

### Sub-project 1: *Wildlife Health Monitor Program*

To understand how changes to the land in the north will affect wildlife populations, it is critical to have baseline information on the current status of wildlife populations, and to establish long-term monitoring plans that can detect important changes. Subsistence hunters are the ‘eyes on the land’ for monitoring and detecting changes in wildlife populations. However, to be more effective in this role, education and training are key. Hunters must be informed and trained so that they know how to recognize and safely handle abnormal tissue samples, collect standard samples, and submit their observations and samples to the appropriate people and agencies.

Objectives:

1. Establish baselines for health and condition of key wildlife species
2. Provide a manageable and cost-effective means of monitoring health and condition of key wildlife species over a long period (i.e., >10 years, with a goal of >25 years)
3. Involve local harvesters in long-term, community-based monitoring of wildlife health and condition

Building on the success we feel we achieved with our Wildlife Health Monitor (WHM) program in Deline in 2004, we expanded the program in 2005. Two WHMs were trained in both Colville Lake and Fort Good Hope during the January community tour; update sessions were held with our Deline WHMs. All WHMs received complete sets of sampling kits – each Monitor collects specific samples from up to 10 animals that they are harvesting for subsistence. In return, WHMs receive \$100 of gasoline/diesel per complete set of samples received to a maximum of \$1000.



Aleksija Neimanis meets with Deline Wildlife Health Monitor, Bruce Kenny, to get his feedback on the program in 2004. Chris Yukon is the other monitor for Deline.

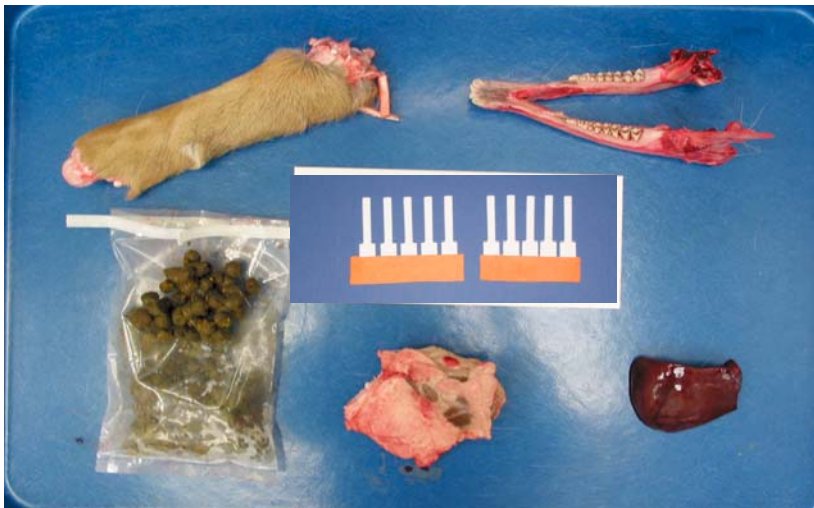
Aleksija Neimanis showing Colville Lake Wildlife Health Monitor, Joseph Kochon, the data sheets for caribou sample collection. Richard Kochon is the other monitor for Colville Lake.





Fort Good Hope new Wildlife Health Monitors, Michael Jackson and Wilfred Jackson familiarizing themselves with their data collection kits.

Posters summarizing the results from samples collected by WHMs in 2004, and an overview of the WHM program were provided to all 5 Renewable Resource Councils (RRCs) and were posted around the communities (e.g., *Northern* store, Band Council offices, etc.).



Example of the samples that the Wildlife Health Monitors collect from caribou

By March 31, 2005, a total of 20 barren-ground caribou samples had been received from the WHMs; an additional 3 moose and 5 barren-ground caribou samples have been collected but not yet submitted to DRWED in Norman Wells.

**Sub-project 2: School Presentations and Dissections**



Susan Kutz and Aleksija Neimanis outside of the Colville Lake School

Participants in the October 2002 workshop strongly advised SRRB and DRWED that youth be informed about wildlife research and management in the Sahtu, and about some of the various issues surrounding wildlife and wildlife health. Students and youth (<25-yr-old) rarely attend RRC or SRRB meetings where these issues are discussed and we found that there was a relatively low level of understanding among young people about the various roles of SRRB, RRCs, government agencies, and local people in wildlife management.

