

News from the KIVALLIQ REGION

Vegetation Mapping in the Kivalliq

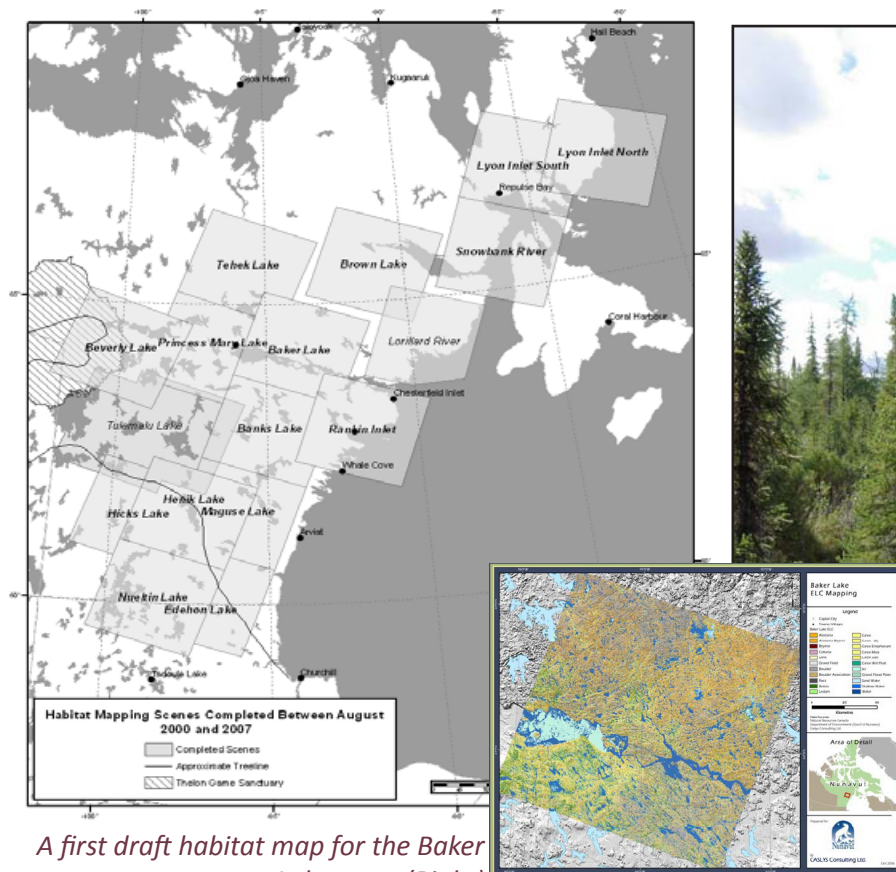
Mitch Campbell, Kivalliq Regional Biologist

Since the summer of 2000, the vegetation mapping program has sampled over 2000 plant sites and about 90% of the Kivalliq region has been mapped. This project has provided vital information, in combination with other projects such as the wildlife collaring and survey programs to determine critically important habitats to wildlife. Critical wildlife habitat is defined as an ecological area that is crucial to the survival of a wildlife species. Understanding the location and nature of these habitats will help us prevent disturbance in these areas. The program will also provide a benchmark from which the effects of climate change on vegetation can be monitored. This is the final year of the program and soon a map atlas as well as maps showing critical wildlife habitats will be provided to all Kivalliq communities and wildlife management organizations.

Wildlife Tracks

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Winter 2009



A first draft habitat map for the Baker Lake area. (Right)

Wildlife Technician Jonathon Pameolik sampling a forested site on the Qamanirjuaq Winter range.

