

Ringed Seal Monitoring and Planning Workshop



**Workshop
Report**

**Iqaluit, Nunavut
6-7 March 2014**

“Understanding the concerns that exist between different groups and trying to create understanding between the groups.”

– ETP STUDENT, RINGED SEAL MONITORING WORKSHOP





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Edited and compiled by
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Executive Summary

Ringed seals (*Pusa hispida*) are the most abundant seal in the Arctic. They are an important traditional food for Inuit throughout Nunavut, and ringed seal skins are an important resource used for clothing and other products. Ringed seals rely on first-year sea ice as a platform for resting and moulting (shedding old hair and replacing it with new growth) and they construct birth lairs beneath the snow for protecting pups against both predators and weather. In many parts of their range, ringed seals feed on fishes and other organisms associated with epontic (under-ice) biological communities. Ringed seals are therefore an important species to monitor as they are vulnerable to changes in environmental conditions, such as ice extent and thickness, snowfall, and abundance of other marine species. Changes in ringed seal health will also affect the health of Inuit communities. In particular, there have been advisories on the consumption of ringed seal liver as a result of contaminants and pollutants. Ringed seal research programs exist across the Canadian Arctic, especially in the eastern Arctic, and involve the participation of local hunters in the collection of samples and data. There is growing interest among communities and researchers in expanding both the focus of research and the communities involved.

Workshop Description and Participants

We held a workshop in Iqaluit, NU on March 6-7, 2014, that invited researchers, managers, community members, and students to discuss knowledge and issues around ringed seal research in Nunavut. The purpose of the workshop was to provide an opportunity to exchange knowledge, identify information gaps and priorities, plan for future collaborative and community-based research on ringed seals, as well as identify management and community concerns. The workshop involved 10 community members from across Nunavut; 14 researchers from universities and government; 5 staff from Nunavut government departments and management organizations; 2 representatives from Nunavut Tunngavik Incorporated; a representative from the Nunavut Research Institute; and 14 students from the Environmental Technology Program (ETP) at Nunavut Arctic College.

The workshop structure involved breakout sessions during which small groups shared their perspectives about specific topics, followed by plenary sessions where each breakout group reported the main points from their discussions to the full group. Breakout sessions focused on 1) identifying knowledge priorities, 2) the communication and use of knowledge, and 3) identifying a set of next steps for future action. Questions that were brought up throughout the plenary sessions were also recorded, and an additional breakout session was dedicated to providing groups with a chance to respond to those questions that were relevant to them.



Summary of Findings

The main findings from the workshop were centred on four central themes:

Workshop Reporting:

1. Produce a written report to document the workshop: who was involved, what took place, what was discussed, and what the workshop will contribute to future ringed seal research.
2. Create a poster to communicate the workshop's purpose and findings that can be distributed to communities and put up in public spaces.



Communication of Research:

1. Establish and strengthen connections between researchers and HTOs to establish clear steps and methods to communicate research findings to communities more broadly.
2. Return research updates and results to communities more frequently, and communicate these results through multiple methods (posters, social media, video conferencing).

SMITH, THOMAS G., & STIRLING, IAN. (1975).
THE BREEDING HABITAT OF THE RINGED SEAL
(PHOCA HISPIDA). THE BIRTH LAIR AND ASSOCIATED
STRUCTURES. CANADIAN JOURNAL OF ZOOLOGY,
53(9), 1309. © CANADIAN SCIENCE PUBLISHING
OR ITS LICENSORS

Research Needs:

1. Identify new communities that are interested in being involved in seal sampling research, and what the particular research needs are in those communities/regions.
2. Identify preliminary opportunities and steps to establish research facilities and capabilities in Nunavut.

The Role of Students:

1. Identify sources of funding to train more ETP students and graduates to work with research programs.
2. Create an online platform to connect students and researchers and have HTOs commit to liaising between researchers and students.



2012 – ringed seals hauled out on spring ice – Hudson Bay off the Manitoba Coast

Introduction

Ringed seals (*Pusa hispida*) are the most abundant Arctic seal, with a range that extends throughout the circumpolar marine region. Ringed seals have adapted to survive in environments with periods of ice cover, constructing breathing holes through both land-fast and pack ice to maintain access to air and ice platforms. Ice platforms provide critical habitat where ringed seals haul-out in the spring during the annual moult, and on which pregnant females construct birth lairs beneath the snow for protection of pups against both predators and weather. Mating occurs under the ice and, after a 10 to 11 month gestation period that includes a 2 to 3 month period of suspended development, ringed seals give birth to a single pup in March or April. The time following birthing is an important feeding period for ringed seals to regain body mass lost throughout birthing and lactation, at which time females forage for food and tend pups. A general seasonal cycle in energy acquisition characterizes ringed seal condition with a negative energy balance overwinter and a positive energy balance through the open-water season. Ringed seals eat a wide variety of prey which vary with location and season, but predominantly include Arctic cod



This map shows the geographical areas included in the Arctic by the Conservation of Arctic Flora and Fauna.



(*Boreogadus saida*), as well as other fish (e.g. capelin (*Mallotus villosus*), sandlance (*Ammodytes dubius*), herring (*Clupea* spp.)) and invertebrates (e.g. shrimp, mysids).

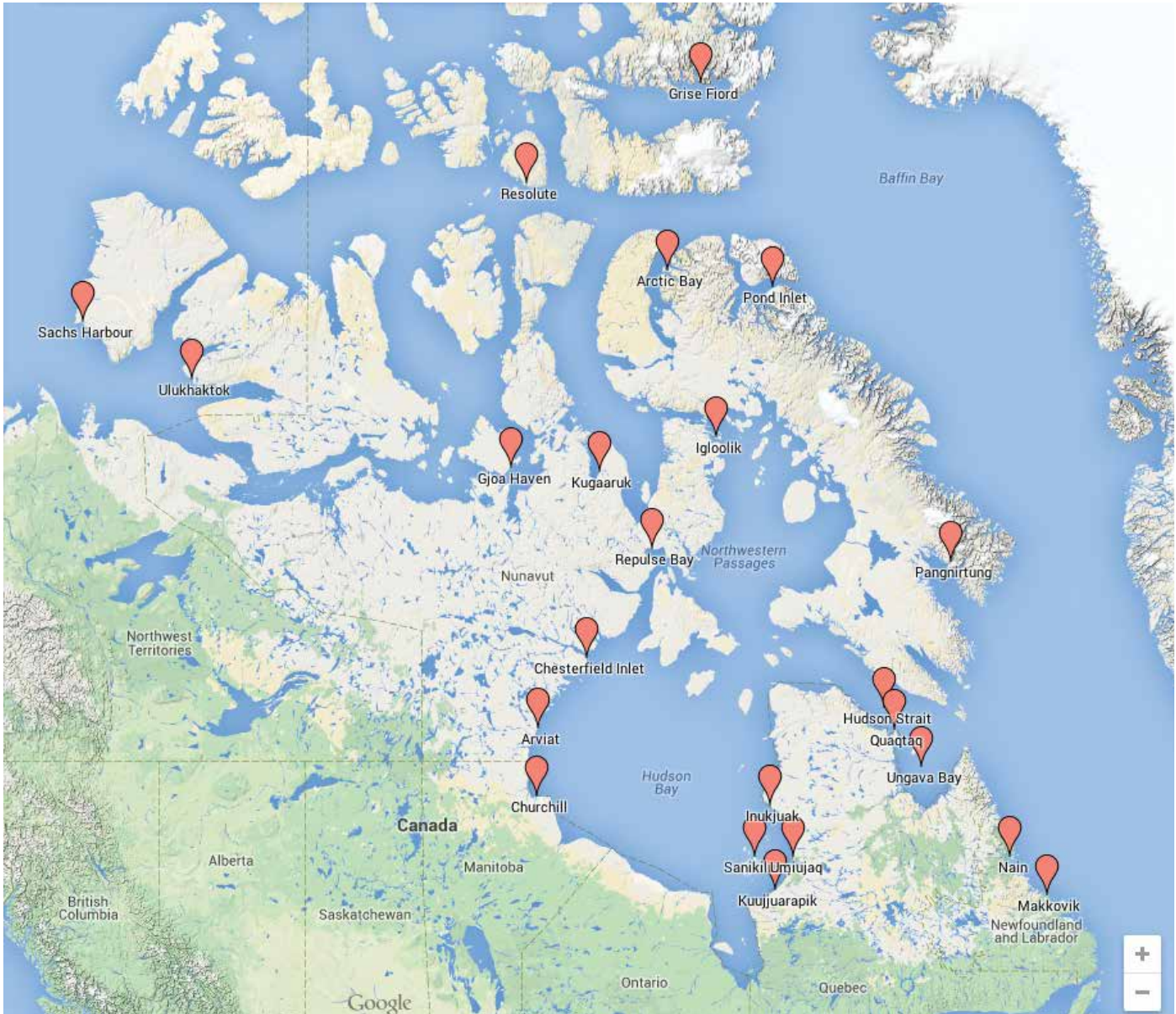
All communities in Nunavut continue to hunt ringed seals, a practice they have done sustainably for generations. Ringed seals are an important traditional food source for Inuit throughout Nunavut, forming a large portion of the diet. Ringed seal skins are also used for clothing and other products, providing communities with both personal needs as well as economic opportunities.

Ringed seal research programs exist across the Canadian Arctic and include harvest-based sampling, satellite telemetry, spring aerial surveys, and acoustic monitoring during winter-spring mating behaviour. Monitoring studies focus on body condition; feeding ecology; abundance and distribution; seals as prey for polar bears; effects of changing ecosystem and environmental conditions (including effects of climate change and industrial development); habitat preference and suitability; environmental contaminants and pollutants; and harvest statistics.



The purpose of this workshop was to bring together researchers; community members with knowledge of ringed seals; staff from the federal, territorial, and regional governments; and representatives from wildlife management organizations, to create a space for knowledge exchange on ringed seals in Nunavut. The goals were to: 1) determine ringed seal knowledge priorities and information needs among researchers, communities, and managers; and, 2) identify questions, strengths, and concerns about current research, and ways to address these. The overarching goal was to ensure research is responsive to environmental changes and the needs of communities in Nunavut by identifying opportunities and priorities for future research; identify ways to strengthen relationships between researchers and community members; and take an important step in working towards establishing a common goal for a community-based ringed seal monitoring program across the Canadian Arctic and within a circumpolar context.