Students are our future resource managers – either as a career choice, as harvesters themselves, or as members of Land Corporations, RRCs, the SRRB, and similar organizations. Therefore, a sound understanding of the role of environmental monitoring, science, and scientists – in conjunction with local knowledge - is essential for our youth.



Objectives:

1. Inform students about basic biology and ecology of local wildlife species
2. Inform students about local wildlife research and monitoring projects
3. Encourage students and schools to become involved in monitoring projects (e.g., small mammal survey, snowshoe hare survey, Christmas Bird Count, etc.)
4. Increase awareness among Sahtu students of the possibility of their having careers in resource management, veterinary medicine, or other science-related fields (e.g., Environmental Monitors, Renewable Resources Officers, etc.)
5. Increase awareness of the use of science and research, in combination with local traditional knowledge, in monitoring wildlife populations and for decision-making in renewable resource management (e.g., land use planning, Protected Areas)
6. Establish liaisons with school staff
7. Identify candidate students for seasonal employment opportunities with SRRB and DRWED.

This year, we used American marten to demonstrate basic concepts of wildlife ecology, research and management, and health to students (Kindergarten to Gr. 12) in the Sahtu's five schools. Marten were chosen for focus since they are by far the most important furbearer for trappers in the Sahtu, representing over 80% of total harvest value. We provided 17 *PowerPoint* presentations on marten biology, local research, historical and current harvest in Sahtu, diseases and parasites, and how research can be used for trapline management. Students had an opportunity to handle marten skins and mounts and to examine marten parasites. Presentations were individually tailored for groups of grades (see below), with more focus on management and research given to students in higher grades.



Sixty-nine students (generally Gr. 10-12) also had the opportunity to dissect marten carcasses received from Sahtu trappers. Students were shown how both wildlife biologists and veterinary

pathologists collect information from marten carcasses, and how to appropriately record information and collect samples.



**Colville Lake (18 January)**



K-4 – 12 students  
5-12 – 14 students  
Dissections – 14 students (Gr 5-12)



**Fort Good Hope (20-21 January)**



K-3 – 26 students  
4-6 – 21 students  
7-12 – 40 students  
Dissections – 15 students  
(Gr. 10-12)



**Tulita (24-25 January)**



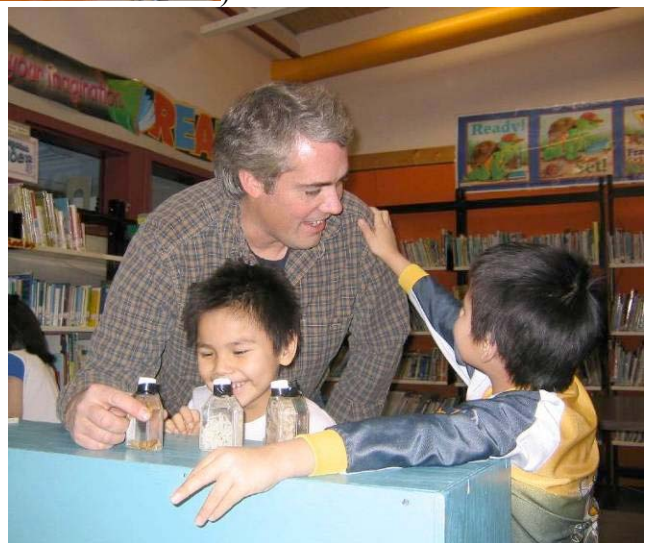
K-3 – 35 students  
4-6 – 46 students  
7-9 – 34 students  
10-12 – 22 students  
Dissections – 16 students  
(Gr. 10-12)



**Deline (27 January)**



K-3 – 25 students  
4-6 – 34 students  
7-9 – 32 students  
10-12 – 17 students  
Dissections – 17 students  
(Gr. 10-12)



Norman Wells (31 January & 01 February)



K-4 – 41 students  
5-6 – 16 students  
7-9 – 34 students  
10-12 – 8 students  
Dissections – 7 students  
(Gr. 10-12)



Thanks to a generous donation (\$5000) from *Enbridge Pipelines (NW) Ltd.* we were also able to provide a high-quality microscope to each of the five schools. Funding (\$1000) was also obtained from NSERC *PromoScience* to supply additional science equipment to each school.



Alasdair Veitch presents Ehtseo Ayha School (Deline) Principal Victor Dikaitis with a new microscope for the school's Science Lab.

