

RESEARCH HIGHLIGHTS

June 2005

EXPLORING FUTURE TRAINING OPTIONS AUGUST 24-25, 2005

The Institute has a mandate to oversee the environmental effects of allied flight training conducted from the Canadian Forces Base at Goose Bay over areas of Labrador and northeastern Quebec. In order to carry out this mandate, several approaches have been used to promote awareness of the Institute's activities to interested groups and individuals.

Planning is currently underway for the "Exploring Future Training Options" workshop. This is the 4th in a series of Institute sponsored events promoting the flow of information with the public to be held in Happy Valley-Goose Bay on August 24-25, 2005.

The objective of this workshop is to provide Institute Board members, research associates, and interested members of the general public an opportunity to gain insight into the environmental implications of proposed training activities for 5 Wing Goose Bay. Workshop proceedings will be published in a future edition of Terra Borealis.

Dr. Peter Duinker, the former Director (1998-2004) of the School for Resource and Environmental Studies at

Dalhousie University in Halifax, Nova Scotia, will serve as the moderator for the workshop.

Featured presentations throughout the two days will include:

An Introduction to Proposed Training Options for 5 Wing Goose Bay

Col Garry Reaume
Wing Commander

Environmental Effect of Radio Frequency (RF) Chaff Released During Military Training Exercises: A Review of the Literature

Dr. Richard Farrell, University of Saskatchewan

Use of Flares in Military Training

Mr. Robert E. Van Tassel
Science Applications International Corporation

Practical Involvement of Indigenous Peoples in Environmental Monitoring

Mr. Tim Byers, Independent Environmental Monitoring Agency

Modeling Sonic Booms in Supersonic Military Airspace

Dr. Ken Plotkin, Wyle Labs

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FUTURE TRAINING OPTIONS (CONT'D)

**Bill C5-SARA Species at Risk Act,
as Passed by the House of
Commons October 9, 2002**

Dr. Kim Mawhinnney
CWS-Environment Canada
Centre

***GEM Meteorological
Forecasting***

Mr. Jim Murtha
Environment Canada

***Overview of the Institute for
Environmental Monitoring and
Research Mitigation Options for
a Supersonic Training Program***

Dr. Louis LaPierre, Institute
Chair



In the evening of August 24, participants are invited to a reception hosted by Dr. Louis LaPierre to be held at the Masonic Lodge starting at 6:30 p.m. This event will provide an opportunity to continue the discussions of the day and to enjoy a buffet of Labrador delights. Throughout the evening, a silent auction will be held and all proceeds to be donated to the Labrador Heritage Society. All of those who bid during the silent auction will have their names automatically entered into a draw for a chance to win one of three seats available for a site seeing tour courtesy of Universal Helicopters to take place immediately following the closing of the conference midday on August 25th.

A round table discussion will be held at the end of the workshop on August 25th. This discussion will be facilitated by Dr. Peter Duinker. The objective of this session to provide an opportunity for participants to exchanges issues and concerns as the relate to the aboriginal communities, the municipality and the economy with the conference presenters.

Workshop participants are also invited to register for a Golf and Barbeque Social to be held on August 25, 2005, at 3 p.m. at the Amaruck Golf Course.

**Information on workshop registration,
speakers' bios, and abstracts
can be obtained from the Institute's office at 709-896-3266
or by visiting www.iemr.org.
As space is limited, you are encouraged to register early.**

2005 RESEARCH AGENDA

The 2005 season is underway with a full slate of projects designed to address the priorities identified by the Board. Future editions of Research Highlights will feature these studies in detail, but summaries of ongoing work include:

* *Transport Airport and Helicopter Effects on Nesting Canada Geese*

In 2004, an investigation of the behavioural reactions of nesting Canada Geese to low-level jet aircraft was conducted. The results suggested that if a strong reaction to low-level jet aircraft had been observed, the presence of natural predators or perceived threats, as observed, could have manifested in a more significant effect. As observers were transported to field sites, strong reactions were observed during the approach and departure of the helicopter. While transport aircraft were, on occasion, flying over nests under observation the distances were often at the far range of the field of view. As both helicopters and transport aircraft are anticipated to form a significant portion of future training, it was agreed that investigation regarding their environmental effects was warranted. The objective of the 2005 program is to further investigate and document the potential effects of low-flying, transport, and helicopter aircraft on the behaviour of nesting Canada Goose.