Ringed Seal Research Locations

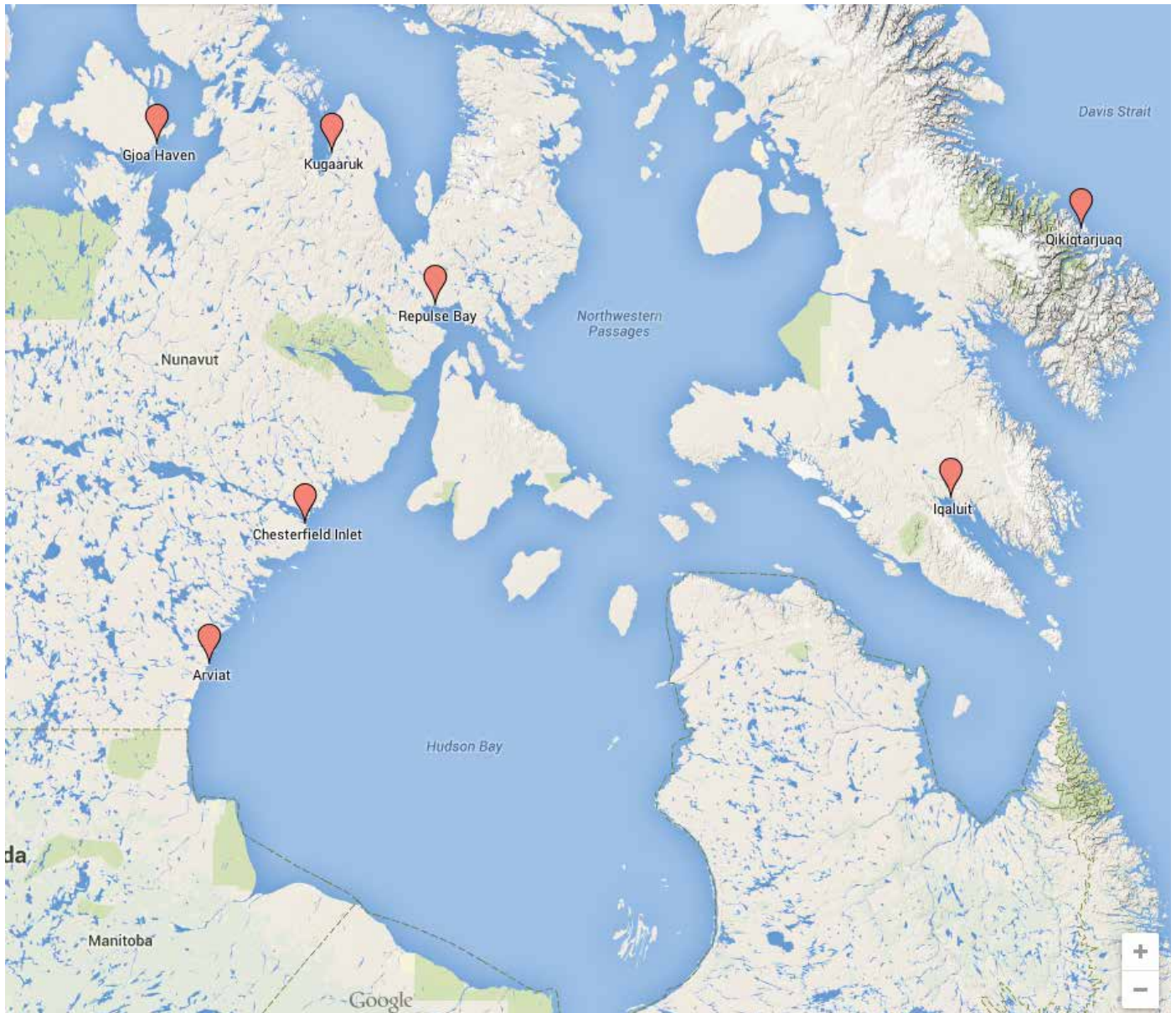


MAP DATA ©2014 GOOGLE, INEGI

This map shows the communities where workshop participants have been involved in ringed seal research programs across the country. There may be other communities involved in ringed seal research not shown on this map, but these are the projects that were represented by workshop participants.



Community Participants



MAP DATA ©2014 GOOGLE

This map shows the communities that were represented at the workshop by community participants.

Workshop Participants

Workshop Chairs: Ben Kovic (Nunavut Wildlife Management Board), Paul McCarney (York University)

Interpreters: Julia Demcheson, Lizzie York

Name	Community/Organization
David Siksik	Gjoa Haven
Ovide Alakannuark	Kugaaruk
Kevin Issaluk	Chesterfield Inlet
Frank Nutarasungnik	Arviat
David Tuktudjuk	Repulse Bay
Loasie Alikatuktuk	Qikiqtarjuaq
Sheba Ishulutak	Iqaluit
Elisapee Kilabuk	Iqaluit
Joshua Kango	Iqaluit
Sammy Peter	Iqaluit
Steve Ferguson	Fisheries and Oceans Canada
Blair Dunn	Fisheries and Oceans Canada
Brent Young	University of Manitoba
David Yurkowski	University of Windsor
Greg Thiemann	York University
Chris Furgal	Trent University
Allison Dunn	Northern Contaminants Program (Nunavut)
Pierre-Yves Daoust	Atlantic Veterinary College (AVC), UPEI
Manon Simard	Nunavik Research Centre, Makivik Corporation
Jason Stow	Aboriginal Affairs and Northern Development
Derek Muir	Environment Canada
Stephen Peterson	Assiniboine Park Zoo
Vicki Sahanatien	World Wildlife Fund Canada (Iqaluit)
Devin Imrie	Government of Nunavut
Maha Ghazal	Government of Nunavut



Name	Community/Organization
Paul Irngaut	Nunavut Tunngavik Incorporated
Andrew Dunford	Nunavut Tunngavik Incorporated
Sheila Oolayou	Nunavut Wildlife Management Board
Ben Kovic	Nunavut Wildlife Management Board
Jackie Price	Qikiqtaaluk Wildlife Board
Jamal Shirley	Nunavut Research Institute
Lisa Bechellier	Environmental Technology Program, Arctic College
Joanne Kokak	Environmental Technology Program, Arctic College
Angulalik Pedersen	Environmental Technology Program, Arctic College
Randy Hinanik	Environmental Technology Program, Arctic College
Nash Paniyuq	Environmental Technology Program, Arctic College
Johnny Nivingalok	Environmental Technology Program, Arctic College
Peter Aqqaq	Environmental Technology Program, Arctic College
James Taparti	Environmental Technology Program, Arctic College
Alannah Kataluk-Primeau	Environmental Technology Program, Arctic College
Alex Kilabuk	Environmental Technology Program, Arctic College
Maria Kasaluak	Environmental Technology Program, Arctic College
Matthew Gardner	Environmental Technology Program, Arctic College
Jason Etooangat	Environmental Technology Program, Arctic College
Troy Netser	Environmental Technology Program, Arctic College

Workshop Agenda

Day 1	8:30-9:00	Welcome
March 6	9:00-10:00	Community participant introductions Presentation: Paul Irngaut - NLCA, Inuit rights
	10:00-10:30	Research updates <ul style="list-style-type: none">• Steve Ferguson – Community-based monitoring• Dave Yurkowski – Seal tagging
	10:30-10:45	Break
	10:45-11:30	Breakout Session 1: Knowledge priorities
	11:30-12:30	Reporting Session: What are the priorities of hunters / scientists / managers?
	12:30-1:30	Lunch
	1:30-2:00	Research updates <ul style="list-style-type: none">• Derek Muir – Northern Contaminants Program• Manon Simard - Food safety• Pierre-Yves Daoust – Seal health
	2:00-2:45	Breakout Session 2: Communication and use of knowledge on ringed seals
	2:45-3:00	Break
	3:00-4:00	Reporting Session: How Can We Communicate More Effectively on Ringed Seals?
	4:00-4:30	Closing
Day 2		
March 7	8:30-8:50	Day 1 Review: Highlight of main questions & discussion points
	8:50-10:00	Breakout Session 1: What do hunters / scientists want to know? Breakout Session 2: What's next for ringed seals in Nunavut?
	10:00-10:15	Break
	10:15-11:30	Reporting Session: What's next for ringed seals in Nunavut?
	11:30-12:00	Closing Comments



Workshop Structure

The two-day workshop was organized around a series of smaller group breakout meetings and full-group plenary sessions. During the breakout sessions, workshop participants were divided into smaller groups to discuss their perspectives around a set of topics. Following each breakout session, the participants reassembled to report the main points of their discussions to the full group in plenary sessions. For the breakout sessions, there were two groups of community members, two groups of researchers, and a group of participants from government and other management interests. Students from the Environmental Technology Program (ETP) were invited to join groups based on their interests.

When breakout groups were planned, the original intention was to have three community groups, one for each of the three regions of Nunavut to allow for more locally specific discussions; however, due to weather, some of the participants from Kitikmeot were unable to attend the workshop. In order to have enough people in each group, community members from the Kitikmeot and Kivalliq regions were combined into a single group. A second community group consisted of participants from the Qikiqtaaluk region. One group of researchers was comprised of researchers who focus on seal biology and ecology, and a second of those interested in health and contaminant issues. Finally, there was a group of participants from government and wildlife management organizations, and this group also had a number of ETP students who joined the group for the entire workshop.

For some breakout sessions, the community groups received one set of questions, and the research and government/management groups received a different set of questions. The government/management group chose which set of questions to answer for each breakout session, as the students in this group were able to share their perspectives as Inuit and as students being trained in wildlife science and management.

For each of the breakout sessions, the two community groups and the government/management group met in the main room, and the two research groups met in separate rooms. Each group was given flip chart paper to record their answers to the questions to report back to the full group.