This close contact each year with wildlife veterinarians and biologists is of tremendous value to these students, since they are current or future harvesters, as well as future members of co-management boards, RRCs, and Land Corporations. Students see some of the wildlife research completed or ongoing in Sahtu and how that research is used in long-term monitoring and management planning. They also learn important information about what diseases occur in local wildlife species and what diseases they may get from animals (zoonoses), parasite life cycles, and emerging wildlife disease issues. Finally, through the dissections they learn basic carcass examination techniques (including personal protection), how to collect samples, and proper recording of data.

### ***Sub-project 3: Experienced Harvester Information Exchange***

Scientific information about the past occurrence of diseases in northern wildlife is scarce. Experienced hunters and trappers in the north are one of the best sources of information about occurrence of wildlife diseases in the past. As a new initiative in 2005, we held information exchange sessions in all five communities with experienced harvesters (at least 25 years experience) to record their observations of wildlife condition and occurrences of diseases and other abnormalities throughout their lifetime. These observations, combined with the present sample collection by WHMs, provide a means for monitoring changes to wildlife condition and health over several decades prior to and during renewable and non-renewable resource development in the Sahtu. It is an opportunity to discuss important diseases of animals harvested for subsistence in a relatively informal and relaxed setting, and with people able to speak in their own language through the services of translators.

Objectives:

- 1) document harvester observations about wildlife diseases in the past and present
- 2) use this knowledge to better understand the possible impacts of climate change and other ecological disturbances to wildlife health
- 3) inform experienced harvesters about what wildlife biologists and veterinarians know about major diseases and parasites of major wildlife species (e.g., parasite life cycles, clinical effects of various diseases, zoonoses etc.)

Focus group interviews of 4-9 experienced harvesters were held in each community. Using *PowerPoint* presentations with pictures we asked harvesters about any observations of diseases or abnormalities that they had seen in caribou, moose, muskoxen, or Dall's sheep over their lifetime of harvesting experience. We explained some aspects of the biology, nature, and significance of parasites and diseases (e.g., brucellosis) on wildlife populations and health. Participants were identified by the RRCs and efforts were made to hire a local assistant in each community to help with the interviews. A total of 33 people were interviewed.

Colville Lake  
18 January



Fort Good Hope  
20 January

Tulita  
25 January





Deline  
26 January

Interviews were taped in four of five communities and notes were taken. Analysis and compilation of the interviews is in progress. This work will contribute to a larger research project ‘*Evaluation of the potential impacts of climate change on disease in arctic and subarctic ungulates*’ funded by the Climate Change Action Fund and the Western Northwest Territories Biophysical Study.

#### **Sub-project 4: Graduate Student Participation**

The success of our program to date is largely due to the multi-disciplinary and multi-agency team approach and the dedication of those involved in delivery. To ensure continuity of this program, and to promote its expansion to other regions or development of similar initiatives, it is important that young university-based researchers are also engaged. The valuable experience that graduate students gain through participation in such northern outreach programs will result in students gaining a better understanding of northern issues and an interest in working with northern communities, biologists, and university/agency-based scientists.

#### **Objectives:**

1. Provide young scientists with the opportunity to work with students and harvesters in remote northern communities
2. Foster long-term partnerships between northerners and university and agency-based scientists
3. Encourage university-based researchers to contribute to existing northern wildlife and wildlife health monitoring programs and consider possible new initiatives.

Two veterinary graduate students (Western College of Veterinary Medicine (WCVM), Saskatoon, SK) were valuable contributors to this year’s project:



- Aleksija Neimanis, a veterinarian and a Masters of Veterinary Science student in Veterinary Pathology, WCVM, evaluated the Wildlife Health Monitor program as an Applied Veterinary Medicine Special Topics course. Under the supervision of Dr. Kutz, Aleksija analyzed samples collected by WHMs in 2004, designed and prepared the summary poster, modified the collection protocols and kits and interacted and trained new WHMs. Aleksija is in the process of writing a report assessing the overall WHM program. This will be complete by April 30, 2005 and will be distributed to NWT CIMP as well as other agencies. In addition, Aleksija was co-leader for the marten dissections in schools with Richard Popko and she recorded notes for 4 of the 5 focus-group interviews with experienced harvesters.



