BASELINE AVIAN SURVEYS
FOR
PROPOSED WABUSH 3 MINE SITE AND POTENTIAL SKI HILL LOCATION
LABRADOR CITY, NEWFOUNDLAND AND LABRADOR

Submitted to:

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Important Notice

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Executive Summary

IOC is proposing to develop a new open pit mine, Wabush 3, within its western Labrador operations. As this new mine may interfere with the Smokey Mountain ski hill, an area for potential relocation of the ski hill has been identified. Construction of a new concentrator facility, CEP3, had originally been proposed, although this project is currently no longer being developed. These projects are likely to have direct and indirect effects on avian species through deforestation and loss of habitat. In order to evaluate the potential effects of the proposed projects on migratory birds and avian species at risk, baseline information on avifauna within the Wabush 3, ski hill and CEP3 sites (the study area) is needed.

Based on a review of available information sources, there are records for over 160 bird species in the vicinity of Labrador City, including ten federally and/or provincially listed species at risk. However, these data do not provide site-specific information about species presence and abundance within the habitats of the proposed IOC expansion project area. To provide this information, bird surveys were carried out within the study area during key times of year in 2012. Information was gathered during the breeding season via point counts, nocturnal playback surveys, scans of water bodies on and adjacent to the sites, and an aerial survey for raptor nests and waterfowl. As well, data were collected on species presence in the project areas during the fall and winter seasons.

During the present surveys of Wabush 3, the potential ski hill location, and CEP3, a total of sixty-six bird species were observed. At least fifty-two species are or may be breeding in the study area, including forty-six species at Wabush 3, forty-two at the proposed ski hill site, and sixteen at the CEP3 site.

One federally protected species at risk, the Rusty Blackbird, was observed during the field program; while they were not seen in the study area during the breeding season, potential nesting habitat for this species does exist in the Wabush 3 and ski hill sites. Potential breeding habitat exists in the study area for two other protected species, the Grey-cheeked Thrush and Short-eared Owl, which were not observed during the surveys but are considered to be potentially breeding in the Labrador City area.

Two active raptor nests were observed close to the study area during the surveys; while both are outside of the immediate project footprints, one, a Red-tailed Hawk nest, is located less than 800 metres from the eastern edge of the Wabush 3 site. Provincial regulations recommend that new construction be avoided within 800 metres of a raptor nest during the nesting period.

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LIST OF ACRONYMS

ACCDC	Atlantic Canada Conservation Data Centre
AMEC	AMEC Environment & Infrastructure, a division of AMEC Americas Limited
CBC	Christmas Bird Count
CEP3	Concentrate Expansion Project – 3rd phase
COSEWIC	Committee on the Status of Endangered Wildlife in Canada
CWS	Canadian Wildlife Service
EIS	Environmental Impact Statement
ELC	Ecological Land Classification
ESA	*Endangered Species Act*
ha	hectare
IOC	Iron Ore Company of Canada
MBCA	*Migratory Birds Convention Act*
NLDEC	Newfoundland and Labrador Department of Environment and Conservation
PC ##	Point Count location
QBBA	Quebec Breeding Bird Atlas
SARA	*Species at Risk Act*
SOP	Standard Operating Procedure

1.0 INTRODUCTION

AMEC Environment & Infrastructure, a division of AMEC Americas Limited (AMEC), was retained by Iron Ore Company of Canada (IOC) to obtain baseline information on avian species presence and habitat use within the proposed mine and potential ski hill location, as well as the site of the new concentrator facility which had been proposed early in 2012, in Labrador City, NL. This report discusses the field methodologies, and presents findings of field surveys and a review of existing information completed between winter and fall of 2012.

This document includes the following sections:

- Section 1 Introduction;
- Section 2 Background and Scope;
- Section 3 Review of Existing Information;
- Section 4 Study Methods;
- Section 5 Results;
- Section 6 Summary and Discussion;
- Section 7 References; and
- Appendices

2.0 BACKGROUND AND SCOPE

IOC is proposing to develop a new open pit mine within its western Labrador operations, Wabush 3. The development of Wabush 3 may interfere with the operation of the local ski hill and, in order to mitigate this potential impact, IOC has selected a potential area for relocation of the ski hill. A separate and distinct project, the construction of a new concentrator facility (CEP3), was originally proposed for the area; although this project is presently no longer being developed, surveys for the area had been conducted and the results are presented in this report.

Figure 2.1 illustrates the proposed mine, concentrator and potential ski hill locations (the study area), as provided by IOC. Much of the study area is densely vegetated and provides terrestrial habitats favourable to a number of flora and fauna species, including species at risk. The project is likely to have direct and indirect effects on terrestrial species through deforestation and loss of habitat. General descriptions of the habitat types found in the three sites that comprise the study area are provided here. Refer to the Ecological Land Classification (ELC) report (AMEC) for more detailed habitat information on the Wabush 3 and proposed ski hill sites.

The Wabush 3 mine site property is located north of Labrador City, slightly overlapping the Smokey Mountain ski hill to the east. While the actual proposed footprint of the Wabush 3 Pit will be 220 hectares, the Wabush 3 study area was 440 hectares. The extra area allows for peripheral development, such as access roads. Coniferous forest covers approximately 50% of the 440 hectare (ha) Wabush 3 site, with alpine shrub and low alpine herb habitat over 33% of the total area, and exposed rocky outcroppings on the higher elevation areas in the southeast and the north of the site comprising 12% of the total area. Small areas of mixed and hardwood forest, and herb and shrub fen make up the remaining 5%. The more open areas of the site are subject to heavy recreational use, as evidenced by the abundance of snowmobile/ATV trails, human footprints, and the presence of the ski hill and associated lift structures. An unpaved road runs through the middle of the site in a north-south direction, although a locked gate restricts vehicle access beyond approximately 600 m from the southern edge of the property. There are two small lakes on the western side of the site connected to each other by a watercourse; the southernmost small lake drains westward into Leg Lake via a small unnamed stream. Another small watercourse, Dumbell Stream, originates from a small fen near the middle of the site and flows eastward into Dumbell Lake.

The proposed replacement ski hill location is located north of Labrador City, and approximately one kilometre south of the existing Smokey Mountain ski hill. The ski hill site is 111 ha in area; dense forest covers over 80% of the study area, predominantly hardwood to the west (17% of the total area), and predominantly coniferous to the east and centre of the site (66%). Disturbed habitat types, including cutover and burn habitat, comprise over 11% of the total area, primarily along trails and roadsides and a cleared power transmission corridor with some shrub and young mixed regenerating forest that crosses the site in an east-west direction near the northern border. Exposed earth (primarily roads and trails) cover 3% of the total area. Alpine shrub and low alpine herb habitat comprising 3% of the total area are primarily found on the higher elevations of the northwest portion of the site. There are two small watercourses on the site,

both flowing into Beverly Lake; one flows through the southeastern corner of the site, and the other flows in an easterly direction along the northern boundary. There is evidence of recreational use on the property, including trapping, snowmobile and ATV use, and cross-country skiing.

CEP3, the site of the previously proposed new concentrator, has an area of 15 ha and is located slightly to the northeast of the existing concentrator. Ecological land classification for this site was not completed; however, most of the habitat consists of young mixed forest, with some cutover areas and open shrub habitat. The adjacent areas to the south and east of the site are highly disturbed, an active rail line runs along the western site boundary, and there is a landfill located less than 100 m to the north.

Most migratory bird species, as well as their nests and eggs, are protected at the federal level by the *Migratory Birds Convention Act* (*MBCA*) and its regulations. Owls and raptors are afforded provincial protection by the Newfoundland and Labrador *Wildlife Act* and its regulations; as well, raptor nests are protected by provincial guidelines that recommend a buffer zone to new construction of 800 m around active nests and 200 m around nests outside of the active period.

Species at risk and their habitats are protected by legislation at both the federal level (*Species At Risk Act*, or *SARA*) and provincially (Newfoundland and Labrador's *Endangered Species Act*, or *ESA*). Data on presence and distribution across the study area are necessary to adequately evaluate the potential effects of the project on migratory birds, including species at risk.

The limited available information on these species in the study area needs to be supplemented with focused field surveys in order to adequately assess the potential effects of the project. The objectives of the baseline data collection exercise are:

- to determine the presence of migratory birds, including species at risk, within the study area;
- to identify essential habitats for species at risk; and
- to acquire data to permit evaluation of potential effects of the proposed projects on migratory birds and avian species at risk.