Breakout Groups:

Community Group 1

David Siksik
Ovide Alakannuark
Kevin Issaluk
Frank Nutarasungnik
David Tuktudjuk
Matthew Gardner
James Taparti
Lisa Bechellier

Community Group 2

Loasie Alikatuktuk
Sheba Ishulutak
Elisapee Kilabuk
Joshua Kango
Sammy Peter
Sheila Oolayou
Johnny Nivingalok
Troy Netser

Research Group 1

Steve Ferguson
Brent Young
Gregory Thiemann
David Yurkowski
Stephen Peterson
Blair Dunn
Angulalik Pedersen
Randy Hinanik
Peter Aqqaq

Research Group 2

Derek Muir
Jason Stow
Allison Dunn
Manon Simard
Pierre-Yves Daoust

Government/Management Group

Devin Imrie
Maha Ghazal
Jackie Price
Nash Paniyuq
Alannah Kataluk-Primeau
Joanne Kokak
Alex Kilabuk Lisa Bechellier





Report Structure

This report has been compiled from a transcript of the recorded workshop discussions and the notes prepared by each group for the reporting session presentations. For each breakout session, the session questions are presented, followed by a summary of the reporting sessions.

Each group presented many important ideas in response to the questions, and there was a great deal of insightful and rich responses. The reporting session summaries in this report focus on the main points highlighted by each group, and especially those points that overlapped between groups, in order to identify the most prominent priorities discussed at the workshop. This is not to undermine the importance of any of the ideas discussed by any of the groups, but rather a reflection that not all ideas can be addressed at once, and in the hopes that this workshop will lead to action on ringed seal research that can begin to address those priorities shared by multiple groups of people.

Following each of the reporting session summaries is a table presenting selected quotes from each group's presentations. These quotes have been selected based on the points emphasized by each of the groups as being some of the most important ideas identified through their discussions.

Appendix A-D contain more detailed summaries of the groups' responses to the individual session questions, as well as a typed copy of each group's notes that were presented during the reporting sessions.

2014 – panorama view from stone blind on Churchill River – Harbour seal behavioural observations



Summary of Breakout Sessions

Day 1

The first day's breakout sessions asked participants to examine their personal and collective knowledge and experiences of ringed seals. The purpose of the breakout sessions on Day 1 was to identify what participants want and need to know about ringed seals, and to examine this knowledge in terms of how it is currently communicated, as well as identify ways in which it can and should be communicated in the future between each of the groups. The first day's breakout sessions were also intended to identify knowledge gaps, and make connections between the knowledge that people want and the knowledge that people have, to begin to fill those gaps.





Breakout Session 1: What Are the Priorities of Hunters / Scientists / Managers?

The purpose of this session was for participants to identify the main priorities for ringed seals from their perspectives. The session was meant to identify broad priorities related to research programs and community needs around ringed seals. Questions were designed to allow groups to begin to draw connections between their priorities and identify where information needs overlapped.

Session Questions:

1. What are your priorities for the workshop? What do you hope is achieved?
2. What do you want or need to know about ringed seals from this workshop for your [hunting / research]? Who do you think has this information?
3. What are your long-term priorities for [hunting / researching] ringed seals?

Summary of Reporting Session

The discussions in this breakout session focused on identifying the type of research that groups would like to see conducted and communication between researchers and communities, as well as long-term priorities. All groups identified the long-term priority of maintaining healthy seal populations in the future, especially for continued consumption.

Community groups and research groups both talked about the need to expand research to additional communities in Nunavut, and identified a desire to see an expansion in community-based sampling efforts. Researchers explained specifically that they would like to see additional community-based sampling programs in central and western Nunavut where programs are currently lacking, and would like to know more about community members' questions and needs. Community participants identified a number of research interests, such as studies examining the safety of seal meat, the effects of industrial development on seals, and predator-prey interactions involving seals.

"[M]ore community-based monitoring, more involvement from communities and to really mentor students who are here today."

– RESEARCH GROUP 2

The desire for more direct local participation in all stages of research was a common theme amongst community participants. Community participants spoke about the need to be involved with ringed seals in multiple capacities, participating in research as well as continuing traditional activities. Community groups explained that they would like research to involve more community members, including hunters and youth. Students also expressed a desire to become more involved in research, working for researchers in their



communities and being trained to work in lab settings.

“It’s good to get us invited so we can understand what’s happening throughout the research, through scientists...so we can bring this information back to our home town when we do finish, and go back home and let people know this is happening.”

- ETP STUDENT

“[S]pecifying what types of contaminants and diseases are a concern, from a researcher’s perspective. Sometimes the only information that is received is that there are contaminants or there are diseases. But what are they, what are the specific diseases, what are the specific contaminants.”

- GOVERNMENT/MANAGEMENT & ETP STUDENTS GROUP

Community groups and students specifically called for the development of local research facilities in Nunavut to process samples within the region. This would achieve multiple goals, including more timely analysis of samples and return of results to communities, specifically about contaminants and food safety, as well as local jobs for youth who are being trained in environmental sciences.

The issue of communication was brought up in various ways by every group, and highlighted two main priorities: 1) the need for effective methods of communication between researchers and communities, as well as within these groups, and; 2) the need for more effective communication of research results back to communities. Groups identified the need to improve communication in both directions: from researchers to communities, and from communities to researchers. Research groups explained that they would like to know more

about the research needs of communities, and need to determine effective ways to hear from communities about their questions regarding ringed seals. Community groups explained that they need better communication of research results, especially research done in their individual communities, but also an awareness of the research that is taking place in other regions of the Arctic and how it impacts Nunavut. Communication issues were spoken of broadly in this first session, but was an important theme underpinning much of the discussions throughout the workshop.

Table 1: Selection of quotations of each group's report from Breakout Session 1.

Session Questions	Community Group 1	Community Group 2	Research Group 1	Research Group 2	Government/ Management Group
1. What are your priorities for the workshop? What do you hope is achieved?	"[S]haring of results, better inform communities and also students, involve more students in the research... because they are our future."	"We want a research centre in Nunavut so that the communities are more encouraged to send samples."	"[I]dentify funding opportunities for expanding community-based sampling, meeting research needs of the communities. But, first and foremost...facilitating, improving, promoting communication."	"The common theme that we heard from other speakers is around communication. We'd also like to learn how we can improve communication."	"[N]etworking, creating a line of communication between researchers, students and community members." " [W]hat are we going to learn from this, why were we invited, why would it be important for us, this workshop in particular, and what are we going to gain from this workshop for our studies."
2. What do you want or need to know about ringed seals from this workshop for your [hunting / research]? Who do you think has this information?	[T]here are many predators that prey on seals, especially during the seal pup season...there should be further studies on this." " [M]ining and other development...is going to have an impact on our sea mammals. [W]e need to have better studies on how much impact it's having on seals."	"[C]heck into what kind of contaminants [seals] carry, because seals are everywhere...what kind of sicknesses they have, how different are they or are they similar [to other regions]?"	"[Q]uestions about long-term changes, how body condition, or numbers, or disease or contaminants in seals has changed."	"[W]hat [community members'] key questions are about ringed seal, Inuit views about research methods - what are the ways you would find acceptable for collecting information on ringed seals?"	"Understanding the concerns that exist between different groups and trying to create understanding between the groups, clearing misconceptions." " [W]e'd like research to be focused on what communities would like or what they need. For example, population, how population numbers vary from one community or one area to another."
3. What are your long-term priorities for [hunting / researching] ringed seals?	"We know that this is going to continue, that we will always hunt seals...they're our source of food."	"Teaching for students so that our future population always have the same knowledge that our elders have through education, including teaching students hunting skills and maintaining tradition."	"[I]dentify funding opportunities to expand research, and data and sample collection to more communities."	"[D]evelop a sustainable research network. [H]ave some kind of living document that people can reference if communities are looking for information. [T]hat document needs to be continuously updated."	"[F]inding out information on contaminants or diseases...expanding community-based sampling, involving more communities and people within communities... coming up with a way to transfer information from a community to the right researcher."

Breakout Session 2: How Can We Communicate More Effectively on Ringed Seals?

This session explored the communication of research results and other information about ringed seals among researchers, communities, and managers. Issues around communication were brought up by all of the groups in the first session, so this session was intended to discuss some of these issues in more depth. The purpose of this session was to understand how to facilitate more effective communication between everyone involved in ringed seal work. For each group, the questions were intended to identify the gaps and challenges in communication and discuss potential solutions.

Session Questions

Questions for Community Groups

1. How do you get knowledge about ringed seals? Where does your knowledge or information come from?
2. How do you want to hear about research results (what type of medium, from where, from whom)?

Questions for Researchers & Government/Managers

1. What challenges do you currently face in communicating about ringed seals in Nunavut?
2. How could these challenges be overcome? Do you know of any solutions?



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Summary of Reporting Session

In addition to understanding the needs and gaps surrounding communication, this session was also intended to understand the extent to which community participants rely on research results for their knowledge on ringed seals. By understanding what type of contribution research makes to community knowledge about ringed seals, it may be possible to identify more effective ways to present research results by focusing on the type of information people want and need, as well as the methods of communication that are most effective.



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Community members responded that their knowledge on ringed seals is passed on through generations by parents and Elders, and is learned on the land through personal experiences such as harvesting. Neither of the community groups identified research results as an important source of knowledge about ringed seals; however, both community groups said they would like to hear more about research results, especially contaminants and other health-related research. Both groups also expressed an interest in continuing to be involved in research and improving the ways in which research is conducted, and thought that Inuit Qaujimagatuqangit should be included in research so that community perspectives are considered.

Community members said that most importantly, there is a need for more meetings and communication in person, and would like to see researchers communicating more directly with communities. They identified a variety of means through which results can be communicated, such as radio, posters, and online methods. The topic of establishing research centres in Nunavut was discussed again by one of the community groups in terms of making communication faster and more direct. Both community groups also highlighted the role of HTOs as coordinators of communication between researchers and the broader community, and said that HTOs could be doing more to ensure the community receives relevant information from researchers.

“We know that it’s not going to be perfect right from the beginning but if there’s enough time we can try and fix that. And hopefully have understanding.”

