

RESEARCH HIGHLIGHTS

April 2004

OSPREY WORKSHOP OCTOBER 16-17, 2003

In October 2003, thirty-three delegates representing a wide range of expertise attended a two-day Osprey Workshop hosted by the Institute in St. John's, Newfoundland. Facilitated by Dr. Peter Duinker of the School for Resource and Environmental Studies, Faculty of Management, Dalhousie University, the goal of the workshop was to assess future trends across the Labrador Landscape that may impact Osprey populations.



Photo NL Hydro

The workshop opened with a review of the existing knowledge including: The Status and Demography of Osprey in North America, The Status of Osprey in Quebec, and The Status of Osprey in Labrador. The participants then viewed a video on the Innu perspective on the traditional knowledge of Osprey in Labrador. This was followed by a presentation on The Life of the Osprey in Southern British Columbia that prompted a discussion on the effect of weather and climate change on populations.

The day progressed with presentations that highlighted mitigation and monitoring programs. Military Airspace Monitor-

ing by the Department of National Defence was reviewed along with presentations on Raptors and Highways, Osprey and Timber Harvesting Operations, and Raptors and Power Lines.

Research conducted at 5 Wing Goose Bay since 1994 including the statistics for the Institute sponsored surveys in 2003 demonstrating a stable healthy Osprey population along with preliminary results from the Osprey and Climate Study conducted in Central Labrador during 2003 were also reviewed.

In keeping with the goal of the workshop to assess future trends across the Labrador landscape that may impact Osprey populations, day two opened with an Introduction to Cumulative Effects Assessments and Cumulative Effects Situations. Because Osprey are associated with water and forest ecosystems and have been identified as a good bioindicator species for pollution, there was agreement that

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2003 OSPREY MONITORING PROGRAM IN THE LOW-LEVEL TRAINING AREA OF LABRADOR

Karen Gosse, Minaskuat

As part of its environmental mitigation program, the Department of National Defence (DND) has been conducting extensive monitoring of Osprey (*Pandion haliaetus*) within the Low-level Training Area (LLTA) of Labrador and north-eastern Québec on an annual basis since 1991. Following the completion of this program in 2002, the Institute for Environmental Monitoring and Research (IEMR) decided to continue to add to the extensive database. The main objective of the 2003 program remained to monitor the reproductive success of Osprey inside (Experimental) and outside (Control) the LLTA.



Photo G. Goodyear

The field program employed the same methodology implemented in 1994 (and operating in its current form since 1999). Briefly, a sample of known Osprey nests were surveyed in 2003 during early June (corresponding to the early incubation period) in the LLTA (n=30) and the Control area (n = 30)

to determine nesting activity. Osprey nests were considered active if eggs or young were observed or suspected (i.e. adults exhibited aggressive behaviour) in the nest. These nests were re-visited in mid- August (pre-fledging period) to determine reproductive success. A nest was considered successful if one or more young were observed in the nest at this time.

Results from 2003 surveys indicate that Osprey reproductive success in the LLTA (93.3%) was the highest observed since the parameter was first examined in 1994. In comparison, reproductive success in the Control Area was lower (83.3%) but exhibited a higher, (though insignificant ($\alpha=0.20$,

$p=0.237$)), reproductive output per successful nest (2.28 vs. 1.86). Nesting activity in both the Control and Experimental Area were also the highest ever recorded, with significantly higher nesting activity in the LLTA (75%) than in the Control (60.4%) ($\alpha=0.20$, $p=0.109$), possibly related to an early spring break up of ice (estimated 7-10 days earlier than the previous year). Note that higher nesting activity and higher reproductive success in the LLTA has been observed on previous occasions as well.

In comparison to 1999-2002 data, the number of young reared per successful nest was similar in both the control and experimental areas over all years, indicating that when a nest was successful the pair managed to achieve similar productivity. Variability in nesting activity and nesting success during each of the five years, however, suggests



Photo P. Trimper

the possibility of a 3-4 year high/low trend in these parameters. Such variation may be expected over large geographic areas, such as the LLTA, that exhibit a variety of regional habitat factors (Bowman *et al.* 1989; Steeger *et al.* 1992; Castellanos and Ortega-Rubio 1995. Annual productivity monitoring by DND between 1999-2002, and by the IEMR in 2003,

suggests Osprey reproduction in the LLTA since the removal of exclusion zones in 1999 appears consistent with the Control area, indicating that reproductive success is related more to other external factors in Labrador and north-eastern Québec.

