

***Using Hunter Observations and Ecological Knowledge Together With Science to Understand Past and Current Occurrence of Wildlife Diseases in the North***  
**Project Report, March 31, 2005**

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***Executive Summary***

We held a series of focus-group interviews on wildlife disease occurrence in 10 communities in the Sahtu, Gwich'in, and Inuvialuit settlement regions, Northwest Territories from January-March 2005. The purpose of the project was to record experienced harvesters' observations of wildlife disease in the past and present, and to determine if harvesters had noticed any changes in disease occurrence - i.e., types or frequency of diseases, or locations,. We worked with the local Renewable Resource Councils and Hunters and Trappers Committees to identify suitable harvesters to interview. A community assistant was hired to contact participants and assist with the interviews. A total of 63 experienced harvesters, both men and women, age 34-88 participated in the project. Focus-group sessions were tape-recorded and notes were also taken. Transcripts are currently being analyzed. This work represents a unique approach to understanding and monitoring changes in disease occurrence in a rapidly changing arctic environment. It is a component of a larger project to evaluate the effects of climate change on wildlife health in the western Canadian Arctic and Subarctic.

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***Background***

Wildlife in Arctic and Sub-arctic regions are an important renewable resource, providing subsistence for northerners and contributing to local and regional economies through tourism, fur harvesting, outfitting, and commercial harvests. Sustainable wildlife populations are, therefore, critical for ensuring biodiversity and ecosystem integrity and for the maintenance of healthy, productive northern communities. Diseases can negatively impact the health of wildlife through a variety of mechanisms and can alter the stability of those populations. Additionally, some diseases of wildlife can infect people (zoonoses) and pose a risk to those who harvest, handle, and consume wildlife. Climate warming is considered one of the most important factors causing emergence of diseases globally. Arctic and Sub-arctic ecosystems, experiencing an unprecedented and unparalleled rate of warming, are particularly sensitive to the impacts of climate change on the occurrence, transmission, and impacts of diseases in wildlife. This instils a sense of urgency to understand the current role of diseases in wildlife and the potential impacts of climate change on these systems.

Our scientific knowledge of diseases in wildlife in northern regions (especially Canada) is incomplete. Historical baseline knowledge and ongoing surveys, inventories and monitoring are needed to understand changes in disease occurrence, impacts in wildlife (individuals and populations), and to anticipate effects of current and future climate changes. In recent years we have increased our scientific investigations of diseases in northern wildlife; however, our understanding of the past remains is poor. To address this significant knowledge gap, in winter 2005 we worked with experienced harvesters in the Sahtu, Gwich'in, and Inuvialuit settlement regions of the NWT to record their observations of wildlife health in the past and present. These observations complement ongoing scientific investigations and help to develop a much broader picture of the past and current status of wildlife diseases in the north and the potential threats of climate change to this disease-wildlife-environment balance.

Indian and Northern Affairs Canada contributed \$35,000 towards this project in 2004-2005. This work is a component of a larger project to evaluate the effects of climate change on wildlife health in the western Canadian Arctic and Subarctic (An Evaluation of the Role of Climate Change in the Emergence of Pathogens and Diseases in Arctic and Subarctic Ungulate Populations), funded by the Climate Change Action Fund (Natural Resources Canada) and the Western Northwest Territories Biophysical Study.

***Project Objectives***

1. To determine the past and current distribution of diseases (readily identifiable by harvesters) in caribou, muskoxen, Dall's sheep, and moose in the Northwest Territories.
2. To determine if harvesters have observed changes in disease occurrence in wildlife over the last 30 years.
3. To determine harvesters' perceptions of the impact of various diseases on wildlife health.

## **Methods**

This project was done in collaboration with the Sahtu Renewable Resource Board, the Gwich'in Renewable Resources Board, and the Department of Resources, Wildlife, and Economic Development, Government of the Northwest Territories. Personnel from the Arctic Borderlands Ecological Knowledge Co-op, and others experienced in collection of traditional and ecological knowledge from harvesters, provided valuable advice on interview methods. Two veterinary graduate students, Aleksija Neimanis and Emily Jenkins, assisted with interviews in the Sahtu while participating in a related program on community-based monitoring of wildlife health in the Sahtu. Renewable Resource Councils (RRCs) and Hunters and Trappers Committees (HTCs) assisted in identifying people who had been actively harvesting for at least 25 years and recommending community assistants.