– GOVERNMENT/MANAGEMENT & ETP STUDENTS GROUP

Among the challenges researchers face in communicating results are the costs associated with community visits, language barriers, and the difficulty in following up on how effectively information has been disseminated to the community. Researchers agreed that more visits to

“ETP students are an excellent resource to provide a bridge between researchers and community members because they are the next generation, [and] have their experience on both sides.”

– RESEARCH GROUP 2

communities are needed, and explained that the cost of travel as well as internal institutional barriers (e.g., restrictions on use of online social media, limited travel) make this difficult. Both research groups agreed that there is a need to identify and dedicate funds specifically for returning results to communities in person, as well as improving communication training among the research community.

Research groups also emphasized that it would be helpful to have designated community members who could liaise between researchers and communities to help ensure research results are communicated in effective and appropriate ways, and identified ETP students as potential individuals to fulfill these roles. All groups identified the need for short, direct, plain language updates on research results.

The predominant themes from this session were the need for more in-person communication between researchers and communities, while at the same time finding dynamic and creative ways to communicate research results. Each of the groups expressed interest in finding multiple methods to communicate information. Suggestions for communicating research included a range of methods, such as plain language fact sheets, internet (e.g. community new pages, new websites dedicated to research results communication), radio, and social media (e.g. Facebook). There is a clear need to articulate an effective process for communication, including the individuals and institutions throughout the process and the role of each.



Table 2: Selection of quotations from the Community Groups' and Government/Management Group's report from Breakout Session 2.

Session Questions	Community Group 1	Community Group 2	Government/Management Group
1. How do you get knowledge about ringed seals? Where does your knowledge or information come from?	"From our parents, from personal experience, through harvesting and all the past knowledges are passed on from generation to generation."	"[F]rom my mother, from our parents, our ancestors...because we live in the Arctic and we need to know those to survive."	"[F]or myself I've mostly learned about ringed seals from scientific journal articles...The other people that were in my group, they've learned from elders... from personally hunting ringed seals, butchering, cleaning, tending to the skin. Also in the ETP program in second year they learn about ringed seals as well."
2. How do you want to hear about research results (what type of medium, from where, from whom)?	"[F]indings should also explain to the communities even if it's simplified in English very briefly to make sure the communities concerned are receiving the information especially when there might be some alarming findings."	"[I]f their project is recommended by HTO and it's approved they should not only report to the HTOs but also spread that information to the general public so that, because of the length of time that's waiting, we lose time of getting more information."	"Connecting with the HTO as a means [to] organize public meetings would be very important. And having smaller groups to meet with. This allows for more give and take, more discussion, more opportunity to ask questions if you don't understand you can ask me more questions." "[P]ublic meetings were very important, it's not enough to just communicate the information to the HTO but to come back and have a meeting. Something in plain language that the majority can understand."

Table 3: Selection of quotations from the Research Groups' report from Breakout Session 2.

Session Questions	Research Group 1	Research Group 2
1. What challenges do you currently face in communicating about ringed seals in Nunavut?	"Much of what we do as scientific researchers is aimed at communicating with other scientific researchers...So we need to get better at [communicating with the public], we need support in our own institutions in terms of training."	"[S]ome researchers don't necessarily have all of the answers to the questions that might come up. And so it's important particularly when there are messages related to health that the information is coming from the right source. In the case of health that the information is coming from the Department of Health and Social Services who have those expertise."
2. How could these challenges be overcome? Do you know of any solutions?	"We need to communicate to our own supervisors and superiors that relaying information back to the communities is important."	"[I]f there is really important information about the results it's important to provide that repeatedly."

Day 2

While the first day's breakout sessions asked participants to think broadly about the session topics, the second day's breakout sessions were intended to narrow in on some of the predominant discussions and ideas from the first day. The focus of the second day was providing answers to questions and determining actionable steps that can be taken following the workshop to address the issues related to priorities and communication identified on the first day.



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Breakout Session 1: What do Hunters / Scientists Want to Know?

This session brought together the main questions that community members and researchers identified for each other from the previous day's sessions, allowing groups to provide answers to these questions. The questions for each group were not a full representation of the topics from the first day, but were developed based on the most commonly discussed ideas.

A large portion of this session focused on the communication of research results. The overarching issue identified by all groups was the need to better articulate a clear process for disseminating research results, including the specific steps, organizations, and people who should be involved.

Session Questions

Questions for Community Groups

1. How would you like to see communications on ringed seal research get better? What aspects of communication do you want to see improved? (How it is communicated? When/how often? Who is communicating it?)
2. What do you want a research centre in Nunavut for? What kind of research would it do or focus on? Who would do this research? Where would it be located? (Will the High Arctic Research Center being developed in Cambridge Bay address some of these issues for you? If not, why?)
3. What are your main food safety/health concerns with ringed seals?

Questions for Researchers & Government/Managers

1. What are the obstacles to returning/communicating research results back to communities faster? Why does it take so long? (Is it possible to return results sooner than they have currently been communicated? If not, why not? What can be done about it?)
2. Can you begin to include Inuit students and youth in research projects? How? Are there any challenges to doing this? Will you do it?
3. Is it possible to have more face to face meetings to discuss research results? What are the specific obstacles and steps that would be required to make this possible?

For Research Group 2:

4. Based on your knowledge and research, what are the main food safety concerns related to consuming ringed seal in Nunavut? Who has this information and should be communicating it with communities? (If it is not the researchers, why not?)

Summary of Reporting Session

Community groups identified the need to use multiple methods to communicate research findings to increase the speed and reach of communication. Groups suggested researchers hold more public meetings and use a variety of both print and online options, such as posters, email, social media, and video conferencing, as well as radio. It was emphasized again during this session that communities need to know how to contact researchers, and in particular which researchers to contact about which specific issues (e.g. contaminants, food web ecology, surveys). Community members said that HTOs should be the main contact and liaison between researchers and communities, and should ensure that they keep the population informed. For example, HTOs could appoint someone, or create a type of community consulting group, that could be responsible for coordinating communication of research results to the community. This group would ensure that research results are distributed appropriately throughout the community, as well as act as an advisor to researchers regarding what is appropriate and effective with communication, and cultural protocols that should be followed while working in the community. Community members also requested that researchers inform HTOs of research results as soon as possible, and continue to provide updates as they become available; however, it was also important to communities that researchers do not make projections or assumptions about the significance of results, in particular about human health concerns, in order to avoid any restrictions (such as those concerning resource use) before it is absolutely necessary.

The desire for local research centres in Nunavut was closely tied to community interest in seal health and food safety. Community members would like research centres established in each of the three regions in Nunavut, with Iqaluit, Rankin Inlet, and Cambridge Bay suggested as locations by both community groups. These centres should focus primarily on contaminants and disease testing to better understand seal meat health and safety, in particular the safety of seal liver. Community groups said that they would like any health advisories or information to be more clearly explained, such as the specific areas affected by health concerns, and which segments of the population are likely to be affected (e.g. pregnant women). In addition, developing local research centres will

speed up the research process and the return of results to communities, as well as create local jobs, particularly for ETP graduates.

“[T]hese research centres should be working closely with the major researchers who work on health factors of wildlife as well as human consumption.”

– COMMUNITY GROUP 2

This session provided an opportunity for researchers to clarify the steps involved between sample collection and the production of meaningful results. They were able to address some of the reasons that the research process can take the time it does, and in some cases, even the perception that results are not being returned to communities. Researchers explained that depending on the research



project, the steps required to receive samples from hunters and produce informative results can take a year or longer. In addition, individual researchers may only have part of the answers that communities need, so sometimes multiple sets of data need to be combined from different research projects to fully answer questions. The distribution of unverified or preliminary information may not be productive. Moreover, information may need to come from the appropriate authorities or government departments (e.g. Department of Health and Social Services), rather than the researchers themselves. Researchers agreed that using email and other online forms of communication would help with providing updates on research progress, even in the absence of final results, and that they would be keen to provide more ongoing project updates. Participants also recognized that not all communities have equal access to internet, and that this method can not be relied upon all the time; however, when internet communication is a possibility, it can offer a faster, effective way to facilitate communication.

Researchers stated clearly that they would like to hire more students. Some of the challenges researchers face include identifying students who want to be involved and sources of funding for training and salaries. Researchers identified the need for coordinated ways to connect with interested students, and suggested that HTOs could assist with making these connections, as well as making use of online communications that could also be facilitated by, for example, HTOs or government websites.

A central point in the discussions around communication focused on the need for more in-person meetings. Researchers emphasized that they would like to hold more meetings in person, and that main obstacles include the substantial time and money required for travel. However, the research groups as well as ETP students suggested a number of ways in which research results could be communicated on an ongoing basis to ensure that results are reaching communities both quickly and with a wider distribution. These included video conferencing; community posters that could be produced annually; and potentially having community members travel to the south to visit multiple researchers in one trip, and bring updates back to their communities.

It was also clarified that the only official health advisory for seals in Nunavut is related to consuming liver. However, researchers stated that the field of food health and safety research needs to continue to develop new ways of monitoring current and potential diseases, as well as better understand the importance of ringed seals in the broader context of food security.

Table 4: Selection of quotations from the Community Groups' report from Breakout Session 1.

Session Questions

Community Group 1

Community Group 2

1. How would you like to see communications on ringed seal research get better? What aspects of communication do you want to see improved? (How it is communicated? When/how often? Who is communicating it?)

"[T]here should be public meetings performed in the community, video conference, internet communications and by radio. The HTOs should be the contact people and keep their population informed because this has been a problem in some communities where there is lack of communication and we find that because of major changes sometimes communication starts lacking but they have to keep their population informed."

"The research results have to be waited for a very long time. I'm sure even when there is some information, that could help the anxiety of the hunters, like if you have immediate short term results, to give that information would be a lot better for the hunters who are participating in the research."

2. What do you want a research centre in Nunavut for? What kind of research would it do or focus on? Who would do this research? Where would it be located? (There is the High Arctic Research Center being developed in Cambridge Bay, will it address some of these issues for you? If not, why?)

"[B]ecause of the lengthy waiting and sometimes the meat becomes old and not good enough to do any form of research and because when an animal is being researched people don't eat it."

"[B]ecause of the distance of the places where they have to send the samples, it's also taking some time, so we recommend that each region has a research centre for the communities of its region."

