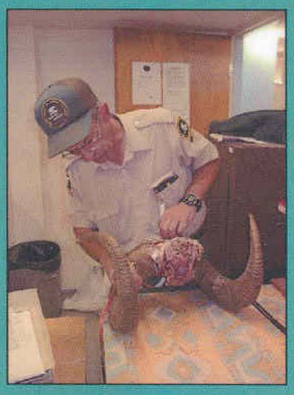
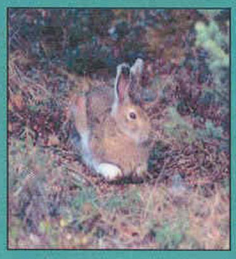
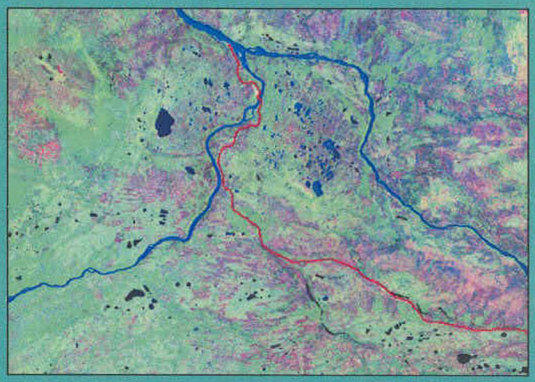


Regional Wildlife Workshop
October 2006





DEHCHO WILDLIFE WORKSHOP, 17-18 OCTOBER, 2006
CULTURAL CENTRE - FORT SIMPSON

2006 Wildlife Workshop Delegates

Ernest Timbre – Acho Dene Koe Band (Fort Liard)
Joe Bertrand – Acho Dene Koe Band (Fort Liard)
Ernest Hardisty – Jean Marie River First Nation
Douglas Norwegian – Jean Marie River First Nation
Francis Betsaka – Nahanni Butte Dene Band
Dolphus Jumbo – Sambaa K'e Dene Band (Trout Lake)
Victor Jumbo – Sambaa K'e Dene Band (Trout Lake)
Joe Lacorne – Deh Gah Gotie Dene Band (Fort Providence)
Darren Campbell – Deh Gah Gotie Dene Band (Fort Providence)
Fred Simba – Ka'a'gee Tu First Nation (Kakisa)
Albert Moses – Pehdzeh Ki First Nation (Wrigley)
Leo Moses – Pehdzeh Ki First Nation (Wrigley)
Jim Thomas – West Point First Nation
William Michel – West Point First Nation
Ernest Martel – Katlodeeche First Nation (Hay River Reserve)
Peter Sabourin – Katlodeeche First Nation (Hay River Reserve)
Robert Hardisty – Liidlii Kue First Nation (Fort Simpson)
Michael Cazon – Liidlii Kue First Nation (Fort Simpson)
Marie Lafferty – Fort Simpson Metis Local
Jonas Lafferty – Fort Simpson Métis Local

ENR Representatives

Nic Larter – Dehcho Regional Biologist, Fort Simpson
Danny Allaire – Dehcho Wildlife Technician, Fort Simpson
Deborah Johnson – South Slave Regional Biologist, Fort Smith
Paul Kraft – Dehcho Regional Superintendent, Fort Simpson
Jennifer Skelton – Protected Area Biologist, Yellowknife

CWS Participants

Lindsay Armer – Landbird Technician, Environment Canada
Credence Wood – Shorebird Technician, Environment Canada

Nahanni National Park Reserve Participant

Doug Tate – Conservation Biologist, Fort Simpson

University of Alberta Participant

Erin Bayne – Assistant Professor, Biology Department

Interpreter: Elizabeth Hardisty, Fort Simpson
Sound provided by Jim Hope of the Dene Cultural Institute, Hay River.
Lunches and coffee breaks catered by the Bompas Elementary School – Grade Six Class

Participants

Lee Thom – Dehcho First Nation
Herb Norwegian – Dehcho First Nation
Carl Lafferty – ENR
George Tsetso – ENR
Daniel Allaire – ENR
Steve Gooderham – ENR
Ken Lambert – ENR
Allan Bouvier – Liidlii Kue First Nation
Leo Norwegian – Liidlii Kue First Nation
Michael Cazon – Liidlii Kue First Nation
Fabian Hardisty – Liidlii Kue First Nation
Peter Corneillie – Liidlii Kue First Nation
Dieter Cazon – Liidlii Kue First Nation
Jim Antoine – Liidlii Kue First Nation
Ernest Tsetso – Liidlii Kue First Nation
Andy Norwegian – Liidlii Kue First Nation
Phoebe Allaire – Liidlii Kue First Nation
Walter McPherson – Liidlii Kue First Nation
Bob Norwegian – Liidlii Kue First Nation
David Horesay – Pehdzeh Ki First Nation
Archie Horesay – Pehdzeh Ki First Nation
Margaret Jumbo – Sambaa K'e First Nation

The Department of Environment and Natural Resources (ENR), Dehcho Region held a Regional Wildlife Workshop at the Cultural Centre in Fort Simpson on 17-18 of October, 2006. This was the third regional wildlife workshop, the first was held September 2002 and the second in October of 2004; it was decided during the first workshop that an October date would not conflict with the fall harvest and allow for an increased participation of harvesters. The key results of the 2004 workshop were the directions for wildlife research programs in the Dehcho and a list of 7 action items. The goals of the 2006 workshop were to:

1) provide an update of the wildlife research that ENR had initiated and conducted in the Dehcho since the 2004 workshop,
2) provide an assessment of how well ENR had addressed the 7 action items from the 2004 workshop,
3) provide a forum for other agencies and other ENR programs to present research findings,
4) provide an open forum for the discussion of regional wildlife issues, and
5) ensure a continued dialogue about research and monitoring programs between all Dehcho First Nations and ENR.

During Day 1, ENR made a presentation detailing how they had addressed each of 7 action items arising from the 2004 workshop. This was followed by presentations on the major research programs being conducted by ENR, the Canadian Wildlife Service (CWS), the Biological Department from the University of Alberta (UA) and Parks Canada (PC). The walls of the Cultural Centre were covered with posters showing results of wildlife research programs in the Dehcho that had been completed over the past 2 years or were ongoing. The posters became focal points during coffee and lunch breaks and during round

table discussions. Day 2 started with an initial ENR presentation on the bison program followed by open round table discussions on a variety of wildlife topics and issues and feedback from delegates and audience members on any and all wildlife-related topics. The workshop was extremely well attended, and ENR would like to take this opportunity to thank all of those First Nations whom sent delegates to the workshop. What follows is the final workshop agenda, the key discussion items and comments that came forth during the workshop, and some action items for ENR to pursue. The discussion items are not listed in any particular order.

The grade 6 class from Bompas Elementary preparing to serve lunch (to the left) and the sound booth and translator (to the right).

Day 1 – 17 October, 2006

0910 Opening Prayer-Jim Thomas

0915 Introductions

0920 Welcoming Comments-Paul Kraft, Regional Superintendent, ENR

0925 Review of 2004 workshop action items-Nic Larter, ENR

1005 Coffee Break

1025 Boreal Caribou South Slave and SAR-Deborah Johnson, ENR

1125 Bird Research and Monitoring in the Dehcho Liard-Lindsay Armer, CWS

1150 Lunch catered by Bompas Grade Six

1330 Birds, Small Mammals and Linear Features-Erin Bayne, UA

1410 Dehcho Caribou Program-Nic Larter, ENR

1445 Dehcho Moose Program-Nic Larter, ENR

1515 Coffee Break

1530 Dehcho Youth Ecology Camp-Danny Allaire, ENR

1545 Wildlife Research Nahanni National Park Reserve-Doug Tate, PC

1610 Shorebird Surveys along the Mackenzie River and Proposed MGP Route - Credence Wood, CWS

1625 Closing comments; Closing Prayer-Dolphus Jumbo

Day 2 – 18 October, 2006

0915 Opening Prayer-Ernest Hardisty

0920 Dehcho Bison Program-Nic Larter, ENR

1010 Coffee Break

1030 Round table discussions on working partnerships for boreal caribou in the Dehcho, boreal caribou capture and collaring operations

1200 Lunch catered by Bompas Grade Six

1330 Round table discussions of moose research program

1400 Round table discussions of youth ecology camps

1430 Coffee Break

1445 Round table discussion on potential action items/current and future workshop formats

1515 Workshop closing comments; Closing Prayer-Peter Sabourin

Day 1

The presentation of how ENR had addressed the 7 action items resulting from the October 2004 workshop stimulated discussion on a few topics.

Furbearers

There were questions about the lack of research on water-related animals like beaver, muskrat and mink for example. This is also a wild meat food source for people living in the north and we need to ensure that these animals are healthy. Muskrats at Buffalo Lake used to be plentiful twenty years ago, each trapper got 400-450 a trapping season now they don't get many. Mink have also disappeared from the area since. It was suggested that harvesters could learn how to monitor their areas with the help of ENR. It was indicated that ENR was open to these suggestions and that some beaver samples had been collected to look at their health.

Bison

Beyond completing a bison management plan, it was reiterated that there was a need for action on the more immediate problems that Fort Providence had been having with bison in the community over the past few months.

Youth Summer Ecology Camps

The success of these camps and the need to continue providing this opportunity for youth was acknowledged by all delegates. Increasing the number of these camps and having similar camps during winter was discussed.

The topic of offering an "advanced" summer youth ecology camp for students who had already participated in at least one camp was also discussed.

Following the action items discussion, presentations were made by ENR, UA, CWS, and PC on research being conducted in the Dehcho. What follows are the topics of discussion related to the wildlife research described.

Boreal Caribou

There was question as to whether the caribou knowledge mapped by local harvesters from the Hay River Reserve had been used with the Cameron Hill's study. This included calving areas and migrations. It was indicated that caribou knowledge had been provided by elders and had been used for the study.

There was general consensus that boreal caribou studies were providing useful information, especially on movements, and to keep up with the work. Some delegates wanted to see the work expanded to include areas like the Horn Plateau to find out if there were calving areas and seasonal migrations of caribou there. Some delegates commented that until recently caribou were always seen crossing the Jean Marie River access road and wondered why there was a change.

The issue of caribou crossing highways and the lack of highway signs was raised. There has been lots of signage for bison on highways but caribou (and other wildlife) have been neglected. There are certainly areas where caribou cross the highways, particularly on the Enterprise to Kakisa section and just west of the Fort Providence Junction on the Mackenzie Highway. Signs indicating caribou may be crossing should be put up on the highways.

Delegates were concerned that climate change may be contributing to the loss of caribou habitat and changes in their movement patterns. It was noted that the genetic studies indicate that there has been historic gene flow in both a south-

north direction and a west-east direction within the Dehcho. There was concern that climate change was bringing up more deer and elk into the region and that they would bring disease with them. ENR was not aware of any diseases that elk and deer could introduce to caribou. Also now there are more unstable winter ice conditions, the ground takes longer to freeze and there is more overflow on rivers later in the year. There was concern that this would lead to more caribou drowning and that some of this might be related to water discharges from dams.

There was a concern raised, that releasing maps showing where collared caribou were was making collared caribou more vulnerable to hunters, and that these data should be confidential. It was noted that there had been discussions on this topic with all First Nations partners in the boreal caribou work conducted out of Fort Simpson prior to any maps being provided. There was agreement that mapped locations of caribou should be provided but with a 2-week time lag. So for example, a map provided on the 15th of October would show where the caribou had been moving from 1-30 September. There had been an agreement that 1 map would be provided to each partner, with no map posted at the ENR office. We all hoped that this delay would not make collared caribou vulnerable to hunters. We could look into having a further delay if there was still a concern.

There was a discussion about the types of collars being used and whether there were other ways of attaching transmitters and whether they would stay on for the animal's lifetime. It was indicated that the units currently being used were the smallest, lightest, and most effective units we could use to collect the information we had been asked to collect. Collars deployed since 2005 have had release mechanisms so they do not stay on the animal for all its life.

There was a discussion about ensuring that when animals had to be handled the handling time was minimized and the people handling them wore protective gear so they would not infect the animal.

Moose

There were questions asking if research was being done on the diet of moose in different seasons to see what they were eating. It was indicated that a number of studies elsewhere have looked at seasonal changes in moose diet, but that we had not done one specific to the Dehcho. ENR has been collecting moose feces as part of the biological sampling program. Fecal samples are currently being used for disease and parasite study. It was reiterated that the moose biological sampling program has been well supported by all First Nations (37 sets of samples have been received to date), but that we would like to continue to collect as many more samples over the next 6 weeks as possible, to try and reach 50 sets of samples before we have to submit the organ samples to the lab for a complete elemental analysis.

There was a discussion about the current status of the moose population in the Dehcho Region, how many are there, and would we continue doing aerial moose surveys in November. There was a discussion about why we used grids and not straight lines to survey for moose. It was indicated that the monitoring surveys would be continued for the next 2 winters and there was general consensus that moose were healthy and harvesters were having successful hunts.

Delegates wanted assurance that the moose harvest by the Big Game Outfitters in the Mackenzie Mountains was being monitored. It was indicated that the Dehcho ENR office receives all outfitter harvest forms and that a detailed harvest report is

compiled annually. There was a copy of the 2005 harvest report available for delegates as part of the poster display. Outfitters have provided biological samples for the moose study.

Birds

Delegates from Fort Liard said that they were seeing new species of birds in their area in the summer; like a blue jay and a yellow-headed blackbird. Other delegates indicated seeing different birds and not as many migratory birds in recent years and wondered if climate change may be affecting bird migration and nesting. Could erratic weather be altering seasonal migration timing and success rate in nests? The CWS participants indicated that any and all observations like the ones being noted here would be greatly appreciated. There is a bird observation checklist that they sponsor and the survey forms are available at the local ENR offices. Doug Tate at the local Parks Canada office also collects and compiles unusual bird observations from the area. It was indicated that biologists have also noticed a decline in migratory birds. The reasons why are yet unknown, but current research is being conducted nationwide to try and answer the question.

