true.

4 He mentioned when they finish the food around
5 this area they're going to move to a different area on the
6 island. And you look way forward into the future, and we
7 believe that because we heard from our grandfather in the
8 past there was no caribou, then there was more caribou in
9 certain years, and once the food is gone, then they move,
10 and once the Nunavut government said caribou are in
11 decline, then that's when we started getting a quota
12 system. We know that they're not in decline. They just
13 move to a different area. And we were happy when we heard
14 that they just moved to a different area.

15 I think the polar bears have the same habits.
16 They're going to be in this area right now, and then
17 they're going to move to a different area when their food
18 sources change.

19 My question is, in your research, in your
20 reports it's always saying that the polar bears are in
21 decline. Us as board of directors when we are going to be
22 affected and we make decisions that affect everybody that
23 wants to harvest polar bears, we would like to hear
24 something. If you say they're not in decline and maybe
25 just they're stable, we're not worried about the

1 population. You have to say something to us that is not in
2 a negative perspective that they're in decline but they're
3 stable or might be more.

4 THE CHAIR: Thank you, Charlie.

5 Nick.

6 DR. LUNN: Thank you for that.

7 I mean, certainly our research said from at
8 least the period 2000 to 2011 when the first aerial survey
9 was done, our research and the aerial survey suggested the
10 population was stable. And we've said that, research
11 showed that. That's what everyone is saying is stable.
12 It's what's happened between now or between then and the
13 latest aerial survey.

14 And my research -- we don't have -- we haven't
15 generated a new number. I don't have a new number to give
16 you how many new bears my research says there is. You
17 know, we're deferring now to less invasive methods, and
18 we're just basing it, this is what the aerial survey said.
19 It came out with a number that's lower with confidence
20 intervals. And at the same time, my research shows that
21 the bears, you know, they weigh less now than they did
22 before. They're having fewer cubs now than they had
23 before. Can I give you a date? People like dates. People
24 like having projections, when is something going to happen?
25 And we don't have that answer. I can't tell you, you know.

1 You know, when is there going to be the last polar bear in
2 Western -- I can't tell you that.

3 One thing we have learned is that things change.
4 I mean, yes, we looked at that trajectory before we got to
5 this period of stability, and we saw this decline. And I
6 showed it on there, and we thought, yeah, it probably would
7 continue, but it didn't. There were other factors at play
8 that made it go stable. So I don't want to sit here today
9 and say -- and I know it's difficult. I know people are
10 looking for answers. I can't as a scientist, without any
11 data, come and say that on such and such a day, -- whatever
12 that day would be -- that you're not going to have any more
13 polar bears or they're going to switch from this to that.
14 I don't have that information.

15 What I can say is that, you know, the
16 information we do have, whether it's the aerial survey
17 information that shows that there are, you know, fewer
18 polar bears from a point estimate now than there was in
19 2011, I can say that cub production isn't as good in
20 Western Hudson Bay than other populations. Bears don't
21 weigh as much. I can say that all those things aren't good
22 for polar bears, and they can't continue forever without
23 having an impact at some point. When that impact is I
24 don't know.

25 If you remember, I showed a graph of solitary

1 adult females, and there was a dotted line that showed the
2 lightest weight of a female that we've ever caught that
3 produced a cub. There's a line coming down meeting it, but
4 I have never projected to say what year are those data
5 going to cross that line. Things change. We know that. I
6 mean, things on the land.

7 So I understand your frustration. All I can do
8 is interpret the science in the best way that I can
9 interpret what my science and other science is saying and
10 present that to the Board as but one piece of information
11 for consideration in this process. It's not the only piece
12 of information. It's but one piece. And it's the best --
13 it's the best that I can do as a scientist is say these are
14 things that, as a scientist, are concerning for me. And
15 it's why as a department we suggested taking a
16 precautionary approach.

17 We didn't say how much you should take or
18 whatever. We just said, you know, that these are things
19 that are causing some concern from a science perspective.
20 You may want to consider that and perhaps look at a
21 precautionary approach, and it will be up to the Board to
22 decide what they want to decide in respect of whatever the
23 TAH may be. I can just present my information as I have.
24 And again, I thank the Board for having that opportunity,
25 but I can't really say a date when you need to be really

1 concerned. I hope I'm wrong.

2 Thank you.

3 THE CHAIR: Thank you, Nick.

4 I got a couple questions, Nick, and then maybe
5 more Board members have, too.

6 But as you know, in Nunavut there was great
7 concern about handling wildlife and being invasive when
8 research is done. So Nunavut has adopted a policy that
9 they're reducing that as much as possible as they can when
10 they do research.

11 Now, with Western Hudson Bay population it
12 probably is the most studied bear population in the world,
13 maybe, or one of in the world for sure, and it's studied on
14 an annual basis. You do denning surveys, you collar and
15 drug many bears. Manitoba has their polar bear program
16 where they drug many, many bears, they detain bears.

17 So I'm saying, with this population, it probably
18 has the most stress on it than any other population ever
19 does when it comes to that. And I'm asking your opinion,
20 how can that not have an impact and the stress levels on
21 these bears, and how can it not have an effect on these
22 bears when it's done every year and it has been for 25
23 years?

24 Just give me your opinion on that. Thank you.

25 DR. LUNN: Well, first of all, I think you

1 have to leave Manitoba out of that equation because that's
2 a management action. That's much like you have a problem
3 bear in a community, you're going to take some sort of
4 management action. So what Manitoba does -- they're not
5 doing research, per se, like we're doing research. They
6 have bears in town. They've got to do something with them,
7 so they either harass them and scare them out of town or
8 they catch them and put them in jail. So that's not
9 research. So I'm not going to talk about what Manitoba
10 does because that's a management, specific management
11 action that they've decided to take.

12 Our research, yes, it's true that bears have
13 been handled since 1980 every year and that bears get
14 collars, and samples are taken.

15 In the early days in the '80s, hundreds of bears
16 were caught every year. On the order of somewhere between
17 200 and 300 bears in the very early days were caught. So
18 there was a lot of bears being handled, and there was
19 concerns for handling bears.

20 Today we don't handle anywhere near that number
21 of bears. We're restricted by permit, we're restricted by
22 animal care protocol. So we're only handling a small
23 fraction of the population in any one particular year.

24 We're catching somewhere between 75 and 95 bears
25 a year. So out of a population of 1,000 or 800 maybe 10

1 percent. It's not the same bears every year, so we're not
2 catching the same individual bear. Most bears when we do
3 catch them and if they've been tagged before, they have
4 somewhere between three or four previous captures over
5 their history, which includes Manitoba.

6 So when I look at how many times has a
7 particular bear has been handled in the past, I include
8 both the Manitoba handling and our handling. So most of
9 the bears now are only on the order of three or four times
10 in their lifetime.

11 Collaring. We had big collaring programs in the
12 past in the '80s where there were large numbers of collars,
13 30 or 40 collars being put out in a year. And we are
14 concerned about the impacts of those things, so we have
15 reduced it to the minimum. And as I've said, we've used
16 the release mechanisms so that we don't have to disturb the
17 bears every single year flying over them once a week. And
18 in the '80s, that's what they did. They would fly once a
19 week. So if they were there for two or three months, which
20 they were, they used to start work in July, and they'd end
21 in October. So there were people there all the time flying
22 back and forth and, you know, tracking out bears.

23 We don't do that anymore. We're there for a
24 three-week period, 75 to 95 bears, and then we put the
25 collars on and we monitor remotely.

1 So we've really tried to reduce whatever impacts
2 we may be having. In the short-term, are bears impacted?
3 For sure they are, and I wouldn't try to lie. When you're
4 in a helicopter and you're coming up to a bear, it's not
5 just standing there looking at you. It is running. You
6 know, there's this helicopter coming. The bear; short-term
7 stress. It's stressed. You know, we put limits on how
8 long we will chase a bear. So if we've been -- from the
9 moment we sight the bear, if we don't have it immobilized,
10 don't have a dart in it within three minutes we leave it
11 alone. We go on to the next bear.

12 So we're constantly going through our handling
13 procedures, and it goes through vets and communities,
14 through people like Parks Canada, and we're continually
15 trying to improve our handling techniques and the minimum
16 number of bears that we need. But one of the values --
17 there are certain things, certain management questions, and
18 as long as I'm being asked to provide the answers, there's
19 only certain ways that I can do it. And collars -- for the
20 certain questions that my department want to know, the only
21 way I can get those answers is by putting a collar on a
22 bear, and that involves handling.

23 There was the question the other day about, are
24 there alternate ways? Well, there are alternate ways, and
25 people are exploring them. Are there ways you can do it

1 without collars? I mean, people are even looking at
2 satellite imagery. Is the satellite imagery good enough
3 that you can pinpoint a bear from a picture? Could you
4 count every single bear in a subpopulation? I mean, that
5 sort of stuff is in its infancy.

6 So people are always looking for new ways to
7 minimize what we do on bears, the handling, the collaring.
8 But there are certain questions that require bears to be
9 handled. If we have to put a collar on, I know of no other
10 way than to actually catch the bear. You're not going to
11 send someone out and say, there it is, try get the collar
12 on. You have to immobilize it.

13 I think long-term research, can you -- you know,
14 do you need to do it every year? I think one of the values
15 of long-term research -- and this population is by far the
16 best studied anywhere in the world. I don't know if that's
17 something to be proud of or not. I guess it depends on
18 which side of the fence you're sitting on. But it's
19 provided we think from a scientific perspective a lot of
20 valuable information that can be used for management
21 purposes.

22 Some of the things or some of the concerns with
23 things such as, you know, earlier breakup of sea ice and
24 impacts on bears comes from the long-term research. You
25 need baseline information. You need to know what the bears

1 were like in the '80s to know if there's been a change in
2 the '90s and the 2000s. And maybe it's something that has
3 decadal scales for its cycles. So it goes down and up and
4 down and up. The only way you know that is if you do
5 long-term studies continuously. So we think there's
6 tremendous value in continuing the long-term studies.

7 In terms of, does our activity impact bears? On
8 all the things that we can measure -- so whether it's
9 weights of bears or whatever that we can measure to look
10 at, handle bears, versus non-handle bears -- there's
11 nothing that we can detect to suggest that it's having a
12 long-term impact on the bears, so whether you've been
13 handled only once for the very first time or 15 years, 15
14 times. And there's some bears -- Manitoba; not us -- but
15 Manitoba has caught some bears 15 times in its lifetime.
16 That's a lot. And the bear's still there, still alive,
17 still has weight, still all those information.

18 There's nothing that we can measure apart from,
19 as I mentioned, the disturbance factor, if we tried to get
20 a bear out of the den and it left the denning area. That's
21 the only thing that we can find long term in all the
22 research. So we don't believe that there are long-term
23 impacts.

24 The only other thing -- and I hear it, and I
25 understand it, and the concern is, is the drug in the meat?

1 People that hunt and want to eat it, they don't want to eat
2 meat that's from a drugged polar bear. They say it tastes
3 different. I've never eaten polar bear. I probably never
4 will eat polar bear. Studies have been done from an actual
5 chemical side of things -- not the taste of polar bear
6 meat -- but the chemicals are out of the body within about
7 48 hours. So sort of 48 hours after, any detectible trace
8 of that drug is gone.

9 Now, that doesn't play to how it tastes, but
10 that is a concern of communities, and we are cognizant of
11 that. We are aware that, yeah, that is an issue for
12 people, that polar bear meat, they don't like eating polar
13 bears that have been drugged.

14 We keep the number of bears down. We minimize.
15 As I said, we don't handle 200 to 300 bears a year. We're
16 catching a fraction of that now. We're trying to do just
17 the minimum to allow us to answer the questions that we're
18 being asked that require us to handle bears. If other
19 techniques come along that we can improve that even better,
20 we will be looking at that. We will be, you know, looking
21 at ways to reduce further or change the way we get
22 information.

23 But it comes -- you know, we're asked to provide
24 information to answer certain questions that at the moment
25 can only be answered by handling bears. So we try to

1 minimize that, do the best we can, but it doesn't satisfy
2 everybody. So it may not be the answer you want to hear,
3 but it's the best that we can do.

4 I mean, if we give it up altogether, then people
5 have to be prepared that we won't have the answers for a
6 lot of questions. So is it important to know that the
7 weights that I showed you have declined? If you don't
8 think it's important, then you don't have to handle bears.
9 But if you need to know that number, you want to know how
10 much are bears weighing now, you're only going to get that
11 by handling them to get their weights.

12 If it's important to know how bears move, the
13 only way you're going to get that now is putting on these
14 satellite devices. Maybe down the road you won't have to,
15 but currently that's the only way now we can get that
16 information.

17 So it comes down to sort of management
18 questions. What do people want? What are the questions
19 that they want answered? And that dictates largely what
20 sort of techniques we do or do not use.

21 Thank you.

22 THE CHAIR: Thank you, Nick.

23 A follow-up that you had mentioned before is,
24 you know, bears can potentially be acclimatized to
25 behaviour, and as you've heard Arviat and Whale Cove talk

1 about public safety and bears coming into communities, that
2 does happen in Churchill somewhat yet and did happen very
3 much so with the dump before. But through the tourism
4 industry there's still the dog issue where bears are
5 attracted to dog teams for tourism purposes. I think it's
6 still going on there. And this might be a drawing factor
7 to communities with dog teams in their communities, that
8 they're acclimatized; when they hear a dog team, it means
9 food.

10 So I would just like to get your opinion on
11 that, and if there could be any deterrence done with those
12 bears in Churchill that are coming up the coast north to
13 put a damper on that. You know what I mean?

14 Thank you.

15 DR. LUNN: Thank you.

16 There hasn't been a lot of work on
17 acclimatization of bears. I mean, I know -- at least in
18 Churchill -- you're right; when there was a Churchill dump,
19 an open dump, there were 30 to 40 bears that would go to
20 the dump, and they would go there faithfully every year.
21 And, in fact, I did my master's degree looking at bears
22 that went to the Churchill dump.

23 And it was so ritualized that all the bears had
24 a particular spot that they went to around the dump. So
25 when they weren't feeding at the dump, they'd walk away,

1 and they'd each have a particular spot around the dump that
2 they would rest overnight. And they never changed. They
3 went to that, and every morning they all got up at the same
4 time, long before the garbage truck came from town to the
5 dump. So they were either hearing it coming that I
6 couldn't hear it coming, or they got so used to it that it
7 just was engrained; we get up and we go to the dump when
8 the garbage truck arrives. So there's no doubt that they
9 do get acclimatized.

10 The degree of the problem, no one's doing any
11 work on that. The tourism industry, as you will probably
12 know, there is a tourism industry with tundra buggies.
13 It's restricted to a small area where the bears are, but
14 there's no doubt that those bears that are in that area,
15 they know tundra buggies. They're not afraid of tundra
16 buggies. When the buggies come in, they get up and they
17 walk. And some will approach the buggies and stand up, and
18 the tourists like that.

19 So, yeah, the tourism industry is definitely
20 based on, you know, bears being acclimatized to at least
21 the movements of tundra buggies. Some will come to
22 vehicles, some won't. I mean, one argument is if the bears
23 don't like it, they can leave, which is true. There's
24 nothing prevents a bear in the tundra buggy area from
25 moving away, but they don't seem to be stressed. Most of

1 them that stay have become acclimatized. They know about
2 the tundra buggies.

3 The dog team one. I only know of one
4 individual -- I'm not saying there aren't more, but I only
5 know of one individual who keeps dog teams in, I guess, a
6 prime area along the coast of Manitoba. And, yes, he
7 provides -- that's where he stakes his dogs, and he does
8 feed them there, and he feeds them frozen chunks generally
9 of seal. And that does bring bears in, and tourists do go
10 to see that. That's the only one -- I only know of one
11 person that does that of all the dog teams.

12 I know that in the past Manitoba has tried to
13 stop that and charged the individual, but there wasn't a
14 conviction in the court. So that's about all I can say
15 about that. I don't think it's a widespread activity. I
16 don't think all the dog teams -- some of the dog team
17 owners are making a living with their dog teams. I don't
18 think they knowingly want to bring bears into their
19 enclosures and lose their dogs.

20 Is there a way to deter that? Are bears getting
21 used to the sounds of dogs and people, and then they move
22 up the coast and they've lost that fear? Again, I don't
23 have any data one way or the other. I mean, it makes sense
24 that they probably are used to sounds of people. They are
25 curious, you know, they're used to dumps. They have dumps

1 in Churchill, they have, you know, places in Arviat. You
2 have people out on the land hunting, fishing, storing food
3 outside. Bears are attracted to smells.

4 I'm not sure I really have an answer for your
5 question other than recognizing that, yeah, it is a big
6 problem, and human safety is a problem, and we recognize
7 that.

8 Thank you.

9 THE CHAIR: Thank you, Nick.

10 One more thing -- two more questions. The next
11 one is I think you started out with the target population
12 of 1,200 when your studies began, or that was the
13 population. What is a healthy population for the Western
14 Hudson Bay? What level, in your opinion, is a stable
15 number, a healthy number for the total population?

16 DR. LUNN: Well, that's a loaded question
17 that, really, I'm not sure has an answer because part of,
18 we can talk about climate change and decline of sea ice
19 and, you know, the impacts on bears. And, you know, it's
20 very difficult to come up with a, quote, "healthy number"
21 if a population is in decline. But you can also talk about
22 things such as social carrying capacity, which might be
23 less than what the biological carrying capacity could or
24 would be.

25 So, you know, in terms of Hudson Bay, a lot

1 really depends on what is the management? When I
2 started -- and 1,200, you're right, that was a population
3 estimate. That wasn't a target. But at one point there
4 were MOUs in Nunavut where the target population size was
5 1,400. That's what people wanted or thought that there
6 could be. I mean, it's a changing thing. I don't have an
7 answer of what is a good number because the environment, to
8 me, is changing, and we don't have a -- we don't have a
9 good handle on how it's changing and the rate of change.
10 Other than sort of monitoring sea ice breakup dates, we
11 don't have a good handle on the biological carrying
12 capacity. People aren't studying a lot of what needs to be
13 studied at the oceanography of Hudson Bay. That work isn't
14 being done.

15 So being able to say 800 is a good number or
16 1,000 is a good number or 500 is a good number, I don't
17 have a means to tell you what that number is because the
18 data doesn't exist to really say what it is. But, you
19 know, there are certainly issues of, you know, social
20 carrying capacity. Some of these newer models of looking
21 at risk assessment you can run a variety of scenarios of
22 different harvest levels, of a different target population.

23 If we wanted to have 2,000 bears in Hudson Bay,
24 what would it take? What would we have to do? If we
25 wanted 500, how could we harvest? So there are ways to

1 sort of help guide those decisions, but I don't think
2 there's a magic number that says Western Hudson Bay, the
3 best number is this, or Baffin Bay, the best number is
4 that. It's a combination of factors, and you have to
5 weigh, you know, public safety concerns, you have to look
6 at, you know, what the population -- what the science says
7 maybe the population is doing, what the community says --
8 there's so many pieces of information that it's not like it
9 was.

10 I guess I often refer to the good old days
11 before sort of all climate change impacts where you went
12 out and you calculated a number and you applied four and a
13 half percent, and you said: There, there's your TAH. And
14 you forgot about it for 15 years. I think things in some
15 populations in Western Hudson Bay, I think things are
16 changing, and I don't think you can afford just to simply
17 do that anymore. But I can't tell you what the best number
18 would be.

19 THE CHAIR: Okay. Thank you.

20 My final question is, in your actual research
21 you're doing -- and since we're dealing with the population
22 that does spend a lot of time and affects Nunavut -- just
23 wondering if you have considered or you have in the past or
24 will in the future use Inuit and the people from
25 communities in Nunavut in your research when you do your

1 research.

2 Thank you.

3 DR. LUNN: We haven't yet. No, we haven't
4 incorporated taking Inuit people out with us. Our
5 helicopter is small, so that's one thing. We have a small
6 field crew.

7 The other thing is that where we work is we're
8 working in a national park, and just like the Nunavut
9 Wildlife Management Board, there's also Wapusk Management
10 Board that has scientists and has local people and has
11 First Nations people. And they want to go out. So it's
12 sort of we can't take everybody out with us. So, no, we
13 haven't taken people out.

14 We've usually taken more people from the
15 Manitoba area out with us, but it's not something we do
16 routinely, and it's simply a fact of the helicopter fits so
17 many people in it, and we can't bring -- it's not something
18 that we have a field camp per se where we go out and then
19 we can ferry people back and forth to a base that we have
20 down. We just don't have that capacity. And we're not
21 doing aerial survey where we just get a charter aircraft
22 and get everyone inside and fly.

23 It's very, you know, requires a small machine so
24 we can get into some of these tight spots. So it's just --
25 so far, hasn't facilitated -- I've been asked before, and I

1 have said I would consider it, but to date I have not taken
2 anybody from a Nunavut community, brought them down to
3 Churchill and have them come out.

4 THE CHAIR: Okay. Thank you.

5 Any other questions? Caleb.

6 MR. SANGOYA: Thank you, Mr. Chairman.

7 I want you to know that I'm not against anyone.
8 I'm not prejudiced or racist, and I'm not rebellious
9 against any governments, but as a Board member, I'd like to
10 hear complete truth with no part of falseness in it.

11 So the researchers -- I shared this in 2013 --
12 people like David Suzuki aired shows and documentaries all
13 over the world about polar bears losing so much ice the way
14 it walked over the ice because it's starving. This is
15 false.

16 My first question is, what have you done
17 regarding those people who give false information on our
18 polar bears, first of all?

19 The other one, researchers often say that we're
20 losing a lot of ice, and so polar bears are in danger. And
21 as an Inuk in the north, this is not true. Up in
22 Lake Hazen, part of that area I've gone to, the ice never
23 goes away. There's no bears there. Lots of ice, no bears.

24 But where the ice breaks up in the summer, in an
25 area where the ice breaks up in the summer, then that would

1 affect the polar bear. But why are polar bears fatter in
2 the summer and more active in the summer when there is no
3 ice? It's actually the opposite. They become thinner and
4 lose weight when there's a lot of ice.

5 Also, with the research, you do not include --
6 when it's getting darker and in April when they're mating,
7 when the seals have their pups, they start going to the
8 patches of ice. This hasn't been a part of your research.
9 And wind direction changes wintertime and springtime. We
10 often see wind direction according to the season, and this
11 also affects where polar bears migrate. They go against
12 the wind. They tend to travel more against the wind, and
13 they are more at the same place when there's less wind. So
14 what we've been around for 4,000 years, and the non-Inuit
15 who come up for a short time and carry their weight as
16 though we have less truth or knowledge, and so this bothers
17 me.

18 Inuit knowledge, if the research is done, if we
19 did our own, it would be better, but we do not have the
20 finances. Researchers, scientists have so much more
21 funding, and in order sometimes to gain financially, they
22 give false information. I shared this same thing in 2013.

23 Have you helped fund other scientists, or have
24 you done anything about all the false information,
25 misconceptions that's been shared around the world on our

1 lands and wildlife?

2 THE CHAIR: Thank you, Caleb.

3 Nick.

4 DR. LUNN: A lot of questions make extreme
5 statements that are incorrect and broadcast it as if it
6 applies everywhere. And you may or may not have seen
7 recently there was an Instagram of this starving bear, and
8 it was put out there and said this is the face of starving
9 bears in climate change.

10 And you're right; the fact of the matter is we
11 know very little. We can see a bear very thin. We don't
12 know. Nobody knows why it was thin. Maybe it was sick,
13 maybe it just happened not that year being a good seal
14 patch so it came ashore in very poor condition. And if it
15 survives, maybe we'll get that -- so I agree that there's a
16 lot of misinformation by groups that want to further an
17 agenda, whether it's to stop sealing or stopping
18 harvesting, or the end of polar bear is coming, we need to
19 do things.

20 That is a very wide circle. It's very difficult
21 because a lot of the times. I personally don't even see
22 any of that stuff. I don't hear it. I don't move in those
23 circles. There are meetings -- and Rachel might be able to
24 speak to this -- Canada collectively attends a number of
25 these international meetings, arrange dates or meetings,

1 and Canada typically always brings a strong indigenous
2 delegation along with them to get the messaging across.
3 And I think collectively Canada does a good job at trying
4 to dispel a lot of the misinformation that's out there.

5 The harvest in Canada is constantly under
6 criticism that we shouldn't be harvesting bears; right?
7 And Canada collectively has been defending. And even
8 scientific groups, the Polar Bear Specialist Group, harvest
9 is not a concern. It's not a threat. And we've come out
10 and supported that.

11 Unfortunately, we can't control what individuals
12 may or may not say or the pieces of information. Can I go
13 out and be critical and about every single piece of false
14 information that is out there? No, I can't. I don't have
15 the time to be able to do that.

16 But in response to that recent Instagram of that
17 starving bear, there were lots of inquiries of our
18 department, and we actually wrote, you know, a response and
19 set the record straight that we have no idea, you know,
20 that we didn't think it was a climate change impact because
21 it happened in Baffin Island where there are close to 3,000
22 bears, and that's the only one. I mean, if it was a real
23 climate change impact, how come there weren't more being
24 reported? It was a single one. So where we can, we will
25 correct people.

1 But there's too many. There are too many people
2 out there that use information and say either part of it,
3 you know, part of what was said without providing the full
4 context to, you know, further their message, you know. And
5 those groups will always be there. Those individuals will
6 always be there, and it's difficult because we're always
7 fighting an uphill battle.

8 Personally, do I do that? No. I have nothing
9 to gain coming here and providing my research. I'm not
10 gaining extra money. I would like to be one of those
11 research scientists that has lots and lots and lots of
12 money to do my research. The fact is I don't. And, you
13 know, I have a very, very small budget. My budget is
14 probably less than the number that Drikus was telling me
15 this meeting might cost. I have a very limited budget. I
16 don't have the luxury to go out and do these sorts of
17 things, and I don't go out soliciting money from groups by
18 saying: The end of the polar bear is coming, please give
19 me more money so I can continue doing that.

20 I go out and do my research. I have to be
21 impartial. I work for the government. I provide the best
22 information that I can, but I can't control how it gets
23 used by others. I can correct it when I have an
24 opportunity, but I can't correct it all. And I think
25 that's probably true for a lot of scientists that go out

1 and do research; they correct it when they can, but they
2 can't control it all.

