



ICE SEAL COMMITTEE BOARD MEETING
MINUTES

Mar 13-14, 2024 - 9:00 am to 5:00 pm

Federal Building Annex
 222 West 8th Ave A-35, Anchorage, AK 99513

1. Call to order (9am) Billy Adams – ISC Chair
2. Invocation Albert Simon I
3. Roll call *Quorum*¹ for ISC Board Meeting = majority (6 members)

Ice Seal Committee		Present	Absent
Bristol Bay Native Association	VACANT		X
	Sam Gosuk	X	
Association of Village Council Presidents	Jennifer Hooper	X	
	Albert Simon	X	
Kawerak, Inc.	Charles Menadelook	X	
	Ben Payenna		X
Maniilaq Association	Timothy Smith	X	
	Cyrus Harris	X	
North Slope Borough	Billy Adams	X	
	Joe Mello Leavitt	X	
Total		8	

Eight ISC members present = *quorum*

4. Introductions

Billy Adams ²	Joe Leavitt ²	Heather Ziel
Sam Gosuk ²	Sydney Waloven	Jenna Malik
Cyrus Harris ²	Donna Hauser	Caroline Cummings
Chuck Menadelook ²	Maeghan Connor	Skyla Walcott
Jared Nayakik ³	Erin Moreland	Rowenna Gryba

¹ **ISC By-Laws – Article IV, Section 4.5:** *A majority of the members of this Working Group, when present at any meeting, shall constitute a quorum, and in case there is less than this number, the presiding officer may adjourn from time to time until a quorum is present.*

² Ice Seal Committee

³ Ice Seal Committee – Next Generation Participant

Lauren Divine
Kimberly Pikok³
Timothy Smith²

Albert Simon I
Wybon Rivers³
Michael Cameron

Andy Von Duyke
Jennifer Hooper

5. Welcome remarks Billy Adams – Chair
6. Approval of agenda Approved
7. Approve Minutes
A. Spring 2023 minutes Approved at 2023 ISC Fall Meeting

B. Fall 2023 minutes

Michael Cameron requested that the 4th paragraph on page 3 be clarified to read:

“Michael Cameron was aware that the PI of the NETS program had made a statement about affects to subsistence.”

Minutes were approved.

8. Unfinished Business

A. Officer elections

Office	Nominee	Status	Next election
Chair	Billy Adams	re-elected	Spring 2026
Vice-Chair	Jennifer Hooper	re-elected	Spring 2026
Sec./Treas.	Joe Leavitt	re-elected	Spring 2026

9. New Business

A. Reports – ISC

1) ISC Chair

Billy Adams (Chair):

Reported that the AEWC has invited the ISC to attend their meetings to learn how they do their work. Billy suggest that the ISC needs to improve and refine its fiduciary responsibilities.

Joe Leavitt: Asked about the frequency of the AEWC meetings. Is it quarterly?

Billy Adams:

Replied that the AEWC meetings are tri-annual. The ISC will need to determine when to participate as observers at AEWC.

Billy Adams:

Provided a regional report as the ISC regional representative for NSB (link to Billy's regional report)⁴. The summer bearded hunt went well. Shorefast ice broke up later June/July.

2) ISC grant status update

Andy Von Duyke provided a brief report on the status of the grant.

B. Reports – Regional

Andy Von Duyke briefly discuss the potential value of using a more standardized approach to collecting regional reports. This was attempted for the 2024 ISC Spring Meeting by distributing worksheets to the ISC members prior to the meeting for use as a guide and to promote consistency (see APPENDIX A).

1) AVCP

Jennifer Hooper

Likes the report template provided by Andy Von Duyke.

Jennifer does not have direct consistent access to marine mammal hunters. She will rely on Albert Simon I and Wybon Rivers for details.

Weather conditions: late freeze up. Roller coaster weather...warm, rain, icy...deep cold and lots of snow. Currently, their big focus as an organization is the salmon crisis. AVCP is working with other tribal consortiums and partners. Salmon is still a very high priority for subsistence. Involved with IPCoMM. Well versed in AK marine mammal world.