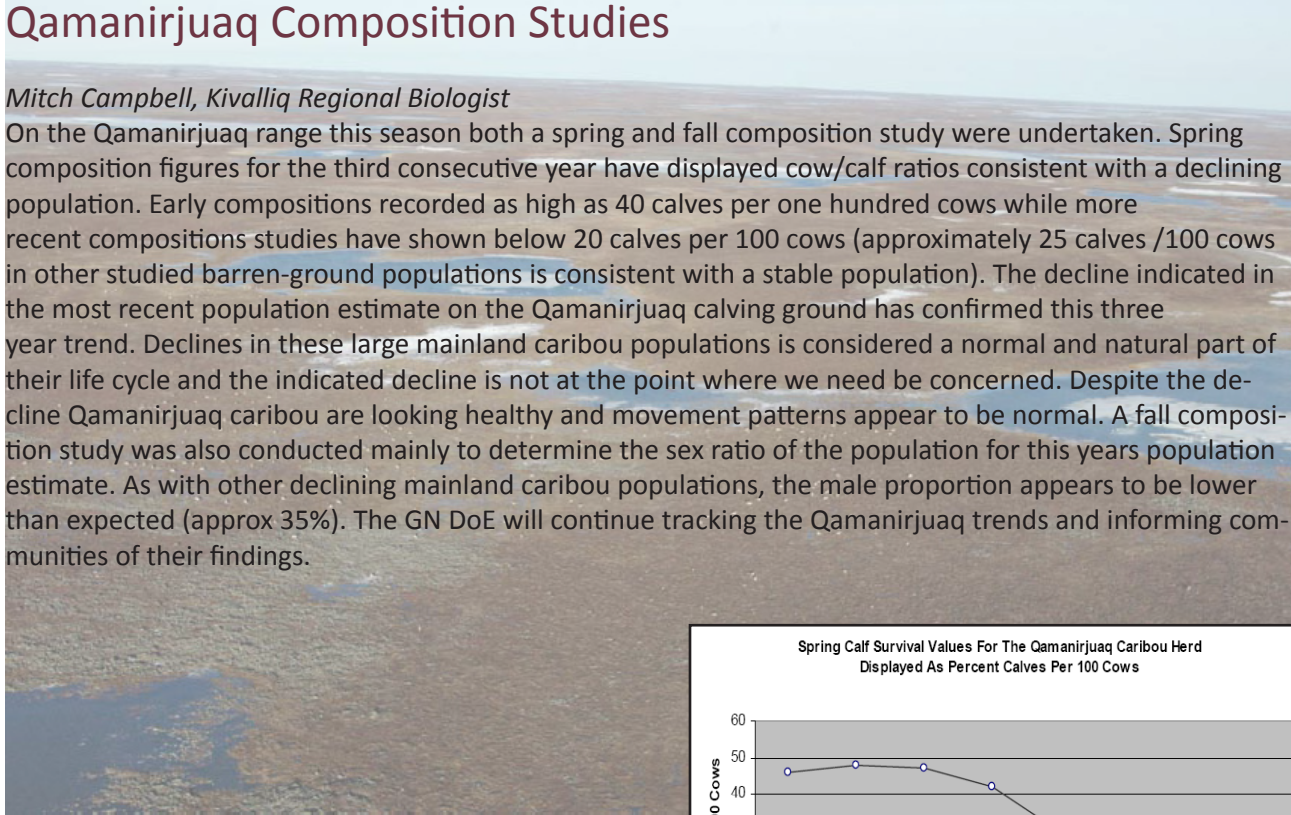
Coral Harbour Caribou Disease Study

The March 2008 disease and condition study done in partnership with the Coral Harbour HTO successfully analysed the health of two hundred Southampton Island Barren-ground caribou. Initial results found a 45% prevalence of Brucellosis which showed little change from the 48% observed in March 2007. Condition of the caribou was on average fair while pregnancy rates were between 35 and 40% which was far below historical rates. Initial findings in March 2009 suggest that the caribou are in better general health with fewer outward signs of Brucellosis. The DoE will be returning to Coral Harbour this June to estimate the population using fixed wing aircraft. An additional study to find ways to screen for disease using blood soaked filter paper was successfully concluded and is now in the development stage thanks to the hard work of Coral harbour hunters.