3 THE CHAIR: Thank you, Nick.

4 DR. LUNN: And I think Rachel might have more
5 to add.

6 THE CHAIR: Rachel, go ahead.

7 MS. VALLENDER: Yeah, if I could just add a little
8 more. I mean, I agree with what Nick said. I also agree
9 it's a huge problem with people miscommunicating
10 information about polar bears.

11 Our group at the Canadian Wildlife Service --
12 like, I've worked on this for almost a decade now, and
13 we've spent a huge amount of time working with the
14 jurisdictional governments and Inuit organizations to try
15 and correct that misinformation that's out there. You
16 know, we as a department really believe in the
17 co-management system, we believe in using TK science to
18 make management decisions, and we've travelled all over the
19 world to try to get that message out there, but it's
20 something we're going to have to keep doing. But we
21 recognize that, and we're committed to keep doing that. We
22 work on a really regular basis with representatives from
23 the four Inuit organizations and the governments, and I
24 think it's going to keep being an uphill battle, but
25 certainly we're committed to keep getting appropriate

1 messaging out there.

2 THE CHAIR: Thank you, Rachel.

3 Charlie.

4 MR. INUARAK: Thank you, Mr. Chairman.

5 As you mentioned earlier about what you would
6 like to see, we are this way when we have a big meeting
7 with people that have the knowledge and then the
8 researchers and their knowledge, we try to hear them both.
9 And we follow more the researchers' findings, and we hold
10 our traditional knowledge in reserve.

11 I would like to see more in the Kivalliq Region,
12 the hunters be more involved or even the HT0s to work
13 together closely. And you have the reports that come and
14 are more collaborative together. When you have two
15 different views with traditional knowledge and science,
16 they should mesh more. And we hold the scientific research
17 more than the traditional knowledge even though we have
18 more information in the Kivalliq Region. The hunters, if
19 you work closer and more collaboratively with them and ask
20 them how the research should be done, whether it's counting
21 or population estimates, if you work together more closely,
22 there's always going to be an organization that is
23 available for that. I would like to see that.

24 Thank you, Mr. Chairman.

25 THE CHAIR: Thank you, Charlie.

1 I think more of a comment, but if you'd like to
2 respond or not.

3 DR. LUNN: No, I know that this department
4 shares that view of sort of getting science and traditional
5 knowledge sort of working together to come up with common
6 answers. And I know that -- I mean, Rachel may want to
7 speak to it because it's on the management side. We know
8 we put money and time trying to get that moving. I don't
9 know the status of that, trying to get that type of working
10 arrangement together.

11 I mean, it was nice to see for the aerial
12 surveys that David presented and the GN has led where,
13 yeah, there was direct involvement participation with
14 community members in helping to design places to go. So, I
15 mean, we're moving that direction. I think that's where
16 people want to go. I think it's just one of those things
17 that takes time and just have to keep working at it, and it
18 will come little by little, and we'll get there.

19 THE CHAIR: Thank you, Nick.

20 David K.

21 MR. KRITTERDLIK: Thank you, Mr. Chairman.

22 For this Board, majority of us are Inuit, and as
23 Inuit I guess we all know what IQ is, the IQ that we got
24 from our ancestors, from our parents.

25 What I want to say is this: Being a board, a

1 public board to approve or look at, disapprove or approve
2 some situation in regard to wildlife management, we as the
3 Board members, it's very hard for us, majority of us being
4 Inuit, to weigh the balance between scientific and IQ. And
5 our responsibility, our mandate is to make a decision on
6 the best possible for the whole table all around. And
7 whatever technical knowledge, scientific knowledge we hear
8 that are presented to us at every meeting from our
9 government, from our other organizations. We may be saying
10 that -- a lot of people say it this way, we're against the
11 technical and scientific. It's not that. It's just that
12 we need to start looking into or working towards balancing
13 the IQ and the scientific, because what we've been trying
14 to do in Nunavut ever since Nunavut was created, we need
15 that balance between that IQ and scientific. We want to do
16 that.

17 So I just want to make sure that all the
18 technical scientific knowledge and our communities and the
19 public know that this Board had to weigh everything to make
20 a decision.

21 Thank you.

22 THE CHAIR: Thank you very much, David. Good
23 comments. Caleb.

24 MR. SANGOYA: It's my final comment. I will not
25 mention it again.

1 I had a great-grandmother or great-grandfather
2 Katchu (phonetic), and he has this song that he wrote about
3 polar bears not being scarey anymore. You can even have
4 one as a pillow. And he's happy now.

5 Right now in the Kivalliq Region in Arviat I
6 want to go sleep over to go hunting. I can't sleep out
7 there because there's polar bears and grizzly bears. I
8 know Inuit don't have that habit of being scared to go
9 sleep out on the land. But as an Inuk I want to see my
10 future children and grandchildren they be able to sleep
11 outside anywhere on the land. Right now it's not like
12 that.

13 It is not our habit to sleep inside a house all
14 the time. And in the past they would be able to sleep
15 outside anywhere, even if they were adult. Right now you
16 can't do that. Even though the polar bear we're told are
17 in decline, but in this area there's hardly anybody that
18 just goes out hunting and relaxes out there, just to go
19 relaxing. I'm coming here to caribou hunt.

20 Thank you.

21 THE CHAIR: Thank you, Caleb. More of a
22 comment. Attima.

23 MR. HADLARI: Thank you, Mr. Chairman.

24 I know the expert is going to speak. Even if I
25 try to speak on something I don't know, I know Inuit

1 traditional knowledge, I know our youth that go out
2 hunting, they only use their knowledge when they go out
3 hunting. And researchers, I think this is the way it is.
4 It is unsure, and I want to hear things that are believable
5 when it comes to research results. And if you speak
6 confidently -- when we talked about traditional knowledge,
7 we do not guess. We know what we are saying, and it is
8 true what we know is true, and it's not guesswork.

9 When you're talking about research and you only
10 speak about parts of it, I don't know what you believe in
11 that, so it's hard to gauge what I'm hearing. And we're
12 going to decide on what is being asked. I would like to
13 have more confidence in the results that you are giving us
14 before you give it to us.

15 THE CHAIR: Thank you, Attima.

16 More of a comment, again, Nick. Would you like
17 to say anything?

18 DR. LUNN: Well, I guess my response to that
19 is, if you want to know how many polar bears there are, the
20 only way you can do that is to count every single polar
21 bear. So if I want to know how many people are in this
22 room, you would have to go around, and you would count. I
23 don't know how many people are in this room, but to get an
24 exact number, to be absolutely confident, you'd have to
25 count every single polar bear there is. And that's not

1 possible.

2 So these methods, whether it's an aerial survey
3 or mark recapture, the scientific methods, they do the best
4 job possible based on whether you fly and count in certain
5 spaces, transect widths, or whether you sample a number of
6 bears. And they end up giving you a point estimate, 842,
7 but they also give you that error estimate because you're
8 not counting -- you can't possibly count every single polar
9 bear in Western Hudson Bay. The area is too big. And
10 bears, as we've heard, they can be in dens, they can be
11 swimming, they can be here and there. So you're never
12 going to get from science an absolute that there are
13 exactly 842 polar bears here.

14 That's the best point estimate that we can get
15 from the aerial survey that was done, and it comes with
16 this wide range. And that's just a fact of the way science
17 is. Unless you can count every single animal, and you know
18 you have, that's the only way science can give you an exact
19 number that you would be absolutely confident in.

20 You can minimize that error of variance either
21 by handling a lot more bears or making your transect lines
22 tighter. You can do and try and narrow that confidence
23 interval, but without counting absolutely every single
24 bear, you can't come up with a single number and say that
25 is it. We can give you the best estimate, and this is how

1 certain we are about it, but that's part and parcel of
2 science.

3 Again, I can tell you how many people are in
4 this room because the room is small, and as long as I know
5 how to count, I can count every single person. But if
6 someone told me how many people live in Rankin Inlet, I
7 could guess or I could knock on doors and try and come up
8 with an estimate, but unless I spoke or saw every person
9 that lived in Rankin Inlet, I wouldn't be able to give you
10 an exact number. I might be able to come close.

11 So I understand what you would like. I
12 understand that decisions are difficult, especially in a
13 situation like this where perhaps traditional knowledge is
14 saying one thing and the science is saying something else,
15 but the science can't be any more exact than what we can --
16 than what we provided. It's a number with a variance
17 around it. We simply can't count every single polar bear
18 there is.

19 THE CHAIR: Thank you, Nick.

20 Attima.

21 MR. HADLARI: Thank you, Mr. Chairman.

22 As you said earlier, the females that are
23 pregnant are not getting as many cubs, and you do put them
24 to sleep even when they're pregnant. Do the drugs that you
25 use -- are they affecting the fetus, the drugs that you're

1 using to put them to sleep? You mentioned earlier that
2 they are not dangerous for the polar bears, but I think the
3 fetus or the embryo -- I'm sure not all of them would be
4 born after being affected by the drugs that you are using
5 to put them to sleep. I know that we don't have all the
6 data available for that to say for sure whether that drug
7 is safe or not.

8 Thank you, Mr. Chairman.

9 THE CHAIR: Thank you, Attima.

10 Nick.

11 DR. LUNN: Yeah, the drugs that we use now,
12 Telazol or Zolatel, depending on where you buy it, has been
13 used since the late 1980s. It's used in a variety of
14 species. It's not a polar bear drug, per se, so it's used
15 elsewhere. And I'm not aware of any information that
16 suggests that using it reduces productivity so that you
17 have fewer cubs or whatever species we're talking about. I
18 don't know of any information that would suggest that
19 that's a problem so that's the best that I can answer. No
20 one's doing studies specifically on pregnant female polar
21 bears in dens and taking measurements of growth rates of
22 fetuses in a den and those types of studies. That's way
23 too invasive. No one is doing that stuff. There's no
24 information suggesting that it is an issue, but that's as
25 best of an answer as I've got.

1 THE CHAIR: Thank you, Nick.

2 Any other questions from the Board? We're
3 getting close to lunch, but we're going to make an
4 exception here. We have a process in place where the
5 public can ask questions later, but the MLA for
6 Rankin Inlet is here, and she has other commitments this
7 afternoon, and we're going to make an exception and allow
8 her to ask questions.

9 So, Cathy, can you go to the mic and state your
10 place, please.

11 **SUBMISSION BY MS. TOWTONGIE**

12 MS. TOWTONGIE: Thank you, Mr. Chairman.

13 My name is Towtongie, Cathy Towtongie. Thank
14 you for giving me the opportunity. I really would like to
15 speak.

16 I'm a seamstress as a woman and, in the
17 traditional way, I make clothing. I use everything from
18 the whales, seals, and wildlife. I know right now I'm not
19 really anything.

20 But for our males I would like them to be aware
21 that the polar bears that are caught in different months,
22 when you're going to make clothing out of it; October.
23 It's the same; in August we hunt caribou for the fur. So
24 if you could change it to a different time, open the
25 season. As a seamstress and you are trying to tan the hide

1 of a polar bear that we're receiving, it's not the same as
2 it used to be.

3 And when we're working on the hides, it's very
4 evident that their cubs were taken away. When you're
5 dealing with the furs and when their cubs are gone, the fur
6 starts molting, and they're no good for making kamiks
7 anymore. It's something that we've noticed when we hear
8 about the polar bears being put to sleep and how it's
9 affecting the polar bear's hide. And in the summertime,
10 they do get sunburn.

11 And then the next one; I had parents that really
12 knew traditional knowledge. The fat of the caribou, I've
13 noticed myself, in the middle when they turn it into a
14 liquid and it would be used as a salve for a cut or things,
15 it's traditional medicine, and if you use it for your skin
16 on your face, it affects it. I've seen a person who used
17 the oil of a polar bear fat on their skin, and they're,
18 like, their skin is very young. I know you know there are
19 a lot of the uses for them.

20 I know that they don't do research on the
21 diseases that are being affected by polar bear. I found an
22 Elder who got sick with cancer. When they harvested a
23 polar bear out of season, he asked his son-in-law to get a
24 polar bear and get the gall bladder. We've lost a lot of
25 traditional knowledge, medicine knowledge. I know that.

1 You know this for a fact. But you don't know what we
2 remember.

3 As you mentioned earlier, the easiest way to
4 find out from the local people, which way to go for polar
5 bears. My father told us, if you go this way, that's where
6 their food is. If you go that way to the northwest, not to
7 the east; if you follow them, you will see them. I've seen
8 my father walking, and he walked to Coats Island without a
9 knife, and he harvested a polar bear when it was -- he
10 wanted us to learn.

11 I said I was going to be brief. It's something
12 I remember why their diseases or the uses of polar bears
13 are not being used, and us seamstresses should not be
14 forgotten. The seasons are not the same, and the female
15 polar bears, if they take their cubs away, you can tell.
16 The body continues to produce things for the cubs. They
17 start molting. It's the same way with people and with
18 polar bears. If you stop the process of the fetus growing
19 and you put them to sleep, it affects them.

20 I'm going to have a meeting this afternoon, so I
21 thank you for the opportunity for speaking. Thank you.

22 THE CHAIR: Thank you, Cathy, for your
23 comments and information.

24 We'll just maybe allow staff. Any questions
25 for -- go ahead, Vickie.

1 **NUNAVUT WILDLIFE MANAGEMENT BOARD STAFF QUESTIONS AND**
2 **COMMENTS**

3 MS. SAHANATIEN: Thank you, Mr. Chair. I'm going
4 to have a few questions.

5 So the first one, just to find out a bit more
6 about nondetriment findings. I'd just like to -- so we can
7 know what triggers a new assessment of a nondetrimental
8 finding, you referred to new total allowable harvests maybe
9 would trigger that, or maybe it doesn't. Maybe they come
10 periodically every five, three years or whatever. So if
11 you could let us know what the process is and how it could
12 affect Western Hudson Bay with the new TAH that decision
13 that we had in December and while we're looking at it right
14 now as well.

15 Thank you.

16 THE CHAIR: Thank you, Vickie.
17 Rachel.

18 MS. VALLENDER: Okay. Yeah, great. Thanks for
19 the question.

20 So these nondetriment finding assessments are
21 carried out by the CITES scientific authority, which is
22 part of Environment and Climate Change Canada and not my
23 group, but I certainly work with them.

24 So they have what is called a standing
25 nondetriment finding where they're constantly looking at

1 changes to management in general. And it's on the
2 Environment Canada website. But, basically, every time
3 there's new information they will update as to whether it
4 changed and the issuance of permits for trade is necessary
5 or not.

6 And as I mentioned, they take into account both
7 the available, all the scientific data that's available, as
8 well as all the traditional knowledge, and as also a
9 management objective. So, for example, if a management
10 authority sets an objective to increase the population,
11 then they would consider that in their assessment. And,
12 ultimately, they're trying to determine if trade is
13 sustainable. And so sort of the covariate of that, if you
14 will, as well is, is harvest sustainable?

15 So I don't know that they've started a process
16 at all for the recent change in the TAH. They would be
17 looking at that, taking into consideration all of the
18 available information. If they determined that trade
19 continued to be sustainable, nothing would change. If they
20 determined that trade was no longer sustainable, that's
21 when they would stop issuing permits for Western
22 Hudson Bay. And so we did see that for Baffin Bay between
23 2010 and then this past summer where they didn't permit
24 international export from that subpopulation. And that has
25 now been lifted based on new information.

1 So if the Board wants more detailed information
2 from the scientific authority, I could certainly put you in
3 touch, but that's kind of the general process of how it
4 works.

5 THE CHAIR: Thank you, Rachel

6 Vickie.

7 MS. SAHANATIEN: Thank you. And I'll perhaps
8 request that just so we have that at our hands.

9 So my second question is related to history,
10 probably for Nick to answer. But you referred to the early
11 impacts of harvesting in Manitoba and generally, I guess,
12 throughout the Northwest Territories on polar bears when
13 there were no regulations and particularly in Manitoba, so
14 referring to Western Hudson Bay here, how the closing of
15 the York Factory reduced harvest impact and also closing of
16 the military base, and then the Manitoba regulations came
17 into effect.

18 So I guess what I'm just wondering -- because I
19 don't know what level of hunting was happening out of the
20 military base -- were they permitted to do that if there
21 were no regulations? If you have that information. You
22 might not.

23 And also, York Factory itself, I'm assuming it
24 was a Hudson Bay post where the polar bear hides were taken
25 for sale, and I'm assuming there was some encouragement of

1 hunting in order to get those. And again to provide the
2 historical context of, I guess, the potential population
3 reduction in the past before the management came into play
4 as a way to also understand the rebound that has happened,
5 I guess, since then and the observations that people are
6 bringing forward.

7 Thank you.

8 THE CHAIR: Thank you, Vickie.

9 Nick.

10 DR. LUNN: A lot of that early history is
11 more anecdotal. How many did the military take? No one
12 knows. No idea. There are stories of, you know, people
13 doing whatever the military did at that time, and there
14 were stories of shooting bears, I mean, because no one had
15 to report anything, so the size and the complexity, how
16 much, when, no one really knows. It's anecdotal
17 information.

18 York Factory, yes, the Hudson Bay Trading Post
19 that closed in the late 1950s. So there are, through the
20 Hudson Bay sort of trading records, how many polar bear
21 hides were traded each year. So a lot of the early stuff
22 is anecdotal and assumed to have been occurring, but the
23 extent of it because it was unregulated and, you know, no
24 one had to report it, the magnitude of it probably will be
25 forever unknown.

1 THE CHAIR: Thank you, Nick.

2 Vickie.

3 MS. SAHANATIEN: Thank you.

4 And just one more question. Again, it's a broad
5 question just so everyone can understand, because we use a
6 lot of terms all the time. "Precautionary approach."
7 You've referred to that a few times, and other
8 organizations did too. So it would be, I think, helpful
9 for everyone if you could explain what that is. And I
10 guess it's within the context of Hudson Bay.

11 And I'm not sure if you want to provide a
12 comment on, I guess, our last decision we applied 4.5
13 percent off-take from the point estimate, and would you
14 consider that as within a precautionary sort of level, and
15 if not, what would you suggest? I don't know if you can do
16 that right now, certainly, but that kind of thing. So how
17 should we be looking at the total allowable harvest within
18 that context of precautionary approach and the percentage
19 that we've applied in December? Thank you.

20 THE CHAIR: Thank you, Vickie.

21 Nick or Rachel.

22 DR. LUNN: I'll take a stab at it.

23 The four and a half percent, it was developed
24 through a number of models, polar bear reproductive rates.
25 Population estimates back sort of in the late 1970s, early

1 '80s the data was collected, and it was worked up into the
2 1980s. And it was basically looking at what would be the
3 maximum sustainable harvest you could take from a
4 population. What sort of ratio? A one-to-one female --
5 what sort of level could you take?

6 And one of the assumptions of that -- and 4 and
7 a half percent is the number that came up, two males to one
8 female. And if you took more males than that, I mean,
9 eventually you deplete males, so you don't have -- most of
10 the females aren't being bred. So you don't want to just
11 exclusively just hunt males. You can't do that. And if
12 you took out just females, you would end up with no bears
13 to produce the cubs. So there have to be -- and the
14 attempt was to find out what's the best ratio to do.

15 It was developed at a time when the environment
16 was considered stable. People knew that you had good years
17 and bad ice years, that sort of stuff. But there wasn't at
18 the time a unidirectional change in the environment that
19 we're seeing in some populations now with the climate
20 change, loss of sea ice. So that sort of a change that the
21 environmental has the natural part goes up and down. But
22 there's this long-term, over time, change.

23 So it was assumed that the environment was
24 stable, and it was assumed that polar bear populations
25 themselves was stable. So you had a healthy polar bear

1 population, and all you really needed to do was just track
2 your harvest, and so you start off at 4 and a half percent
3 and then you adjust it up and down as you went along.

4 But the two things that were required was a
5 population that was stable itself -- it wasn't a population
6 in decline or a population increasing -- and that the
7 environment itself was stable, that you weren't seeing huge
8 changes in some of the things that we're seeing with
9 respect to sea ice in, say, places by the Beaufort Sea or
10 Western Hudson Bay. So that's where the 4 and a half
11 percent came from. And it has been applied for many years,
12 and it seems to work generally well. There are many
13 populations, you know, in Canada where the impacts of
14 climate change, we're not detecting them, and people have
15 made those comments that people aren't seeing it.

16 There are few populations where we can
17 definitively say that there are these concerns with climate
18 change impacts on bears. Western Hudson Bay we're seeing
19 impacts, Southern Beaufort Sea we're seeing impacts, we're
20 seeing impacts in Southern Hudson Bay. Kane Basin, which
21 is just north of Baffin Bay, it was an area of multi-year
22 ice that seals and bears didn't seem to like. Climate
23 change is now shifting it to one where it's more annual ice
24 that seems to be better for bears. And Kane Basin is an
25 example where the number of bears from the science, anyway,

1 is increasing. That's what the science has said; this
2 population is increasing.

3 So not everything is doom and gloom, but that
4 4 and a half percent was based on a population that was
5 stable, wasn't going through these environmental
6 bottlenecks, and the environment itself was stable. So the
7 4 and a half percent you can't necessarily apply across the
8 board to every single population because they're not all --
9 they don't meet those assumptions that the 4 and a half
10 percent was developed under, you know, back in the 1980s.

11 So the precautionary approach is more along the
12 lines of when you're considering setting it, don't
13 necessarily -- when there's a bunch of stuff that is
14 unknown, you know, things could be changing, and we're not
15 certain -- don't necessarily just assume everything is fine
16 and maximize that harvest. So we would say a precautionary
17 approach would not be just applying 4 and a half percent
18 across the board.

19 What the right number would be, I mean, it's got
20 to be balanced. There have to be management objectives.
21 You can't sort of set a harvest level if you don't have a
22 management objective. I mean, if you said you wanted 1,400
23 bears here, you would set your harvest differently than if
24 you said you only wanted 200 bears here. If you wanted 200
25 bears here, well, then, there's room to harvest; right?

1 You could have a higher harvest than if you wanted to
2 maintain it at 800 or you wanted to make it grow to 1,400.

3 So one of the key things is defining a
4 management objective or a target population size. And that
5 might be as simple as saying, 840 bears, that's what we
6 want, and then you can work around that.

7 One of the, you know, advantages of this new
8 approach to harvest that was applied in Baffin Bay, you
9 know, is that you have those sorts of opportunities to now
10 do some modelling that uses environmental change. The
11 earlier models were based on getting a population number
12 and just assuming it applied across the board for 15 or 20
13 years and that nothing changed in between. So it was just
14 set and fixed.

15 This approach allows you make some adjustments
16 so you could include in the model -- if sea ice was
17 declining at a certain rate, you could include that in the
18 model and move it forward and say, if we continue with this
19 harvest level and this is what's happening to sea ice, what
20 does that mean in the future?

21 So these new models are trying to assist and
22 provide advice on management decisions when you're dealing
23 with harvest. So precautionary is just, you know, don't
24 necessarily assume that everything is fine and we're just
25 going to go along at 4 and a half percent in a situation

1 where there's some evidence that the environment's changing
2 and, you know, some lines of evidence, but not all, that
3 there are potentially impacts on the bears themselves.

4 I don't know if that answers the question. I
5 think Rachel might have something to add.

6 THE CHAIR: Go ahead, Rachel.

7 MS. VALLENDER: Just a little something else to
8 add.

9 So I think, you know, in terms of whether our
10 department could accept that, I mean, I think you're
11 probably coming at that from the CITES angle, like, would
12 they consider that level to be sustainable? And so I don't
13 want to trump their process because certainly that's
14 something they have to carry out.

15 I will just note that, as a department, we have
16 supported removal rates of both lower and higher than 4 and
17 a half percent. That's not, like, not necessarily a solid
18 line for us. So our goal is not always to minimize
19 harvest, and it's that something we try and take into
20 account all of the available information, as well. And so
21 certainly, you know, our group at CWS would be working with
22 the colleagues in SNT -- so like Nick -- and working with
23 the scientific authority looking at scientific authority.
24 But as to what they ultimately will decide, I think it's
25 too premature to kind of say what they would think. They

1 haven't done that analysis yet.

2 THE CHAIR: Okay. Thank you.

3 Quick, Vickie. We want to break for lunch.

4 MS. SAHANATIEN: Very quick. Thank you.

5 That's very helpful, all your answers, and I
6 guess I wanted to thank you, as well, for that
7 presentation. I think it really helps fill out the context
8 for us about Western Hudson Bay polar bears overall, and I
9 appreciate you putting it together. It will be helpful in
10 our decision-making.

11 Thank you.

12 THE CHAIR: Thank you, Vickie.

13 All right. You're going to be on the block
14 after lunch yet, so we're going to break for lunch, and
15 then I think we've just got our legal counsel, and then
16 we'll start with communities around the table for
17 questions.

18 So we'll be back here at 1:15. Thank you very
19 much.

20 (Proceedings Adjourned at 12:04 a.m.)

21

22 PROCEEDINGS ADJOURNED TO 1:15 P.M.)

23

24 THE CHAIR: Welcome back, everyone. Thank you
25 for coming back, and I hope you had a good lunch.

1 So we left off, we were just about done our
2 Board questions. I think the last is from our legal
3 counsel. Michael, you're up.

4 MR. D'EÇA: *Qujannamiik, itsivautaaq.*

5 My question is with respect to the management
6 side of the issues we've been talking about. I note that a
7 lot of the focus in the morning was on information and even
8 advice that aren't necessarily compatible with one another,
9 making the NWMB's decision difficult. But what I want to
10 turn to is what I think is an issue that there is a
11 consensus under the table, and that is the concern over
12 public safety.

13 Under the terms of the Land Claims Agreement
14 public safety can serve as the basis or at least part of
15 the basis for the NWMB's decision-making with respect to
16 limitations on Inuit harvesting for polar bears. And just
17 for everybody's information, that falls under the
18 decision-making kind of test under the Land Claim, section
19 5.3.3. And one of the elements that the NWMB can look at
20 is public safety in terms of what would be an appropriate
21 decision. And my question probably goes to Rachel, but
22 Nick may have something to say about it as well. I guess I
23 have a couple of elements.

