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## **Survey for Golden Eagle and Bald Eagle Nest Activity in Flight Training Blocks CYA 732 and CYA 733**

Prepared for

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## 1.0 INTRODUCTION

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Within the flight training blocks at 5 Wing Goose Bay, known active Golden Eagle (*Aquila chrysaetos*) and Bald Eagle (*Haliaeetus leucocephalus*) nests are excluded from military aviation training activities by a 2.5 nautical mile radius (Department of National Defence 1994). The 2010 survey program of CYA 732 and CYA 733 (i.e., the Study Area) represents the continuation of this annual commitment that started in 1991. Members of the Study team have been annually involved in this program since it began.

Stassinu Stantec is a relatively new corporate entity, yet has a Study Team with decades of experience in Labrador, including previous work for the IEMR. Baseline research in support of the raptor avoidance program was started by members of the Study team in 1991 (Jacques Whitford 1992a) and has since continued annually for DND or the IEMR by members of the proposed Study Team. Investigations regarding Golden Eagle and/or Bald Eagle occurred in most years. Prior to this period, the Study Team started the first aerial surveys for these species in association with the military training areas in 1987 (DND 1994). Recently, the Study Team was contracted by IEMR to identify potential monitoring locations for Golden Eagle and Bald Eagle in both CYA 732 and CYA 733.

A selection of these numerous studies was included with the submitted proposal for this work.



## 2.0 PREPARATION

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Stassinu Stantec surveyed all known (Minaskuat 2005a, 2005b; Jacques Whitford 2008; Jacques Whitford Stantec Limited 2009) Golden Eagle and Bald Eagle nests within CYA 732 and CYA 733 as a part of the 2010 survey. The coordinates of each nest site were plotted on a map using the Geographic Information System capabilities of the company in St. John's. Routes were then designed according to distance and fuel limitations of the helicopter. Refueling occurred at Goose Bay and Churchill Falls. Specially designed sheets were prepared for data entry.

The two raptor species of interest are similar in terms of their breeding phenology but occupy different habitats. Golden Eagle is a mid-distance migrant that breeds in Labrador (Kochert and Steenhof 2002) and has historically nested in the Study Area on cliffs (Jacques Whitford 1995). In the Study Area, Golden Eagles have been found to initiate their clutch during mid-April with eggs hatching during the first two weeks of June (Jacques Whitford 1992b, 1996a, 1996b, 1997, 1998, 1999, 2001). Fledging occurs by mid-August, though dates may vary by several weeks (Jacques Whitford 1996a, 1996b, 1997, 1998, 1999). A study by Steenhof et al. (1997) found that eagles hatched earlier when prey was abundant, and later after severe winters.

Bald Eagle occur in a discontinuous pattern throughout the Study Area, usually nesting in tamarack (*Larix laricina*) or birch (*Betula papyrifera*) trees or large or otherwise isolated (from predators) erratic rock features (Jacques Whitford 1999). Based on previous experience of the Study Team (e.g., Jacques Whitford 1999), initiation of incubation may range from mid-April to mid-May in Labrador. Incubation and nestling periods of 35 and 74 days respectively (Brown and Amadon 1969), result in fledging occurring between early August and early September or later. These aspects of breeding ecology have been important considerations in terms of completing the previous monitoring and baseline research, but also in terms of airspace management and mitigating the potential effects of military training.

Based on this background understanding, the two-day survey occurred in the first week of May due to an earlier than average spring. This decision was made in consultation with the IEMR.



### 3.0 METHODOLOGY

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Prior to the start of the field program, a permit application was submitted to the Department of Wildlife and Conservation, Wildlife Division, describing the project and requesting approval to proceed. Approval for the research (i.e. permit) was received from Mr. Tony Chubbs, Senior Wildlife Biologist (Labrador), dated 7 April, 2010 (Appendix A). Please note that the survey dates changed based on a predicted earlier spring. Tony Chubbs of the Wildlife Division in Goose Bay, Labrador acknowledged the change of date in an email but did not re-issue the permit. Neither a Federal permit nor a permit from the Nunatsiavut Government was required for this scope of work.