There were questions about how many different types of waterfowl were found in the region and in the north and whether ENR would be getting involved in waterfowl studies. It was indicated that CWS was conducting the waterfowl research in the region. Trout Lake delegates indicated that they would like to see more waterfowl work done in the Trout Lake area.

There was a question about birds and West Nile Virus. It was indicated that as part of a nationwide monitoring program, dead corvid (ravens and their relatives)

birds were collected and if there was no obvious cause of death they were forwarded to the lab in Saskatoon for testing for West Nile Virus. None of the birds submitted had tested positive. ENR has also been trapping mosquitos on a weekly basis during summer to get baseline data on what species are found around Fort Simpson and when they are present.

Day 2

Bison

Questions arose regarding the bison ecologist position, how soon it would be filled, the qualifications needed for the position and whether it would be based out of Fort Smith given the current bison issues being faced by residents of Fort Providence. It was indicated that a competent biologist would be required and that the interview process was being completed.

There was a discussion about potential strategies to deal with bison that frequent communities regularly and the need for communities with bison problems to discuss what works and what doesn't work. Keeping sandy places fenced off and reducing food available to bison in the community should make areas less attractive to bison. The use of loud devices like bear bangers, screamers and vehicle sirens has not been particularly effective. Some individuals are regular visitors to the community while others pass through.

There was mention that the current number of tags issued for the Mackenzie population could be increased with more tags being made available to harvesters since the bison population is increasing its range and there is a lot of wild meat that not being utilized. There was mention of the lack of tags being used for the

Nahanni population. It was indicated that increasing harvest on a species at risk is not a simple matter.

There was also concern from communities that do not have bison in their area. Trout Lake delegates were worried that the Nahanni bison population may increase its range to the east of the Liard Valley. It was indicated that if the Nahanni bison population range increased it would remain along the Liard River Valley. Rivers coming from the east do not have active channels or an abundance of oxbow lakes.

Delegates wanted to know where the Nahanni bison moved to and suggested that getting some collars on them would be a good thing and could provide this information. It was indicated that ENR was working with biologists from the Yukon Territory towards a cooperative collaring program and hoped to be able to collar some Nahanni bison in summer 2007.

Hunters have noticed areas which used to be good moose habitat are now being utilized by bison and wondered if bison were disturbing moose so they would go elsewhere. It was indicated that this is a possibility but there has been no research on interactions between bison and moose yet. There could be new areas of better moose habitat which attracted moose away. It was mentioned that if wolves got better at hunting bison then wolves might become more plentiful which would not be good for moose.

Boreal Caribou Persistence and the Dehcho Landscape

"What does the landscape in the Dehcho need to look like for the persistence of boreal caribou?" was a question posed for a further discussion on boreal caribou.

It was noted that caribou utilize vast expanses of wilderness throughout the year and that the areas they use may change from year to year depending on weather conditions, wild fires and industrial activity. Some harvesters indicated that caribou have not been seen near Paradise Creek since there was a fire in the area in 2004. ENR noted that collared caribou have used recent burns during summer and fall. Not all fires have the same impact on the landscape. In summer, recently burned areas can provide high quality food, relief from insects, ease of travel and ease of spotting predators. There was a comment that caribou were plentiful along the Mackenzie Valley before the construction of the IPL pipeline. After construction of the line caribou were not seen for a few years, now it isn't the same as it used to be.

The issue of access into important caribou habitat was raised. The problem is created by oil and gas exploration and forestry activities. Information gathered from local expertise and caribou studies needs to be filtered through and standards need to set which include limiting the size of seismic lines and restricting access to areas during certain times of the year. Conditions should be based upon the individual needs of each species. Again it was noted by delegates that the information being collected by the various boreal caribou studies in the Dehcho was important.

It was indicated that there was a wealth of caribou knowledge and expertise sitting right in the room. There was also knowledge from aboriginal peoples and biologists in northern Alberta, Saskatchewan, and British Columbia, where the landscape has changed dramatically. So how do we bring all of this knowledge together?

It was suggested that some kind of group be formed to look at boreal caribou issues only, not all wildlife issues. There could be separate groups for bison and moose if need be. There was a suggestion that, on an interim basis, hunters could voice their concerns to the local Hunters and Trappers Association or Resource Management Board. It was noted that only Fort Providence had established such associations/boards and that the topic of local resource management boards had been discussed in the previous regional wildlife workshop.

There was the suggestion that the issue of forming a boreal caribou "working group" should be brought up at the upcoming leadership meeting to be held in Fort Providence in November. There was consensus amongst delegates that the leadership meeting was the best place to have this issued addressed.

Some delegates asked if there were alternative ways for tracking caribou other than using collars, something smaller maybe that was not so intrusive to the animal. It was indicated that the current collars being used were the smallest ones capable of providing the location information for a minimum of 2 years. Ear tags were another potential attachment however they were more prone to tearing out of the ear, and becoming more of an annoyance to the animal. Also it is unlikely that, given the size and weight limitations of ear tags, that they would have enough power to provide the required information or the range needed to track them from the air without flying very low to the ground. Ear tags are more prone to being eaten and badly damaged by predators so finding mortalities and reusing the technology is compromised.

Moose

There was a comment that the biological samples ENR was requesting includes delicacies (like the kidney) that are cherished by harvesters, which may limit the amount of samples ENR may receive. ENR indicated that they were well aware of that fact and that it had been discussed at length during the previous workshop and at community meetings. The figure of $50 had been determined collectively as an appropriate reimbursement to harvesters for providing a complete set of samples including the kidney. It was also indicated that the current study was going to compare the level of elements in both kidney and liver samples, so that in future ENR may need only liver samples for monitoring the level of elements.

Delegates indicated that moose undergo changes throughout the year. During the rut the chemistry of the kidney and liver may change and they asked if there was a certain time of year ENR want samples? ENR indicated that they were trying to get as many samples from as many times of the year as possible in order address these changes. Harvesters expressed interest in obtaining the results of the elemental analysis. ENR indicated that once the analysis was completed results would be forwarded to First Nations.

When the Mackenzie Highway was first opened harvesters noticed lots of moose along the road, now moose observations along the corridor are less frequent. Was this an indication that moose had learned to stay away from the roads or was this because there are fewer moose? The new road corridor provided increased access to harvesters and road traffic would be a new disturbance to moose, so probably over time there are fewer moose staying in and around the newly accessible road corridor.

It was suggested by one harvester that March would be a good time to survey for moose because they are quite visible and mobile during this time. It was indicated that this time of year was probably better for estimating the number of moose but because moose do not have antlers in March it is very difficult to accurately classify moose as males or females. Because we need accurate information on the number of calves and female moose we conduct surveys in November.

Summer Youth Ecology Camp

All delegates thought that the summer youth ecology camp was very beneficial and good exposure for the youth. There was a continued expression of interest in having the camp located in different areas throughout the Dehcho Region. Being able to utilize resource people and learn from elders from different communities is a good thing.

There should be another camp held during the winter and trapping should be the main focus of the camp. The traditional lifestyle has been slowly disappearing from the northern landscape and youth should be exposed to it. Delegates indicated that in some communities they do similar camps with the schools and they vary in the length of time on the land.

After a successful winter camp it was suggested that camps should change to other seasons to teach the youth about different skills that are needed out on the land. It was indicated that for larger region-wide camps there was often difficulty in finding a time that all could participate and that this was even more difficult during the school year with different times for school breaks. Camps associated with local schools are one way to get youth out on the land. It was indicated that

funding had been secured for a summer youth ecology camp in 2007 and 2008 and that DFN had secured funding for a winter camp this year.

Action Items

1. ENR needs to ensure that the final report of the workshop is distributed to all First Nations in a timely basis.

2. ENR needs to ensure that these workshops become a biannual event, and that participation by elders and youth of the region is actively supported and encouraged. The current timing of the workshop is good.

3. ENR needs to ensure that a bison management plan is developed for the Nahanni Bison population.

4. ENR needs to initiate discussions with trappers in the Dehcho communities to stimulate cooperation in designing and conducting basic research and monitoring programs.

5. ENR needs to continue seeking proposals for hosting the summer youth ecology camp so that the camp curricula can be varied and can be held in different locations in the Dehcho.

6. ENR needs to secure funding for conducting an additional youth ecology camp during a different season of the year, preferably starting with a winter camp when students could be taught trapping.

7. ENR needs to actively pursue a collaring program for the Nahanni Bison population to provide baseline information on movements and the range of their distribution.

8. ENR needs to pursue the idea of a working group for boreal caribou in the Dehcho by having it put forward as a topic for discussion at the November, 2006 Dehcho First Nations leadership meeting in Fort Providence.

9. ENR needs to ensure that the 5 GPS collars and all available satellite collars are deployed on boreal caribou throughout the region in January 2007.

10. ENR needs to ensure that once the results of the elemental analyses from moose organs are received, that they are analyzed and a plain language report of the results is circulated as soon as possible.

Dehcho Regional Wildlife Workshop
Fort Simpson, NT
17-18 October, 2006

Co-Sponsored by DFN and ENR

In October, 2004, The Department of Resources, Wildlife & Economic Development (RWED) and Dehcho First Nations (DFN) jointly hosted a second Dehcho Regional Wildlife Workshop in Fort Simpson.

The main objectives of the workshop were to: review the progress made on action items from the September 2002 workshop, provide an update of the various regional wildlife research programs (RWED and other agencies), and provide an open forum to discuss regional wildlife programs and issues to ensure open dialogue between RWED and Dehcho First Nations.

At the end of the workshop 7 follow-up activities were recommended by the delegates in attendance.

What follows is a description of the activity and the action by ENR (formerly RWED) on each item.

Item #1

Ensure that the final report of the workshop is distributed to all First Nations in a timely basis.

Action:
CD transcripts of the workshop were forwarded to all First Nations on 25 October; hard copies of the final report were forwarded to all First Nations on 9 December 2004.

Item #2

Ensure that these workshops become a biannual event, and that participation by elders and youth of the region is actively supported and encouraged.

Action: Secured funding to conduct 3rd Biannual Dehcho Regional Wildlife Workshop and to cover the costs for 2 participants from each First Nation. Encouraged each First Nation to send 2 participants to the Workshop and to include youth, elders, harvesters and council members as participants.

Item #3

Ensure that a bison management plan is developed for the Nahanni Bison Herd.

Action: ENR held a meeting in July 2005 to specifically discuss bison issues including the development of a bison management plan for the Nahanni. Unfortunately due to staff shortages (no bison ecologist), the development of a formal Nahanni bison management plan has been delayed. ENR Fort Simpson has been monitoring the population and is publishing a comprehensive 5-year report from which a formal management plan can be based.

Item #4

Initiate discussions with trappers in the Dehcho communities to stimulate cooperation in conducting basic research and monitoring programs.

Action: ENR continues to provide trapper training programs and to collect wolverine carcasses. However, there has been little time spent with trappers in Dehcho communities to design local monitoring and basic research programs. This was a topic of active interest at the last workshop which ENR needs to better address in the future.

Item #5

Discuss changes and modifications to the current youth ecology camp location, timing, and format with local communities and DFN and investigate other available options.

Action: DFN/ENR solicited proposals for hosting and running summer ecology camps in 2005 and 2006. The goal was that different aboriginal organizations would host the summer ecology camps in different locations of the Dehcho.

In 2005 the camp was held at the mouth of the Trout River, near Jean Marie River. In 2006 the camp was held at Sandy Creek near the Hay River Reserve. Camps continue to be well attended and a great experience for the youth that participate.

Item #6

ENR needs to continue to promote and support community wildlife monitoring programs.

Action: ENR introduced a moose sampling program in January 2005 to monitor animal condition and to collect baseline data on the levels of various elemental contaminants. Participants received $50 for each set of samples submitted to the program. Most communities have been active participants in the program.

Item #7

ENR needs to support any self-management programs related to wildlife harvest that may be initiated by local First Nations

Action: Dehcho ENR monitors the annual non-resident harvest in the Mackenzie Mountains and publishes a detailed annual report of the harvest. ENR-HQ is responsible for monitoring resident harvest based upon questionnaire returns.

The topic of improved monitoring of community harvest by local First Nations was discussed at length at the last workshop. Other regions have wildlife harvest studies which document the numbers and types of country foods harvested by community residents. ENR would be supportive of similar studies in the Dehcho initiated by First Nations.

