COASTAL MONITORING INDIGENOUS KNOWLEDGE HOLDERS MEETING REPORT

Ottawa, Canada, February 29, 2016

Facilitated by the Inuit Circumpolar Council (ICC) with funding provided by Polar Knowledge Canada.

INUIT

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Hosted by Canada and facilitated by the Inuit Circumpolar Council (ICC). Ottawa, Canada, February 29, 2016. This is an independent report prepared by ICC and sponsored by Polar Knowledge Canada. All information within this report is the intellectual property of the Indigenous Knowledge holders attending the meeting. Photographers maintain all rights to the photos within this report. No photos may be duplicated or copied.

Photo by Laura Thomson. Left to Right: Eva Krummel, Pitsey Moss-Davies, Stacey Fritz, Baba Pederson, Patrick Gruben, Carolina Behe, John Cheechoo, Qaiyaan Harcharek, Roy Ashenfelter, Quitsak Tarriasuk, Jimmy Johannes, Martha Flaherty, Cyrus Harris, Donald McLennan

"We have been here for thousands of years. We know these animals. Sometimes if they [researchers] just asked us, we would be able to give them the answer. They won't need to spend so much money and we can get to a more current question." – IK holder participant

Participants: Roy Ashenfelter, Nome Alaska; Patrick Gruben, Inuvik; Qaiyaan Harcharek, Barrow, Alaska; Cyrus Harris, Kotzebue, Alaska; Jimmy Johannes, Kuujjuaq; Baba Pederson, Kugluktuk; James Simonee, Pond Inlet; Quitsak Tarriasuk, Ivujivik; Scott Nickels and John Cheechoo (Inuit Tapiriit Kanatami); Donald McLennan (Coastal Expert Monitoring Group co-chair); Pitsey Moss Davies and Carolina Behe (Inuit Circumpolar Council and Coastal Expert Monitoring Group); Martha Flaherty (Interpreter); Stacey Fritz and Laura Thomson (Note takers).

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Introduction

The Coastal Expert Monitoring Group (CEMG) is organized under a Conservation of Arctic Flora and Fauna's (CAFF) Circcumpolar Based Monitoring Program. The primary goal of the CEMG is to develop a long term, integrated, multi-disciplinary, circumpolar Arctic Coastal Biodiversity Monitoring Plan that relies on science and Indigenous Knowledge, and has direct and relevant application for communities, industry, government decision makers, and other clients of the knowledge generated. Given approval of the Coastal Plan, CEMG will work to develop an implementation plan that will identify a timeline, costs, organizational structure and partners. It is fundamental to the Coastal Plan that implementation partners will include Arctic Indigenous peoples and information/concepts from Indigenous Knowledge.

There are many questions that Indigenous Knowledge holders must address and many decisions that our coastal communities face. In working with scientists and international programs, some of the questions and decisions include how to share our information, how information from IK should be categorized when used with science, how to safeguard information documented from IK holders, and how to ensure that IK holders are involved in analysis and interpretation of their information.