Internally, Stassinu Stantec completed a review of health and safety issues related to the project. Universal Helicopters co-ordinated communications with the Military Co-ordination Centre to advise of our survey routes. Stassinu Stantec was aware of the military training and confirmed itinerary each day prior to departure. The survey routes were not in conflict with the training that was happening at the time. On the morning of each survey day, the navigator confirmed with the helicopter pilot the expected route, weather conditions, timing for refuel and other details. A health and safety checklist was reviewed with all participants on 5 May and on 6 May a safety toolbox meeting was completed and documented.

With so many years of involvement in this type of program, several staff were available to complete the work. Mr. Perry Trimper is serving as Project Manager. Ms. Tina Newbury participated as a navigator and observer on 5 May. Ms. Mary-Ann Aylward is an Innu Consultant with Stassinu Stantec and participated as observer (5 and 6 May) and as navigator (6 May). Ms. Caroline Hong participated as an observer (6 May). Rotating on a single observer position were Ms. Aylward and Scott Finlay who works as an environmental scientist with Stassinu Stantec. Coordinates from each nest were uploaded to the aircraft prior to departure for ease of navigation.

Search techniques for aerial raptor surveys were previously developed by the Study Team, in association with the Newfoundland and Labrador Wildlife Division (Jacques Whitford 1998b). While searching for new nests was not an objective, any incidentally encountered eagle nest were recorded and added to the database. At each known but inactive nest location, a brief (<5 minute) scan of the immediate area was conducted to attempt to identify alternate nest sites. Bald Eagle nests were searched for by maintaining a height of 50-100 m above ground level (agl), with a focus on higher points of land, rocks and trees adjacent to smaller tributaries or within a lake. Cliff habitat was searched for Golden Eagle nests at speeds of 50-100 km/h and a distance of approximately 50 m from the cliff face. Heights of Golden Eagle nests have been found to range from 0-100 m across its range (Kochert et al. 2002) but in Labrador have been documented in excess of 300 m (Jacques Whitford 1995). While nest site selection can be influenced by exposure, and most nests in northern climes face south to exploit positions that are free from snow, and to minimize exposure to cold and inclement weather (Kochert et al. 2002), the Study Team has found that physical parameters may be as important or more so at

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least in the Study Area, as several nest sites are known to exist on north facing cliffs (Jacques Whitford 1995; Minaskuat 2005a).

Consistent with Van Daele and Van Daele (1982) a nest was considered occupied if one or more adults were observed in the vicinity (but no eggs/young in the nest) and considered active if eggs or young are observed or suspected (e.g., fresh material such as vegetation including sticks and branches, with an inner lining of grasses, bark, leaves, mosses, and lichens). This information was recorded on the data sheets as well as other details such as observations of other wildlife. Once nest status was confirmed, the pilot was instructed to move away from the area immediately to reduce possible harassment. Note that the navigator usually instructed the pilot to approach a nest site to limit any possible startle effect (for the nesting birds) and to allow efficient progress on to the next nest location. Nest contents were observed opportunistically if an eagle flushed from the nest.



## 4.0 FIELD TEAM

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**Perry Trimper**, Project Manager, has over 25 years experience as an environmental scientist and wildlife biologist working predominantly in northern ecosystems, resource development and environmental assessment. He started working for Jacques Whitford in Labrador in 1987. Since that time he has worked extensively throughout this region, elsewhere in northern Canada, Alaska and Russia. This experience has included: baseline data collection and environmental effects monitoring at 5 Wing Goose Bay for National Defence; environmental research and assessment of the proposed Lower Churchill Hydroelectric Project for Nalcor; the inventory and decommissioning of DEW-Line sites in the central Arctic for USAF; and several assessments of other industrial projects throughout Canada for many proponents including: Noranda, Albright & Wilson, Abitibi-Price, Inco, and Transport Canada. In Russia he has worked for the Canadian International Development Agency, the United Nations Development Program and the World Bank on similar themes of northern resource development projects and environmental assessment. He has published several articles related to this experience. Mr. Trimper currently works for Stantec Consulting Ltd. and is based in Labrador.

**Mary Ann Aylward**, Observer/Navigator, currently works for Stantec Consulting Ltd at their office in Happy Valley-Goose Bay, Labrador. She has a background working in environmental sciences including wildlife and geological studies and in management of Innu field assistants. Ms. Aylward has experience working in remote sites in Labrador.