"So the message is to keep the public informed as a team, researchers and Inuit people."

"[W]omen also clean seal skins and we just learned that we should probably send samples to the researchers if we find something weird on the skins."

3. What are your main food safety/health concerns with ringed seals that you need answers for?

"[T]here should also be more studies specifically on the liver because we've been told that for those who are pregnant we've been told not to eat liver which is the best part of the seal in terms of iron content."

Table 5: Selection of quotations from the Research Groups' report from Breakout Session 1.

Session Questions

Research Group 1

Research Group 2

1. What are the obstacles to returning/communicating research results back to communities faster? Why does it take so long? (Is it possible to return results sooner than they have currently been communicated? If not, why not? What can be done about it?)

"It does take a substantial amount of time to actually analyze the samples and data that are collected...there are a number of logistical steps along the way, from the collection and storage and organization of samples in the HTO office, then the HTO manager or someone in the community has to take those samples for shipment to a southern laboratory where they're inventoried, they're stored, they may need to be sub-sampled and then distributed to various other institutions for analysis and that analysis can take some time."

"[S]ome researchers don't necessarily have all of the answers to the questions that might come up. And so it's important particularly when there are messages related to health that the information is coming from the right source."

"[S]ome things like parasite identification can happen fairly quickly but for other things like chemical analysis there's a very detailed analytical process that takes place, that can take upwards of a year before results are available to the scientists let alone ready for communication and in order to communicate those results responsibly... and if they're relevant to human health then we have to make sure the human health authorities are involved."



2. Can you begin to include Inuit students and youth in research projects? How? Are there any challenges to doing this? Will you do it?
- “[W]e could certainly do more to include Inuit youth and students...often we rely on the HTOs to identify local people to participate in the research, we can ask those HTOs to prioritize youth and students as research assistants. When it comes to having more youth and students participate there is the trade off between wanting experienced people and wanting to provide training for young people.”
- “[A]bsolutely yes students can be involved in projects and there is a great willingness among the researchers to involve students.”
- “There is also the challenge of identifying them to researchers so a southern based researcher may need some support in identifying those students and I think through the college and [inaudible] we can help overcome that. Then there is the question of funding, specific money has to be set aside to support these students.”
3. Is it possible to have more face to face meetings to discuss research results? What are the specific obstacles and steps that would be required to make this possible?
- “[T]here are constraints there in terms of money and time.”
- “[W]e could have] more northerners come down to the south to visit...we can invite other researchers from neighbouring institutions to come together to meet with people from the communities.”
4. Based on your knowledge and research, what are the main food safety concerns related to consuming ringed seal in Nunavut? Who has this information and should be communicating it with communities? (If it is not the researchers, why not?)
- N/A
- “[T]he only concrete advisory on country food that’s been issued in Nunavut was related to the ringed seal liver. That’s been issued by the Government of Nunavut, Department of Health and Social Services and that is really the only department with the authority to issue health advisories.”
- “[W]e can monitor the diseases we know about but we need also a system of surveillance to look for diseases we don’t yet know about or the ones that perhaps haven’t been transmitted to the Arctic yet.”
- “[T]here is a] need perhaps for there to be a wildlife veterinarian in Nunavut to serve Nunavut’s needs instead of having to use other regions.”
- “And finally on the contaminants side, a need to refine our analysis of mercury to focus on the type of mercury that is actually the toxic part, called methylmercury.”

Table 6: Selection of quotations from the Government/Management Group’s report from Breakout Session 1.

Session Questions

Government/Management Group

<p>1. How would you like to see communications on ringed seal research get better? What aspects of communication do you want to see improved? (How it is communicated? When/how often? Who is communicating it?)</p>	<p>“[H]aving updates throughout the research projects so it’s not just at the end of the project but also throughout, but if that isn’t a possibility some communities have community news and announcement Facebook pages and perhaps even providing a link where people can get more information. I think we agreed that any one of those is not enough, it has to be multiple things that are done to try and reach as many people in a community as possible.”</p> <p>“[A]nother thing that could be done is hiring a community member too to be research liaisons and that person could also help to disseminate information within the community throughout the project.”</p>
<p>2. What do you want a research centre in Nunavut for? What kind of research would it do or focus on? Who would do this research? Where would it be located? (There is the High Arctic Research Center being developed in Cambridge Bay, will it address some of these issues for you? If not, why?)</p>	<p>“[T]he Cambridge Bay Centre could address some of these needs, I think maybe just looking into what their facility can do. Meat testing is something that I think is a concern for Nunavummiut so stuff to do with contaminants and parasites.”</p> <p>“[A]nything that’s created when it comes to the research centre should have a focus on things that are of relevance to Nunavummiut.”</p>
<p>3. Can you begin to include Inuit students and youth in research projects? How? Are there any challenges to doing this? Will you do it?</p>	<p>“[T]here’s sometimes a problem that the same individuals within a community are hired over and over again...perhaps researchers can say when they go to an HTO they can say well our first preference would be an ETP graduate.”</p> <p>“[C]reate a website that could include a page that has looking to hire, where researchers can send us job postings that we can include, or a looking for work page [for students].”</p>



Breakout Session 2: What's Next for Ringed Seals in Nunavut?

The overall objective of the breakout sessions throughout the workshop was to identify priority areas of ringed seal knowledge and research. This session worked to determine which areas were most important to the groups, and identify a set of key steps to begin to address long-term priorities. This was done in two ways: first, participants were asked to reflect on the points that were raised throughout the workshop and identify ways that they could begin address these in their individual work; second, groups were asked to present the three actions that they thought were most important to take place immediately following the workshop as the first steps towards achieving the long-term goals. In this way, participants could begin to integrate actions into their individual work that would support the larger actions taking place in research and management more broadly.

Group and individual participant answers to question 1 are summarized in Appendix D. Group answers to question 2 have been collected and organized here into a list of main findings, in the form of next steps.

Session Questions

1. Did the information you heard change what you do or will do in the future? How?
2. What 3 actions would you like to see happen from this meeting and who should do them? (In your list, please try to identify at least 1 thing that you will do to make improvements in the issues raised at this workshop.)



PHOTO CREDIT: DAVID YURKOWSKI

Seal tagging team (left to right - David Yurkowski, Peter Amarualik and Rob Cook) in Resolute Bay, NU in 2013.

What's Next for Ringed Seals in Nunavut?

It is important to remember that findings from this workshop are a reflection of discussions that took place in a particular context, and are a representation of the ideas expressed by a particular group of people. As such, these findings are not intended to be prescriptive of solutions in other community or geographical contexts; rather, they are intended to offer insights into suggestions for action on concerns and ideas identified in the Nunavut context. The success of this workshop, including the process of organizing and planning it, and the structure of the sessions and discussions, could be considered as a model for organizing future workshops around similar topics. Therefore, the lessons learned from the workshop surround the process, perhaps as much as the substantive discussions that are reported here. A number of common and overlapping recommendations for action emerged from the group presentations. These were themed around reporting from the workshop, communication, research needs, and including more students in research.

The next steps for action from this workshop include the following:

Workshop Reporting:

1. Produce a written report to document the workshop: who was involved, what took place, what was discussed, and what the workshop will contribute to future ringed seal research.
2. Create a poster to communicate the workshop's purpose and findings that can be distributed to communities and put up in public spaces.

Communication of Research:

1. Establish and strengthen connections between researchers and HTOs to establish clear steps and methods to communicate research findings to communities more broadly.
2. Return research updates and results to communities more frequently, and communicate these results through multiple methods (posters, social media, video conferencing).

Research Needs:

1. Identify new communities that are interested in being involved in seal sampling research, and what the particular research needs are in those communities/regions.
2. Identify preliminary opportunities and steps to establish research facilities and capabilities in Nunavut.



The Role of Students:

1. Identify sources of funding to train more ETP students and graduates to work with research programs.
2. Create an online platform to connect students and researchers and have HTOs commit to liaising between researchers and students, as well as continue to identify partners to be involved in facilitating these connections.

This workshop represented an important opportunity to bring individuals together who are involved with ringed seals, in research and as part of their daily lives, to exchange knowledge and communicate about questions and priorities. Ringed seal research in the Canadian Arctic is a collaborative process that involves researchers and community members, so it is critical for the success of these projects that there is effective, appropriate, and ongoing communication between those involved.

This workshop was an important step in identifying research needs as well as what is needed to strengthen and maintain working relationships between community members, researchers, and managers. Perhaps the most important aspects to maintaining long-term working relationships that will ensure the continuity of ringed seal research are individuals to continue this work in the future. In this regard, the involvement of ETP students in this workshop was a key opportunity to identify individuals who will be in a unique position to continue this work in the future as both experienced community members and individuals trained in wildlife science.

It is hoped that the experiences and findings from this workshop can be a stepping stone for future actions, including additional workshops in other jurisdictions. The participants at this workshop made important connections, both with one another and in the context of identifying the steps needed to continue to create success in their work with ringed seals. One of the important factors that contributed to the success of this workshop was the focus on ideas and solutions at multiple scales – at the community level, at the institutional research and managerial levels, and at the individual level in building long-term understanding between community members, researchers, and managers.



2012 – annual lines in ringed seal claws



PHOTO CREDIT: STEVE FERGUSON

Jeff Higdon, Steve Ferguson, Johnassie Ippak with a ringed seal captured in a net, Belcher Islands, Nunavut.



Appendix A

Day 1:

Breakout Session 1: What Are the Priorities of Hunters/Scientists/Managers?