Focus-group interviews were held in several communities in the Gwich'in, Inuvialuit, and Sahtu Settlement regions. In most communities, a community assistant helped organize the sessions. Participants were first asked to sign a consent form and to fill in a harvester information form. Each individual was given a copy of the consent form for their files. Powerpoint slides and specimens of diseased tissues were used to facilitate discussions and identification of diseases. Discussions focused on diseases in muskoxen, caribou, moose, and Dall's sheep. At the end of each session, harvesters were asked to outline on a map the general area in which they had harvested over their lifetime. In all communities, with the exception of Colville Lake, the sessions were audio-taped. Translators were hired where necessary.

## **Results**

We held interviews with experienced harvesters from Colville Lake (7), Fort Good Hope (9), Norman Wells (4), Tulita (6), and Deline (5) in the Sahtu Settlement region, from Tsiigehtchic (6), Inuvik (3), and Aklavik (7) in the Gwich'in Settlement region; and from Sachs Harbour (4), Paulatuk (7), and Inuvik (5) in the Inuvialuit Settlement Region. A session was scheduled for Fort McPherson, however, because of a tragic death in the community the session was postponed until April. Interview sessions generally lasted 2-3 hours and participants were paid \$100 each.



Deline: Susan Kutz with translator Camilla Tutcho

Inuvik Inuvialuit: Shawna Kaglik (assistant) and Wendy Wright



Inuvik Gwich'in: Elizabeth Firth, GRRB Wildlife Biologist  
Catherine Lambert, and William Francis

Tsiigehtchic



*Hunter Observations of Wildlife Diseases, Report to INAC, March 31, 2005*



Sachs Harbour: Joe Apiana and Susan Kutz

Paulatuk: Edward Ruben, Garret Ruben, Susan Kutz



Aklavik Gwich'in:  
James McDonald Sr.,  
Susan Kutz





Colville Lake: John B Gully shows abnormal leg from a recently harvested caribou to Susan Kutz and Aleksija Neimanis

Tulita: Victor Menacho and Joe Bernard looking at map. Emily Jenkins in the background is taking notes



Fort Good Hope: Marking harvesting areas on the map.

A total of 54 men and 9 women participated in the focus-groups. Ages ranged from 34-88 years old. Participants had hunted and traveled in regions from the northern tip of Banks Island to south of Tulita and from the Yukon border east to Bluenose Lake.

The most common species harvested was caribou, with the exception of Sachs Harbour where muskoxen were the most common species. Very few people had harvested Dall's sheep, and with the exception of Paulatuk and Sachs Harbour - few had harvested muskoxen.

## ***Discussion***

In general, focus-group sessions were very successful, with researchers and participants appearing noticeably relaxed and freely sharing knowledge. Feedback from participants indicated that they felt that it was a positive and worthwhile experience and that we had learned from each other. In several communities participants requested that we do this type of work again, provide general public information sessions, and that we work with the youth and elders on the land.

A comprehensive analysis of the transcripts of the interviews is necessary before commenting in detail on results from the interviews. Of initial interest, however, is that harvesters in communities in the Sahtu had identified a 'slimy, yellow/green/tea colored fluid under the skin' as a recent and unusual observation in caribou. Harvesters in the Gwich'in and Inuvialuit regions did not report this abnormality in the animals they had harvested. Geographic differences in observations of a number of diseases were also apparent. Surprisingly, in some regions harvesters were not well informed about important zoonotic diseases such as Brucellosis, indicating that active harvester education in these regions is very necessary.



Paulatuk

***Plans for 2005-2006***

Data from interviews will be analyzed and presented in reports, posters, maps, and public presentations in the communities. Pending approval by the participants, the RRCs and the HTC, information will be incorporated in the broader climate change project and developed into peer reviewed publications.

Additional funding will be sought in 2005-2006 to do similar focus-group sessions in the Deh Cho and South Slave regions of the NWT, thereby completing both a north-south transect as well as a Mackenzie Valley transect.



Aklavik

***Acknowledgments***

**Community Assistants:**

Ray Ruben, Paulatuk; Terrance Lennie, Sachs Harbour; Neil Firth, Inuvik; Shawna Kaglik, Inuvik; Robert Buckle, Aklavik; Jennifer Andre, Tsiigehtchic; Debbie McNeely, Fort Good Hope; Wilfred Lennie, Tulita; Dennis Kenny, Deline; Glenda Lennie, Norman Wells; Linda Kochon, Colville Lake.

Department of Resources, Wildlife, and Economic Development: Richard Popko, James Auld  
Western College of Veterinary Medicine: Aasma Amin, Pat Thompson, Amy Templeman, Aleksija Neimanis, Emily Jenkins, Brent Wagner, Mathew Herperger  
Arctic Borderlands Ecological Knowledge Coop: Barney Smith, Joan Eamer, Gary Kofinas



Richard Popko, Alasdair Veitch and Aleksija Neimanis at Fort Good Hope: