



# 2018 Light Goose Management Workshop

Winnipeg, Canada

September 23-25, 2018

**Bringing together Inuit knowledge and  
science to manage light geese in the  
Kivalliq region, Nunavut**

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# Preface

This report represents the authors' best efforts to accurately capture and translate all of the information that was shared during the workshop. This report has been validated by available workshop participants and the workshop organizing team. The authors received informed consent from all workshop participants to share contributions and images (Appendix A). Each participant was given the option of remaining anonymous or being recognized by name and/or in photographs in this report.

## Acknowledgements

The authors wish to acknowledge the financial support of Environment and Climate Change Canada, Polar Knowledge Canada, the Nunavut Wildlife Management Board, and the Nunavut General Monitoring Program. We wish to acknowledge and thank the workshop participants (Appendix B); facilitator Joanasie Akumalik; the Kivalliq Wildlife Board; and Environment and Climate Change Canada for supporting this workshop and making this event possible and successful. We wish to acknowledge the organizations whose representatives participated in this workshop, including (in alphabetical order): Aiviit Hunters and Trappers Organization, Arviat Hunters and Trappers Organization, Environment and Climate Change Canada, Inuvialuit Game Council, Innuviit Area Co-Management Committee, Kivalliq Inuit Association, Nivvialik Area Co-Management Committee, Nunavut Tunngavik Incorporated, Nunavut Wildlife Management Board, POLAR Knowledge Canada, and the Wildlife Management Advisory Council (NWT). We wish to thank Suzie Napayok for her translation services.



Photo credit: Andrew Dierks



# Executive Summary

Over the past 50 years, light goose (Snow and Ross' Goose; *kangut* and *kangunnaaq* in Inuktitut) populations nesting in Inuit Nunangat have shown a dramatic increase according to scientific studies. In Nunavut, light geese are harvested by Inuit. Inuit have lived and hunted in the areas of light goose colonies for generations. In recent years, Inuit, scientists, and wildlife managers have all expressed concerns about high abundance of light geese in the Kivalliq region, Nunavut.

The 2018 Light Goose Management Workshop took place on September 23-25, 2018, in Winnipeg, Manitoba. This workshop brought together 36 participants to discuss light goose management in the Kivalliq region of Nunavut. Participants included representatives from co-management partner organizations and communities: Inuit Elders and community members from Arviat and Coral Harbour, Migratory Bird Sanctuary Area Co-Management Committee (ACMC) members, Hunters and Trappers Organization (HTO) members, representatives from Inuit organizations, light goose and shorebird biologists, wildlife managers, and territorial and federal government representatives.

Workshop participants were encouraged to share their knowledge about light goose abundance and management, and collaborate to discuss possible options for managing light geese in the Kivalliq region. The management options that were discussed were identified through an ongoing research project (which this workshop was a part of) entitled *Inuit knowledge about the impact of light geese on the land, wildlife, and people, and potential management strategies for light geese in the Kivalliq region, Nunavut* ([www.kangut.ca](http://www.kangut.ca)). Through this project, Inuit knowledge about light goose populations and their impacts on the land, water, other animals (including other bird species), and people around Arviat and Coral Harbour were documented. Potential strategies for light goose management that address Inuit concerns and perspectives were also identified by residents from Coral Harbour and Arviat. This workshop was the final step of this research project.

**As part of the workshop, participants identified a common management objective:**

Our shared management objective is to have goose populations at a level that allows us to have healthy communities and a healthy land, where all species thrive and survive. We agree that the size of the light goose population must be decreased to keep the land and the animals strong for future generations. We understand actions shall be undertaken in Nunavut and in other jurisdictions to meet our shared objective.

**Participants considered four key management options:**

(1) Increase non-commercial harvest; (2) implement commercial harvest; (3) expand recreational hunting and tourism; and (4) conduct community-based research and monitoring. For each option, participants discussed in detail: resources required; implementation timeframe; lead, support, and funding organizations; and potential benefits, challenges, and risks. For each management option, participants compared: ease of implementation; timeframe; resource requirements; and contribution to their shared management objective. They also identified eleven guiding principles for management actions. Workshop participants recognized their responsibility to share knowledge they gained at the workshop with their community members and colleagues so that others can be informed and participate in decision-making processes relating to light goose management.

The information provided in this report summarizes the discussions and ideas put forward during the workshop and will form a starting point for further discussions and next steps in the management of light geese at local, regional, territorial and national levels.

<sup>1</sup> Among workshop participants, individual perspectives varied about the amount by which light goose populations should be decreased. Any future actions which may affect the size of light goose populations must not be done without in-depth consultation with potentially impacted communities, Hunters and Trappers Organizations, wildlife management boards, and Inuit organizations, as light geese are relied upon as an important source of food in Nunavut.





# Introduction

The 2018 Light Goose Management Workshop took place on September 23-25, 2018, in Winnipeg, Manitoba. This workshop was hosted by Environment and Climate Change Canada. It was held in response to concerns about the high numbers of light geese (Snow and Ross' Goose; *kangut* and *kangunnaaq* in Inuktitut) in the Kivalliq region of Nunavut. Representatives from Inuit communities and organizations, light goose and shorebird biologists, wildlife managers, and representatives from the Governments of Nunavut and Canada made great efforts to come together for this important occasion (see Appendix B for a full list of participants).

Their commitment was evident and demonstrated by the enthusiasm of the 36 workshop participants who came from across Canada to discuss light goose management. Light geese are important to Inuit culture, way of life, and food security. Managing the current abundance of light geese is of interest and concern to Inuit communities and organizations, scientific researchers, wildlife managers and government agencies alike.

## The primary objectives of the 2018 Light Goose Management Workshop were:

- 1 To affirm Inuit rights to the use of light geese and eggs for domestic (non-commercial) purposes, the protection and promotion of Inuit culture and traditional practices, and the co-management of light geese in order to have light goose populations at a level that allows for healthy communities and healthy land, where all species thrive and survive.
- 2 To share knowledge (Inuit, scientific, management, political, legal) about past and current light goose management strategies employed in Inuit Nunangat, and develop common management objectives for light goose populations in the Kivalliq region of Nunavut, and beyond.
- 3 To investigate options for collaborative management of light goose populations at the local, regional, territorial, and national level (including Inuit-led management actions, and collaborative research and monitoring), and fully describe the resources required to implement these options.

## Workshop outcomes include:

- A common management objective for light geese;
- A strengthened national light goose co-management network;
- Commitments made by participants to share what they learned during the workshop with their communities, colleagues, and other organizations as well as to take actions to implement some of the management options developed during the workshop;
- A workshop report; and
- Identification of the need to have more opportunities for knowledge exchange and discussion among co-management partners to ensure that light goose management objectives continue to be pursued.

This report captures key elements of this three-day workshop (see Appendix C for the workshop agenda).

## Rationale – Why this workshop?

Over the past 50 years, scientific studies have shown a dramatic increase in light goose populations nesting in Inuit Nunangat (Inuit homelands also called Arctic Canada). Inuit have lived and hunted in the areas of light goose colonies for generations. In Nunavut, light geese are harvested by Inuit for their meat and eggs, and are an important country food. Light goose harvesting contributes to Inuit food security, culture, and way of life. Inuit have expressed concerns that the abundance of light geese may result in a sudden drop in the light goose population size (due to overcrowding, lack of food/space or disease), which could impact food security and traditional harvesting practices. However, Inuit have also expressed that the current abundance of light geese creates harvesting opportunities.

Scientific researchers have also expressed concerns about habitat alteration linked to increasing light goose abundance, which may in turn contribute to population declines in other birds sharing the same habitat. The dramatic increase in the size of the light goose population observed in Inuit Nunangat in recent years is generally viewed by both Inuit and scientific researchers as a concern but not as a crisis.

To date, Inuit perspectives about light goose population status and trends have not been incorporated into management decisions or actions aiming to regulate light goose abundance in Canada. This workshop was thus needed by co-management partners. In the past, legislation in Canada restricted Inuit harvesting rights related to migratory birds, including light geese. Past legislation was developed without Inuit input, and early wildlife management regimes did not consider the knowledge Inuit had about light goose populations. Today, within the Nunavut Settlement Area, Inuit are assured of their right to harvest light geese and eggs for domestic (non-commercial) use, including inside federally regulated Migratory Bird Sanctuaries (MBS) and National Wildlife Areas (NWA). Moreover, the inclusion of Indigenous knowledge in resource management is now a legal and policy requirement in Nunavut and other settled land claim areas. Inuit knowledge is an important part of the wildlife co-management system in Nunavut. Inuit knowledge and scientific knowledge are now recognized as two important sources of information that can contribute to wildlife management and evidence-based decision-making.

In this context, this workshop created an opportunity for scientists, wildlife managers and Inuit knowledge holders to come together to have in-depth discussions and knowledge exchange about management options for light goose populations. Inuit knowledge and scientific research can complement each other. They each contribute unique dimensions that may be lost when using Inuit knowledge or scientific knowledge alone. Combining scientific and Inuit knowledge can lead to novel and more effective management actions. This workshop was therefore envisioned and conducted in a spirit of collaboration and respect among light geese co-management partners.

## Workshop objectives

The objectives of this workshop were:

- 1** To discuss existing knowledge about light geese from both Inuit and scientific perspectives;
- 2** To explore how Inuit knowledge and scientific knowledge can be brought together to better understand and manage light goose populations;
- 3** To identify common management objectives for light geese; and
- 4** To discuss and compare options for light goose management, particularly in the Kivalliq region of Nunavut.

## Workshop participants

The workshop was hosted by Environment and Climate Change Canada and facilitated by Mr. Joanase Akumalik, bringing together co-management partners from across Canada. The 36 workshop participants included invited Elders from Coral Harbour and Arviat, Nunavut, and representatives from the following organizations and communities (in alphabetical order):

- Aiviit Hunters and Trappers Organization (Coral Harbour, NU);
- Arviat Hunters and Trappers Organization;
- Arviat community researchers;
- Coral Harbour community researchers;
- Environment and Climate Change Canada (Science and Technology Branch and Canadian Wildlife Service);
- Inuvialuit Game Council (NWT);
- Irniurviit Area Co-Management Committee (Coral Harbour, NU);
- Kivalliq Inuit Association;
- Nivvialik Area Co-Management Committee (Arviat, NU);
- Nunavut Tunngavik Incorporated;
- Nunavut Wildlife Management Board;
- POLAR Knowledge Canada;
- Wildlife Management Advisory Council (NWT); and
- Arctic Goose Joint Venture.

For a full list of workshop participants and organizations, please see Appendix B.



Figure 1. 2018 Light Goose Management Workshop participants



## Workshop format – What we did

The workshop included:

- Formal presentations by all participating organizations;
- Storytelling by Elders and Inuit community members;
- Small-group and plenary discussions about light goose management options; and
- Canoeing, walking, a bird-banding demonstration, and an Inuit game at the Oak Hammock Marsh Interpretive Centre.

See Appendix C for the full workshop agenda. The next sections of this report summarize the content of workshop activities.



Figure 2. Plenary discussion



Figure 3. Canoeing, a bird banding demonstration, and an Inuit game at the Oak Hammock Marsh Interpretive Centre





# Presentations and stories by workshop participants

The first part of the workshop focused on knowledge sharing among all participants around three key themes:

- 1 Importance of light geese to Inuit;
- 2 Scientific research about light geese; and
- 3 History of light goose management (evolution of management through time and roles of co-management partners).

One and a half days were dedicated to presentations and storytelling sessions in which many workshop participants contributed. The table below offers an overview of the topics that were covered during these knowledge sharing sessions, as well as a list of contributing individuals and organizations.

TOPIC	PRESENTER	AFFILIATION
Acknowledgement of Indigenous Peoples and the place called Winnipeg	Natalie Carter	ECCC
Inuit knowledge about light goose project	Natalie Carter <sup>1</sup> , Aupaa Irkok <sup>2</sup> , Bobbie Saviakjuk <sup>3</sup> , Lenny Emiktaut <sup>3</sup>	<sup>1</sup> ECCC, <sup>2</sup> Arviat Community researcher, <sup>3</sup> Coral Harbour Community researcher
What this project means to our community – Perspectives from project partners	Noah Kadlak <sup>1</sup> , Moses Nakoolak <sup>2</sup> , David Aglukark Sr. <sup>3</sup> , Angelina Suluk <sup>4</sup>	<sup>1</sup> Chairperson Innuurviit Area Co-Management Committee (ACMC), <sup>2</sup> Chairperson Aiviit HTO, <sup>3</sup> Elder from Arviat and, <sup>4</sup> Chairperson Nivvialik ACMC, <sup>4</sup> Vice-Chairperson Arviat HTO
Inuit land claims and light goose co-management – Perspectives from Nunavut Tunngavik Inc.	Paul Inngaut	Nunavut Tunngavik Inc
Inuit land claims and light goose co-management – Perspectives from Nunavut Wildlife Management Board	Kyle Ritchie	Nunavut Wildlife Management Board
Inuit land claims and light goose co-management – Perspectives from Environment and Climate Change Canada	Myra Robertson	Environment and Climate Change Canada
Inuit and light geese	Thomas Ubluriak <sup>1</sup> , Mark Paniyuk <sup>2</sup> , David Aglukark Sr. <sup>3</sup> , Bobby Saviakjuk <sup>2</sup>	<sup>1</sup> Elder from Arviat and member Nivvialik ACMC, <sup>2</sup> Elder from Coral Harbour, <sup>3</sup> Elder from Arviat and Chairperson Nivvialik ACMC
Overview of status and trends of light geese and habitat research 1989-2018	Ray Alisauskas	ECCC
Light geese and shorebirds in the Arctic and doing bird science	Paul Smith	ECCC
History of light goose management in Canada	Ryan Zimmerling	ECCC

TOPIC	PRESENTER	AFFILIATION
Our shared management objective and guiding principles for action	Joanasie Akumalik <sup>1</sup> and Dominique Henri <sup>2</sup>	<sup>1</sup> Facilitator, <sup>2</sup> ECCC
Overview of the Nunavut Harvesters Support Program	Raymond Mercer	Nunavut Tunngavik Inc.
Light goose management options from Coral Harbour and Arviat	Dominique Henri <sup>1</sup> , Noah Kadlak <sup>2</sup> , Donald Akammaq <sup>3</sup>	<sup>1</sup> ECCC, <sup>2</sup> Chairperson Irmuvit Area Co-Management Committee (ACMC), <sup>3</sup> Boardmember Arviat HTO



Figure 4. Presentations and storytelling sessions

Stories shared by the four Inuit Elders who were present at the workshop were greatly appreciated by all participants. Similarly, the participation of three community researchers was highlighted by many participants who welcomed Inuit youth engagement in the workshop. Representative quotes from Elders and community researchers are included below.