The development of the surveys was based on a review of previous survey work and existing data for the project area, to determine the additional information required to comply with federal and provincial government policies and legislation.

The scope of work for this project included a review of existing information on avian species presence and habitat use in the Labrador City area, identification of the general habitat types located within the study area based on available aerial photography, and completion of field surveys during known breeding and migration periods. Observations of wintering bird species were recorded during mammal surveys conducted in April, and are summarized in this report.

Figure 2.1: Baseline Avian Surveys Study Area

3.0 REVIEW OF EXISTING INFORMATION

Prior to conducting field surveys, a desktop review was conducted for existing information on the presence of avian species, including species at risk, in the Labrador City area. Information sources consulted at that time included prior surveys conducted in the study area, the eBird database, and the Christmas Bird Count.

A review of the available information on birds at the mine site shows that there exist few data sources, aside from two studies conducted on waterfowl in 2000 (JWEL 2000; JWEL 2001). These studies have a very limited scope, focusing only on a few lakes located in an area already exploited: Lakes Wabush, Luce, White and Hakim. The studies concluded that Luce Lake and the small waterbodies downstream from it provide suitable waterfowl habitat, including breeding habitat for dabbling ducks, while White Lake may provide breeding habitat for diving ducks such as White-winged Scoters. Wabush Lake and Hakim Lake do not provide suitable waterfowl habitat according to these studies, with the exception of some localized areas at the north end of Wabush Lake; the authors conclude that the lake is likely a stopover area for small numbers of waterfowl migrating from elsewhere.

The eBird database provides a more comprehensive assessment of the avifauna in the vicinity of Labrador City, with a tally of 160 species from a total of 1,449 surveys for a radius of approximately 20 km around the community (Table A.1 in Appendix 1; eBird Canada 2012). eBird is a project coordinated by the Cornell Lab of Ornithology and National Audubon Society that collects observations from birders, through portals managed and maintained by local partner conservation organizations. There are limitations to the eBird database; for example, records of sightings are user-submitted by observers (often amateur birders) of varying skill levels, and the survey methods employed by observers are not consistent. Nonetheless, it is considered to be a useful source of information on species presence in the study area.

The Christmas Bird Count (CBC) is an early winter bird census in which volunteer participants record all birds seen within a 24 hour period, in an established circle with a 12 km radius. Data from this count provide information on winter resident bird species. CBC data for the Labrador City count circle over the 14 available survey years, 1998 to 2011, indicate that at least 38 species have been found overwintering in the area (Table A.1 in Appendix 1; CBC 2012).

Based on the information presented above, at least 10 species at risk have potential to occur within the study area (Table 3.1). Many of these species are likely migrants, since central Labrador is not known to be part of their breeding range. However, the study area is within the known breeding ranges of the Rusty Blackbird, Harlequin Duck, Gray-cheeked Thrush and Short-eared Owl. The Harlequin Duck is known to breed in the Labrador City region (Environment Canada, 2007); however, their preferred nesting habitat is large, fast-flowing rivers, and there are no such rivers in the three project sites. There have been observations of Gray-cheeked Thrush in the Labrador City region during the breeding season (Table 3.1), and they have been reported to nest in central Labrador, about halfway between Labrador City and Schefferville (Dalley *et al.* 2005). The Short-eared Owl, although most common along coastal areas, is known to use inland marshes and bogs as nesting sites (COSEWIC 2008), and the few sightings of this species in inland Labrador come from the Labrador City area (Schmelzer 2005; eBird Canada 2012). Rusty Blackbirds are considered likely to breed in the Labrador City area based on the large number of observations of the species during the breeding season (Table 3.1).

Table 3.1: List of Species At Risk with Potential to Occur Within the Study Area

Common Name	Latin Name	Provincial Status[1]	Federal Status[2]	#Obs[3]
Harlequin Duck	*Histrionicus histrionicus*	Vulnerable	Special concern	14
Barrow's Goldeneye	*Bucephala islandica*	Vulnerable	Special concern	12
Peregrine Falcon (*tundrius* subspecies)	*Falco peregrinus tundrius*	Vulnerable	Special concern	12
Red Knot (*rufa* subspecies)	*Calidris canutus rufa*	Endangered	Endangered	2
Short-eared Owl	*Asio flammeus*	Vulnerable	Special concern	9
Common Nighthawk	*Chordeiles minor*	Threatened	Threatened	2
Barn Swallow	*Hirundo rustica*	No status	COSEWIC : Threatened	1
Olive-sided Flycatcher	*Contopus cooperi*	Threatened	Threatened	1
Gray-cheeked Thrush	*Catharus minimus*	Vulnerable	No status	6
Rusty Blackbird	*Euphagus carolinus*	Vulnerable	Special concern	75

[1] NLDEC, 2012
[2] *SARA*, 2012
[3] Number of observations reported by eBird during the breeding season (May 1st to August 15th)

The Atlantic Canada Conservation Data Centre (ACCDC) was contacted in order to obtain records of rare and endangered species sightings in the vicinity of the project. In a circle with a 5 km radius encompassing the entire study area, sightings of four of the species at risk shown in Table 3.1 were reported: Rusty Blackbird, Barrow's Goldeneye, Harlequin Duck and Barn Swallow (ACCDC 2012). As well, there was a single record of a Chimney Swift (*Chaetura pelagica*) in the area from 1999 (COSEWIC and NLDEC: Threatened) in the area (ACCDC 2012); however, this species is considered unlikely to reside in the project area, as it is listed as accidental/vagrant in Labrador by NLDEC. Based on expert opinion maps, which are generated by ACCDC in consultation with species-specific experts to indicate where it is likely that species at risk may occur, it is believed that Common Nighthawks and Short-eared Owls possibly occur in the study area, while Peregrine Falcons considered are possible but unlikely (ACCDC 2012).

The current body of available data does not allow for any conclusion about the relative abundance of each species, nor does it provide any site-specific information about the presence of species within the proposed expansion sites.

4.0 STUDY METHODS

A representative from Environment Canada's Canadian Wildlife Service (CWS) office in St. John's, NL was initially engaged in discussions for the present IOC project in a meeting held in St. John's in July 2011. CWS was subsequently contacted prior to the start of the field program in March 2012, and again in July, for consultation on survey timing and methods.

Bird surveys were carried out in accordance with the protocols discussed with CWS, at times of the year when birds make the most intensive use of the area. Survey times were chosen based on known breeding and migration periods, and all habitats used by the targeted birds were surveyed at appropriate times of the year to maximize the quality and quantity of data obtained. Surveys were conducted at the time of day with the highest likelihood of detecting the target species, and in favourable conditions to maximize detection probability (low winds, no

precipitation).

Birds observed in the survey area were identified by sight, sound or sign (e.g. nests, tracks, scat). Bird species, abundance and geographical location were recorded. Survey dates and primary targets were as follows:

- April 3rd to 6th: winter surveys targeting furbearers, and including winter birds
- June 12th to 16th and July 17th to 19th: surveys for breeding birds
- September 11th to 17th: fall migration surveys

Prior to the field surveys, aerial photography for each of the sites was consulted in order to identify different habitat types. In particular, efforts were made to identify suitable habitat for target species at risk.

Winter Surveys

Winter surveys focused on furbearer and small mammal presence; however, in each site, all bird species detected during the surveys were recorded. These winter surveys consisted of area searches conducted on foot and by snowshoe. Surveys were conducted during daylight hours in all identifiable habitat types, with particular focus on forested areas and areas within 1 km of open water bodies. The surveys covered as much of each site as possible, although some areas could not be accessed due to steep topography or, in the case of CEP3, due to safety concerns from on-site activity. The survey routes are shown in the winter furbearer survey report (AMEC 2012).

Point Counts for Diurnal Species

For the breeding bird surveys, point counts were the primary source of data gathering. Surveys generally followed the Newfoundland and Labrador Boreal Bird Monitoring Protocol draft Standard Operating Procedure (SOP) for conducting a bird survey (Environment Canada 2011), with the exception that playback was not used and ten minute point counts were conducted rather than five minutes. Surveys began at dawn and continued until late morning, when bird activity was perceived to drop off. Species were identified visually or by their unique vocalizations. Bird activity and evidence of reproductive behaviour was noted, and the status of each species was recorded as "possible", "probable", or "confirmed" breeding based on criteria from Bird Studies Canada and the Quebec Breeding Bird Atlas (QBBA 2010). Behavioural cues for breeding, and codes used to record this breeding evidence, are shown in Table 4.1.