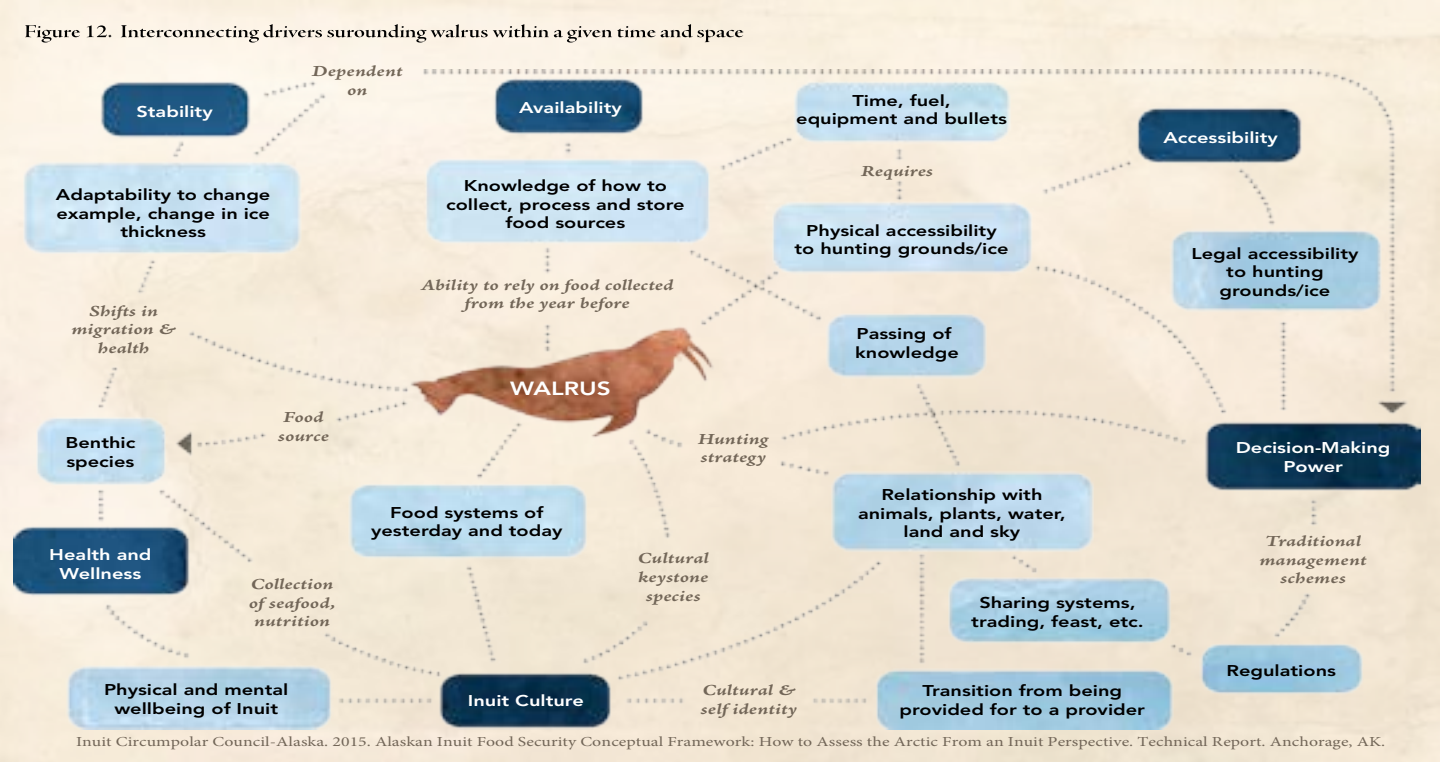
With this understanding Canada hosted a one-day meeting, facilitated by ICC that brought together IK holders to become familiar with CAFF, CBMP and to prepare for the Coastal Expert Group Monitoring workshop. The ICC facilitated the workshop. Though all Permanent Participants were encouraged to attend, they were unable to. Through the one-day workshop, participants held open discussions on the threats to biodiversity within their given regions, changes occurring; ways that IK directs daily monitoring activities; challenges and potential solutions for the inclusion of IK within CEMG; monitoring priorities and IK approaches to monitoring; what programs may be occurring within their respective regions that are based on IK and/or science and the potential benefits to taking part in CEMG.

Cambridge Bay, Canada. Photo by Carolina Behe

Below provides a brief discussion of the main points raised during the one-day workshop. Many of these points were further expressed and explored during the full CEMG workshop. The largest point raised continuously throughout the IK holder and the CEMG workshops is the need for trust and respect. We will come back to this discussion toward the end of this report. For now, we begin the discussion with ways of monitoring.