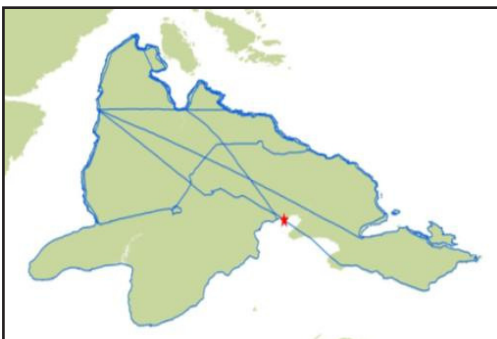
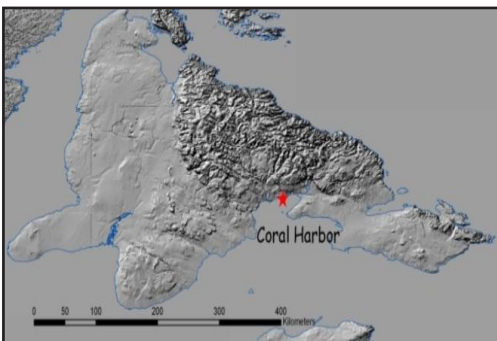
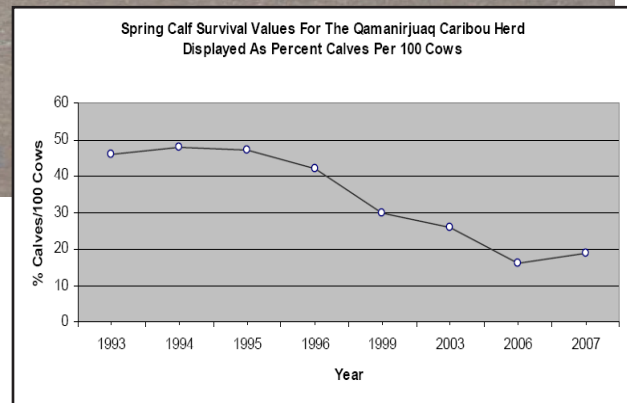
Qamanirjuaq Composition Studies

Mitch Campbell, Kivalliq Regional Biologist

On the Qamanirjuaq range this season both a spring and fall composition study were undertaken. Spring composition figures for the third consecutive year have displayed cow/calf ratios consistent with a declining population. Early compositions recorded as high as 40 calves per one hundred cows while more recent compositions studies have shown below 20 calves per 100 cows (approximately 25 calves /100 cows in other studied barren-ground populations is consistent with a stable population). The decline indicated in the most recent population estimate on the Qamanirjuaq calving ground has confirmed this three year trend. Declines in these large mainland caribou populations is considered a normal and natural part of their life cycle and the indicated decline is not at the point where we need be concerned. Despite the decline Qamanirjuaq caribou are looking healthy and movement patterns appear to be normal. A fall composition study was also conducted mainly to determine the sex ratio of the population for this years population estimate. As with other declining mainland caribou populations, the male proportion appears to be lower than expected (approx 35%). The GN DoE will continue tracking the Qamanirjuaq trends and informing communities of their findings.



Medium density caribou on the Qamanirjuaq calving ground.



Aerial Survey Method “Takes Off!”

Lily Peacock, Polar Bear Biologist and Seth Stapleton, University of Minnesota

Aerial surveying is a new method that is being developed as an alternative to methods involving handling of wildlife. In polar bear research studies, it involves using a mathematical model to estimate the number of bears in a population based on the number of bears seen from the air while flying transects across a population area.

As with any new methodology, this alternatives method must be tested to ensure that it provides accurate and reliable data.

The photo on the bottom left shows aerial survey transect lines flown over Southhampton Island during a pilot study in 2008. 170 bears were sighted. Using a mathematical model gave a population estimate of 240 bears.

Wildlife Management Priorities

Research in the Kitikmeot region is guided by a number of key priority areas. These priority areas are based on significant social and environmental factors that may have current or future impacts on wildlife populations in the region, for example changes to ranges of southern species such as Grizzly bear. Research is needed to better understand how these factors may affect the sustainability of wildlife resources on which people in the Kitikmeot depend. The following is a list of main terrestrial wildlife management priorities for the Kitikmeot region:

- ❁ Grizzly bear population assessment and management plan
- ❁ Dolphin and Union Caribou Management Plan
- ❁ Wolverine population assessment and management plan
- ❁ Muskox population monitoring for total allowable harvest (TAH) recommendation
- ❁ Harvest monitoring
- ❁ Habitat mapping and land use monitoring
- ❁ Wildlife disease and parasite monitoring
- ❁ Cumulative Impact Assessment (information is needed on how the cumulative effects of development and exploration projects may impact wildlife)

The Hair Snagging project will help us assess the status of these species in the Western Kitikmeot region.