Programs/Projects Dehcho ENR Undertook/Participated in Since 2002

- Problem Bear Disease/Parasites Monitoring
- Diseased/Parasitized/Injured Wildlife Sampling
- Wolf Carcass/Stomach Collection
- Small Mammal Trapping and Hare Turd Counts
- Beaver Contaminants
- Tourist and Staff Wildlife Observation
- Edehzhie and area Wildlife Survey
- Boreal Caribou Survey/Satellite Collar Deployment
- Boreal Caribou Occupancy Model Refinement
- Boreal Caribou Harvest Sampling
- Nahanni Bison Sex/Age Classification Survey
- Nahanni Bison Population Survey
- Nahanni Bison Disease Monitoring
- Youth Summer Ecology Camp
- Moose Population Survey – Mackenzie River Valley
- Moose Population Survey – Liard River Valley
- Moose Annual Population Monitoring Surveys
- Moose Health, Condition, and Contaminant Levels
- Dall's Sheep Survey Nahanni/Liard Ranges
- Dall's Sheep Horn Growth
- Non-Resident Hunter Harvest Monitoring/Sampling
- Mountain Goat Surveys Flat River
- Monitoring EnCana Gravity Survey
- Participated in Wolverine Carcass Collection
- Participated in Barren-ground caribou survey
- Participated in Dene Nation Contaminant Study
- Participated in BC Government Porcupine Survey
- Participated in University of Alberta Mink Study

Boreal Caribou in the Dehcho-East

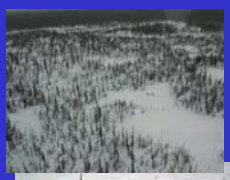
South Slave Project Summary
Species at Risk

Presentation to Dehcho Wildlife Workshop
17 October 2006
Fort Simpson, NT

South Slave Project Summary

- 2 Study Areas
  - Capture Locations
    - Progression to separate study areas
- Home Range Size
- Seasonal Movement Patterns
- Population Information

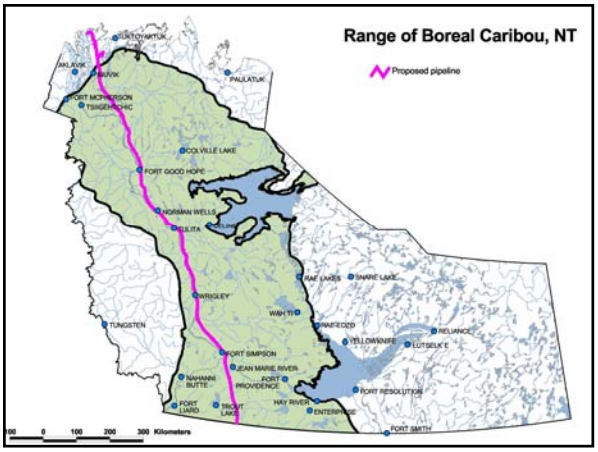
Woodland caribou split into:



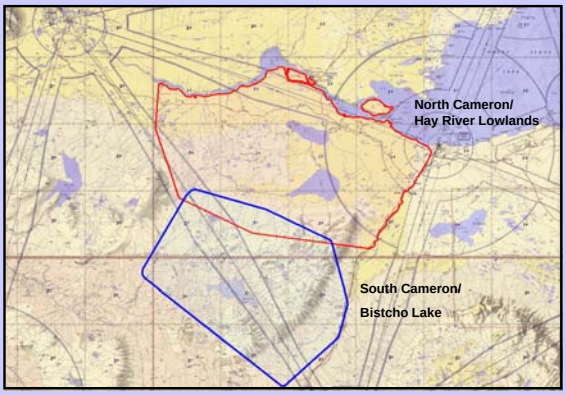
Mountain caribou

Boreal caribou

Range of Boreal Caribou, NT

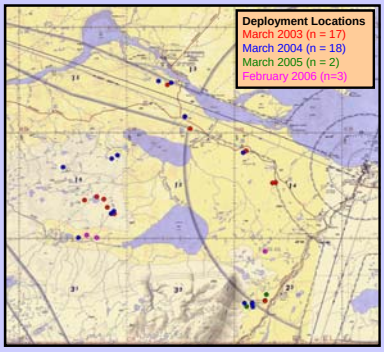


Boreal Caribou Study Areas



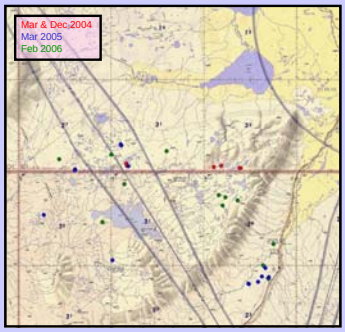
North Cameron Study

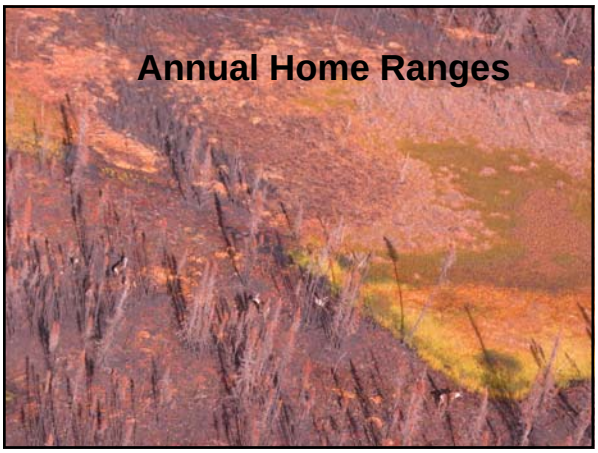
- Initiated in March 03
- VHF collars
- Objectives
  - Population info
  - General range use
- Sample size of 30 cows
- 40 cows collared to date
  - 17 deployed in 03
  - 18 deployed in 04
  - 2 deployed in 05
  - 3 deployed in 06



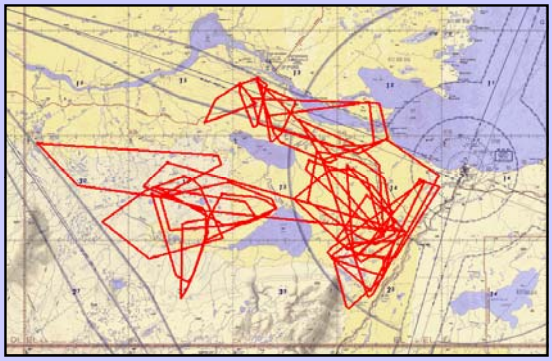
South Cameron/Bistcho Lake Study

- Initiated in Mar 04 & Dec 04
- Mar 06: 12 VHF + 8 satellite + 10 GPS collars
- Objectives
  - Demographics
  - Seasonal use
  - Habitat selection
  - Avoidance
- Sample size of 30 cows
- 33 cows collared to date
  - 3 VHF in Mar 04
  - 4 VHF in Dec 04
  - 6 VHF + 8 SAT in Mar 05
  - 2 VHF + 10 GPS in Mar 06

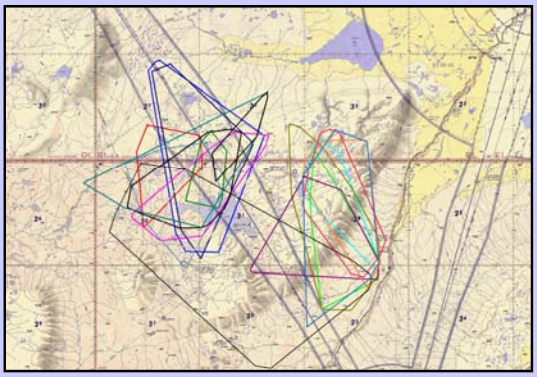




North Cameron: Cumulative Home Ranges – March 03-06



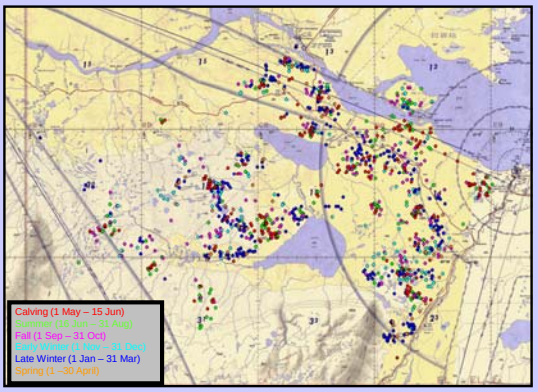
South Cameron: Home Ranges – March 04-06



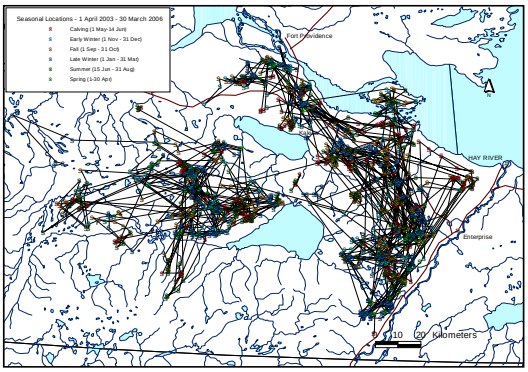
Home Range Summary (100 MCP)

North Cameron				South Cameron
	2003-04 (n=13)	2004-05 (n=30)	2005-06 (n=25)	2004-05 (n=20)
Mean (km^2)	**619**	**985**	**746**	**2198**
Median (km^2)	574	828	875	1950
Minimum	75	33	161	464
Maximum	1235	3099	2623	7897

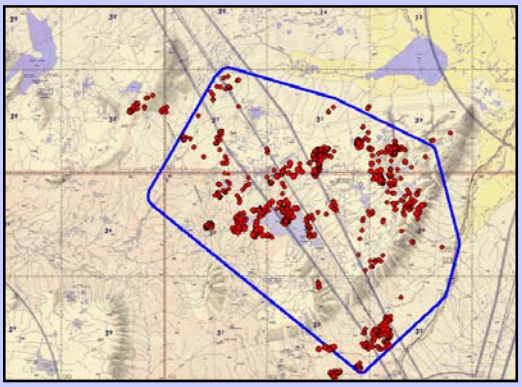
North Cameron: Seasonal Locations (Mar 03-06)



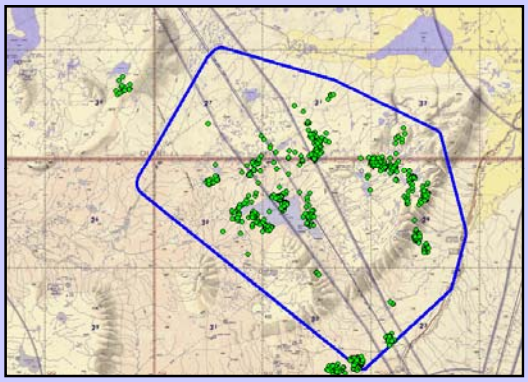
North Cameron: Movement Patterns (Mar 03-06)



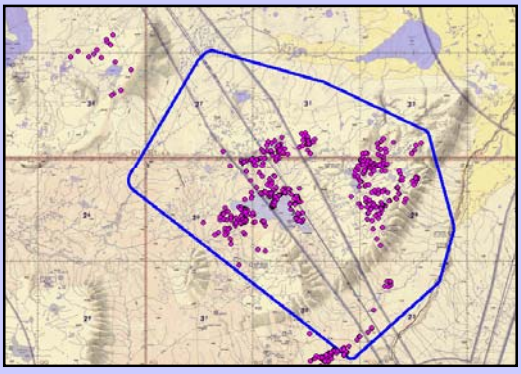
South Cameron: Calving Locations: 1 May-15 June (2004-06)



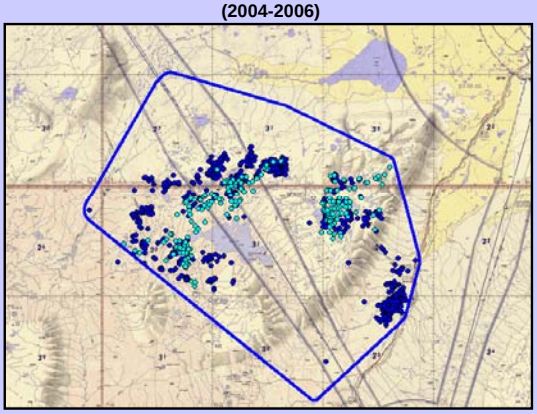
South Cameron: Summer Locations: 16 Jun-31 Aug (2004-06)



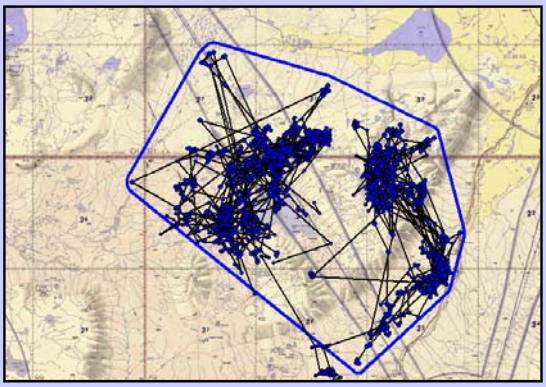
South Cameron: Fall Locations: 1 Sep-31 Oct (2004-06)



South Cameron: Early & Late Winter Locations: 1 Nov – 31 Mar (2004-2006)



South Cameron: Movement Patterns - March 2004-06



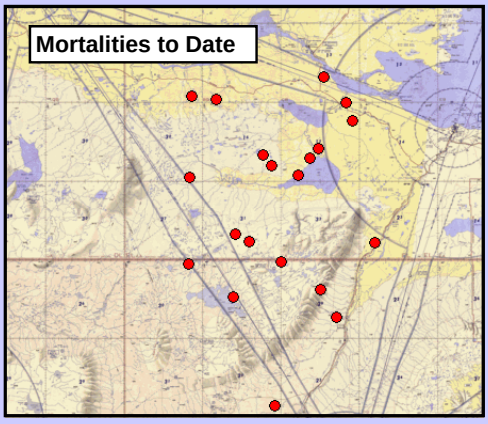
Population Information

	North Cameron			South Cameron	
	2003-04	2004-05	2005-06	2005-06	2006-06
Calf Production	87% (n=15)	95% (n=32)	93% (n=29)	90% (n=20)	89% (n=29)
Calves/ 100 Cows (Additions to Adult pop)	17 (11-14)	22 (16-29)	18 (13-24)	12 (9-17)	12 (collared cows in Sept)
Cow Survival	76% (56-97%)	88% (77-99%)	90% (79-100%)	90% (76-100%)	83% (70-97%)
Rate of Increase	0.84	0.99	0.99	0.96	

Mortalities

	North Cameron				South Cameron	
	2003-04	2004-05	2005-06	2006-07	2005-06	2006-06
Mortalities	4 / 17	4 / 31	3 / 30	3/28	2 / 20	5 /30
	4 Mortalities in May 4 Mortalities in July-August 1 Mortality each in Nov, Jan and Feb 9 Due to Predation 1 Unknown cause 1 Human harvest				3 Mortalities in May 1 Mortality in June 2 Mortalities in July 1 Mortality in August All due to predation	
Collar Failures	2 in January 2006				1 in August 06	

Mortalities to Date

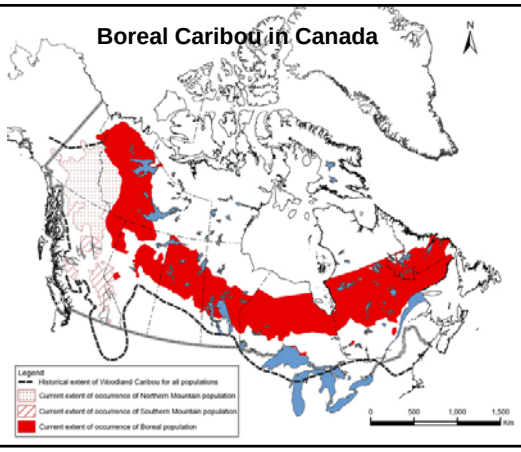


Species at Risk – Boreal Caribou

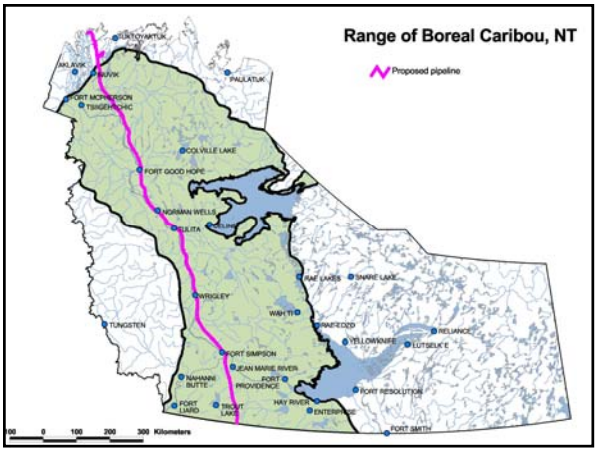
THREATENED under SARA

- Habitat destruction, human disturbance, and predation have contributed to the decline of boreal caribou across Canada.
- Extirpation from US and Maritimes / Range recession

Boreal Caribou in Canada



Range of Boreal Caribou, NT



Recovery Planning

- National recovery strategy for boreal caribou
  - Umbrella document
- Jurisdictional recovery strategies
  - NT, BC, AB, SK, MB, ONT, QUE, NFL
  - Parks Canada
- NT Recovery Strategy = Conservation Action Plan

Action Plan for the Conservation of Boreal Caribou in the NT

- WHY??
  - One of the most sensitive wildlife species to human disturbance
- HOW??
  - Sharing information on boreal caribou.
  - Asking for your input.
  - Collectively develop an action plan for the conservation of boreal caribou.
- *Please let us know your opinions!*
- *Brochures are available!!*

What are you thoughts on..?