**Scott Findlay**, Observer, is an environmental biologist with Stantec Consulting Ltd. in Happy Valley-Goose Bay, NL. His experience includes fluid level monitoring, environmental drilling supervision, installation of monitoring wells and groundwater sampling, test pitting and soil sampling, and archeological surveying.

**Caroline Hong**, Observer, Health and Safety, is an environmental scientist with Stantec Consulting Ltd., and has been affiliated with Stantec's current and previous aboriginal partnerships since 1995. Her role has been as a team manager, field supervisor, logistics coordinator and assessor for various environmental baseline studies, phased environmental assessments, environmental remediation projects, air quality monitoring across Labrador and Newfoundland. Ms. Hong also is the safety and environment coordinator for Stantec's Happy Valley-Goose Bay office.

**Tina Newbury**, Observer/Navigator, Report Compilation, is a Wildlife Biologist based in Corner Brook, Newfoundland. She graduated from Trent University (1992) with a B.Sc. with a joint major in Biology and Environmental and Resource Sciences, and more recently completed her M.Sc. in Natural Resource Sciences from McGill University (2006). Tina has 15 years field and other experience, including her involvement on various large-scale projects associated with military activities and proposed mining and hydroelectric development projects in the province. Her work in Labrador includes wildlife investigations of small mammals, forest songbirds, waterfowl, raptors, woodland caribou and other species in the region, as well as various habitat characterization studies.



## 5.0 RESULTS

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The nest sites described below were visited on 5<sup>th</sup> and 6<sup>th</sup> May 2010. Note that nest sites for these species are considered confidential and their exact location is not identified in public documents. The Study Team expanded the search to include additional nests (beyond those provided by IEMR).

Weather was suitable for eagle nest surveys (i.e., overcast skies, no precipitation, and moderate winds on both days of the survey).

A total of 45 Bald Eagle nests and 18 Golden Eagle nests were surveyed. There were fifteen active Bald Eagle nests and one active Golden Eagle nest. Two new Bald Eagle nests were recorded. Both were active with one adult on each (Appendix B-1).

There were 10 other species of wildlife observed during the Bald and Golden eagle surveys: Six mammal species and 4 bird species as well as four unidentified raptors. These wildlife observations are documented in Appendix C.



## 6.0 INVOLVEMENT OF ABORIGINAL STAFF

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Mary-Ann Aylward, an Innu employee with Stantec in the Goose Bay office, was involved in all aspects of this work. She was involved with the development of the project which included proposal preparation and route planning. She participated as an aerial survey observer on both of the survey days. Ms. Mary-Ann Aylward assisted with the transfer of data from the field sheets to the interim report and final document. She was also involved in aspects related to the tracking of expenses, time sheets, and project management support.

These acquired and practiced skills and experience may be then used in similar future work or considered transferrable to other areas. A variety of surveys for many wildlife species in Labrador have been important for monitoring various aspects of species biology, potential effects of on-going activities, and for base-line studies for proposed development. Having skilled people to carry out these surveys over time is critical. Mary-Ann Aylward has much previous experience with project planning, logistics, a variety of wildlife surveys and report preparation.

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## 7.0 DATA COMPILATION AND REPORTING

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At the end of each day, the project manager communicated with the IEMR as to progress of the survey. A list of all active eagle nests and their coordinates were previously forwarded to the IEMR. At the request of the Newfoundland and Labrador Wildlife Division, co-ordinates of eagle nest sites are not to be released to the public.

A written report will be provided to the Wildlife Division as a stipulation of the permit. The report will contain a copy of all nest locations and their status.



## 8.0 DISCUSSION

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In discussion with IEMR and Provincial Wildlife Division, the surveys were advanced by one week due to an somewhat earlier advancement of spring.

Golden Eagle in the Study Area initiate their clutch (and incubation) during mid-April and typically hatch during the first week of June (Jacques Whitford 1996, 1997, 1998, 1999). A previous report prepared for IEMR by Stantec (formerly Minaskuat) identified low prey densities, of both small mammals and willow ptarmigan, as a possible explanation for relatively low numbers of observed active Golden Eagle nests in recent years (Minaskuat 2006). There were no willow ptarmigan observed during the eagle surveys on 5-6 May 2010.

In comparison with results over the past 3 years, the number of active Bald Eagle nests are somewhat higher while the number of Golden Eagle nests appears to be somewhat lower.