When grizzly bears or wolverine brush up against the post, they leave hair behind, which can be genetically analyzed. (Top)

Hair snagging post set up near Kugluktuk. (Bottom)

Hair Snagging Project

Mathieu Dumond, Kitikmeot Regional Biologist

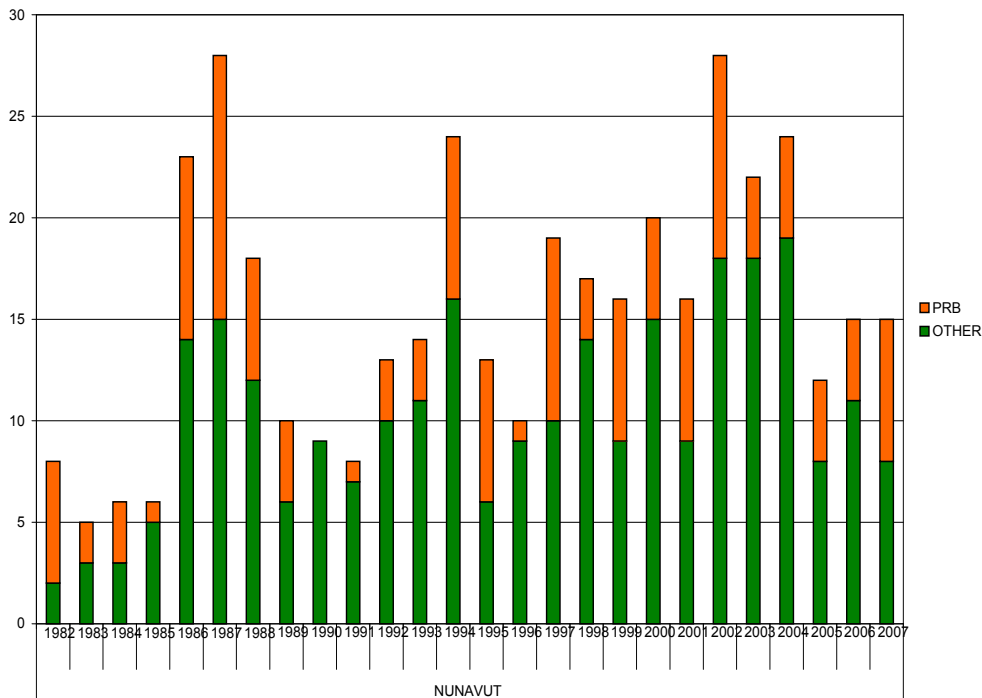
This project will assess the status of Wolverine (*Gulo gulo*) and Grizzly bear (*Ursus arctos*) populations in the Western Kitikmeot using genetic information extracted from hair collected through hair-snagging technique. The method does not require any handling of the animals or any invasive type of interaction. This project is a continuation of the pilot study conducted by Kugluktuk HTO and DoE since May 2004. This project aims to determine Grizzly bear and Wolverine abundance, harvest rates, population trends, landscape use, and population structure. The data will also be used to shed some light on the dynamics of bear-people conflicts and to complement data collected from other ongoing research projects. This project started in April 2007 and is scheduled to finish in 2011.



Grizzly Bear and Wolverine Harvest Monitoring

Mathieu Dumond, Kitikmeot Regional Biologist

This is a yearly project that aims to monitor the geographic distribution, sex and age composition of wolverine and grizzly bear harvest. Samples from both species are obtained from hunters. Tooth samples are processed to determine age, and DNA is extracted and used to assess population structure. Genetic information will also be compared to samples collected from hair snagging posts to estimate harvest rates. The data will be analyzed to assess the status of harvested wolverine and grizzly bear populations.



Number of Reported Grizzly Bear Kills in Nunavut from 1982 to 2007. The number of grizzly bears killed in defense of life and property has not significantly ($P=0.51$) increased during this period, whereas other type of kills (subsistence and commercial) have significantly increased over the period ($P<0.01$). The average yearly number of Grizzly bears killed in Nunavut increased from 13 from 1982 to 1997 to 19 from 1998 to 2007. Males represent on average, 81% of the harvest.