24 First of all, does that issue inform your advice
25 to the NWMB, public safety? We know conservation is

1 obviously a big element, but does public safety work its
2 way into your advice? And, also, what jurisdictional
3 responsibility, if any, does Environment Canada have with
4 respect to addressing those kinds of very practical and
5 serious concerns? And whatever your response to that, in
6 any case, if you are working with the Government of
7 Nunavut -- you mentioned a little bit about it, Rachel, in
8 your opening remarks -- but, you know, what measures are
9 you taking or working on or advising on? Just what actions
10 is Environment Canada taking with respect to that public
11 safety issue?

12 *Taima.*

13 THE CHAIR: Thank you, Michael.

14 Rachel.

15 MS. VALLENDER: Thank you for that.

16 Some very good questions in there, so I'll try
17 and go through your questions one by one.

18 So does public safety inform advice to the NWMB?
19 Certainly that's something we recognize as being a concern,
20 and I think that's -- you know, I can't ultimately speak to
21 the full departmental position. This letter was signed by
22 the assistant deputy minister of both Canadian Wildlife
23 Service and the Science and Technology branch, so I'm kind
24 of speaking for them in some ways. But I think that is --
25 you know, we recognize that there's multiple sources of

1 information that the Board is going to have to consider.
2 And certainly, you know, in this subpopulation in
3 particular, the expertise within our department is very
4 heavily science focussed.

5 And I think -- so one of the reasons we didn't
6 put an explicit TAH recommendation, which we have done in
7 the past for this subpopulation and for others, is out of
8 recognition that there are multiple things that need to be
9 considered by the Board, and we didn't really feel
10 comfortable putting down a hard number for that reason.

11 In terms of jurisdictional responsibilities, we
12 have -- I mean, I'm sure everybody here knows what the
13 primary responsibility for terrestrial species, which is
14 what polar bear is classified as in Canada, falls to the
15 provinces and territories and, of course, the management
16 system under the under Land Claims Agreement in the north.
17 So we certainly -- we, like, Canadian Wildlife Service --
18 and Nick may want to add some from his side, from the
19 Science and Technology branch, but we do work with the
20 jurisdictional partners and mostly provide funding.

21 So we have, for example, a contribution
22 agreement in place with the Government of Nunavut which
23 gives them \$250,000 a year, and that's typically used for
24 monitoring. We've also supported a collection of
25 traditional knowledge studies in different parts of the

1 arctic. So that's probably how we can contribute sort of
2 on a more regular basis.

3 And I think for a situation like this where
4 decisions are not going to come to our minister, we would
5 just like to be involved in the process and have our
6 information submitted and considered along with everything
7 else that is put in front of the Board.

8 THE CHAIR: Rachel, can I just ask you to slow
9 down a little bit for the interpreters. Thank you.

10 MS. VALLENDER: Sorry.

11 And then in terms of action our department is
12 taking with respect to public safety. So we do a lot of
13 work at the circumpolar level. So Nick had mentioned
14 earlier we have this 1973 agreement on the conservation of
15 polar bears. That's a treaty in Canada that came into
16 force in 1976. So we have a very active conflict working
17 group under that agreement, involves representatives from
18 all of the five countries, including Government of Nunavut,
19 Government of Manitoba. And so that group is involved in a
20 number of initiatives. I was the chair of that group for a
21 little while and stay involved to a certain degree at this
22 point.

23 And so they are looking at, for example, best
24 management practices for deterrence techniques. And that's
25 whether the countries can learn different things from each

1 other. I would say that Canada is a leader in this and
2 that the program in Nunavut is a really successful one, as
3 well as with Manitoba, too. But we certainly can learn
4 from some of our colleagues in Alaska, for example, who
5 deal a lot with public safety concerns as well.

6 And so from that we're sort of feeding back to
7 the jurisdictions on strategies or means to mitigate some
8 of those interactions. So again, if there was a specific
9 need for the department to act in a certain way, whether
10 that would be provide funding, it's certainly something
11 that would be appropriate to put forward to CWS for
12 consideration, I would say.

13 I can't ever speak to budgets, certainly not
14 before we get our budget for the next fiscal year. But it
15 has definitely been a concern, and it's something we have
16 heard many times over the years.

17 So I don't know if Nick has anything else to
18 add.

19 DR. LUNN: No, I have nothing to add to that.

20 THE CHAIR: Okay. Thank you, Rachel.

21 Michael.

22 MR. D'ÉÇA: Thank you, Mr. Chairman. That's
23 it for me.

24 And thanks, Rachel.

25 THE CHAIR: Okay. Thank you.

1 That concludes the Board's questioning, then.

2 Next in line is the Government of Nunavut.

3 Drikus, the floor is yours.

4 **GOVERNMENT OF NUNAVUT QUESTIONS AND COMMENTS**

5 MR. DRISSING: Thank you, Mr. Chair.

6 I just want to start off by thanking Nick for
7 coming to this meeting, Environment Canada sending Nick
8 here. You know, this is something I think the Government
9 of Nunavut and the Board and a lot of communities in the
10 Western Hudson Bay has been asking for many years is to
11 actually have the biologist here. And I think it has been
12 very productive. It's really good to hear from Nick. It's
13 really good sharing that information, and I think it's a
14 good exchange of information both ways from the communities
15 to Environment Canada so they have a better understanding
16 of the expectations from communities but, also, for them to
17 understand the nature of the work that Environment Canada
18 is doing in the Western Hudson Bay. That's just an
19 observation and a comment.

20 One of the questions I have is, based on the
21 work that Environment Canada and Nick specifically is doing
22 in Western Hudson Bay, as you mentioned, is looking at
23 habitat and how the habitat is changing of the bears and
24 how that might influence the productivity of the bears over
25 time.

1 And I know, Mr. Chair, you this morning also
2 asked this question about carrying capacity of the
3 population and trying to set management objectives or
4 management goals for this population. And I think Nick
5 already answered it to some degree, but the question I have
6 is that, with the observations of declining habitat, bears
7 spending less time on the sea ice, would it not be better
8 to try and -- and especially the discussions that Michael
9 just mentioned about bear-human conflict, would it not be
10 better to manage this population at a lower level where
11 it's still abundant, where there's still maybe more
12 productive, having less bears in that population, and that
13 might address a lot of these issues.

14 I was just wondering what your thoughts are
15 about identifying a management objective that, as I say,
16 with a much lower target number -- let's, for example, say
17 500 or 600 -- and manage towards that and try and manage it
18 at that level with the objective of maybe creating a more
19 healthy population. That is some of the comments -- and
20 I'm asking that because that is some of the comments I've
21 heard recently in discussions around Baffin Bay is that the
22 high harvest in Baffin Bay between Greenland and Canada may
23 have resulted in that population staying quite healthy over
24 the period of time, in a period of time where there's
25 observations of declining sea ice due to climate change.

1 Just your thoughts around that.

2 THE CHAIR: Thank you, Drikus.

3 Nick.

4 DR. LUNN: Yeah, first of all, thank you very
5 much, Drikus, for those kind comments of my attendance. We
6 try to come to these meetings, but it doesn't always happen
7 that way. You know, I know the last NWMB meeting on
8 Western Hudson Bay I was unable to attend because my father
9 had passed away, so we sent someone that wasn't able to,
10 you know, maybe answer all the questions. But, you know,
11 we try when we can, and we're available to come and answer
12 questions. Maybe we don't do it as frequently as we
13 should, but we are available. So thank you for those kind
14 words.

15 In terms of, you know, a lower number of bears,
16 that's certainly one -- definitely one management
17 objective, one way to look at the problem, and it's a
18 social carrying capacity issue. I mean, there's how many
19 bears, you know, will the environment support, but there's
20 also, as we've heard, a lot of safety concerns, public
21 safety concerns in communities. And one way to address
22 that that's entirely valid is, you know, manage for some
23 lower level of bears, a reduction, whether that's 500 or
24 600, to alleviate some of these concerns.

25 I think back in the early days, in the '80s when

1 the population was 1,200, the harvest was 55 bears, and I
2 think some of the perhaps lack of human-bear interactions
3 at that time was that there were a high number of bears
4 being taken before they got to communities, before they
5 came into places like Arviat. And with low quotas now I
6 think that makes it difficult. You don't have as many
7 bears being intercepted, so more and more coming through
8 the communities. So it's certainly, in my opinion, one
9 strategy to deal with the issue is to manage for a
10 reduction.

11 But that comes with some level of, you know,
12 additional management oversight, you know, frequent
13 surveys, and they're being done now anyway, so they would
14 go hand in hand. I don't think you could certainly say
15 we'll just set it at a lower level and forget about it for
16 15 to 20 years. I think it would require a bit more
17 frequent monitoring, but that's being done by aerial
18 surveys. And, you know, if you're doing them every five or
19 six years you would quickly be able to determine, you know,
20 where you're at and how things are happening. And with
21 community-based monitoring harvest, I mean, there's a
22 wealth of information in the harvest data, you know, that
23 could be used to also monitor how the population is going.
24 So I don't see that as a -- as a bad thing, necessarily, as
25 one of the options that the Board might want to consider.

1 Thank you.

2 THE CHAIR: Thank you, Nick.

3 Drikus.

4 MR. DRISSING: Thank you, Mr. Chair.

5 I have quite a few questions for you on that,
6 but just to follow up on that -- and maybe Rachel might be
7 in a better position to answer that.

8 And I'm not suggesting that we manage for a
9 lower population. It's just I can see this happening in
10 other subpopulations in future is I know that
11 Environment Canada has expressed concerns with that
12 approach under SARA because it really conflicts with SARA
13 where under SARA management plans you're actually trying to
14 recover populations to historic levels, and managing for a
15 decline is problematic. So just from that perspective if,
16 in future, we identify we're managing for a reduction to
17 address concerns, how would that be addressed under SARA?
18 Would there be concerns under SARA, and would it result in
19 possibly NDF decisions?

20 THE CHAIR: Thank you, Drikus.

21 Rachel.

22 MS. VALLENDER: Thanks, Drikus.

23 So as to whether there could be concern under
24 SARA, that's a bit difficult for me to answer given that
25 I'm not in the SARA group; however, I will say -- and I

1 think maybe most people in this room know -- so polar bears
2 were listed as special concern in 2011.

3 The approach taken for developing a management
4 plan was to actually take a compilation of the
5 jurisdictional plans, recognizing that the populations of
6 bears and their status varies across the arctic, the
7 listing under provincial or territorial legislation varies
8 across the arctic. So we really, in that sense, are kind
9 of deferring to the management that is going to be carried
10 out by the jurisdictions, and so that's why for the SARA
11 management plan we will be adopting those jurisdictional
12 plans, and then just sort of writing a federal chapeau, if
13 you will, that would just make sure things are
14 SARA-compliant. So that's kind of the one part of that is
15 we do recognize that that management authority lies with
16 the territory in this case.

17 As for implications for an NDF, you know, again,
18 I won't speak to whether the CITES scientific authority --
19 I mean, they haven't started a process for this
20 subpopulation yet, but they certainly do take into account
21 management objectives. And if there was a rationale for
22 setting a management objective specifically for a decline,
23 then they would need to take that into consideration.

24 So again, our goal is not always to minimize
25 harvest. Our goal is not always to have, like, a 4 and a

1 half percent maximum. Like, we do try and take all of the
2 information into account, including what the jurisdiction
3 has set as a management objective.

4 THE CHAIR: Thank you, Rachel.

5 Drikus.

6 MR. DRISSING: Thank you, Mr. Chair.

7 Another question I have -- a comment and a
8 question together -- is about the telemetry and the
9 collaring.

10 As you know, there's a lot of opposition to
11 collaring in Nunavut and handling of polar bears, and those
12 comments were made this morning by some of the Board
13 members, as well. But at the same time, we do have in
14 certain regions, especially in the Kivalliq Region, a good
15 example where we do have a lot of support for collaring for
16 caribou, for instance, where the communities here has been
17 supporting collaring -- I don't know -- David Lee could
18 help me right if I'm wrong or -- but 20 or more years that
19 we've been putting collars on some of these migratory
20 caribou herds, and they provided some really good
21 information that helps support management decisions.

22 And I think the reason -- and I might be
23 wrong -- but my impression is that the reason why the
24 communities support collaring of caribou is because that
25 information is shared to the communities on a very regular

1 basis. They can see the benefits of collaring, and they
2 can utilize that information.

3 And the same with the work that
4 Environment Canada is doing. A bit of criticism from our
5 side is that that is such useful information that we could
6 use for decision-making, and it's not shared. I have put
7 forward through our biologist to the Polar Bear Technical
8 Committee meeting a number of times if there's a
9 possibility to have that information written up in reports
10 and shared with people -- and not just Western
11 Hudson Bay -- but there's really good work being done by
12 Ontario in Southern Hudson Bay, as well. And I believe
13 that that information would be able to advise the Board and
14 the government and answer a lot of questions that we get at
15 these meetings about population delineation.

16 Every meeting I've been to on polar bears people
17 want to ask questions about the boundaries, how can we
18 change the boundaries? And I think if these reports are
19 available we could show to community why the boundaries
20 could not change or maybe why they should change, and a lot
21 of times it might support community requests to change
22 boundaries based on community observations.

23 And especially now with the changing
24 environment, as you've identified, and changing sea ice,
25 you might see changes in bear movements which can only be

1 identified through collaring projects. But there is such
2 dislike in it, and people have lost a lot of faith in it
3 because we have not been able, I think, to do a good job.

4 And I'm not just pointing a finger at
5 Environment Canada. I think Nunavut could do a better job
6 of that, but sharing that information on a more regular
7 basis with the communities. And I'm sure a lot of people
8 when they saw those movements this morning on the map found
9 it interesting and useful, and I just request that maybe be
10 shared more often with the communities.

11 THE CHAIR: Thank you, Drikus.

12 Nick.

13 DR. LUNN: Yeah, that's always been our
14 intention is to share that information, and currently
15 there's maps that are being produced sort of every three to
16 four days, and there's a wide distribution list, and it's a
17 map that plots where the bears are at any particular time,
18 both Southern Hudson Bay and Western Hudson Bay together,
19 so people can see. And it's got a wide distribution list.

20 And there's nothing sensitive about the data.
21 It's generated and sent through the University of Alberta,
22 and I believe your biologist is one of the people that
23 receives it, but it would be useful perhaps if somebody
24 could give me a list of the emails that I could -- maybe in
25 each community or to someone -- and I'll make sure that

1 that name or names gets added to that list so they would
2 then be receiving these maps every three to four days of
3 where the current locations of the bears are. So, yes, I
4 agree we could do a better job.

5 That map slide that I put up, we're developing a
6 poster of similar stuff with information of why we do it
7 and movements of individual bears, and our intention is
8 that those posters would be translated, and we would
9 provide them to the communities in the Kivalliq and also in
10 and around Churchill. So we're moving on it. We recognize
11 we need to get more information out. It's just that we are
12 moving probably slower than other people would like.

13 But certainly as a first step if I can get a
14 list from somebody of all the emails that should go on --
15 and it doesn't really go out to individuals, per se, so I
16 don't want a list of a hundred emails to send it to -- but
17 if there's one contact, whether it's, you know, the head of
18 each HTO or the NWMB, that it could then be distributed, or
19 through, you know, the KWB -- just some contact that we
20 could start getting that information out to people.

21 Thank you.

22 THE CHAIR: Thank you, Nick. Very helpful.

23 Drikus.

24 MR. DRISSING: Thank you very much.

25 No, we'll definitely provide that contact

1 information, and then I'll speak to Marcus about it as
2 well.

3 In your presentation this morning you also
4 provided some information from DFO on seals. Is there a
5 report on that available?

6 THE CHAIR: Thank you, Drikus.
7 Nick.

8 DR. LUNN: To the best of my knowledge, if
9 there is, it's likely a report made to the NWMB. I asked
10 Steven about it, and he said he came up to give some
11 presentation in the Kivalliq on the seal research, and
12 those were slides that he had used. So I can double-check
13 who he gave that talk to and whether there's a written
14 report.

15 There isn't, say, a publication, a scientific
16 publication yet on those changes. There is some
17 information on seal surveys, but not the seal blubber
18 thickness. But I can double-check with Steve to see if, in
19 fact, there is a report, and if there is, is it accessible
20 to the NWMB and others other here?

21 Thank you.

22 THE CHAIR: Thank you, Nick.
23 Drikus.

24 MR. DRISSING: Thank you, Mr. Chair.

25 My last question is just to get Nick's thoughts.

1 And it was mentioned this morning, as well, around
2 modelling and, you know, if we start talking about managing
3 for reduction or managing for increase.

4 When I started in Nunavut in 2003 and 2004, at
5 least up until quite recently, there was a lot of always
6 reference and a use of RISKMAN as the model to use for
7 polar bears, and it seems like now RISKMAN -- nobody really
8 likes RISKMAN anymore, and people believe it's not giving
9 good information. And there's a new model that
10 Eric Regher, I think, developed now for Baffin Bay. I just
11 have a concern, personal concern with how useful that
12 modelling would be in such a changing environment, that you
13 mentioned this morning that you see changes almost on an
14 annual basis.

15 I remember when our biologist did the study in
16 Baffin Bay over that three-year period, the first year they
17 came back and said, oh, this is a disaster. There's no
18 cubs. You know, we're not seeing cubs of the years. And
19 the next year they went back, and there was lots of cubs.
20 So it changes almost from year to year, and the ups and
21 downs -- even in the maps that you showed this morning and
22 changes, you have these variables.

23 And I'm concerned about the amount of trust we
24 put into these models to make decisions, and just your
25 thoughts around that. I know very little about modelling.

1 I'm really -- but I have some concerns when it comes to
2 environmental changes, how much faith we put into these.

3 THE CHAIR: Thank you, Drikus.

4 Nick, go ahead.

5 DR. LUNN: I've got a couple of parts of way
6 to answer that.

7 One of the use of models is because people want
8 to know what's going to happen in the future, and so that's
9 one of the reasons that people develop models. And they
10 don't have to be polar bear-specific. People want to know
11 what the weather's going to be like, people want to know
12 whatever is going to happen. People want to have some
13 information on what is on for the future. I mean, people
14 have asked me what do I think is going to happen? When is
15 the quota -- when do we lose bears in Western Hudson Bay?

16 The only way you can get answers to that is
17 through the development of models, right, if you really
18 want to have some sort of a rough guideline. And the way
19 you develop those models is you take what information you
20 have, what you think are the important variables that might
21 influence that, and you develop a model, and then you run
22 it. And then you look at the existing data to see whether
23 it matches, how close it comes to predicting what actually
24 happened.

25 And once you get a model that works, then you

1 run with it, but the problem then comes in when something
2 happens and the model doesn't predict it. It doesn't
3 necessarily mean that the model itself is wrong, but it
4 means that something has changed, something that we
5 considered not important turns out to be important. So
6 you're constantly upgrading and changing these models.
7 And, again, it's not because the models are wrong. It's
8 because the system is changing or something is becoming
9 more or less important.

10 So I share your concerns, but we're always
11 battling with that in the various status tables. And you
12 will know status tables on polar bears, it's always
13 changing. And that's because people want to know what's
14 going to happen in the future. And so you try to develop
15 the best model. And then when it doesn't happen, then
16 there's -- you know, people are critical that, well, you
17 said this, and it didn't happen. So there's that element.

18 RISKMAN was very good when it was developed for
19 what it was developed for. The issue for RISKMAN was that
20 down the road that wasn't very good as sort of climate
21 change -- as the environment was changing, it wasn't very
22 good at handling that because the way RISKMAN worked, it
23 had a fixed environmental variable. So you set it once at
24 the beginning, and that variable, whatever it is for the
25 environment, stayed for the whole length of your runs and

1 your simulations. So if you ran it out 20 years or 30
2 years, it assumed that the environment was constant at
3 whatever you set it at. So you couldn't change an
4 environment that changed over time. You couldn't get
5 RISKMAN to deal with that.

6 So you started ending up with projections that
7 didn't really seem to make a lot of sense. So people got a
8 little bit, you know -- not that RISKMAN itself was bad.
9 It's just that it was no longer really functional to deal
10 with changing environments. And there was some initial
11 work done on trying to change it to do that, but again,
12 that wasn't anything that I was involved in. I don't know
13 go if that ever happened.

14 So, you know, the model of Eric Regehr that you
15 mentioned, and that's a recent development, and that does
16 include and incorporate a lot of environmental uncertainty
17 and changes and involves changes in age -- you can really
18 model a lot different variables, but the problem is, as
19 you've mentioned, they become very, very complex. They
20 take a long time to run, and they provide you with, you
21 know, various output, but there's no guarantee. There's no
22 guarantee in these models that what it says is what's going
23 to happen. And if you get it wrong, you fall back on the
24 model and say, well, the model got it wrong; right? And
25 you can go back and sort adjust it and fix it, but in the

1 mean time, there may be consequences.

2 So I think they're useful tools to provide sort
3 of some guidance or some advice on potential outcomes, but
4 I think one has to be very careful and recognize that
5 models themselves aren't perfect because they're based on
6 what's happened to date. And that's what makes them run,
7 what has happened to date, and then you see if it fits.
8 You run the model, develop it. Does it predict accurately
9 what actually did happen? And then you run it forward.
10 But if something else, some big hiccup happens that you
11 haven't anticipated, I don't know, a seal explosion so
12 there's lots of seals in the bay or the sea ice comes back
13 or something else, well, if that hasn't happened before,
14 it's not in the model. So all of a sudden you could get a
15 very spurious result and you lose face.

16 A clear example of that is, for those that
17 follow sort of the arctic sea ice minimum in September,
18 that that's how much sea ice at its minimal or the
19 circumpolar arctic -- there was a good model that predicted
20 that. But in 2007, it had this huge record low, a drop,
21 and nobody -- there were no climate models that predicted
22 that drop. And it wasn't that the model was wrong, it's
23 just something else happened. And so people started
24 becoming very critical of those sorts of models. They went
25 back to the drawing board and rejigged those models.

1 So one just has to be careful that when you use
2 models. It's projecting something into the future, and
3 you'll never know if it was right until you get to whatever
4 that future point is. So if you use it for ten years at a
5 certain harvest rate and it says you should be okay, you
6 won't know it's okay until that time comes and you can say,
7 yes, it was good or, no, it was bad; right? That's the
8 only way you can validate it is, you know, it predicts it
9 to a certain point, and then you just run it for the
10 future, and you check.

11 So, yeah, there are lots of models of how many
12 bears maybe -- you know, the U.S. did one. I don't want to
13 go off on a tangent, but the U.S. did modelling into the
14 future, and they had certain predictions of when there
15 would or would not be bears. The only way you're going to
16 know if that's true is when that period comes. Was it
17 right? Was it not right?

18 THE CHAIR: Thank you, Nick.

19 Drikus.

20 MR. DRISSING: Thank you, Mr. Chair. That's all.

21 Thank you very much, Nick.

22 THE CHAIR: Thank you very much, Drikus, from
23 the GN.

24 I'd like to welcome Stanley Adjuk here from
25 Whale Cove, the chair of the Kivalliq Wildlife Board. You

1 can come join us at the table here, Stanley. Welcome.

2 We'll move on, then. NTI, the floor is yours.

3 **NUNAVUT TUNNGAVIK INCORPORATED QUESTIONS AND COMMENTS**

4 MR. IRNGAUT: Thank you, Mr. Chairman.

5 Thank you, Nick, for your presentation. That
6 was very informative. I have a few questions, and I'm sure
7 David Lee will have a question, too.

8 In your presentation you mentioned that you
9 collared, what, 75 to 95 bears per year, and I take it the
10 majority of those are -- well, all of them, probably, are
11 females. Is that correct?

12 THE CHAIR: Thank you, Paul.

13 Nick, go ahead.

14 DR. LUNN: No, we capture 75 to 100 bears per
15 year of all age and sex classes, a total. Collars are
16 somewhere between 10 and 12 adult females per year.

17 THE CHAIR: Thanks, Nick.

18 Paul, go ahead.

19 MR. IRNGAUT: Yes, thank you. Thanks for that
20 clarification. My mistake.

21 You also mentioned that some of them are caught
22 three or four times per year. No? Okay. I wrote
23 something wrong, then.

24 So with the collared females, are the cubs
25 immobilized, too, at the same time? Thank you.

1 THE CHAIR: Thank you, Paul.

2 Nick.

3 DR. LUNN: Yeah, the first one, when I said
4 three to four times, that's over their lifetime.

5 In any one year we only catch a bear once, and
6 we minimize the risk of catching it twice but putting on a
7 paint mark. We put a little spray paint on its back, and
8 that identifies to us that we've caught it already. So the
9 intention is you only catch a bear once in a year. Three
10 to four was over the lifetime that a bear is being caught.

11 THE CHAIR: And he also asked you about the
12 cubs.

13 DR. LUNN: Yeah. When we're handling
14 females, in the fall time the cubs are too big to be left
15 alone while we collar mom. So, yes, we immobilize the
16 cubs, as well, and we get weights and measurements and
17 stuff on the cubs.

18 THE CHAIR: Thank you, Nick.

19 Paul.

20 MR. IRNGAUT: Thank you. Thank you for the
21 answer.

22 So you collar females during the fall when
23 they're on land, I take it, then. Yeah. How long do you
24 stay with them before they can get up and move around on
25 their own freely?

1 THE CHAIR: Thank you, Paul.

2 Nick.

3 DR. LUNN: We stay with bears until they're
4 showing signs of recovery, so they're starting to move
5 their heads, the cubs will be up and moving about. We
6 don't stay until the bear is completely recovered and walks
7 away. They're up and about, able to move within an hour
8 and a half to two hours, and they're probably fully back to
9 their good old selves within a day or two. So it would
10 take a while for us to sit and stay by a bear until it was
11 back to how it was before we caught it.

12 There's obvious concern that if we leave a
13 drugged bear that another bear is going to come along and
14 kill it or there's going to be some injury or something is
15 going to happen. In Western Hudson Bay I only know of one
16 instance since we've started the research where an
17 immobilized bear was killed by another polar bear. We see.
18 We fly over the area, and there's dots on them so we know
19 they're marked, and we fly back and forth over the area,
20 and we see those marked bears up and about moving around
21 after we've handled them. Most of the bears that we've
22 handled in the past, they've been recaptured again so, you
23 know, that provides additional information that there's not
24 this mass mortality due to drugging being left on the
25 tundra.

1 And there are lots of people around flying.
2 It's a big tourist industry. There's people working on
3 geese. If it was a huge concern, there would be other
4 people seeing these dead bears, and we would hear about it.
5 But I'm only aware of one instance in all our time doing it
6 where a bear has died because it was drugged and just left
7 on the tundra.

