

RESEARCH HIGHLIGHTS

October 2002

RESPONSE OF MOULTING BLACK DUCKS TO JET AIRCRAFT ACTIVITY

By Perry, Trimper, JWEL

Background

In July 1992 while Jacques Whitford (JW) was conducting wildlife surveys in the vicinity of the Petit-Mecatina River for the Department of National Defence (DND), a large group of black ducks were observed at the east end on Lac Fourmont. The moulting (i.e. non-flying adult) black ducks were distributed on the main river in adjacent ponds. This observation was important as few moulting locations had been identified within the Low-level Training Area and effects of aircraft noise on waterfowl during this period were unknown. During the 1990's, JWEL was able to survey Lac Fourmont on several occasions as part of the annual monitoring and mitigation program managed by the Goose Bay office of DND. On each occasion, up to 140 black ducks were observed during mid-June to late July. In addition to local numbers and timing, use of the local habitat was also consistent and well defined. This location is in close proximity to the Practice Target Area (35-km northwest) used as a focal point for operations and also the lake is adjacent to frequently used corridors for training.

The Institute for Environmental Monitoring and Research (IEMR) accepted a proposal for a pilot study investigating aircraft activity and the response of moulting black

ducks and provided funding for this program.

Methods – Capture

As the black ducks were unable to fly, the study team employed a technique used previously by the Canadian Wildlife Service (CWS) during waterfowl studies elsewhere in Labrador. Most of the black ducks in the



area are males, many of whom are believed to have bred elsewhere in the region, then gathered in select locations such as Lac Fourmont to moult. Due to extensive feather loss during this period, the birds are unable to fly for over a month. The birds are therefore secretive spending most of their time beneath cover while the new feathers develop. By searching wetland habitat, Dusty, a wired-haired pointer, was able to locate hidden birds in dense vegetation. Placing the birds in appropriate holding containers, the capture team would return to the field camp where a surgery tent

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had been established.

Methods – Implant

An experienced wildlife veterinarian conducted the implantation of 25 g. heart rate transmitters manufactured by Telonics. All ducks were given antibiotics during the surgery and an injection of a non-steroidal anti-inflammatory drug for post-operative pain relief. Surgeries took approximately 40 to 50 minutes from induction to the bird waking up and being able to hold its head erect. Most birds were released completely alert one to two hours post surgery so they could be monitored for immediate post-operative complications. Birds were marked with metal leg bands and nasal discs for the identification of individuals in the field.



Duck Surgery

Methods – Monitoring

The range of the transmitters was estimated at 500-1,000 m. Most monitoring was completed by canoe however, elevated blinds were used whenever possible as improved reception was noted with increased height of the receiver. To record the constantly changing pulse period values displayed on the TR-5 receiver, one person would concentrate on the screen, reading aloud a value every 5 seconds for an observation period of 15 minutes. In addition to recording these values manually, a second person would monitor weather and other stimuli such as predators and aircraft activity if present.

Methods – Aircraft Activity

In advance of the field experiments, Jacques Whitford and the IEMR met with the Military Coordination Centre (MCC) to discuss protocols and requirements for aircraft activity during 1-15 July 2002. Flights were encouraged during the second week with the participating Allied pilots making every attempt to overfly coordinates representing a point in the middle of the

blind. The study team communicated daily by satellite telephone with the MCC to discuss approximate timing of aircraft activity.

Results

The greatest challenge during the two weeks was the weather. After three days of intense heat, rain continued virtually unabated for the next 10 days with temperatures often below 10 degrees Celsius. On 09 July 2002, the water level rose over 1.1 m, such that the habitat structure and resultant behavior of the black ducks changed. Flooded wetlands enhanced accessibility for the study team but provided cover over water for the black ducks in the study. Observations of black ducks including those previously captured, were rare after this date.

Fifteen male black ducks were captured during 2-8 July. Twelve were implanted with the HR-150 transmitters and released. Of the 11 birds available for monitoring, 10 were relocated at least once in the study area. One of the released birds was killed by a mink two days following surgery. A total of twenty-nine aircraft noise events were recorded while monitoring telemetered black ducks.

Conclusions

Based on the telemetry monitoring of 10 individuals during this pilot study, black ducks during moulting appear to react to aircraft noise events by increasing their heart rate when maximum noise levels are at least 75 dB. The heightened heart rate, if it occurs, is temporary usually lasting a few seconds up to approximately one minute.

The 2002 study was a pilot to determine if heart rate monitoring technology could be practically applied in a remote field setting. The study results indicate that this technology is feasible and valuable data on the response of black ducks to aircraft and other stimuli can be collected.

PREDATION ON A COMMON GOLDENEYE BY A RIVER OTTER

By Corinne Wilkerson and Shauna Baillie

Field Biologists, Corinne Wilkerson and Shauna Baillie witnessed an interesting event this spring, a River Otter (*Lutra canadensis*) was observed feeding on an adult male Common Goldeneye (*Bucephala clangula*) at Lac Fourmont in southern Labrador (52°00'N, 60°15'W). The observation was made while participating in Tina Newbury's Master's study examining the effects of military low-level flying on the behavior of staging waterfowl at *ashkui* sites.