Boreal woodland caribou conservation in the NWT

Distribution & Population Status in Dehcho

- Have the areas where boreal caribou are changed over time?
- Are there areas where boreal caribou no longer exist, or where there are only few caribou left ?

•Has the number of boreal caribou changed?

•Does the population go up and down naturally?

What are the Possible Risks to Boreal Caribou in the NWT?

- **Habitat loss?**
- **Wildfires?**
- **Predators?**
- **Prey increases (deer, moose, beaver)?**
- **Harvesting?**
- **Disease and parasites?**
- **Vehicle collisions?**
- ***Others?***

Habitat loss

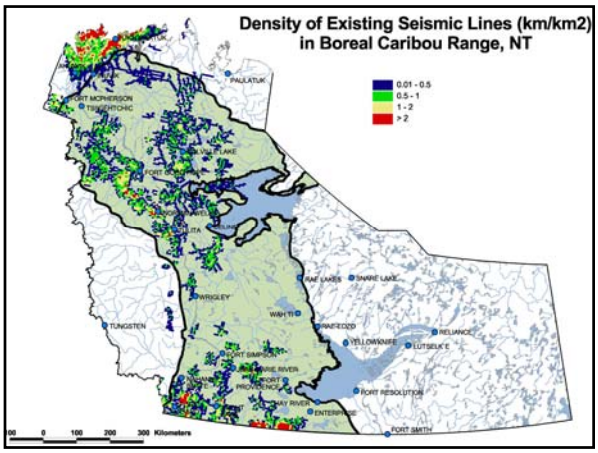
Courtesy Phil McLoughlin

Effects of Linear Features

NWT today: Cameron Hills

©GNWT

NWT tomorrow? (pictures from Alberta)



Habitat Loss

- Amount & type of habitat(s) necessary for survival of boreal caribou?
- What areas are especially important to boreal caribou?
- What kind of protection does the habitat need?
- What kind of activities disturb caribou?
- How can we balance industry with conservation of habitat for boreal caribou?

Courtesy Phil McLoughlin

Critical Habitat

- Habitat that is necessary for the survival of boreal caribou in the NWT
- Broadly defined as caribou ranges at the national level
  - Caribou operate at broad scales
- Management of caribou ranges is paramount
  - Caribou need space (e.g., spacing of calving females)
    - Ability to separate from landscape disturbances

Courtesy Alberta Boreal Caribou Committee

Wildfire

- How much boreal caribou habitat has already been changed due to fire?
- How do human and natural landscape changes affect caribou?
- How quickly do habitats regenerate after wildfires in the NT?
- Are there areas that boreal caribou use that we should be protecting from fire?

© GNWT Forest Management

Predator and Prey Increases

- Have *you* seen more beaver, deer, bison or barren-ground caribou in areas where there are boreal caribou?
- Have *you* seen any new predator or prey species in the forest? Increases in their numbers or distribution?
- Are there more wolves or bears in areas where there are boreal caribou than there used to be?
  - Decreased hunting/trapping effort?
  - More prey?

Courtesy Boyan Tracz

Harvest Levels

- Should harvest information from all hunters get collected? If so, how should that collection be done and who should do it?
- Have there been changes in the number, location, or condition of boreal caribou being hunted?
- Have there been any changes in how difficult it is to hunt boreal caribou?

Courtesy David Abernethy

Other Risks???

- **Vehicle collisions**
  - **Are there any highway sections that boreal caribou frequently cross?**
  - **Are more signs needed to show where wildlife or caribou cross the road?**

Other Risks???

- Caribou health (Role of disease/parasites)
  - Should there be compulsory inspection of boreal caribou harvested by all hunters?
  - Do you have any other ideas of how else could we collect samples to get information about parasites and diseases in boreal caribou?

Other Risks???

- What can *you* tell us to help conserve boreal caribou in the NWT?

We Need to Know What You Think about Boreal Caribou Conservation in the Dehcho!

www.cws-scf.ec.gc.ca

Bird Research & Monitoring in the DehCho

17 Oct 2006

Canada

CWS Work in the DehCho:

- Rusty Blackbird
- Trumpeter Swan
- Other Songbirds

Canada

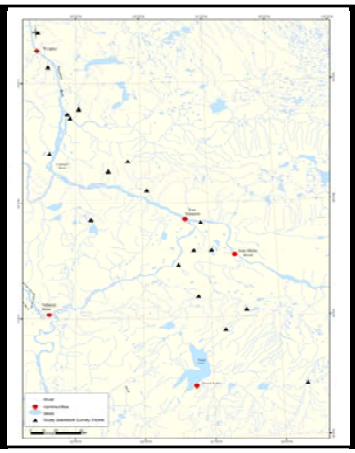
Rusty Blackbirds – Why?

- Species at Risk in Canada
- NWT population?
- Compare 2006 to 1970's

Canada

Rusty Blackbirds – Where?

Canada



Rusty Blackbirds - Results

- 2006: Birds at 21/45 sites
- 1970's: Birds at 30/45 sites
- Small change from 1970's, but not 90% decline
- Where are the declines occurring?

Canada

CWS Work in the DehCho:

- Rusty Blackbirds
- **Trumpeter Swans**
- Other Songbirds

3/7/2011 Page 7

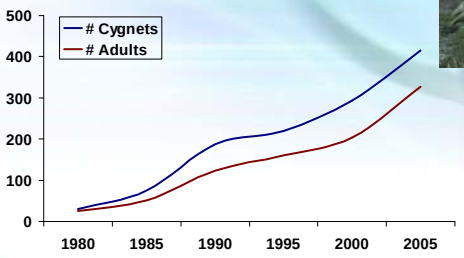
Trumpeter Swans – Why?

- International Trumpeter Swan Aerial Survey (every 5 years)
- Count families and number of young
- Tally age and social classes

3/7/2011 Page 8

Trum

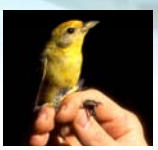
Trumpeter Swans - Results



3/7/2011 Page 10

CWS Work in the DehCho:

- Rusty Blackbirds
- Trumpeter Swans
- **Other Songbirds**



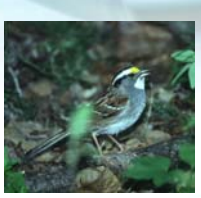
3/7/2011 Page 11

Fort Liard – Seismic Study

3/7/2011 Page 12

Long-term Monitoring: Fort Liard

- Every 2-5 years
- Environmental assessment
- Bird communities over time



3/7/2011 Page 13

Environment Canada Environnement Canada Canada

Breeding Bird Surveys

- 3 routes for ~12 years
- New route near Wrigley ?

www.pwrc.usgs.gov/BBS/

3/7/2011 Page 14

Environment Canada Environnement Canada Canada

NWT/NU Bird Checklist Survey

- Over 83 000 bird observations
- Data online next spring

www.pnr-rpn.ec.gc.ca/checklist

3/7/2011 Page 15

Environment Canada Environnement Canada Canada

Summary & Suggestions

Community participation

- What would you like to see CWS investigate in the future?

3/7/2011 Page 16

Environment Canada Environnement Canada Canada

www.cws-scf.ec.gc.ca

Thank you!

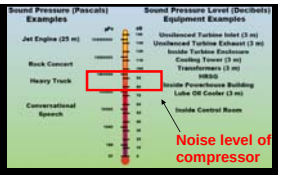
3/7/2011 Page 17

Canada

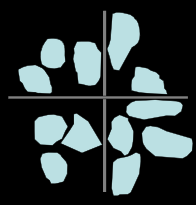
Themes of today's talk

- Outline how we think pipelines might alter habitat quality for songbirds
- Show preliminary results from Fort Simpson on how songbirds, bird predators, and bird prey interact on the existing pipeline
- Discuss what cumulative effects of linear features might mean for the future of forest birds
- Future research directions in Fort Simpson area

What we already know about pipelines & birds



- 1) Some birds have troubles mating due to noise created by compressor stations
- 2) Some birds avoid noisy areas as a result
- 3) Pipelines create a territorial FENCE effect



How else might pipelines affect birds?

3) Could influence how predators use landscape & change nest predation rates

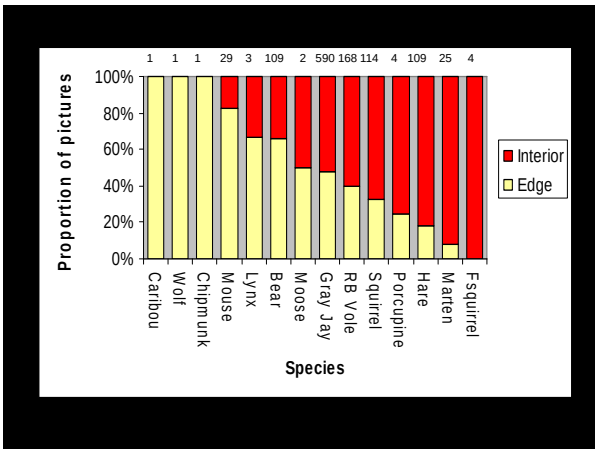
4) May alter temperature, wind & moisture in forest, affecting bird food

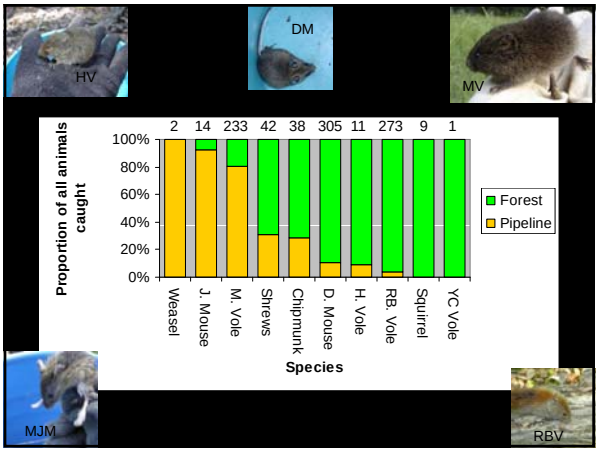
5) Effects may stretch into forest through "EDGE EFFECT"

Where we worked

What we did

- Used remote cameras & trapping to estimate abundance & movement of predators
- Looked really hard to find nests of birds!
- Collected a lot of bugs so we can measure how the food of birds responds to edge environments





Predators differ

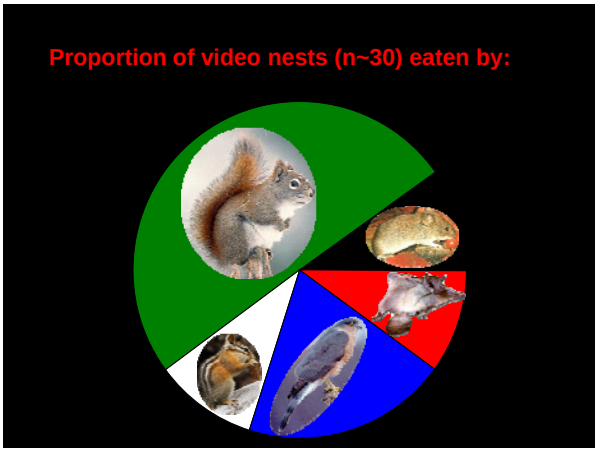
- Deer mice & meadow voles were more abundant on the pipeline or close to the edge
- Bears were detected more near pipeline edge
- Marten less likely to be detected near pipeline
- Does this lead to greater nest failure?