Albert Simon I

Resides in Hooper Bay and stated that he is lucky to be near the ocean there. Very little shore fast ice. Only can launch from the south side of Hooper Bay because that is the only shore fast ice. Last year they could not launch boats from the beach due to the Typhoon Merbok. Many icebergs and a lot of ice to pass through to get to the water. Been hunting for a couple of months. Focusing on ringed seals now and this is when they are the best. They also hunt by kayak or canoe. Need to be aware of the tides and wind. Need to relay this knowledge to younger hunters who may not have it. Albert does a lot of hunter education. Caught over 30 ringed seals plus some spotted seals over the last two months. Last fall was a very good hunt for young bearded seals in the river and even in the bay. Later fall during ice freeze-up is when ringed seals (and bearded seals) show up. So far, a good spring hunting season.

Wybon Rivers

Resides in Scammon Bay. They have a lot of snow and thick ice (2 feet). Good start to the seal season. Ringed seals in the area are healthy. During the summer, young bearded seals come around and, in the fall, they are available. Good seal hunting habitat, shallow water.

⁴ For the 2024 ISC Spring Meeting a standardized regional report form was tested (see APPENDIX A).

Joe Leavitt: Asked Albert Simon about whether there is a tide gauge in Hooper Bay.

Albert Simon I: Replied that there is an app on his phone.

Joe Leavitt: Mentioned that he has asked for tide gauges in Barrow for a long time.

Albert Simon I:

Mentioned that when the tide comes in it brings game with it. At slack tide the seals pop up their heads. He also mentioned that his sons caught a beluga whale in January.

2) BBNA

Sam Gosuk

The following is the text from a written report that Sam provided prior to the meeting:

This year I did get to go out and did harvest some seal. I went out in the fall around the end of October and got a seal. Since it was a while that I was able to harvest seal, it was good to be out. When going out, I notice that the smelt were just coming in. The sea gulls were eating them flocking to them as the tide was going in.

The seals were at the haul out areas of Anchor Point, past Rocky Point, and Nunvaruaq Bay where I finally got one. I got a dark spotted seal. Later on, when talking with my hunting partner, I found out that usually darker colored ones have less fat. The fat of the seal was thin. My hunting partner said that he usually tries to take lighter colored seals because they usually have more fat. The fat of the seal I got yielded only 4 pints of rendered seal oil. I did later was given a similar sized seal and had more fat.

The Weather this year for Togiak started getting cold in November. It was very cold and froze the bay early. This cold continued to December and was getting to below zero weather for a while with chill temperatures downing down to -40 which is colder than the last 2 to 3 years. Then in January, it got warm and the ice which had froze the bay broke off all the way past the dock. It rained and what snow there had fallen melted in most places except where there bushes. I noticed that this year, there wasn't much smelt. We fished for them but got a few when it first froze. I was able to get a few pounds of smelt one day, but the next day there was a storm and there were higher tides than normal so didn't catch any but one. The ice at the mouth of the river broke off where we usually get smelt. A person I knew was getting spotted seal close by and getting them with his kayak. He said he got about 6 of them. In February the weather got cold again. It froze the creeks so people were able to their moose. Some people were able to cross creeks and get the moose. In late February after a lot of snow fell, we were able to go moose hunting although it rained couple of days before we went. The creeks had lot of snow but slushy under the snow.

What is unusual this year is weather that keeps going back and forth from being cold and warm. We did get a lot of snow this year more than I remember for the last few years. This week of March is supposed to get cold again. Dr. Michelle Fournet was supposed to help us start listening to bearded seal this year. Because of the uncertainty of the weather and possible ice at the launching area and the sea, we decided that it would be better to put out the acoustics for bearded seal in August and pick them up at early May.

In addition to his written report, Sam provided the following comments:

Bearded seal hunting occurs during August. He has not heard whether anybody got any. He hunted in October for the first time in a year. He didn't realize that there were differences between seals (white vs dark). Cold weather came in October. This year there were not as many smelt. In January it got warm and the entire bay's ice broke away in one piece. Very low smelt numbers. In warm January he fished at the mouth of the river where he got two sacks full. In February it got cold again, without too much snow. This increased accessibility for hunting opportunities. Planned to deploy acoustics with Dr. Michelle Fournet. But this week in Togiak the weather turned and made conditions unacceptable for deploying a hydrophone array. Next week the winds are not favorable (e.g., SE winds). Deployment has been postponed until August. Hoping to detect the presence of bearded seals in the spring. In recent years, the winds have changed (from NE), which moves ice away that they need. May need to alter hunting practices if seals are not present. Good to know whether they are there. Right now they are catching spotted seals. Bearded seals are rare, and ribbon seals are very rare.