Table 4.1: Breeding Evidence Codes Used in Point Count Surveys

Level of Certainty	Code	Definition
No Evidence	X	Species observed in the survey area, outside of suitable breeding habitat.
Possible	S	Individual singing in suitable nesting habitat during the breeding season.
	H	Individual observed in suitable nesting habitat during breeding season.

Level of Certainty	Code	Definition
Probable	T	Presumed territory based on presence of an adult bird in the same place in suitable nesting habitat on two visits, a week or more apart.
	A	Agitated behaviour or alarm call of an adult in suitable nesting habitat.
	M	Seven or more individuals heard in suitable nesting habitat during the breeding season.
	P	Presence of a pair in suitable nesting habitat during the breeding season.
Confirmed	NM	Carrying nest material or building nest.
	FY	Presence of recently fledged young.
	CF	Adult carrying food for young.

Point count locations were positioned 300 to 500 metres apart, and covered all major habitat types in the study area. Most of the point count locations on the Wabush 3 and Ski Hill sites were surveyed in both June and July. The CEP3 site was surveyed in June only. Water bodies on and adjacent to the sites were scanned for presence of waterfowl from the shore from one or more vantage points. A spotting scope equipped with 20x - 60x zoom lens was used for lakeshore scans.

Point Counts for Nocturnal Species

Nighttime surveys were carried out at select locations on the Wabush 3 and Ski Hill sites in June, beginning approximately a half hour after sunset and ending shortly after midnight on a calm, clear night. For these surveys, a playback protocol was used to increase the probability of detection of the target species, i.e. owls and Common Nighthawk.

Playback equipment was tested prior to the surveys to ensure that the speakers are powerful enough for the calls to be heard at a distance of 300 m. For owls, the playback protocol employed by the Nocturnal Owl Survey in Nova Scotia was used (Takats *et al.* 2001); at each survey location, a series of two Boreal Owl and two Barred Owl calls, interspersed with one to two minute silent listening periods, was played for a total listening time of ten minutes. Following the owl playback, a recording was played of a series of five Common Nighthawk calls, each followed by a one minute silent listening period; this sequence (playback of calls, followed by a one minute listening period) was repeated until the 10-minute point count was complete.

Aerial Surveys for Raptors and Waterfowl

During the June survey period, a helicopter-based survey covering the three project sites was conducted; a survey was also conducted over the Polly Lake area, which is not currently under development but may be in the future. The survey consisted of a series of parallel transects over the study area spaced 500 m apart, flown in a north-south orientation at a sufficiently low

speed and altitude to afford the observers a good view of the terrain below. In addition to the pilot, three observers conducted the survey of the primary study area encompassing Wabush 3, CEP3 and the proposed ski hill, while two observers participated in the Polly Lake survey. Observers scanned trees and cliff faces for raptor nests, and water bodies for waterfowl.

Fall Migration Surveys

Field work in the fall included area searches during daylight hours, which were conducted concurrently with small mammal surveys in each of the three sites. As well, water bodies on and adjacent to the sites were scanned for presence of waterfowl from one or more vantage points on the shore using a spotting scope equipped with a 20x - 60x zoom lens.

5.0 RESULTS

The following subsections provide a summary of the findings of the baseline avian surveys. A list of all bird species observed in the present survey, as well as those reported by the eBird and CBC databases, is provided in Table A.1 in Appendix A. Photographs of the typical habitats surveyed are provided in Appendix B.

5.1 WINTER SURVEYS

Winter surveys were conducted in early April, and consisted of area searches on foot and by snowshoe. Surveys were conducted in all identifiable habitat types. No avian species of special status were observed during the winter surveys. Observations in each of the sites are discussed below.

5.1.1 Wabush 3 Mine Site

The Wabush 3 property was surveyed on April 5th and 6th, 2012. Weather conditions at the time were overcast with light flurries, and moderate winds. A total distance of 14.8 km was surveyed on snowshoe over the two days.

Spruce Grouse and their tracks were fairly commonly observed in forest habitat, and Willow Ptarmigan tracks were seen in open areas. A flock of about 30 Snow Buntings was seen near the crest of the ski hill. Pine Grosbeaks were infrequently seen and heard in the site, and Common Raven, Boreal Chickadee and Grey Jay were also observed.

5.1.2 Proposed Ski Hill Site

The W4-Ski potential ski hill site was surveyed on April 3rd. Weather conditions at the time of the survey were partly sunny with light winds. A total distance of 5.0 km was surveyed on snowshoe.

Spruce Grouse, Pine Grosbeak and Common Raven were commonly seen and heard during the survey. Common Redpoll, American Goldfinch, Boreal Chickadee and Grey Jay were observed less frequently.

5.1.3 CEP3 Site

Winter surveys were conducted on April 3rd at an industrial area east of the existing concentrator facility, along a section of unpaved site road extending from the rail line eastward to Wabush Lake approximately 400 m southeast of the proposed CEP3 site. The CEP3 site itself was not surveyed due to a miscommunication at the time about the project location. Weather conditions at the time were partly sunny with light winds. A total distance of 1.3 km was surveyed on foot.

Spruce Grouse tracks and scat were observed in the study area. Canada Goose scat from the previous summer was observed near a ponded area at the north end of the site. No passerines were detected during the survey, although small bird tracks were seen in the snow under a small patch of conifer.

5.2 BREEDING BIRD SURVEYS

Breeding bird surveys were conducted in June and July. Nighttime surveys for nocturnal species, as well as aerial surveys for raptors and waterfowl, were conducted during the June survey period, while point counts and area searches were conducted in both June and July.

Breeding evidence was recorded for a total of 52 species in the three sites comprising the study area, and an additional four species were observed during the summer surveys with no breeding evidence. Thirteen species were confirmed breeding in or near the study area due to the presence of active nests or fledged young, or inferred from observed parental behaviour (e.g., carrying food or nesting material during the breeding season). A further 14 species are considered probable breeders, inferred from the presence of a pair of adults in suitable breeding habitat, agitated behaviour of an adult indicating a possible nest nearby, more than seven individuals present in suitable nesting habitat, or territorial singing (i.e., an individual observed singing in the same location on two separate occasions spaced more than a week apart). The remaining 23 species are considered possible breeders in the study area, as they were detected in suitable habitat in the breeding season. No federally or provincially listed species at risk were found during the summer surveys; however, three raptor nests were found in the course of the surveys.

5.2.1 Wabush 3 Mine Site

A total of 28 point count (PC) locations were surveyed on the Wabush 3 site; twenty of these were surveyed in both June and July (Figure 5.1). All point count surveys were conducted in favourable conditions, with calm to moderate winds and no sustained precipitation. A total of 48 species were seen or heard during the surveys, and breeding evidence was observed for 46 of those species (Table 5.1). Eighteen of these species are considered probable breeders due to observed territorial singing behaviour, more than seven individuals in suitable habitat, or presence of a pair of adults in suitable habitat, while seven are confirmed to be breeding in the Wabush 3 study area based on observed breeding evidence. In addition to the species detected on the site during the point counts, two more species were confirmed breeding at or near Wabush 3; a family of Hooded Mergansers was observed on the southernmost small lake during the September survey, and a recently fledged Red-tailed Hawk was seen near its nest just outside of the study area in July.

Nocturnal surveys were conducted on June 14th. Wind and weather conditions were favourable for the survey, but train noise somewhat hampered listening conditions at PC 12. No owl species or Common Nighthawks were detected. White-throated Sparrow, Swainson's Thrush, American Robin and Wilson's Snipe were heard.