Our land has been overpopulated with geese and we have some concerns about how to control them. We have always heard wildlife becomes sick when they are too abundant. I wonder if this can happen to the geese, too. It happened with caribou before.

**- Bobby Saviakjuk,**  
Elder from Coral Harbour

Ever since I was a child, I would go goose hunting away from the community. Back in the 1960s, there were no freezers, no ATVs. Back then, we went by boats and dog teams to get geese. Starting in the 1970s, geese have started to come a lot closer to the communities. From the 1980s and the 1990s, they came closer and made our travel easier [to hunt them]. Today, we can see a lot of geese closer to communities in big flocks. Back then geese were hard to catch but now we can hunt them close by.

**- Mark Paniyuk,**  
Elder from Coral Harbour

This project was very good for me as a young person. I learned about what my ancestors did. I learned that my Elders used to use [light goose] wings as brooms. Getting knowledge from scientists and Elders was good. There should be more of this.

**- Lenny Emiktaut,**  
Community researcher from  
Coral Harbour

With this project, I could go out on the land. I learned about different animals and where to go. Thank you for being part of this.

**- Aupaa Irkok,**  
Community researcher from Arviat

I am proud of our ancestors. Our ancestors wanted to see some changes [...] When negotiations started for Nunavut, Inuit started to have a voice. Today, we are here and we are talking about geese. Before Nunavut, we were very silent. The claim ignited this. We are now able to share our ideas about wildlife issues.

**- David Aglukark Sr.,**  
Elder and Nivvialik ACMC  
Chairperson from Arviat

When we began to research goose in the 1960s, I was a young man. From the 1960s up to today there are a lot of differences [...] The difference now is more vehicles, more people hunting geese [...] This topic of geese being abundant is discussed a lot in our community. In Arviat, geese have moved from their nesting grounds to other areas perhaps because there is not enough food for them. To my knowledge, the geese have affected the land and other small birds.

**- Thomas Ubluriak,**  
Elder and Nivvialik ACMC  
member from Arviat

My grandfather used to go to East Bay (Southampton Island) in spring when he was young. We went there for this project and I saw how things are today. We did interviews with Elders. It reminded me of what my grandfather used to say. I want to thank you for being part of this project.

**- Bobbie Saviakjuk,**  
Community researcher from  
Coral Harbour





# Common management objective for light geese

The workshop included an important session focused on discussing and identifying a shared management objective for light geese. The two questions discussed by participants were:

- 1 What are our common objectives or fundamental goals for managing light geese?
- 2 What type of land/ecosystems do we want light geese and people to live in?

Workshop organizers guided participants to develop a common management objective before discussing specific management options. This shared goal formed the basis for evaluating whether or not specific management options met this objective, and were worth pursuing, therefore it was an important step in decision-making.

Working in four small (~8 people) groups, each guided by one facilitator, participants focused on discussing *fundamental objectives* as opposed to *surface objectives* (means to attain fundamental objectives). For example, reducing the Mid-continent Lesser Snow goose population to 1.5 million individuals (surface objective) is a means to having a healthy ecosystem (fundamental objective). To help participants identify fundamental objectives, facilitators asked “Why is this objective important?” until the group could not refine the objective any further. This method led workshop participants to verbalize what they fundamentally cared about. Following 30 minutes of small-group discussion, each small group presented their shared objectives to the plenary. The facilitators synthesized all of the shared objectives and guiding principles for action that arose from the small group discussions. A final common management objective and guiding principles for action were discussed, refined, and approved by participants in plenary. These are presented below.

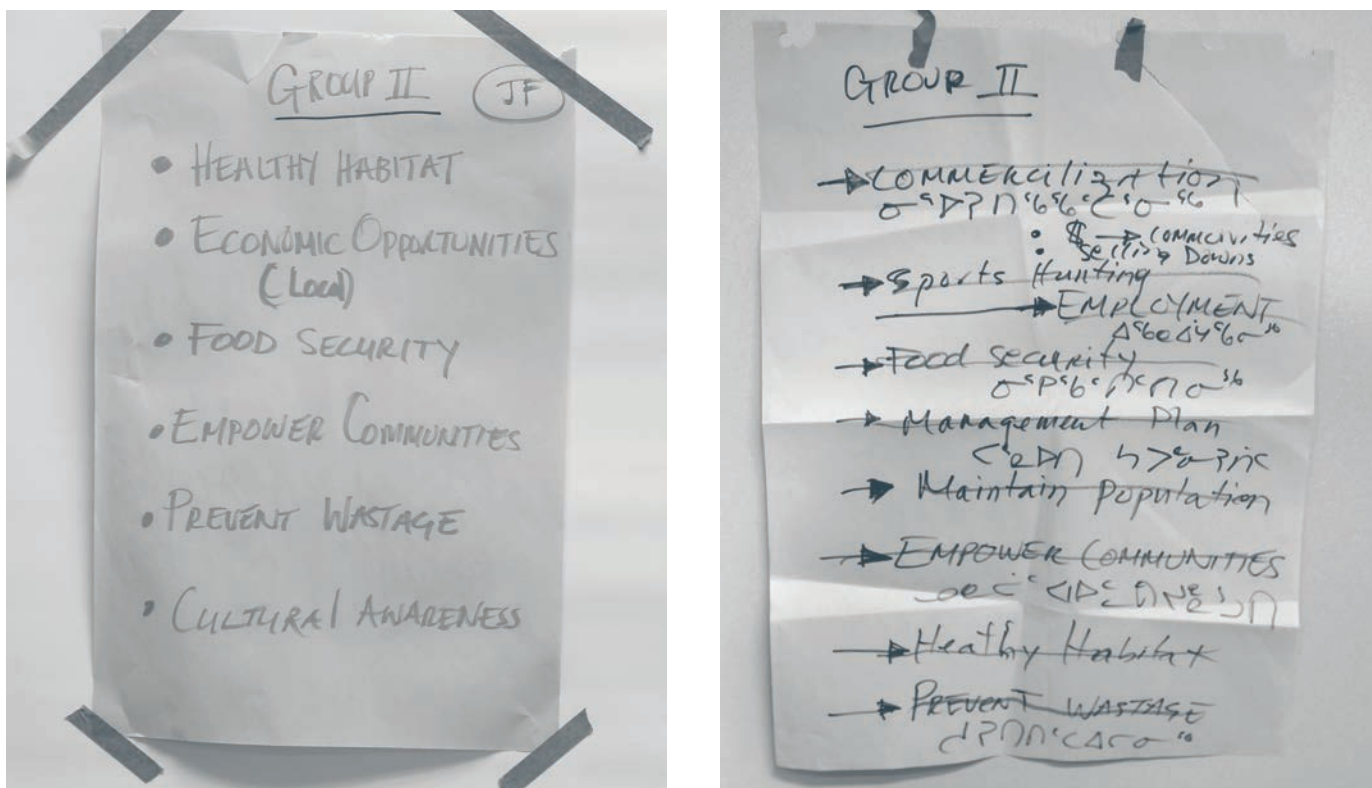


Figure 5. Examples of notes taken while developing a common management objective

#### **Common management objective for light geese**

Our shared management objective is to have light goose populations at a level that allows us to have healthy communities and a healthy land, where all species thrive and survive. We agree that the size of the light goose population must be decreased to keep the land and the animals strong for future generations. We understand actions shall be undertaken in Nunavut and in other jurisdictions to meet our shared objective.

#### **Guiding principles for action**

Actions we take to manage goose populations shall encourage:

- Community empowerment and decision-making;
- Partnerships among communities, Inuit organizations, local/regional/territorial/federal governments, and international agencies;
- Inuit cultural heritage, connections within and between communities, and Inuit Qaujimajatuqangit;
- Opportunities for people to be on the land;
- Knowledge sharing with younger generations;
- Local economic opportunities;
- Improved food security, nutrition and water quality;
- Public safety;
- Non-wasteful harvesting practices;
- Indigenous engagement in international governance and decision-making; and
- Indigenous and public awareness/education about light goose ecology and management.

Photo credit: Paul Smith



# Discussion about light goose management options

After identifying a shared management objective for light geese, workshop participants had the opportunity to discuss in detail specific management options for light geese. The options that were discussed were identified by Inuit residents from Arviat and Coral Harbour at an earlier stage of the research project entitled *Inuit knowledge about the impact of light geese on the land, wildlife, and people, and potential management strategies for light geese in the Kivalliq region, Nunavut* ([www.kangut.ca](http://www.kangut.ca)). Through this project (which this workshop is a part of), Inuit knowledge about light goose populations and their impacts on the land, water, animals, and people around Arviat and Coral Harbour were documented. Potential strategies for light goose management that address Inuit concerns and perspectives were also identified by residents from Coral Harbour and Arviat (please refer to Appendix D and E).

The four management options discussed by workshop participants were:

- 1 Increase non-commercial harvest
- 2 Implement a commercial harvest
- 3 Expand recreational hunting and tourism
- 4 Conduct research and monitoring

These options were the focus of in-depth small (~8 people) group discussions. A modified World Café method (see Appendix H) was employed to facilitate discussions. Each participant was pre-assigned to one of four groups. Each group sat together at a designated table which included participants with a variety of expertise and experience (coming from diverse communities, organizations, areas of expertise, and cultural backgrounds). Two groups conversed in English and Inuktitut (with interpretation provided) and two groups conversed in English only. Discussions were facilitated by a total of four moderators. Each moderator was pre-assigned one of the four management options (each moderator had a different option). To begin, the moderators each went to a different (unique) group of participants and facilitated a discussion about their assigned management option, guided by pre-developed questions (see Appendix F). After 30 minutes, the discussion ended, and each moderator moved to the next group of participants. With this new group, the moderator shared the information provided by the first group and then requested feedback, comments, and additional information including responses for any unanswered questions. After 30 minutes, the discussion ended and again the moderators moved to new groups until they had facilitated discussions with all four groups. Notes were taken throughout the entire process. Moderators summarized the information shared by all four groups into one comprehensive presentation, and shared this summary in plenary. Results from group discussions about the four management options are presented here.

## Management option 1 – Increase non-commercial harvest

### *What is this management option about?*

Conduct facilitated harvests to increase the non-commercial harvest of light geese in Arviat and Coral Harbour. The Hunters and Trappers Organization (HTO) in each community would advance funds to harvesters to buy gas, grub (groceries), and ammunition. Hondas (all-terrain vehicles) or skidoos (snowmobiles) would be rented as well so that people without transportation could participate. People with transportation would also take people without transportation, so that everyone who wants to can participate. Harvesters would give receipts to the HTO and harvest the number of light geese the HTO requests. Each HTO would manage distributing and storing harvested light geese in the community, and shipping light geese to other communities and to Nunavut Corrections facilities. Local coordinators who would manage all community-level logistics would be hired by the HTO with the support of the Kivalliq Wildlife Board (KWB). To help the HTO decide how many geese to harvest and distribute, each HTO board would have a survey done to find out:

- 1 How many people harvest geese in the community;
- 2 How many people cannot harvest light geese themselves but want to;
- 3 How many light geese (meat/eggs) each household currently eats each year; and
- 4 How many light geese each household would eat if supply was not an issue.

This knowledge would allow the HTOs to maximize harvest while ensuring that no light geese would be wasted.

### *Who should lead implementing this option?*

Nunavut Tunngavik Inc. (NTI) and HTOs could lead implementation through the existing Nunavut Harvester Support Program (NHSP). The NHSP is already operational and includes a community hunt program, so it would be efficient to include an expanded light goose harvest as part of this program. Environment and Climate Change Canada (ECCC) could connect with regional organizations to potentially move forward with this option. These organizations would potentially include the Nunavut Inuit Wildlife Secretariat (NIWS) and KWB. Potentially NIWS could manage finances and accounting. Potentially KWB could help each HTO move things forward by providing training and logistical support, supporting the hiring of local coordinators, and offering ongoing project support. Each HTO would manage community-level logistics in their community.

### *When could this management option be implemented?*

With the support of the organizations listed above, a pilot harvest program would be organized in Arviat and Coral Harbour for implementation during the 2019 light goose spring harvest. The pilot program would then be evaluated by the six leading organizations mentioned above (ECCC, NTI, NIWS, KWB, Aiviit HTO, Arviat HTO). The facilitated hunt could be expanded to other communities (starting in spring 2020 light goose harvest season) using lessons learned from the 2019 pilot program.