3) Kawerak

Charles Menadelook

Chuck reported that in their region they are becoming very aware of HPAI and HABs. Last year they had the largest HAB outbreak in US history. He asked how to eliminate or fix something like this. Currently he is advocating for monitoring systems. No recourse for HABs, which can create terribly dangerous situation where a subsistence harvested seals can harbor lethal doses of HAB toxins. He did work collecting carcasses and looking at strandings. They are willing to do the monitoring, but Chuck stated that it's not his job to sample these animals. NOAA, USFWS, etc are not doing the job. No sampling, no monitoring with seals, walrus, even a minke whale in Nome. No results have been received on these sampled animals, even after 6 months, instead of 90 days.

Chuck will ask for an ISC resolution to advocate for a local Nome lab so there are results more readily available.

Regional spring hunts begin when the ice goes out, so dates are variable. This year has been good and cold, so the ice will probably hang around longer.

Seals caught in Unalakleet had symptoms of UMEs. Chuck suspected that hair loss and skin lesions may be sign of starvation.

The Bering Straits (Nome / Kawerak) region is bombarded from all sides by nature, and bureaucracy. Chuck is frightened that traditionally harvested subsistence food can kill somebody.

Ben Payenna No regional report provided prior to meeting

Joe Leavitt:

Mentioned that HPAI has been found in a polar bear (Stimmelmayer et al. 2024).

Charles Menadelook:

Also gave examples of HPAI in South America, Antarctica, and the Arctic. One example was of many dead seals at a colony in Brazil that died of HPAI.

Albert Simon I: Mentioned that ADFG-AMMP is a good resource for monitoring.

Charles Menadelook:

Also related an example of dead birds in clusters around nests seen by egg hunters. Chuck asked why no federal government monitoring now? He mentioned that hunters are being warned not to touch found dead animals. Chuck also pointed out that care should be taken to differentiate between “stranded” seals vs. “resting” seals.

4) Maniilaq

Cyrus Harris

Cyrus Harris filled out a Regional Report worksheet. See Appendix A for a summary of his responses.

Cyrus provided the following additional information during the meeting:

Top subject is climate change. It is happening and is having effects everywhere. It is evident in the other regional reports. It creates unusual weather patterns, fierce winds, makes travel really difficult. This requires that people adapt, just as their ancestors did. They hunt adult bearded seals in June. In 2018-2020 there was hardly any ice at all. More recently, there have been colder temperatures and therefore more ice. Access not too bad, other than jumbled ice to boat through to access seals. Nowadays hunters are chasing the ice, before it goes away. Ugruk hunting was pretty good. Later season (October) when ice forms. Perfect fall freeze up in October; then SW wind and high tide the ice lifts up and goes away. This now seems to be a trend.

Chuck Menadelook:

Discussed the reliability of the seasons in the past and noted that now the seasons are much less predictable. Many factors are at work to affect the timing of the seasons.

Billy Adams:

Discussed climate change and its effect on almost everything that subsistence communities depend on, including access to game such as terrestrial animals like caribou. Caribou cows with calves are affected. They are vulnerable and/or trapped by rushing rivers. Access is greatly reduced due to snow drifts, which can be as hard as concrete.

Timothy Smith:

Timothy Smith filled out a Regional Report worksheet. See Appendix A for a summary of his responses.

Timothy provided the following additional information during the meeting:

Last fall had a later freeze up. Less ice but also more time for spotted seal hunting. Hunting lasted till the end of October. Mild winter so far. Lot of overflow in the sound. Ice is not that thick. Break up in the end of May.