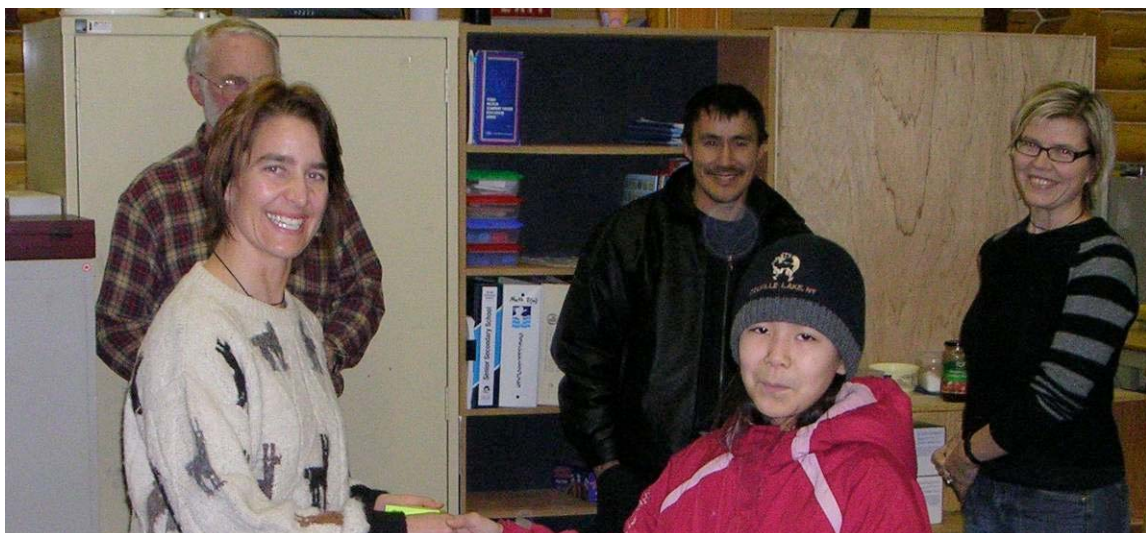
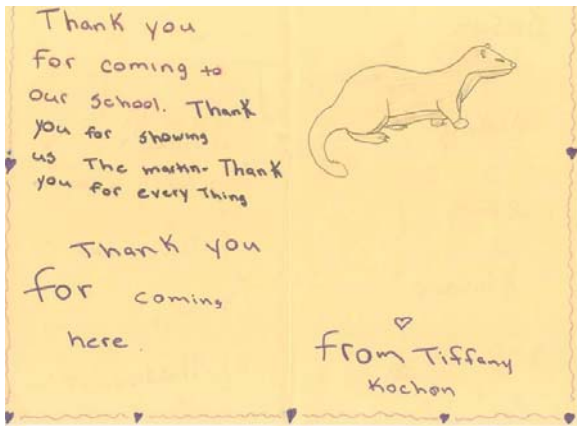
- Emily Jenkins, a veterinarian and a Doctorate graduate student in Veterinary Microbiology at the WCVM also participated in much of the program this year. Emily is completing her PhD on lung and muscle worms in Dall's sheep in the Mackenzie Mountains. Although she had done 2 field seasons of research in the Sahtu, she had not had the opportunity to work in the communities and interact with harvesters and youth. Emily designed lectures on wildlife veterinarians for the younger students. She also developed a unique, interactive presentation for the older students - *Crime Scene Investigations: Marten*. Using marten as an example she demonstrated important concepts about wildlife diseases that domestic animals can get (i.e., distemper and rabies), zoonotic diseases (animal diseases that infect people, i.e., mange and rabies), and poisons. Emily traveled to Fort Good Hope and Tulita to deliver these presentations, in the other communities they were delivered by Aleksija Neimanis (Deline), Brett Elkin (Norman Wells), or Susan Kutz (Colville Lake). The presentations were lively and informative, and they were well received by the students.



Both graduate students were outstanding role models for the students and each found the program to be an extremely valuable learning experience. This type of graduate student training increases awareness of northern issues by future scientists and continues to build and maintain bridges between northern residents and scientists.

### ***Overall Project Evaluation:***

The third year of the project was highly successful and resulted only from significant planning, presentation preparation, and dedication to the task by team members. The project has become a much-anticipated regular feature on our annual work calendars, and it's particularly rewarding that students – especially in the younger grades – look forward to our visits and to learning more about wildlife, wildlife health, and what scientists do. We received very positive feedback from the schools (students, teachers, Principals, and Sahtu Divisional Education Council), from the WHMs, and from experienced harvesters we met.