Nest data

- Found 409 nests of 20+ species
- Tracked every nest by visiting every 3 days
- Over 50 nests were monitored via video surveillance

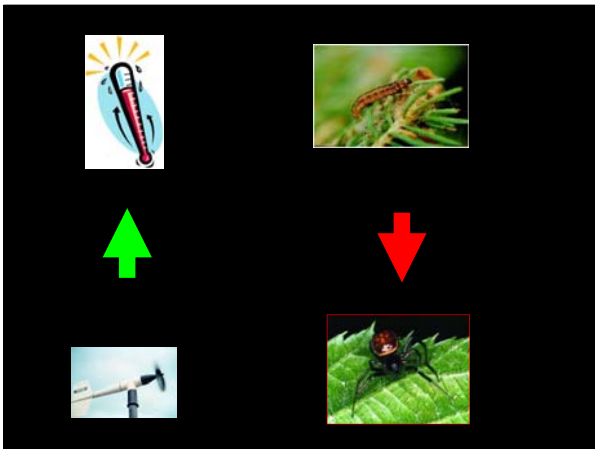
Results

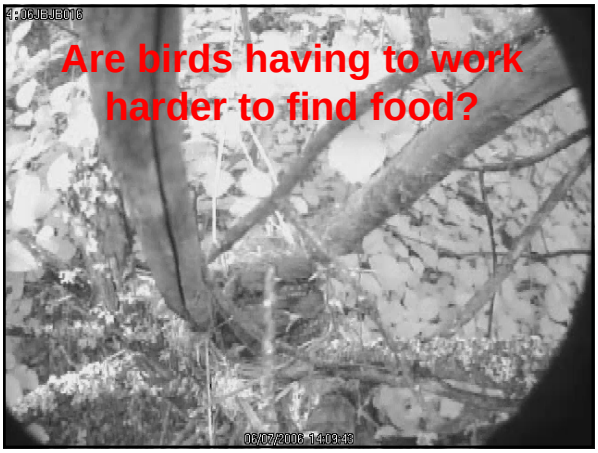
- In 2005, 42% of nests were destroyed
- In 2006, 50% of nests were destroyed
- Preliminary analysis suggests no strong relationship between the distance from the pipeline and whether a nest survived



Nest success does not differ

- So does this mean that pipelines do not have an effect on birds?
- Microclimate may differ at edge
- Insect prey may react to microclimate
- Ability for birds to find food may differ
- Fence effect DOES OCCUR





Future directions

- Return for one more year of nest searching (very productive)
- Use the cameras to develop habitat selection functions for furbearers/ bears/ other spp.?
- Use the cameras to assess baseline condition of mammals in area of potential pipeline development?
- Further evaluation of noise effects from compressor stations

Project support

Liidlii Kue First Nation

NSERC CRSNG

Environment Canada / Environnement Canada

Canadian Circumpolar Institute

Northwest Territories Environment and Natural Resources

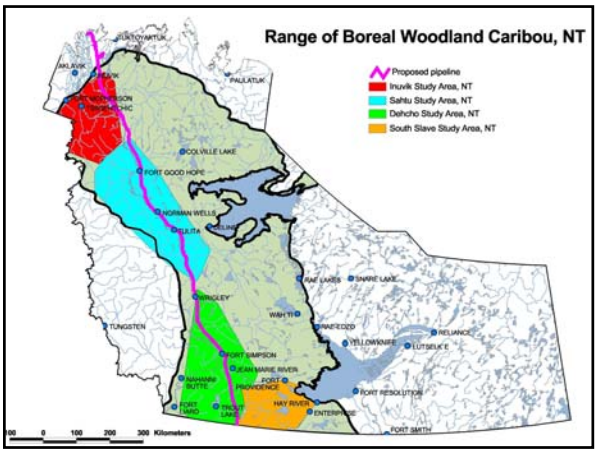
Integrated Landscape Management

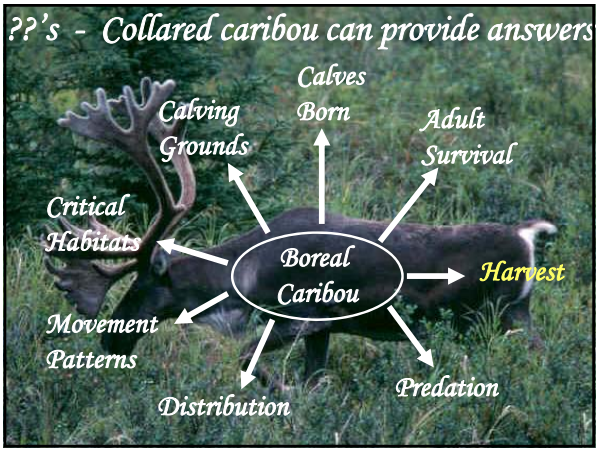
University of Alberta

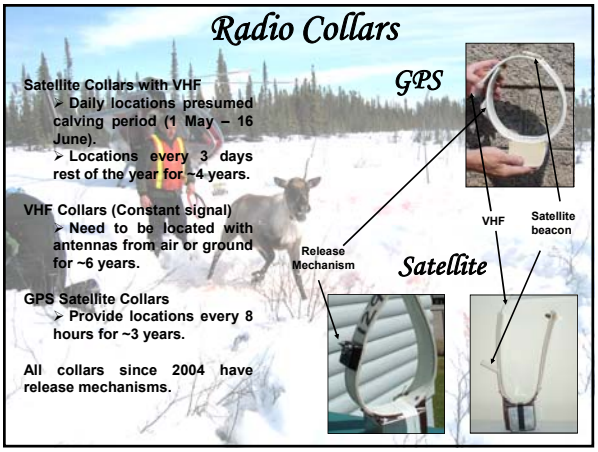
ConocoPhillips

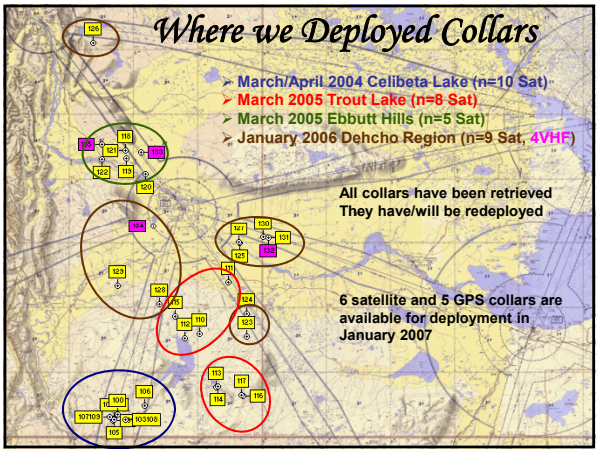
Samson Security Solutions

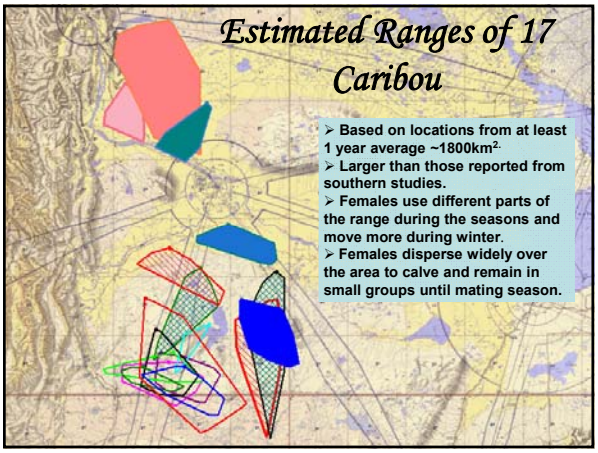

Boreal Caribou Program
Dehcho Wildlife Workshop
October 17, 2006

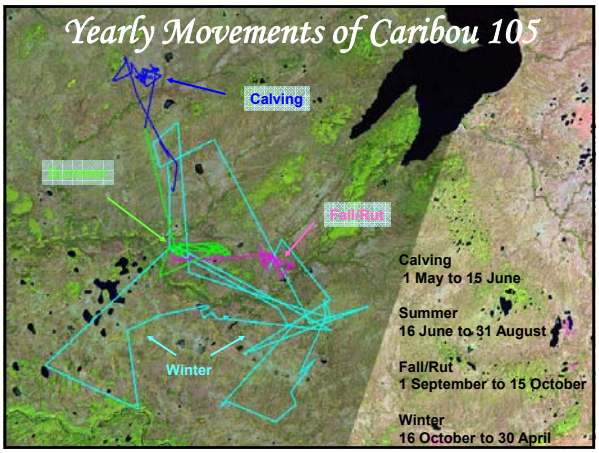

Range of Boreal Woodland Caribou, NT
Proposed pipeline
Inuvik Study Area, NT
Sahtu Study Area, NT
Dehcho Study Area, NT
South Slave Study Area, NT
Kilometers

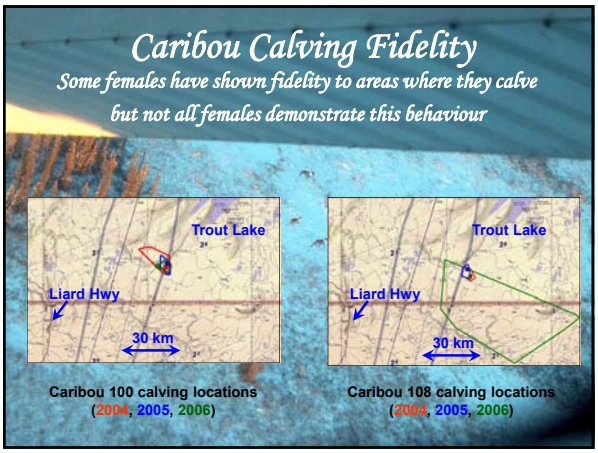

??'s - Collared caribou can provide answers
Calves Born
Calving Grounds
Adult Survival
Critical Habitats
Boreal Caribou
Harvest
Movement Patterns
Predation
Distribution


Radio Collars
Satellite Collars with VHF
➢ Daily locations presumed calving period (1 May – 16 June).
➢ Locations every 3 days rest of the year for ~4 years.
VHF Collars (Constant signal)
➢ Need to be located with antennas from air or ground for ~6 years.
GPS Satellite Collars
➢ Provide locations every 8 hours for ~3 years.
All collars since 2004 have release mechanisms.
GPS
VHF
Satellite beacon
Release Mechanism
Satellite


Where we Deployed Collars
➢ March/April 2004 Celibeta Lake (n=10 Sat)
➢ March 2005 Trout Lake (n=8 Sat)
➢ March 2005 Ebbutt Hills (n=5 Sat)
➢ January 2006 Dehcho Region (n=9 Sat, 4VHF)
All collars have been retrieved They have/will be redeployed
6 satellite and 5 GPS collars are available for deployment in January 2007

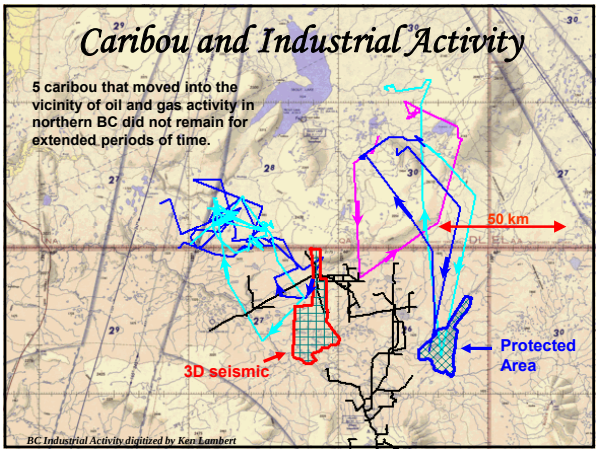

Estimated Ranges of 17 Caribou
➢ Based on locations from at least 1 year average ~1800km².
➢ Larger than those reported from southern studies.
➢ Females use different parts of the range during the seasons and move more during winter.
➢ Females disperse widely over the area to calve and remain in small groups until mating season.

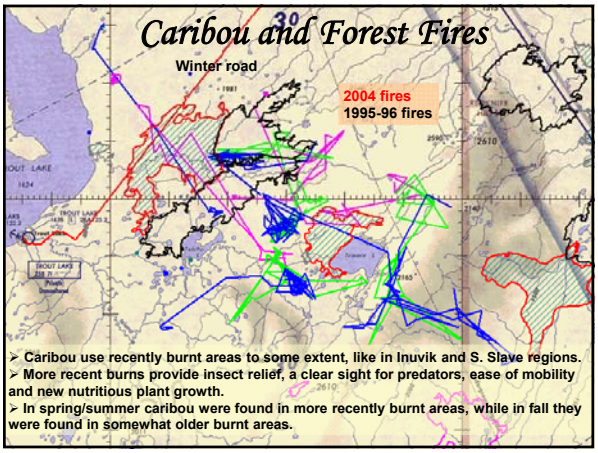

Yearly Movements of Caribou 105
Calving
Summer
Fall/Rut
Winter
Calving
1 May to 15 June
Summer
16 June to 31 August
Fall/Rut
1 September to 15 October
Winter
16 October to 30 April


Caribou Calving Fidelity
Some females have shown fidelity to areas where they calve
but not all females demonstrate this behaviour
Trout Lake
Liard Hwy
30 km
Caribou 100 calving locations
(2004, 2005, 2006)
Trout Lake
Liard Hwy
30 km
Caribou 108 calving locations
(2004, 2005, 2006)


Mortalities
➢ 15 animals have died: 2 in 2004, 7 in 2005 and 6 in 2006.
➢ 13 were most likely killed by wolves; 2 died of other causes.
➢ Most (11) died between March 30–May 30, similar to studies elsewhere in NT.
➢ Ages from 6 sets of teeth: 5, 10, 11, 14, 15, and 17 years.
➢ Blood tests showed age 10, 13, and 16 caribou were pregnant

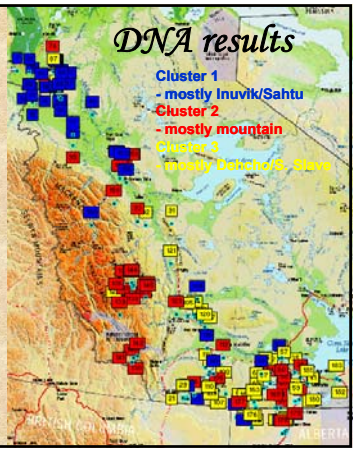

Linear features & caribou mortality
➢ Linear features can be man made seismic lines or game trails usually along high ground.
➢ Linear features are believed to make travel easier especially for predators relative to their prey.
➢ Studies in southern Canada show caribou avoid areas with significant linear development.
➢ Some caribou mortalities occurred near (<500m) from seismic lines and/or well used animal trails.
Collar locations
Seismic lines
Game trails
Courtesy Phil McLoughlin


Caribou and Industrial Activity
5 caribou that moved into the vicinity of oil and gas activity in northern BC did not remain for extended periods of time.
50 km
Protected Area
3D seismic
BC Industrial Activity digitized by Ken Lambert


Caribou and Forest Fires
Winter road
2004 fires
1995-96 fires
➢ Caribou use recently burnt areas to some extent, like in Inuvik and S. Slave regions.
➢ More recent burns provide insect relief, a clear sight for predators, ease of mobility and new nutritious plant growth.
➢ In spring/summer caribou were found in more recently burnt areas, while in fall they were found in somewhat older burnt areas.