5) NSB

Joe Mello Leavitt

Joe hunts seals in the summer. He hunts *ugruks* (bearded seals) for their skins for their *umiaks* (wooden framed boat with skin covering, skin boat). The people of Wainwright asked to be taught how to sew skin boats. Some young people have never been in a skin boat ever. “Skinning” the boat requires 4 days of preparation, and then on the day of sewing, work starts at 8am and can last to 3am. Skin was put on the boat by 5am. Old and worn out skins will be used for blanket toss.

Joe caught one seal. Back in the 1960s the ice used to be very heavy. Once the ice goes away it tends to never return. Young people do not know how to read the ice. Heavy ice will cause mirages at the horizon. Heavy ice comes in from the east in the Beaufort Sea. Going east along the barrier islands is a good routine for bearded seals. Tides in Barrow are wind-blown. Two currents exist. Lots of knowledge is getting lost about assessing and understanding sea ice. The ice this year is rougher and somewhat heavier. Seals can be caught east of Nuvuk (Point Barrow). *Ugruk* season occurs before it starts getting rainy (August). Skins are prepared by storing in blubber in a cool place out of the sun and dogs. Need to flip it.

The ice was about normal this last year. People haul boats across the *tuvak* (shorefast ice). Joe saw a ribbon seal, and his brother-in-law caught one in Pt. Lay. A humpback whale washed ashore. Joe mentioned that killer whale numbers are increasing. Bowhead whales are good. Some mortality of bowhead whales attributed to ship strikes. Elders have great knowledge that is getting lost. Loss of the Iñupiaq language is leading to difficulties in sharing knowledge. Lots of change in Barrow, including seasons of subsistence species. E.g., differences in phenology from what has been previously reported (Brower et al. 1942).

Joe has had trouble accessing his fall fishing camp. Hunting occurs in an annual cycle. Good whale hunting in spring and fall.

Jared Nayakik

Jared Nayakik filled out a Regional Report worksheet. See Appendix A for a summary of his responses.

Jared provided the following additional information during the meeting:

Last summer caught 7-8 bearded seals; 2-3 of which seemed skinnier than average. One seal looked like it had escaped a polar bear attack and it was injured internally and smelled bad. They dumped that particular seal in the ocean on the advice of

elders so that it would feed the other animals. The winter has been harsh. Ordinarily, late fall seal hunts occur in late November and early December. But storms and bad winds kept the lead closed and prevented hunting until February.

Billy Adams

Billy Adams filled out a Regional Report worksheet. See Appendix A for a summary of his responses.

Billy provided the following additional information during the meeting:

Lots of healthy polar bears and ringed seals. Good stable ice. Not as rough as last year. Animals are healthy. New species of whales are showing up, and more killer whales, plus kidney worms in bowheads and belugas.

Michael Cameron:

Reminded Billy about the topic of gray whales. Michael is interested in whether people have interacted with gray whales during their seal hunting activities. There is a NOAA researcher who is interested in gray whales and sea ice. He has three primary questions:

1. In what concentration of sea ice do you encounter gray whales?
2. How is gray whale variation associated with sea ice concentration?
3. How does sea ice affect gray whale foraging?

Chuck Menadelook:

Historically, gray whales appeared after the ice left. Nowadays they come up in May and occur in mostly open water.

Joe Leavitt:

Gray whales show up ~ May 20. Not as many gray whales are seen now. They used to be commonly seen. Nowadays in open water they are seen less.

Billy Adams:

Gray whales around Barrow moved farther north and east (15 miles north) in August to late September. They are very fast swimmers. Billy has observed them swimming very fast away from killer whales (which are more frequently seen).

Cyrus Harris: Rare occasional sightings of gray whales in the Maniilaq region.

Albert Simon I: He has seen them gray whales in/near the sea ice.

Cyrus Harris: Noted the expanded range of sea lions.

LUNCH BREAK

After lunch break, the ISC went into Executive Session.

C. Reports – Research

All of the reports in this section can be accessed on the Ice Seal Committee website at:

<https://www.iceseals.org/2024-spring-presentations>

1) North Star Ringed Seal Monitoring (Hilcorp)

Jen Dushane provided an update. This update is available at:

Discussion / questions:

- [Billy Adams](#) advocated for hiring local people as experts who can do the work and train others not familiar with the Arctic. This is also good from the perspective of public relations. It also improves the quality of the work.