In previous years we travelled to communities and schools in March; this year we switched to January for the following reasons:

- Closely following Christmas break at schools means we do not run into the problem of schools being on Spring Break during the tour as has happened in the past. Students are focused and not tired after a long semester.
- Examinations, etc. are not generally scheduled in mid-January.
- Winter roads are open and in good condition prior to the onslaught of heavy trucks, oil rig hauls, etc. during February and March
- Most adults are in communities and few people are out on the land due to the limited daylight and extremely cold temperatures; in March many more people are out caribou hunting and on the land.
- Little field work and other conflicting activities (e.g., workshops, meetings, etc.) are held in January, whereas March is a very common month for both field work and meetings/workshops.
- The SRRB generally holds one of its two annual meetings in February; therefore, the tour occurs before the SRRB meeting and we can present to the Board and RRCs the results of our project immediately after we've been in the communities.

Therefore, despite the frigid conditions (e.g., -48 C at Colville Lake), we found the timing of the tour this year to be excellent. We plan to use roughly the same dates for our fourth year in 2006.

We have found that the suite of experience and specialized knowledge brought to the team by each member allows presentations and discussions whereby we can be put regional wildlife population and health issues into larger territorial, national, and global monitoring frameworks. This aspect of our program is fully supported by the University of the Arctic, fitting within their 'Open-learning' mandate (<http://www.uarctic.org/programs.html>).



The WHM program is the key component of our project's long-term monitoring strategy and for involving local harvesters in scientific research. An overview of the WHM program was presented by S. Kutz at the national meeting of the Canadian Cooperative Wildlife Health Centre (CCWHC) in Quebec City (Feb 2005). The CCWHC is very supportive and interested in this component of our

overall program as an innovative way to monitor wildlife health in a changing environment. The evaluation of the first year of the program (2004) by graduate student Aleksija Neimanis will serve as the basis for modification and improvement to the program in 2005.

The focus-group information exchange sessions with experienced harvesters were mutually enjoyable – we had the opportunity to find out what harvesters knew and what changes they had observed over time and the harvesters had the opportunity to ask specific questions about various parasites and diseases. Translators were hired for each session, except for Norman Wells; however, the lack of simultaneous translation slowed the sessions down and interrupted the ‘flow’ of discussion. Future sessions should consider obtaining simultaneous translation equipment. Participants had little trouble with the presence of a tape-recorder and it is highly desirable that all sessions be taped and the tapes transcribed (and translated) so that information is accurately recorded for each session.

The opportunity to travel to the NWT to meet with students, harvesters, and resource managers was considered very rewarding by both graduate students that participated in the project this year. It was particularly beneficial to have their ‘northern experience’ occur in January when few souther-based researchers come to the Sahtu and experience travel on the winter roads. By doing so, some of the logistical challenges faced by resource managers, communities, and schools are made clearly evident – understanding and appreciating issues related to research and education in the north is a central objective for involving graduate students in the project.

#### ***Public & Renewable Resource Council Workshops:***

Our planned workshops with the RRCs and the general public in the communities were intended to have two primary components:

- 1) Wildlife *Population* Monitoring (Veitch, Popko, Guthrie) - describe small-scale, long-term wildlife monitoring projects (e.g., small mammal studies, breeding bird surveys, forest carnivore winter track counts, etc.) that are currently being done by DRWED staff out of Norman Wells and which could be done in each community. Facilitate a general discussion to determine which, if any, of the project possibilities each RRC is interested in establishing.
- 2) Wildlife *Health* Monitoring (Kutz, Neimanis, Elkin) - provide seminars on wildlife diseases including a broader context of the importance of wildlife disease and emerging diseases and a more regional context on important diseases in the Sahtu. Specific instruction on how to safely collect and submit abnormal tissues and record relevant information.

We advertised these workshops in Colville Lake and Tulita, however, similar to our experience in 2004, there was no turnout in either community. The repeated failure to generate significant interest in our RRC Workshops in communities is likely a result of ‘meeting burnout’ in the small communities. There is a constant stream of meetings/workshops being held in each community by government agencies (federal and territorial), organizations set up under the Sahtu land claim agreement (e.g., Land Use Planning Board, Renewable Resources Board, Land Corporations), industrial exploration and development companies (e.g., Esso, Diamondex), and socio-economic organizations (Justice Committees, Education Councils, etc.). With populations of under 700 people, community members find it difficult to attend each and every meeting scheduled for their communities. In the future we will not hold these workshops unless it is requested and arranged by the RRCs.