

RESEARCH HIGHLIGHTS

October 2004

BOREAL OWL STUDY – COMPONENT OF RIVER VALLEY ECOSYSTEMS PROJECT

By Charles Maisonneuve

Partners:
 Institute for Environmental Monitoring and Research
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In 2003, 600 nesting boxes were installed by the MRNFP in co-operation with the Natashquan Band Council in order to study the possible effects of low-level flying on boreal owl reproduction (see November 2003 newsletter). Half of the nesting boxes were installed along the Natashquan River within the limits of the training area, and the other half, serving as control boxes, were installed to the south of this area, along the Natashquan and Aguanus rivers. The first year during which data were to be collected as part of this project was 2004.

The first complete visit to the nesting boxes was to be carried out by snowmobile towards the end of April in order to check the occupancy rate and the nesting effort. However, owing to the early thaw of the rivers in the spring of 2004, it was no longer possible to make the visit by snowmobile. The only way to reach certain nesting boxes was by helicopter, and in view of the high costs associated with this mode of transportation, only one partial visit was made to the nesting boxes. The occupancy rate of the nesting boxes in the control sector was 18.9%, whereas only 4.5% of the nesting

boxes in the training area were occupied. Nesting had barely begun at the time the visit was made, and it was suspected that other boreal owls could move in later and start building nests.

A second visit was made to the nesting boxes from May 20 to 28. By that point, the rivers were accessible by motor boat, and it was possible to visit almost all the nesting boxes. The occupancy rate at the time was 18.9% in the control sector and 5.6% in the training area. However, many disturbance indicators were noted, particularly in the training area. For example, 77% of the occupied nesting boxes had been subject to predation. The images caught by the video camera systems set up



at certain nesting boxes show clearly that martens were responsible for these cases of predation. The presence of hairs around the entrance to other nesting boxes unoccupied by boreal owls, together with the presence of obvious depressions in the wood chips placed in the nesting boxes, indicates that martens were using the nesting boxes as sleeping quarters as well. In addition, a number of nesting boxes had been chewed by porcupines. This use of the nesting boxes by martens and porcupines was much more apparent in the training area than it was in the con-

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BOREAL OWL (CONT'D)

trol sector. It is very likely that the series of rapids on the Natashquan River in the southern part of the training area (Nihuahtehitih portage) represents an obstacle limiting access to the territory to some extent and that the harvest pressure exerted on martens and porcupines is therefore lower in the training area than in the control sector. Consequently, owing to this situation and the high rate of predation by martens, only a single occupied nesting box remained in the training area during the May visit, compared with 12 in the control sector. In the light of these results, it was not possible to attempt an adequate assessment of the potential effects of low-level flying on boreal owls.

The monitoring of the nesting boxes was therefore interrupted, and the project's remaining budget was recovered to allow for the installation of devices meant to prevent martens and porcupines from getting to the nesting boxes. These devices were prepared over the summer, and a complete visit of the nesting boxes was conducted in September at which time the devices were installed. A sheet of metal was wrapped around the trees, under the nesting boxes, to prevent porcupines from climbing up and reaching the nesting boxes. Another sheet of metal with a hole in it to provide access to the nesting box entrance was placed in front of each box. The excess metal around the entire perimeter should discourage any martens that want to get to the nests.



The trapping campaign conducted in September 2003 had indicated a very large abundance of voles and mice in both the training area and the control sector. This seemed to point to an excellent reproduction season in 2004 for boreal owls, which feed primarily on such prey. Another trapping campaign was therefore carried out in September 2004 to determine whether there might have been a decline in vole and mouse populations. The results indicate that those populations were still very high, which enables us to be optimistic about the monitoring of nesting boxes scheduled for 2005. With such an abundance of prey and the decrease in problems caused by martens and porcupines, it should be possible to obtain more conclusive results from the monitoring of the nesting boxes.

RED WINE MULTI-SPECIES PROJECT

By Rebecca Jeffery

The Wildlife Division of the Government of Newfoundland and Labrador and the IEMR have been involved in the Red Wine Multi-Species Project. This project aimed to gather data on not only the Red Wine Caribou Herd but also on the other large mammal species in the area. The Institute is responsible for the caribou component while the Province is responsible for the other prey (moose) and predator (black bear and wolf) species in the Red Wine area.



Since collaring efforts began in April 2003, three wolves and four moose have been outfitted with radio collars. This allows the animals to be located by using aerial telemetry. The data produced by the telemetry has helped determine the home ranges used by the animals. Two of the collared wolves appear to be part of the Grand Lake pack which may consist of 7 animals. The alpha female was collared in 2003 and the den site located that summer. She had four pups in 2003 and six this year. The third collared wolf is part of the Minipi Lake pack which appears to be slightly smaller. Den sites were also located for this pack. Although wolves in this area are thought to rely on moose most of the year, many caribou from the George River Herd wintered near both these packs in 2004 providing a plentiful food source. There is one collared moose near Grand Lake, two near Gull Island, and one by Dominion Lake.

Black bear collaring efforts have been unsuccessful to date. Animals are captured with leg snares, which do not harm or endanger them. Snare sites are baited with a combination of old meat and sweets such as cake batter, syrup and pastries. Young bears have been captured, but none have been large enough to collar.

BAT PRELIMINARY STUDY – COMPONENT OF THE RIVER VALLEY ECOSYSTEMS PROJECT

By Charles Maisonneuve and Michel Delorme

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Of the nocturnal species likely to be associated with river valleys, bats are a group worthy of interest. Owing to the very large abundance of insects found in such areas, riparian habitats are especially important environments for bat foraging. These riparian environments are therefore much more frequented by bats than the adjacent forest environments. In addition, the large trees generally found in riparian habitats provide excellent shelter for bats.