COMMUNITY GROUP 1:

Summary of Group Responses

1. What are your priorities for the workshop? What do you hope is achieved?
 - Need for a local research centre or laboratory
 - Seal is the main diet for Nunavummiut, so healthy seals is the main priority
 - Would like to see studies expanded to other communities, and to involve more hunters and students (“they are our future”)
 - Researchers sometimes come and do their research, and then don’t share results with the communities
 - Communities need to be better informed of research results
 - Communities need to be informed with information on the status of seals

2. What do you want or need to know about ringed seals from this workshop for your hunting? Who do you think has this information?
 - Would like to see additional studies on seals as prey for predators, such as wolves, foxes, polar bears
 - Researchers should consult with communities and include IQ in studies
 - Important for research results to be distributed widely, including internationally
 - Communities need to be consulted when regulations/legislations are made

3. What are your long-term priorities for hunting ringed seals?
 - Healthy populations to continue to hunt
 - Improved communication of research results
 - Monitoring
 - Industrial development, such as mining and shipping, will have an impact on marine mammals
 - Need studies to better understand the impacts of these on seals and other marine mammals
 - Inuit need to learn traditional skills and knowledge about seals
 - Don’t have any facilities in Nunavut to test meat for contaminants
 - Would be good for students to learn some of the techniques so they can be involved in the testing
 - ETP students glad to be involved to understand what’s happening in the research and in science around ringed seals
 - Will be going into the work force in the next two years, so will want to look for jobs in research
 - Can bring information on research activities back to communities

COMMUNITY GROUP 2:

Summary of Group Responses

1. What are your priorities for the workshop? What do you hope is achieved?
 - Would like a research centre in Nunavut so communities are more encouraged to send samples
 - Improve communication
 - Often hear that research results are not given back to communities, which makes it discouraging for people to be involved and take samples
 - Want to know if there are other countries and regions doing research on ringed seals, and if they have similar findings, especially on health and contaminants
2. What do you want or need to know about ringed seals from this workshop for your hunting? Who do you think has this information?
 - Would like more research on seal meat to find out if seals are contaminated
3. What are your long-term priorities for hunting ringed seals?
 - Education for students and youth so that future generations continue to have the knowledge that Elders have
 - Continue seal hunting, preparation of food and clothing
 - For researchers to do more work with other hunters to hear their knowledge, which will be important for the international community

RESEARCH GROUP 1:

Summary of Group Responses

1. What are your priorities for the workshop? What do you hope is achieved?
 - Develop a better understanding of how existing tools can be applied to research on ringed seals
 - Identify funding opportunities to expand community-based sampling
 - Improve communication: among communities, among researchers, and between researchers and communities
 - Better understanding of what communities want
 - Written product
 - Poster or PowerPoint presentation to communicate results of workshop to communities
2. What do you want or need to know about ringed seals from this workshop for your research? Who do you think has this information?
 - Research questions around long-term temporal trends
 - How have these changed in the past 30 years?



- Identify what communities want to know, what are their concerns and questions
 - How can research techniques be applied to provide information that is useful to communities?
- 3. What are your long-term priorities for researching ringed seals?
 - Identify funding opportunities to expand research and sample collection (especially in central and western Nunavut)
 - In the absence of funding, identify other incentives for involvement in research
 - Identify ways to establish long-term collection and archiving of samples to do retrospective studies as new tools emerge
 - Be able to share and integrate results with other circumpolar sampling efforts
 - Ensure large, healthy populations of ringed seals that can support long-term sustainable harvest

Flip Chart Notes

1. What are your priorities for the workshop? What do you hope is achieved?

- ◇ Priorities
 - effective use of tools
 - funding opportunities
 - communication
- ◇ Achievements
 - written product
 - poster/PowerPoint

2. What do you want or need to know about ringed seals from this workshop for your research? Who do you think has this information?

- ◇ Questions that communities have
- ◇ Long-term changes
 - e.g. migration, contaminants, disease

3. What are your long-term priorities for researching ringed seals?

- ◇ Expand to more communities
- ◇ Healthy, abundant, sustainable populations

RESEARCH GROUP 2:

Summary of Group Responses

1. What are your priorities for the workshop? What do you hope is achieved?
 - Hear about community needs and wants related to contaminant information
 - Identify ways to improve communication: researchers communicating findings to communities; helping communities find the right researchers to answer their questions
 - Want to know what the researchers at the workshop are doing, and find ways to better coordinate knowledge on contaminants within the research community

2. What do you want or need to know about ringed seals from this workshop for your research? Who do you think has this information?
 - Want to know key community questions about ringed seals
 - Understand Inuit views on research methods
 - What ways do community members find acceptable to collect information on ringed seals
 - Hear more information on seal behavior

3. What are your long-term priorities for researching ringed seals?
 - Develop a sustainable research network
 - Make connections among workshop participants (community members and researchers)
 - Develop a list of researchers involved with ringed seal work and create a “living document” that can be updated consistently, so that communities can find out who they can contact about specific questions
 - More community-based monitoring, more community members in research
 - Mentor students

Flip Chart Notes

1. **What are your priorities for the workshop? What do you hope is achieved?**
 - ◇ Community needs and wants for contaminant information
 - ◇ How to improve communication
 - ◇ Who can do what and for who?
 - ◇ Better communication/coordinating of knowledge within the research community

2. **What do you want or need to know about ringed seals from this workshop for your research? Who do you think has this information?**
 - ◇ Key community questions about ringed seals
 - ◇ Inuit views about research methods
 - ◇ Information on behavior (diet/movement)



3. What are your long-term priorities for researching ringed seals?

- ◇ Sustainable research network

GOVERNMENT/MANAGEMENT GROUP:

Summary of Group Responses

1. What are your priorities for the workshop? What do you hope is achieved?
 - Network with researchers, students, and community members
 - Students asked: what are we going to learn; why were we invited; why is it important to us to attend; what will we gain for our studies?
 - Create a common understanding of what is being done around ringed seals
 - Understand concerns between groups, clear misconceptions
 - For researchers to be able to communicate to community members, so they community members understand what research is being done
 - For community members to explain to researchers what they would like to have done in their communities
 - Create a better understanding of what each group has to offer each other
2. What do you want or need to know about ringed seals from this workshop? Who do you think has this information?
 - Want research to focus on what communities need
 - E.g. population numbers, how they vary from one community to another
 - For the purposes of management and showing international community the sustainability of the seal hunt
 - Does research affect the behavior of ringed seals?
 - Where is data stored?
3. What are your long-term priorities for ringed seals?
 - More testing of meat for contaminants, diseases
 - Understand what types of contaminants or diseases should be a concern to communities
 - Expand community-based sampling, involve more communities and people within communities
 - More research:
 - Competition between species: whales – ringed seals; harp seals – ringed seals; impacts of too many harp seals in an area
 - Population numbers and trends
 - Improve communication
 - How to have data returned to communities
 - Designing a way to transfer information from communities to researchers, so communities know who to contact and how

Flip Chart Notes

1. What are your priorities for the workshop? What do you hope is achieved?

- ◇ Networking between researchers, students and communities
 - what we are going to learn
 - why we were invited/why is this important to me
 - what will be gained for our studies
- ◇ Hope to gain an understanding of what is conveyed in the conference
- ◇ That all people involved in the workshop leave with a common understanding of the priorities for ringed seal research
 - we are all on the same page
- ◇ Understanding concerns that vary from one group to another
- ◇ Clearing misconceptions/explaining research procedures/methods in a clear manner
- ◇ Better understanding of what each group has to offer
 - between both communities and researchers

2. What do you want or need to know about ringed seals from this workshop? Who do you think has this information?

- ◇ Research to be focused on what communities would like or need
 - e.g. population and how it varies from one community to the next
 - this would help with management and argue the sustainability of the seal hunt
- ◇ Does research affect the behavior of ringed seals?

3. What are your long-term priorities for ringed seals?

- ◇ Testing of meat
- ◇ Expanding community-based sampling
- ◇ Competition with whales, harp seals
 - is there interbreeding between harp seals and ringed seals?
 - Impacts of too many harp seals
- ◇ Population numbers and trends
- ◇ Where is collected data stored?
 - how will it be conveyed/communicated with communities?
- ◇ Coming up with a way to find the right person/group to contact when a community has a concern
- ◇ Specifying which contaminants/diseases
- ◇ Also creating a means of getting sick of diseased animals to researchers



Appendix B

Day 1:

Breakout Session 2: How Can We Communicate More Effectively on Ringed Seals?

COMMUNITY GROUP 1:

Summary of Group Responses

1. How do you get knowledge about ringed seals? Where does your knowledge or information come from?
 - Parents
 - Personal experience
 - Harvesting
 - Knowledge passed on from generation to generation
2. How do you want to hear about research results (what type of medium, from where, from whom)?
 - Communities need to know about contaminants, whether these are increasing, what the causes are, and especially if they are a concern for women of child bearing age
 - HTOs should receive research results to pass on to communities (email an effective method)
 - Sometimes research takes too long, but plain language updates should be sent to HTOs, especially if findings may be alarming
 - There should be a research centre in the regions that can pass on information
 - Researchers can make posters to send to communities

COMMUNITY GROUP 2:

Summary of Group Responses

1. How do you get knowledge about ringed seals? Where does your knowledge or information come from?
 - Parents
 - Ancestors
 - HTO
 - Knowledge necessary to survive
2. How do you want to hear about research results (what type of medium, from where, from whom)?
 - Radio
 - Internet
 - Consultations from researchers
 - Researchers should provide updates on research to both the HTOs and the public directly
 - More detailed inclusion of Inuit knowledge in research

RESEARCH GROUP 1:

Summary of Group Responses

1. What challenges do you currently face in communicating about ringed seals in Nunavut?
 - Limitations within own institutions
 - Money and time to return to communities not always available
 - Language and translation
 - Researchers need more training for communicating with the general public
 - Don't know the best methods to communicate research results or research activities
 - Phone, email, posters, brochures, websites, etc.
 - Turnover of personnel, in both the community/HTO and in research institutions

2. How could these challenges be overcome? Do you know of any solutions?
 - Need to communicate to institutions that visiting communities is important to communicate results
 - Find funding specifically for communication
 - Improve training among researchers and within communities to facilitate communication and understanding of results
 - Have a local liaison in each community (HTO manager, conservation officer, etc.) to work with researchers to help communicate results
 - Also bring community members south to visit research facilities, observe research process, meet students and researchers

Flip Chart Notes

1. **What challenges do you currently face in communicating about ringed seals in Nunavut?**
 - ◇ Capacity
 - ◇ Language
 - ◇ Internal restrictions
 - ◇ Expertise
 - ◇ Methods
 - what's best?
 - communicating results
 - communicating research
 - ◇ \$\$