* *Osprey Reproductive Success Monitoring*

The 2005 program is a continuation of the long term Osprey reproductive success monitoring program initiated in 1991 by DND. This involves comparison of nest occupation, nesting success and reproductive output of Osprey inside and outside of the low-level training area,

* *Surveys for Bald Eagle and Cliff Nesting Raptor Nests*

The objective of these surveys is to re-examine previously known nests and locate new nests, assess nest status and condition, and identify possible locations for behavioural observations in the future. This information will be documented and considered during planning of upcoming supersonic environmental effects monitoring studies.

* *Quebec Boreal Owl Project*

In 2003 the Boreal Owl was selected as an indicator species for a three year study on the effects of military flights on the wildlife of river valleys. Being at the top of the food chain, they are vulnerable to changes in their environment. They also depend largely on their hearing capability for hunting and may be affected the repeated high levels of noise from military jet activity. In this final year of study, the field team will make a series of visits to 600 nesting boxes along selected stretches of river to determine occupancy rate, clutch size, and to and survival rates. A small mammal trapping campaign will also be conducted. After three years of data collection, a detailed analysis for an adequate determination of the factors influencing the reproductive output of boreal owls will be conducted and will include an evaluation of the effects of low-level flights.

* *Quebec Bat Project*

As the impact on nocturnal species had been identified as a research priority, a preliminary study on bats was undertaken in 2004 to evaluate the effects of low-level flying on bats. To maximize the efforts of field crews, the researchers conducting the Boreal Owl study did this work. This initial work has been reviewed and it was agreed that this project should continue for the 2005 field season.

* *Survey Population Trend of the Harlequin Duck in Labrador*

The Harlequin Duck is presently listed as a species of Special Concern in eastern Canada under the federal Species at Risk Act and as Vulnerable in Newfoundland and Labrador by the Provincial Endangered Species Act. Results of a study conducted by Dr. Ian Goudie did indicate behavioural changes in response to low-level flying, the magnitude of the disturbance was suggested to be minimal and the low level flying buffer zones surrounding key Harlequin Duck areas were lifted. Despite the termination of the

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RESEARCH 2005 (CONT'D)

closures, the DND and IEMR have committed to monitor long-term impacts through focused surveys intended to assess population trend over time.

*** Moulting Black Ducks**

A re-analysis of data collected during a pilot project designed to investigate the potential linkages between moulting and free ranging black Ducks and noise events from jet training is underway. Peer review comments from an earlier draft report will be reviewed and new approaches for future research will be identified.

*** Exploration of Map Archives for Evidence of Barrow's Goldeneye**

This goal of this task is to determine whether Barrow's Goldeneye exists within the low-level training area . This species has recently identified this as a species of Special Concern, and consistent with the Species at Risk Act there is a requirement to understand whether the species and/or potential habitat exists within the training area and if so, address issues related to potential impacts from military training.

GEM FORECASTING WORKSHOP

At the March Board of Directors meeting, the Chair advised the members a workshop on GEM data was being arranged. Members were asked to advise the office if they would be interested in having their technical staff attend this workshop.

In April Jean Sebastian-Gravelle (Mamit Innuat), Tony Chubbs (DND), Perry Trimper (Minaskuat) and Tony Parr (IEMR) attended a one-day workshop presented by the Meteorological Department at Environment Canada's offices in Dartmouth. A presentation by Jim Murtha was given introducing the participants to Numerical Weather Prediction (NWP) and GRIBded Binary (GRIB) data. GRIB is an international standard format chosen for distribution of meteorological data and is available to the public from the Environment Canada website. Discussions took place regarding NWP and available resolutions of GRIB data, if it is applicable for our needs, and how GRIB data could be interpreted and manipulated for insertion into the PC Boom model. All participations considered the workshop very informative and pertinent .

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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.