Insectivorous bats hunt mainly by means of echolocation, and it is possible that the low-level flights, which are often concentrated in the river valleys, could have a negative impact on their hearing ability and, consequently, on their hunting efficiency. At night, the females have to maintain intense foraging behaviour during nursing, which occurs at night as well. Low-level flying at night could therefore interfere with nursing and the production of milk used to feed the young. During the day, resting bats are capable of lowering their internal temperature to the level of the ambient temperature (daily torpor) if weather conditions are unfavourable. The intense noise generated by low-level flying could disturb the individuals in torpor and have an effect on their physical condition. The presumed effects of low-level flying might ultimately lead to a reduction in the breeding success of bats and, in the long term, to a decline in the abundance of these species in the regions where the low-level flying occurs. The disturbance might also cause the bats to leave the training area to look for quieter shelter elsewhere.

It was in that context that exploratory work was undertaken in 2004. The aim of that first year of work was to make it possible to evaluate the feasibility of conducting a study to determine the effect of military activities on bats. The first step was to answer the following questions:

- Are there a sufficient number of bats in the region for adequate comparisons to be made between the training area and the control sector?
- What sampling effort would be required to obtain conclusive results?



Two units for detecting and recording bat calls were installed in different

habitats located along the Natashquan and Aguanus rivers. Installation was done late in the day, and the devices were collected the next morning or, occasionally, two days later and then installed in new sites. In all, four 60-minute cassettes were recorded. The presence of bats was confirmed in different locations, but the cassettes will have to be analyzed in the fall in order to identify the species present and determine the number of detections that it is possible to obtain.

The analysis of the recordings and the different data collected will make it possible to:

- identify the species of bats present in the region;
- determine the average number of detections that it is possible to obtain per station and per night;
- identify the periods of activity (seasonal and daily);
- identify the habitat characteristics that influence the presence or the number of bat detections.

Together, these factors will be used to develop a protocol for a research project that could get under way in 2005, the goal of which will be to do an adequate evaluation of the effects of low-level flying on bats. The project may make it possible to determine whether certain species are more sensitive than others to the disturbance caused by low-level flying. Also, with a better knowledge of bat activity cycles, it will be possible to make recommendations concerning the sensitive periods to be avoided when sorties over the region are being planned.

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4TH ANNUAL IEMR PHOTO CONTEST

During the month of October, Institute members, partners, and researchers were invited to submit their best pictures into the 4th Annual IEMR Photo Contest. All photos must be of wildlife, wildlife habitat, or landscapes taken within the Quebec Labrador Peninsula.

On November 1, 2004, all of the photos received will be posted to the IEMR website. Visitors to the site are invited to vote for their favourite photo for the full month of November. Visitors will only be able to vote once.

The winning photo will be used as the cover shot for the 2004 Annual Report.

The winners will be notified by December 10, 2004, and prizes will be awarded at the March 2004 Board meeting.

Many thanks to those who have provided prizes for this contest:

- * Provincial Airlines
- * Steers Insurance
- * Minipi Camps
- * Churchill Falls Labrador Corp.
- * Labrador Institute
- * Labrador North Chamber of Commerce

MAY THE BEST SHOT WIN!

CHANGE OF COMMAND AT 5 WING GOOSE BAY



Colonel G.F. (Garry) Reaume was born in Windsor, Ontario and attended the University of Windsor graduating in 1973 with a Bachelor of Arts Degree. Joining the Canadian Forces in 1974, he realized a life long desire to fly when in 1975 he was selected for pilot training in Moose Jaw, Saskatchewan. Upon completion in 1976, he was retained at the Big 2 for instructional duties on the Tutor jet trainer where he remained for four years and some 1500 instructional hours. In 1980, he was selected for an exchange position with the United States Air Force at Williams Air Force Base near Phoenix, Arizona. Flying the T-38 Talon supersonic trainer, he enjoyed duties as Deputy Flight Commander, Deputy Chief of Check Section and lastly, Chief of Check Section before returning to Winnipeg in 1982. He returned to another training position as Tutor Standards Officer in the Central Flying School, during which time he was promoted to Major. Completing his tour of duty in 1986, Colonel Reaume was posted to Canadian Forces Base Comox and 407 Maritime Patrol Squadron to pilot the CP140 AURORA. During the next five years he held various line and staff positions on the Squadron, departing in 1991 as the Deputy Commanding Officer. In the fall of 1991, he was selected to attend the Royal Australian Air Force Staff College at RAAF Base Fairbairn, in Canberra, Australia. Upon completion, Lieutenant-Colonel Reaume was posted to Maritime Air Group Headquarters Detachment Esquimalt as the Senior Staff Officer Air Operations. Following his promotion to Lieutenant-Colonel, he assumed the position of Director of Operations for Maritime Air assets stationed on the West Coast. Colonel Reaume was selected to Command 407 Maritime Patrol Squadron commencing July 1996. Upon completion of his tour with the "Demons" he was posted to

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the Continuous French Course at the Base Language Training Centre in Esquimalt, completing the course in June. He was then posted back to Comox to assume the position of Wing Administration Officer. Following two years in administration, Col Reaume was posted to Wing Operations as the Operations Officer. Colonel Reaume assumed command of 5 Wing Goose Bay on 7 Jul 2004.

Research Highlights

Information for this issue of Research Highlights was 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.