2. How could these challenges be overcome? Do you know of any solutions?

- ◇ \$\$
- ◇ Training
 - communication
 - knowledge mobilization
- ◇ Local rep/liaison (conservation office)
- ◇ Exchange visits

RESEARCH GROUP 2:

Summary of Group Responses

1. What challenges do you currently face in communicating about ringed seals in Nunavut?
 - Don't know what happens with information once in community
 - Need to ensure information is understood as intended
 - Language and translation
 - Difficult to get information from communities
 - Geographic distance from researchers to communities
 - Difficult to ensure results are being communicated in a responsible way
 - Sometimes researchers have data, but may not know the answer, or only know part of the answer, communities need
 - Important to ensure that information is coming from the right source (may not always be researchers)
2. How could these challenges be overcome? Do you know of any solutions?
 - Hold more in person meetings
 - ETP students can be a bridge between researchers and communities
 - Create small fact sheets that explain key messages to leave in communities

Flip Chart Notes

1. What challenges do you currently face in communicating about ringed seals in Nunavut?
 - ◇ Disseminating the information within the community
 - ◇ Difficulty to convey/give the right message
 - ◇ Challenge to get information from community to researchers
 - ◇ No easy answer or don't have an answer, or part of an answer
 - ◇ Language, translation
 - ◇ Comprehension and retention of the information

2. How could these challenges be overcome? Do you know of any solutions?

- ◇ Working hand in hand
- ◇ Use trained students to gather and distribute the information
- ◇ Small fact sheets explaining the most important diseases

GOVERNMENT/MANAGEMENT GROUP:

Summary of Group Responses

1. How do you get knowledge about ringed seals? Where does your knowledge or information come from?
 - Scientific journals
 - Elders
 - Hunting: butchering, cleaning, working with skin
 - School (ETP, 2nd year)
 - In one community, Elders bring seals to schools to show students how to remove skin and blubber, how to prepare skin
2. How do you want to hear about research results (what type of medium, from where, from whom)?
 - Public meetings
 - Researchers should return to communities and meet with smaller groups to allow for more discussion and questions
 - Plain language that people can understand
 - Internet: create a website to pass on information; Facebook; community news websites

Flip Chart Notes

1. **How do you get knowledge about ringed seals? Where does your knowledge or information come from?**
 - ◇ Scientific journals
 - ◇ Elders
 - ◇ Hunting – butchering/cleaning/tending to skin
 - ◇ School – ETP, 2nd year
 - ◇ Elementary school – Elders bring in seals, show how to skin, take blubber off, how to stretch/dry on rack, clean/wash



2. How do you want to hear about research results (what type of medium, from where, from whom)?

- ◇ Public meetings
 - plain language
 - especially good for Elders and general public
 - oral discussion with presentation
- ◇ Websites
 - difficulty of some places having slow internet
 - Facebook – community news page
- ◇ Connect with HTO in order to organize communication – HTO as a liaison
- ◇ Smaller groups – knowing it won't be perfect but trying to be flexible and providing time for the conversation to evolve and understanding to occur
 - Time for questions, back and forth discussion



PHOTO CREDIT: STEVE FERGUSON

Johnassie Ippak, Lucassie Ippak, Steve Ferguson, Carie Hoover with a captured ringed seal, Belcher Islands, Nunavut.

Appendix C

Day 2:

Breakout Session 1: What do Hunters / Scientists Want to Know?

COMMUNITY GROUP 1:

Summary of Group Responses

1. How would you like to see communications on ringed seal research get better? What aspects of communication do you want to see improved? (How it is communicated? When/how often? Who is communicating it?)
 - More public meetings
 - Other ideas for communication include video conferencing, internet communications, radio, newsletter for hunters
 - HTOs should be the main contact and should keep the community informed
 - Research communication should focus only on what is known, and avoid projections/assumptions
 - Communities want to ensure that animals don't suffer as part of research methods
2. What do you want a research centre in Nunavut for? What kind of research would it do or focus on? Who would do this research? Where would it be located? (There is the High Arctic Research Center being developed in Cambridge Bay, will it address some of these issues for you? If not, why?)
 - Waiting for research results can take too long, so having a centre in Nunavut would speed this up
 - The length of time it takes to send samples can cause the meat to go bad, and then it can't be consumed
 - Three centres in Nunavut: Cambridge Bay, Rankin Inlet, Iqaluit
3. What are your main food safety/health concerns with ringed seals that you need answers for?
 - Need to know if there are health concerns with seal meat
 - Inuit and researchers should inform public together

COMMUNITY GROUP 2:

Summary of Group Responses

1. How would you like to see communications on ringed seal research get better? What aspects of communication do you want to see improved? (How it is communicated? When/how often? Who is communicating it?)
 - Reports should have a deadline agreed upon in advance to ensure information is forwarded quickly to communities



- Sometimes community members are worried about results related to health, so short-term updates of results would be good
 - HTOs should inform both hunters and higher authorities (Wildlife and Marine Boards)
2. What do you want a research centre in Nunavut for? What kind of research would it do or focus on? Who would do this research? Where would it be located? (There is the High Arctic Research Center being developed in Cambridge Bay, will it address some of these issues for you? If not, why?)
- Waiting for results takes too long, so a local research centre would speed up this process
 - Three centres in Nunavut: Cambridge Bay, Rankin Inlet, Iqaluit
 - These centres should work closely with researchers
 - Centres would focus on wildlife health and meat safety
 - Skin samples should also be sent for analysis if there are concerns
 - Women would be well positioned to help with this, as they work with skins
3. What are your main food safety/health concerns with ringed seals that you need answers for?
- If results are alarming, communication needs to specify which region the results came from, and who should and should not be concerned
 - More studies on seal liver
 - Concerns about safety of liver for pregnant women
 - Liver is highest in iron content, so need more information about this

RESEARCH GROUP 1:

Summary of Group Responses

1. What are the obstacles to returning/communicating research results back to communities faster? Why does it take so long? (Is it possible to return results sooner than they have currently been communicated? If not, why not? What can be done about it?)
- Takes a long time from collection of samples to analyze and generate data
 - Many steps along the way: collection, storage, shipping, sub-sampling, analysis, integration of different data, interpretation
 - Ways to increase speed of reporting
 - Using email or other online forums, online map showing tagging data, results of feeding analyses
 - Researchers don't want to share incomplete or incorrect data
 - Sometimes studies need to be integrated or combined before results have significance

2. Can you begin to include Inuit students and youth in research projects? How? Are there any challenges to doing this? Will you do it?
 - Yes
 - Already include hunters and other community members, can make an effort to specifically include students
 - Researchers rely on HTOs to identify local people – can request that students are prioritized as research assistants
 - Challenges
 - There are already community members with experience working on research projects, so trade off between hiring experienced people and wanting to provide training for youth

3. Is it possible to have more face to face meetings to discuss research results? What are the specific obstacles and steps that would be required to make this possible?
 - Money and time are substantial constraints
 - Solutions
 - Raise more funding
 - Could bring northern community members south – could allow multiple researchers to meet with community members

RESEARCH GROUP 2:

Summary of Group Responses

1. What are the obstacles to returning/communicating research results back to communities faster? Why does it take so long? (Is it possible to return results sooner than they have currently been communicated? If not, why not? What can be done about it?)
 - Speed to return results depends on the type of analysis being done
 - If research is related to human health, results also have to involve health authorities before communication can be done
 - Will try to communicate results faster whenever possible
 - Electronic methods are fastest
 - Technologies like iPads may be able to help

2. Can you begin to include Inuit students and youth in research projects? How? Are there any challenges to doing this? Will you do it?
 - Yes
 - Challenges
 - Competition for students
 - Researchers need assistance in identifying students interested in working
 - Funding to specifically hire and train students and pay for expenses needs to be planned from beginning of projects (this is happening more frequently)



3. Is it possible to have more face to face meetings to discuss research results? What are the specific obstacles and steps that would be required to make this possible?
 - Yes, it is possible
 - Cost of travel is a barrier
 - Can be difficult to get approval for travel in own institutions
 - Solutions
 - Video conferencing
 - Other online methods

4. Based on your knowledge and research, what are the main food safety concerns related to consuming ringed seal in Nunavut? Who has this information and should be communicating it with communities? (If it is not the researchers, why not?)
 - Only advisory in Nunavut is related to ringed seal liver
 - Government of Nunavut, Department of Health and Social Services has authority and responsibility to issue health advisories and communicate these
 - Important to continue monitoring for other diseases (known and detecting new diseases)
 - Need to continue to develop diagnostic tests
 - Perhaps there should be a wildlife veterinarian in Nunavut
 - Need to refine mercury analysis to focus on the toxic methylmercury
 - Need for a more holistic assessment of ringed seal food safety that also accounts for the benefits of consuming seal
 - Should have a harvest study to assess economic value of seal harvesting
 - Consider these issues in context of food security
 - Need public officials to be educated and trained in the area of diseases and contaminants

Flip Chart Notes

1. **What are the obstacles to returning/communicating research results back to communities faster? Why does it take so long? (Is it possible to return results sooner than they have currently been communicated? If not, why not? What can be done about it?)**
 - ◇ It depends
 - ◇ Lab capacity/priority setting
 - very competitive
 - urgent
 - not practical
 - week to month, more for health studies (2 years)
 - normal – 1 year
 - ◇ Need to allow for interpretation
 - what do results mean?

2. Can you begin to include Inuit students and youth in research projects? How? Are there any challenges to doing this? Will you do it?

- ◇ Yes
- ◇ Field work, lab training
- ◇ Competition for students
- ◇ Identify students
- ◇ \$\$
- ◇ Planning
- ◇ Role of NAC

3. Is it possible to have more face to face meetings to discuss research results? What are the specific obstacles and steps that would be required to make this possible?

- ◇ Yes
- ◇ \$\$
- ◇ Federal bureaucracy/travel approval
- ◇ Video conferencing (future)

4. Based on your knowledge and research, what are the main food safety concerns related to consuming ringed seal in Nunavut? Who has this information and should be communicating it with communities? (If it is not the researchers, why not?)