Figure 5.1: Baseline Avian Surveys Wabush 3 Survey Locations

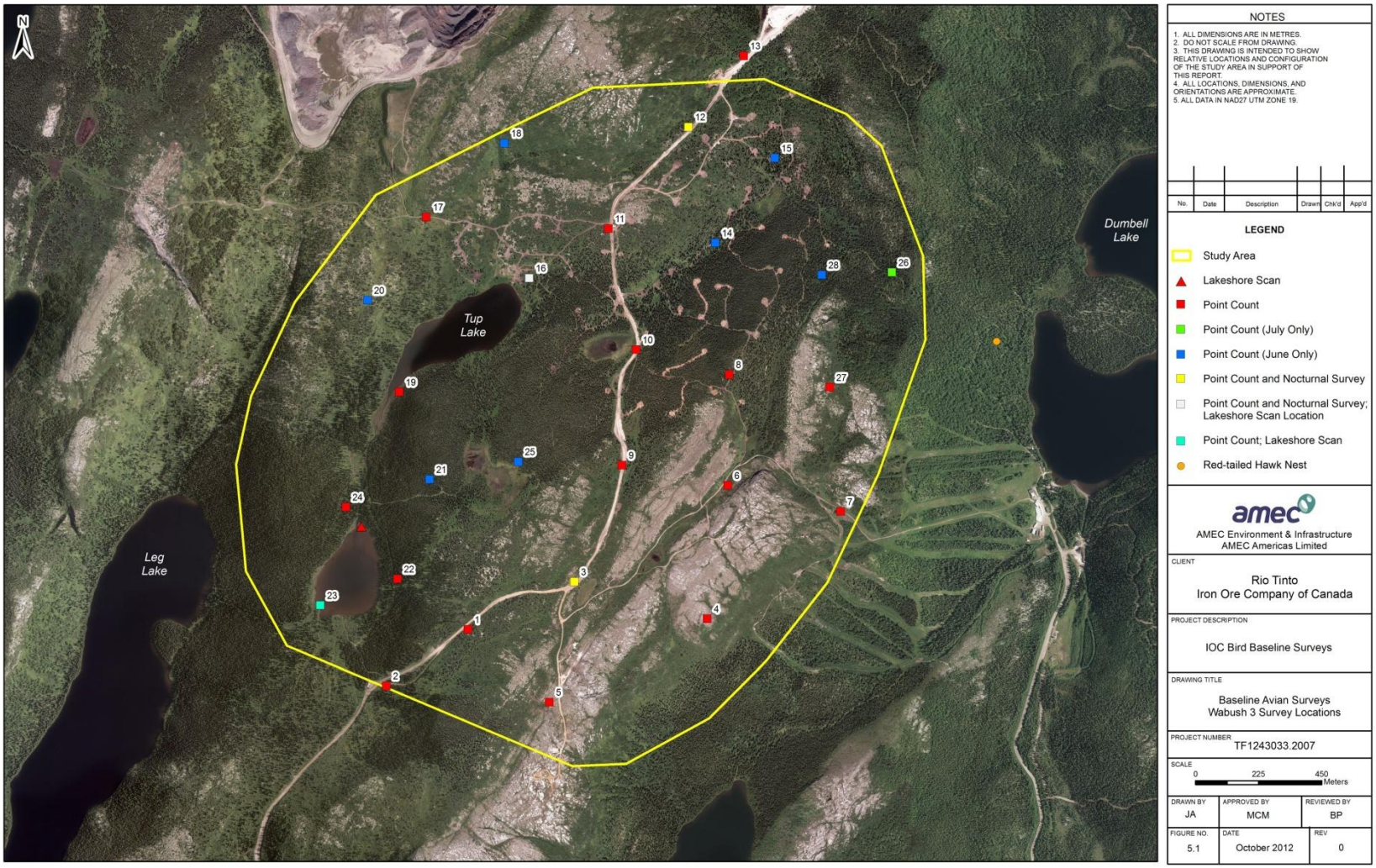


Table 5.1: Bird Species Observed during Breeding Bird Surveys on the Wabush 3 Site

Species[1]	Point Count Number Observed (max breeding evidence)[2]																										
	PC 01	PC 02	PC 03	PC 04	PC 05	PC 06	PC 07	PC 08	PC 09	PC 11	PC 12	PC 13	PC 14	PC 15	PC 16	PC 17	PC 18	PC 19	PC 20	PC 21	PC 22	PC 23	PC 24	PC 25	PC 26	PC 27	PC 28
Alder Flycatcher		1 (S)										5 (S)	3 (S)			2 (S)	1 (T)	3 (S)									
American Goldfinch		1 (S)			1 (S)									1 (S)			1 (S)		2 (S)								
American Redstart				1 (S)	1 (S)																						
American Robin	3 (S)	3 (T)	2 (T)	3 (NY)	2 (S)	1 (S)	1 (T)		1 (T)	3 (S)	2 (T)				1 (S)	3 (S)	7 (P)	3 (S)	1 (T)	3 (S)	2 (S)	1 (S)	1 (S)			1 (S)	3 (T)
Black-and-white Warbler																						1 (S)					
Black-capped Chickadee											1 (S)																
Blackpoll Warbler	1 (S)	2 (S)							2 (S)		1 (S)	2 (T)				2 (S)	2 (S)	2 (S)									
Boreal Chickadee									3 (FY)														1 (S)				
Brown Creeper																										4 (FY)	
Canada Goose														35 (X)													
Cedar Waxwing	2 (S)	1 (T)														1 (S)			1 (S)								
Chestnut-sided Warbler										1 (S)																	
Chipping Sparrow	1 (S)		3 (S)		1 (S)	1 (T)										1 (S)				2 (S)							
Common Loon			1 (S)			1 (X)										1 (S)					1 (S)	1 (S)	1 (S)				
Common Merganser																								1 (X)			
Common Raven	1 (H)	1 (H)		3 (H)	2 (T)								1 (H)							3 (H)	2 (H)	2 (H)	1 (H)	1 (T)	1 (H)		6 (FY)
Dark-eyed Junco	3 (S)	2 (S)	2 (S)	2 (S)	1 (T)	1 (S)	3 (S)	2 (T)	2 (T)	4 (CF)	2 (T)	1 (S)	1 (S)		3 (S)	3 (T)			1 (S)	1 (S)		1 (S)	6 (T)	2 (T)		2 (P)	2 (T)
Downy Woodpecker				1 (S)															1 (S)								
Fox Sparrow		3 (S)	2 (T)		2 (S)			2 (S)	1 (S)	1 (S)	2 (T)	1 (T)	1 (S)			1 (S)	2 (T)	1 (S)		1 (S)			2 (S)				
Grey Jay	1 (S)						1 (S)						1 (S)				1 (S)									1 (S)	
Hairy Woodpecker							1 (S)																				
Hermit Thrush	2 (S)	4 (T)	2 (S)	3 (T)	1 (S)	2 (S)		1 (T)		2 (S)		2 (S)	2 (S)	1 (S)		1 (S)	1 (T)		1 (S)								
Lincoln's Sparrow	2 (S)	3 (S)	1 (S)	1 (S)	1 (S)	4 (S)	1 (S)			1 (S)	1 (S)		1 (S)			1 (T)	2 (S)	1 (S)	1 (S)		1 (S)						
Magnolia Warbler								1 (S)		1 (S)															1 (S)		
Mourning Warbler				1 (S)																							