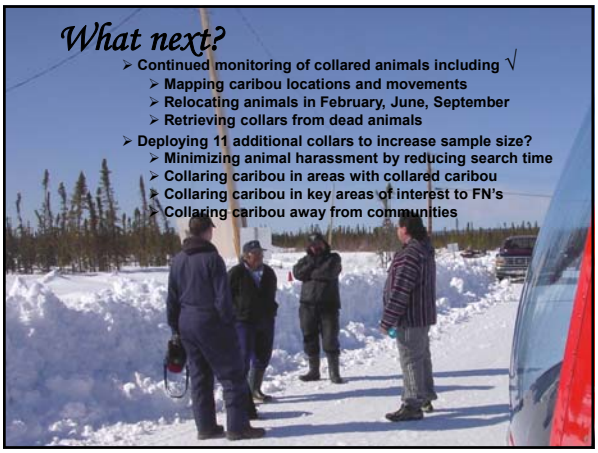
Diseases & Parasites

- Samples collected from most collared caribou: 22 blood and 41 fecal samples tested.
- Low incidence of diseases and parasites.
- No evidence of brucellosis.
- Low incidence of *Ostertagia*, a common parasite in caribou.
- Low incidence *of Giardia*.
- Historical gene flow in both a north-south and west-east directions.



What next?

- Continued monitoring of collared animals including √
  - Mapping caribou locations and movements
  - Relocating animals in February, June, September
  - Retrieving collars from dead animals
- Deploying 11 additional collars to increase sample size?
  - Minimizing animal harassment by reducing search time
  - Collaring caribou in areas with collared caribou
  - Collaring caribou in key areas of interest to FN's
  - Collaring caribou away from communities



Questions?
…. and thanks

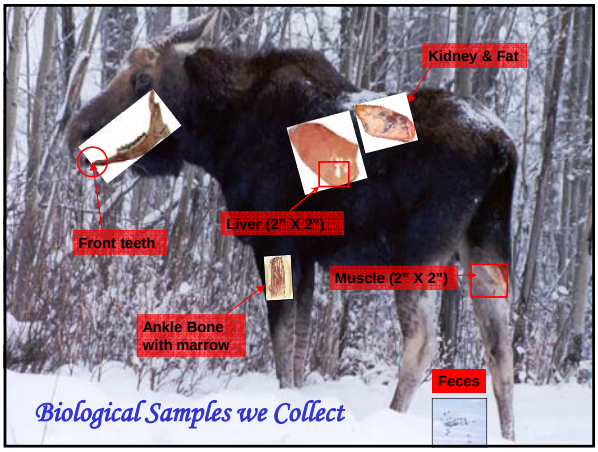
Chief Dennis Deneron (Sambaa K'e Dene Band) has been an avid proponent of this program since its inception. With the expanded program support has come from Chiefs Keyna Norwegian and Stanley Sanguez and President Marie Lafferty of Liidlii Kue First Nation, Jean Marie River First Nation, and Fort Simpson Métis, respectively. We thank Jonas Antoine, Edward Cholo, Steven Cli, Peter Corneille, David Jumbo, Edward Jumbo, Tony Jumbo, Victor Jumbo, Ronnie Kotchea, Jonas Lafferty, Andrew Lomen, Raymond Minoza, and Jonas Sanguez for their assistance with various aspects of the program.

Dehcho Moose Program

Dehcho Wildlife Workshop
October 17th, 2006

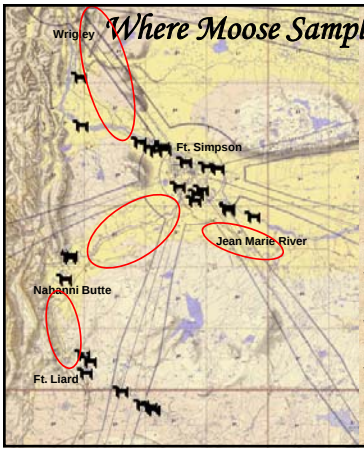
Objectives

- Monitor General Animal Health and Condition
- Document Disease, Parasites, and Contaminants
- Monitor Animal Density and Calf Production



Biological Samples we Collect

Where Moose Samples Came From



- Program began January 2005.
- Received 37 samples to date.
- Most First Nations have been Participating (LKFN, JMRFN, NBDB, ADKB, PKFN).
- ENR actively encourages First Nation members to provide moose samples.
- ENR reimburses harvesters $50 for each set of samples.
- Red circles indicate areas where we would like to get samples from.
- Sample kits have been provided to Band and Métis offices in the Region and are available at the ENR office in Fort Simpson.

What Samples Tell Us

- Femur marrow fat content is an indicator of animal condition
- Kidney and its fat weight is an indicator of animal condition
- Kidney and liver provide levels of heavy metal content
- Feces provides incidence of disease and parasites

To date harvested animals have generally:
- been in good condition for the time of year they were harvested
- low incidence of diseases and common moose parasites

It would be nice to increase the number of samples we have from throughout the Dehcho

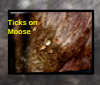

High marrow fat


Low marrow fat


Abundance of kidney fat

Winter Ticks in Moose

Hair Loss Creates "Ghost Moose"



Ticks are:
- small parasites that live on an animals skin and suck blood
- brown, oval shaped with 8 legs and look spider-like
- often found on the neck, shoulders, and back (sometimes the stomach)
- found over the entire body in severe cases

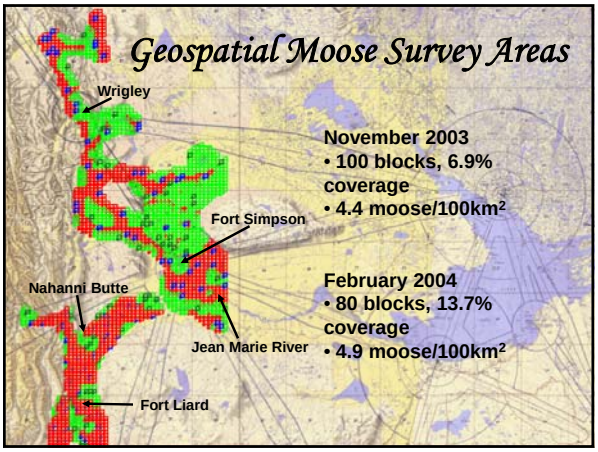
Moose:
- can carry thousands of ticks
- can become weakened through blood loss and skin irritation
- actually lose hair over parts of their body with high tick loads
- meat is not affected by ticks and is suitable for human consumption

Have you seen moose looking like this ?

Common Diseases in Moose

- Warts are caused by viruses, spread by direct contact, have little effect on body condition and usually occur in young animals.
- Meat is safe to eat; trim the hide of parts containing warts.
- Tapeworm cysts are often found in the liver and muscle tissue of moose; cooking kills the parasite which can be removed during butchering, but, DO NOT FEED RAW INFECTED PARTS TO DOGS.
- ENR publishes a Field Guide of wildlife diseases/parasites.

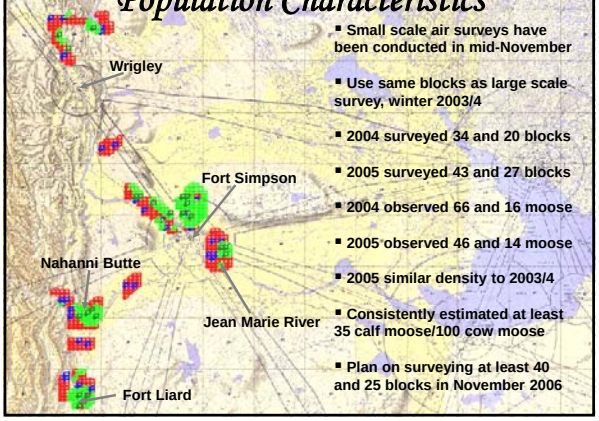
Geospatial Moose Survey Areas



November 2003
- 100 blocks, 6.9% coverage
- 4.4 moose/100km²

February 2004
- 80 blocks, 13.7% coverage
- 4.9 moose/100km²

Population Characteristics



- Small scale air surveys have been conducted in mid-November
- Use same blocks as large scale survey, winter 2003/4
- 2004 surveyed 34 and 20 blocks
- 2005 surveyed 43 and 27 blocks
- 2004 observed 66 and 16 moose
- 2005 observed 46 and 14 moose
- 2005 similar density to 2003/4
- Consistently estimated at least 35 calf moose/100 cow moose
- Plan on surveying at least 40 and 25 blocks in November 2006

Stable Moose Populations?

- In 2003/04 density estimates for moose in the Dehcho were 4.4 and 4.9 moose/100km².
- Density estimates based upon smaller sampling areas ranged from 2.4-7.5 moose/100km² in 2004 and 2.1-4.8 moose/100km² in 2005.
- In November 2003 we estimated the calf:cow ratio's of 32.1.
- Estimated cow:calf ratios for both November 2004 and 2005 was 50.0.
- Surveys occur after major fall moose harvest which reduces local density and may inflate cow:calf ratios. Accurate harvest data would be required to assess this.
- The number of females seen was lower in the 2 smaller surveys which could inflate cow:calf ratios but we continue to see females with twins.
- Local harvesters continue to have success harvesting moose.

Harvest Information?

Not knowing how many moose are harvested each year remains a key piece of information needed to properly assess population sustainability.

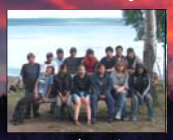
We would like to thank all harvesters who have participated in our harvest sampling program thus far

Mahsi

- Steven Cli, Jonas Antoine, Peter Corneillie, Frank Tsetso, George Tsetso, Peter Cazon Jr., Peter Cazon Sr., Loyal Letcher, Troy Ruttle, James Mouse, Roy Mouse and Chicky Cholo from the Liidlii Kue First Nations.
- Raymond Vital, Steven Vital, Darrel Betsaka and Francis Betsaka from the Nahanni Butte Dene Band.
- Ernest Timbre, Ernie Timbre and Elvis Lomen from the Acho Dene Koe Band
- Angus Sanguez, Stanley Sanguez and Isidore Simon from the Jean Marie River First Nation.
- Wes Pellissey and Gabe Hardisty from the Pehdzeh Ki First Nations.

Dehcho Youth Ecology Camps

2003 Trout Lake



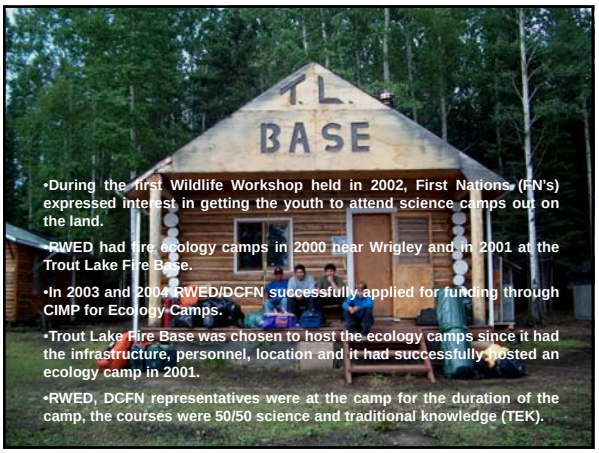
2004 Trout Lake

2005 Trout River

2006 Sandy Creek

Regional Wildlife Workshop
October 17, 2006

By; Danny Allaire



- During the first Wildlife Workshop held in 2002, First Nations (FN's) expressed interest in getting the youth to attend science camps out on the land.
- RWED had fire ecology camps in 2000 near Wrigley and in 2001 at the Trout Lake Fire Base.
- In 2003 and 2004 RWED/DCFN successfully applied for funding through CIMP for Ecology Camps.
- Trout Lake Fire Base was chosen to host the ecology camps since it had the infrastructure, personnel, location and it had successfully hosted an ecology camp in 2001.
- RWED, DCFN representatives were at the camp for the duration of the camp, the courses were 50/50 science and traditional knowledge (TEK).

Scientific Knowledge

The students learned how to read coordinates on a map, they learned how to navigate with a compass and a GPS. There were obstacle courses set up for the students so they could use their newly acquired knowledge.

The students learned how to use fire fighting equipment, they flew to fires near the camp and mapped them with a GPS.

The students learned how to use forestry equipment, each student had to measure tree heights, tree diameter, and they had to age a tree.

Traditional Knowledge

The students learned how to traditionally prepare fish, ducks and rabbits. They learned how to set fish nets and rabbit snares. Students picked berries and the dry fish they made they were able to bring home with them.

Elders told stories about the area and how our ancestors survived off the land.

Students learned about boat safety and were able to use canoes that were at the camp.

At the end of the camps there was a community drum dance and feast to celebrate the closing of the camp.

2005 Trout River Ecology Camp

During the 2004 Wildlife Workshop held in October, First Nations requested that the Ecology Camp should be moved to different locations to ensure TEK from other communities is utilized and funding is distributed throughout the Dehcho Region.

Land is Life was awarded the 2005 Ecology Camp held at the mouth of Trout River on the Mackenzie River. They were awarded the contract by the ENR/DFN committee based upon the quality of their proposal. Staff from Fort Simpson and Jean Marie River were hired for the camp.

Student questionnaires that were collected from past camps had a clear majority of them wanting more TEK during the ecology camps.

Scientific Knowledge

The students learned how to read coordinates on a map, they learned how to navigate with a GPS.

The students learned how to use forestry equipment, each student had to measure tree heights, tree diameter, and they had to age a tree.

The students learned how to use a VHF receiver and antenna to find VHF collars hidden around the camp.

They also learned about the moose contaminants program and what samples were needed to sample for contaminants.

Traditional Knowledge

The students learned how to set up a traditional campsite, they made dry meat, dry fish and picked berries to take home.

The boys learned how to skin a moose and beaver, how to drum, they camped out on the land for a night.

The girls learned how to fix a moose hide, use traditional medicines, how to properly use spruce boughs for flooring and they made birch bark baskets.