Caribou and Muskox Monitoring Update

Ungulates are of great importance for Nunavummiut food, culture and economy. We have assisted neighboring jurisdictions with the assessment of shared caribou herds and completed in the survey of the Dolphin and Union Caribou Herd in October 2007. Over the past 10 years we have nearly completed the inventory of the various muskox populations in the Kitikmeot. We continue to monitor these species through collaborations with our partners (GNWT-ENR-Sahtu region, GNWT-ENR-Inuvialuit Settlement area, GNWT-ENR-Headquarters, Local HTOs, University of Alaska, University of Calgary).

“A Polar Bear Ate My Snowmobile!”

We are beginning to hear more and more testimony like this, as conflicts between people and wildlife are increasing across Nunavut. Such interactions can range from minor disruptions, such as the presence of wildlife in close proximity, to the extreme, such as loss of life. In Nunavut, both polar bears and grizzly bears have been involved in conflicts with humans. Along with the very real risk of injury or death, these interactions typically involve economic loss (property, food, ammunition, fuel, and time), and can be a source of significant stress or worry amongst Nunavut residents and visitors.

Understanding bears and the underlying causes of bear-human conflict will help to prevent property damage and more serious interactions. Both polar bears and grizzly bears are quick to associate humans and human structures (caches, cabins, communities) with available food. This is apparent when a series of cabins are broken into; the bear only needs to find food in one to be inclined to check other cabins out. Or if you have meat that is accessible to bears at your camp or home you will find it much harder to chase and keep a bear away than if you had made that meat inaccessible.

The Department of Environment will soon launch a territory wide campaign to help individuals and communities reduce the frequency and severity of human-bear interactions. Both traditional and scientific knowledge will be applied to find solutions which can be tailored to the unique situations in Nunavut. These department activities are headed by the Wildlife Deterrent Specialist who will be working closely with Conservation Officers, Hunter and Trappers Organizations, and hamlets to address wildlife conflict issues.

Meet the Wildlife Deterrent Specialist

Sarah Medill has hands on experience with dealing with grizzly bear and polar bear encounters during her time camping and staying in cabins in Nunavut. She is familiar with the tools which can help to prevent conflicts between wildlife and people and hopes to share her experience and knowledge to benefit Nunavummiut. She is very excited for the opportunity to learn more about the history and culture of Nunavut and incorporate this into the wildlife deterrent program.

The Wildlife Deterrent Specialist’s goals are to:

1. Reduce the risk to human life
2. Reduce destruction of property
3. Reduce defense kills; which supports selective and sustainable hunting.

Increased conflicts between people and polar bears or grizzly bears could be due to:

-  Increased polar bear populations since 1960s
-  Increased grizzly bear populations and range expansion
-  Rapidly growing human population (more people, more cabins, etc.)
-  Changes in the way people live. For example, community garbage dumps become a predictable source of food for bears.
-  Changing sea ice conditions forcing polar bears onto land for longer periods. Polar bears with insufficient sources of food may be more inclined to approach humans and their structures.



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Nunavut Wildlife Symposium

From March 16th-20th, over 140 delegates from across Nunavut convened in Rankin Inlet for the 2009 Nunavut Wildlife Symposium. The event was planned and coordinated collaboratively by representatives from Nunavut Tunngavik Incorporated (NTI), the Nunavut Inuit Wildlife Secretariat (NIWS), the Nunavut Wildlife Management Board (NWMB), and the Government of Nunavut (GN).

The purpose of the Symposium was to foster dialogue and promote *Piliriqatigiinni* (working together) for wildlife research and management in Nunavut.

Participants at the wildlife symposium included at least two delegates from each community HTO, and each RWO, as well representatives from NTI, NWMB, NIWS and federal government departments involved in wildlife management in Nunavut. Included in the Symposium agenda were opportunities for informal and interactive group discussions that encouraged sharing wildlife knowledge and information between hunters, elders and scientists.



“The Symposium has been an opportunity for everyone involved in wildlife management to think about new ways to bring together science and Inuit Qaujimajatuqangit, working toward the vision we share surrounding wildlife sustainability. It is so important that the great momentum initiated through this Symposium continues. Although the Symposium is over, I hope it is only the beginning of renewed relationships, new understanding, new partnerships, and innovative ideas for wildlife co-management.”

The Honourable Daniel Shewchuk, Minister of Environment

Photos:

Top: Symposium delegates including Mitch Campbell and Simeonie Aqpiq engage in “Cabin Talk”, sharing stories and knowledge about Caribou in Nunavut.