Steps towards implementation include:

- 1 HTOs should work with NTI and government to get them involved.
- 2 Ensure that necessary funds, logistics and local coordinators are in place.
- 3 Have harvesters complete a Canadian firearms safety course and obtain a Possession and Acquisition License (PAL).
- 4 Install bridges, bear-proof cabins near goose colonies, temporary storage facilities, and larger community freezers. This is essential for harvester safety and preventing waste.

### *How long could it be implemented for?*

For more than 10 years, for life, for time immemorial, and “for as long as grass grows, wind blows and the sky is blue” (one participant said this quoting the Fort Laramie Treaty of 1868).

## *Who could be involved?*

### Community-based organizations and/or groups

- Hunters and Trappers Organizations
- Local harvesters
- Local youth on-the-land programs (involvement in harvest)
- Local seamstresses (using down and feathers from harvested geese)
- Strengthen connections and relationships between communities
- Local carvers (using bones from harvested geese)
- Harvesters from other Nunavut communities and regions

### Nunavut-based organizations and/or groups

- Nunavut Tunngavik Inc. (Nunavut Harvester Support Program)
- Nunavut Inuit Wildlife Secretariat (finances and accounting)
- Nunavut Wildlife Management Board
- Nunavut Premier Joe Savikataaq (previously led a similar pilot program in Arviat)
- Nunavut Food Security Coalition
- Government of Nunavut Social Services (firearms safety training)
- Government of Nunavut Poverty Reduction Division
- Government of Nunavut Department of Economic Development & Transportation (Anti-Poverty Secretariat)
- Nunavut Corrections

### Government of Canada

- Health Canada (food sharing)
- Agriculture Canada (food security)
- Crown-Indigenous Relations and Northern Affairs Canada
- Environment and Climate Change Canada (Canadian Wildlife Service)

### Non-governmental organizations and/or private industry

- Stores selling ammunition (obtaining discounts on purchases)
- Airlines (shipping meat/eggs to communities/correction facilities)
- Makers of Canada Goose coats (for using down and feathers from harvested geese)
- World Wildlife Fund – Canada (funding)



Photo credit: Robert Rockwell



## What resources are needed?



### HUMAN RESOURCES

- Staff at HTOs, NTI, NIWS, KWB.
- Logistical and training support (for program start-up and ongoing program support).



### INFRASTRUCTURE & EQUIPMENT

- Bigger community freezers.
- Temporary meat storage facilities near light goose colonies (ice house or cooled by generator).
- Portable or permanent bridges over rivers (to access light goose colonies).
- Bear-proof cabins near light geese colonies.
- Hunting equipment (decoys, gas, ammunitions, grub/groceries).



### FINANCIAL RESOURCES

- Funding to pay for all resources to implement harvest.
- Funding to cover increases in cost of electrical bill for community freezer.
- Funding for bagging, freezing, shipping whole light geese to other communities.
- Funding for bagging, freezing, shipping whole light geese to Nunavut Corrections facilities.



### OTHER

- Firearms safety training.
- Finding easier techniques to pluck light geese.
- Finding commercial uses or purchasers of down and feathers.

## Who could provide funding?

Funding for implementing this management option could be provided by:

- Crown-Indigenous Relations and Northern Affairs Canada
- Nunavut Tunngavik Inc.
- Nunavut Food Security Coalition (Community Food Security Initiatives Program)
- Government of Nunavut (including Poverty Reduction division)
- Canadian Northern Economic Development Agency
- Agriculture Canada
- Health Canada
- Environment and Climate Change Canada (especially Canadian Wildlife Service)



Photo credit: Mike Stegmann

### *What would be the benefits of implementing this management option?*

This management option could reduce the size of the local light goose population. Other benefits include:



#### **SUPPORT INUIT CULTURE**

- Youth could gain harvesting experience and intergenerational knowledge transfer.
- Community sense of working toward a common goal will strengthen community relationships.
- More geese for community feasts.
- Strengthened connections and relationships between communities.



#### **IMPROVE FOOD SECURITY AND NUTRITION**

- Community freezer and food banks stocked with traditional meats (food security, nutritional).
- It is healthier to eat light geese than store-bought food.
- Opportunities to eat light geese for communities that do not get geese, and people in Nunavut Corrections facilities.



#### **SAVE MONEY**

- Harvesters will save money they currently spend on gas, grub (groceries) and ammunition to harvest light geese.
- Less store-bought food to buy (store-bought is expensive and has a lower nutritional value).

### *What risks could be associated with this option?*

Inexperienced hunters may have accidents. Firearms safety training is needed for light goose harvesters. In addition, when light geese are harvested in spring, rivers are very dangerous to cross (whitewater, flooding, very fast-moving waters, and swollen rivers). With an increased non-commercial harvest, harvesters might take risks to get out on the land when it is too dangerous. More harvesters may get stranded and require search and rescue. Bridges that can withstand water flow and level are required so that harvesters can safely cross rivers. Temporary storage facilities near the light goose colonies are also needed to keep light geese frozen until they can be safely delivered to the community. Bear-proof cabins are needed for harvesters to stay near the light goose colonies so they do not need to travel to the community and cross dangerous rivers daily.

### *What challenges could people face when implementing this option?*

- Weather and flooding/fast moving rivers might make it very hard or impossible for harvesters to get to the light geese.
- People can only harvest so many light geese before their bodies get too sore and tired.
- Community freezer space is limited. There is not enough room to store more light geese.
- Community freezer electrical bills are very expensive.
- It is hard to build portable bridges. There are many rivers so many bridges would be needed. Permanent bridges might get washed out. It would require a lot of time and money to build and maintain permanent and safe bridges.
- There will be a lot more down, feathers, and bones around. Something needs to be done with them. Waste should be minimized.
- Plucking is hard to do. People pluck because they have to. With more light geese being harvested, having to do more plucking may limit people's motivation to harvest.

### *Does this management option meet our common management objective for light geese?*

This management option directly contributes to our common management objective of having healthy communities. Please see the table above describing many benefits of implementing a facilitated harvest. This management option will also help to reduce the size of the light goose population locally, which may contribute to our common management objective of having healthy ecosystems.

## **Management option 2 – Implement commercial harvest**

### *What is this management option about?*

The communities of Arviat and Coral Harbour emphasize the importance of non-commercial light goose harvesting. There is interest in commercial harvesting but the local non-commercial light goose harvest comes first. In Arviat, people are much more interested in community (non-commercial) harvests where light goose meat and eggs are distributed freely. In Coral Harbour, people are interested in both a non-commercial community harvest and a commercial harvest where light geese are for sale. The following specific principles should be applied when considering a commercial harvest of light goose meat and/or eggs:

- 1** Be careful about how the hunt is conducted: consider where, when, and how many birds are taken as we do not control the animals. This is much like the precautionary principle in Western thought (see Appendix H).
- 2** Do not expect a commercial harvest of light geese to meet all ecological and economic needs of communities. The light goose hunting season (when birds and eggs are good to eat) is limited to only a few weeks per year each spring.
- 3** Meeting community and family needs for country food must be the first priority. Only then should light geese be sold.

The scope of the commercial harvest would start small, and then grow. It would start with inter-community sales within Nunavut. Then, later, as the product becomes known, sales could be attempted outside of Nunavut. Participants from Coral Harbour mentioned the possibility of buying light geese from other Nunavut regions/communities for processing, packaging, sale and distribution directly from the community.

### *Who should lead implementing this option?*

The general feeling from workshop participants is that Inuit would lead implementing this option and governments would support Inuit to implement it. Commercial harvests could be facilitated and controlled by a community organization such as a Hunters and Trappers Organization.

### *When could this management option be implemented?*

The first stage of a commercial hunt (sale within Nunavut only) could be piloted within one to five years.

### *Who could be involved?*

#### Community-based organizations and/or groups

- Hunters and Trappers Organizations
- Elders
- Local Wildlife Conservation Officers

#### Nunavut-based organizations and/or groups

- Government of Nunavut (Department of Economic Development and Transportation)
- Nunavut Tunngavik Incorporated
- Nunavut Wildlife Management Board (would consider options put forward in the spirit of supporting locally-based initiatives).

#### Government of Canada

- Environment and Climate Change Canada



### *What resources are needed?*

A primary requirement will be to confirm the 'red tape' involved. Workshop participants understand that no food/health inspections are required if sale is restricted to within Nunavut, and that a written agreement would be needed between Environment and Climate Change Canada (ECCC) and the local HTO or Regional Wildlife Organization (RWO) prior to implementing a commercial sale – this information however needs to be confirmed. A market survey would also be needed to find out if Nunavummiut from other communities want to buy light goose meat and eggs. Appropriate quality control which includes proper handling of birds in the field and during shipment needs to be ensured (so that the meat retains texture and flavor, and remains free of pathogens). Good marketing and product presentation are required; this would extend to value-added products as well (e.g., goose jerky). Products would need to be attractive and professionally-packaged. Funding will be needed to: (1) pay hunters for harvesting light geese; (2) buy appropriate equipment to process large numbers of light geese at one time; and (3) ensure proper product processing, storage, shipment, and advertising.

### *What would be the benefits of implementing this management option?*



#### **PROVIDE EMPLOYMENT OPPORTUNITIES**

- Employment for local people, even if seasonal in nature; seasonal employment has significant benefits in small communities.



#### **IMPROVE FOOD SECURITY AND NUTRITION**

- Increased self-sufficiency through liberation from high prices at the grocery store.
- Country food is more nutritious (better quality food) than store-bought food.



#### **SUPPORT HEALTHY ECOSYSTEMS**

- Control of local impacts of light geese on the land and other animals.

### *What risks could be associated with this option?*

There is a risk that the project could get 'tied up in red tape'. This is a new venture and no one really knows how it will work. This could lead to confusion and excessive bureaucracy. There is also the risk that money will be invested into hunters and facilities, only to discover that no one wants to buy light goose eggs or meat.

### *What challenges could people face when implementing this option?*

There could be challenges with prohibitions on commercial hunting under the Migratory Birds Convention Act, and opposition from animal rights activists. It is also unknown if there is currently a market for light geese (i.e., people will accept them if they are free, but will people pay for them?).

### *Does this management option meet our common management objective for light geese?*

From conversations with workshop participants, it is clear that this option could help to provide some control over local goose populations. If carefully managed, this option would support healthy land and wildlife in areas where light geese are commercially harvested. Lastly, this option can also contribute to healthy communities by reducing contamination of drinking water from light geese droppings, and by providing employment, country food, and income for communities.

## Management option 3 – Expand recreational hunting and tourism

### *What is this management option about?*

Workshop participants recognized that recreational hunting for light geese is a relatively new phenomenon in Nunavut and that bird-related tourism could be expanded in the territory. This management option consists of increasing recreational hunting for light geese and expanding other bird-related tourism opportunities by:

- 1 Changing some existing regulations that are applicable to light goose harvesting by non-resident hunters and non-beneficiary Nunavut residents;
- 2 Providing training to Nunavummiut (as guides, outfitters, tour operators);
- 3 Developing new tourism opportunities where tourists could experience bird watching, light goose hunting and/or egg-picking with local communities (promote Inuit cultural experience); and
- 4 Improving marketing of recreational hunting and tourism opportunities related to light geese and birds to attract more tourism and business opportunities.

The Migratory Bird Convention Act (MBCA, 1994) currently places restrictions on light goose harvesting by non-Inuit. These restrictions include specific harvest seasons and a bag limit of 50 geese per person per day (for those without beneficiary rights only). Given the abundance of light geese observed today, workshop participants agreed that some rules and regulations applicable to light goose harvesting by those without beneficiary rights could be lifted or modified. This would encourage and support recreational hunters residing outside Nunavut and non-beneficiaries (residing in Nunavut) who wish to harvest light geese and/or eggs in Nunavut. There was a general consensus among workshop participants that each community should decide what specific regulatory changes are required. Some workshop participants suggested having an open season (no seasonal restrictions) and increasing the daily bag limit for recreational hunters and non-beneficiaries. Others participants mentioned the possibility of opening the light goose egg harvest to those without beneficiary rights (which is not currently allowed).

In addition, two specific principles should guide action towards this management option:

- 1 Inuit Qaujimajatuqangit must be included in planning and/or implementing any regulatory changes or promoting tourism. Traditional principles such as respecting animals, harvesting only what is needed, sharing harvested animals and not wasting them should be respected; and
- 2 Rules and regulations relating to recreational hunting and tourism activities should be clearly explained and communicated to outfitters, tourists, recreational hunters and other community stakeholders in order to minimize the risk of conflicts and protect people's safety (e.g., harvest regulations applicable to recreational hunters and non-beneficiary Nunavut residents such as bag limits and harvest seasons for light geese; requirement that tourists and recreational hunters are accompanied by a local guide or hire a local outfitter).

### *Who should lead implementing this option?*

The local communities would be supported by ECCC and NTI to ensure they are aware of the current regulations; to know what options they may have under the Nunavut Agreement; and to consider ways of changing and implementing new regulations. The HTOs in collaboration with interested communities, RWOs, and the NWMB would need to define daily bag limits and seasonal restrictions they would like to have in place in relation to the harvest of light geese and/or eggs for non-Indigenous hunters and non-beneficiaries (to make sure there are enough light geese for everyone). Given that federal approval is required (changes to the MBCA), proposals would need to be submitted to the Canadian Wildlife Service (CWS), which would then consult with appropriate parties including submitting the proposal to NWMB for review and decision, before making a final decision. Local outfitters and interested community members would lead the development of new tourism opportunities with support from other organizations that could provide adequate training, financial support, and assistance with marketing.

