

# RESEARCH HIGHLIGHTS

Spring 2002

## Lac Joseph Caribou Herd Monitoring Program

The final component of the Institute's Lac Joseph Caribou Herd monitoring program initiated in March 2000 was completed in March 2002 with the assistance of DND and the two provincial resource management agencies.



Neck Condition

Upon recapture of IEMR satellite collars, DND refitted the animals with the newest generation of satellite PTT's, providing continued life history/movement data and regular information for their mitigation program. Collared animals were easily located for recapture since satellite collars were still functional and individual locations were known. Eight of the nine IEMR satellite collared animals were recaptured and refitted with DND satellite collars. One animal was not observed during the course of the fieldwork due to exhausted battery life. This animal was discovered to have had a 'dead' collar during the January telemetry flight and recapture was not anticipated.

Prior to captures, individual group sizes and compositional data was collected. Captures followed stan-

dard Provincial Wildlife Science Division protocol. After the collars were removed, photos were taken of neck condition, new collars deployed, ear tags issued where necessary, and morphological measurements along with samples of blood, feces, and hair were collected.

All project participants obtained coordinates of caribou capture locations as the fieldwork progressed and copies of individual capture sheets were distributed at the end of the project. In the coming months Institute staff will update the Lac Joseph caribou database.

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## Spring Staging Waterfowl Update – May 2002

*Tina Newbury, MS.c. Candidate, McGill University*

Lac Fourmont, Labrador (latitude 52° 03' 30", longitude 60° 31' 01"), was chosen as the study site for the 2002 field season. Lac Fourmont is seen as a good study site for studying the effects of low-level overflights on the behaviour of spring staging waterfowl for the following reasons: (1) there is a known ashkui previously identified by Innu (2) it is a known staging ground for a large variety of waterfowl, and (3) it is a widely overflowed area by low-level flying jets training in the Military Training Area of the Quebec-Labrador Peninsula.

The 2002 field season began 17 April with a week of camp set-up, establishment of viewing blinds from which observations of waterfowl are made, and the calibration of two Sound Level Meters and overflights (carried out by Kees Verberg, RNLAF) on 23 April. Data from these overflights will be used by the Department of National Defence (DND) to make a noise propagation model.

The field crew consists of 4-6 observers and an Innu family from La Romaine, Quebec, two of whom are directly involved with the research project. Waterfowl were present in relatively small numbers on the ashkui when the field crew began observations 26 April. Over the course of the next two weeks many waterfowl moved into the Lac Fourmont ashkui for spring staging. The peak day for diversity and abundance of waterfowl was 13 May with approximately 376 waterfowl using the ashkui. There are two observers in each of two blinds each day from 0900h - 1200h and 1300h -1600h (times when low-level overflights can be expected). In addition, random days have been selected to carry out dawn and dusk observations. With observations throughout all daylight hours it will be possible to compile diurnal time-activity budgets for each species. The majority of observations are being made on Canada Geese, Common Goldeneye (a diving duck) and American Black duck (a dabbling duck). With support from DND the ashkui has been directly overflowed approximately 60 times to date. The field crew has been quite busy noting behaviours before, during, and after overflight disturbances. In addition, there have been regular disturbances by three Bald Eagles and snowmobile activity around the ashkui. Canada Geese have reduced in number at Lac Fourmont and there is a shift in species present at the study site.

Four collared Canada Geese have been observed on the ashkui. We have learned that two of these Geese are at least 10 years old and were banded in Massachusetts and Connecticut respectively as members of the Atlantic Flyway population. Also of interest was the observation of a pair of Barrow's Goldeneye on the Lac Fourmont ashkui.

The second week of May brought milder weather and as a result the ashkui enlarged considerably. Aerial photos have been taken to document the change in size and shape of the ashkui with each provisional flight into Lac Fourmont (17 April, 25 April, 1 May and 12 May).



Crew Picture  
Jean Baptiste, Kathy Hogan, Dawn Laing, Sylvester Lalou, Shauna Baillie, Leanne Elson, Corinne Wilkerson, Ted Pardy, and Tina Newbury

## Red Wine Mountain Caribou Report

*Sean Sharpe, R.P. Bio, Research Manager*

On April 19, Rob Otto, Richard Neville (Newfoundland and Labrador Wildlife Science Division) and Sean Sharpe (Research Manager, Institute for Environmental Monitoring and Research) set out to capture and radio collar up to 10 caribou from different groups of the Red Wine Mountain Caribou. Many of the animals in the Red Wine Herd are already collared with VHF radio transmitters, but these require the biologists to fly and locate the animals periodically and the result is at best a biweekly location for most caribou. In the preliminary work this spring, we are using Global Positioning Satellite (GPS) radio collars instead of the conventional VHF radio collars. The objective is to use these GPS collars to determine daily movement patterns with respect to habitat use and to improve understanding of seasonal shifts in distribution.