Indigenous Community Monitoring: Applying a food security lens, applying an Indigenous Knowledge approach to monitoring

Recently, ICC-Alaska completed a food security project and report. The products of the project come from Inuit throughout the four Inuit regions of Alaska and provide descriptions of Indigenous Knowledge assessment processes and point out important Indigenous monitoring philosophies. As the participants of this CEMG workshop shared, Inuit have monitored their environment for thousands of years. Inuit monitoring centers on relationships among components, as opposed to the monitoring of individual components[1]. The below conceptual map from the ICC-Alaska food security report demonstrates connections that Inuit monitor. Though scientists may at times also monitor connections as opposed to individual components, often these are different connections. Looking at monitoring questions developed by both scientists and IK holders will aid in gaining a more holistic image of what is occurring within the Arctic.



Interconnecting drivers surrounding walrus within a given time and space. Conceptual model provided by the ICC-Alaska Food Security Report (ICC-Alaska. 2015)[2]

In developing CEMG utilizing both IK and science, meeting participants pointed out the importance of using methodologies from both knowledge systems. For example, it is likely that IK categorizes information differently than science. In some areas, categorization occurs by seasons as opposed to specific species or trophic levels. How boundaries are defined also differs.

[1]Inuit Circumpolar Council-Alaska. 2015. Alaskan Inuit Food Security Conceptual Framework: How to Assess the Arctic From an Inuit Perspective. Technical Report. Anchorage, AK. http://iccalaska.org/wp-icc/wp-content/uploads/2016/05/Food-Security-Full-Technical-Report.pdf
[2]ISDB

For example, participants explained, that beluga is a coastal animal. Beluga must migrate into freshwater areas where there are pebbles in order to moult and to give birth. This example demonstrates the multiple layers that IK is considering when monitoring: the animal uses both salt and fresh water; it is important for beluga to go up particular rivers to shed their skin every year; beluga in other areas may follow salmon upriver to feed; they need freshwater to give birth. These animals, dependent on both salt and freshwater habitats, are considered coastal. IK allows for adjustment of the 'coastal boundary line' to include where the animals move. It is possible for CEMG to allow for this shifting boundary line in addition to the hard lines that scientists often require in their work.

Overall, participants expressed the need to:

1. Monitor through seasons
2. Recognize changing boundaries
3. Identify parameters and attributes through both IK and science (i.e. taste, smell, weight, etc.)
4. Monitor through a food security lens/approach
    a. look at the base species and what effects them (e.g. cod to lemmings)
    b. connecting social, natural and physical pieces
5. Work together - co-production of knowledge
6. Engage youth
7. Communicate – communication between IK holders and scientists; between communities and scientists
8. Ensure that information addresses community driven concerns
9. Fund Inuit involvement
10. Report out (before publishing or making publicly available)
11. Share knowledge
12. Understand the inherent conservation process in IK
13. Collect place names
14. Acknowledge that language and cultural preservation is connected to maintaining biodiversity
15. Encourage more community driven research and community driven monitoring
16. Establish trust and respect

Photo by Jacki Cleveland

Questionnaire Discussion

In preperation for the CEMG workshop, a questionaire was sent to scientists, IK holders, practioners, industry and managers to gain information on their perspectives of the state of coastal biodiversity. Of the 48 questionnaires answered, 25 were answered by Indigenous peoples. To the question of what are the most pressing issues facing coastal biodiversity, the following answers were provided. The workshop participants discussed the pressing issues listed and added to them. A large focus of the discussion was on changes occurring in sea ice thickness and coverage, impacts of industrial activity, the need for IK holders and scientists to work collaboratively in order to make effective decisions, and the need for respect.

1. Climate change
2. Pollution
3. Shipping
4. Erosion
5. Change in sea ice
6. Bad decision-making/outside values imposing decisions on what occurs in the Arctic
7. Noise
8. Development
9. Fish farming
10. Lack of inclusion of Indigenous Knowledge in planning, research and decision making

Sura. Photo by Carolina Behe

Workshop participants also pointed out that some Arctic communities are producing the pollution that impacts the local environment (e.g., trash is not contained or old batteries are leaking in landfills). Additionally, participants raised concerns about invasive species and the potential risks associated with an increase in shipping. The following section provides a brief summary of some of the main points from this discussion.