- ◇ Nunavut advisory for ringed seal liver for women of child bearing age
 - GN HSS
- ◇ Monitoring for diseases
- ◇ Surveillance for new diseases (things we don't know about)
- ◇ Diagnostic test adaptation/development
- ◇ Need for wildlife vet in Nunavut
- ◇ Need more data on methylmercury in different tissues to improve risk assessment information
- ◇ Need for more holistic assessment of seal food safety
 - benefits – social cultural, nutrition, economic (harvest study), spiritual, food security
- ◇ Education of public health officials
 - disease
 - contaminants
- ◇ Data on other seal species (harp, bearded, harbor, etc.)



GOVERNMENT/MANAGEMENT GROUP:

Summary of Group Responses

1. How would you like to see communications on ringed seal research get better? What aspects of communication do you want to see improved? (How it is communicated? When/how often? Who is communicating it?)
 - Sometimes research results don't get passed on from HTO
 - Community meetings
 - Annual meetings for several researchers to visit at the same time and present updates
 - Posters, community TV stations, community news and announcements, Facebook, website links
 - Researchers could create a short video that could be played on community TV stations to update communities on research progress
 - Government of Nunavut Fisheries and Sealing Division could create a page on their website to be a database of research projects and contact information for researchers and community organizations
 - One method not enough, has to be communicated through multiple sources
 - Community research liaisons

2. What do you want a research centre in Nunavut for? What kind of research would it do or focus on? Who would do this research? Where would it be located? (There is the High Arctic Research Center being developed in Cambridge Bay, will it address some of these issues for you? If not, why?)
 - Cambridge Bay facility could address some needs, but need to know more about what it can do
 - Testing meat for contaminants and parasites would be a priority
 - Could see if lab at NTI could begin to house equipment
 - Maybe begin with a mercury tester
 - Research centre should focus on topics relevant to Nunavummiut

2. Can you begin to include Inuit students and youth in research projects? How? Are there any challenges to doing this? Will you do it?
 - Research projects should be designed from the beginning to create space for students
 - Funding exists to hire and train students in research
 - Advertise research jobs for students locally (such as on GN website)
 - Researchers can request with HTOs that a student be hired to help with research

Flip Chart Notes

1. How would you like to see communications on ringed seal research get better? What aspects of communication do you want to see improved? (How it is communicated? When/how often? Who is communicating it?)

- ◇ Currently: researchers communicate results to HTO but often it is not communicated further from there
- ◇ Community meetings
 - single meeting per year with multiple researchers attending to share results
- ◇ Posters
 - these are usually posted around, some people read these
 - similar to the big scientific posters describing research
- ◇ Community TV stations
 - short video clip to share results
- ◇ News and announcements Facebook page
 - link to research
- ◇ To improve communication
 - create a webpage for communities that lists the names and contact info of ringed seal researchers who do work in Nunavut – maybe with profiles that include research interests
 - for researchers, include page with community contact info – HTO, Inuit association, economic development office, radio station, hamlet office, college
 - hire a community members or two to be a “research liaison”

2. What do you want a research centre in Nunavut for? What kind of research would it do or focus on? Who would do this research? Where would it be located? (There is the High Arctic Research Center being developed in Cambridge Bay, will it address some of these issues for you? If not, why?)

- ◇ Cambridge Bay centre could address some of these needs
- ◇ Meat testing for contaminants and parasites
- ◇ Nunavut Research Institute (NTI) lab – if mercury tester is available then a technician can be brought in to test samples being brought from communities
- ◇ Research centre should focus on research questions of relevance to Nunavummiut

2. Can you begin to include Inuit students and youth in research projects? How? Are there any challenges to doing this? Will you do it?

- ◇ More thought into including the space for a student within the project (funding exists for training and hiring students)
- ◇ Locally advertising jobs
- ◇ Website to include “looking to hire” and “looking for work” on GN sealing website
- ◇ Go to the schools
- ◇ Problem sometimes is that the same individuals are hired time and again, this can exclude students
- ◇ Perhaps researchers can include requirement that their first choice is an ETP grad



Appendix D

Day 2:

Breakout Session 2: What's Next for Ringed Seals in Nunavut?

COMMUNITY GROUP 1:

Summary of Group Responses

1. Did the information you heard change what you do or will do in the future? How?
 - I will be more concerned about contaminants, and would like to learn more about how these affect wildlife and food
 - I will lobby policies at NTI and the government to have a research centre established

2. What 3 actions would you like to see happen from this meeting and who should do them? (In your list, please try to identify at least 1 thing that you will do to make improvements in the issues raised at this workshop.)
 - Research
 - Expand research to other communities
 - Develop plans for research centres in Nunavut to work on contaminants
 - Communication
 - Develop more effective methods for communication, such as posters and media, and better direction for researchers so they know where to submit research information
 - Contact QIA liaison officers to help with communication

COMMUNITY GROUP 2:

Summary of Group Responses

2. What 3 actions would you like to see happen from this meeting and who should do them? (In your list, please try to identify at least 1 thing that you will do to make improvements in the issues raised at this workshop.)
 - Research
 - Involve Inuit more in all stages of research, so that knowledge of hunting and Traditional Knowledge are included

- Communication
 - Inform HTOs of research results; HTOs inform Regional Wildlife Boards
 - Establish deadlines for returning results to communities
 - Create a group that can consult with researchers and direct communications in the communities
 - More meetings involving researchers, Elders, and students
- Community
 - Teach youth traditional skills around seal hunting

RESEARCH GROUP 1:

Summary of Group Responses

1. Did the information you heard change what you do or will do in the future? How?
 - Work with communities to hire northern college students for field work
 - Provide more research information and results to the HTAs more than once a year. I will also include a paragraph or several statements regarding research plans and results, which can be read over the local radio to the community.
 - Look for ways to communicate results/progress faster, not just final results, and try to find a way to collect results to a single location.
 - Spend more time communicating the importance of ringed seals to people in the south.
 - Plan to spend more time in communities.
 - Report results to communities and partners more quickly.
 - Provide more information back to the HTOs and communities in a more timely manner, even if it is just 'basic' information.
 - Do a better job of communicating with communities, regularly reporting results back to communities in a timely manner.
2. What 3 actions would you like to see happen from this meeting and who should do them? (In your list, please try to identify at least 1 thing that you will do to make improvements in the issues raised at this workshop.)
 - Reporting
 - Workshop summary report of workshop goals and achievements (Paul McCarney, Greg Thiemann, Chris Furgal)
 - Poster (ETP students)
 - Annual summary of research topics, results, and contact information
 - Research
 - Expand sampling to additional communities (Steve Ferguson)



RESEARCH GROUP 2:

Summary of Group Responses

1. Did the information you heard change what you do or will do in the future? How?
 - Share the information I have on wildlife diseases with Nunavut
 - I am interested in gathering studies on seals in the Kialliq region because I am from Rankin Inlet. I have not heard anything about my region from this workshop.
 - I commit to working with scientists, Elders, hunters, and students to better use NRI's laboratories to provide contaminant analysis and training for Nunavummiut.
 - Promote support for community-based monitoring and engagement of students in the Northern Contaminants Program.
 - Communicate contaminants data to communities quickly, including communities that NCP has not had samples from for the past 5 years or more.
 - Develop a plain language guide about contaminants.
 - Assist with communicating Derek Muir's contaminant work on ringed seals to Nunavut communities.
 - Continue to support marine mammal health surveillance in Nunavut.

2. What 3 actions would you like to see happen from this meeting and who should do them? (In your list, please try to identify at least 1 thing that you will do to make improvements in the issues raised at this workshop.)
 - Reporting
 - Written report
 - Effective communication of the report to communities and to the people who can help achieve the goals identified at this workshop
 - Communicated to the broader public for wider awareness
 - Research/Communication
 - Apply for funding to expand ringed seal monitoring networks in communities
 - Create a group to follow up on the progress of the goals identified at this workshop
 - Students
 - Create job postings to hire students
 - Community involvement
 - Invite hunters to community and regional meetings to share their knowledge

Flip Chart Notes

2. What 3 actions would you like to see happen from this meeting and who should do them? (In your list, please try to identify at least 1 thing that you will do to make improvements in the issues raised at this workshop.)
 - ◇ Communication of report
 - high levels of government – briefing up
 - ◇ Press release (from York University)
 - ◇ New proposals to follow up on workshop recommendations (ringed seal network)
 - ◇ Commitment to follow up on workshop (+1 or 2 year workshop)
 - ◇ Researchers that are invited to, or know about, the next territorial conference should gather job postings for Inuit in their department
 - ◇ Invite experienced hunters and ask about the animals' behavior throughout their community and/or region



2012 – weighing a harvested ringed seal (in photo L to R: Stephen Petersen, Sebastian Luque, Brent Young)



GOVERNMENT/MANAGEMENT GROUP:

Summary of Group Responses

1. Did the information you heard change what you do or will do in the future? How?
 - Be more conscientious when talking to researchers to help facilitate ways for them to communicate to or get involved with interested community members. Also, help community members find the right people to help accomplish the research they want to see in their communities.
 - Be more aware of the need for researchers to communicate their findings back to communities.
 - Take steps to improve the Fisheries and Sealing Division's role in acting as the link between researchers, communities, and ETP students.
 - Get more answers and try harder to get the information to do my part to pass it around.
 - This doesn't change my mind about ringed seal research; other species should be discussed too.
 - Ask my community how we can fix problems that occur with seals, and bring this to the attention of those who can help with solutions.

2. What 3 actions would you like to see happen from this meeting and who should do them? (In your list, please try to identify at least 1 thing that you will do to make improvements in the issues raised at this workshop.)
 - Students
 - Revamp the Fisheries and Sealing website to accommodate space that will provide contact information for researchers, communities, and students seeking jobs
 - Continue to invite students to workshops
 - Research
 - Look into NTI lab space and capabilities, and how it can be expanded
 - Focus research on safety of seal meat for human consumption, and communicate to Nunavummiut
 - Ensure there is a way to get sick/contaminated animals to a research centre for testing
 - Reporting
 - Produce report from workshop to document discussions
 - Communication
 - Use the GN's Sealing Nunavut website to link researchers, students looking for work, and communities looking for information
 - Establish community representatives to ensure information gets to community members
 - Ensure HTOs inform communities of research results



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