### *When could this management option be implemented?*

Increasing recreational hunting for light geese and expanding other bird-related tourism opportunities would happen gradually over time. Formal processes for implementing regulatory changes could be set in motion as soon as CWS and the HTOs jointly put forward their requests to NWMB. A change in bag limit or harvest season for non-Inuit could take approximately two years to implement from the time a request is submitted to CWS.

### *How long could it be implemented for?*

Any regulatory change would need to be revised through time and as circumstances change (adaptive management). For example, if light goose abundance decreases significantly as a result of environmental change or increased harvest pressure, then stricter harvest regulations may have to be implemented once again. Currently hunting regulations are reviewed annually and revised every two years which aligns with and supports an adaptive management approach.

### *Who could be involved?*

#### Community-based organizations and/or groups

- Hunters and Trappers Organizations (initiating/leading requests for regulatory change)
- Elders (ensuring traditional knowledge is included)

#### Nunavut-based organizations and/or groups

- Regional Wildlife Organizations (coordinating community requests for regulatory changes and supporting HTOs in development of tourism opportunities)
- Nunavut Wildlife Management Board (engaging communities in discussing regulatory options and supporting proposed regulatory changes put forward by HTOs)
- Government of Nunavut Department of Economic Development and Transportation (GN ED&T) (develop and offer adapted training programs for Nunavummiut; offer subsidies to local businesses to decrease costs of sport hunt and support growth of tourism industry)
- Nunavut Tunngavik Incorporated (provide project management support)

#### Government of Canada

- Environment and Climate Change Canada (consult with Inuit and approve regulatory changes related to federal laws)

#### Non-governmental organizations and/or private industry

- Outfitters and other tourism companies



## What resources are needed?



### HUMAN RESOURCES

- Outfitters and tour operators in communities.
- Support from GN ED&T for developing businesses in the tourism sector.



### INFRASTRUCTURE & EQUIPMENT

- Need to make sure the right infrastructure and expertise is in place in communities (accommodation, office space, accounting and management skills).
- Organize booths at trade shows to promote tourism opportunities related to light geese in Nunavut.



### FINANCIAL RESOURCES

- Government subsidies for supporting recreational hunting and other tourism opportunities in Nunavut (supporting marketing and decreasing cost for tourists and sport hunters).
- Organize group hunts and use existing camps and infrastructure to cut down costs as much as possible.



### OTHER

- Increase availability of training for community residents to become guides and outfitters.
- Need to make information available to tourists and local residents about applicable rules and regulations related to tourism and recreational hunting.

## Who could provide funding?

The territorial government could offer subsidies for supporting recreational hunting and other tourism opportunities in Nunavut. Such financial support could fund marketing initiatives and help offset high costs of transportation and accommodation for tourists and sport hunters. Training for community members could also be funded by the territorial government.

## What would be the benefits of implementing this management option?



### PROVIDE EMPLOYMENT & SKILL DEVELOPMENT OPPORTUNITIES

- Recreational hunting and tourism create employment opportunities and income for local community members (as guides, cooks, outfitters, and bear monitors).
- Developing recreational hunting and tourism businesses can lead to training and skill development for community residents.



### IMPROVE ACCESS TO COUNTRY FOOD

- Part of what recreational hunters and tourists harvest can be distributed to the community; it is very beneficial when country food is given to single parents, widows or families with no means to go on the land.
- Tourism and recreational hunting activities provide opportunities for people to be out on the land.



### SUPPORT HEALTHY ECOSYSTEMS

- Control of local impacts of light geese on the land and other animals by increasing harvest.

### *What risks could be associated with this option?*

If existing restrictions on light goose harvest are lifted for recreational hunters and non-beneficiaries, there is a risk of needing to change regulations again if the size of the light goose population is reduced in the future. As tourism expands, communities could face safety and/or regulatory issues if tourists and recreational hunters are not made aware of existing rules and regulations applicable to their trips on the land. For example, southern tourists and recreational hunters could get in trouble if they go out on the land on their own. In particular, they could face polar bear and boating safety issues. Under the Nunavut Tourism Act, tourists need to be accompanied by a local guide and recreational hunters have to hire a local outfitter. Similarly, tourists visiting Migratory Bird Sanctuaries require a special permit from CWS. Tourists and tour operators in communities should be made aware of these existing rules, and the safety of tourists and recreational hunters should be carefully considered. Lastly, if an open light goose harvest season is implemented for non-Inuit, this could lead to conflicts as some community residents do not want southerners or non-beneficiaries to disturb geese in breeding colonies and do not want goslings shot.

### *What challenges could people face when implementing this option?*

HTOs could face challenges in making regulatory changes related to light goose harvest if acting alone. The implementation of any regulatory change will require coordination among HTOs and other co-management partners to make sure that the scale of change is carefully considered. For example, it would be inefficient to have multiple similar requests from HTOs submitted to the federal government. It would be better to have a Nunavut-wide or regional proposal instead. When bringing more tourists and recreational hunters to Nunavut, communities could also face challenges if the appropriate infrastructure is not in place. It is important to ensure that communities have sufficient accommodation and office space, as well as adequately trained personnel to welcome sport hunters and tourists. Lastly, tourists and recreational hunters currently have to pay high costs to travel and stay in northern communities. This could limit the expansion of recreational hunting and tourism activities around light geese in Nunavut.

### *Does this management option meet our common management objective for light geese?*

This management option meets our common management objective of supporting healthy communities by providing employment, income, and skills development to community members engaged in recreational hunting and tourism. Recreational hunting and tourism can also lead to greater emotional well-being associated with employment and opportunities for community members to be out on the land. Tourism will increase awareness about and sensitivity to other cultures among Nunavummiut. Depending on the scale of the recreational hunt for light geese, this management option may contribute to healthy ecosystems by decreasing light goose abundance locally.

Photo credit: Paul Smith

## Management option 4 – Conduct research and monitoring

### *What is this management option about?*

Research and monitoring can play a crucial role in identifying different issues related to light goose abundance, and the most effective solutions. Research and monitoring projects can also play an important role in empowering communities, if they are carried out appropriately. This management option can therefore offer a variety of benefits, from scientific to social, as we work toward our shared management objective of healthy communities and ecosystems. While recognizing the important role of large-scale scientific research carried out by the federal government and its partners, this management option focuses on the development of local-scale research and monitoring programs to support local-scale decision-making. Specifically, this option consists in developing community-based research and monitoring programs to measure:

- 1 The condition of light geese (measured by how fat light geese are when arriving in spring), their general health, and if any diseases are present;
- 2 Numbers of light goose nests;
- 3 Where light geese are (distribution); and
- 4 Total harvest of light geese by each community.

To be effective, community-based programs would need trained researchers. A training program to make sure there is a pool of qualified researchers and monitors available in communities is an important part of this management option.

### *Who should lead implementing this option?*

The purpose of this management option is to develop locally relevant yet scientifically robust monitoring programs. These programs would explore characteristics of goose populations that guide local-scale decision making. For example, light goose monitoring could answer questions such as: “Are geese moving away from areas of intensive harvest? Is this desirable?” The monitoring programs should also be delivered primarily by local participants, so that the community is not only engaged but also employed in monitoring and managing light geese. Close collaboration between local communities and science organizations would increase the likelihood of success of this management option.

Scientific expertise and guidance from researchers within the federal government, the NWMB, and Regional Wildlife Organizations is necessary to make sure that the design of the monitoring programs meets scientific standards (rigour). However, for the management option to achieve its goal of community empowerment, the communities involved need to demonstrate leadership by defining the specific goals of the monitoring program and mobilizing community-based monitors.

Inuit knowledge holders also have an important role to play in designing these monitoring programs, by offering a longer-term and more locally-relevant perspective of where light geese are located (distribution), how many there are (abundance), and light goose behaviour. Finally, involvement of the broader public through “citizen science” programs like SIKU or eBird could also make a valuable contribution.

### *When could this be implemented?*

Research and monitoring of light geese already happens on a regular basis throughout Nunavut. Elements of a community-based monitoring program have already been proposed in Coral Harbour (e.g., in March 2018, the Canadian Wildlife Service proposed a program where harvesters collect geese in spring to monitor “condition” – fatness).

Development of community-based monitoring programs could begin as soon as appropriate community-level leaders are identified. Depending on the monitoring objectives, these programs could begin immediately (e.g., harvester-based collection of specimens) or might require significant fund-raising efforts and training (e.g., for community-based monitoring of nesting densities (number of nests in an area)). Where training is required, the training could begin as early as 2019, and then the monitoring programs could start.



Steps towards implementation of monitoring programs for light geese include:

- 1 Communities identify who is interested in the development and leadership of a community-based monitoring program, and put a monitoring team together;
- 2 The monitoring team works with scientists to decide on the goals, methods, and how to make it happen (logistics);
- 3 The monitoring team and scientists work together and identify the training needs and constraints with respect to logistics;
- 4 The monitoring team and scientists collaborate in the development of funding proposals as needed; and
- 5 The monitoring program is started as soon as there is funding and trained people.

### *How long could it be implemented for?*

Light goose populations have been and will continue to be monitored in the long-term. Specific parts or focal areas of a community-based monitoring program may come and go as priorities change. Importantly, these monitoring activities should be reviewed at regular intervals to ensure that they are meeting management needs.

### *Who could be involved?*

#### Community-based organizations and/or groups

- Hunters and Trappers Organizations
- Migratory Bird Sanctuary Area Co-Management Committee
- Community-based monitoring steering committee (to be created)
- Local educators and training programs
- General public, through citizen science programs

#### Nunavut-based organizations and/or groups

- Government of Nunavut – Nunavut General Monitoring Plan (or other funding programs for community-based monitoring)
- Kivalliq Wildlife Board
- Nunavut Inuit Wildlife Secretariat (finances and accounting)
- Nunavut Wildlife Management Board
- Kivalliq Inuit Association

#### Government of Canada

- Environment and Climate Change Canada – Science and Technology Branch including the Inuit Field Training Program
- Environment and Climate Change Canada – Canadian Wildlife Service
- Environment and Climate Change Canada – Inuit Field Research Assistant Program (IFRA)
- Polar Knowledge Canada
- Federal community-based monitoring programs (Northern Contaminants Program – Community Based Monitoring subprogram)

### What resources are needed?



#### HUMAN RESOURCES

- Local steering committee/ leadership
- Trained researchers/monitors
- Time and commitment from scientific advisors, and people who will use the results



#### INFRASTRUCTURE & EQUIPMENT

- Transport to remote monitoring sites (skidoos/ATVs)
- Firearms to collect specimens
- Binoculars, Global Positioning System (GPS) and other basic survey equipment (big tape measures for survey plots, survey flags/stakes, calipers to measure eggs, cameras to document observations, backpacks to carry gear)



#### FINANCIAL RESOURCES

- Funds for travel, logistical costs, and wages

### Who could provide funding?

Federal and territorial programs supporting community-based monitoring programs, including:

- 1 Nunavut Wildlife Management Board's Nunavut Wildlife Studies Fund
- 2 Nunavut Wildlife Management Board's Inuit Qaujimajatuqangit Research Fund
- 3 Nunavut General Monitoring Program
- 4 Crown-Indigenous Relations and Northern Affairs Canada's Northern Contaminants Program – Community-Based Monitoring subprogram

Monitoring could be supported by organizations that might use the results such as:

- 1 Environment and Climate Change Canada's Canadian Wildlife Service
- 2 The Flyway Councils and Joint ventures responsible for light goose management
- 3 Environmental non-governmental organizations (ENGO) such as Ducks Unlimited

### What would be the benefits of implementing this management option?

Accurate monitoring information is needed in order to understand the ecological issues and track the species' responses to management interventions. Nunavut is large, and light geese are distributed widely across it. Accurate local information is needed in order to understand the responses of goose populations at the local scale; the scale that matters most to Inuit.

For example, population-level surveys of light goose abundance (population size) in the non-breeding season would not help wildlife managers in Coral Harbour or Arviat determine if an increased local harvest is resulting in a local reduction of population size or a change in distribution that makes geese more or less difficult for harvesters to access. Community-based monitoring programs could offer this local-scale information, and allow wildlife managers to track the responses of light geese to management options as they unfold.

The benefits of implementing this option extend beyond improved information. Community-led research to support community-led management is an important demonstration of self-determination. Also, migratory birds are a resource that is shared among nations. Community-based monitoring programs would allow Inuit to play a role in the national and international management of this shared resource. Finally, such programs would allow Nunavummiut to gain the added benefits of training and employment, and could potentially train young Inuit to become tomorrow's wildlife scientists.

### *What risks could be associated with this option?*

Scientists all agree that maintaining monitoring programs for the long-term is both important and difficult. Research priorities and funding sources come and go. Without strong, dedicated, and locally-based leadership, a community-based monitoring program might fail after a few years.

There are also concerns that the monitoring information could yield unexpected or “inconvenient” answers; for example, results that point to a need to change harvesting activities in a way that Inuit do not support. In addition, the information gathered could be used by others in unanticipated or undesirable ways, for example by private industry to support activities that the community opposes.

### *What challenges could people face when implementing this option?*

The biggest challenge for implementing this option is capacity, and specifically, the willingness of community members to step forward as leaders of a community-based monitoring initiative. Many scientists already recognise the efficiency of a community-based approach for gathering some monitoring data of importance for light goose management, and are ready to use the information once it is generated. Funding agencies have undersubscribed programs ready to support this type of initiative. Training programs such as the Inuit Field Training Program, Inuit Field Research Assistant Program, and others are already in place, in order to help train community-based monitors.