Photo by Stacey Fritz

"Some of the caribou feed on algae – and they cross the ice to go to islands. Caribou cross some areas when the ocean freeze. Now they are falling through because the ocean is not freezing at the same time" – IK holder participant

"Respect for the ocean and all it provides, you take care of it and it will take care of you. Keep it clean, don't cause harm to its occupants, don't waste or kill them for sport" – Carol Oliver (IK holder from Chinik)

Decision making

Overcrowding was one issue that was attributed to poor decision-making.

> The challenge of where towns are located was discussed, and it was concluded that this was due to the engineers' lack of knowledge and not including Indigenous Knowledge. The towns were not located in areas where people lived [at the time]. Decisions were not made according to what was appropriate for the community. For example, a US [government] airstrip was placed in a village. The homes are too close only 30 feet apart. It becomes difficult to have space to dry meat, butcher food, etc. During the summer it is okay because people are working outside. But during the winter it is a challenge. Everyone is in the house and the house becomes too crowded. There is also a problem wit inadequate sewage tanks. This is common throughout the Arctic. It impacts peoples' quality of life negatively. *-IK holder participants*

Photo by Carolina Behe

"Polar bears eat moss before eatingseals. The moss helps retain seal oil. So that they do not excrete all of it." – Quitsak Tarriasuk (Elder IK holder)

Many examples were provided regarding the management of coastal animals. These examples often led into deeper discussions about respect and trust.

> In one case, IK suggests that the walrus have not disappeared, but rather that they moved on to a new area with more food. This was not believed by the scientists. In this community, the elders teach younger hunters how to interact with walrus. They are taught to never bother or hunt the walrus when they are on a particular island. This is a time that the walrus has to be left alone. This management practice is based on long term monitoring that has led to knowledge of how the walrus behaves and why it would move. In another example, IK indicated that an increase in snow geese was needed. Federal regulations applied a limit and the population increased to a point that it has impacted other species. *- IK holder participants*

Through these examples and others, participants stressed the need for IK holders and scientists to work collaboratively to aid in evidence-based decision making that supports biodiversity conversation.

Sea ice, swells, storm surges, sea level rise...

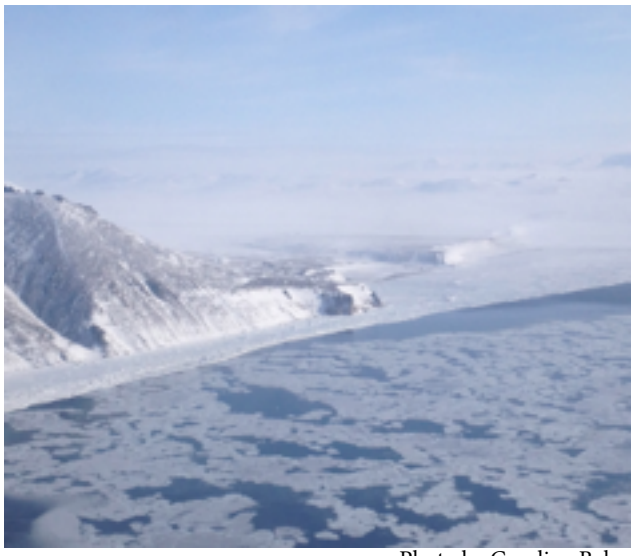


Photo by Carolina Behe

There are unique or certain ways that nature provides protection. For example, ice provides protection from storm surges. Participants described that changes in sea ice thickness and coverage, sea level rise, increase in storm surges, freshening of some water bodies and an increase in salinity of other habitats, change in types and amounts of precipitation, increase in erosion, changes in near shore currents and gyres, timing and level of snow fall, and shifts in wind directions are all connected and are impacting biodiversity. Many of these changes are directly related to shifts in animal migration patterns, shifts in food web dynamics, changes in food gathering practices, loss of hunting camps and homes, changes in water salinity levels, and changes in breeding, nesting, and refuge areas.