**Table 8.1 Number (percentage) of Active Bald Eagle and Golden Eagle Nests in the Low Level Training Area 2008-2010**

	<b>2008</b>	<b>2009</b>	<b>2010</b>
Active Bald Eagle Nests	11 (25.6%)	5 (12.5%)	15 (33.3%)
Active Golden Eagle Nests	3 (27.3%)	3 (30%)	1 (6.7%)



## 9.0 SUMMARY

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- In addition to the list provided by the IEMR, the Study Team reviewed survey data and topographical maps from the past several years and compiled a comprehensive list of Bald and Golden Eagle nests to be surveyed in 2010.
- There were a total of 45 Bald Eagle and 18 Golden Eagle nests surveyed. There were 15 active Bald Eagle nests and one active Golden Eagle nest.



## 10.0 LITERATURE CITED

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- Jacques Whitford. 1992a. 1991 Raptor Monitoring Program: Goose Bay EIS. LeDrew, Fudge and Associates report prepared for PMO Goose Bay, National Defence Headquarters, Ottawa, ON. 15 pp. + Appendices.
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# APPENDIX A

Permit



**PERMIT**

Department of Environment and Conservation  
Wildlife Division  
P.O. Box 3014, Stn. B  
Goose Bay, NL  
AOP 1E0

**Project Title:** Survey for Golden Eagle and Bald Eagle Nest Activity in flight training blocks CYA 732 and CYA 733

**Issued To:** Perry Trimper  
Stassinu Stantec Limited Partnership  
P.O. Box 482, Station C  
Happy Valley-Goose Bay, NL  
AOP 1C0  
Tel: 896-5860  
Fax: 896-5863

**Dates:** 10-13 May 2010

**Location:** DND CYA 732 and CYA 733

**Conditions:**

- 1.) No wildlife species will be harassed during this project. This will be at the discretion of the Senior Wildlife Biologist – Labrador.
- 2.) The Project will be conducted using accepted wildlife research techniques and target species will be disturbed as little as possible.
- 3.) Upon completion of field portion of the project, all survey data collected will be remitted to the Wildlife Division – Labrador.
- 4.) Upon completion of the Report writing, a copy of the final reports will be remitted to the Wildlife Division – Labrador.
- 5.) Any unusually wildlife observations or any adverse effects observed during this survey are to be reported immediately to the Wildlife Division – Labrador.
- 6.) All conditions of this permit must be adhered to prior to another permit being issued.

  
Name \_\_\_\_\_

7 Apr 2010  
Date \_\_\_\_\_

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# APPENDIX B

Data

*Not to be released to the public  
at the Request of the Newfoundland and Labrador Wildlife Division*

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# APPENDIX C

## Wildlife Observations

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BLOCKS CYA 732 AND CYA 733**Table C1 Additional wildlife observations during Eagle surveys in Labrador on 5-6 May 2010**

Species	Sign	Location	
		Latitude	Longitude
Bald Eagle (immature)	Individual - flying	54 05.887	64 59.391
Bald Eagle (immature)	Individual - flying	52 11.209	63 44.043
Bald Eagle	2 individuals - flying	53 33.498	64 05.472
Bald Eagle	Individual - flying	54 26.550	65 11.313
Bald Eagle	Individual - flying	53 32.657	64 04.320
Beaver	Dam and lodge	52 16.391	60 23.665
Black Bear	Individual	54 35.343	61 18.098
Canada Goose	Small flock (~5) - flying	54 08.336	65 03.851
Canada Goose	Large flock (80+) - resting on ice	54 27.491	65 12.019
Caribou	40+ individuals	54 30.913	61 59.025
Caribou	200+ individuals	54 28.407	62 18.453
Great Horned Owl	Individual on nest (formerly occupied by Golden Eagle)	54 23.904	62 41.520
Moose	individual	53 29.866	64 01.010
Moose	tracks	53 18.836	60 24.646
Osprey	individual	53 32.699	63 52.229
Osprey	Nest - empty	53 43.480	64 55.019
Otter	tracks	53 18.836	60 24.646
Otter	tracks	53 44.776	64 58.348
Red fox	individual	53 18.836	60 24.646
Unidentified raptor	individual	53 32.415	63 42.335
Unidentified raptor	individual	53 33.663	64 07.538
Unidentified raptor	individual	53 50.148	64 56.168
Unidentified raptor	individual	52 10.920	63 17.124