Species[1]	Point Count Number Observed (max breeding evidence)[2]																											
	PC 01	PC 02	PC 03	PC 04	PC 05	PC 06	PC 07	PC 08	PC 09	PC 11	PC 12	PC 13	PC 14	PC 15	PC 16	PC 17	PC 18	PC 19	PC 20	PC 21	PC 22	PC 23	PC 24	PC 25	PC 26	PC 27	PC 28
Nashville Warbler																1 (S)			1 (S)								
Northern Flicker																										1 (S)	
Orange-crowned Warbler							1 (S)			1 (S)		1 (T)								1 (S)			1 (S)				
Osprey			2 (P)													1 (S)											
Pine Grosbeak			1 (S)																								
Pine Siskin														1 (S)		15 (X)								1 (S)			
Red-breasted Nuthatch	12 (FY)	1 (S)						1 (S)	1 (S)	1 (S)		1 (S)					1 (S)		2 (T)			1 (S)	3 (S)			1 (S)	
Red-eyed Vireo											1 (S)		1 (S)														
Ruby-crowned Kinglet		4 (S)						1 (S)	2 (S)	2 (S)			1 (S)	1 (S)	1 (S)	2 (T)				1 (S)	2 (S)	1 (S)			1 (S)		
Song Sparrow							1 (S)			2 (FY)																	
Surf Scoter																							2 (P)				
Swainson's Thrush	1 (S)	2 (T)	1 (S)	2 (T)	2 (S)	1 (S)		1 (T)		1 (S)		1 (S)	2 (T)			5 (T)		2 (S)	3 (S)	2 (S)	5 (S)	5 (T)	2 (S)	2 (S)	1 (S)		
Swamp Sparrow																						1 (S)					
Tennessee Warbler													1 (S)			1 (S)			2 (S)	1 (S)			1 (S)				
Tree Swallow			1 (S)						1 (S)																		
White-crowned Sparrow							1 (T)																				
White-throated Sparrow	5 (T)	7 (T)	5 (T)	5 (T)	7 (T)	4 (T)	4 (T)	3 (T)	2 (T)	4 (T)	5 (P)	4 (P)	5 (T)		3 (S)	9 (T)	5 (T)	4 (S)	4 (T)	5 (S)	3 (S)	6 (T)	7 (P)	1 (T)	2 (S)		6 (A)
White-winged Crossbill								10 (X)					1 (S)			20 (X)											
Wilson's Snipe		1 (S)	1 (S)									1 (S)				1 (S)							2 (S)		1 (S)		
Wilson's Warbler	1 (S)						1 (S)			1 (S)		2 (S)			1 (S)	2 (S)	1 (S)			1 (S)		1 (S)					1 (T)
Yellow Warbler		1 (S)	1 (S)					1 (T)	2 (S)	1 (S)			1 (S)			1 (S)		1 (S)	1 (S)	1 (S)			2 (S)				1 (S)
Yellow-bellied Flycatcher	1 (M)	1 (M)										1 (M)	1 (M)			1 (M)					1 (M)					1 (M)	
Yellow-rumped Warbler	1 (CF)	1 (S)						1 (T)	2 (T)	2 (S)			2 (P)		1 (S)	2 (T)		1 (S)	1 (S)			1 (S)	6 (FY)	1 (S)			1 (S)

Notes: 1. Species in **bold** font are considered possible breeders; species in **bold and underlined** font are probable breeders; species in ***bold, underlined and italicized*** font are confirmed.
2. For locations surveyed in both June and July, "Number observed" is the highest number of the species recorded at the point count location in a single survey. Breeding evidence codes are described in Table 4.1.

5.2.2 Proposed Ski Hill Site

A total of twelve point counts were conducted at the proposed ski hill site in June, and nine of these were re-surveyed in July (Figure 5.2). All point count surveys were conducted in favourable conditions, with calm to moderate winds and no sustained precipitation. In total, 45 species were detected during the surveys; breeding evidence was observed for 42 of those species (Table 5.2). Thirteen of these species are considered probable breeders due to observed territorial singing behavior, a large number of individuals in suitable habitat, or presence of a pair of adults in suitable habitat, while six are confirmed to be breeding on the proposed Ski Hill site based on observed breeding evidence.

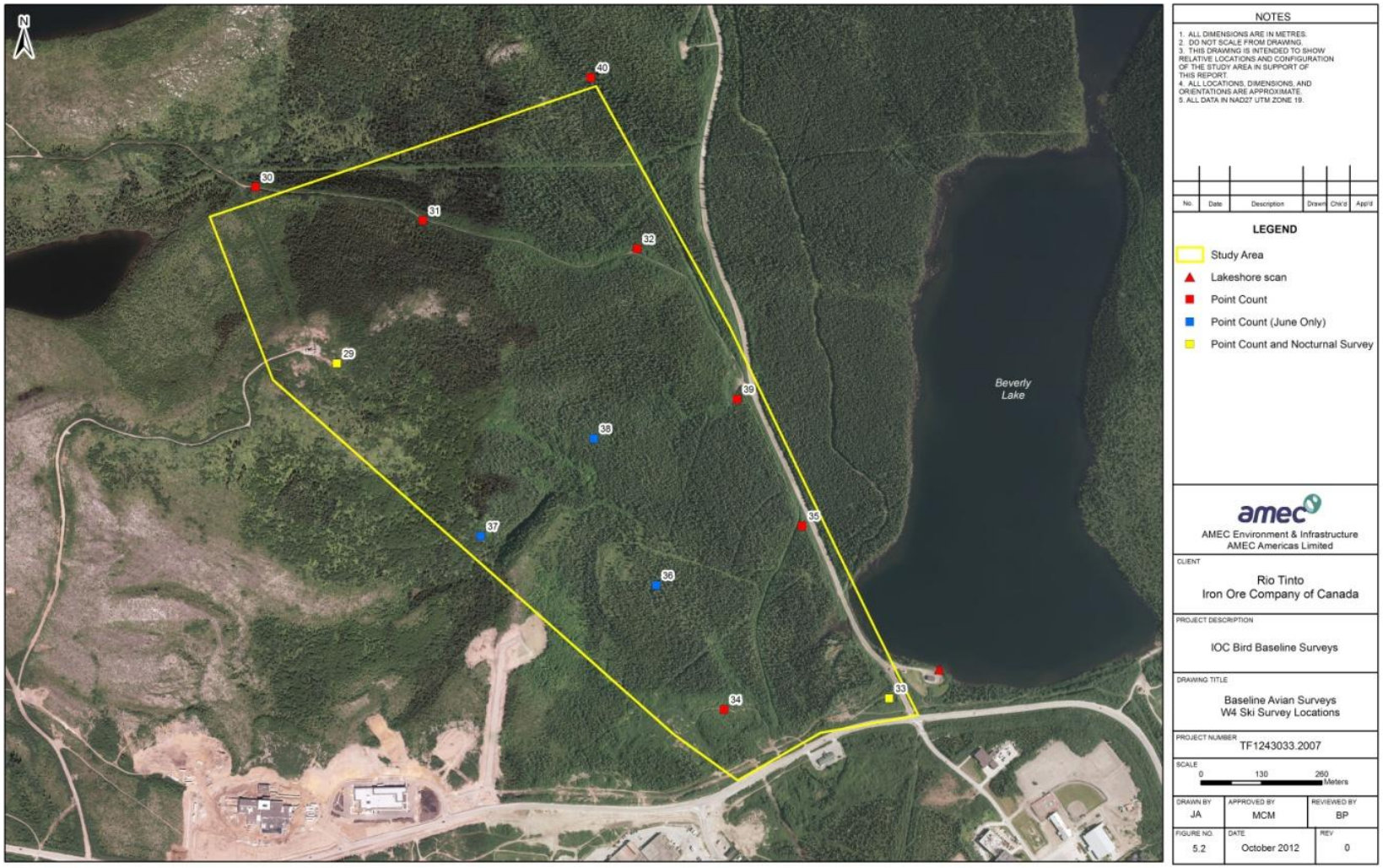
Nocturnal surveys were conducted on June 14th; although wind and weather conditions were favourable for the survey, traffic and train noise interfered slightly with hearing at station PC 33. No owl species or Common Nighthawks were detected. White-throated Sparrow, Lincoln's Sparrow, Swainson's Thrush and American Robin were heard.

Table 5.2: Bird Species Observed during Breeding Bird Surveys on the Proposed Ski Hill Site