8 Thank you.

9 THE CHAIR: Thank you, Nick.

10 Paul.

11 MR. IRNGAUT: Yes, thank you for that answer.

12 When you see them again the following year, do
13 they still have cubs, or are the cubs gone?

14 THE CHAIR: Thank you Paul.

15 Nick.

16 DR. LUNN: That really depends on the
17 individual female. If we're catching a female with cubs of
18 the year and we see them again the next fall, some will
19 have cubs, some won't have cubs. In Western Hudson Bay, at
20 least in the early '80s, about a third of the females were
21 able to wean their cubs at one year of age, which is a year
22 earlier than most other subpopulations. That number's
23 declined. So most females are keeping their cubs for two
24 and a half years, but they are still these lone independent
25 yearlings that are running around and seem to be fine. So

1 it really is variable between bears whether or not we'll
2 see the cub with mom the following year.

3 THE CHAIR: Thanks, Nick.

4 Paul.

5 MR. IRNGAUT: Thank you for that answer. You
6 mentioned in your presentation that you had information
7 about the seals from Ferguson from DF0. What about any
8 information on killer whales? Because we know they come up
9 to Repulse Bay area quite a bit. Any information on killer
10 whales?

11 Thank you.

12 THE CHAIR: Thank you, Paul.

13 Go ahead, Nick.

14 DR. LUNN: I apologize.

15 Certainly when we started our research, killer
16 whales, sightings of killer whales in Hudson Bay and
17 Western Hudson Bay was never reported. No one ever talked
18 about them, at least around the community of Churchill. In
19 recent years, probably within the last ten years or so,
20 there have been more increased sightings of killer whales
21 coming right into the mouth of the Churchill River, and
22 there's photographs of a pod of killer whales. I think
23 there were seven of them literally right in the mouth of
24 the Churchill River.

25 So clearly there are more killer whales at least

1 being seen in Western Hudson Bay. Whether they've always
2 been in the bay and just not on the western side I couldn't
3 answer. We're not doing work on killer whales. So I can
4 answer part of it that. Yes, we're seeing increases in
5 killer whales, but I couldn't tell you sort of numbers or
6 that type of information.

7 THE CHAIR: Thanks, Nick.

8 Paul.

9 MR. IRNGAUT: Thank you. Thanks for that
10 answer.

11 The reason why I ask that question is that
12 killer whales do have impact on the food source of polar
13 bears.

14 I don't have further questions, but maybe David
15 might have some. Thanks.

16 THE CHAIR: Thank you, Paul.

17 David Lee, go ahead.

18 DR. LEE: Thank you, Mr. Chairman.

19 I just have a quick couple of comments for
20 clarification for the Board. And, again, thank you to
21 Rachel and Nick for presenting their presentation.

22 So one of the slides mentioned the 18 percent
23 downward reduction -- I can't recall the exact term that
24 was used -- when comparing the most recent estimate to the
25 previous estimate. I just wanted to clarify for the Board

1 that, in the opinion of the authors, the coauthors of the
2 report and the survey -- being careful that I'm not
3 representing the GN, and it states that on the report --
4 that we're not indicating that there is actually a decline
5 in the population. I think it's important because I don't
6 want there to be an impression that the scientists that
7 conducted the survey are presenting a report that the
8 population has been reduced. I think in the presentation I
9 gave on behalf of the GN we're very clear that, because of
10 the uncertainty surrounding the most recent point estimate,
11 we could not actually detect a decline.

12 So that's important because even suggesting that
13 there was this 18 percent reduction -- and I realize this
14 is part of human nature -- is suggesting that there's a
15 decline. In fact, we're not suggesting that there is a
16 decline. Yes, there is a difference, but how you can
17 attribute that difference -- there is not a trend analysis.

18 In the NTI submission, in fact, there was a
19 figure provided that was in the supplemental information of
20 the GN report. I noticed it isn't in the tab under the GN
21 report, but it's in the NTI submission. And that is a
22 trend analysis of the Manitoba coastal survey data. I
23 realize there are potentially issues with that survey data,
24 but we analyzed it, and that trend data was showing an
25 increase at least in the observations of male bears.

1 Again, I wanted to mention that to you because I
2 don't think that there is always disagreement between
3 scientific observations and scientific research and what
4 Inuit are observing, and this is an area that probably
5 requires further investigation or at least asking Manitoba,
6 who are unfortunately not here, for clarification on their
7 trend data or their observations and how we analyzed their
8 trend data. So those are two points of clarification.

9 The last item, and it's just in case
10 Environment Canada decides to utilize that difference
11 between the 2011 and the most recent estimate. And I don't
12 attribute any criticism to development of that comparison,
13 but the accurate comparison would be to 949 because there
14 were differences in how the previous estimate was derived,
15 and the difference then would be 11 percent, not 18
16 percent.

17 So, again, I realize these are minor details,
18 but I just wanted to be clear for the Board's
19 consideration. Thank you. And those are just comments. I
20 don't know if...

21 THE CHAIR: Thank you, David Lee, for that
22 information.

23 Would you like to respond, Nick?

24 DR. LUNN: Yeah. No, I mean, that's good to
25 clarify and make sure that people around the table know

1 what the data say and what they show. I may have used
2 wrong terminology, but we're sort of looking at point
3 estimates, and that's what's typically used, and that's
4 what's used by groups such as the PBTC and the PBSG and
5 whether or not there's a statistical -- I mean, I agree
6 that you can't determine a trend from two points. But, you
7 know, you have a number, a previous number, and now you
8 have a new number, and one is lower than the other, whether
9 it's statistical or not or exactly what it means. You
10 know, presumably -- and, again, I'm just speaking -- at the
11 next meeting we're going to use whatever is the best
12 available piece of scientific information when we put in an
13 abundance estimate for Western Hudson Bay or Southern
14 Hudson Bay. It will be up to those authors that did the
15 work to tell us what that number is.

16 But, you know, the numbers are lower, and they
17 were both similarly lower, and that was the point of the
18 slide. And the terminology maybe was incorrect. But both
19 populations have aerial survey estimates that the number,
20 the new numbers are lower than the old numbers of
21 equivalent change. So how we present that, that will be
22 something that will need to be sort of identified by the
23 authors of the report, but, you know, people will be
24 looking to use the new estimates for these subpopulations,
25 so we're going to have to work on that. But your point is

1 taken.

2 Thank you.

3 THE CHAIR: Thank you, Nick.

4 NTI, any more questions? Thank you very much,
5 gentlemen.

6 Next on the list is Kivalliq Wildlife Board,
7 questions to Environment Canada.

8 **KIVALLIQ WILDLIFE BOARD QUESTIONS AND COMMENTS**

9 MR. GREENE: Yeah, just one question you guys
10 re ECCC recommends a comprehensive harvest risk assessment
11 be undertaken no matter what TAH is decided upon, and you
12 identify that an analysis has been done with the Baffin Bay
13 polar bear subpopulation. I'm just wondering if you could
14 provide more details on what that type of study would
15 actually look like and what it would entail.

16 THE CHAIR: Thank you.

17 Nick.

18 DR. LUNN: Yeah, for the Baffin Bay Kane
19 Basin work, a scientific working group was asked to provide
20 some advice on harvest levels to the joint commission, and
21 the scientific working group looked at this new model
22 developed by Eric Regehr and its ability to incorporate
23 things such as environmental change and age-specific
24 reproductive rates, a whole variety of pieces of
25 information that weren't necessarily or easily incorporated

1 into other models. And we like the model because it
2 provides options and advice to people that have
3 responsibility for management.

4 What's involved in that? Well, one of them is
5 you need some management objectives. So there would have
6 to be, as we talked about, what would be a management
7 objective for Western Hudson Bay? And by that I mean, you
8 know, we know what a starting point of the population is,
9 assuming we use 842, but you could start at what you want,
10 and then you would want to know, where do you want to end
11 up? So you have to have that bit first.

12 You would have to have a whole variety of the
13 harvest data, so the harvest data from the communities and
14 from whoever maintains that. Presumably the GN has that
15 information, so they would have to make that available.
16 For a place like Western Hudson Bay, because there is a
17 long-term mark recapture program, a lot of data,
18 Environment Canada would have to be willing -- and we are,
19 so I'm not saying -- you know, we would be willing to
20 provide that information to such an exercise. And then
21 there would be other organizations. Manitoba would have
22 some data on tagged bears.

23 And so you'd have to ask everybody that has some
24 data from, you know, Western Hudson Bay to be willing to
25 provide that. You'd have to get the harvest data. You'd

1 need management objectives and some level of risk
2 tolerance. You know, and it would have to be a range.
3 Like, are you prepared to be wrong? If you want to go from
4 800 to 500, what is the risk that you're prepared to take
5 that you're wrong? You know, and that could be where
6 10 percent, we're prepared to take a 10 percent chance that
7 we're wrong.

8 It can be any number, so you have to come up
9 with sort of your boundaries of how risky you want to be.
10 You might not want to be risky at all. You might want to
11 say there's no chance. We don't want to be wrong at all.
12 Well, that's going to give you a different result than if
13 you said, look, we're prepared to take a 10 percent risk
14 that, if we hold us to this level, we won't meet the
15 target. So that's what we did for Baffin Bay, and we ran
16 three sort of different management objectives in a number
17 of scenarios.

18 I won't sugarcoat it. It's labour intensive.
19 It's a very complex model. It's not something that you
20 just get the data one day and a week later you hit the
21 button and you say, "Here it is."

22 I actually, in anticipation of perhaps this
23 being a potential recommendation, I actually asked
24 Eric Regehr how much time he thought it would take to run
25 the model, and his response was that if that's the only

1 thing he did, it's probably in the order of three months to
2 do, to set the whole model up, run through all the data, do
3 it. If he's doing other things as part of his job, then he
4 says you're looking more like six to seven months of time,
5 and then there would be a cost. Eric Regehr is at a
6 university in the U.S., and, you know, he would be -- you
7 would basically be contracting him. So it wouldn't -- I
8 don't know what that would cost, so I can't give you that
9 estimate, but I could pursue it if that was of interest.

10 But it's not going to be something that you're
11 going to get in a week. If you decided to run, it's
12 probably going to be three months of time, solid time, or
13 six months or so if he's doing other things in between.

14 THE CHAIR: Thank you, Nick.

15 Ezra.

16 MR. GREENE: Thank you. Thank you for that
17 answer. That's the only question I have.

18 THE CHAIR: Okay. Thank you. No other
19 questions from KWB.

20 We'll move on to the communities, then. Arviat,
21 any questions for Environment Canada? Nick.

22 **ARVIAT HTO QUESTIONS AND COMMENTS**

23 MR. ARNAUKJUAQ: Yes, thank you, Mr. Chair, and
24 good afternoon.

25 I have a couple on my list with the polar bear

1 population and now with the human-bear interaction. But
2 I'll go with the first one. The polar bear population in
3 Canada overall is a large number, but I'm wondering for
4 Western Hudson Bay population, is it stable? Like, the
5 risk, the category risk work that Environment Canada's done
6 with this, is it stable, concern, or at risk?

7 Thank you.

8 THE CHAIR: Thank you, Nick.

9 Nick.

10 DR. LUNN: The status of populations of polar
11 bears in Canada is determined by a committee called the
12 Canadian Polar Bear Technical Committee, and that's made up
13 of government agencies, wildlife management boards, so on
14 and so forth. And they meet once a year, and they review
15 at that time what information is available, the best
16 available information, both scientific and traditional
17 knowledge information, and then, based on that, their
18 determinations, they assign a status to each subpopulation.

19 The Polar Bear Technical Committee has not yet
20 met. It has not yet seen this aerial survey report, so
21 currently the status of Western Hudson Bay is stable. It's
22 a stable population. Once a presentation is made to the
23 technical committee -- and they're meeting in early
24 February in Inuvik -- there will be presentations from
25 presumably GN or NTI on the aerial survey, there may be

1 other information that's given at that meeting. I know the
2 regional wildlife organizations typically attend, NTI
3 attends. So there will be new information. All that will
4 be considered, and then a new status assigned at that
5 point. So at the moment, it's stable. That may or may not
6 change after the next meeting.

7 Thank you.

8 THE CHAIR: Thank you, Nick.

9 Go ahead, Nick.

10 MR. ARNAUKJUAQ: Yeah, thank you for that answer.

11 My second question had to do with human-and-bear
12 interaction. I don't know if Environment Canada is aware
13 about Arviat and Churchill. When it comes to polar bears,
14 they're two completely different sides. What do I mean by
15 that? Churchill is in tourism, whereas in Nunavut we kill
16 bears. And I worry about this sometime because maybe in
17 five, ten years this will change because protection, animal
18 activists and also how Churchill is handling tourism. I'm
19 sure it's going to be a balance where one is favoured and
20 one is not favoured. But the problem that we face with
21 polar bears is different from Churchill, so I'm wondering
22 what would likely happen. Does Environment Canada look
23 into this?

24 Thank you.

25 THE CHAIR: Thank you, Nick.

1 Go ahead.

2 DR. LUNN: Yeah, thank you.

3 Environment Canada is well aware of the issues
4 of public safety, human safety, what's happening in Arviat
5 and the communities up the Kivalliq and is aware of the
6 tourism angle in Churchill.

7 I mean, Canada collectively has always
8 supported, you know, that we have a very well-managed
9 harvest in Canada. We're not concerned about that. And
10 internationally, that's defended internationally, and
11 international polar bear groups such as the IUCN polar bear
12 specialist group, they likewise have said that, you know, a
13 well-managed harvest is not a threat to polar bear
14 populations. So there's no concern at the moment that
15 there's an issue that, you know, harvest is well-managed
16 and it's well supported by Canada collectively. It's
17 supported by international groups, and I think proof of
18 that internationally, at least so far, is that attempts to
19 get them uplisted under CITES to Appendix 1 have always
20 failed, and so I think there is a recognition that that
21 harvest is not an issue, and human safety is not an issue.

22 I can't speak specifically to what Manitoba
23 thinks about tourism, how it manages. It's unfortunate
24 they were unable to attend, so I can't speak to that part
25 of your question. But I'm not aware that there are any

1 major Manitoba initiatives dealing with tourism versus
2 problem bears. I simply don't know of any. I can try to
3 find out, but at this meeting I have nothing that I can,
4 unfortunately, contribute to answering that question.

5 Thank you.

6 THE CHAIR: Thank you, Nick.

7 Nick.

8 MR. ARNAUKJUAQ: Thank you, Mr. Chair.

9 I just have a bit more of a comment regarding
10 disturbance and disruption of wildlife. Like, for polar
11 bears, it's changing the habits and wildlife natural
12 environment. And Inuit have maintained good use and are
13 the most environmentalist with our arctic species like
14 polar bear. What I want to say is work with that in spirit
15 and in cooperation between the federal -- between the
16 Government of Nunavut. This way we won't have any
17 conflicts or issues when it comes to polar bear.

18 Now, we've been dealing polar bear year after
19 year, and ongoing -- like, five, ten years -- with no solid
20 footing or with solid understanding. And sooner or later
21 this has to be in place. So that's just my comment
22 regarding this. And I will go quickly with the problem of
23 taking polar bear cubs that no longer have a mother to use.

24 With the use anywhere in Canada, I find it most
25 inhumane, most cruel to a polar bear. And I was glad the

1 mayor of Churchill stood up to say no more sending bears to
2 anywhere down south in zoos. Let nature take its course.
3 Like, it doesn't matter what level of government, they
4 cannot protect all the polar bear cubs. That's just part
5 of natural wildlife. We can intervene, yeah, but to send
6 them to zoos, I often find it inhumane and really cruel.
7 So this is just my comment on this matter about polar bear.
8 And, yes, we want this resolved, and we want this to be in
9 order in the long run. That's our goal and plan for the
10 Inuit for the HTO.

11 Thank you.

12 THE CHAIR: Thank you very much, Nick, for
13 those comments and concerns.

14 Environment Canada, would you like to comment?

15 DR. LUNN: I guess I can comment on a short
16 comment on sending bears to zoos. That is an issue that
17 we're well aware of is of concern to Inuit. It's not a
18 decision of Environment Canada. If there's an orphaned cub
19 of the year in Manitoba, that is up to Manitoba to decide
20 what they want to do with it, what other mechanism they
21 have in place, and I'm not sure what those mechanisms are.
22 So it's not an Environment Canada Rule or regulation that
23 says you have to send them to zoos. That's entirely up to
24 Manitoba or any other jurisdiction where it occurred. So
25 it's not something that we're involved in per se.

1 But I know that there are conflicting opinions.
2 I know in the north people don't like them being sent to
3 zoos, and there are some people that do like to see bear
4 cubs sent to zoos. So, again, it's not a federal issue.
5 It's a provincial or territorial issue.

6 And in my comment of better working together of,
7 you know, science and traditional knowledge and
8 communities, that's something that our department does
9 support, and we have tried to get that moving along through
10 various contributions to organizations to work much better
11 and get mechanisms in place. That's an ongoing process,
12 but it is something that we as Environment Canada do
13 support. It may not be happening as fast as people would
14 like, but it is something that is important to us and is
15 one of the sort of priorities of, you know, involving the
16 local users in a lot of these decisions.

17 Thank you.

18 THE CHAIR: Thank you, Nick.

19 Thomas.

20 MR. ALIKASWA: Thank you, Mr. Chairman.

21 My question to Environment and Climate Change
22 Canada, the polar bears that are being put to sleep, the
23 drug that is used on polar bear with their organs, their
24 hearts, their livers, whether they get sick from it or not,
25 that's my question. I know in November in Arviat our

1 Renewable Resource Officer in the community, one of the
2 houses, there was a male bear that had to get picked up
3 because it died from freezing. It was starving. It went
4 inside the house, and it froze. So they had to go get it
5 out of the building. It was very skinny, and it was a
6 male.

7 And the other concern that I have of polar bears
8 when they put collars on them and the females that are
9 collared, I see myself the polar bear that has a collar on
10 it will not hunt properly. I'm just mentioning that
11 because in Arviat, in November still, the Renewable
12 Resource Officer had to destroy a bear that was very, very
13 skinny, and it had a collar on it. It had to be destroyed.
14 It was very skinny, and it kept coming back to Arviat, and
15 it was a safety for the public, so they had to destroy it.

16 These are my questions to Environment and
17 Climate Change Canada. The collared bears don't hunt
18 properly anymore because of the collar. When they try to
19 follow the seals in the water, it affects their swimming
20 ability.

21 Thank you.

22 THE CHAIR: Thank you, Thomas.

23 Nick.

24 DR. LUNN: The answer to your first part of
25 your question about does the drug have effects or negative

1 effects on the internal organs, we don't have any
2 information that it does. We don't really have a -- when
3 we have a bear immobilized, we certainly monitor heart
4 rate, how fast it's breathing, we can monitor its oxygen
5 level in its blood. And we do that stuff routinely so we
6 can monitor the health of the animal as we're working on
7 it. And if there was an issue, we could take some
8 intervention.

9 So during our handling we don't see those sorts
10 of issues that there are compromises to its heart or its
11 lungs or liver function. We wouldn't really have a way to
12 detect that unless we did biopsies on these various organs,
13 and because we're not concerned and there's no evidence
14 that these drugs do that to bears, it's not something that
15 we plan to do is to start doing invasive stuff, taking
16 biopsies of livers and pieces like that. It's widespread
17 use in veterinary medicine, so from that perspective, there
18 have been a lot of studies done on dogs and cats, and there
19 aren't issues with the drugs on the internal organs. But,
20 again, we have no evidence that there is.

21 The second part about that particular skinny
22 bear in Arviat and because it had a collar on it wasn't
23 able to feed properly, the circumstances for that bear was
24 that collar -- that bear had come ashore sometime that
25 summer -- I don't know the date because it didn't have a

1 collar on at the time -- and we caught it in the denning
2 area and put a collar on it at that time. And it then
3 spent the rest of the summer in that denning area, and in
4 the fall time it moved directly to Arviat. So its movement
5 and its appearance in Arviat and its unfortunate demise all
6 occurred while it was on land. So that particular bear had
7 never been collared before, and it never had an opportunity
8 to hunt on the sea ice. So in that particular instance,
9 the collar didn't have an impact on its ability to catch
10 seals because it never got back out onto the sea ice.

11 What we do know from its movement was, as I
12 said, we collared it in September, and it spent about six
13 weeks in the denning area. And then, for whatever reason,
14 it went basically a straight line movement straight from
15 the denning area to Arviat. It bypassed Churchill
16 altogether, so it didn't even go into the town of
17 Churchill. It just made a straight line movement to
18 Arviat.

19 And, unfortunately, it was very thin. It wasn't
20 in that condition in the fall time when we handled it. But
21 when bears are on shore they're generally not feeding, and
22 they lose about a kilogram per day. So that female had
23 been on shore six weeks or so since we handled it. So six
24 weeks is 42 days. She could have lost 42 kilograms of body
25 weight. So it's unfortunate that she was very, very thin.

1 I was told that it had some leg injury. I don't
2 know. I didn't examine the bear in Arviat at the time, but
3 I'm told it had some sort of a leg injury. Whether that
4 was a factor, I can't say, but at least in this particular
5 case it wasn't a case of the collar preventing the bear
6 from hunting seals on the sea ice because it was all done
7 and happened within a couple months while it was on shore
8 prior to the sea ice re-forming.

9 Thank you.

10 THE CHAIR: Thank you, Nick. *Taima*. Any
11 anybody else from Arviat? Any other questions from Arviat?
12 Okay. Thank you very much, gentlemen, for your questions.

13 We'll now move on, then, to Whale Cove
14 questions. Go ahead, Simon.

15 **WHALE COVE HTO QUESTIONS AND COMMENTS**

16 MR. ENUAPIK: Thank you Mr. Chairman.

17 This morning we were shown one presentation. I
18 have one question. You have been doing studies for 30
19 years. My question; have you noticed whether polar bears
20 have levels of mercury in their bodies?

21 Thank you.

22 THE CHAIR: Thank you, Simon.

23 Go ahead.

24 DR. LUNN: In the early days of the study --
25 bears generally in Hudson Bay have low level of

1 contaminants when you compare them to other subpopulations
2 around the circumpolar arctic. The populations that tend
3 to have the most level of contaminants are ones higher on
4 up as you move to the pole, and probably some of the
5 populations with the most are next to the former
6 Soviet Union in areas where there's been a lot of dumping
7 of radioactive contaminants. So those are some of the most
8 of the contaminated bears. Part of that is due to the
9 atmospheric and circulatory -- the currents that bring
10 contaminants up. They all tend to concentrate them up in
11 the higher arctic. They don't generally get into
12 Hudson Bay just because of where it's at.

13 In terms of mercury level of bears in
14 Hudson Bay, they do have levels of mercury, but they are
15 very low levels, and we're not seeing increases in that in
16 the bears. So the short answer is they're not heavily
17 contaminated, and we're not seeing increases of mercury in
18 bears in Western Hudson Bay.

19 THE CHAIR: Thank you, Nick.

20 Simon?

21 MR. ENUPIK: No more questions. Thank you,
22 Mr. Chair.

23 THE CHAIR: Jackie, go ahead.

24 MR. NAPAYOK: Thank you, Mr. Chairman.

25 I wanted to ask a question. The collared bears,

1 I think some Inuit know, they've seen collared bears. I
2 haven't seen one personally. What kind of material do you
3 use? Is it cloth or steel or aluminum, or what kind of
4 material are on the collars?

5 THE CHAIR: Thank you, Jackie.

6 Nick -- sorry.

7 DR. LUNN: That's all right. I was following
8 protocol this time.

9 Where the battery is housed, so that square part
10 of the collar -- I don't know if we can bring the picture
11 up -- but the collar itself, the battery part, that's a
12 metal box that the batteries and the electronics are housed
13 in.

14 How it attaches to the bear, it's webbing, and
15 it's the same type of webbing that's used in refrigerators.
16 It's refrigerator belting, so it's a fabric material, and
17 degrades -- oh, I can't probably see it. I can just see
18 over there. Maybe if you can zoom in on the one on the
19 bottom. The material -- it's a fabric material with a
20 rubber coating, and that degrades -- maybe the one below --
21 yeah. So the big square box, that's metal. That's where
22 the batteries, the electronics are housed, so that's a
23 metal housing to protect it, and that's covered in a
24 rubberized fabric.

25 Most of the belting that you see, the bulk of

1 the collar, the round part that attaches, it's just
2 refrigerator belting which is a fabric covered in plastic.
3 It degrades over time. The cubs will rip it apart, so
4 after two years they're in pretty rough shape. It degrades
5 over time.

6 There are bolts that hold it together that rust
7 out, as well, in addition to the release mechanism. So
8 lots of sort of backups and backups to backups, so these
9 collars don't stay on, but it's a fabric that mostly goes
10 around the neck.

11 Thank you.

12 THE CHAIR: Thank you, Nick.

13 Jackie.

14 MR. NAPAYOK: When you put the collars on, you
15 bolt it. I think you put two bolts on it with nuts. They
16 don't loosen over time, the nuts and bolts that you use?

17 THE CHAIR: Thank you, Jackie.

18 Nick.

19 DR. LUNN: Yeah, it's two bolts, and they go
20 through that little black -- if you can now move that one
21 up so that we can see the top panel, I think you might see
22 it better, maybe. Anyway, yes, it's two bolts that fasten
23 the two pieces of the collar together, and the bolts go on,
24 and they rust out. Do they loosen? No, there's a washer
25 on that prevents that from coming undone and popping some

1 off. So, no, they don't. The bolts don't drop off
2 unintentionally.

3 THE CHAIR: Thank you, Nick.

4 Jackie.

5 MR. NAPAYOK: I was worried about them. Thank
6 you for your answer.

7 When you put them on the bear, I think the cubs
8 try and take them off of the mother with their claws. So
9 just not today.

10 Another thing you mentioned this morning, in
11 1950s, there was a lot of polar bears. I grew up in
12 Coral Harbour. I just moved into this area. From 1950 to
13 today -- that's quite a while ago -- I witness today that
14 polar bear are more abundant than they used to be. When we
15 had dogs in the past, we had to feed our dogs, we had to
16 feed our children. I wonder why today, even though you're
17 saying they're declining, we notice as Nunavut people that
18 we don't believe that they're declining. There's more than
19 there used to be.