Industrial impacts

Participants raised concerns about the impacts of industrial activities on biodiversity. Many of these concerns come back to questioning how impact assessments are conducted and the need to include IK in the process. Below are a few examples that were raised:

1. Hydro dam – the discharges leaves murky water along the shoreline. Because the discharge is made up of freshwater the saltwater is pushed down.. When hunting, seals are not floating on the water, they sink down. In another area, a hyrdo dam has resulted in a decrease in the river water level and water flow.
2. Roads – roads built in some areas disrupt migration patterns.

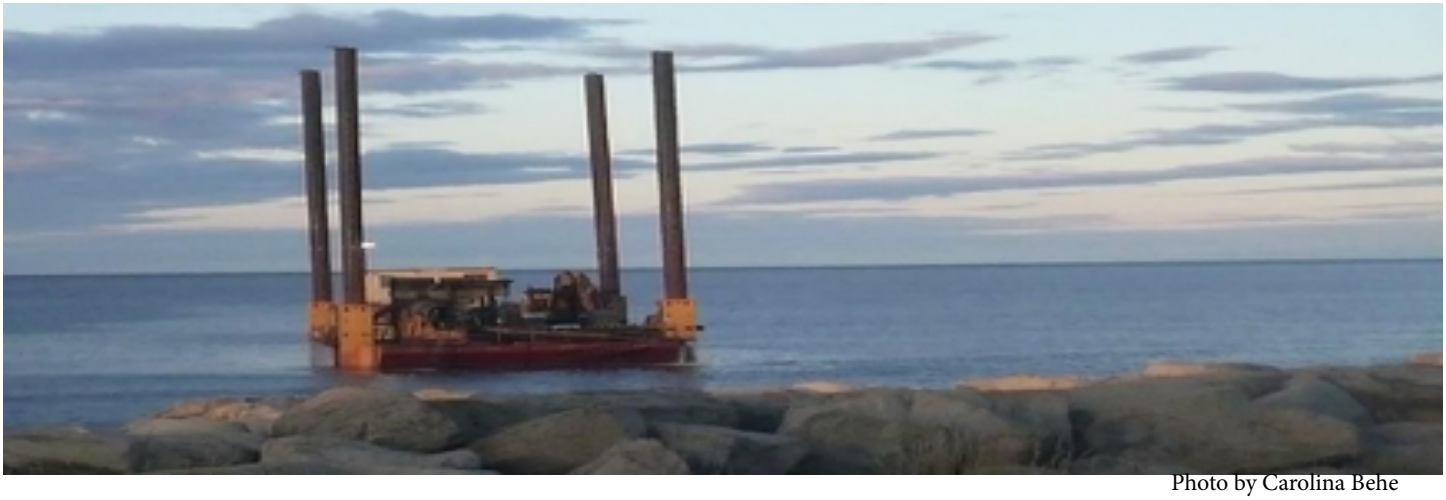


Photo by Carolina Behe

"If there is no ice, but it is snowing heavy in April, water gets high but then a big wall of snow is created. [This] creates a gate and ocean waves are on the other side…slush pile. If there is no sea ice, we are at least praying for snow. How life is protected from storm surges should be monitored. In Alaska, sandbars are a protection from storm surges." – IK holder participant

Shipping

The current and potential impact of shipping activities on biodiversity are large (ships are impacting life and ice formation). Participants discussed different examples of the impact that shipping is having.

1. Noise – animals are very sensitive to sound. In some areas, people are witnessing a changing in animal behavior and migration in response to the noise.
2. Artificial leads are created – when artificial leads are created, whale migration patterns shift
3. Invasive species – there is a large concern of what the ships and the people on the ships may bring with them
4. Ballast water – concern of pollutants released into the water in addition to invasive species
5. Potential accidents – concerns of impacts that an accident will have throughout the entire food chain

Photo by Chris Danner

"I had opportunity to share knowledge with those from Greenland and Nunavut (Akvaiuyut) – they told me that at one point they had walrus haul outs in their area. But what happened was during a period of time past more development and noise came in and the result was the walrus wanted no part of it and did not come back. The knowledge had always been in the haul outs. [This is] their domain. The walrus's knowledge was there." - Quitsak Tarriasuk (Elder IK holder)

Impacts of seasonal Activities

Participants raised concerned of the impact that some research activities have on animal well being.