Species[1]	Point Count Number Observed (max breeding evidence)[2]											
	PC 29	PC 30	PC 31	PC 32	PC 33	PC 34	PC 35	PC 36	PC 37	PC 38	PC 39	PC 40
Alder Flycatcher	2 (S)	3 (S)			3 (T)	1 (S)						
American Goldfinch	1 (S)		1 (S)			3 (S)	1 (T)	1 (S)			2 (S)	1 (S)
American Robin	3 (T)	1 (S)	3 (T)	1 (T)	2 (T)	3 (T)	3 (T)	1 (S)	2 (S)		2 (S)	
Black-capped Chickadee				1 (S)								
Blackpoll Warbler								1 (S)				
Boreal Chickadee				4(FY)		1 (S)						
Cedar Waxwing	1 (T)				1 (S)							
Chestnut-sided Warbler				1 (S)								
Chipping Sparrow	1 (S)											
Common Loon												1 (X)
Common Merganser					1 (X)							
Common Raven	4(FY)	3(FY)										1 (T)
Dark-eyed Junco	1 (S)	1 (S)	1 (T)	1 (T)	1 (S)	1 (S)	1 (S)	1 (S)	1 (S)	1 (S)	3 (S)	
Downy Woodpecker		1 (S)										
Fox Sparrow	1 (S)	2 (S)	1 (S)		3 (T)	2 (T)	3 (T)	2 (S)		1 (S)	1 (S)	1 (S)
Golden-crowned Kinglet											1 (S)	
Grey Jay					3(FY)	3(FY)						
Hairy Woodpecker										1 (S)		
Hermit Thrush	3 (T)	3 (S)	2 (T)		1 (S)		2 (T)		1 (S)			2 (S)
Herring Gull	1 (X)					2 (X)						
Lincoln's Sparrow	1 (S)		1 (S)		2 (T)	1 (S)	1 (S)					
Magnolia Warbler						1 (S)						
Mourning Dove				1 (S)		1 (S)						
Mourning Warbler		2 (S)	1 (S)									1 (S)
Nashville Warbler					1 (S)	2 (S)					1 (S)	
Northern Flicker			1 (S)									
Northern Waterthrush		1 (S)			2 (S)							
Orange-crowned Warbler			1 (S)	2 (P)	1 (S)	1 (S)					1 (S)	
Osprey	1 (S)				1 (S)							
Palm Warbler				1 (S)							1 (S)	
Pine Grosbeak							1 (S)				2 (S)	
Pine Siskin							2 (S)					
Red-breasted Nuthatch	4(FY)	5(FY)	3(FY)	1 (T)		1 (S)	2 (S)			2 (S)	3(FY)	1 (S)
Ruby-crowned Kinglet		1 (S)		2 (T)			1 (S)				3(CF)	1 (S)
Spruce Grouse												1 (H)
Swainson's Thrush	3 (S)			2 (S)	1 (S)	3(P)	3 (T)	1 (S)	2 (S)	1 (S)	1 (T)	1 (S)
Tennessee Warbler						1 (S)						
Tree Swallow				1 (X)	2 (H)	2 (H)	1 (X)					
White-throated Sparrow	2 (T)	4 (S)	3 (T)	1 (S)	4 (T)	2 (S)	1 (T)	1 (S)		2 (S)	2 (T)	
White-winged Crossbill											1 (H)	1 (H)
Wilson's Warbler		1 (S)			2 (S)			1 (S)		1 (S)		
Winter Wren			1 (S)	2 (S)								
Yellow Warbler	1 (M)				2 (M)	2 (M)	2 (M)			1 (M)		
Yellow-bellied Flycatcher	2 (T)	3 (S)	3 (T)		1 (S)	1 (S)			1 (S)			
Yellow-rumped Warbler	2 (S)	3 (S)	2 (T)	1 (T)		2(CF)				2 (S)	2 (S)	

Notes: 1. Species in **bold** font are considered possible breeders; species in **bold and underlined** font are probable breeders; species in ***bold, underlined and italicized*** font are confirmed breeders in the study area.
2. For locations surveyed in both June and July, "Number observed" is the highest number of the species recorded at the point count location in a single survey. Breeding evidence codes are described in Table 4.1.

Figure 5.2: Baseline Avian Surveys Ski Hill Survey Locations



5.2.3 CEP3 Site

Four point count surveys were conducted on the CEP3 site on the morning of June 16th (Figure 5.3). Weather conditions were suitable for surveys, with light to moderate winds and no precipitation. A total of eighteen species were detected during the surveys (Table 5.3); thirteen of these are considered possible breeders and three are considered probable breeders because of the high number of individuals seen in suitable habitat on the site. The remaining two species were seen flying over the site, outside of suitable nesting habitat.

Table 5.3. Bird Species Observed during Breeding Bird Surveys on the CEP3 Site

Species[1]	Point Count Number Observed (max breeding evidence[2])			
	PC 41	PC 42	PC 43	PC 44
Alder Flycatcher	1 (S)			2 (S)
American Goldfinch				1 (S)
American Robin	3 (M)	2 (M)	4 (M)	2 (M)
Blackpoll Warbler	1 (S)			
Cedar Waxwing				1 (S)
Chestnut-sided Warbler				1 (S)
Common Raven		2 (H)		
Fox Sparrow	3 (M)	1 (M)	2 (M)	3 (M)
Herring Gull			2(X)	2(X)
Lincoln's Sparrow		1 (S)		
Magnolia Warbler	1 (S)	1 (S)		
Orange-crowned Warbler				1 (S)
Spruce Grouse		1 (S)		
Swainson's Thrush	1 (S)			1 (S)
Tennessee Warbler	1 (S)			
Tree Swallow		1(X)		
Wilson's Warbler				1 (S)
Yellow Warbler	2 (M)	3 (M)	1 (M)	5 (M)

Notes: 1. Species in **bold** font are considered possible breeders, while species in **bold, underlined** font are probable breeders.
2. Breeding evidence codes are described in Table 4.1.

No nocturnal surveys were conducted; however, considering the proximity of the site to industrial activities and the absence of suitable habitat, it is considered unlikely that the CEP3 site would support Common Nighthawks or owls.

Figure 5.3: Baseline Avian Surveys CEP3 Survey Locations

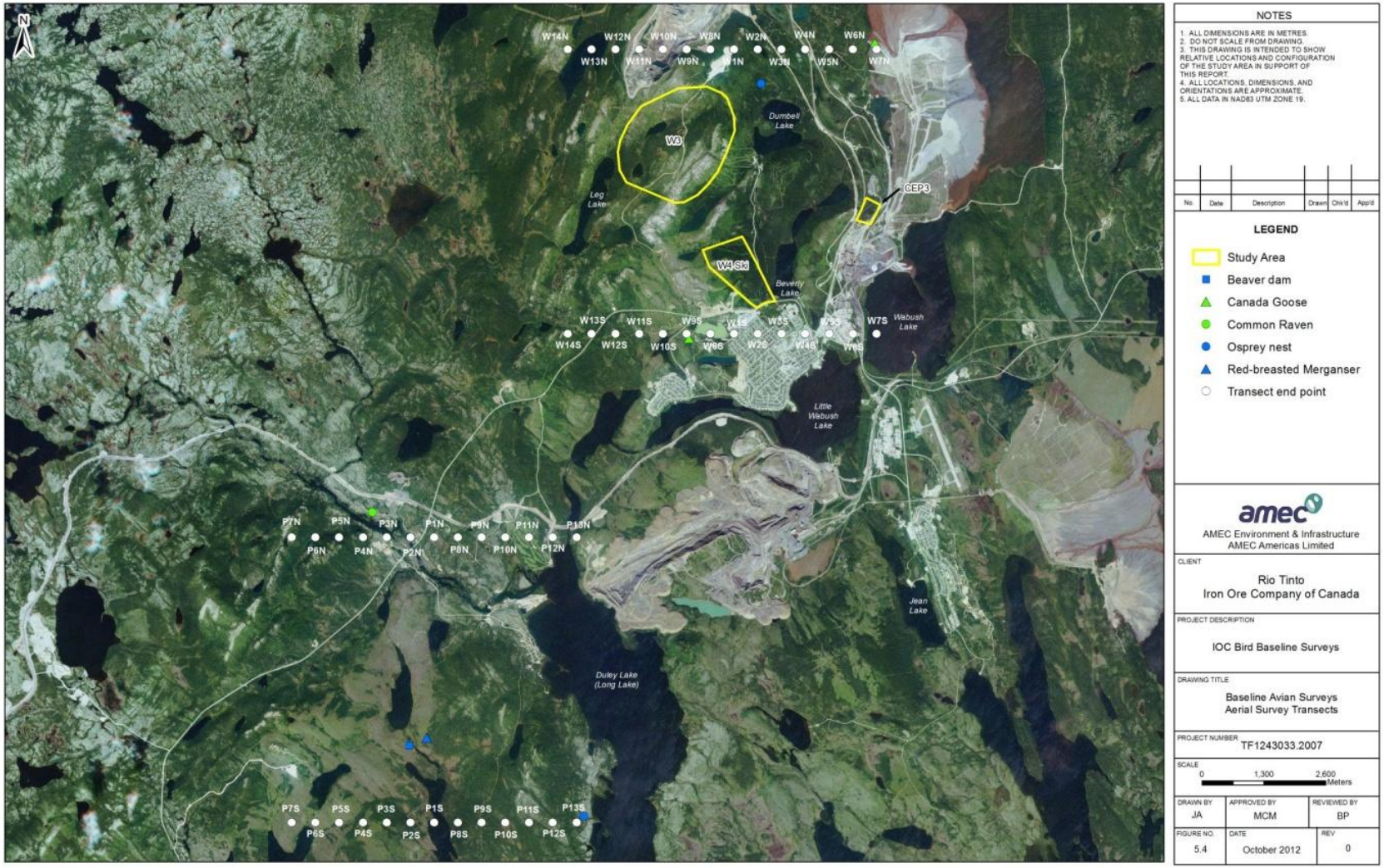
5.2.4 Aerial Surveys of Wabush 3, Ski Hill, CEP3 and Polly Lake Area

An aerial survey was conducted on the morning of June 17th; the transects flown are depicted on Figure 5.4. Survey conditions were favourable, with clear skies and good visibility throughout the morning.