2) AAOKH Dr. Donna Hauser presented on the following topics

- a) Children’s book “Natchiq Grows Up”
- b) Marine Traffic Overlap with Tagged Ringed Seals, 2013-2022

Discussion / questions:

- [Chuck Menadelook](#) asked about whether Russian side has been included. Concern expressed about seal pups. [Donna Hauser](#) suggested that evidence from Caspian Seals supports concern about disruption of pup lairs by ice breakers. She also advocated for good research, proactive planning based on IK, ArcticWatch...
- [Michael Cameron](#) mentioned harbor seal research (analog of spotted seals) that looks at impacts of cruise ships on glacier-based harbor seals. Identified distances for reactions by seals to ships. Guidelines proposed based on empirical evidence. Also looked at metabolic study of disturbed pups. These methods can be applicable to spotted seals in the Bering Strait.
- [Sam Gosuk](#) mentioned presence of trawlers and said he’d be very curious about their effects on walrus. [Donna Hauser](#) mentioned that vessel-type can be filtered from data, but it’s not perfect data yet. Data are provided voluntarily. Vessels can turn AIS off/on at will. Bulk of Bering Sea vessels are fishing vessels.

c) Alaska Arctic Observatory & Knowledge Hub (AAOKH)

Roberta Tuurraq Glenn provided the following update:

- AAOKH core functions
- outreach activities
- sharing how observers’ IK based observations can help inform conservation and management

- communicating subsistence using a yearly calendar of activities, and changes over time, unusual observations
- general understanding of local conditions, animals' health, presence absence
- co-management data needs
 - capacity building
 - IK ice seal ecology workshop
 - develop a strategy for documenting and managing data for future use

Discussion / questions:

- Sam Gosuk will info collected from communities be returned to the community?
Donna Hauser mentioned the use of the AAOKH newsletter as a tool, also facebook (most popular method), database (accessible online), curriculum
- Billy Adams commented on changing weather patterns and general observations
- Jennifer Hooper asked about the use of Yupik in the seal book
Donna Hauser mentioned that NPRB would be a good source of funding to cover costs for a Yupik translation

d) Short Update on the Monitoring of Spotted Seals at Terrestrial Haulouts

See section below regarding UAF student Maeghan Connor, who provided a brief summary of her research plan for her Master's project.

3) U of British Columbia / ICC Canada

Dr. Rowenna Gryba provided two project updates.

- a) Integration of Traditional Knowledge and Western Science Using a Bayesian Approach for Fully Informed Models
- b) Indigenous Knowledge Habitat Models

Discussion / questions:

- Chuck Menadelook: Asked about doing this type of work in the Bering Straits region.
Rowenna Gryba replied that this is the eventual goal, because seals use habitat differently in different places, and so this is needed in order to more fully understand how seals use habitat.

4) ADFG Dr. Justin Olnes presented on the following topics:

a) Harvest monitoring

Discussion / questions:

- Justin Olnes asked whether there was a better way to collect harvest data?
- Cyrus Harris noted that people get concerned about how the harvest data will be used?
- Chuck Menadelook concurred with the Cyrus about the concerns for data usage. Native people want to conserve seals more than anybody.
- Sam Gosuk brought up concerns about limits to harvest.
- Joe Mello Leavitt also brought up concern for whether data would be used against communities.
- Jennifer Hooper asked about MMPA requirements for harvest monitoring.
- Michael Cameron provided an example of the value of the data insomuch as it can demonstrate that seal populations are doing well rather than the data being used to penalize subsistence harvesters. With “no data” regulators would likely take a conservative precautionary approach to management.

b) Ice Seal Biomonitoring

Discussion / questions:

- Chuck Menadelook asked how representative the ADFG samples are of the larger seal population?
Justin Olnes replied that it’s pretty good, they have a large number of samples over a very long time period, but more samples are better.

c) Ringed seal winter density project at Prudhoe Bay

d) Bearded seal close-kin mark-recapture

5) Aleut Community of St. Paul Island.....Dr. Lauren Divine

a) Update on the NETS project status

Presentation materials are on the ISC website (<https://www.iceseals.org/2024-spring-presentations>). Provided a critical review of the plan and the process. No consultation or meaningful communication occurred.