20 THE CHAIR: Thank you, Jackie.

21 Nick.

22 DR. LUNN: Just a quick comment on the first
23 point you raised about cubs taking collars off moms. When
24 we put them on, we put them on so they're loose enough that
25 my fist fits through, and we find that when bears get up,

1 adult females, that if they want to get those collars off
2 they take them off right away, and they are sitting at the
3 spot where we put them on.

4 We find that, if a bear will wear it, leave that
5 area, that she's fine at leaving that. But definitely the
6 cubs do chew on them, and they will try to get them off,
7 and so we have had some of our collar failures or early
8 collar failures when we get them back is that the antennas
9 and the webbing have been ripped apart presumably by cubs.
10 And so the antenna is gone and is no longer in a position
11 to transmit. So cubs definitely do play with them and
12 will, you know, chew on them and, in some cases, do quite a
13 bit of damage.

14 To the second part about more bears now than
15 when you remember back in the '50s, part of that, again, at
16 least, is up until the late '60s, early '70s, worldwide
17 polar bear harvest was unregulated and nonselective all
18 around the world. People were just shooting whatever polar
19 bears whenever they wanted. And it was because of that
20 that people around the world were quite concerned, and
21 that's what initially led to this international agreement
22 of the five polar bear countries was they got together and
23 said: Look, we know nothing about polar bears yet we're
24 seeing large, large numbers being harvested. And so that
25 was sort of the impetus for research was this uncontrolled

1 and nonselective harvest.

2 So in the early days polar bear populations were
3 probably kept very low simply because there were lots of
4 bears being taken nonselectively, females with cubs, so on
5 and so forth. And then once we started implementing or,
6 you know, and quotas started coming in it was through those
7 conservation methods and through the hunters following
8 these quotas that, all of a sudden, that provided a level
9 of protection to subpopulations, provided protection to
10 females and cubs, so those bears were able to survive and
11 come into the population. So it was through the
12 implementation of those quotas that people were able to
13 control the harvest. So it was no longer nonselective,
14 whatever you wanted. People were limited. And that
15 allowed polar bear populations to recover. So that's one
16 of the reasons why I think you're seeing more bears now
17 than you did in the early days in, the '50s and '60s, was
18 that previously there was no rules. You could take what
19 you wanted when you wanted, and people weren't concerned.

20 And I think in Churchill, Western Hudson Bay,
21 that was probably true with the military. You know, there
22 was a lot of military activity right in that denning area,
23 and we had no idea what bears are taken, how many, when.
24 But we believe that there were probably a number taken.

25 And so, yeah, management initiatives and, you

1 know, the quota system and people, you know, wishing for a
2 conservation of polar bears that it's a success story. So
3 in some ways, you know, it's a double-edged sword. It
4 really is a conservation success story, of, you know, this
5 quota system and people following these regulations. It's
6 very successful for polar bears. Now we're coming to other
7 issues with there perhaps being more bears than people
8 remember and some of the other issues.

9 Thank you.

10 THE CHAIR: Thank you, Nick.

11 Jackie.

12 MR. NAPAYOK: In the past around 1953, I'm
13 guessing, the government had asked for cubs. They come out
14 in March, they're born. And I think you know in January,
15 in January right now they are really small. We caught 24
16 small cubs in Coral Harbour. We collected 24. We didn't
17 get the mother, we just got the cubs, and we brought them
18 to the meat plant. They were fine, healthy. One of the
19 them was really, really small. The Government wanted them,
20 so they sent them down to the coast, and we brought them
21 that small. Polar bears are very smart, and they remember.
22 The smallest one was the only one that went back to its
23 mother. I started thinking that that was just a very
24 talented bear.

25 Thank you for that information.

1 THE CHAIR: Thank you, Jackie.

2 Nick, go ahead.

3 DR. LUNN: Yeah, thank you for that. I
4 wasn't aware of that information, so thank you for
5 providing that. It's very interesting to know, you know,
6 the sorts of stuff and what was done in the past.

7 We do catch bears in the springtime and, yes, we
8 catch them in March -- they are three months old. They are
9 very, very small. And the smallest one we caught this year
10 was a female that had three cubs, and the smallest cub was
11 five pounds, so very, very tiny. And its siblings, its
12 brothers and sisters, were 15 and 20 pounds. So the
13 smallest one was very tiny. And even with a helicopter the
14 mother was very, very protective and didn't abandon the
15 cub, kept coming back and actually sat with the littlest
16 cub and made sure it was all right, and allowed the little
17 cub to climb on mom's back. And she was protecting it.
18 So, yes, they are very smart, and they're very, very
19 protective of their cubs.

20 And you get a whole range in size from five
21 pounds, which is the smallest cub I have ever seen. In
22 fact, I didn't actually even drug that cub. It was so
23 docile that I just weighed it. I put it on a little scale
24 and weighed it. And I didn't put tattoos because to do
25 that I would have to drug it, and I didn't want to drug a

1 bear that small. So I was able to weigh it and stretch it
2 out on mom's back, and it laid there and I was able to take
3 my little measurements with the tape measures on that cub.
4 But it's by far the smallest.

5 And the heaviest cub, just for comparison, was a
6 female that had a single cub the same year, and that cub
7 was 45 pounds. So we had a mom with one cub that weighed
8 45 pounds and a mom with three cubs where her smallest cub
9 was 5 pounds. So there's a whole huge range in the weights
10 of these cubs in the springtime. And that has an impact,
11 we think, on their survival. Bigger cubs probably have a
12 better chance of survival than a little five-pound cub.

13 Hopefully, we'll see that five-pound cub in the
14 future, but I wouldn't want to bet a lot of money that we
15 will, but I always like to cheer for the underdog, so I'm
16 hopeful that some year that bear will turn up.

17 Thank you.

18 THE CHAIR: Thank you, Nick. I guess, that's
19 why you cheer for Edmonton, then. Too late now to take it
20 back.

21 Thank you, Whale Cove. Any more questions? .
22 Jackie, go ahead.

23 MR. NAPAYOK: I know I'm not the only one that
24 wants to speak. There are other people. I just wanted to
25 ask another question.

1 Polar bears, I think you know more about them
2 than I do. They have cubs up to three every once in a
3 while. In the past, I just wanted to ask the question
4 whether there's more cubs that are three or two -- there's
5 usually two, but how often do you see three cubs from one
6 female?

7 DR. LUNN: First of all, I would never claim
8 that I know more about polar bears than people around this
9 table. I recognize that I don't. I might know some of the
10 science stuff, but I would never want to claim that I know
11 more about polar bears than most people here around the
12 table.

13 Number of cubs; you're right. Most of the cubs
14 are either single cubs or two cubs. We do catch in the
15 springtime -- maybe out of a sample of 20 family groups, we
16 might expect one or two females that have triplets. This
17 past spring we caught two females with three cubs. The
18 rest had one or two.

19 In the fall time we have not seen or captured a
20 female with triplets since 1996 in Churchill. They still
21 exist. People still see them from time to time, but we
22 haven't seen one, and we haven't handled one. So we think
23 that what is happening, probably, is that of those
24 springtime cubs such as that five-pounder, yes, it was
25 there in the springtime. It's unlikely -- you know, again,

1 I'm cheering for the underdog, and, yes, cheer for
2 Edmonton -- that the underdog will survive. It would be
3 nice to know that it did. But my gut feeling is that it
4 won't survive. So if we catch it again, she'll either have
5 two or one cub.

6 And out of all the years that we've done
7 research -- so of the 37 years -- there was one case of a
8 female with four cubs in the springtime. And I don't know
9 if any of you in your experiences have come across or seen
10 or heard of a female with four cubs, but we had one
11 instance in all the years of research in Churchill a female
12 with four cubs.

13 Thank you.

14 THE CHAIR: Thank you, Nick.

15 Jackie.

16 MR. NAPAYOK: The reason why I mentioned it, the
17 three females with three cubs is very rare and not very
18 often, when they first come out in March, and the mother
19 starts walking away with three cubs away from the den. And
20 the smallest one, once they stop, it starts feeding the
21 smallest one. The third cub, maybe it doesn't feel the
22 same way, so it just feeds the two more healthier ones.
23 That's why the third smallest one would be the skinniest
24 one. I've seen that myself. They would have fed all
25 three, but they only feed two. Every now and again it does

1 feed the third one. I just wanted to mention that because
2 I've witnessed that myself.

3 Thank you.

4 THE CHAIR: Thank you, Jackie.

5 Nick, want to comment?

6 DR. LUNN: Yeah. I mean, the work that we
7 do, when we see bears, they're running so we don't often
8 get to see those observations of a mom feeding, how many
9 cubs she's feeding at a time. We do get that when we have
10 her immobilized and we can examine her nipples, how many of
11 them are enlarged. And, typically, two are enlarged, and
12 the other two nipples are not enlarged. So, again, that
13 would be, you know, supporting what you're saying is that,
14 when there are three cubs, there's probably only two that
15 are feeding at any one time, and one is the runt or left
16 out. Usually that's what we see in triplets is two are big
17 and one is small. So what you're saying is, you know, what
18 we see supports exactly what you know and have just
19 provided.

20 So thank you.

21 THE CHAIR: Thank you, Nick. *Taima?*

22 Whale Cove, done?

23 Okay. We've still got a little time before
24 coffee, so we'll move on to Chesterfield Inlet. Any
25 questions for Environment Canada?

1 **CHESTERFIELD INLET HTO QUESTIONS AND COMMENTS**

2 THE CHAIR: Harry.

3 MR. AGGARK: Thank you, Mr. Chair.

4 First of all, I want to thank you for my
5 questions yesterday on collars, the collars that are put on
6 from northern Manitoba and the distance they go, and this
7 was shown to us.

8 So they go almost up to reaching
9 Chesterfield Inlet, but they turn and go return to
10 Churchill, Manitoba. And I think that's the reason why in
11 the springtime when we're losing the ice and Chesterfield
12 has an inlet, so it has a strong current, and the ice
13 starts going that way. So this may play a part how they
14 move around from Arviat and Chesterfield surrounding area.
15 And the seals are more abundant when the ice is leaving,
16 and no doubt the polar bears are following the seals at
17 this time. But obviously some of them moving toward
18 Repulse, Naujaat. So I wanted to thank you for sharing
19 that.

20 The other question I have; you stated earlier
21 the surveys that are done on the bears or the research over
22 past five or ten years, that they're losing more fat. Is
23 it the same bear? My question is, would it be the same
24 bear that you researched over the ten-year period when you
25 detected that bear losing more fat over the years?

1 THE CHAIR: Thank you, Harry.

2 Nick.

3 DR. LUNN: No, generally not. It's not the
4 same bear over time. When we do our fieldwork, we capture
5 a sample randomly. So we don't pre-decide which bears
6 we're going to catch. We just fly, we see bears, we catch
7 them, we take measurements. So we don't know in advance.
8 Unless it's got a collar on, we wouldn't know in advance
9 which bear we're seeing and whether we handled it last year
10 or whether it's been handled at all, unless it's got an ear
11 tag.

12 So it's more by luck. If we were to catch a
13 bear, you know, two years in a row, it would be purely by
14 luck. We have no way to say we want to catch this
15 particular bear this year and next year and the year after.
16 We have no way to determine that unless we put a specific
17 permanent mark. So it's more random. So those years over
18 the last five to ten years losing weight, that's just the
19 average of those bears we catch. They're not the same
20 individuals each year. So they're different bears that
21 would contribute to that.

22 But because we're taking what we call a random
23 sample, we're assuming that some of the bears -- you know,
24 that the differences between years, it's a random sample.
25 There's not a bias that we're targeting only fat bears or

1 we're only targeting small bears. It's completely random,
2 and we're assuming that some will be heavy, some will be
3 small, and you determine those mean weights based on that.
4 So it's random.

5 Thank you.

6 THE CHAIR: Thank you, Nick.

7 Harry.

8 MR. AGGARK: Thank you. No more questions.

9 THE CHAIR: Okay. Thank you,
10 Chesterfield Inlet.

11 Rankin Inlet, any questions for
12 Environment Canada? No? Okay.

13 Baker Lake, any questions? Hugh.

14 **BAKER LAKE HTO QUESTIONS AND COMMENTS**

15 MR. NATEELA: Thank you, Mr. Chair, for the
16 information we received.

17 I'm just wondering if there are any plans of
18 introducing some of these climate change monitoring
19 programs that are happening across Canada from
20 New Brunswick to B.C. where some young indigenous people
21 are collecting their own data. I was just wondering if
22 there was any plans of introducing some of this data
23 collecting in Nunavut. I realize I think that there are
24 some notices out from the federal agencies about funding
25 and things like that, so I was just wondering if you might

1 be able to have a bit of information on that.

2 Thank you, Mr. Chairman.

3 THE CHAIR: Thank you, Hugh.

4 Nick.

5 DR. LUNN: I don't have any specifics on
6 funding opportunities or what's available in the federal
7 government for those types of initiatives in the north.
8 But I know in the -- you know, one of the things that
9 collectively -- not just Environment Canada -- is that we
10 want to get more community-based monitoring occurring with
11 polar bears.

12 There's a lot of information that can be
13 provided by communities that we can't get necessarily from
14 the science, and so there's certainly a lot of interest in
15 trying to develop community-based monitoring programs,
16 whether it's collecting seals or observations when hunters,
17 you know, harvest a bear, taking some basic measurements or
18 any number of things that, you know, would help augment,
19 you know, a collective knowledge of what's happening with
20 polar bear subpopulations.

21 So it's something that people have very
22 interested in, and we're looking at what can be done, but I
23 don't have specifics per se that I can provide today or
24 where the funds would come for that, but it is something
25 that community-based monitoring is important, and we want

1 to get those types of programs off the ground and working.

2 Thank you.

3 THE CHAIR: Thank you, Nick.

4 Hugh.

5 MR. NATEELA: Yes, thank you for the response.

6 I guess the reason why I was asking about that,
7 and I guess just to go back to some of the discussions I
8 heard around the table and certainly from one of the Board
9 members was discussions of bridging science world and
10 traditional IQ stuff. And I guess I just wanted to make a
11 final comment, I guess, just for -- I'm sure you know this
12 already -- but when there's a clash between the science and
13 traditional knowledge, it's just that the reason why
14 there's a clash is because of the difference in the
15 approach. Whereas the scientific world, it's a linear
16 approach versus a holistic approach. So I think if we can
17 start teaching our young people and our students, our young
18 people in Nunavut, I think we'd be able to start bridging
19 some of these differences that we often hear about from
20 people. There are differences between the science world
21 and traditional knowledge.

22 And so I think in due time, I'm hoping that in
23 due time we will be able to teach our students, our kids
24 some of the skills that they need to learn to be able to
25 help us monitor for ourselves so that we can start making

1 some informed plans and decisions, hopefully more on our
2 own independently without so much government, mining
3 companies, and other agencies' input which is, you know,
4 where it's always welcome to have assistance from the
5 outside agencies, but I think this is a time where we need
6 to start making some solid plans where we start taking some
7 of these initiatives ourselves.

8 Thank you, Mr. Chairman.

9 THE CHAIR: Thank you very much, Hugh, for
10 those good comments.

11 And they were more comments than anything,
12 unless you want to comment on that. Go ahead, Rachel.

13 MS. VALLENDER: Yeah, thank you.

14 So I think those are great comments. Certainly
15 as a department we recognize that we need to get better at
16 sort of the co-application of -- I know we used to say
17 integration. I'm not sure that's necessarily the best term
18 for bringing together traditional knowledge and sciences,
19 certainly the use of both knowledge sources.

20 And so just to let you know about a couple of
21 initiatives that we have had on the go noting that in 2009
22 our minister at that time did commit to learning how to
23 better use the two knowledge sources. And so one thing we
24 have done is actually within Nick's branch of our
25 department, we have hired a research scientist who that is

1 her specialty is how to use both those knowledge sources.
2 And certainly on the management side we are learning a lot
3 from her about how we can better use TK and science in our
4 recommendations.

5 And then, secondly, so we started in 2011
6 working with the jurisdictional governments and the Inuit
7 orgs, including ITK, to develop a protocol for how to
8 better use the two knowledge sources. And so ITK actually
9 led that work, and it was funded by Environment and Climate
10 Change Canada.

11 That hasn't yet been finalized, but certainly
12 from the management perspective that's something we would
13 still like to get better at and to actually finish that
14 protocol so that it can be used across the country. So I
15 don't think we have it perfect yet, but certainly we
16 recognize that as a department and are making efforts to
17 better use both knowledge sources.

18 THE CHAIR: Thank you, Rachel. Nick.

19 DR. LUNN: Yeah, I just wanted to add a
20 comment that it's a two-way street, that scientists like
21 myself, we have to learn better how to incorporate and use
22 traditional knowledge as well. So it's not a one-way
23 street. We have to learn, as well, that there are other
24 sources of information, and how can we best use that
25 information. So I just wanted to make that comment.

1 THE CHAIR: Thank you very much. *Taima*?

2 Okay. World Wildlife Fund, any questions? Go
3 ahead.

4 **WORLD WILDLIFE FUND QUESTIONS AND COMMENTS**

5 MR. LAFOREST: Thank you, Mr. Chair. Just one
6 quick question.

7 The current schedule for reassessing this
8 subpopulation from an aerial survey standpoint, correct me
9 if I'm wrong, is not for another five years. If ultimately
10 it's decided by the co-management system to manage for a
11 decline and bring the population down, in your expert
12 opinion for Environment Canada, would that be a sufficient
13 monitoring schedule to wait five years before going back
14 and checking?

15 And a follow-up question is, what other sort of
16 management recommendations would you make when managing for
17 decline? And given the difficulty in detecting trends in
18 the high confidence intervals of surveys, how confident are
19 you that we could achieve management goals like that?

20 Thanks.

21 THE CHAIR: Thank you.

22 Nick.

23 DR. LUNN: Boy, there were a lot of loaded
24 questions in there.

25 I guess to answer the last one first, aerial

1 surveys typically have wide confidence intervals, and so
2 you need to have a really significant change in numbers to
3 be able to state statistically that a change has occurred.
4 So, you know, you would have to see a huge drop in number
5 or increase in number, huge differences to be able to pick
6 that up on an aerial survey. And that would apply to other
7 methods as well. You know, you need very, very tight
8 confidence intervals to be able to see and detect change.

9 Could you do it with an aerial survey in five
10 years? While having just said that you need to have huge
11 change, I mean, you would have to be able to detect that.
12 So huge changes would have to occur over five years to be
13 able to detect, you know, whether there are big changes
14 occurring. So is a five-year interval good enough?

15 I mean, I think from a monitoring perspective,
16 going every five years gives you at least a heads-up, but,
17 you know, short of it going from 800 to 100, you know, the
18 confidence intervals are too wide. If you're looking for
19 something statistical and you're only going to act on a
20 statistic, you're really going to have to have a huge
21 change in the numbers, and that doesn't matter if it's five
22 years or ten years. If there's no huge change and you have
23 those wide confidence intervals, you're going to have two
24 point estimates that might be different. But the
25 statistical -- the statistics will say they're not

1 different.

2 So I don't know if that answers your question,
3 but I think it is, you know, something that needs to be
4 appreciated that, to detect statistical change, you know,
5 there's going to have to be a huge drop.

6 Thank you.

7 THE CHAIR: Thank you, Nick.

8 Brandon, good?

9 MR. LAFOREST: Good.

10 THE CHAIR: Okay. We're going to try and
11 finish this before coffee time, I think. Next up -- not
12 many left, but I see David from KIA is here.

13 David, it's your turn, KIA, to ask questions of
14 Environment Canada if you have anything.

15 Go to the mic and introduce yourself anyway.

16 **KIVALLIQ INUIT ASSOCIATION QUESTIONS AND COMMENTS**

17 MR. NINGEONGAN: Thank you for the opportunity,
18 Mr. Chair.

19 I apologize we were not invited, although we
20 were told we could sit at the table. So in saying that I
21 will need to get briefed on what's been discussed before I
22 have any questions, so if you could give me a few minutes
23 to get some briefing, Mr. Chair, I would appreciate it so
24 that I do ask the right questions for the panel.

25 Thank you.

1 THE CHAIR: David, that's fine. You take your
2 time. You're going to have an opportunity here. You're on
3 our list to give a presentation to all of us at that time.
4 Okay? Thank you.

5 Is there any questions to Environment Canada
6 from the public or any Elders in the public that would like
7 to ask any questions? Now is the time. If not -- don't
8 see any -- Thomas, go ahead.

9 **PUBLIC QUESTIONS AND COMMENTS**

10 MR. COMER: Thank you, Mr. Chair.

11 And thank you for the answer the other day to my
12 question about establishing whatever it's called, the
13 scientific term for the population of polar bears. My
14 question today is, during all these studies, are Inuit ever
15 considered as an indicator organism that, you know, the
16 polar bears do exist? In a lot of studies when it deals
17 with wildlife management or anything to do with wildlife,
18 there's always an indicator organism to say that the
19 presence of a specific or a certain species is present in
20 that environment. So in our case for Nunavut or anywhere
21 in the circumpolar region Inuit are definitely an indicator
22 organism to indicate that there is a healthy presence of
23 polar bears. That's number one.

24 And the other one is I do have a question about
25 the drugging techniques for polar bears, capturing them and

1 drugging them. My question is, is it healthy? Because I
2 don't see any practice of drugging. Well, for one thing,
3 the polar bears are expert swimmers, and so they can swim
4 for great distances in the water. We have Olympic swimmers
5 who compete in these Olympic stadiums, but I don't see them
6 getting drugged, you know, just to study them, so I don't
7 know why we would need to drug our Olympic swimmers that
8 are in their natural environment.

9 Thank you.

10 THE CHAIR: Thank you for those questions.

11 And, Nick, go ahead.

12 DR. LUNN: Yeah, answering the first question
13 about Inuit as indicator species, I have to admit I've
14 never considered that in part of my sort of scientific
15 studies. We use polar bears as an indicator of the arctic
16 marine ecosystem because they're at the top of the food
17 chain, the natural food chain, and I've never even thought
18 of Inuit as an indicator species.

19 In terms of drugging Olympic swimmers, drugging
20 bears that we know can swim great distances, we don't drug
21 bears for the sake of just drugging bears because I'm a
22 scientist and I can do it. It's done because there are
23 specific questions that are being asked. Not necessarily
24 here in this room, but my department has questions. There
25 are questions that are being asked, and I'll use collaring

1 as one example.

2 People want to know about movements of bears.
3 People want to know what is going to happen. How are they
4 going to move on sea ice? And to do that right now the
5 only technology we have is a collar, and the only way I can
6 get a collar on a bear is to drug it. So I'm going to have
7 to drug it to put the collar on in order to get the
8 information that I've been asked, or questions to answer.

9 And that's similar with all the other bears that
10 we handle and we take these measurements. There is
11 considerable interest, certainly in my department and
12 elsewhere, about what are the impacts, long-term impacts,
13 and how will the polar bears be affected by things such as
14 climate change?

15 When we started the program, it was more we
16 wanted to know something about polar bears. You know, how
17 much do they weigh, those sorts of informations. And the
18 only way to get that was to drug them, and so that's why
19 bears are drugged and handled is because there are specific
20 questions that need to be answered that have been asked of
21 us to answer. It's not because I think it's really neat to
22 fly around in a helicopter and shoot bears out of a window.
23 It's because I have a question or questions that need to be
24 answered and, currently, the only way is immobilizing
25 bears.

1 Originally that was the cases for, how do you
2 get abundance estimates? So a lot of it was done through
3 mark recapture. There is work done now to use alternate
4 techniques, and so aerial surveys is one. Genetic -- mark
5 genetic biopsy is another way to get a population
6 abundance estimate. But there will still be questions that
7 require bears to be handled and questions that are asked of
8 me in my job that I have to answer.

9 And so, again, I appreciate that there is a lot
10 of concern about the handling of bears and collaring bears,
11 and we try to minimize as best we can the number that we
12 do. As I said, for those that maybe weren't here or in the
13 back, when the work first started people were handling 200
14 to 300 bears a year in Churchill. That was the number of
15 bears, so that's a lot of bears to handle. We don't do
16 that anymore. We really limit to what we think is an
17 appropriate number to get a sample size that can help us
18 answer the question. If you can answer it with handling
19 75 bears, why would you want to handle 300?

20 So it comes down to, how many bears do you need
21 to handle, what are the questions being asked? And so
22 that's how our research is done and why we handle them.
23 And we are continually trying to find improvements, ways
24 that we can minimize our impacts, and collaring is yet
25 another example. With those release mechanisms and using

1 satellite technology, we only have to handle the bear once.
2 We don't have to disturb it for the next two years by
3 flying over it. We don't have to drug it again to get the
4 collar off. So those are ways that we can minimize -- you
5 know, not eliminate, but minimize -- some of these more
6 invasive procedures such as drugging, is looking at new
7 technologies. And as newer technologies come around, you
8 know, maybe we can improve what we do and reduce it even
9 further. But there will always be questions at the moment
10 that need me to -- or need bears to be handled and drugged.

11 THE CHAIR: Thank you, Nick.

12 Any other questions? Go ahead. Just state your
13 name for the record, too.

14 MR. OTTENHOF: Hi. My name is Jared Ottenhof.
15 I've heard the term a couple times "immobilize and not
16 tranquilize" the bear. I'm just wondering what's used. Is
17 it a tranquilizer, or is it a paralytic drug, and is the
18 bear aware, conscience, when the sampling is being done?

19 THE CHAIR: Thank you, Jared.

20 Nick.

21 DR. LUNN: It's a combination. The drug
22 Telazol or Zolatel, it's a combination of a sedative and an
23 anesthetic, and it's a dissociative anesthetic, so the bear
24 is not aware as we're doing these techniques. It's not the
25 drug that we would use if we were going to do something

1 like surgery on the bear. We would use different drug --
2 we don't do that, so don't jump at me that we're
3 planning -- but it's not the drug that we would use if we
4 were going to surgically implant something into the bear.
5 We would use different drugs. But when we're working on
6 the bear, it's a dissociative, so it's a tranquilizer and a
7 sedative combination.

8 Thank you.

9 THE CHAIR: Thank you, Nick.

10 Go ahead, Jared.

11 MR. OTTENHOF: So you mentioned earlier as well
12 75 to 95 bears are handled in a year and ideally keep the
13 numbers down. Each time you do handle a bear and you
14 mention you're sampling -- you take the fat core, pull the
15 tooth if it hasn't been pulled before, I guess. Do you do
16 that on all the bears you handle in a year? Or I'm just
17 wondering to what extent are you sampling each animal when
18 you handle it per year.