### *Does this management option meet our common management objective for light geese?*

Various benefits associated with this management option have been described above. This option addresses our common management objective by:

- 1 Improving the management of light goose populations by better understanding their local/regional responses to local management efforts;
- 2 Empowering communities to manage their goose populations following their own vision;
- 3 Benefiting from training and employment opportunities; and
- 4 Getting youth and other community members out on the land, trained and gainfully employed.



Photo credit: Lenny Emiktaut





# Comparison of the feasibility and effectiveness of management options

Immediately after discussing in small groups the four management options presented above, participants engaged in a voting exercise designed to compare these options. Through this exercise, participants' perceptions of the feasibility and effectiveness of the following management options were documented:

- |  |  |
|--|--|
| <b>1</b> Increase non-commercial harvest | <b>3</b> Expand recreational hunting and tourism |
| <b>2</b> Implement a commercial harvest  | <b>4</b> Conduct research and monitoring         |

Participants compared these four options by voting for *descriptors* that best described the feasibility or effectiveness of five management option *considerations*.

MANAGEMENT OPTION CONSIDERATION	DESCRIPTOR 1	DESCRIPTOR 2	DESCRIPTOR 3
Ease of implementation	Easy	Medium	Hard
Amount of resources (human and financial) required	A little	Medium	A lot
Implementation timeframe	Short (1-5 years)	Medium (5 - 10 years)	Long (10+ years)
How much the option would contribute to our shared management objective of having healthy communities	A little	Medium	A lot
How much the option would contribute to our shared management objective of having healthy ecosystems	A little	Medium	A lot



Figure 6. David Aglukark Sr. (left), Mark Paniyuk (centre) and Ray Alisauskas (right) comparing management options

To do so, first, each participant self-identified with one of the following groups: community member, researcher, manager, or other. Each participant was then given stickers of a unique colour corresponding to that group. Participants voted for descriptors by placing stickers in locations of their choice on five poster boards (one poster per management option consideration). Each poster listed the four management options to assess, and a choice of three *descriptors*. Each participant chose one descriptor per management option, and placed a total of 20 votes (5 management option *considerations* x 4 management options X 1 *descriptor* per management option = 20 votes) (see Figures 6 and 7).

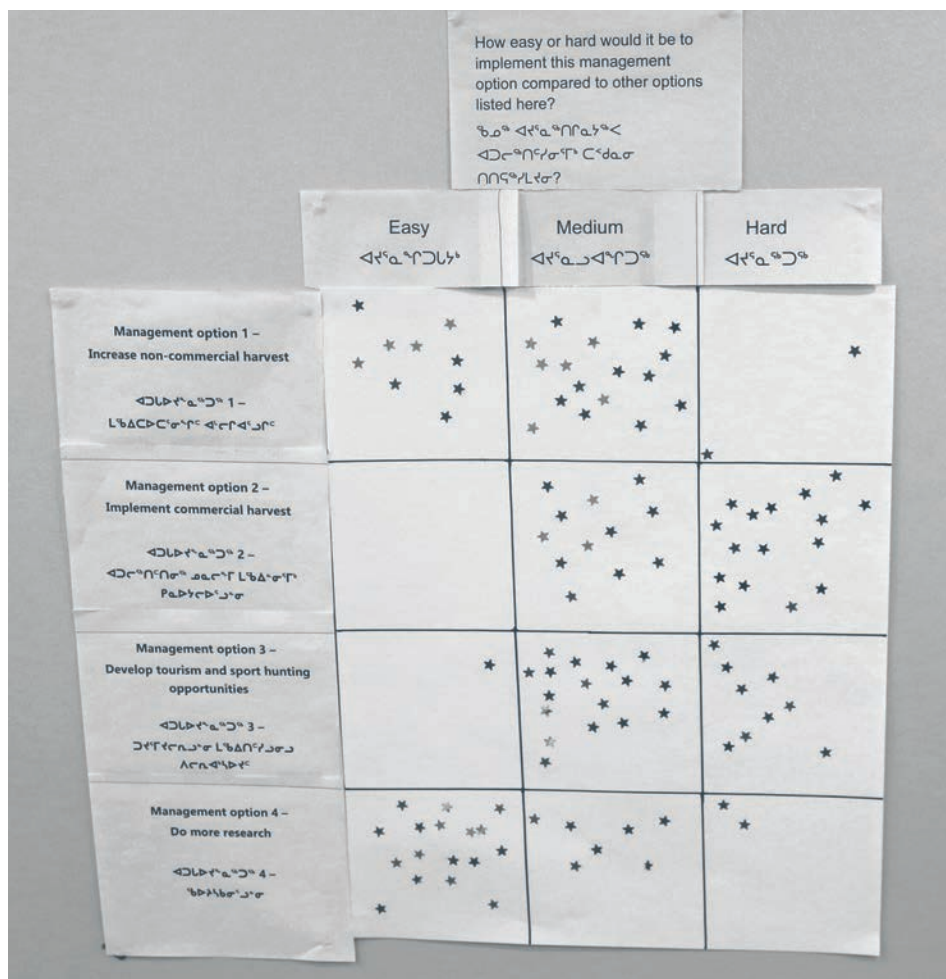


Figure 7. Example of poster board with stickers from voting participants

Votes from participants were compiled and are presented in the Figures 8 to 12. These results suggest that participants viewed increasing non-commercial harvest and conducting additional research as the two easiest management options to implement. Participants rated commercial harvest as the most resource intensive option to pursue. A majority of participants also considered feasible to implement all four management options in the short- to medium-term (within 1 to 10 years). Lastly, most participants indicated that all four management options contributed significantly to supporting healthy communities and ecosystems.

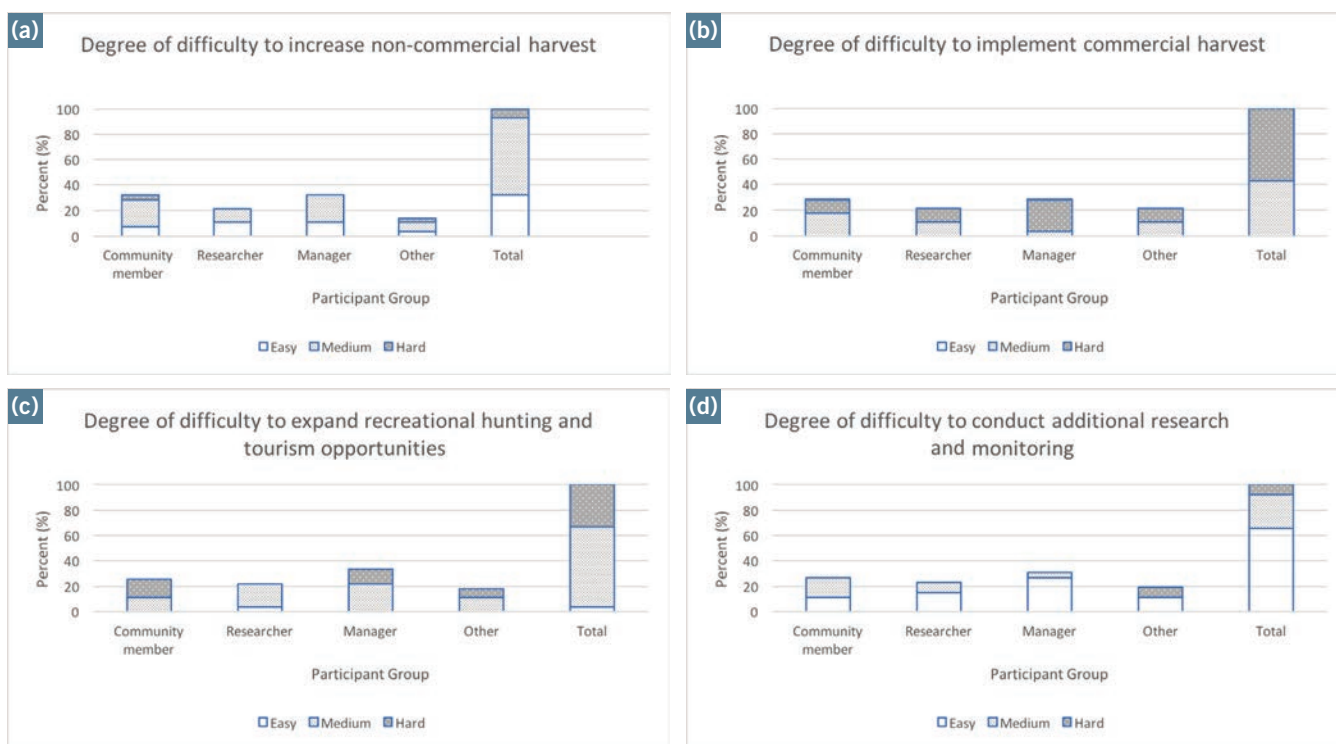


Figure 8. Ease of implementation for four management options according to workshop participants (n=28, 28, 27, and 26 for non-commercial harvest, commercial harvest, recreational hunting and tourism, and conducting additional research, respectively)

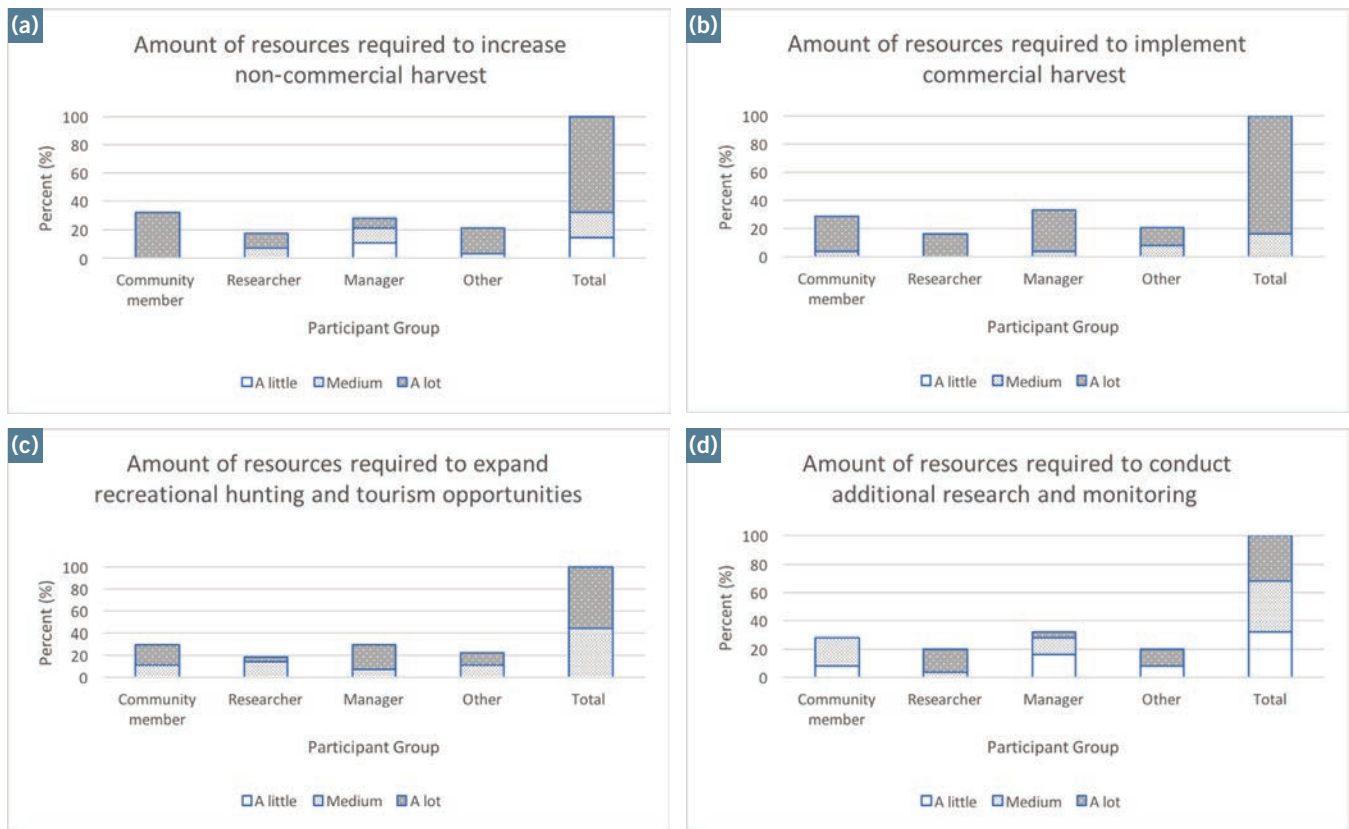


Figure 9. Amount of resources (human and financial) required to implement four management options according to workshop participants (n=28, 24, 27, and 25 for non-commercial harvest, commercial harvest, recreational hunting and tourism, and conducting additional research, respectively)