In the primary study area, including the Wabush 3, Ski Hill and CEP3 sites, Canada Geese were sighted in two locations (Figure 5.4). A flock of 12 individuals was observed in Wabush Lake, at the eastern edge of the surveyed area, while another 2 geese were seen near Tanta Lake just northwest of Labrador City. An Osprey nest was found north of Dumbell Lake, approximately 800 m northeast of the Wabush 3 area.

A second Osprey nest was found near Duley Lake, at the southeast corner of the Polly Lake survey area (Figure 5.4). A small flock of five Red-breasted Mergansers was observed flying near Narrow Lake in the Duley Lake Provincial Park, and two Common Ravens were seen at the northern edge of the survey area at Walsh River. A beaver dam was noted on the Narrow Lake near Duley Lake Provincial Park.

Figure 5.4: Baseline Avian Surveys Aerial Survey Transects



5.3 FALL MIGRATION SURVEYS

Fall surveys were conducted between September 11th and 17th. Area searches of terrestrial habitats were conducted in conjunction with small mammal surveys, and water bodies on and near the study areas were scanned with a spotting scope for waterfowl and other species. No avian species of special status were observed during the fall surveys.

5.3.1 Wabush 3 Mine Site

Sixteen bird species were identified on the Wabush 3 site: Common Raven, Grey Jay, Ruby-crowned Kinglet, Boreal Chickadee, Wilson's Snipe, White-throated Sparrow, Fox Sparrow, Dark-eyed Junco, Pine Grosbeak, Pine Siskin, Song Sparrow and American Pipit were observed in the forest and clearing habitats.

Mallard, Spotted Sandpiper, Common Loon and a family of Hooded Mergansers were seen on the two small lakes on the western portion of the site.

5.3.2 Proposed Ski Hill Site

A total of ten species were detected at the proposed ski hill site in September: Common Raven, Boreal Chickadee, Dark-eyed Junco, Ruby-crowned Kinglet, Golden-crowned Kinglet, Grey Jay, American Robin, Song Sparrow and American Pipit.

A further three species were observed at nearby Beverly Lake; Herring Gulls and American Black Duck were seen flying over the lake, and two Common Loons (one adult and one immature) were observed on the water.

5.3.3 CEP3 Site

Six bird species were detected at the CEP3 site during the September surveys: Common Raven, Boreal Chickadee, Dark-eyed Junco, Rusty Blackbird, Swainson's Thrush and American Pipit. A distant Common Loon was heard on one occasion, and Herring Gull was seen flying overhead.

6.0 SUMMARY AND DISCUSSION

In all, more than 160 bird species have been reported in the Labrador City area. Sixty-six species were observed in the present surveys of Wabush 3, the potential replacement ski hill location and CEP3; based on observed evidence, at least fifty of these are, or may be, breeding in the study area. Few wintering bird species were found in the study area, and no avian species at risk were observed in April. Common Raven, Pine Grosbeak, Boreal Chickadee, Spruce Grouse and Grey Jay were the most commonly observed winter species, while Common Redpoll, American Goldfinch, Snow Bunting and Willow Ptarmigan were seen less frequently. Fifty-six bird species were recorded during the summer surveys; White-throated Sparrow, American Robin, Swainson’s Thrush, Dark-eyed Junco, Fox Sparrow and Hermit Thrush, Yellow-rumped Warbler, Lincoln’s Sparrow, Red-breasted Nuthatch, Yellow Warbler and Common Raven were the species most frequently detected, collectively comprising over 65% of the total number of individuals observed. During the fall surveys, Boreal Chickadee, Common Raven, Dark-eyed Junco, American Pipit, Ruby-crowned Kinglet and American Robin were the species observed most frequently in the study area.

Ten federally and/or provincially listed avian species at risk have been reported in the Labrador City area, but only one, the Rusty Blackbird, was seen during field program, on the fall survey. Rusty Blackbirds were not observed in the study area during the breeding season; however, it is noted that suitable breeding habitat for this species does exist in the Wabush 3 and ski hill sites. Rusty Blackbirds nest close to water in wet coniferous and mixed forests, in fens and bogs, and on swampy lakeshores in northern regions (Avery 1995). Potential breeding habitat exists on the site for two other protected species not observed during the surveys but possibly breeding in the Labrador City area, the Grey-cheeked Thrush and Short-eared Owl. Grey-cheeked Thrush nests in dense conifer stands and medium-height shrubby habitat (Lowther *et al.* 2001), while Short-eared Owls nest in open terrain including inland marshes and bogs, in areas supporting populations of prey animals including voles and lemmings, where there are dry sites with sufficient vegetative cover to conceal incubating females (COSEWIC 2008; Wiggins *et al.* 2006).

Nests of two raptor species were found near the study area during the surveys, both near Dumbell Lake east of Wabush 3. An Osprey nest was found during the aerial survey approximately 800 m northeast of the Wabush 3 site, and a Red-tailed Hawk nest was encountered during the July survey approximately 250 m east of the site. A second Osprey nest was found near the Polly Lake site, which is not currently under development, but may be in the future. Like all raptor species, Osprey and Red-tailed Hawk are protected by provincial regulations; a buffer zone to new construction of 800 m is recommended around active nests and 200 m around nests outside of the active period. While the Osprey nest is not likely to be negatively affected by the proposed Project, intrusive activities on the eastern portion of the Wabush 3 site within 800 m of the Red-tailed Hawk nest (Figure 5.1) should be avoided while the nest is active. If this time period cannot be avoided, NLDEC should be contacted for advice on how to minimize disturbance of the nest.

The *MBCA* and its regulations prohibit destruction of most migratory bird species, as well as their nests and eggs. The Canadian Wildlife Service branch of Environment Canada recommends that proponents proactively develop and implement a management plan that includes appropriate measures to minimize the risk of adverse effects and to mitigate any unavoidable impacts on nests (Environment Canada 2012). Environment Canada should be contacted to provide expert advice in developing best management practices that includes measures to protect migratory birds and their nests. Such measures may include, but are not limited to: minimizing clearing and grubbing activities during the breeding season (May 1st to August 15th); if clearing during the nesting season cannot be avoided, conducting non-intrusive nest searches prior to clearing or grubbing, particularly in sensitive areas (e.g., potential breeding habitat for species at risk); and identifying steps that should be taken if an active nest is discovered during site activities, such as establishing a species-appropriate buffer zone around the nest.

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APPENDIX A

AVIAN SPECIES REPORTED AND/OR OBSERVED IN THE STUDY AREA

Table A.1. Species reported in and near the Labrador City area.