19 THE CHAIR: Thank you, Jared.

20 Nick.

21 DR. LUNN: How many samples or what we do to
22 each bear really depends if it's been captured before. So
23 if a bear has never been captured before, well, then, we're
24 going to put a tattoo on. We're going to put ear tags in
25 which will require us to punch the ears, and then we'll get

1 a skin disk, so we would collect a skin sample.

2 Things such as fat and hair we collect routinely
3 from all bears. We generally don't collect blood from
4 every single bear. It's a lot to process, spinning it
5 down, storing it, so we'll target bears. We'll just take a
6 random sample from some of the individuals, but we won't
7 take it from every single bear. So hair and fat are
8 something that we would get from all bears. The other
9 samples really depends on who it is and what it is.

10 And all the information that we collect over
11 time goes into a computer record, and we're able to print
12 out what we call a bible, and it's a binder. So when we
13 catch a bear we can look at it and look at its complete
14 history, and we can see, did we take a skin sample from
15 this bear, did we take this, did we take that? So that can
16 help direct, do we need to take it again?

17 And so, for example, with a tooth, once we have
18 an age, we don't need to take another one. So we leave it
19 alone. We won't take a tooth, but we might have a comment
20 in it that, you know, the last tooth we took we couldn't
21 age it, for whatever reason -- in which case we would.

22 So, again, we try to minimize the samples that
23 we take, and that's guided a lot by the bear itself; has it
24 been tagged or not tagged before, and whether or not we
25 have some of these samples and whether we need to take it

1 again.

2 So it's not every bear gets everything done, but
3 fat and hair is something that we take -- that we take from
4 every bear.

5 THE CHAIR: Thank you, Nick.

6 Okay. Quickly, Jared.

7 MR. OTTENHOF: Last question, I promise.

8 There's been quite a lot of talk around the
9 tables about, you know, more concern about handling the
10 animals. Is there a way that there could be a program
11 developed where, with the 34 tags that we're here to
12 discuss, minimize handling of each bear in the wild if you
13 took the bears that are harvested and each HTO has a kit,
14 perhaps, that they could take samples of the bear that is
15 harvested, submit it to ECCC and perhaps cut down the
16 numbers of bears that need to be handled in a year?

17 THE CHAIR: Thank you, Jared.

18 Nick.

19 DR. LUNN: There's certainly merit in
20 developing, and that's part of what we were talking about
21 earlier about some of the community-based monitoring, what
22 other types of information can you get. And you can
23 certainly get a lot of samples from harvested bears; body
24 fat, condition, and so on and so forth.

25 Some of the questions we ask, though, we want to

1 follow individuals and things over time. So if it's shot,
2 we're not going to be able to follow that individual
3 anymore. So there are circumstances where you could get
4 that information from a hunter, you know, get a hunter
5 harvest collection.

6 Again, the harvest is, you know, directed more
7 towards males, so you sort of skew your sample a bit, but
8 there would be certainly definite information that you
9 could get from harvest sampling, and some of that stuff is
10 collected already. And I believe that a tooth is provided,
11 you know, so you could start looking at things like age
12 structure of bears. I don't know what other samples are
13 collected in Nunavut, you know, fat, muscle, those sorts of
14 things.

15 I know that those community harvesting programs
16 have provided samples at least to DFO for some of that
17 information on seals came from communities, from local
18 hunters harvesting. So there's lots of opportunities for
19 that, and there may be ways to reduce -- depending on the
20 questions being asked, reduce how many bears necessarily
21 would have to be sampled each year. But there will always
22 be a need for trying to follow individuals that are still
23 alive, moving forward.

24 MR. OTTENHOF: Thank you.

25 THE CHAIR: Thank you, Nick.

1 Thank you, Jared.

2 Okay. If there's no other questions, we are
3 going to break here in a minute, but first of all, that
4 concludes Environment Canada, your presentation and your
5 questions.

6 Again I would like to thank you very much for
7 your presentation, both of you, and for being here and
8 participating in this hearing. I think it's very important
9 that you were here and answered all the questions as
10 candidly as you could and as transparent and honestly as
11 you could. And it's been very helpful, I think, to all of
12 us. And it's nice to have you here, and we hope that the
13 cooperation and collaboration and communication between all
14 of us and Environment Canada stays the same and it gets
15 better from this day on. So thank you very much.

16 Go ahead.

17 DR. LUNN: Yeah, thank you very much.

18 And again, thanks to everybody for allowing me
19 to make that opportunity. And I would like to say I hope
20 that the communication gets better and not stays the same.
21 I mean, we've heard the message loud and clear that, you
22 know, we communicate, but maybe we don't communicate as
23 often or to the right people, and we'll start addressing
24 that through things such as these movement maps. We'll get
25 the right people that should be seeing it and getting it,

1 we'll speed up development of our posters to get it out to
2 communities so people can actually see and provide some
3 information on that. So hopefully the communication will
4 improve.

5 Thank you.

6 THE CHAIR: Thank you, both.

7 So we're going to take a 15-minute break for
8 coffee and a snack.

9 And up next is KWB, your presentation to us.
10 Thank you.

11 (ADJOURNMENT)

12 THE CHAIR: Okay. Everyone, we'll resume.
13 Thank you for coming back. What a great snack there,
14 except for those people that have an allergy to seafood, I
15 guess, or fish.

16 So we'll resume. Kivalliq Wildlife Board, it's
17 your floor to present to the NWMB with regards to the
18 Western Hudson Bay polar bear, so, I guess, Stanley, the
19 floor is yours. Go ahead.

20 **SUBMISSION BY KIVALLIQ WILDLIFE BOARD**

21 MR. ADJUK: All set? Thanks, Dan,
22 Mr. Chairman.

23 If I need some assistance, as he will be
24 assisting me in everything, so he's been doing our
25 background work for KWB.

1 Our background with KWB is we deal with our
2 seven communities from the region, but some of those
3 communities aren't here because they're from Foxe Basin and
4 not from Western Hudson Bay. Our board consists of each
5 chairperson from each community, just so everyone knows.

6 And, firstly, I think Ezra has done all the
7 background work, and our coordinator, Qovik, who tirelessly
8 keeps working with us -- who keeps bothering me, too.

9 And I may be the closest, living next to Rankin,
10 but I took the longest time to get here. I was lost in
11 between. Too many bears around.

12 Just a little tough while I'm listening to some
13 topics, these are the same topics from 20 years ago still
14 going on. It hasn't changed since. But we have our
15 written submission here, so I'm not going to read the whole
16 thing as everybody's seen it already.

17 With KWB, it's an active board, very active
18 board, getting more active every year. And all this stuff
19 we talked about, all the stuff we touched upon, the stuff
20 we're presenting is from listening to the communities from
21 Western Hudson Bay. And we do work for the region.

22 It's really nice to be here and present our
23 stuff from here, and we thank the NWMB and the GN for
24 making our total allowable harvest a bit higher from the
25 existing, although it's not quite satisfactory yet to our

1 region. The stuff we talk about, we would maintain the
2 Inuit ways of hunting of polar bears. We're not there just
3 to hunt for sport just to kill, we're not there just to
4 hunt a bear so we can say, "I've caught a bear before."
5 That's not the case.

6 And that stuff being said, the last probably
7 since 2006 we've been struggling with polar bears in the
8 region, more mainly from Arviat, Whale, and Chester --
9 Rankin once in a while. But the bears are scared of Rankin
10 people, so they hardly bother them. It's just a fact that
11 we've seen, when there's no polar bear quota in the system,
12 the bears do come into communities. They're an intelligent
13 animal, and then when there's quota with so much to
14 harvest, they never show up. It's just a fact.

15 And just a little topic offhand just so
16 everybody knows that I know I'm still a kid compared to
17 these Elders around the table. But when we were kids five
18 years ago or so, growing up back in the day in Whale, I
19 remember once there was a bear that came into town. Once.
20 That was something to see because we never seen bears then.
21 Today my kids and grandkids can't even stay out. That's
22 just how many polar bears there are. That's just an
23 example of how many bears have been since. And it's kind
24 of hard to believe when they say it's declining because
25 when I was a kid growing up there was absolutely nothing.

1 There was no polar bears. So when they say it's declining
2 it's hard to believe because there's more than what I've
3 ever seen since I was a kid. Not just me. There are a lot
4 of people that were kids around the table. Even the
5 Elders, I know they know there's more bears than ever
6 before. In saying that, we've talked about our total
7 allowable harvest. It was nice when we got 34 last season,
8 and it still didn't meet our 4 and a half percent from the
9 population. We're still going on the goal to reach at
10 least 40 for the region and 5 for Manitoba.

11 There's a lot of stuff that we talked about in
12 our meetings, and one of the things we've been fighting to
13 get something right, when they catch too many female bears,
14 there's a big penalized system going on that cuts our
15 harvest down. That part we hope that will be fixed when we
16 catch too many female bears in the community. The people
17 from the Western Hudson Bay pay the price all the time.

18 And same stuff goes on with what we talked about
19 last fall where, I'm from Whale Cove and I shoot one year n
20 Rankin, and it's taken off from Rankin quota system while
21 it should be taken off from the person where he's living.
22 These are a few minor things that we wanted fixed, and I
23 hope it goes through.

24 And we do a lot of defence kills. Not every
25 time a bear comes, but when it keeps coming to the

1 community, that's when we do a defence kill. It's not
2 every time there's a bear that goes to a community gets
3 killed. That's not the case, but we do a lot of defence
4 kills when we have no choice.

5 Saying that, in Whale Cove there's a lot of
6 problems with bears, and now Foxe this year, without a CO
7 there, so we have no choice but to get the community
8 members involved where the Environment people should be.
9 There's an office there. There's everything there for
10 Environment, but it's empty. No one works there. In
11 saying that, Rankin does take care of Whale Cove right now,
12 just so you guys know, but it's not working.

13 In what we talked about, what we've been talking
14 about as a board that there's too many bears that are
15 destroying people's personal stuff, meaning from cabins to
16 snow machines being parked. And it's not just polar bears.
17 Any wildlife damage. And there's a compensation program,
18 but you got to be a rocket scientist to get that going, and
19 it should be a better program where everyone can just
20 easily have access to it. And we've been trying to find
21 ways for research on bears or any other animals, but it's
22 hard without any funding or with infrastructure that you
23 need to do any research.

24 When we talk about harvesting bears, the science
25 states that we don't shoot females with cubs. It's not

1 only the science. It's within the Inuit, too. Inuit are
2 taught like that. And we grew up listening to our Elders
3 that you don't just shoot an animal with a cub or a calf.
4 We know that rule, so on the sex-selective harvest, it
5 shouldn't even be a problem.

6 So I know some communities were saying there's
7 too many female bears now in communities, and we know
8 that's a fact. There are a lot of female bears because we
9 shoot more males than the female bears. But I think the
10 science is so scared that we're just going to shoot females
11 with cubs, that sex-selective is always there. But we also
12 have to know that the population is getting so big, and
13 we're not following the 4 and a half percent that we need
14 to keep it stable. Maybe we're just killing them. Maybe
15 there's too many now. Maybe we'll just be killing them all
16 for their food source.

17 And we hear a lot of global warming. We've
18 talked about global warming, too. We hear a lot of global
19 warming. Once the ice stops forming, the bears are going
20 to disappear, which is not the case. Bears or any animals
21 adapt to anything in the environment. They adapt, and I
22 think we need to teach the world more that they will adapt
23 instead of the world going against the Inuit harvesting
24 rights all the time. There's just few examples where polar
25 bears adapted to zoos. That's one example where science or

1 the world never recognize. They've adapted to the zoos.
2 They will adapt in the north. And I know we're going to
3 starting get very cold winters while we live.

4 I think I'm going to talk a bit too much, too,
5 now, so those are the main points what we wanted to talk
6 about more. And Ezra will clarify more stuff on this
7 stuff.

8 MR. GREENE: Yeah, just so everyone knows, I am
9 providing technical support to Kivalliq Wildlife Board, and
10 I did help with the writing of the submission, and I just
11 want to clarify a few things from it.

12 This was created through a discussion with the
13 board of Kivalliq Wildlife Board and then input from the
14 executive, as well. And based on that input that I
15 received from everybody I worked on drafting this up, and
16 and then where there was written literature that supported
17 some of what was talked about, there are some references to
18 that as well.

19 But just to emphasize one thing, we looked at
20 the 2016 draft of the Nunavut Polar Bear Co-management
21 Plan, and currently the goal is stated as being to:
22 (as read)

23 "... maintain viable and healthy polar bear
24 subpopulations for current and future
25 generations and to ensure that polar bears

1 remain an integrated and functional part of
2 the ecosystem where monitored and appropriate
3 harvests are allowed."

4 One thing that is clear to me is that the continued hunting
5 of bears by Inuit is very important as part of the
6 management, and I think that Kivalliq Wildlife Board wants
7 to make sure that that's emphasized. And to my
8 understanding, a big way that Inuit *qaujimajatuqangit*,
9 which we talk about so much, is passed on is through
10 hunting, and so hunting needs to continue. And I think
11 that's one of the points emphasized in the submission.
12 We've talked about public safety quite a bit, and everyone
13 else.

14 The subpopulation boundaries have been
15 talked about some, and there's some disagreement on
16 understanding bears in that way, and Kivalliq Wildlife
17 Board notes that. As we saw from how the polar bears move
18 around from the telemetry data, the same bears can be in
19 the Western Hudson Bay, the Foxe Basin, or the Southern
20 Hudson Bay areas.

21 But also beyond just the bears, sometimes
22 those boundaries cause problems for humans also, and one
23 area I think we saw that when Baker Lake was presenting is
24 the Western Hudson Bay subpopulation and the Foxe Basin
25 subpopulation boundary is south of Chesterfield Inlet, and

1 sometimes that's caused some internal debate in the region
2 about who should get tags and whatnot. So that's just one
3 thing to think about.

4 However, it's important that if any sort of
5 reconsideration of boundaries is considered, one concern is
6 the political-legal implications of that, and that, like,
7 it's so hard already to do co-management with so many
8 different boards and jurisdictions and communities, and I
9 think Kivalliq Wildlife Board would be reluctant to open it
10 up to even more. I know that Makivik put in a written
11 submission on this. So they're not here, but, you know,
12 they have concerns about the polar bears here, as well.

13 A lot's been mentioned about polar bear
14 tourism, so we won't reiterate that.

15 And then for the level, the total allowable
16 harvest level, it was emphasized by Kivalliq Wildlife Board
17 in my discussions with everyone that the goal is to
18 maintain a stable population. It's not to decrease. From
19 the Kivalliq Wildlife Board's perspective, it's not to
20 decrease their polar bear population. But that total
21 allowable harvest recommendation of 44 for Nunavut and then
22 5 for Manitoba, based on the aerial surveys we found -- and
23 then also the Inuit knowledge -- we found that a thousand
24 bears is a reasonable estimate for how many bears there
25 are. That's a little higher than that 842 of the survey,

1 but it's within the confidence interval, and Inuit are
2 saying there's more and more bears. So that 1,000 seems
3 reasonable both from Inuit *qaujimajatuqangit* and from
4 science. And the 45 TAH for both Nunavut and Manitoba is a
5 recommendation using that 4.5 percent figure on that
6 estimate. So that's sort of where that number is coming
7 from or the rationale behind that number.

8 We've heard that the flexible quota system
9 is challenging to understand and that it causes a lot of
10 animosity, and so there's a recommendation in the written
11 submission on how maybe it could be dealt with. This is
12 open to discussion, but one suggestion is to maybe have a
13 moratorium on the severe penalizations that come from
14 harvesting too many females. And I still have -- the
15 Kivalliq Wildlife Board still have the HTOs and the other
16 co-management partners emphasize that two-males-to-one-
17 female ratio but maybe not have such a strict penalization
18 where lots and lots of credits get taken away, because what
19 happens is sometimes some communities don't get to hunt at
20 all for multiple years because there's been too many
21 defense-of-life-and-property kills.

22 So that's just some of the rationale that
23 went into the written submission.

24 If you go to the end, the tables, these are
25 kind of confusing.

1 I just want to emphasize we also had
2 discussions with NTI's Wildlife and Environment Department,
3 and they helped out a lot with technical things, so this is
4 one of those things. This one just shows the harvest
5 levels for each community from 2000 up until 2016. So the
6 black numbers show what the actual harvest was. The
7 columns, the blue in the right -- it becomes confusing --
8 the top number is how many were from the Western Hudson Bay
9 population, and the bottom number is the Foxe Basin
10 population. So in Chesterfield you see that there's a
11 mixture of the two. And these come from the Nunavut
12 harvest reports that are provided by -- the polar bear
13 harvest reports provided by the Government of Nunavut.

14 But one thing to note is around 2008 the
15 quota severely or drastically dropped from -- I think in
16 2005 to '06 the quota for the Western Hudson Bay was around
17 56, and then it dropped to 30 something and then to 8, and
18 so that was difficult to manage for communities. Go to the
19 next slide.

20 One thing looking at the records, it seemed
21 to us that the amount of defence-of-life-and-property kills
22 increased quite a bit around that 2008 period. So the
23 number in orange, you see that prior to 2008-2009 there
24 were occasionally defence-of-life-and-property kills, but
25 in a lot of communities, like in Arviat and in Whale Cove,

1 those defence-of-life-and-property kills really increased
2 when there was a really, really low total allowable
3 harvest, and it just becomes difficult for communities to
4 manage what hunters are going to do when there's such a low
5 total allowable harvest. Go ahead to the next one.

6 This just shows over time what the annual
7 harvest was for each community. I think we can go to the
8 next slide.

9 And this one just is a graph that again
10 shows what I just said. Prior to 2008-2009 there was
11 really not a problem with people meeting the management
12 levels. A lot of years the actual harvest was lower than
13 the quota, and it's only after 2008 to 2009 where there's
14 been issues where there's been actually more bears killed
15 than the quota. So I think that's important to think about
16 when we're considering management and what people are
17 actually going to do with hunting.

18 So that's some of the technical aspects just
19 behind Kivalliq Wildlife Board's submission.

20 THE CHAIR: Thank you very much, Stanley and
21 Ezra. You're completed, then, your presentation to us?
22 Ezra?

23 MR. GREENE: Sorry, there was some more. These
24 last ones, like there's, I think, five at the end that
25 break it down what the actual harvest was in terms of the

1 types of kills or the types of harvest.

2 So everything in green is a regular harvest, so
3 that's Inuit hunting. The blue is sports hunts. This one
4 is Arviat, and Arviat did quite a bit of sports hunting
5 prior to 2008, so you can see that since the quota was
6 really reduced, Arviat has really had to stop doing sports
7 hunting, which impacts the local economy. But we also see
8 here that in 2008 is when those defence kills really jump
9 up, and a few illegal kills as well.

10 And the next four tables were similar. We can
11 go through each one. So this is Baker Lake. You can see,
12 as Hugh mentioned, Baker fluctuates how many bears they get
13 to hunt, and I think that is something that Hugh is going
14 to bring up as a question. But there's some years where
15 they've had two tags that I think come from both
16 Western Hudson Bay and Foxe Basin and some years where they
17 have had none and then some years where they have one. So
18 go ahead to the next one. We'll look at it.

19 This is for Whale Cove, I believe. Let me
20 double-check. No, this is for Chesterfield Inlet. So you
21 can see that they've had some -- they've had defence kills
22 quite a bit in Chesterfield Inlet all the way back to 2000,
23 but that 2011 to 2012, they had -- they had a lot of
24 defence kills. I don't know the specific histories of
25 every single kill here. We can look at the last two

1 quickly. This is Rankin Inlet. And then the last one is
2 Whale Cove.

3 And that's everything.

4 THE CHAIR: Thank you, Ezra. Okay, then,
5 thank you very much, gentlemen.

6 Okay. Open for questions from the Board to
7 Whale Cove. Charlie.

8 **NUNAVUT WILDLIFE MANAGEMENT BOARD QUESTIONS AND COMMENTS**

9 MR. INUARAK: Thank you, Mr. Chair.

10 Regarding what you just shared that you wanted
11 40 in the Western Hudson Bay region and then you also said
12 the 4 and a half percent -- the percentage, what would that
13 equal? According to the 4 and a half percent base, what
14 would the number be?

15 THE CHAIR: Thank you, Charlie.

16 Ezra?

17 MR. GREENE: So the population estimate from
18 which Kivalliq Wildlife Board made its decisions was 1,000
19 bears, and the recommendation was for a total allowable
20 harvest of 45 bears, which is 4 and a half percent of
21 1,000, but 40 of those would be for the Kivalliq Region or
22 Nunavut, and the other 5 would be for Manitoba because I
23 believe right now there is a sharing of the total allowable
24 harvest between the two.

25 THE CHAIR: Thank you, Ezra.

1 David K.

2 MR. KRITTERDLIK: Thank you, Mr. Chair.

3 A comment before a question. Stanley was saying
4 that he's not an Elder, but elder doesn't make elders an
5 Elder.

6 Now, I keep bringing up IQ because IQ is not
7 taught in the classroom, IQ is not taught on a written
8 material. IQ in Inuit is taught verbally right from the
9 child, right from the infant growing up. I just noticed
10 that when Stanley mentioned that, that that's where IQ is
11 unique with Inuit throughout Nunavut, even in NWT.

12 As we see around the table, there's a mixture of
13 us Elders and the younger representatives of hunters and
14 trappers organizations. Having said that, question: We
15 hunt wherever we want to go hunting. If there's no polar
16 bears in Whale Cove, we may go to Arviat. But there was a
17 mention of a hunter from, let's say, Rankin Inlet that got
18 a polar bear in Whale Cove or Arviat, but the number of
19 that kill was taken out from a community -- let's say,
20 Whale Cove. I think that happened before, but I'm just
21 questioning if that has been a problem. And we've heard
22 that RWOs are the ones that allocate number of tags to the
23 communities. I was just wondering why that happened
24 before, like, a hunter from Rankin Inlet went to Whale Cove
25 or Sandy Point and a tag was taken out from Whale Cove

1 allocation.

2 Thank you.

3 THE CHAIR: Thank you, David K.

4 Stanley.

5 MR. ADJUK: Thank you, Mr. Chair.

6 I'll clarify that. I guess I wasn't clear
7 enough. These are the ones that are taken out of the
8 communities, who is not from a community or for defence
9 kills only. Example, I'm here in Rankin and I harvest a
10 bear in my own defence, but it would come off from their
11 next. The total allowable harvest would come out from that
12 community where it was the nearest. That is one thing that
13 we didn't like, and we kept talking about it in our
14 regional meetings. When they do a defence kill, wherever
15 they are, whoever they are and wherever they are from
16 should come out of their community, not from the nearest
17 community. That's what we were trying to say earlier.

18 *Matnaa.*

19 THE CHAIR: Thank you, Stanley.

20 David.

21 MR. KRITTERDLIK: I guess to make it a little more
22 clear, a hunter from Rankin Inlet got a polar bear in
23 Sandy Point, and that tag was taken out from Whale Cove
24 because Sandy Point is closer to Whale Cove. Is that how
25 it's supposed to work? Thank you.

1 THE CHAIR: Thank you, David.

2 Stanley, you're going to defer that to Michael?

3 Okay.

4 Michael.

5 MR. D'EÇA: *Qujannamiik, itsivautaaq.*

6 I think this section I'm about to read would
7 answer this issue, and if you have a binder it's at tab 21,
8 and it's section 6.2 of the MOU. And the opening sentence
9 of section 6.2, it's on page 10, and it says: (as read)

10 "When a Nunavut beneficiary residing in a
11 Western Hudson Bay population community kills
12 a bear in the Western Hudson Bay population,
13 the tag will come from their home community."

14 So I read that to mean that if you happen to be in Rankin
15 but you're from Whale Cove and, whatever the reason, if you
16 have killed a bear from the Western Hudson Bay population
17 in that community, the tag comes from your home community,
18 which I think is the rule that KWB wants to have in place.
19 So my understanding is that that is the rule that's set out
20 in 6.2.

21 *Taima.*

22 THE CHAIR: Thank you, Michael.

23 David Lee, you have something to add. I'll
24 allow that over this topic.

25 DR. LEE: Thank you, Mr. Chairman.

1 And thank you, Michael.

2 Just to assist David and the KWB, I was involved
3 in a teleconference call that dealt with this specific
4 issue. I know this is outside of potentially what we're
5 discussing here, but in respect to David I wanted to answer
6 his question.

7 What actually occurred was that there was some
8 confusion because of the clause on the same page of 6.1.
9 So in 6.1, if you read that first sentence, the
10 interpretation says "nearest community," but then if you
11 read 6.2, it's what Michael had just said. So this was
12 discussed by the board and also by the GN, and so that this
13 situation could be discussed by the KWB, because it is a
14 KWB responsibility to avoid that occurrence in the future.
15 I mean, the MOU is a guideline. It's the KWB that has the
16 ultimate responsibility. *Qujannamiik*. That's just for
17 context. It's not to dispute what's been said. It's to
18 provide background in how this situation developed.

19 Thanks.

20 THE CHAIR: Yeah, thank you, and I think it is
21 sort of out of the realm of what we're discussing here, but
22 it's an interesting point.

23 So, David, did you get your clarity on that?

24 Okay. David's good. Caleb.

25 MR. SANGOYA: Thank you, Mr. Chair.

1 I have four questions in all. First, I have
2 many relatives outside of Nunavut. They were born here in
3 our territory but reside outside. Inside the Hudson Bay
4 the same bear population exists in Quebec, and I was told
5 last year there's about 124 bears caught from Northern
6 Quebec. So this population have only 38 tags allowable to
7 harvest, so why is it that Northern Quebec have more leeway
8 and you have been strapped under strict policy?

9 Second question. Before the *Nunavut Land*
10 *Claims*, before this existed, before the NWT passed any
11 regulations, they never told Inuit not to be allowed to
12 hunt polar bears. Now I see in red the term "illegal
13 kills." Now that we have Nunavut, the prestigiousness of
14 Inuit in relation to their polar bears is being harmed.