2nd from Top: Dr. Oscar Kawagley, a Yupiat elder from Alaska shares his wisdom on the keys to successful co-management through bringing together science and Indigenous knowledge.

2nd from Bottom: Minister Shewchuk delivers opening remarks at the Community Feast

Bottom: Jayko Aloo, Attima Hadlari, and David Aksawnee talk about the role of HTOs in wildlife management.

Community Based Caribou Health Monitoring

Debbie Jenkins, Baffin Regional Biologist

Barren-ground caribou are an integral component of the arctic ecosystem and an important game species of Inuit hunters. Environmental changes, increasing industrial development and the historical high prevalence of brucellosis in North Baffin region are raising questions among hunters and scientists alike on the health and survival of Nunavut's caribou herds. Based on local observations of declining populations, HTOs and local hunters have expressed interest in becoming actively involved in a caribou research program. In response to this, a community-based research program was developed with HTOs in Arctic Bay, Pond Inlet, Clyde River and Sanikiluaq. Hunters in these communities have been trained to collect information and samples from caribou that they already harvest. Hunters will collect the lower left leg, lower jaw, blood and fecal samples and record information such as back fat, the sex of the animal and where it was harvested.

In turn, scientists will analyse the samples and information and report back to the communities.

Since we know very little about the health of caribou herds in the Baffin region, this program will help us explore important questions on caribou diet, body condition, genetic variation and disease.



The lower leg with skin provides information on parasites, body condition, growth, disease, and genetic diversity.

This information, combined with local and Inuit knowledge on caribou ecology, morphology and behaviour will help address key wildlife management concerns of HTOs, communities and wildlife managers. Over the long term, this community-based monitoring approach will allow us to detect and respond to changes in caribou health over time. We look forward to bringing the knowledge gained from this research project back to the communities, confident that it will help to ensure the long term sustainability of caribou and benefit the communities that depend on them.

“There are hardly any caribou around North Baffin anymore, which has generated more interest in the health of our caribou. A program like this should go Nunavut wide, involving more communities and collecting even more information on the caribou that so many depend on. The information we collect includes caribou condition and disease, information that we all benefit from.” Jayko Aooloo, Chair, Pond Inlet HTO

Peary Caribou Update *Debbie Jenkins, Baffin Regional Biologist*

Since 2001 we have been working with the HTO in Resolute and Grise Fiord to survey Peary caribou and muskoxen in the High Arctic. This included joint ground and aerial surveys on the Bathurst Island Complex, Cornwallis Island, western Devon Island, Prince of Wales Island, Somerset Island, and in 2005-06 Ellesmere and Graham island. In 2007 and 2008, aerial survey techniques were used to record wildlife numbers on Axel Heiberg, Ellef Ringnes, Amund Ringnes, King Christian, Cornwall, Meighen, Loughed Island, and Devon Island. Ground surveys could not be completed due to the remote location and the challenging relief. The principle goal of the project is to determine the abundance and distribution of these species. Fecal samples collected during the surveys will provide additional genetic information to evaluate population structure and diversity. The results will be used to update TAH recommendations and inform habitat conservation and land use (i.e. exploration, mining, road development).

North Baffin Caribou Collaring

Debbie Jenkins, Baffin Regional Biologist

Barren ground caribou are the only ungulates which inhabit Baffin Island. North Baffin caribou are one of 3 populations (North Baffin, Northeast Baffin, and South Baffin) currently recognized on the island. Although this population has never been surveyed, the number of caribou was estimated at greater than 30,000 in 1985 and at 50,000-150,000 in 1991.

Recent exploration efforts in North Baffin, particularly the Mary River, are raising concerns and questions about the potential impact of development on caribou fitness and survival. The ecosystem is fragile and changes in habitat quality, access and availability can impact wildlife. Both Inuit Qaujimagatuqangit (IQ) and a preliminary calving survey have identified the Mary River area as important to caribou.

Because detailed information on space use and movement is critical to understanding range use over time, the principle aim of this program was to capture adult female caribou, attach GPS collars, and release them back into their natural environment. The GPS collars allow the collection of important location data without disturbing the caribou again.