Four GPS collars were placed on female caribou on April 19, 2002 as part of the baseline research on the Red Wine Caribou and their ecosystem. These collars receive signals from a series of satellites and then record the exact location of the caribou four times a day. After a year of recording locations, the batteries in the collars will be used up and there is a release mechanism on the collar so that it will drop off the caribou and researchers will pick up the collar in the spring of 2003 and download the data recorded. The collars have a VHF radio beacon that allows biologists to find the animal and collar, but we don't need to fly as frequently to locate animals as the data are recorded and stored in the collars. Both the VHF and GPS radio collars have a special switch that de-

fects movement, so that researchers can determine if animals have died by listening to the pulse rate of the radio signal for each animal.

The caribou were captured by net gun from the helicopter and all were in good physical condition. Animals were ear tagged; body measurements were taken; and samples of blood and feces were collected. The last day available to deploy collars was the end of April, in order to give animals a full month free of disturbance before the calving season. Unfortunately poor weather and time available for the capture team did not allow deployment of all 10 GPS collars in the Spring. There are now a total of 20 collared Red Wine Mountain caribou, 4 with GPS collars.

Future work will include capture and collaring of up to another 6 caribou late this fall. This long term project is a joint cooperative study between the Newfoundland and Labrador Wildlife Science Division and the Institute for Environmental Monitoring and Research that includes a comprehensive look at the complex interaction of caribou, moose, wolves and bears and the potential impacts of low level flying. Researchers are examining the possibility of developing special GPS collars that are able to detect and record sound levels from overflights and physiological responses of the caribou in addition to detailed locations. The Institute is exploring ways of integrating this research with the River Valley Ecosystem Project and is planning to hire a Post Doctoral Fellow (a recent Ph.D.) to spearhead the caribou research project in the coming years.

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**Digital Vegetation Data  
Meeting**

On March 6, 2002, the Western Newfoundland Model Forest hosted a workshop in Corner Brook on behalf of the IEMR to evaluate the Institute's Digital Vegetation needs. Represented around the table were various aboriginal groups, provincial officials, and professionals in the fields of Remote Sensing, Cartography and Geographic Information Systems.

Dr. Louis LaPierre reviewed the Institute's research projects and discussion took place on what scales and types of data are needed. There was discussion on the availability of satellite imagery and the associated costs.

One recommendation coming out of the meeting was for the Institute to closely define habitat parameters for all species of concern. Currently the highest priority research activities include the Red Wine Ecosystem, Ashkui Sites, and Moulting Ducks. In closing, all participants at the workshop agreed to assist in putting together proposals to determine the right questions so that no important issues are overlooked in the process of obtaining the data.

**Waterfowl Conference 2002  
September 17-18, 2002  
Banquet Keynote Speaker**



**Dr. M. J. Apps**  
***ABC's of Climate Change***

Mike Apps is a senior research scientist with Natural Resources Canada, Canadian Forest Service at the Northern Forestry Centre, Edmonton and an adjunct professor in forestry faculties at both the University of Alberta and Lakehead University. A physicist by training (Ph.D., 1972, University of Bristol, UK), he has been with Forestry Canada for 23 years, where he has earned an international recognition for his research on the role of Northern Forest Ecosystems in global change and, more specifically, their contribution to the global carbon budget. He is the author or co-author of more than 150 manuscripts, of which more than over 100 are in peer-reviewed journals. Dr Apps served as Convening Lead Author for the IPCC 2000 Special Report on Land Use, Land-Use change and Forestry and Lead Author in the IPCC Third Assessment Report Working Groups I and II.

Dr Apps is presently at the Pacific Forestry Centre in Victoria B.C. where he is co-leading the development of a national forest Carbon Accounting Framework to meet Canada's international commitments under the United Nations Framework Convention on Climate Change. This Carbon accounting program is based on the research he has led for more than a decade and seeks to embrace the latest developments in the field both in Canada and internationally.

For further information on the Waterfowl Conference agenda and speakers go to [www.iemr.org](http://www.iemr.org)

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**Research Highlights**

**Information for this issue of Research Highlights was provided and compiled by Institute staff. If you have any comments or if you have information you would like to see included, please contact the Institute's office.**