DND, OSPREY SATELLITE TELEMETRY STUDY UPDATE – 2004

Dawn Laing & Tony Chubbs, DND

Over the last two years Department of National Defence (DND) has been funding a research project investigating the movements and site fidelity of Osprey traveling from, and returning to, the Low Level Training Area (LLTA). As jet fighter and environmental safety is a concern of DND; this study was implemented in order to determine Osprey arrival and departure dates from the LLTA. The data collected from these raptors would provide critical bird strike risk assessment information that is an essential element for safe flight planning. Data collected during the breeding season will also be used to evaluate current mitigation measures for raptors.

Prior to commencement of the Aug-Sept field dates, Raptor surveys were completed in part of the ongoing DND raptor mitigation program. During this time accessible rock nests were noted and revisited during the summer to assess whether or not the nests were occupied. Active rock nests were targeted during the Aug-Sept 2002 and Aug 2003 field seasons for capture attempts. Large rock pinnacles situated within, and around, the Smallwood Reservoir (53° 30'N; 64° 00'W) were used in this study. Osprey were caught using walk-in and mountaineering techniques to approach the nest. Raptors were then removed from the nest and transported in a holding bag, wearing a hood, to an adjacent open area for processing (generally less than 15m from capture site). Once in hand, each bird was banded and morphological measurements were taken. Lastly, a 35g solar powered Platform Transmitter Terminals (PTT) were affixed externally to each bird in a backpack fashion. Solar PTTs weighed less than 3% of the birds' body weight. Prior to releasing the bird, researchers assessed the birds' mobility and the fit of the transmitter to ensure the PTT did not interfere with flight.

During the 2002 field season four juveniles, from

two separate nests, were caught and fitted with transmitters. All four transmitters ceased providing locations by 3 Nov 02 providing incomplete migration routes. Two juvenile Osprey migrated out of the training area with a mean departure date of 3 Oct 02. One juvenile was tracked to the Gulf of St. Lawrence and the other into the state of Maine prior to loss of location data.



In 2003, two juveniles and one adult male Osprey were caught and fitted with PTT's. Locations on both juveniles ceased by 19 Oct 03. Osprey used an average area over capture

sites of 160km², and concentrated most of their primary flights along the shoreline of the Smallwood Reservoir. The adult male continues to provide consistent data, and migrated on 18 Oct 03 and arrived on its wintering grounds in the Dominican Republic on 23 Nov 03. The bird traveled 4,000 km at a rate of 188km/d and along the east coast of the U.S.A. to the southern tip of Florida before crossing the Atlantic Ocean to Cuba then to the Dominican to winter in Haiti.

To date, this is the first study to confirm the wintering areas of Osprey from Labrador. Results of the first two years of study form the basis for a Master of Science Degree, for candidate Dawn K. Laing, under the supervision of Dr. David M. Bird at the Avian Science Conservation Centre at McGill University. In 2004, DND, in collaboration with its partners, will continue to track movements and timings of Osprey and Bald Eagle migration in the LLTA and plans to examine if environmental contaminants are being accumulated by young birds.

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OSPREY WORKSHOP (CONT'D)

they may be a good choice to focus on at this time. Future cumulative effects in Labrador were discussed and included presentations on Projected Military Activities, Central Labrador Forestry, and the Trans Labrador Highway.

The work of graduate student Dawn Laing on Satellite Telemetry was presented followed by a review of Population Simulation Modelling by Dr. John Chardine.

In the concluding discussion, the question posed to the participants was "What could or should a collaborative effort on continued cumulative effects oriented Labrador Osprey research and monitoring program look like?" It was agreed that the Institute would coordinate a meeting of the experts responsible for resource management in Labrador to explore how to best address the issues identified throughout the workshop with a focus to bring together the existing datasets on Osprey and related studies in a metadata set.

In January 2004 the first of these resource managers meetings took place in Corner Brook, and these options continue to be explored. Copies of the presentations from this workshop can be viewed www.iemr.org.

3RD ANNUAL IEMR PHOTO CONTEST WINNERS

In October 2003, participants at the Board of Directors meeting cast their vote for the winning photo in the 3rd Annual IEMR Photo Contest. This year there were nineteen entries representing a wide variety of research initiatives being conducted on the Quebec-Labrador Peninsula. The winning photo submitted by Geoff Goodyear of a fledging osprey will grace the cover of the 2003 IEMR Annual Report. Thank you to Northmart, the Town of Happy Valley-Goose Bay, Central Labrador Economic Development Board, Specialty Apparel, and LLIAN for donating prizes for the winners.

1st - Geoff Goodyear, Universal Helicopters

2nd - Alain Chenel, Société de la faune et des parcs du Québec

3rd - MaryAnn Aylward, Minaskuat Ltd.

3rd - Charles Maisonneuve, Société de la faune et des parcs du Québec



Photo A. Chenel



Photo M. Alyward



Photo C. Maisonneuve

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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.