1. In some areas, monitoring equipment is set up in areas that animals use as refuge (it is important to the health and wellbeing of animals to ensure that their area of rest are not distributed).
2. In other areas, the number of ships conducting research becomes disruptive to the animals by creating noise and/or light pollution or traveling through their migration path.
3. There is a concern for how animals are tagged and [at times] tranquilized. Concerns are focused on the impact that tagging has on the animal health and well-being and the toxin that may stay in the animal's body.
4. Airplanes and helicopters coming into the area to bring tourists, reporters, visitors or researchers can at times also be disruptive to animals. In one situation, a reporter trying to get close to a walrus herd caused a stampede. In another example, air craft flying close to cliffs disrupt nesting murres. The birds are startled by the noise and quickly flee the nest, subsequently knocking the eggs from the nest.

Key gaps identified in the questionnaire by Indigenous Peoples were:

1. Localized IK is seldom included
2. Lack of communication
3. Need for permanent monitoring
4. Language – need for translated material
5. Need funding for Indigenous organizations to do research
6. Shrinking of coastal ponds
7. Change in hydrodynamics due to loss of permafrost
8. Lagoon systems and their importance to production
9. Understanding of the importance of winter food chains

"Some of the caribou feed on algae – and they cross the ice to go to islands. Caribou cross some areas when the ocean freeze. Now they are falling through because the ocean is not freezing at the same time" – IK holder participant

Participants discussed and stressed the significance of the following answers –

1. Bad decision making; uutside values imposing decisions on what occurs in the arctic
2. Lack of inclusion of IK in planning, research and decision making

***It is recommended that CAFF further investigate these two causes or threats to biodiversity within the Arctic. Following is a brief description of some of the points raised.

Lakes are drying up

Lakes and ponds are drying up. Many communities collect drinking water from lakes and ponds. There is a witnessed shift in some animal migration patterns as this water source is no longer available for them. Vegetation changes with the loss of fresh water. The drying of the lake and ponds are thought to be related to melting of permafrost and at times erosion.

Language and culture connected to biodiversity

Preservation of language and culture is a necessary topic within any Arctic biodiversity monitoring plan. The knowledge and language maintained by Indigenous peoples aids in supporting biodiversity and overall health of the Arctic. It is important to remember that culture is part of the ecosystem. Working to support one aspect of the ecosystem, while neglecting other aspects, will result in a decrease in biodiversity.

Photo by Carolina Behe

Food web dynamics

There are many examples of shifts occurring in Arctic food web dynamics. Some shifts are the result of an increase in predators. For example, eider duck eggs are being eaten more frequently by polar bears. As Orcas increase in numbers in the Arctic Ocean they add to the predation role. Additionally, there are changes in the food that some animals rely on. For example, a change in zooplankton will impact the distribution of beluga; shift in benthic species results in a shift in walrus distribution and/or food intake. These examples provide a valuable example of different pieces that are important to monitoring. Inuit monitoring is often focused on food web interconnections. Under the conversation of food webs, there are concerns over increased vulnerability to parasites and bacteria as the Arctic changes.

Trust and Respect

Participants pointed out that lack of trust and respect has created a large barrier between scientists and IK holders. The inherent level of trust and respect given to scientific experts and those that have been in their fields for many years is not given to Indigenous Knowledge holders.

> "Remember that our elders are not numerous across the Arctic. They are an invaluable resource and they are challenged with ridicule of others passing it off as "old" knowledge. More and more we have people from the south and they have another knowledge and it is hard having someone from the south acting as though they have more knowledge than you. This can make you feel small or even die from the suppression and immensity of this other knowledge" – Quitsak Tarriasuk

Through this discussion, one participant summed up the discussion on trust, respect and validity of knowledge holders.