Discussion / questions:

- Chuck Menadelook expressed some clarification (and frustrations) on his communications with NOAA.
- Sam Gosuk suggested that observers be employed, even placing cameras on gear.
- Anne Marie Eich informed ISC of upcoming dates.

b) Update on the Indigenous Sentinels Network

Info available at: <https://www.sentinelsnetwork.com>

Andy Von Duyke advocated for the use of tools that are in place already, rather than reinventing the wheel. He noted that ISN hosts websites, helps with grant writing, and can be generally a great resource for other co-management ANOs.

- 6) University of Alaska Fairbanks.....Maeghan Connor
Exploring Novel Technologies to Assess the Terrestrial Ecology of Spotted Seals

A summary of Maeghan’s presentation can be found at the link provided above.

- 7) Michigan State University.....Sydney Waloven
Exploring Alaska: Building Partnerships, Understanding Co-Management, and Navigating Subsistence Challenges.

A summary of Sydney’s presentation can be found at the link provided above.

- 8) NOAA – NMFS – Marine Mammal Laboratory.....Michael Cameron
 - a) 2024 fieldwork plans
 - b) Trophic Roles Project

Michael Cameron provided summaries of upcoming fieldwork all of which are available at the link provided above.

ISC approved the placement of SPLASH tags on the heads of ribbon seals only.

10. Next Meeting Dates

- A. 2024 ISC Fall Meeting (virtual)
Typically, this meeting will last 3-4 hours and is a chance for updates and for topics that are timely and cannot wait until the spring meeting.

2024 ISC Fall Meeting date.....**30 Sep 2024**

- B. 2025 ISC Spring Meeting
Period between late-January and early-March is strongly preferred.

2025 ISC Spring Meeting scheduled for the days immediately preceding the Alaska Marine Science Symposium 2025 (AMSS-25) including the weekend (This was requested to allow for ISC participants to be in Anchorage immediately before AMSS-25 in case they would like to attend.).

At the time of the meeting, the dates for AMSS-25 had not been established yet. Since then, AMSS-25 is scheduled to take place January 27 – 31, 2025 at the Captain Cook Hotel in Anchorage, AK.

*New development: NOAA hopes to host a 2-day workshop on ringed and bearded seal recovery immediately before the 2025 Ice Seal Co-Management Committee meeting.

Altogether, this means that the entire 2025 ISC Spring Meeting dates are:

- NOAA ringed & bearded seal recovery workshop..... 22-23 Jan 2025
- Ice Seal Co-Management Committee meeting date..... 24 Jan 2025
- ISC Board Meeting dates..... 25-26 Jan 2025

11. Adjourn

Meeting adjourned at 1pm on March 14, 2024

Executive Session (if needed –Ice Seal Committee members only)

Acronyms

- ADFG Alaska Department of Fish and Game
- AEWK Alaska Eskimo Whaling Commission
- AMMP Arctic Marine Mammal Program (of ADFG)
- AVCP Association of Village Council Presidents
- HAB Harmful Algal Bloom
- HPAI Highly Pathogenic Avian Influenza
- IPCoMM Indigenous Peoples Commission for Marine Mammals
- ISC Ice Seal Committee
- NMFS National Marine Fisheries Service
- NOAA National Oceanic and Atmospheric Administration
- NSB North Slope Borough

APPENDIX A – Regional report worksheet and graphical summary of results

To assist ISC representatives with their regional reports, a worksheet was designed to capture factors of potential importance to ice seals. The worksheet features space for notes and checkboxes that function as a visual scoring system⁵ for each category. The aim is to guide participants, promote consistent reporting, and potentially identify emerging trends. Altogether, this information will be helpful for guiding ice seal management. A blank form (Fig. A1) and a graphical summary (Fig. A2) from two regions are included as examples.

Figure A1 – Blank regional report worksheet. These were distributed to the ISC members prior to the 2024 ISC Spring Meeting.