During our reconnaissance survey in 2008, we encountered a small number of caribou (47 in 9 groups) within the 40,000 km sq. study area. One healthy female caribou per group was fitted with a collar for a total of 4. Some of the caribou groups had no females. Deployment of collars was limited by low caribou numbers and deployment efforts will continue in 2009 to increase the sample size and spatial distribution of collars. In an effort to increase caribou encounters and deployment, the study area has been expanded to include the Borden Peninsula as recommended by the Arctic Bay HTO. Field efforts will begin later this month.



What GPS Collaring Tells Us

Caribou GPS collars are designed with an automatic release mechanism so that they fall off the caribou in 2 years. The collars will collect 2 locations a day.

The caribou location data will help us evaluate:

- 1) space use and movement of caribou through time
- 2) the number of distinct populations or herds in North Baffin
- 3) the nature of caribou range use (including seasonal and annual ranges)
- 4) potential impacts of exploration/human activity

This information helps us to recommend appropriate conservation and management initiatives.



Adult female caribou are fitted with GPS collars with an automatic release (Above)

During the 2008 reconnaissance survey, Sheatie Tagak from Pond Inlet HTO served as a caribou observer in the helicopter. (Left)



Inuit Qaujimajatuqangit Research in Davis Strait

Moshi Kotierk, Social Science Researcher

The *Nunavut Land Claims Agreement* laid a foundation for a wildlife management system that invites and promotes public participation and confidence. By researching *Inuit Qaujimajatuqangit*, we are making an effort to ensure that information on local values and concerns is available for decision-making. *Inuit Qaujimajatuqangit* translates as “that which

has long been known by Inuit”. It can be defined as a system encompassing both traditional knowledge and individual and societal values and beliefs.

To inform the Davis Strait polar bear study, *Inuit Qaujimajatuqangit* has been gathered in Pangnirtung, Iqaluit and Kimmirut. Traditional knowledge was documented through interviews with elders and hunters about polar bears, climate change, Inuit knowledge and research. To gather information on societal values and public opinion, polls were conducted by randomly selecting houses and asking residents to participate in a questionnaire. Public opinion polls are a commonly used method to inform decision-making.

Results from this study indicate that elders and hunters are observing environmental change, but many felt that it was out of human control. In addition, elders and hunters in these communities did not seem to feel that polar bears are threatened, since they are viewed as being more adaptable and resilient than human beings. Data from the public opinion poll indicate that members of the sample communities perceive there to be “many polar bears” and public preference was for polar bears to exist at a moderate level.

The social science program will continue to develop the issues examined and the methods used for gathering traditional knowledge and public opinion.

Meet the New Carnivore Biologist: Malik Awan, Igloolik

Malik joined the Nunavut research team as Carnivore Biologist in March, 2009.

Q. Where are you from, and how long have you been with the Department?

A. A thirst for knowledge, love for wildlife and later Inuit societal values has driven me from the mountains and deserts of south East Asia (Pakistan), to the cold desert of Canada. I moved to Igloolik to join Department of environment in March 2008 from Ontario. I have some experience in research and management of wildlife with the help of local communities.

Q. What is your role as Carnivore Biologist?

A. My role as carnivore biologist is to develop and maintain a scientifically sound research program and information about wolves, wolverines, grizzly bears by: Obtaining and integrating traditional/IQ knowledge into and wildlife management; Identifying issues and priorities and information gaps that require scientific data; Developing studies, identifying the scope and methodology to obtain information on carnivore biology and habitat requirements to assess the impacts of human behaviour including economic and infrastructure development; and Interpreting data from studies to provide a basis for managing wolf, wolverine and grizzly bear populations and other species as required.

Q. What do you want Nunavummiut to know about wildlife research?

A. What I have learnt while working with the wildlife and people that this is hunters, as individuals and through organizations, have created a powerful conservation ethic. Wildlife researchers here in arctic are summer observant (most studies conducted in late spring to early fall). In my opinion for long term management we need the species complete biology/ecology knowledge and for that we are dependent on IQ. Inuit-men and women, young and old-are the firsthand observers of the health of wildlife populations. Wildlife research is also a set of observations a person conducting by using specific method/technique to get the objectives in a comparatively organized way. In my opinion by working together we can defend our position in scientific and international community in a better way.



Davis Strait Polar Bear Study

Lily Peacock, Polar Bear Biologist

In January, we visited the communities of Pangnirtung, Kimmirut and Iqaluit to share the results of the Davis Strait polar bear population study. This goal of this project were to estimate the number of bears in the population, as well as get an estimate of the growth rate of the population.