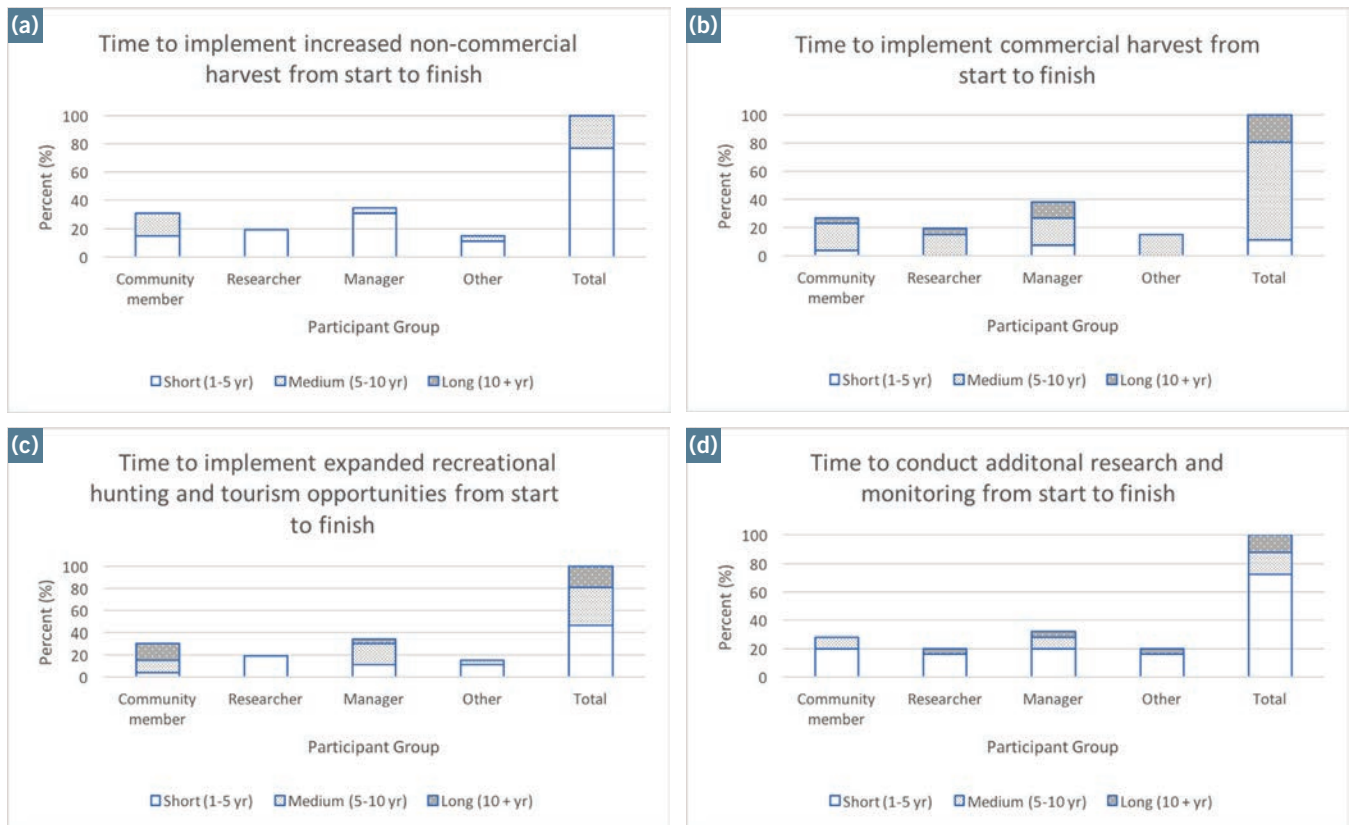


Figure 10. Implementation timeframe for four management options according to workshop participants (n=26, 26, 26, and 25 for non-commercial harvest, commercial harvest, recreational hunting and tourism, and conducting additional research, respectively)



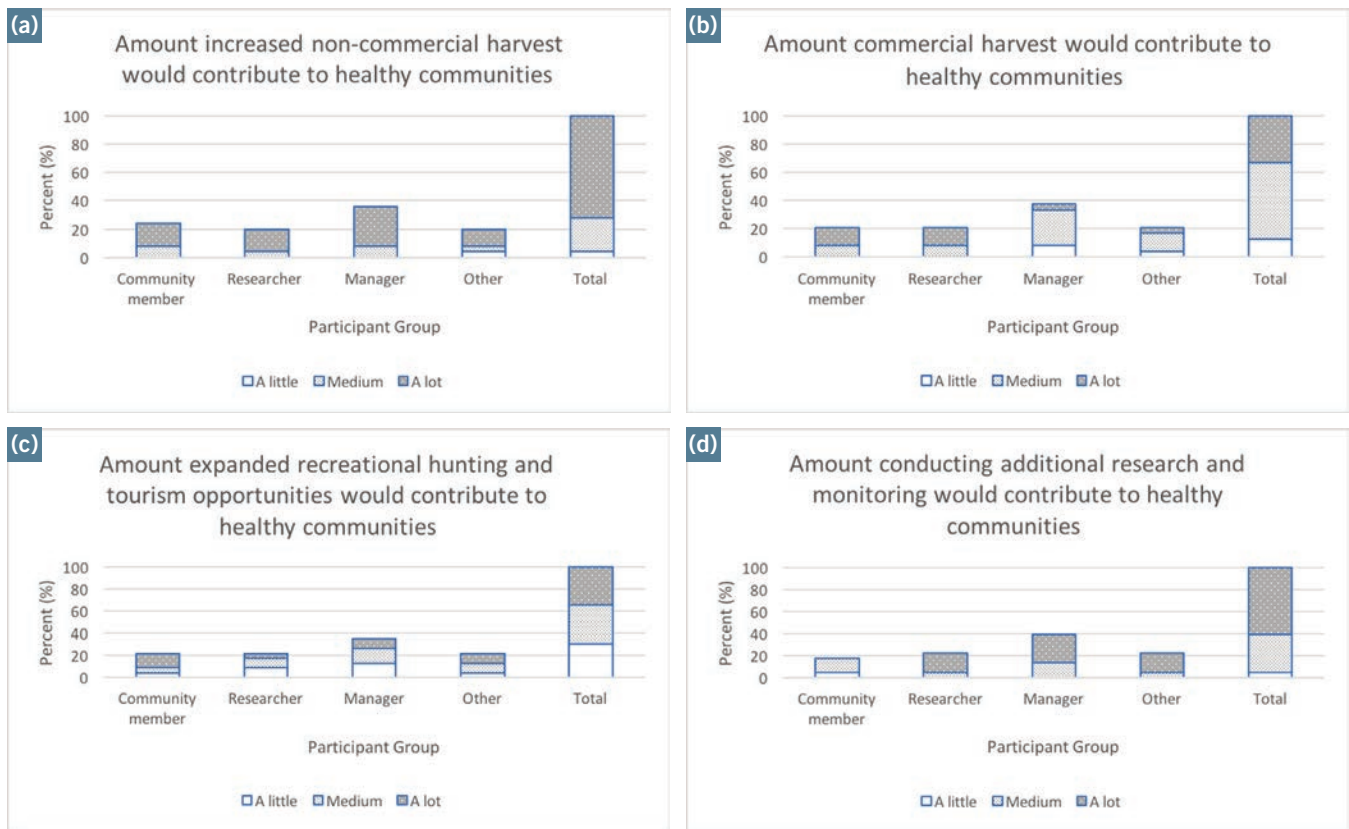


Figure 11. Contribution of four management options to supporting healthy communities according to workshop participants (n=25, 25, 24, and 23 for non-commercial harvest, commercial harvest, recreational hunting and tourism, and conducting additional research, respectively)

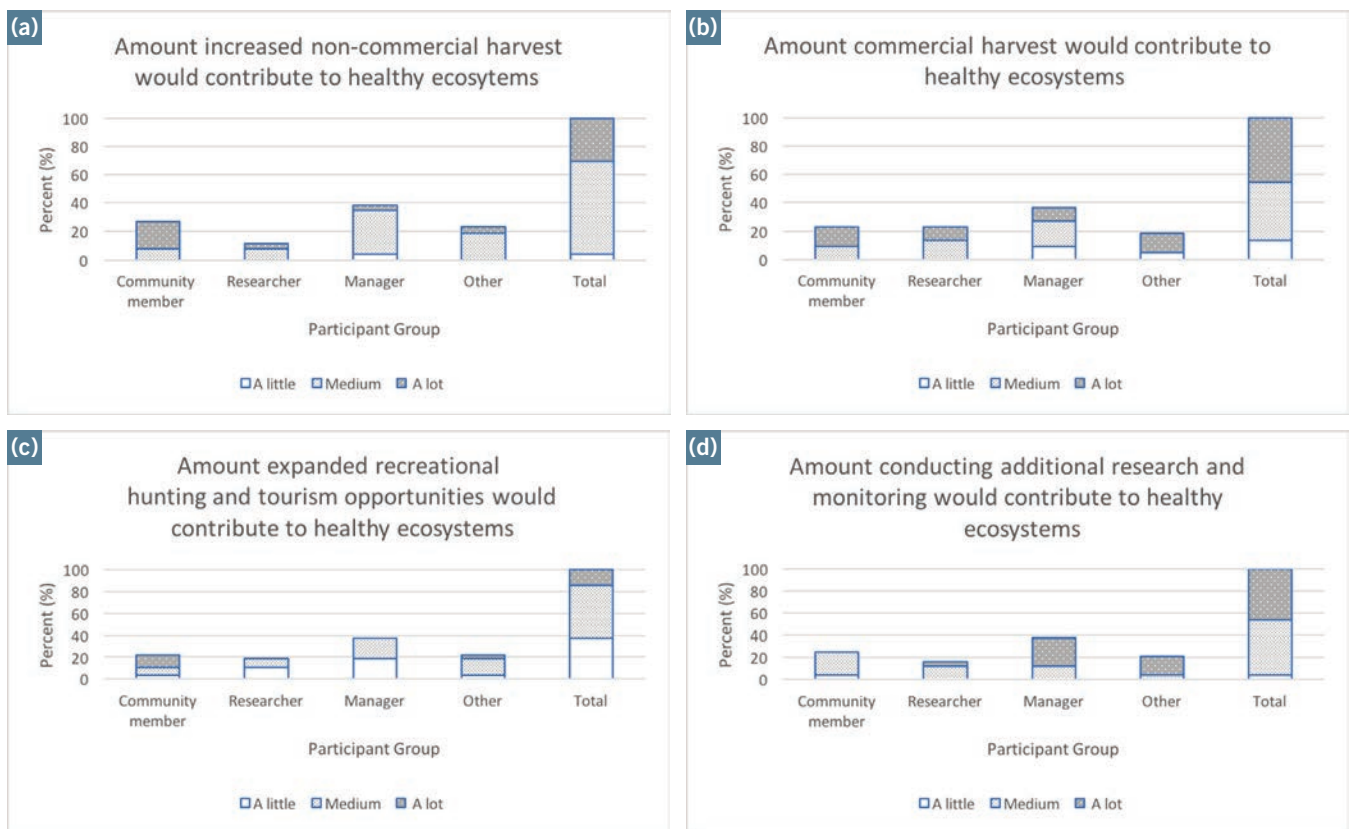


Figure 12. Contribution of four management options to supporting healthy ecosystems according to workshop participants (n= 26, 22, 27, and 24 for non-commercial harvest, commercial harvest, recreational hunting and tourism, and conducting additional research, respectively)



# Commitments from workshop participants

At the end of the workshop, participants reflected on what they would do after the workshop to address our shared light goose management objective, and begin implementing the management options that were discussed. Participants wrote their commitments on sticky notes that they posted on the wall for everyone to see.

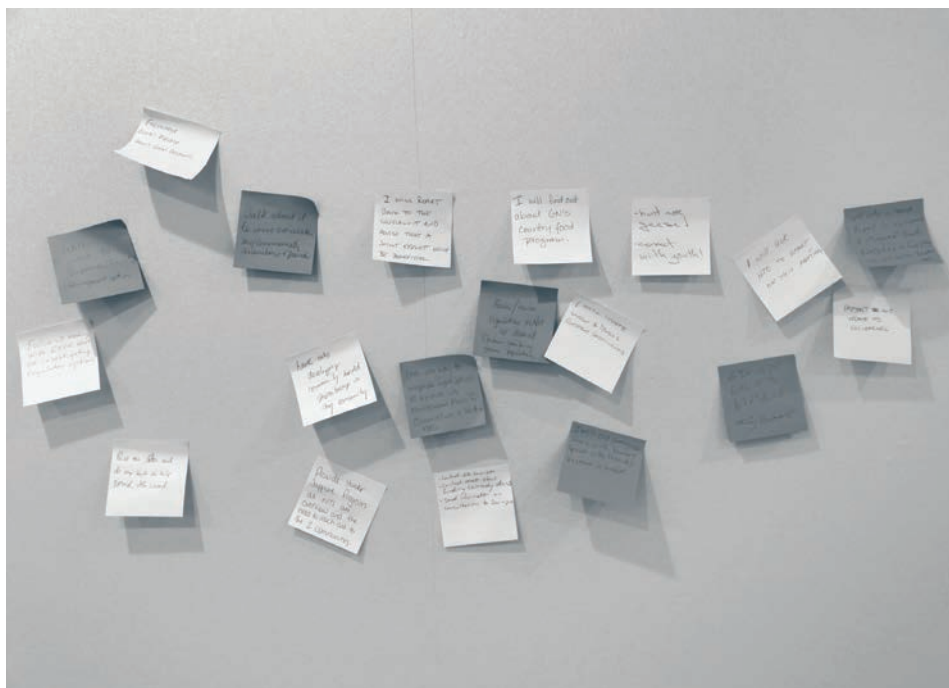


Figure 13. Commitments from workshop participants

Participants committed to take the following actions:

- Share information about the workshop with colleagues, community members, hunters, youth, family and friends;
- Contact relevant people and organizations to find out more information to facilitate implementation of management options;
- Look into funding opportunities to begin implementing management options;
- Organize meetings among co-management partners to follow-up on implementing management options;
- Reach out to community organizations and leadership to encourage and facilitate implementation of management options;
- Continue monitoring light goose populations and update Snow and Ross' goose population estimates;
- Look into developing new community-based monitoring programs;
- Review and/or revise Nunavut regulations as desired by communities; and
- Include shared management objective, management options, and Inuit Qaujimajatuqangit in the development of management plans for the Migratory Bird Sanctuaries around Arviat and Coral Harbour.