15 Third, I have a friend from Greenland who I
16 often talk with each month. People in Greenland, we have
17 an agreement that they can catch polar bears in Baffin Bay.
18 They are free to hunt as much as they want. It's only
19 closed in July. And they don't trade bears, but it is
20 their own. And they also make garments, hunting gear,
21 clothing out of the hide, and so this is their management.
22 And we all have different management styles, but because
23 they are our kin, Inuit kin, why is it that we're so
24 different? Does it not matter why there's such a vast
25 difference amongst us?

1 And speaking inside of Nunavut, those
2 beneficiaries, if there's one town has 45 tags, why would
3 we have different numbers for the rest of Nunavut
4 communities? We're all one. We're all from the same
5 territory. It doesn't matter whether it's Hudson Bay or a
6 different area. And, again, prior to the Land Claims,
7 Inuit hunted for food and for warmth and clothing, but when
8 we got the Land Claims it only focuses on hunting and
9 trading without considering our diet. Do we just exclude
10 what's so important, such as our diet, out of the Land
11 Claims?

12 Regarding polar bears, we know that those people
13 who strived hard to come up with the Land Claims from the
14 Government and NTI, they didn't describe how to change our
15 diet. They didn't consider what was in existence and what
16 we practice to today. Our forefathers always caught bears
17 and automatically cooked it as a meal. Perhaps we're too
18 much in the western civilization ways that are we not even
19 allowed to follow our own people anymore from the past?

20 I want these answered.

21 THE CHAIR: Thank you, Caleb. I guess your
22 questions are to KWB.

23 Stanley.

24 MR. ADJUK: Thank you, Mr. Chair.

25 Those are very powerful comments you just

1 mentioned, and with all these regulations and rules we
2 follow, we're still following. Maybe over the last couple
3 of years each HTO's been saying if the allowable harvest is
4 not there we'll just do whatever we want because there's no
5 allowable harvest. I think that's a better route that we
6 should be looking forward to. They cut our quota, then
7 there's no quota, so it's all for anyone.

8 It's hard to answer Caleb's questions because
9 we've always had this quota system in our communities.
10 It's not our choice that we wanted 8 for the region, 38 for
11 the region, 54 for the region. That was never the region's
12 choice at all. It was given to the region.

13 That's all I can answer. Thank you.

14 THE CHAIR: Thank you, Stanley.

15 Caleb.

16 MR. SANGOYA: The hides were sent to Iqaluit
17 from the Baffin and Kitikmeot and Kivalliq when they caught
18 bears. In 1999 they started taking hides. They took all
19 the hides that were caught collected in Iqaluit and burnt.
20 The government burnt them. Inuit knowledge was harmed,
21 hugely damaged, all the hides that we could have used and
22 applied. Our Inukness is more important than making money,
23 and this is our strength. We strive for this to be our
24 strength, but it's deteriorating by outsiders.

25 THE CHAIR: Thank you, Caleb.

1 Charlie.

2 MR. INUARAK: Thank you, Mr. Chair.

3 We all know that you often have many meetings in
4 the Kivalliq, Kivalliq with the HTOs, and this is policy
5 and a regulation to hold meetings, and we're also going to
6 oblige to what you have to share here because that's our
7 nature.

8 And we have a hearing here. We've heard the
9 same issues and concerns over and over through the years.
10 My term is almost up, still hearing the same. They've
11 often said the people who are home, whether in Arviat,
12 Whale Cove, Chesterfield, and any of these communities, and
13 not only in meetings, not only during meetings that they
14 see so many bears, and they are having so many problems
15 with bears and what a nuisance they've become, even to the
16 point where the Nunavut government has assisted in problem
17 bears. So we feel this.

18 If there are really 1,000 bears in number, if I
19 were the judge, if I were to play judge and look at the
20 evidence before me, according to the number of bears that
21 are nuisance bears, if I wanted fewer of these nuisance
22 bears, problem bears, then I would have to add to your
23 tags, to your quota, and this would help you because we
24 would increase the number of bears you can catch. For
25 protection-wise, it would be a lighter burden for those

1 that monitor throughout the night and throughout the
2 critical times of the month or year.

3 And you're sharing this with us from Kivalliq
4 Wildlife Board. Can I gather this to be true? I'm
5 collecting all what's being said, and could I say that this
6 is true overall in what you're asking?

7 THE CHAIR: Thank you, Charlie.

8 Stanley

9 MR. ADJUK: Thank you, Mr. Chair.

10 Yes, what you've said are true. We've come to
11 realize -- we saw a picture of a bear earlier. When we had
12 more tags, we would never use them all. But now that they
13 cut the quota and the tags, then we went over that limit,
14 and many hunters are disturbed because it's part of their
15 diet, it's part of our clothing. So when we're disrupting
16 them too much as hunters, harvesters, they have their own
17 right to rebel and disobey.

18 So now that there's no limit. Then they were
19 under the numbers required, but when they put a limit they
20 went over. If there's going to be more cuts to the quotas
21 or the tags, perhaps we can expect that more bears are
22 going to be killed, according to Inuit law-abiding citizens
23 as they are, and we really do tell them you have a right to
24 protect yourself and carry out your right as an Inuk
25 harvester. But if you increase the number of tags, I want

1 you to know that we're not going to probably use them all
2 in one year. I'm sure there's going to be some left over,
3 and perhaps some years perhaps they'll use them all.
4 According to the population, I think this is more fitting
5 every year, without too much changes over the year, be more
6 consistent.

7 In the Western Hudson Bay population, if there
8 is 1,000 that you know of and if you give out 45 tags, then
9 that makes sense. So if there's 1,000, it should be pretty
10 steady, and that is the steady number to be safe, 4.5
11 percent. I don't really know if that's the complete truth
12 or fact, but that's what we follow through for all
13 wildlife, not just polar bears.

14 Yeah, we are requesting increase the number,
15 because if you decrease it, we know for a fact that people
16 from Kivalliq according to our meetings with
17 Nick Arnaukjuaq, Harry from Chester, every time we meet
18 they've said this. But in this meeting, for example, in
19 this hearing they're likely not to share that. It's when
20 we hold meetings with them they're warning us, whether or
21 not there's tags or quotas, we're going to hunt and kill.

22 And regarding Environment Canada or people from
23 the Environment, you can't monitor every hunter. There's
24 no way you can monitor every hunter. So if you decrease
25 the tags, it's going to be increase in harvesting. And not

1 all bears go into every community, but it's just we always
2 find that when there's no more tags, they come around. Not
3 in Whale Cove -- I think everywhere. When there's no more
4 tags, they come and show up. But when there's polar bear
5 tags, they're hard to find. They don't come close to our
6 communities. Inuit know this very well.

7 And what Charlie shared earlier, what he asked,
8 yes, we're asking for more. There used to be 56. Then it
9 was cut to 38, and then it was going lower, even for the
10 point where there were 8 in the Kivalliq Region.

11 But I'm not trying to scare everyone, not trying
12 to intimidate everyone as people from Kivalliq, but if
13 there's no more tags, yeah, obviously there would be no
14 limit. They're our animals, our wildlife, our diet. We
15 use them. If there's no quota, then there's no limit. I
16 think we need to state this coming from Inuit.

17 THE CHAIR: Thank you, Stanley.

18 Charlie.

19 MR. INUARAK: I want to ask you, in the Kivalliq
20 Region the tags for polar bears are for Inuit, and the HTOs
21 are in charge of giving out those tags, but it's the HTOs
22 that are in charge of those tags.

23 My question to you: The Inuit in the Kivalliq
24 Region that are affected, if I can make it clear, I would
25 ask the question; the Kivalliq Inuit Association -- I know

1 NTI is in favour to the KWB. What about the Kivalliq Inuit
2 Association? Have they recognized this, as well, what
3 we're talking about?

4 Thank you.

5 THE CHAIR: Thank you, Charlie.

6 Stanley

7 MR. ADJUK: The president of KIA was in our
8 meeting. He knows our view. We're looking for ways. He's
9 probably going to speak. He knows, understands, he's a
10 hunter, as well, in the Kivalliq Region. He even goes to
11 Whale Cove for polar bears. We understand that he was in
12 support of us, but we're going to hear from him later, so I
13 can't speak on his behalf.

14 Thank you.

15 THE CHAIR: Thank you, Stanley.

16 I think at this time I'd ask David if you want
17 to go to the microphone and just state who you are, David,
18 and you can say your few words.

19 MR. NINGEONGAN: Thank you, Mr. Chair.

20 My name is David Ningeogan, president of the
21 Kivalliq Inuit Association. Thank you, Mr. Chairman, for
22 giving me the opportunity today.

23 The polar bear issue in the Kivalliq Region is
24 very evident that we need a larger number for TAH. We hear
25 all the time that the total allowable harvest is not enough

1 for the communities over the last many years. For an
2 example, what you see, the polar bears that are harvested,
3 there were TAHs for the communities. They would always be
4 the same, the amount harvested. But the tags are not
5 enough for the Kivalliq Region for the communities that are
6 affected.

7 As a board, Kivalliq Inuit Association, our
8 mandate is to ensure that the beneficiaries are taken care
9 of. And Inuit traditional knowledge, we know that there
10 should be a higher TAH, but they're listening to western
11 science more than traditional knowledge. Our agreements
12 that we have, we've had to use it a few times. The
13 stumbling blocks that we have over the last few years that
14 we've encountered, the tags that we are asking for in the
15 Kivalliq Region and the HTOs in the communities are going
16 to be affected. We are in support of those organizations
17 as Kivalliq Inuit Association, and we know that we do not
18 want the tags to be reduced. We need to increase that
19 number.

20 I want you to understand the tags that we have
21 is not enough for the region.

22 We all know that the polar bears today are being
23 affected more by western science and not by Inuit, and they
24 are going more into the communities. Once they are handled
25 down in Churchill by putting them to sleep and when Inuit

1 harvest those affected bears, and they paint the fur, we
2 can't use the fur and eat the meat anymore. When it's like
3 that, us Inuit feel that only we harvested for food and
4 clothing, and it's not to be a detriment to our
5 beneficiaries using Inuit traditional knowledge.

6 I know, NWMB, we are asking you that the quota
7 should be increased for the Kivalliq Region because it's
8 been really small and not enough. If we were given more
9 and we are in support of more tags being given, we would
10 like to see that. We are asking you.

11 And the western science biologists in Churchill
12 is where they operate, they should go to the Kivalliq
13 communities to see what it is like in our communities in
14 the region with respect to wildlife and learn from Inuit
15 traditional knowledge. We are going to invite them to come
16 more often to our region.

17 For your information, I know it hasn't been
18 mentioned too many times that five tags for Manitoba. We
19 know that there are defence kills down there, we would ask
20 that compensation be given to the Kivalliq Wildlife Board.
21 If they're going to have five tags, then they should be
22 giving funds to the Kivalliq Wildlife Board, and you add
23 another 45 tags for the Kivalliq Region, those 5 that are
24 defence kills should be compensated.

25 Thank you for giving me the opportunity. I

1 don't have anything else to say. Thank you.

2 THE CHAIR: Thank you, David.

3 Charlie.

4 MR. INUARAK: Thank you.

5 While you're down there, my final question. The
6 Inuit, you're standing here representing them. I'm proud
7 of you. I would like you to continue. I'm sure you have a
8 written submission for us. Our MLAs and lawyer is probably
9 motivated. This is our second hearing with respect to
10 Western Hudson Bay polar bears, and it is very evident the
11 people that are getting more and more bears in Arviat, you
12 could hear it on the radio a lot. Even though we're far up
13 north we know that there's more polar bears in the region.

14 And the regulations and laws, that we've reduced
15 the number of polar bears you can harvest with the rules
16 and regulations and law that we had to add, if you have a
17 written submission, are you going to give us a request, or
18 have you already given us that request to increase the
19 total allowable harvest?

20 THE CHAIR: Thank you, Charlie.

21 David?

22 MR. NINGEONGAN: Thank you, Mr. Chairman.

23 This is something we don't have a written
24 submission to. We have given that mandate to NTI because
25 it is their mandate, but if we have to have a letter of

1 support, we can give you one if we are given the
2 opportunity.

3 I apologize that I didn't come here earlier. I
4 knew that you were having a meeting, however, we've been
5 quite busy trying to keep up with our job, but if we are
6 given the opportunity, we'd be able to give you a support
7 letter for increasing the total allowable harvest for
8 Western Hudson Bay.

9 THE CHAIR: Thank you, David.

10 And I just want to clarify. What you gave us
11 today and what you spoke to is on our record, so that is a
12 submission by you, and that will be accept, and the board,
13 too.

14 Any other questions from the Board to
15 Whale Cove -- I mean to KIA. Getting tired. At least I
16 got the community. Right, Stanley? Any questions from
17 staff? Vickie, quickly.

18 **NUNAVUT WILDLIFE MANAGEMENT BOARD STAFF QUESTIONS AND**
19 **COMMENTS**

20 MS. SAHANATIEN: Thank you, Mr. Chair.

21 Yes, just one question. And we'll need this
22 information for our future analysis. So you've recommended
23 to use a number of 1,000 for the population estimate to
24 estimate the total allowable harvest, and in your
25 submission you provided some information about why you

1 selected that number, but it would be very helpful to
2 receive more details about that, so if you can fill out
3 some details and why 1,000.

4 Thank you.

5 THE CHAIR: Thank you, Vickie.

6 Ezra.

7 MR. GREENE: So, yeah, that number, as I
8 mentioned, comes partially from the results of the aerial
9 survey and the confidence interval for that 2016 aerial
10 survey that 1,000 is within the limits of -- I don't know
11 exactly what the range was -- around that 842. But also
12 from Inuit saying there's more and more bears and saying,
13 okay, well, there's a range here that western -- like, an
14 aerial survey has provided and Inuit are saying there's
15 more and more bears, maybe the estimate should be higher
16 within that range.

17 And we also consulted with David Lee and
18 Gabriel Nirlungyak at NTI just to get insight into whether
19 that was a reasonable sort of number to work around, and
20 David said, yeah, that works with the science. And I think
21 he can respond to that if there's anything else that needs
22 to be said.

23 THE CHAIR: Thank you, Ezra.

24 Vickie.

25 MS. SAHANATIEN: Thank you, Ezra. That's very

1 helpful.

2 Yeah, I'll just note the interval, confidence
3 interval is 526 to 1,121, and the point estimate was 842.
4 So 1,000 is up towards the top limit of the latest
5 estimate. So it would be useful to hear from David to find
6 out any additional information why that number was
7 selected.

8 Thank you.

9 THE CHAIR: Thank you, Vickie.

10 David Lee.

11 DR. LEE: Thank you, Mr. Chair.

12 And thank you, Vickie.

13 So as Ezra mentioned, the KWB held a
14 teleconference call, and also there were a number of
15 meetings where they were trying to essentially discuss how
16 they could be reasonable with all of the information that
17 the board members in the communities were mentioning,
18 especially the traditional knowledge. And the estimate of
19 1,000 was mentioned because, over the past several decades,
20 in looking at just the stability of the population, that
21 was the number that had been used during the last public
22 hearing, and it was a number that the board felt
23 comfortable using if they had to provide some justification
24 with percentages and numbers because, of course, IQ doesn't
25 provide an exact number.

1 So I would try to not focus on necessarily an
2 exact reason for using a specific number but just that this
3 was a result of a frank and open discussion where the
4 participants, especially the board members on those calls,
5 felt that they could essentially compromise to provide some
6 type of option for the Nunavut Board.

7 Thanks.

8 THE CHAIR: Thank you, David Lee.

9 Vickie.

10 MS. SAHANATIEN: Thank you, David, and Ezra as
11 well. Sorry. I didn't want to belabour it, by any means,
12 but it will be very important when we review all the
13 information and we put options towards the Board. So we
14 need that type of background, so I appreciate it.

15 Thank you.

16 THE CHAIR: Thank you.

17 Michael, any questions to KWB? No?

18 Government of Nunavut, any questions for KWB?

19 MR. DRISSING: No questions, Mr. Chairman.

20 THE CHAIR: NTI, Paul?

21 **NUNAVUT TUNNGAVIK INCORPORATED QUESTIONS AND COMMENTS**

22 MR. IRNGAUT: Yeah, just one quick question. On
23 3.2 on your submission on the moratorium on flexible quota
24 system penalizing or penalizations for over-harvesting
25 females, can you explain that a little bit more? You're

1 suggesting that they have a moratorium for five years. Is
2 that correct?

3 THE CHAIR: Thank you, Paul.

4 Ezra.

5 MR. GREENE: Yeah, so the suggestion there, as
6 I said, this is open for discussion, and it's an issue
7 that's clearly an issue, as has been noted by other
8 participants.

9 But the suggestion is basically maybe we should
10 start with a moratorium on the severe penalizations where,
11 if too many bears are harvested in a single year within
12 that two-to-one ratio, it can eliminate multiple tags
13 within the next year. And one thing, it's confusing. It's
14 not clear how the math is actually done. There's actually
15 not very -- from what I was looking into, there's not very
16 good records of how credits were determined based on what
17 the harvest was the year before. So maybe that's just
18 information that needs to be more transparent from the
19 government or from NWMB. I'm not sure who that would be
20 would be in charge of that.

21 But the suggestion here is that maybe one way to
22 do it is that there should be a moratorium where there
23 isn't that severe penalization for over-harvesting one
24 female and that KWB, the HTOs, and the other co-management
25 partners should still emphasize that that ratio should be

1 targeted. But during that time, maybe if there's
2 over-harvesting of females, it should just be a one-to-one
3 penalization for the next year so that if the TAH is 40 and
4 there's 41 caught, then the next year it will be 39 tags
5 that would be provided to the region. And then after that
6 time of five years, evaluate what actually happened, see if
7 people actually followed, more or less, that two-to-one
8 ratio and revisit whether more severe penalizations are
9 necessary.

10 So if there's any more questions, we can answer
11 them.

12 THE CHAIR: Thank you, Ezra.

13 Paul.

14 MR. IRNGAUT: Thank you. Thanks for that
15 answer. No further questions.

16 THE CHAIR: Thank you, Paul.

17 Arviat HTO, any questions to KWB? Nick?

18 **ARVIAT HTO QUESTIONS AND COMMENTS**

19 MR. ARNAUKJUAQ: Thank you, Mr. Chair

20 I'll just make this clear and quickly. I'm
21 seeing different numbers when it comes to the quota. I
22 said now I'm sure all the information is correct for the
23 Government of Nunavut to stand at 28, for KWB to stand at
24 40-45, and that's between the three communities, Arviat,
25 Whale Cove, Rankin. Arviat has requested 25, Rankin at 40,

1 and Whale Cove at 20.

2 With these numbers I'm sure today there is no
3 deal, but given the fact what I sit here today, any
4 governing body if you cannot give us 25, then I request you
5 give us 60 with no question asked and that be done with.
6 But I know this is workable even though the numbers are
7 different, and the understanding is there, it's very clear.
8 And given the fact with the polar bear problem situation,
9 defence kill, yes, I want this matter done with today that
10 we can do it -- I know it -- because we've heard enough
11 about Western Hudson Bay polar bear.

12 The three communities -- Whale Cove, Rankin,
13 Whale Cove (verbatim) -- let's deal with the Western
14 Hudson Bay polar bear and decide on Baker Lake and
15 Chesterfield how we'd be able to move forward. Let's fix
16 it now. It would be all right. I think we understand
17 clearly where we stand. Using our knowledge, we decided on
18 those numbers.

19 That's not a question, just a comment I just
20 wanted to mention. Looking at the numbers are different,
21 let's fix it today. We're going to be on the same boat,
22 you owe me something or we miss something. While there is
23 no serious injuries by polar bears, let's resolve this
24 matter.

25 The polar bear problem, if the harvest was at

1 the proper level, we wouldn't even be sitting here if the
2 polar bear situation was resolved ten years, five years.

3 Thank you, Mr. Chairman.

4 THE CHAIR: Thank you, Nick.

5 And I think those were more comments than any
6 questions to KWB. I just will advise you, Nick, we will
7 not make a decision on this today. We need to go back and
8 analyze all this information and understand it fully before
9 we make a decision. So we're hoping that will happen in
10 March, in our March meeting.

11 Any other comments or questions from Arviat?

12 No?

13 Whale Cove.

14 MR. ENUAPIK: No comments.

15 THE CHAIR: Thank you, Simon.

16 Chesterfield, Harry.

17 MR. AGGARK: No comments.

18 THE CHAIR: Rankin.

19 MR. SIGARDSON: Just like to clarify, Rankin
20 wanted 40 total for Western Hudson Bay, not 40 for Rankin
21 like Nick suggested there.

22 THE CHAIR: Okay. Noted.

23 Baker Lake, any questions, comments?

24 **BAKER LAKE HTO QUESTIONS AND COMMENTS**

25 MR. NATEELA: Thank you, Mr. Chairman.

1 We don't have any questions. Maybe, however, if
2 there are more ways for capacity building for the local
3 HTOs it would be helpful to us when we're having a meeting,
4 a large meeting like this, sometimes we're not prepared and
5 we end up travelling, which is a detriment. Even though we
6 want to help the wildlife boards and our own HTOs, when you
7 don't have staff that are qualified and knowledgeable --
8 maybe, for an example, if we had biologists for HTOs, the
9 questions that we have, you know, they'd probably be able
10 to assist us because we don't have the proper qualified
11 staff in our communities. Maybe that would be helpful for
12 the RWOs and the NWMB and the HTOs. Something should be
13 considered for the future. If we had a regional biologist
14 or a policy analyst in the region, they would be helpful to
15 the HTOs.

16 Thank you, Mr. Chairman.

17 THE CHAIR: Thank you, Hugh. I think more of
18 a comment again that everybody can hear.

19 Environment Canada, any questions to KWB?

20 MS. VALLENDER: No questions. Thank you.

21 THE CHAIR: Thank you.

22 World Wildlife Fund, nothing?

23 Any questions from the general public or Elders
24 out there? Bert Dean, go ahead to the mic. You're both, I
25 guess, eh?

1 **PUBLIC/ELDERS QUESTIONS AND COMMENTS**

2 MR. DEAN: Thanks, Mr. Chairman. Thanks
3 Louie.

4 Yeah, I didn't get Paul's attention when it was
5 NTI's turn, but just to comment to sort of build on
6 Kivalliq Wildlife Board's submission, there was an NWMB
7 hearing in Naujaat where they were talking about the
8 Foxe Basin allocations, and because of the flexible quota
9 system one, of the communities -- it was either Hall Beach
10 or Iglulik -- was going to be reduced potentially -- so was
11 Coral Harbour -- because they had gone one female over, one
12 female tag or credit over. Because of their credits,
13 Coral Harbour was going to lose three tags or four tags the
14 next year, and Hall Beach was only going to lose two or
15 whatever it was.

16 When you looked at Foxe Basin, when you looked
17 at the harvest for that year, it was a two-to-one
18 male-to-female ratio. But at the community level some
19 communities had harvested too many females. Now, they
20 could ask the other community for credits, but if the
21 community gave up those credit, then potentially their
22 quota would go down by five.

23 A good friend and colleague once sort of
24 explained this is more of a social experiment with people
25 as opposed to a wildlife management approach, this whole

1 flexible quota system. It takes away the job of the NWMB.
2 You don't have to decide whether to lower or increase the
3 quota. The flexible quota system decides all of that for
4 you. And it doesn't take into account traditional
5 knowledge or hunter observations or any information, so
6 it's been put forward for something for the Board to
7 consider or think about.

8 Another example for this region, I believe it
9 was 2010 or somewhere in there when the quota had been
10 reduced to eight, Arviat had eight or nine defence kills.
11 All the tags were gone before the season had even opened.
12 The government department released all those hides to the
13 Arviat HTO. The Kivalliq Wildlife Board hadn't even talked
14 about how to share those eight tags, so Whale Cove and
15 Rankin, Chester, and Baker were never even considered. And
16 we had a conference call, and there was people arguing and
17 mad about that whole situation.

18 And the one thing I've learned working and
19 living here is we shouldn't be arguing or fighting about
20 animals or tags. And so I think if we can find a
21 respectful way to figure out what, you know, from a
22 conservation perspective is a reasonable quota, from a
23 human or public safety -- you know, if we go a bit below
24 800 -- if we went to 700 or 600, would that be the end of
25 the world if there was only 600 polar bears in the Western

1 Hudson Bay? But if it was a bit safer for hunters or
2 families that are camping in the spring, or communities,
3 kids going to school or going out in the playground or to
4 the store.

5 That flexible quota system -- because I was
6 around, and we talked about it -- the communities wanted a
7 higher quota. So if you want those 100 tags, then your
8 target population has to be 1,400 or 1,500 or whatever, and
9 it was that reverse calculation. And that's kind of a sad
10 way to set up our management goals or objectives, whether
11 it was greed of wanting more tags or it was manipulation of
12 this is what you have to have to get them, I think some of
13 the discussion earlier about, what are the management
14 objectives.

15 Moshi Kotierk did a survey from a lot of these
16 communities. I don't know if that's been entered into this
17 hearing, but I know it has been before the Board before,
18 and Moshi has made presentations to the Kivalliq Wildlife
19 Board. A lot of the people he interviewed in the
20 communities were not adverse to having a lower quota if it
21 meant it was safer to go camping. So if we had a higher
22 quota now and that reduced those population and it was a
23 bit safer -- or maybe not -- but in the Kivalliq Wildlife
24 Board presentation they talk about, like, set a date to
25 come back and look at it again, is it working.

1 But the news last year, or whenever it was, you
2 know, that there was going to be this 28 tags for Western
3 Hudson Bay, and it was on the news and everything else, the
4 reality was Arviat had two tags because of that flexible
5 quota system. There had been too many defence kills or
6 female bears killed. So even though the Board had made
7 that decision about 28, it was never 28, to begin with. It
8 had already started down at 18 or something a lot lower.
9 Rankin last year harvested mostly males, and this year I
10 think we're quite successful again in getting mostly males
11 with CEID's (phonetic) allocation or tags. If you follow
12 the flexible quota system, Rankin should be at 15 or 20,
13 and Arviat should be at 0. That's the flexible quota
14 system.

15 So I think we need to take a harder look at that
16 and maybe consider some other options, because we don't use
17 it for any other species. We don't use it for musk ox or
18 caribou or whales or anything. No other the jurisdiction
19 uses it. Inuvialuit refuse to use it. Nobody uses the
20 flexible quota system.