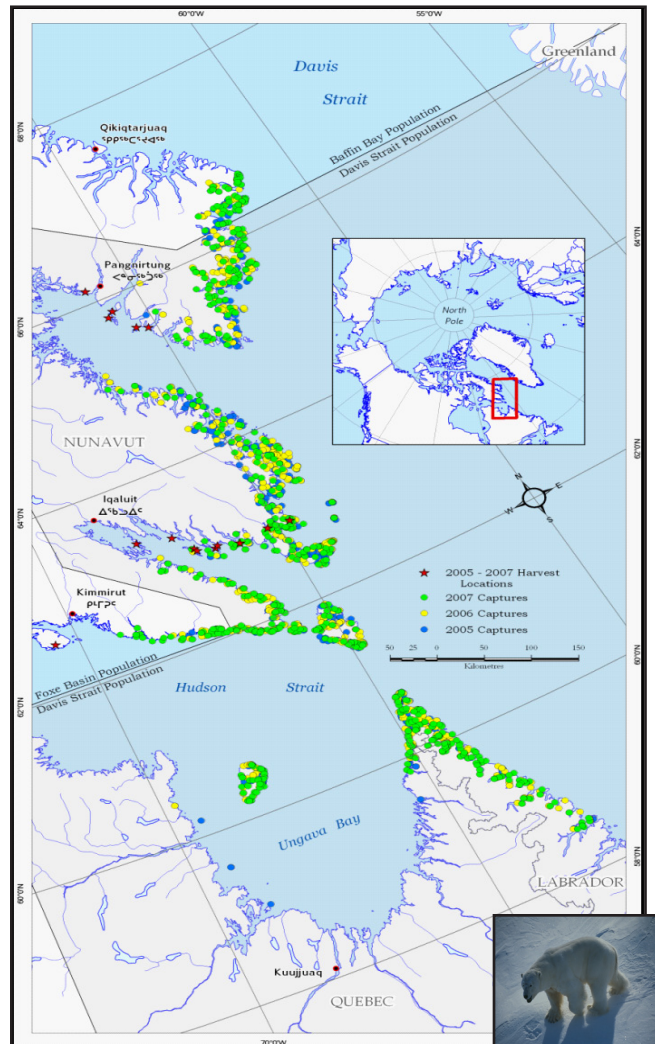
For this population, field work was conducted from 1997-1999 using satellite collars and from 2005-2007 using mark-recapture methodology to generate a new population estimate.

Consistent with Inuit and local knowledge, our research results show that the population size has increased to 2,200 animals. However our data shows that the population size is no longer increasing. Polar bear survival has also increased from the 1970's to the present, but is starting to level off.

Our findings indicate that the increase in harp and hooded seals is correlated with the increase in polar bear survival. These populations have increased because of lower commercial harvest of harp seals.

The results of this study suggest that this population could support a moderate increase in harvest.

Dots on the map indicate polar bears captured from 2005-2007.



Species at Risk Update

The polar bear has recently been assessed under the Federal Species at Risk Act (SARA) as a species of Special Concern, the first step in the listing process. Environment Canada is currently visiting all communities in Nunavut to seek public input into the proposed listing. The Nunavut Wildlife Management Board will make the decision on the listing in Nunavut and provide that decision to the Federal Minister of Environment. There are no automatic harvesting restrictions under SARA for species of Special Concern. The listing would apply to polar bears across Canada on land administered by the federal government.



Did you know?

An ecosystem is a natural unit consisting of all plants, animals and micro-organisms (biotic factors) in an area functioning together with all of the non-living physical (abiotic) factors of the environment.

The Ecosystems Biologist applies both the science that is generated by the wildlife research section and Inuit Qaujimagatuqangit to:

- 1) Enable wildlife managers to make the best decisions possible under the uncertainty of changing times (e.g. development, climate change), and
- 2) Help ensure development, wildlife harvesting, tourism, and other human activities are conducted in a manner which does not compromise the sustainability of wildlife and wildlife habitat

For more information, or if you have concerns about the impacts of human activities on wildlife, you may discuss them with Hillary Robison, the Ecosystems Biologist: (867) 934-2176.



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