# Workshop assessment

On the last day of the workshop, participants completed a written workshop evaluation form (see Appendix G). A total of 24 participants completed the feedback form (representing 77% of all participants, excluding the organizers and facilitator). All of the participants rated their workshop experience as 'Good' or 'Very good' (Figure 14). Participants also provided valuable constructive comments and suggestions for future events of this sort. Their feedback is summarized below.

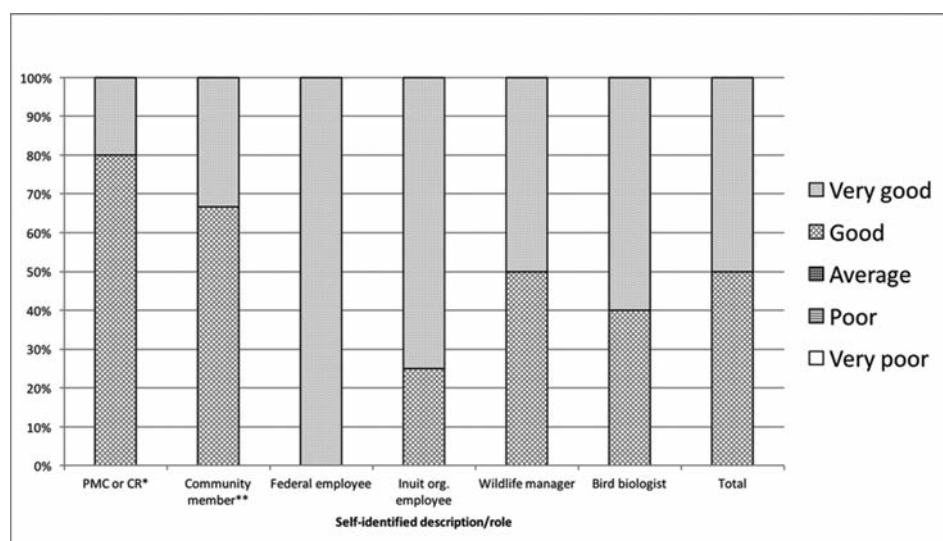


Figure 14. Participants' rating of overall workshop experience (n=24)

\* Project Management Committee (PMC) member or Community Researcher (CR) as part of research project entitled *Inuit knowledge about the impact of light geese on the land, wildlife, and people, and potential management strategies for light geese in the Kivalliq region, Nunavut*.

\*\* Community member from Arviat or Coral Harbour, Nunavut.

## Workshop program and content

Participants commented positively about:

- How interactive the workshop was;
- The diversity of events and formats (formal presentations, storytelling, outdoor activities, small group and plenary discussions); and
- The Inuit game, bird banding demonstration and outdoor excursion (walking and canoeing at the Oak Hammock Marsh Conservation Area).

Many participants noted positively that everyone was given opportunities to participate, and they felt comfortable speaking. However, some participants had observed participants who were hesitant to speak and suggested that Inuit participants, in particular, should have been given more time or been more encouraged to speak.

Another constructive comment was that "it may have been beneficial to have a discussion about management options earlier in the workshop to give more time to think about how to implement [them]."

Lastly, participants would have preferred that all PowerPoint presentations had been provided before the workshop ended. Within days of the workshop, presenters granted permission for the co-organizers to share presentations; and this was done via email and Dropbox.

## Time management

Many participants commented positively about:

- The pace of the week;
- The way each day was structured and organized;
- Time management; and
- Facilitators kept participants occupied and working toward workshop goals.

Several participants noted that they wished there was more discussion time about the management options. They suggested adding an additional (fourth) day to future workshops to allow sufficient time to debrief about all of the information shared, and allow more time for community members to shop.

## Diversity of participants

Participants most liked that the workshop brought together Inuit, researchers, and managers to discuss a common concern.

Participants commented positively about:

- The diversity of participants and range of knowledge types;
- Interacting with, learning from, and sharing knowledge with such a variety of knowledge holders;
- The intergenerational knowledge exchange that occurred – youth enjoyed learning from Elders, and youth's involvement was noted positively by many participants, including Elders;
- Meeting new people and making new friends; and
- Gaining empathy and new understanding, for instance about how light geese impact Inuit.

### Facebook Post by Aupaa Irkok, Community researcher from Arviat



Suggestions for improvement included:

- Inviting even more Elders and Inuit;
- Including international representatives from across the Arctic; and
- Because a lot of information needs to be shared to understand others' perspectives, paying more attention to the opinion of the various groups (community members, scientific researchers, wildlife managers) would have helped see what was more important for each.

Some participants noted that accepting differences in perspectives was a challenge and that it was sometimes difficult to reconcile different perspectives.



## Venues and food

Participants found that having a variety of venues (two conference rooms, and a day at Oak Hammock Marsh Conservation Area) contributed positively to their experience. Several participants noted that one of the meeting rooms was too small for the number of participants attending. This was due to unexpectedly high participation during that session. One suggestion for improvement was to provide country food. The organizers tried to provide country food, but availability and logistical challenges made it not possible.

## Facilitation

Nearly all of the participants commented very positively about the quality of facilitation. They noted that the small-group and plenary facilitators “kept you awake”. Participants also highlighted their pleasure that the plenary facilitator was an Inuk.

## Interpretation

The Arviat and Coral Harbour Inuktitut dialects are very different. Organizers had hired one interpreter from each community. Participants reported issues with translation quality and clarity. This was largely due to the difference between the two dialects. All types of participants (biologists, managers, community members, government representatives) noted challenges with translation. Some content was lost for both Inuktitut and English speakers.

## Learning experience

Most participants described the workshop as a positive learning experience. Some of the key learning areas that were noted included:

- No longer feeling alone with concerns about light geese;
- Learning from local, regional, national and international challenges and opportunities;
- Different organizations have a lot of goals and objectives in common, yet little has been done over the years to address the light goose management issue;
- How to co-manage wildlife and work toward consensus as a group of people coming from diverse backgrounds;
- How likely it is that various management options will or will not succeed; and
- How to move forward with the information gained at the workshop.

Other important learning experiences included gaining new knowledge:

- From Elders, wildlife managers, scientists and biologists;
- About Inuit perspectives and traditional ecological knowledge;
- About the similarities between Inuvialuit and eastern Inuit hunting methods and cultural practices;
- That there was interest from youth; and
- About regulations, bird banding, harvesting, and light goose reproduction.

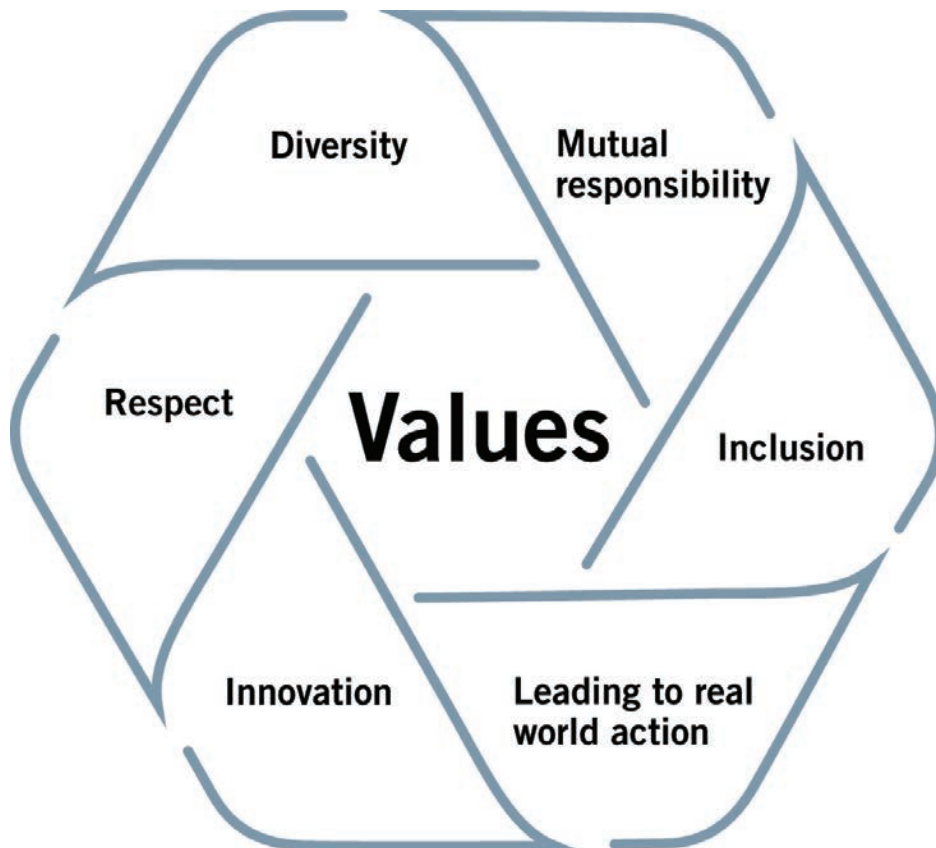
Participants also said that they learned:

- Patience;
- Dedication;
- Hard work; and
- That our voices are strong and heard: they are moving mountains and obstacles, and creating ideas.



# Conclusion

This workshop mobilized participants with a broad range of expertise to discuss a subject of common interest: light geese and their management in the Kivalliq region of Nunavut. The diversity of our group and the variety of methods we employed throughout the workshop reflected core values that guided the 2018 Light Goose Management Workshop.



We hope that this report can be used by co-management partners and other stakeholders to support and inform future light goose management actions. The information contained in this report can be viewed as a tool to leverage resources and support the planning and implementation of future initiatives related to light goose research and management, and wildlife conservation more broadly. All workshop participants learned from the 2018 Light Goose Management Workshop. We hope that documenting our experience can inspire others who care about promoting healthy land and communities in Inuit Nunangat.





# Appendix A – Participant consent form

## 2018 Light Goose Management Workshop

As a workshop participant, it is important that you are aware of and comfortable with how the information you share during this workshop is reported to interested parties and the public.

### Instructions

- 1 Please read carefully the *statement of participant rights* below.
- 2 Tick appropriate boxes.
- 3 Sign and return this form to workshop organizers.

If you have any questions or concerns about this consent form, please do not hesitate to discuss with workshop organizers.

### Statement of participant rights

I have been fully informed of the objectives of this workshop. I understand these objectives and I consent to participate in the workshop. I understand that this workshop will result in reports, presentations and publications that will be posted on the project website and shared with interested parties, the public, and journalists. I understand that steps will be undertaken to ensure that the information I share during the workshop will remain anonymous unless I consent to being identified by name (by ticking the appropriate box below). I also understand that, if I do not consent to have the information I share included in reports, presentations and publications related to this workshop, I may do so without any repercussions.

I would like my name, image, and the information I share used as follows (please tick three boxes):

☐

I WANT the information I share included in reports, presentations, publications and the website related to this workshop.

☐

I DO NOT WANT the information I share included in any way in workshop outputs/products.

☐

I WANT to be identified by name in reports, presentations, publications and the website related to this workshop.

☐

I wish to remain anonymous. My name will not be used in workshop outputs/products.

☐

I WANT my image/picture to appear in reports, presentations, publications, and the website related to this workshop.

☐

I DO NOT WANT my image to appear in any way in workshop outputs/products.

Participant consent: \_\_\_\_\_ (print name)

\_\_\_\_\_ (sign name)

Date of consent \_\_\_\_\_

Witness signature: \_\_\_\_\_



## Appendix B – Workshop participants

Name		Affiliation
David	Aglukark Sr.	Nivvialik Area Co-Management Committee, Arviat
Thomas	Ubluriak	Nivvialik Area Co-Management Committee, Arviat
Shayne	Ubluriak	Nivvialik Area Co-Management Committee, Arviat
Angelina K.	Suluk	Arviat Hunters and Trappers Organization, Arviat
Donald	Akammak	Arviat Hunters and Trappers Organization, Arviat
Andrea	Ishalook	Arviat Hunters and Trappers Organization, Arviat
Aupaa	Irkok	Community researcher, Arviat
Noah	Kadlak	Irniurviit Area Co-Management Committee, Coral Harbour
Moses	Nakoolak	Aiviit Hunters and Trappers Organization, Coral Harbour
Natasha	Ottokie	Aiviit Hunters and Trappers Organization, Coral Harbour
Ron	Ningeongan	Kivalliq Inuit Association
Bobby	Saviakjuk	Elder, Coral Harbour
Mark	Paniyuk	Elder, Coral Harbour
Lenny	Emiktaut	Community researcher, Coral Harbour
Bobbie	Saviakjuk	Community researcher, Coral Harbour
Jason	Akearok	Nunavut Wildlife Management Board
Daniel	Shewchuk	Nunavut Wildlife Management Board
Kyle	Ritchie	Nunavut Wildlife Management Board
Michael	Tucktoo	Kivalliq Inuit Association
Cheryl	Wray	Nunavut Tunngavik Incorporated
Raymond	Mercer	Nunavut Tunngavik Incorporated
Paul	Irngaut	Nunavut Tunngavik Incorporated
Manny	Kudlak	Wildlife Management Advisory Council (NWT)
Bradley	Carpenter	Inuvialuit Game Council
Jean-François	Lamarre	POLAR Knowledge Canada
Myra	Robertson	Environment and Climate Change Canada / Arctic Goose Joint Venture
Nute B.	Arnauyumayuq	Environment and Climate Change Canada / Nivvialik Area Co-Management Committee
Jean-François	Dufour	Environment and Climate Change Canada / Irniurviit Area Co-Management Committee
Ray	Alisaukas	Environment and Climate Change Canada
Ryan	Zimmerling	Environment and Climate Change Canada
Jim	Leafloor	Environment and Climate Change Canada
Dominique	Henri	Environment and Climate Change Canada / Workshop organizer
Vicky	Johnston	Environment and Climate Change Canada / Workshop organizer
Paul	Smith	Environment and Climate Change Canada / Workshop organizer
Natalie	Carter	Environment and Climate Change Canada / Workshop organizer
Joanasie	Akumalik	Workshop facilitator