2006 Sandy Creek Ecology Camp

The Katlodeeche First Nation from the Hay River Reserve was awarded the contract by the ENR/DFN committee based upon the quality of their proposal. Staff from Hay River, Fort Simpson and Hay River Reserve were hired for the camp.

The 2006 Ecology Camp was held at the mouth of Sandy Creek on the shore of Great Slave Lake.

Scientific Knowledge

The students learned how to find coordinates on a map, they learned how to use a GPS and they mapped trails around the camp.

The students learned how to use forestry equipment, each student had to measure tree heights, tree diameter, and they had to age a tree.

The students learned how to use a VHF receiver and antenna to find VHF collars hidden around the camp.





Traditional Knowledge

The students learned how to prepare ducks, geese, fish and caribou under the guidance of local elders. The food that was prepared was used during the camp.

The boys got driftwood from Great Slave Lake for the camp. The girls helped out with cooking and cleaning.

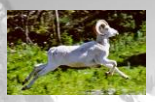
They also learned how to properly handle a canoe, make a fire using a flint and set up a traditional campsite.

We had a feast on the second last day of the camp to commemorate another successful ecology camp.





Wildlife Research in Nah▪ą Dehé



Nahanni National Park Reserve

Dehcho Wildlife Workshop
October 17&18, 2006

Douglas Tate
Conservation Biologist
Nahanni National Park Reserve

Parks Canada Parcs Canada Canada

OVERVIEW

I. **Why do Wildlife Research?**
- Parks Canada Mandate
- Reasons for Research & Monitoring

II. **What Should We Study?**
- Developing Research Priorities for Nahanni

III. **What's New?**
- Highlights of Recent Wildlife Studies

IV. **Where do we go now?**
- Conclusions and Future Directions

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I. Why do Wildlife Research?

- Parks Canada mandate - to protect representative samples of all of Canada's Natural Regions
- National System Plan - Nahanni National Park Reserve represents the Mackenzie Mountains region
- *Canada National Parks Act* (2000) clearly states that protection of ecological integrity is the first priority of National Parks

[*Ecological Integrity can be defined as 'the health of the land'*]

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Completing Canada's National Park System

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II. What should we study?

- January 2000 Workshop (DFN/PC) to determine the state of park ecology, research needs.
  - federal and territorial government representatives
  - scientific researchers
  - local community leaders
  - elders and active harvesters
- June 2000 - formation of Nah▪ą Dehé Consensus Team as part of Deh Cho I.M.A.;
  - 3 by Parks Canada
  - 2 members appointed by DCFN
  - 2 members appointed by Nahanni Butte
  - Ecological Integrity Statement (2001)
  - Interim Park Management Arrangement (2003)
  - Park Management Plan (2003)

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II. What should we study? (continued)

- Nah▪ą Dehé Consensus Team wrote the Park Management Plan, which:
  - affirms the importance of research, monitoring and traditional knowledge
  - recognizes that Dene are inseparable from the land, and traditional use will continue as a part of the park ecology
  - confirm the South Nahanni River watershed as the primary area of interest and influence in terms of park ecology
  - provides objectives and targets for park management, including wildlife research

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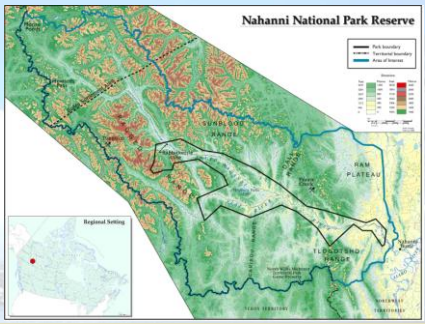
Greater Nahanni Ecosystem



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III. What's New? (Research Highlights)

- Bull Trout
- Listed as 'threatened' in US, 'sensitive' in AB, BC & YT, and 'may be at risk' in NWT (ENR, 2005)
- Southern populations of Bull Trout have declined due to industrial disturbance

- Initial work with Neil Mochnacz (UofM & DFO) in 2001 confirmed that Bull Trout, not Dolly Varden, occur in the South Nahanni River watershed
- Impacts to Bull Trout were raised as a concern in a recent Environmental Assessment report (2006) on proposed mining activities at Prairie Creek.

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III. What's New? (Research Highlights)

- Bull Trout spawning site was found on Funeral Creek, a tributary of Prairie Creek. Proposed access road to mine goes along this creek.
- Field work in 2004-06, has found Bull Trout in many locations below Nailicho (Virginia Falls), including the Flat River, but no sites above the Falls.
- Lake Trout occur both above and below the Falls, in lakes and in the main river.

- Parts of the Nahanni were not glaciated in the last ice age, and trout from here may have colonized much of Canada.

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III. What's New? (Research Highlights)

- Bats

Prior to this study, the status of bats in NNPR (and the NWT) was not well known:

- Only one common bat in NWT – Little Brown Bat.
- Two other species recorded in NWT, but extremely rare.

- One park record of Northern Long-eared Bat; Kraus Hotsprings (1976).
- This study used mist-nets to capture bats and electronic recorders to collect their calls.

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III. What's New? (Research Highlights)

- Field crew worked in the dark, battled hordes of mosquitoes, stayed up nights.
- Found **seven species** of bats in the park.
- Several captures of Northern Long-eared Bat, plus Western Long-eared Bat, Long-legged Bat.
- Sight/sound records of Red Bat, Hoary Bat and Big Brown Bat.
- Tripled the known bat species in the park, and more than doubled the NWT species list!

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III. What's New? (Research Highlights)

- Butterflies
- Little was known about butterfly diversity in the Nahanni region; collaborated with an ENR project in 2005.
- Ross Layberry, Canadian butterfly expert, travelled through NNPR with park staff.
- Collections were made along South Nahanni River from Nailicho to Nahanni Butte, plus other locations in the vicinity.
- Forty-three (43) species were identified from the GNE.
- Two butterflies - Mormon Fritillary and Atlantis Fritillary - were new species for NWT.

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III. What's New? (Research Highlights)

- Grizzly Bears
- 2002 - Project initiated in cooperation with Dr. John Weaver, Wildlife Conservation Society.
- Determine relative abundance and distribution of grizzly bears in and adjacent to park, identify important areas, movement patterns, potential areas of conflict.
- No capturing or handling of bears; barbed wire corral with scent lure - bears investigate but find no food.
- Most work in June, avoided visitor & hunting seasons.

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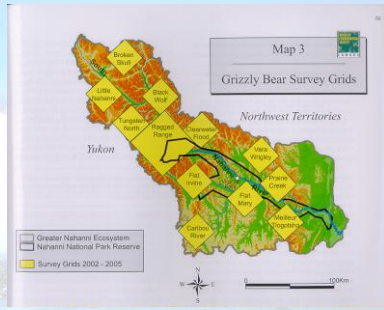
III. What's New? (Research Highlights)

Grizzly Bear Survey Grids 2002 – 2005

(Weaver 2006)



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III. What's New? (Research Highlights)

- Hair samples caught on wire; additional hairs taken from rub trees. DNA analysis used to identify individual bears.
- Grizzly bears detected at 49% of scent stations; at least 103 different bears.
- 16 different grizzly bears in the Rabbitkettle Lake area; average of 7 in a year (5 – 8).
- Straight-line movements of up to 91 km observed.
- Model of bear density developed; estimated population of 665 grizzly bears in the Greater Nahanni Ecosystem.

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III. What's New? (Research Highlights)

- Dall's Sheep
- Composition counts (ground-based) started on Tlogotsho Plateau in 2001. Similar to Sahtu ENR methods.
- Contributed to parasite and genetic studies with ENR & U of Sask.
- 2003 was a good year; 53 sheep and ratio of 41 lambs per 100 ewes suggested good early survival rate. No count in 2004; poor weather in 2005.
- 88 sheep seen in 2006 (some double counts).

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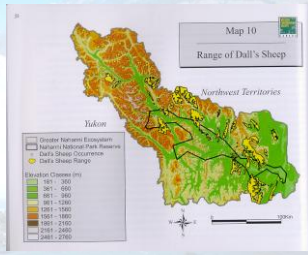
III. What's New? (Research Highlights)

- Larger scale sheep range / occurrence assessment undertaken in cooperation with Dr. John Weaver (WCS).
- Surveys of Ram Plateau and Nahanni Plateau / Tundra Ridge areas. Review of previous sheep surveys & TK.
- Estimate of Dall's sheep population in GNE between 800 – 1200 animals.
- Most of the primary sheep ranges are outside of the current park area.



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III. What's New? (Research Highlights)

- Moose
- No moose surveys had occurred since 1980s.
- NNPR supports ENR moose surveys (Dehcho Region) by contributing extra funding and staff assistance (2003 -06)
- Planned moose surveys in Liard and Mackenzie valleys have been extended into South Nahanni River valley from Nahanni Butte up to Deadmen Valley

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III. What's New? (Research Highlights)

- Woodland Caribou

- 1995- Study started by NNPR in consultation with LKFN; cooperation with RWED (ENR) and Yukon government.
- Local traditional knowledge suggested South Nahanni herd was declining.
- Local TK, oral histories and outfitters and Yukon researchers surveyed; estimate of 2000 – 3000 caribou.
- Traditional knowledge of caribou migration on Flat and Caribou River valleys.

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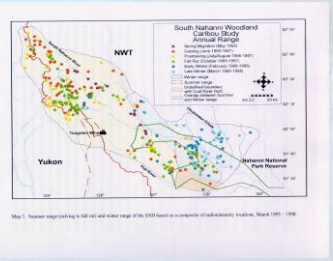
III. What's New? (Research Highlights)

- Caribou herd winters in park river valleys, summers in alpine NW of park.
- Very low calf:cow ratios suggest poor survival, herd may be declining.
- Census in 2001 saw only 781 caribou; population estimate of 940 – 1140 (GNWT 2002).
- Results agreed with local TK - the herd appears to be in decline.



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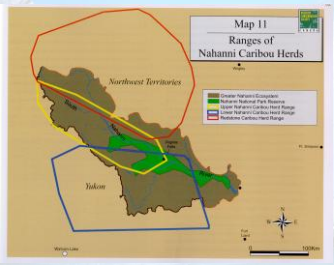
III. What's New? (Research Highlights)

- None of the primary calving or rutting grounds of the South Nahanni Herd are protected.



- Some caribou travel west to Coal River area, and south to LaBiche Range; again supports the local traditional knowledge.
- Caribou from the Redstone Herd enter the watershed in the north.
- Some winter range is in the park, but none of the calving or rutting areas are protected.

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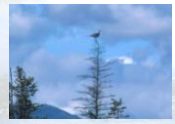
III. What's New? (Research Highlights)

- Other Wildlife

- Record sightings of other species including wolves, lynx, mountain goat, beaver, frog.
- Breeding bird and spring migration monitoring, recording observations on park shifts and patrols



- Periodic surveys for Trumpeter Swans, and raptors (eagles, hawks & falcons)
- Occasional monitoring of rare species such as Upland Sandpiper, Black Tern, Western Toad

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IV. Where do we go now? (continued)

- Nah▪ą Dehé Consensus Team continues to be the cooperative management body for NNPR; wildlife research proposals are reviewed by the NDCT.
- NDCT currently consists of:
  Wilson Dimsdale, Ann Ronald, Douglas Tate, Jonas Antoine, George Tsetso, Peter Marcellais, George Betsaka
- Watershed Protection – Nah▪ą Dehé K'éodíi
  - numerous resolutions from Nahanni Butte and Dehcho First Nations to protect lands, waters and wildlife of Nah▪ą Dehé.
- Nahanni Expansion Working Group studying wildlife, as well as mineral & energy potential, land features, culturally important sites, etc, to decide what to protect. Extensive community consultation ongoing.

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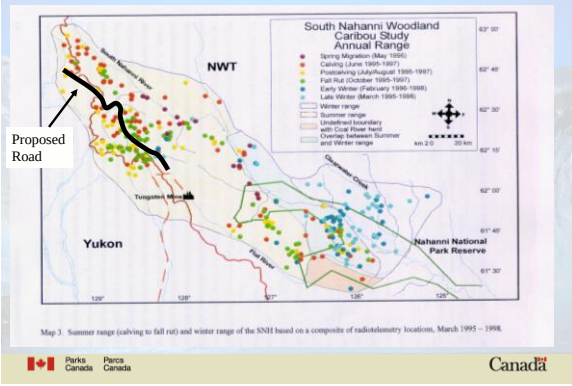
IV. Where do we go now?

- Ecological Integrity (health of the land) is good in Nah▪ą Dehé - Nahanni National Park Reserve.
- Partnerships with DFN, ENR, local communities and other organizations has worked well; this will continue to be very important in future. We are pursuing ideas for a cooperative research centre.
- Research Priorities for the park are posted on the website; a more detailed Science Strategy for the park is planned.
- ***High Priority:*** Caribou Status.
  - Low population size; poor calf survival; no data on trends.
  - Herds are hunted (traditional harvest, plus resident hunting, plus outfitter trophy hunting).
  - New proposal for a mine and all-season road through the calving grounds; more impacts on a possibly declining herd.
  - NNPR willing to be a funding partner in studies.

Parks Canada Parcs Canada Canada


South Nahanni Woodland Caribou Study Annual Range
NWT
Yukon
Nahanni National Park Reserve
Proposed Road
Map 3. Summer range (calving to fall rut) and winter range of the SNH based on a composite of radiotelemetry locations, March 1995 – 1998.
Parks Canada Parcs Canada
Canada


Mahsi Cho / Thank You
• Environment and Natural Resources (GNWT) & Dehcho First Nations
• Nahąą Dehé Consensus Team & NNPR Staff
• Yukon Renewable Resources
• Department of Fisheries and Oceans
• Environment Canada (Canadian Wildlife Service)
• Univ Manitoba, Univ Saskatchewan
• Wildlife Conservation Society
• Cori Lausen, CPAWS & MEC
Parks Canada Parcs Canada
Canada

www.ec.gc.ca

Shorebird Surveys in the Mackenzie Valley

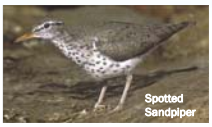
Canadian Wildlife Service

Credence Wood
Vicky Johnston
October 17, 2006

Breeders – Nest in the boreal forest


Lesser Yellowlegs


Solitary Sandpiper

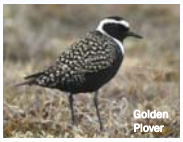

Spotted Sandpiper


Wilson's Snipe

Migrants – Nest in the arctic/northern boreal forest


Whimbrel


Hudsonian Godwit


Golden Plover


Sandpipers

Why study shorebirds?