> "Often older scientists teach younger scientists. They teach them how to become good scientists. The young scientists are taught how to build their reputation within the scientific community, by publishing peer-reviewed papers. To become respected and considered knowledgeable in your field. Inuit also have a process. Elders train younger generations. A hunter gains a reputation, the power of a hunter, is in feeding the family, in being a provider. For the scientist it is about working toward their scientific knowledge base so they can also make money for their family, to provide for their family. The scientists are doing the same thing through a different path. As the Elder [meeting participant], is talking about walrus we all feel that we receive the knowledge. We [those attending the IK holder meeting] accept it, we trust it. But scientists believe that someone has to come and look up what the elder has said in a book; that they have to see a scientific paper proving that what the hunter is saying is true in order to verify the Indigenous Knowledge by using science. But this is not possible. This is what young scientists are learning today. To us, this is disrespectful to our Elders and to our way."

IK holds validation and evaluation processes and ways of determining who has the most knowledge (or are considered experts). It is crucial for this to be understood and respected in order for knowledge holders of different systematic ways of thinking to work together. With this understanding, IK holders and scientists will be able to move forward working collaboratively as opposed to attempting to translate one type of knowledge into the other.

Inuit have experienced researchers coming to their communities and acting as if they know more about the land, water, birds, animals, plants or anything in the area than the knowledge holders of that area. This leaves people feeling "shrunk down", as an elder explained. Once this has occurred, there is a feeling of lack of respect and trust is lost. Because of past experiences of how information from IK holders has been used or Inuit have been treated, many people are becoming increasingly distrusting.

Another participant offered examples of how information was gathered from IK holders regarding polar bears. The IK holders worked with the scientists and felt that they had all worked collaboratively together and had spending a great deal of time analyzing information together. They had begun to build a trusting relationship. When the reports were released the analysis that they had agreed upon was not in the report. They saw their IK separated out and misinterpreted. This left the IK holders feeling hurt and disrespected.

The meeting participants stressed the need for researchers and IK holders to find common ground. Though the two may be asking different questions that require monitoring, it is still possible to find common ground and to use all of the information gathered to have a stronger understanding of the ecosystem.

The CEMG is taking a positive step by developing a platform of trust and respect that will allow for a co-production of knowledge. This step has begun with having a meeting that includes IK holders, working collaboratively with Arctic Council Permanent Participants, and finding ways to include IK holders in all steps of the process. It will be important to continuously come back to the topic of trust and respect and to re-evaluate the process to ensure that the best monitoring processes are providing the information needed to make effective, ecosystem-based decisions.

Photo by Carolina Behe

"…for it to work [monitoring plan] in the long term, you need elders and youth." – IK holder participant

"…connect with youth groups – plug into modern tech. One idea is to develop animal sounds for the youth to use on their phones. They become familiar with the sound." – IK holder participant

Focal Ecosystem Components

Focal Ecosystem Components (FEC) are chosen within the begining of the CEMG process. FECs are the things that will be monitored (or monitoring information gathered about). In discussing focal ecosystem components (FECs), participants stressed the need to also consider culturally rooted FECs, such as feasts, celebrations, language and education. Though the CEMG may not actively monitor these suggested FECs, it will be good to included them and to work collaboratively with the Sustainable Development Working Group when developing reports. *The below list should not be considered exhuastive. The list is the product of a short meeting with a few IK holders. The items are listed in no particular order of importance.