21 Thank you.

22 THE CHAIR: Thank you very much, Bert Dean,
23 for your comments.

24 Any other? I don't think there was any
25 questions to you, Stanley. It was more comments.

1 Any other questions or concerns from the public?

2 I don't see any.

3 All right. We're done. Whale Cove, thank you
4 very much for presenting your information -- I don't know.
5 Should we take a break? Thank you, Kivalliq Wildlife
6 Board -- I'm sorry -- thanks for your presentation and
7 question answering.

8 I guess we have a choice here. We only have a
9 couple -- World Wildlife Fund, do you have much to say, or
10 do you have a big presentation?

11 MR. LAFOREST: As the day's gone on I've chopped
12 my presentation. It shouldn't take more than ten minutes.

13 THE CHAIR: Okay. With that, we have World
14 Wildlife Fund left, and I think that's pretty much it,
15 unless somebody from the public has something to present
16 later. But I think we'll carry on and try and finish this
17 hearing as best we can. We're all here. Instead of coming
18 back in an hour or so, if everybody's in agreement, let's
19 just go until we can finish this, and it shouldn't take too
20 much longer. All right? Good?

21 All right. World Wildlife Fund, you're up. Go
22 ahead, you have the floor.

23 **SUBMISSION BY WORLD WILDLIFE FUND**

24 MR. LAFOREST: Thank you, Mr. Chair. And thank
25 you very much to the NWMB for the opportunity to present.

1 My name is Brandon Laforest, and I work for WWF
2 Canada based out of Iqaluit.

3 It's not lost on my organization or myself that
4 we are the only nonco-management partner given the
5 opportunity to provide an oral presentation, and we are
6 very grateful for that.

7 The WWF has advocated in international forums
8 such as CITES to defend international polar bear trade,
9 recognizing that harvest is a vital part of Inuit culture
10 and economy and is not a threat to polar bear populations
11 in Canada.

12 We have offices across the arctic, including
13 here in Nunavut, and we aim to incorporate the valuable
14 lessons learned from living in the north, however briefly,
15 including traditional ecological knowledge perspectives in
16 our conservation work and messaging. A big part of my job
17 anecdotally is to ensure that our messaging from Toronto is
18 reflective and respectful of the north. That being said, I
19 appreciate the chance to offer the perspective of an
20 outside organization to this process.

21 First thing I want to talk about is management
22 plans, and I think what we've seen here is there's a strong
23 need to have an approved Nunavut polar bear co-management
24 plan in place so there's a more systematic approach to
25 polar bear management decisions with updated management

1 goals, especially given the changes we're seeing in the
2 arctic and the need for adaptive management.

3 For example, we recommend it be made clear what
4 the management goal for Western Hudson Bay is, whether it's
5 to maintain the current abundance or to decrease the
6 population and the appropriate actions that would follow
7 each scenario. The MOU currently indicates a target
8 population of 1,400 bears, which was not relevant or --
9 yeah, it's not relevant. To that effect we would recommend
10 the NWMB work with the RWOs towards holding a hearing to
11 discuss the GN's proposed polar bear management plan. We
12 recommend the federal government support this initiative
13 however possible, including financially, so that they
14 themselves can move closer towards a finished federal plan
15 which is also long overdue from mandated deadlines.
16 Clearer management objectives would facilitate decisions
17 such as the one we're discussing today, and we've heard a
18 lot of uncertainty about how territorial and federal plans
19 will interact and how they will affect harvesters, and the
20 biggest part of that confusion is that none of these plans
21 are finalized, so that confusion will remain.

22 For human-polar bear conflict we understand and
23 hear the facts presented by the communities that the
24 subpopulation is increasing and the levels of conflict are
25 too high. It appears that the number of bears in this

1 region currently exceeds the capacity of local and
2 territorial governments to ensure the safety of community
3 members and maximize traditional harvest opportunities, and
4 that message is loud and clear.

5 We recommend more investment from the GN in
6 polar bear-human conflict reduction measures, including
7 patrols and the management of attractants that draw polar
8 bears into communities. Most notably, we recommend
9 conservation officers should be in place in every community
10 and, where needed, additional personnel be hired to act as
11 polar bear guards during the appropriate seasons.

12 We offer support to Arviat currently to
13 supplement the GN program, and we're prepared to offer
14 additional support wherever needed, but given the legality
15 of the situation in the *Wildlife Act*, WWF cannot act alone
16 in establishing patrols. We can't hire people to chase
17 bears. It has to be in conjunction with the GN.

18 The goals of any management action, including
19 setting a TAH, should be clear so it can be evaluated in
20 the future to see if those desired effects are being
21 achieved. Subsequent studies should be done, led by
22 communities, to determine if increased harvest helps the
23 human-polar-bear-conflict issue, as well as to identify
24 other solutions. I think studies done from the community
25 perspective showing the effectiveness would help in future

1 arguments, as well, when they come forward for advocating
2 different TAH levels.

3 And, lastly, on the harvest level question, WWF
4 does not believe that Inuit harvest has or is currently
5 leading to a reduced abundance in the Western Hudson Bay
6 polar bears. If the management goal is for a sustainable
7 population, environmental trends, as well as the latest
8 information from Western Hudson Bay surveys and Southern
9 Hudson Bay surveys and all of the information presented by
10 Environment and Climate Change Canada this morning, seem to
11 indicate a precautionary approach should be considered as
12 put forward by Environment Canada. We aren't advocating
13 for any specific number. We leave that for co-management
14 partners to decide. But we strongly recommend the NWMB be
15 clear about the management goal and how they plan to
16 achieve that goal.

17 So, in conclusion, at the end of the day, we
18 believe strongly in co-management, and we hold up Nunavut
19 and the NWMB as examples of successful implementation of
20 co-management as evidenced by currently stable or
21 increasing polar bear populations across the territory;
22 however, given the concerns expressed by community members,
23 we think there are more direct actions that can be taken to
24 ensure the safety of people and maximize harvest
25 opportunities that aren't defence kills.

1 And, lastly, there's just a need for clearer
2 management objectives for this subpopulation so the
3 achievement of these objectives can be evaluated over time.

4 And that's it. Thank you very much.

5 THE CHAIR: Thank you, Brandon, for your
6 comments.

7 Any questions to World Wildlife Fund?

8 **NUNAVUT WILDLIFE MANAGEMENT BOARD QUESTIONS AND COMMENTS**

9 THE CHAIR: Charlie.

10 MR. INUARAK: Not really a question, but I
11 really thank them sharing what you just said stating your
12 facts.

13 THE CHAIR: Thank you, Charlie.

14 Any other comments, questions from the Board?

15 If not, staff. Vickie? Go ahead.

16 **NUNAVUT WILDLIFE MANAGEMENT BOARD STAFF QUESTIONS AND**
17 **COMMENTS**

18 MS. SAHANATIEN: Just a short question. Because
19 you read your presentation and you didn't provide a written
20 submission, it would be very useful to receive that. We
21 have recorded it, but, still, it would be nice to have that
22 in writing.

23 Thank you. That's all.

24 THE CHAIR: Thank you, Vickie.

25 You can do that, Brandon?

1 MR. LAFOREST: Yes, that's no problem.

2 THE CHAIR: Thank you.

3 Michael, any questions?

4 GN, anything for World Wildlife Fund?

5 **GOVERNMENT OF NUNAVUT QUESTIONS AND COMMENTS**

6 MR. DRISSING: Thank you, Mr. Chair.

7 Just a comment that, from the government
8 perspective, we support WWF's request to the Board that,
9 when you make a decision to increase or reduce a harvest is
10 to clearly outline what your management objective with that
11 population is. That makes it much easier for the minister
12 to consider the decision to accept or reject a decision.
13 When it's just a total allowable harvest increase without
14 clear objectives of what you want to achieve with that
15 total allowable harvest recommendation, it makes it very
16 challenging for myself and staff to explain to explain it
17 to the minister.

18 Thank you. So, just again, to support WWF on
19 that specific issue.

20 THE CHAIR: Thank you, Drikus. Good?

21 Okay. NTI, questions, comments?

22 MR. IRNGAUT: No comments. Thank you.

23 THE CHAIR: Thank you.

24 Kivalliq Wildlife Board, any comments? No
25 comments?

1 Arviat HTO, anything? Nick.

2 **ARVIAT HTO QUESTIONS AND COMMENTS**

3 MR. ARNAUKJUAQ: Thank you, Mr. Chair.

4 I just want to make a brief comment to WWF for
5 their efforts in Arviat. It's been very helpful to the
6 community, so we appreciate that, with the polar bear
7 patrol and monitoring, and that has reduced a lot of
8 problems. So we from the Arviat HTO thank WWF for their
9 efforts in Arviat.

10 *Taima*. Thank you.

11 THE CHAIR: Thank you, Nick.

12 Brandon.

13 MR. LAFOREST: Just to say thanks, Nick.

14 THE CHAIR: Simon, anything from Whale Cove?

15 MR. ENUAPIK: No comments.

16 THE CHAIR: Thank you.

17 Chesterfield Inlet?

18 MR. AGGARK: No comments.

19 THE CHAIR: Thank you.

20 Rankin Inlet. No comments.

21 Baker Lake?

22 MR. NATEELA: No, no questions.

23 THE CHAIR: Thank you, Hugh.

24 Environment Canada.

25 DR. LUNN: No comments.

1 THE CHAIR: Any anybody from the public
2 gallery or Elders, any comments to World Wildlife Fund?
3 Nothing.

4 Okay. Thank you, Brandon. Thank you for your
5 words, and that concludes your presentation and questions
6 to you.

7 Okay. Next what we have left, is there anybody
8 in the gallery or the public that would like to make any
9 comments to the Nunavut Wildlife Management Board in
10 regards to the Western Hudson Bay polar bear population?
11 This is your time.

12 **SUBMISSION BY PUBLIC/ELDERS**

13 THE CHAIR: Thomas.

14 MR. COMER: Thank you, Mr. Chairman.

15 I just wanted to say thank you for inviting the
16 public, for inviting everyone here. And all the
17 information that has been presented has been very clear,
18 and good luck with everything.

19 Thank you.

20 **SUBMISSION BY MAKIVIK CORPORATION SPOKEN TO**

21 THE CHAIR: Thank you, very much. Thank you
22 for those comments.

23 Okay. One other item that we just want to
24 indicate to everybody is you have a tab 12. It's a
25 submission by Makivik, and we just want to inform you all

1 that we have this submission, and it will be taken into
2 consideration when our decision is being made. The
3 highlighted points, they've provided a written submission
4 for the management of the Western Hudson Bay polar bear
5 population.

6 They observe that bears travel extensively into
7 their area. Two bears were harvested in Inukjuak
8 (phonetic) in their area south of Churchill. They just
9 stress that Western Hudson Bay polar bear harvest by
10 Nunavummiut is incidental, and they would like us to
11 consider the harvesting activities outside the Nunavut
12 Settlement Area, and they submitted us a letter that has
13 been registered in our documents we're going to consider
14 for this hearing.

15 So just so that you're all aware that we have
16 that information from Makivik.

17 Okay. That concludes -- David Lee, go ahead.

18 **NUNAVUT TUNNGAVIK INCORPORATED QUESTIONS AND COMMENTS**

19 DR. LEE: Just I realize they're not here to
20 respond. But to comment on that letter, I think NTI would
21 be remiss if we did not also indicate that they're
22 providing evidence of two polar bear tags for one season,
23 and no other information. So I think NTI would stress that
24 is very specific limited information that has been provided
25 to the Board.

1 Thanks.

2 THE CHAIR: Okay. We have you on record
3 saying that, David. Thank you.

4 **CLOSING REMARKS**

5 THE CHAIR: All right. So that concludes our
6 hearing. I want to thank everybody for being here and
7 attending and taking such an interest in this very
8 important topic, and it was very obvious that this is a
9 topic that's very close to everyone's heart and very, very
10 important to this region.

11 Stressing the safety of people is one of the
12 biggest things that I think we all can see is a concern to
13 everybody, probably the number one concern.

14 Anyway, as I said to David before -- or I said
15 to somebody before, to maybe Nick -- there's a lot of
16 information to absorb, and our staff is going to put this
17 all together for us to analyze, and our goal is to do that
18 in our next meeting in March and to hopefully come up with
19 the TAH recommendation for this population.

20 Again, I want to thank you all. I think what
21 I'm going to do is just open the floor for closing remarks,
22 and I'll start with you, Brandon, at your end of table, and
23 if you'd just like to say any words at all before we close,
24 go ahead. Start with you. Go ahead, Brandon.

25 MR. LAFOREST: Thank you. I just spoke, but once

1 again, to reiterate, we appreciate the opportunity to be
2 here and recognize that we don't have to be here and you
3 don't have to listen to us at all if you don't want to. So
4 it's appreciated to have a seat at the table, and we look
5 forward to future engagement. Thank you.

6 THE CHAIR: Thank you.

7 Kivalliq Wildlife Board.

8 MR. ADJUK: Thank you, Mr. Chair.

9 I'd like to thank everyone for waiting patiently
10 for me come in the last couple days. Close but yet so far.

11 I'd like to thank NTI for their technical
12 support working with KWB. They did a lot of work, Ezra and
13 Qovik. Also the communities of the Western Hudson Bay
14 coast, Arviat, Whale Cove, Chester, and Rankin, and Baker.
15 And I look forward to still representing the region and
16 like to thank the NWMB Board for listening to our, every
17 year, same discussions.

18 *Matnaa.*

19 THE CHAIR: Thank you, Stanley.

20 Paul, NTI, concluding words?

21 MR. IRNGAUT: Thank you. We thank the NWMB.
22 They're following the guidelines and doing great work
23 hearing out all the people, groups, organizations that they
24 have to, and communities strive and struggle. I want to
25 stress again how they need protection. This is priority.

1 Don't forget this when you're making decisions.

2 And, also, we're always going to support our
3 communities, especially the wildlife organizations in the
4 regions and communities, and we also thank you that we have
5 an opportunity to be here.

6 THE CHAIR: Thank you, Paul.

7 Drikus, Government of Nunavut.

8 MR. DRISSING: Thank you, Mr. Chair.

9 Just like everybody else, want to thank you and
10 the Board for a very good and well-run meeting. I think it
11 was a very informative meeting. We might not always agree
12 how we get there, but I think at the end of the day we all
13 have the same objective, and that's the conservation of
14 polar bears and making sure that the harvest is sustainable
15 and how we manage it that we all work together on that.

16 Thank you very much.

17 THE CHAIR: Thank you, Drikus.

18 Environment Canada.

19 MS. VALLENDER: Thank you.

20 Yes, I would also like to thank the Board and
21 everybody here for letting us participate in this hearing.
22 I think, especially, it was useful and very appreciated
23 that you let Nick provide some of the science that came out
24 of our department. I apologize that we did take up most of
25 the day for that, but I think it was hopefully useful for

1 everybody.

2 Certainly for us on the management side it was
3 very useful for us to hear from all the different
4 organizations and particularly the HTOs and communities.
5 You know, I'm always amazed how much people care about the
6 species and how much effort there is put into the effective
7 management, and I can say that as a department we really do
8 believe in the system that's in place in Nunavut.

9 And so, again, I think that the NWMB has a big
10 job ahead of you, but I hope that you have all the
11 information you need to make a good decision in
12 consideration of all of the best available information,
13 which would include the TK and the science.

14 So thank you for having us.

15 THE CHAIR: Thank you, Rachel.

16 Baker Lake, any closing comments?

17 MR. NATEELA: Thank you, Mr. Chair.

18 We thank you for the chance to be here. We've
19 also learned a lot, especially on polar bears, but it also
20 affects you when you're from where I come from in
21 Baker Lake. But it's because we are Inuit, and it's our
22 right, and we appreciate being invited here. For
23 decision-making don't forget us in Baker Lake.

24 Thank you, Mr. Chair.

25 THE CHAIR: Thank you, Hugh.

1 Rankin Inlet, any comments?

2 MR. SIGARDSON: Thank you for having us here in
3 your community.

4 THE COURT: Harry, Chesterfield Inlet.

5 MR. AGGARK: I thank you to the Board for
6 inviting us from Chester. But also the bears that approach
7 our communities nonhunting season, we don't like to kill
8 just to kill, but it's deducted off the tags, and this puts
9 us in danger. Then we try not to kill any bears. It's a
10 very unfair place we're put into.

11 But thank you for inviting us.

12 THE CHAIR: Thank you, Harry.

13 Whale Cove, Simon.

14 MR. ENUAPIK: I'd also like to say thank you for
15 inviting us. Thank you for having Elders here that hold
16 that precious knowledge. You really have to study this on
17 behalf of Inuit. I absolutely would appreciate the
18 increase. I'd rather not lose an Inuk person, you can't
19 replace a person. Polar bears are replaceable, so to
20 speak. Think of human beings.

21 THE CHAIR: Thank you, Simon.

22 Arviat, Thomas.

23 MR. ALIKASWA: Thank you, Mr. Chair.

24 During this hearing on polar bears I appreciate
25 that, as people from Arviat are appreciative and our Elder

1 here, Kablutsiak, being here. We've learned a lot,
2 especially on bears, and we hope and expect that the tags
3 and the quotas will be increased

4 Thank you.

5 THE CHAIR: Thank you, Thomas. Nick.

6 MR. ARNAUKJUAQ: Thank you, Mr. Chair.

7 I just want to make a brief comment. Our chair
8 spoke on behalf of our community. And I also want to
9 recognize David Kritterdlik. I know through the three
10 years he was with KWF, and he's done a lot of work that I
11 want to appreciate. And I used to be a fieldworker with
12 KWF around beginning of 1980s, and David Kritterdlik was
13 very involved and participating and supporting and working
14 towards all this. So that's my appreciation to him.

15 Thank you.

16 THE CHAIR: Thank you.

17 Paul.

18 MR. KABLUTSIK: My name is Paul Kablutsiak, and
19 the items we discussed here with NWMB and the policy that
20 will be created, I'm glad when it will be established
21 regarding all the coastal communities that the quota be
22 increased, and I appreciate if this happens. And what
23 happened was a sad incident before around our area
24 concerning problem bears.

25 So thank you for inviting me.

1 THE CHAIR: Thank you, Paul.

2 Okay. Final words will go to Board members
3 closing comments. Jorgen, go ahead.

4 MR. BOLT: Thank you, Mr. Chair.

5 Just more or less say that we all have to work
6 as a team, you know, to conserve our wildlife in Nunavut,
7 and the only way we can do that is work together, because
8 we all have TK. No matter where we're from, from around
9 the world, we all have TK, whether you're from Australia or
10 Africa or wherever. Everybody has traditional knowledge.

11 And only way we could reach our mandate is to
12 work together, and if there's -- I don't know how you
13 would say -- conflicting parties all the time, we'll never
14 get to conserve our wildlife. If we're conflicting
15 together all the time, then meanwhile our wildlife is going
16 down while we're, you know, being childish about things,
17 you know. So we all have to work together to conserve our
18 wildlife, and I think from what I've heard today and
19 yesterday, everybody has that same goal to preserve our
20 wildlife in Nunavut.

21 Thank you, Mr. Chair.

22 THE CHAIR: Thank you, Jorgen. Attima.

23 MR. HADLARI: Thank you, Mr. Chair.

24 Yes, all the things that have been shared here
25 we're going to look at and see how we can lay out the best

1 plan. We're going to consider everything that was said
2 here, as the Board. And I know it won't be an easy thing
3 to do, but because you are my kin, this is how I will
4 represent you. We will consider everything that was spoken
5 up here.

6 Thank you.

7 THE CHAIR: Thank you, Attima. Caleb.

8 MR. SANGOYA: Thank you.

9 These are very difficult topics what Inuit want
10 due to the fact that we have a government and the
11 government has final say, before we come to that, before
12 the decision is made by the government. We won't get
13 everything we want. It may not be given, but according to
14 Inuit knowledge that we've shared over and over, has many
15 blockages, hindrances, and so when we're making decisions
16 it is often forgotten or a lack of IQ in decision-making.

17 But, yes, we hear the need for an increase in
18 the number, quotas, and the HTOs and RWOs have power
19 according to the Land Claims, but it is more often taken
20 away or ignored by the government.

21 So, my fellow members, I'm not getting any
22 younger. Ever since I joined we do work well together, but
23 there's, like, a price to pay, and we work well with the
24 government and Tunngavik folks. We shall strive to include
25 and share and consider everything that was spoken here, and

1 any time if the HTOs in the communities can write
2 letters -- even KWB -- write to us. Write to these bodies.
3 If you change your mind or want to share more, we request
4 in writing because then we'll have it recorded and
5 documented. So submit any letters you want.

6 And I thank the Chair. He used to live in
7 Arviat, and he was a minister before, and I know with his
8 experience as a chair he has all this knowledge and
9 experience, and because we are dwelling more and more on
10 Inuit knowledge I appreciate it and acknowledge it.

11 THE CHAIR: Thank you very much, Caleb, thank
12 you. Charlie.

13 MR. INUARAK: I also want to say thank you. The
14 hard stuff is only coming. We're not going to forget what
15 you shared, and the staff with the GN, NTI, federal
16 government and the knowledge of the scientists and
17 biologists, we're all going to consider your input.

18 The minister has the final say. He may reject
19 it. He rejects it sometimes, he agrees with it sometimes.
20 So he tends to agree more than rejecting. And since it's a
21 new government, I expect that he'll be more in agreement.
22 And I want to thank everyone, not just people from Rankin.

23 But I did have one question. I saw something
24 written that said WWF -- are you guys the ones that are the
25 World Wrestling Federation, the crazy people who fight?

1 THE CHAIR: Thank you, Charlie.

2 Have you got a comment?

3 MR. LAFOREST: Some things you don't need
4 translated. I could have picked that up.

5 THE CHAIR: Thank you, Charlie. Noah, any
6 words, closing words, any closing remarks?

7 MR. MAKAYAK: Yes, thank you.

8 I'm pretty new to this process, and I may be
9 catching up more, learning from you more at this date, even
10 though I'm becoming more of an Elder, and I won't forget
11 easily. And I often seek help from anyone who's more
12 knowledgeable than me, but I really thank the people who
13 shared, like NTI, what they've been working towards, and
14 the GN and the Environment folks, all of you. And our
15 administrator or secretary seem to have been forgotten.

16 This is really difficult to ask for an increase.
17 And we used to go to Indian country, Dene or other, and it
18 was harder. David and I and Paul Qallujak (phonetic),
19 because they're very knowledgeable with more experience,
20 used to represent us well when we were trying to create
21 Nunavut and we were trying to establish boundaries on our
22 wildlife. So up to date I don't see too many difficulties.
23 David is still here with us, still working. And for the
24 directors and staff and for Baffin folks who have helped us
25 immensely and to all of you people who were invited, thank

1 you for caring -- everybody. Even the other folks out
2 there and to the interpreters, thank you.

3 THE CHAIR: Thank you, Noah. David K.

4 MR. KRITTERDLIK: I think let me speak in Inuktitut,
5 last words.

6 For us Board members, we're not going to be here
7 forever. We have been appointed by different
8 organizations. NTI, KIA appointed different folks and
9 Kivalliq members, and by the GN, and some of us from the
10 federal government appointed. And our membership has
11 terms, three-year terms or four-year terms. I think it's
12 four-year terms we have on this Board. So memberships
13 change. Myself, my term is ended, so my appointment by the
14 federal government will be coming to an end.

15 Inuit are more in number, and we also understand
16 clearly that we have a need by our government and for other
17 organizations and to involve the communities that we strive
18 to come up with something that accommodates all of us. And
19 I know you understand this and know this well now regarding
20 our wildlife, are very familiar with locals from the
21 communities, and IQ is often mentioned.

22 There was something documented in Arviat, and
23 our Arviat has many different dialects. And even for
24 government workers, perhaps this can be read what's been
25 documented out of Arviat. It would help you understand

1 where we're coming from and our knowledge. This would help
2 you immensely, and I want to thank everybody here.

3 And we've been told by our lawyer, legal, that
4 we will be making a decision in the next meeting or further
5 down the road for sure. We'll make this public. We can
6 make suggestions to the minister, but it is the minister
7 who will make his own decision.

8 I thank everybody who came here.

9 THE CHAIR: Thank you, David.

10 Okay. I think I got the final thank-yous here.
11 So I want to thank all of our staff for being here and
12 providing their support and their skills and their
13 knowledge to this Board, and they continue to do that when
14 we get back home, too. So Michael, our legal counsel, as
15 always, he's been with us for 25 years, I think, so hasn't
16 changed. He does a very, very good job, and we sincerely
17 appreciate his advice and knowledge to us, too.

18 John and Patricia back there, thank you very
19 much for everything you've done. They came a few days
20 early to set all this up, and yeah, it's a huge job. The
21 lunches were wonderful, and the coffee breaks were good,
22 and thank you very much for all your organization and the
23 skills you put into here, and it went off without a hitch.
24 So thank you.

25 Jason, our executive director, appreciate your

1 support and your leadership in this hearing.

2 As you can see, there's seven of us here now,
3 and that's high for the NWMB. We're always short members,
4 and it's a struggle to keep a quorum going sometimes. So
5 it's amazing, and it's such a privilege to belong to this
6 Board. We work very well together, and we do very, very
7 good and hard work, and very thoughtful decisions come out
8 of this Board. Very appreciative

9 It's funny, though. Three of us are going. I
10 know Charlie, me, and I think Caleb, our appointments are
11 up very soon, in a few months, I think, so three of us
12 there's a possibility won't be here anymore, and that's how
13 fast this Board changes and the dynamics. But four years
14 goes by very quickly.

15 So anyway, I want to thank everybody again, and
16 wish everybody safe travels home. I hear the blizzard is
17 coming Friday, so nobody's going anywhere. No, really,
18 really. I hope everybody gets home safe and on time and
19 get back to your families, and everybody have safe travels.

20 Thank you very much.

21

22

23 (Proceedings ended at 4:44 p.m.)

24

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1 Certificate of Transcript

2

3 I, the undersigned, hereby certify that the foregoing pages
4 201 to 467 are a complete and accurate transcript of the
5 proceedings taken down by me in shorthand and transcribed
6 from my shorthand notes to the best of my skill and ability.

7

8 Dated at the City of Calgary, Province of Alberta, on the
9 19th day of February, A.D. 2018.

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"Adele Jones"

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Adele Jones, CSR(A)

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Official Court Reporter

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