- populations of shorebird species are declining on migration counts
- little known about shorebirds in the boreal forest

CWS – Northern Conservation Division

Shorebird Conservation Strategy and Action Plan

Goal

- To maintain the diversity and abundance of shorebird species in the Northwest Territories and Nunavut

Objectives

- collect baseline data for the MGP environmental assessment process
- work towards a monitoring program for the boreal forest

  - part of PRISM (Program for Regional and International Shorebird Monitoring)

Mackenzie Gas Project

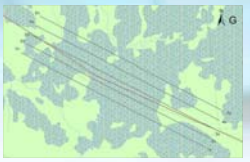
PRISM

Objectives

1. determine abundance and distribution of shorebird species breeding on the proposed pipeline corridor and along the Mackenzie River;
2. determine the level use of the proposed pipeline corridor and Mackenzie River as a spring migration route for shorebirds that breed in the Arctic;
3. identify location of shorebird 'hotspots' along the pipeline corridor and river.

Types of Surveys – Aerial

- surveyed 200m wide strip from helicopter 30m above ground traveling 80 km/h
- recorded birds and general habitat for each observation

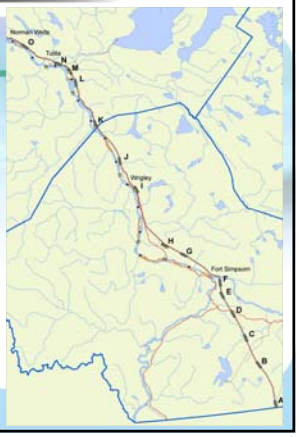


Types of Surveys - Ground

- recorded birds and general habitat for each observation

When and Where

- May 19 – 23, 2006
- block surveys along proposed MGP pipeline route between Norman Wells and the Alberta boarder
- spaghetti surveys along Mackenzie River between Norman Wells and Fort Simpson



Results - Abundance

Pipeline

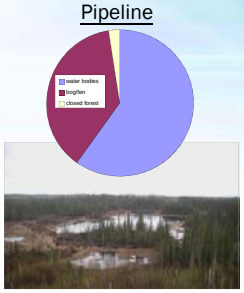
- 259 shorebirds counted over 750 km of surveys
- Density = 1.73 / km^2

River

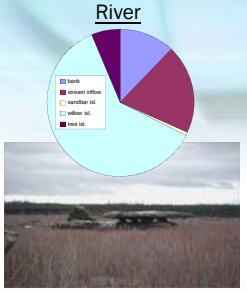
- 225 shorebirds counted over 198 km of surveys
- Density = 5.68 / km^2

Results – Distribution by Habitat

Pipeline



River



Results

Migration

- migrants were only identified along the river and the river had higher densities of shorebirds (5.68/km^2 vs 1.73/km^2)
- pipeline corridor is not used by migrants
- river is a migration corridor but importance compared to other migration corridors is as of yet unknown

Hotspots

- difficult to determine with our surveys after 1 year
- appear to be thinly, but evenly dispersed through valley where open, wet habitat exists

Environment Canada Environnement Canada Canadian Wildlife Service Canada

Future Research

- funding for 2 more years ??
- longer, intensive surveys at specific locations with emphasis on biology of species, as well as counts, for boreal breeding shorebirds
- establish sites along river to monitor spring and fall migrations

Environment Canada Environnement Canada Canadian Wildlife Service Canada

www.ec.gc.ca

Thank you!

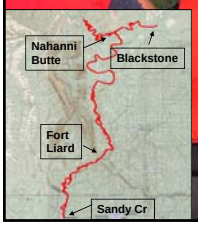
Canadian Wildlife Service Canada

Nahanni Wood Bison Program

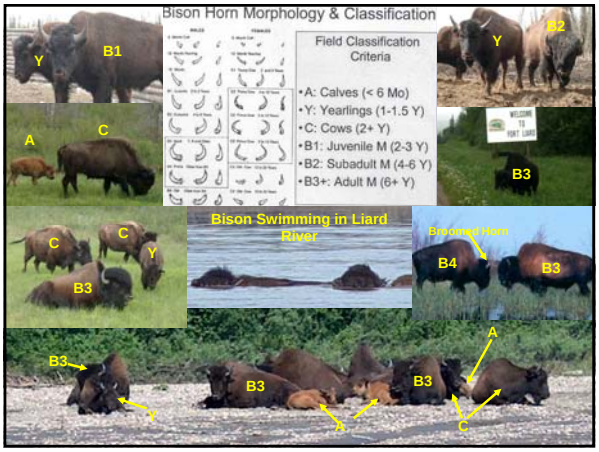
- Sex and Age Classification Surveys
- Biological Sampling
  - Harvested Animals
  - Vehicle Collisions

Dehcho Wildlife Workshop
October 17, 2006

Sex and Age Classification Surveys



- Surveys conducted annually starting in 2002.
- Surveys are 2-3 days long and cover the Liard and South Nahanni Rivers, generally north from Sandy Creek to Nahanni Park and Blackstone River.
- Surveys are conducted in mid-July when bison frequent the sandbars and shoreline avoiding heat and insects.
- Survey routes are tracked using a GPS; observations recorded as waypoints.

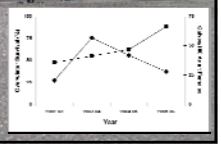


Classification Survey Results

	2002	2003	2004	2005	2006
# bison classified	131*	154	137	138	167
# calves/100 females	20	56	42	28	47
# yearlings/100 females	17	10	31	26	25
# mature males/100 females	48	50	40	50	72

* Included group of 42 classified at Beaver Camp prior to survey

- We consistently observe >130 animals/survey.
- Calf production shows great annual variation.
- Overwinter survival of calves has increased.
- Population stable, likely increasing slowly.

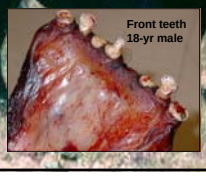


Biological Sampling

- ENR tries to collect a variety of biological samples from harvested and/or dead animals depending upon the condition of the carcass.
- Blood and lymph nodes are important for disease screening. All submitted samples have come back negative for brucellosis and tuberculosis and anthrax has never been detected in the Nahanni bison range.
- We also collect teeth for aging; stomach contents and/or poop for diet, disease, and parasites; long bones for measuring marrow fat; kidney and liver for contaminant levels.

Bison Diet

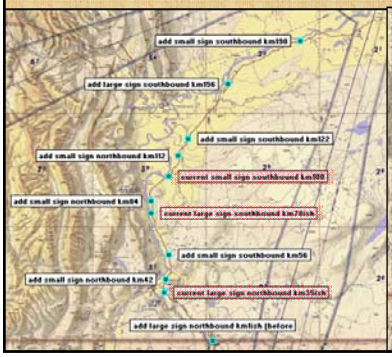
- Similar to Mackenzie bison a lot of sedge, grass, and willow.
- Different from Mackenzie bison is scouring rush (horsetail).
- Scouring rush (*Equisetum*) has silica which wears down teeth.
- Reduces life expectancy relative to Mackenzie population.



Motor Vehicle Collisions

- Collisions between vehicles and bison were rare on the Liard Hwy until fall 2004.
- DOT/ENR added 8 highway signs warning of bison on the Liard Hwy in spring 2005.
- DOT/ENR drafted a protocol so that as much information can be collected from these unfortunate incidents as possible.
- Timely reporting of collisions is essential so meat can be salvaged and all pertinent information can be collected.

Locations of new signs on Liard Hwy, spring 2005



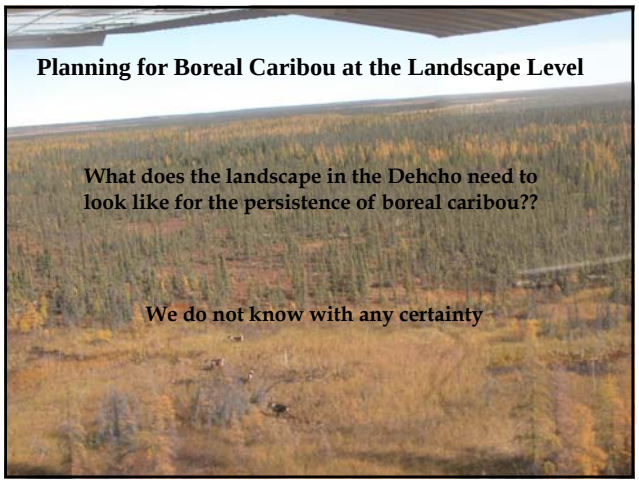
Collision locations Sept '04 - Jan '05

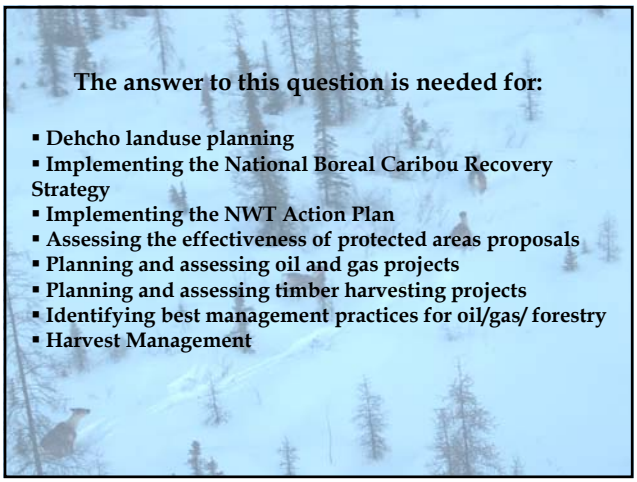
Bison in the Community

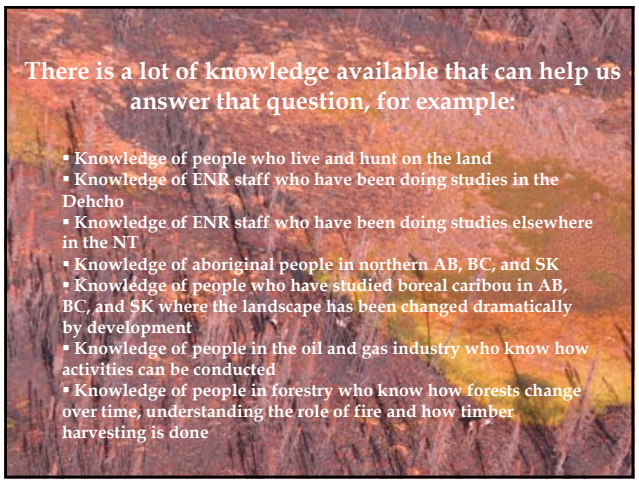
- Most activity in the community occurs during summer, prior to the rut.
- Local ENR office fields and investigates complaints and responds where appropriate.
- The appropriateness of the response made is an ongoing issue.

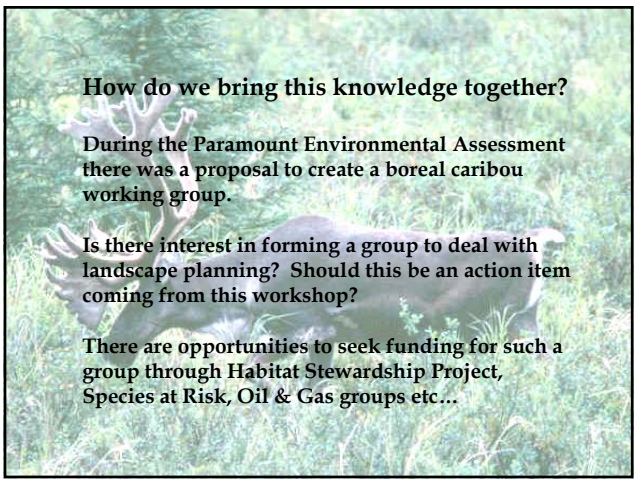
Thanks

We thank the following for their active participation in the bison program: Frank Kotchea, Michael Sassie, Isadore Lomen, Earl Hope, Peter Bertrand, Ernest Timbre, Ernie and Angus McLeod from the Acho Dene Koe Band, and Francis Betsaka, Ernie Isaiah, Sam Ekotla, George Tsetso, Steve and Raymond Vital from the Nahanni Butte Dene Band.


Planning for Boreal Caribou at the Landscape Level
What does the landscape in the Dehcho need to look like for the persistence of boreal caribou??
We do not know with any certainty


The answer to this question is needed for:
▪ Dehcho landuse planning
▪ Implementing the National Boreal Caribou Recovery Strategy
▪ Implementing the NWT Action Plan
▪ Assessing the effectiveness of protected areas proposals
▪ Planning and assessing oil and gas projects
▪ Planning and assessing timber harvesting projects
▪ Identifying best management practices for oil/gas/ forestry
▪ Harvest Management


There is a lot of knowledge available that can help us answer that question, for example:
▪ Knowledge of people who live and hunt on the land
▪ Knowledge of ENR staff who have been doing studies in the Dehcho
▪ Knowledge of ENR staff who have been doing studies elsewhere in the NT
▪ Knowledge of aboriginal people in northern AB, BC, and SK
▪ Knowledge of people who have studied boreal caribou in AB, BC, and SK where the landscape has been changed dramatically by development
▪ Knowledge of people in the oil and gas industry who know how activities can be conducted
▪ Knowledge of people in forestry who know how forests change over time, understanding the role of fire and how timber harvesting is done


How do we bring this knowledge together?
During the Paramount Environmental Assessment there was a proposal to create a boreal caribou working group.
Is there interest in forming a group to deal with landscape planning? Should this be an action item coming from this workshop?
There are opportunities to seek funding for such a group through Habitat Stewardship Project, Species at Risk, Oil & Gas groups etc…