The event occurred on 06 May 2002 at 11:35AM, approximately 70 meters from an observation blind located on the south side of the *ashkui*. Although the moment of capture was not witnessed, the goldeneye was alive and struggling when the otter was initially observed. The otter sat on its rear haunches with the goldeneye braced in its forepaws and consumed the head of the duck first before eating the breast muscles and abdominal viscera. Photographs of the event were taken with the digital camera through the lens of the spotting scope. After approximately 10 minutes of feeding, the otter slipped into the water and swam downstream without the carcass remains. The fate of the duck carcass was not observed, as it was no longer visible on the ice when the otter left the feeding site.

Although the diet of a River Otter is composed primarily of fish, a search through the literature has indicated that otters may feed opportunistically on birds, small mammals, invertebrates, molluscs, reptiles, and fruits. This is likely the first documented case of a River Otter feeding on a Common Goldeneye so, Ms. Wilkerson and Ms. Baillie have collaborated on a brief paper describing the event and have submitted it to the Canadian Field Naturalist for publication.



WATERFOWL CONFERENCE 2002, SEPTEMBER 17-18

The Institute hosted their third conference on September 17-18, 2002, in Happy Valley-Goose Bay. Previous conferences focused on Traditional and Ecological Knowledge and Western Science and the Effects of Noise on Wildlife. This year's conference focused on recent population trends in waterfowl management. The themes of the conference included population shifts, emerging new population monitoring tools, as well as leading edge information on how climate change may impact waterfowl populations within Labrador. Special information sessions were held on the Model Forest program and the First Nation Forestry Program.

During the two days 26 speakers addressed an audience of 119 delegates. The conference banquet featured a keynote address by Dr. Werner Kurz on the ABC's of Climate Change. Northern Mosaic who sung in both French and English to the delight of the audience provided entertainment for the evening.

Several of the presentations that were available digitally have been posted to the Institute's web site at www.iemr.org. Proceedings of the Conference will be printed in the 3rd edition of Terra Borealis in the coming months.

INSTITUTE FOR ENVIRONMENTAL MONITORING AND RESEARCH

P.O. Box 1859, Stn. B
Happy Valley - Goose Bay, Labrador
AOP 1E0

Phone: 709-896-3266
Fax: 709-896-3076
Email: iemr@iemr.org
www.iemr.org

Geomatics Atlantic 2002 Conference
September 25-27, 2002

In September 2002, Tony Parr attended the Geomatics Atlantic 2002 Conference "Technology and Beyond: Geomatics in the Information Age" in St. John's, Newfoundland and Labrador. Throughout this conference, Geomatics Atlantic showcased the latest in Geomatics technology within Atlantic Canada.

Several workshops were available on September 25 as a mechanism to present in depth looks at topics of general interest to the Geomatics community. One of the workshops Mr. Parr found most beneficial was "Integrating High Resolution Imagery into Geospatial Projects" which was led by Jeff Chamberlain of PCI Geomatics. This workshop dealt with all aspects of integrating high-resolution imagery into Geospatial projects, including an overview of high-resolution sensors, where to get data, and how to use it – cost effectively. Techniques were also shown on how to orthorectify imagery, create DEM's from stereo image pairs, 3D feature extraction and how to produce seamless mosaics. This workshop provided insight into aspects of high-resolution spatial imagery technology that the Institute will be working with in the near future.

On September 26-27 a full Conference program was divided over four sessions including:

Session I "Connecting and Sharing" As the internet touches our lives in almost everything we do, this series of presentations described how this technological revolution is opening up significant new opportunities for Geomatics.

Session II "Geomatics and Natural Resource Management" Presenters related how Geomatics can contribute to the sustainable use of natural resources nationally, within the region, and all over the world.

Session III "Geomatics and Social-Economic Development" This session explored the importance to the social sciences through civic addressing, spatial data being used to build a national health surveillance info-structure, and GIS as a tool to support education reform.

Session IV "Latest Trends in Geomatics" This informative session explored how Geomatics is continuing to grow in many exciting and different directions including the many software application in GIS, wireless communications, and web technology.

One of the highlights of this three-day event was the keynote address by Sam Bacharach the Program Manager for the Outreach and Community Adoption Program at the Open GIS Consortium (OGC). The OGC empowers technology developers to make complex spatial information and services accessible and useful with all kinds of applications. Mr. Bacharach addressed "Geomatics: The Consumer Controls the Future".

IEMR STAFF

Moncton, New Brunswick

Louis LaPierre, Ph.D.
Institute Chair

Gloria Belliveau
Executive Assistant

Happy Valley– Goose Bay, Labrador

Maureen Baker
Administrative Manager

Natasha Canning
Secretary

Sean Sharpe
Research Manager

Colin Jones
Wildlife Biologist

Tony Parr
GIS Specialist

Corinne Wilkerson
Assistant Wildlife Biologist

THANK YOU

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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.