FECs identified

Caribou
Beluga
Oogruk (Bearded Seal)
Beaver
Various bird species
Benthic species (clams, muscles, tunicates)

Roots
Muskrats
Ice seals
Bowhead whale
Killer whale (Orca)
Water flies

Berries (salmon, blue, etc.)
Sea weeds
Zooplankton
Wolverine
Phytoplankton
Whales
Sea weed

Wolves
Lemmings
Grey whale
Sea urchin
Grizzly

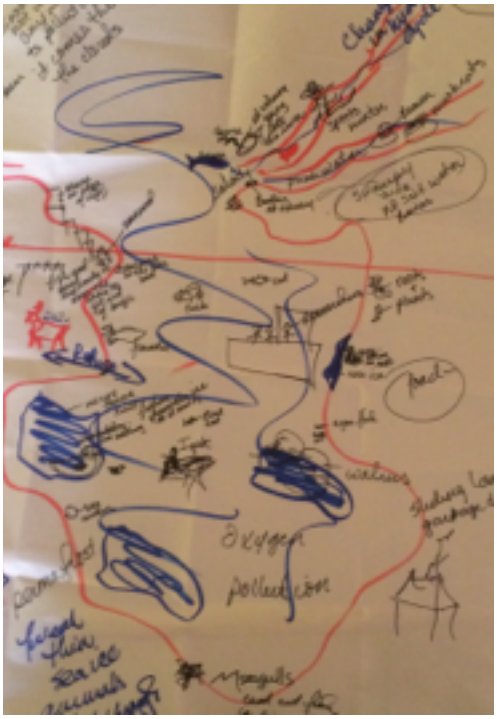
Polar bear
Fish (all salmon, char, cods and white fish, Sculpin, Flounder, herring and candle fish)
Various plants (sura and Celery)
Migratory and resident birds (Sea gulls, geese, murres /eggs, eider ducks, ellow belly loon)

Narwhal
Phytoplankton
Mosquitos
Crab
Parasites

Gambell, Alaska. Photo by Carolina Behe

Concept Maps

Participants collectively created a concept map to identify key species, habitats and activities during a season (June/July). Two types of concepts maps were developed. One map demonstrated connections and concepts through drawings and a second made connections using terms and lines. The lines could then be weighted through a fuzzy concept map exercise (although workshop participants ran out of time before this process could be fully completed). Below is a description of what participants asked to be included in the two concept maps.


Making of a concept map. oto by Carolina Behe

The maps demonstrate activities occurring across the entire North America Arctic coastline. geese, sitting on nests or guarding chicks on coast; oogruk (bearded seal) near the ice, sunbathing on floes – no predators; ducks in the water near the ice; th seagulls come first, then the ducks; murres lay eggs last on giant cliffs; beluga are feeding at the mouth of the river, and come to rub on rocks in freshwater molting; clams and mussels at mouths of river where fresh and salt water is mixed and high/low tides; seaweed below cliff on shoreline; herring spawning; candlefish; cod fish, arctic cod; grey whale; beluga whaling begins; pink, red, chum and king salmon are running; char; drying racks near coast away from bugs and bears; seagulls are becoming a huge nuisance everywhere, resulting in difficuly cutting cutting fish; some polar bears are starting to show up at dumps; sculpin; devilfish everywhere; mosquitoes; flounders sea urchins; fish like to hide where the snow is thickest; fish also hide where ice is thinnest; collect roots (masu) when plants are blooming; sura; eskimo celery; beaver – farther up the river; muskrats; wolverines are gone in their region (northern quebec), there are lots on north slope in alaska; wolf populations are increasing; at edge of the ice, life frozen in the ice begins to fall into the water during the thaw - fish eat the life; rock cod or greenland cod; saffron cod; blue cod are important food source for sea mammals further out at sea; salmon berries – august unless it is a hot summer then earlier; collect berries in late july in swampy areas; walrus – on an ice floe or an on island; crab in july are offshore; sea ice.

Conclusion and lessons learned

The IK holders provided a valuable opportunity for all of the IK holders to become familiar with each other, to learn about CAFF, CBMP and the intention of CEMG. All participants left the meeting feeling more prepared for the CEMG two-day workshop. In moving forward, it will be important to translate all meeting material for participants prior to the meeting. We are grateful to the Canadian government for hosting this meeting and to all of the meeting participants, note takers, translators and the CEMG co-leads. We are also grateful for the funding provided by Polar Knoweldge Canada and Oceans North.