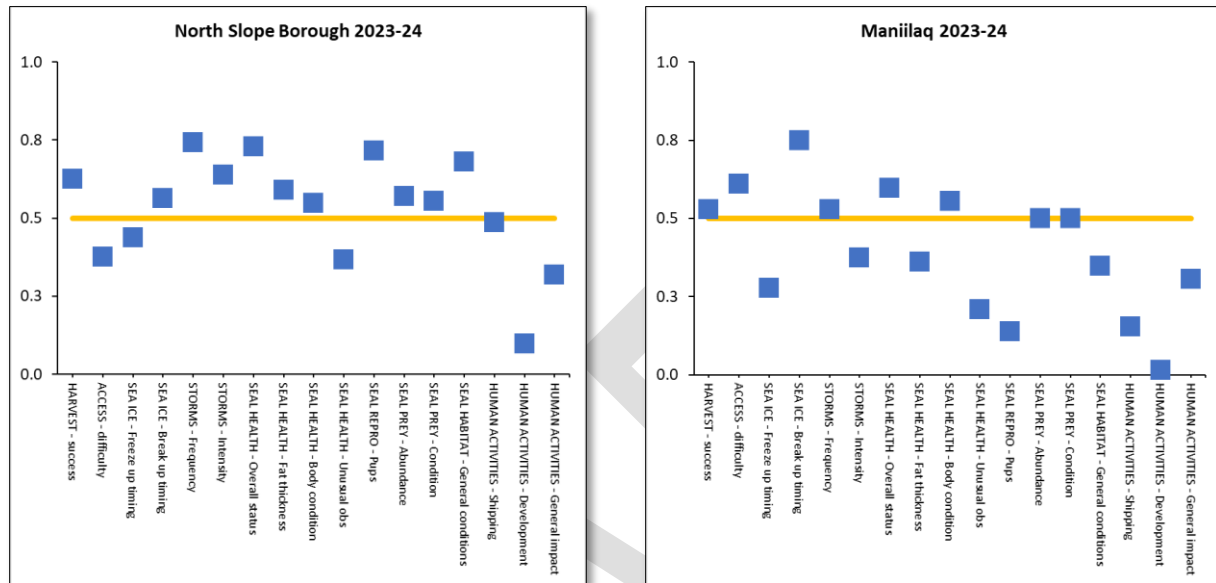
The figure displays two pages of a '2023-24 Regional Report worksheet'.
Page 1: Contains an introduction, directions, and sections for 'HARVEST - How was last year's seal harvest?' and 'ACCESS - How difficult was it to go hunting last year?'.
Page 2: Contains sections for 'SEA ICE - Freeze up timing', 'SEA ICE - Break up timing', 'STORMS - Frequency', and 'STORMS - Intensity'. Each section uses a grid of checkboxes to rate various factors.

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⁵ The check boxes represent a scale or measuring stick for each category. This concept was inspired by the concept of proportional piling used to document and characterize Indigenous Knowledge of polar bears in Davis Strait, Nunavut, Canada (Tomaselli et al. 2022).

Figure A2 – Graphical summary from two regions. The values were taken from the checkboxes on the worksheet. The yellow horizontal line at $Y = 0.5$ represents the average value. Each chart includes responses from two participants in each region.



CITATIONS

Brower CD, Farrelly PJ, and Anson L (1942). *Fifty Years Below Zero: A Lifetime of Adventure in the Far North*. University of Alaska Press.

Stimmelmayer R, Rotstein D, Torchetti M, and Gerlach R (2024). Highly Pathogenic Avian Influenza Virus A(H5N1) Clade 2.3.4.4b Infection in Free-Ranging Polar Bear, Alaska, USA. *Emerging Infectious Diseases*, 30(8), 1660-1663.
<https://doi.org/10.3201/eid3008.240481>.

Tomaselli M, Henri DA, Pangnirtung Hunters and Trappers Organization, Mayukalik Hunters and Trappers Organization, Akavak N, Kanayuk D, Kanayuk R, Pitsiulak P, Wong P, Richardson ES, and Dyck M (2022). Nunavut Inuit Qaujimagatuqangit on the health of the Davis Strait polar bear population. Final project report. 117 pp. and appendices. Available at:
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