# Appendix C – Workshop agenda

Monday, September 24

4.00 pm to  
6.00 pm

- Meeting for participants from Arviat and Coral Harbour and workshop organizers

Tuesday, September 25

1.30 pm to  
2.15 pm

- Welcome note and opening prayer (by Joanasie Akumalik and Elder)
- Acknowledgement of Indigenous Peoples and the placed called Winnipeg (by Natalie Carter)
- How this project started and workshop objectives (by Vicky Johnston)
- Workshop logistics (by Dominique Henri)
- Icebreaker (by Joanasie Akumalik)

2.15 pm to  
3.15 pm

- Presentation of *Inuit knowledge* about light geese project (by Natalie Carter, Aupaa Irkok, Bobbie Saviakjuk and Lenny Emiktaut)

3.15 pm to  
3.30 pm

- *Break – Coffee and snacks provided*

3.30 pm to  
5.00 pm

- What this project means to our community – Perspectives from project partners (by representatives from Area Co-Management Committees and Hunters and Trappers Organizations from Coral Harbour and Arviat)

5.00 pm to  
7.00 pm

- *Dinner – Please make your own arrangements*

Wednesday, September 26

8.15 am to  
9.00 am

- *Travel by bus from Clarion Hotel & Suites to Oak Hammock Marsh Interpretive Centre. Please meet in the hotel lobby at 8.15am. Coffee and snacks will be available upon arrival at the Interpretive Centre.*

9.00 am to  
10.00 am

- *Outdoor activity: songbird banding in the marsh (organized by Oak Hammock staff)*

10.00 am to  
11.00 am

- Welcome note (by Joanasie Akumalik)
- Inuit land claims and light goose co-management – Perspectives from Nunavut Tunngavik Incorporated (by Paul Irmgaut)
- Inuit land claims and light goose co-management – Perspectives from the Nunavut Wildlife Management Board (by Jason Akearok)
- Inuit land claims and light goose co-management – Perspectives from Environment and Climate Change Canada (by Myra Robertson)
- Questions and discussion

Wednesday, September 26

11.00 am to  
12.00 am

- Sharing stories about light geese
  - Inuit and light geese (by community members from Arviat and Coral Harbour)
  - Overview of status/trends of light geese (by Ray Alisauskas)

12.00 am to  
1.00 pm

- *Lunch provided*

1.00 pm to  
2.15 pm

- Sharing stories about light geese (continued)
  - Light geese and shorebirds in the Arctic & Doing bird science (by Paul Smith)

2.15 pm to  
3.00 pm

- History of light goose management in Canada (by Ryan Zimmerling)
- Questions and discussion

3.00 pm to  
3.15 pm

- *Break – Coffee and snacks provided*

3.15 pm to  
4.15 pm

- Discussion about management objectives for light geese (in four break-out groups)

4.15 pm to  
6.00 pm

- *Outdoor activity: bird observation in the marsh by foot or canoe (organized by Oak Hammock staff)*

6.00 pm to  
7.00 pm

- *Dinner provided*

7.00 pm to  
7.30 pm

- Inuit community game

7.30 pm to  
8.30 pm

- *Travel by bus to Clarion Hotel & Suites*

Thursday, September 27

9.00 am to  
10.00 am

- Welcome note (by Joanasie Akumalik)
- Discussion about of our shared management objectives and guiding principles for action (by Joanasie Akumalik and Dominique Henri)
- Presentation of light goose management options from Coral Harbour and Arviat (by Dominique Henri and community members from Arviat and Coral Harbour)
- Summary of key light goose management options / approach for discussion (by Joanasie Akumalik)
- Overview of the Nunavut Harvesters Support Program (by Raymond Mercer)

Thursday, September 27

10.00 am to  
10.30 am

- Discussion about management options (in four break-out groups)

10.30 am to  
10.45 am

- *Break – Coffee and snacks provided*

10.45 am to  
12.00 am

- Discussion about management options (in four break-out groups)

12.00 am to  
1.00 pm

- *Lunch provided*

1.00 pm to  
3.00 pm

- Discussion about management options (in four break-out groups)
- Plenary – Summary of break-out group discussions about management options (by Natalie Carter, Dominique Henri and Paul Smith)

3.00 pm to  
3.15 pm

- *Break – Coffee and snacks provided*

3.15 pm to  
5.15 pm

- Comparison of four management options
- Workshop evaluation
- Draw for prizes
- Conclusion and closing prayer (by Joanasie Akumalik and Elder)

5.15 pm to  
7.00 pm

- *Dinner – Please make your own arrangements*

Photo credit: Scott Flemming





# Appendix D – Light goose management options from Arviat

Arviat residents recommend exploring the following options for managing light geese in the Kivalliq region:

## 1 Expand the local harvest (for non-commercial use)

- Expand the local light goose harvest for non-commercial use. Hire local hunters to harvest light geese (meat and eggs) for people in the community, other Nunavut communities, and other countries that need them. This would provide local employment opportunities and address food security.

## 2 Expand recreational hunting opportunities

- Open recreational hunting for light geese. Remove the bag limit and seasonal restrictions for non-Inuit hunters.

## 3 Conduct more research

- Conduct more research on light geese, including research on light goose population size, seasonal movements, and contaminants present in light goose meat (find out if geese are safe to eat).
- Inuit and scientists should work together (concurrently) when conducting research.

## 4 Other strategies

- Do not waste light geese.
- According to Inuit Qaujimajatuqangit, if light geese become overabundant the population size will suddenly drop due to disease, which would be bad news. The size of the light goose population should be reduced to avoid this situation.
- Southerners should take action to reduce the size of the light goose population.
- Take no action (management option expressed by a minority of residents).



# Appendix E – Light goose management options from Coral Harbour

Coral Harbour residents recommend exploring the following options for managing light geese in the Kivalliq region:

## 1 Expand the local harvest

- Expand the local light goose harvest for non-commercial use. Hire local hunters to harvest enough light geese (meat and eggs) for everyone in the community, and for other communities in Nunavut that do not get as many light geese. This would provide local employment opportunities and address food security.
- Implement a local light goose harvest for commercial use. Build a processing plant for selling meat and down. This would provide local employment opportunities.

## 2 Expand recreational hunting and other tourism opportunities

- Open recreational hunting for light geese (no bag limit for non-Inuit hunters) to encourage southern-based hunters to visit the community. This would provide local employment opportunities.
- Develop bird watching opportunities for southerners who want to see the end of the light geese migration route.

## 3 Conduct more research

- Conduct more research on light geese on Southampton Island (including in the Ikkattuaq Migratory Bird Sanctuary).

## 4 Other strategies

- Do not waste light geese.
- Make public announcements to discourage disrespectful behavior towards light geese (such as kids throwing rocks at geese or vehicles killing geese on the road).
- Take no action (management option expressed by a minority of residents).





# Appendix F – Questions for discussion of light goose management options

## 1 **How could this management option be implemented?**

- a. *What* exactly is the management option about?  
(define management option)
- b. What *resources* are needed? (types of expertise required, types of expenses (costs), potential sources of funding)
- c. *Who* should be involved?  
(organizations/communities and types of expertise required)
- d. *Where* could this management option be implemented?  
(communities/regions, with strategies for scaling up if appropriate)
- e. *When* could this management option be implemented?  
(approximate timeline, with steps if possible)
- f. What would be the *benefits* of implementing this management option?  
Who would directly benefit from this option? (organizations, communities, species)
- g. Are there *risks* associated with this option?  
Are there *challenges* people are likely to face when implementing this option?
- h. Who should *lead* this initiative?  
(organizations/communities)

## 2 **Does this management option *meet our fundamental management objectives*?**

(please discuss each objective)



# Appendix G – Workshop evaluation and feedback form

## 2018 Light Goose Management Workshop

### Your feedback is important to us!

We are interested in knowing what you think about the workshop that just took place. Your feedback will help us improve our work. It will allow us to share information with others about best practices for using science and Inuit knowledge in wildlife co-management.

The information you provide as part of this evaluation process will remain anonymous. It will be used only in reports, presentations, and publications associated with this workshop.

We thank you in advance for your valuable collaboration!

– The workshop organizers

### Please take a few minutes to answer the following questions.

- 1 What did you like the most about the workshop? Why?
- 2 Is there anything you did not like about the workshop? Why?
- 3 What could we improve if we were to hold a workshop like this again?
- 4 What did you learn at this workshop?
- 5 What was good (benefits) about having people with different knowledge discuss light goose management options together?
- 6 What was difficult (challenges) about having people with different knowledge discuss light goose management options together?
- 7 What else would you like to tell us about your workshop experience?
- 8 How would you describe your workshop experience? (Please circle the appropriate answer.)

Very good      Good      Average      Poor      Very poor

- |  |  |
|--|--|
| <input type="checkbox"/> Project Management Committee member             | <input type="checkbox"/> Bird biologist                  |
| <input type="checkbox"/> Community researcher                            | <input type="checkbox"/> Wildlife manager                |
| <input type="checkbox"/> Community member (from Arviat or Coral Harbour) | <input type="checkbox"/> Federal government employee     |
| <input type="checkbox"/> Inuit organization employee                     | <input type="checkbox"/> Territorial government employee |
| <input type="checkbox"/> Participant to interview done by research team  | <input type="checkbox"/> Other (please describe) _____   |





# Appendix H – Useful resources

## Funding opportunities and potential partners

- 1 Agriculture and Agri-food Canada <http://www.agr.gc.ca/> and programs accepting applications  
<http://www.agr.gc.ca/eng/programs-and-services/?id=1362151577626> - details-panel1
- 2 Canadian Northern Economic Development Agency  
<https://www.cannor.gc.ca/eng/1351104567432/1351104589057>
- 3 Crown-Indigenous Relations and Northern Affairs Canada Funding Programs  
<https://www.aadnc-aandc.gc.ca/eng/1425576051772/1425576078345>
- 4 Government of Nunavut including Poverty Reduction division
- 5 Health Canada  
<http://www.hc-sc.gc.ca/> and Healthy Living funding  
<https://www.canada.ca/en/health-canada/services/healthy-living/funding.html>
- 6 Nunavut Food Security Coalition (Community Food Security Initiatives Program)  
including calls for funding proposals  
<https://www.nunavutfoodsecurity.ca/>
- 7 Nunavut Harvester Support Program (Nunavut Tunngavik Incorporated)  
[http://www.tunngavik.com/blog/initiative\\_pages/nunavut-harvester-support-program/](http://www.tunngavik.com/blog/initiative_pages/nunavut-harvester-support-program/)
- 8 Nunavut Wildlife Management Board Funding Opportunities  
<https://nwmb.com/en/funding>
- 9 Northern Contaminants Program  
<https://www.aadnc-aandc.gc.ca/eng/1323294036202/1323294099541#section1>
- 10 Nunavut General Monitoring Plan  
<http://www.ngmp.ca/eng/1363792048577/1363792058944>
- 11 Ducks Unlimited  
<https://www.ducks.org/>

## Materials on migratory bird hunting regulations and regulatory change

- 1 Hunting regulations for migratory birds: Nunavut 2018-2019  
<https://www.canada.ca/en/environment-climate-change/services/migratory-game-bird-hunting/regulations-provincial-territorial-summaries/nunavut.html>
- 2 Canadian Wildlife Service contact information  
<https://www.canada.ca/en/environment-climate-change/services/avoiding-harm-migratory-birds/canadian-wildlife-service-contact-information.html>
- 3 Plain language guide to the Nunavut Agreement  
<http://www.tunngavik.com/documents/publications/2004-00-00-A-Plain-Language-Guide-to-the-Nunavut-Land-Claims-Agreement-English.pdf>
- 4 Nunavut Agreement  
[http://www.tunngavik.com/documents/publications/LAND\\_CLAIMS\\_AGREEMENT\\_NUNAVUT.pdf](http://www.tunngavik.com/documents/publications/LAND_CLAIMS_AGREEMENT_NUNAVUT.pdf)

## Other helpful links

- 1 SIKU: The Inuit Knowledge wiki & social mapping platform  
<https://arcticeider.com/siku>
- 2 eBird  
<https://ebird.org/home>
- 3 WorldCafé Method  
<http://www.theworldcafe.com/key-concepts-resources/world-cafe-method/>
- 4 The Flyway Councils responsible for Light Goose Management
- 5 Precautionary Principle  
<http://www.cela.ca/collections/pollution/precautionary-principle>
- 6 Contact information to request bag limit changes  
Canadian Wildlife Service,  
Environment and Climate Change Canada, Northern Region  
Nova Plaza, 4th Floor, 5019 – 52nd Street, P.O. Box 2310  
Yellowknife, NT, X1A 2P7  
[ec.enviroinfo.ec@canada.ca](mailto:ec.enviroinfo.ec@canada.ca)

## Meat processing equipment information

- 1 A processing trailer: A portable unit allowing for easier scalding and plucking. The estimated cost is \$18,000 (including shipping to Nunavut).
- 2 A mobile slaughter unit: A fully insulated 40 foot containerized unit with stainless lining, electrical system, plumbing, hot water for cleaning, and drainage. The estimated cost is \$150,000 to \$165,000. This unit would weigh about 15,000 lbs. The total estimated cost including delivery, installation, and necessary gear (knives, clothing, boots) is \$200,000.



Photo credit: Paul Smith