Latin Name	Common Name	eBird [1]	CBC [2]	Present Surveys [3]	Special Status
Chen caerulescens	Snow Goose	x			
Branta bernicla	Brant	x			
Branta canadensis	Canada Goose	x		s	
Aix sponsa	Wood Duck	x			
Anas strepera	Gadwall	x			
Anas penelope	Eurasian Wigeon	x			
Anas americana	American Wigeon	x			
Anas rubripes	American Black Duck	x		f	
Anas platyrhynchos	Mallard	x		f	
Anas discors	Blue-winged Teal	x			
Anas clypeata	Northern Shoveler	x			
Anas crecca	Green-winged Teal	x			
Aythya collaris	Ring-necked Duck	x			
Aythya marila	Greater Scaup	x			
Aythya affinis	Lesser Scaup	x	x		
Somateria mollissima	Common Eider	x			
Histrionicus histrionicus	Harlequin Duck	x			*SARA* : Special Concern; *ESA* : Vulnerable
Melanitta perspicillata	Surf Scoter	x		s	
Melanitta fusca	White-winged Scoter	x			
Melanitta americana	Black Scoter	x			
Clangula hyemalis	Long-tailed Duck	x			
Bucephala albeola	Bufflehead	x			
Bucephala clangula	Common Goldeneye	x			
Bucephala islandica	Barrow's Goldeneye	x			*SARA* : Special Concern; *ESA* : Vulnerable
Lophodytes cucullatus	Hooded Merganser	x		f	
Mergus merganser	Common Merganser	x	x		
Mergus serrator	Red-breasted Merganser	x		s	
Bonasa umbellus	Ruffed Grouse	x			
Falcipennis canadensis	Spruce Grouse	x	x	s,w	
Lagopus lagopus	Willow Ptarmigan	x	x	w	
Lagopus muta	Rock Ptarmigan	x			
Gavia stellata	Red-throated Loon	x			
Gavia immer	Common Loon	x		s,f	
Phalacrocorax auritus	Double-crested Cormorant	x			
Phalacrocorax carbo	Great Cormorant	x			
Botaurus lentiginosus	American Bittern	x			
Ardea herodias	Great Blue Heron	x			
Pandion haliaetus	Osprey	x		s	NLDEC: Raptor
Haliaeetus leucocephalus	Bald Eagle	x			NLDEC: Raptor
Circus cyaneus	Northern Harrier	x			NLDEC: Raptor
Accipiter gentilis	Northern Goshawk	x	x		NLDEC: Raptor
Buteo jamaicensis	Red-tailed Hawk	x		s	NLDEC: Raptor
Buteo lagopus	Rough-legged Hawk	x	x		NLDEC: Raptor
Aquila chrysaetos	Golden Eagle	x			NLDEC: Raptor
Falco sparverius	American Kestrel	x			NLDEC: Raptor
Falco columbarius	Merlin	x			NLDEC: Raptor
Falco rusticolus	Gyrfalcon	x			NLDEC: Raptor
Falco peregrinus	Peregrine Falcon	x			*SARA* : Special Concern; *ESA* : Vulnerable; NLDEC: Raptor
Porzana carolina	Sora	x			
Fulica americana	American Coot	x			
Pluvialis squatarola	Black-bellied Plover	x			
Pluvialis dominica	American Golden-Plover	x			
Charadrius semipalmatus	Semipalmated Plover	x			
Charadrius vociferus	Killdeer	x			
Actitis macularius	Spotted Sandpiper	x		f	
Tringa solitaria	Solitary Sandpiper	x			
Tringa melanoleuca	Greater Yellowlegs	x			
Tringa flavipes	Lesser Yellowlegs	x			
Limosa haemastica	Hudsonian Godwit	x			
Arenaria interpres	Ruddy Turnstone	x			
Calidris canutus	Red Knot	x			*SARA* : Endangered; *ESA* : Endangered
Calidris alba	Sanderling	x			
Calidris pusilla	Semipalmated Sandpiper	x			
Calidris minutilla	Least Sandpiper	x			
Calidris fuscicollis	White-rumped Sandpiper	x			

Latin Name	Common Name	eBird [1]	CBC [2]	Present Surveys [3]	Special Status
Calidris bairdii	Baird's Sandpiper	x			
Calidris melanotos	Pectoral Sandpiper	x			
Calidris maritima	Purple Sandpiper	x			
Calidris alpina	Dunlin	x			
Limnodromus griseus	Short-billed Dowitcher	x			
Gallinago delicata	Wilson's Snipe	x		s,f	
Phalaropus lobatus	Red-necked Phalarope	x			
Chroicocephalus philadelphia	Bonaparte's Gull	x			
Larus delawarensis	Ring-billed Gull	x			
Larus argentatus	Herring Gull	x	x	s,f	
Larus glaucoides	Iceland Gull	x			
Larus hyperboreus	Glaucous Gull	x			
Larus marinus	Great Black-backed Gull	x			
Chlidonias niger	Black Tern	x			
Sterna hirundo	Common Tern	x			
Sterna paradisaea	Arctic Tern	x			
Zenaida macroura	Mourning Dove	x	x	s	
Bubo virginianus	Great Horned Owl	x			
Bubo scandiacus	Snowy Owl	x			
Surnia ulula	Northern Hawk Owl	x			
Asio otus	Long-eared Owl	x			
Asio flammeus	Short-eared Owl	x			*SARA* : Special Concern; *ESA* : Vulnerable
Aegolius funereus	Boreal Owl	x			
Chordeiles minor	Common Nighthawk	x			*SARA* : Threatened; *ESA* : Threatened
Megaceryle alcyon	Belted Kingfisher	x			
Picoides pubescens	Downy Woodpecker	x	x	s	
Picoides villosus	Hairy Woodpecker	x	x	s	
Picoides dorsalis	American Three-toed Woodpecker	x	x		
Picoides arcticus	Black-backed Woodpecker	x	x		
Colaptes auratus	Northern Flicker	x		s	
Contopus cooperi	Olive-sided Flycatcher	x			*SARA* : Threatened; *ESA* : Threatened
Empidonax flaviventris	Yellow-bellied Flycatcher	x		s	
Empidonax alnorum	Alder Flycatcher	x		s	
Empidonax minimus	Least Flycatcher	x			
Tyrannus tyrannus	Eastern Kingbird	x			
Vireo solitarius	Blue-headed Vireo	x			
Vireo olivaceus	Red-eyed Vireo	x		s	
Lanius excubitor	Northern Shrike		x		
Perisoreus canadensis	Gray Jay	x	x	w,s,f	
Cyanocitta cristata	Blue Jay	x			
Corvus brachyrhynchos	American Crow		x		
Corvus corax	Common Raven	x	x	w,s,f	
Eremophila alpestris	Horned Lark	x			
Tachycineta bicolor	Tree Swallow	x		s	
Hirundo rustica	Barn Swallow	x			*COSEWIC* : Threatened
Poecile atricapillus	Black-capped Chickadee	x	x	s	
Poecile hudsonicus	Boreal Chickadee	x	x	w,s,f	
Sitta canadensis	Red-breasted Nuthatch	x	x	s	
Certhia americana	Brown Creeper	x		s	
Troglodytes hiemalis	Winter Wren			s	
Regulus satrapa	Golden-crowned Kinglet	x		s,f	
Regulus calendula	Ruby-crowned Kinglet	x		s,f	
Sialia sialis	Eastern Bluebird	x			
Catharus minimus	Gray-cheeked Thrush	x			*ESA* : Vulnerable
Catharus ustulatus	Swainson's Thrush	x		s,f	
Catharus guttatus	Hermit Thrush	x		s	
Turdus migratorius	American Robin	x	x	s,f	
Dumetella carolinensis	Gray Catbird	x			
Mimus polyglottos	Northern Mockingbird	x	x		
Sturnus vulgaris	European Starling	x	x		
Anthus rubescens	American Pipit	x		f	
Bombycilla garrulus	Bohemian Waxwing	x	x		
Bombycilla cedrorum	Cedar Waxwing	x	x	s	
Parkesia noveboracensis	Northern Waterthrush	x		s	
Mniotilta varia	Black-and-white Warbler	x		s	
Oreothlypis peregrina	Tennessee Warbler	x		s	
Oreothlypis celata	Orange-crowned Warbler	x		s	

Latin Name	Common Name	eBird [1]	CBC [2]	Present Surveys [3]	Special Status
Oreothlypis ruficapilla	Nashville Warbler			s	
Geothlypis philadelphia	Mourning Warbler			s	
Setophaga ruticilla	American Redstart			s	
Setophaga magnolia	Magnolia Warbler			s	
Setophaga petechia	Yellow Warbler	x		s	
Setophaga pensylvanica	Chestnut-sided Warbler			s	
Setophaga striata	Blackpoll Warbler	x		s	
Setophaga palmarum	Palm Warbler			s	
Setophaga coronata	Yellow-rumped Warbler	x		s	
Cardellina pusilla	Wilson's Warbler	x		s	
Spizella arborea	American Tree Sparrow	x			
Spizella passerina	Chipping Sparrow	x	x	s	
Passerculus sandwichensis	Savannah Sparrow	x		s	
Passerella iliaca	Fox Sparrow	x	x	s,f	
Melospiza melodia	Song Sparrow	x		s,f	
Melospiza lincolnii	Lincoln's Sparrow	x		s	
Melospiza georgiana	Swamp Sparrow	x		s	
Zonotrichia albicollis	White-throated Sparrow	x	x	s,f	
Zonotrichia leucophrys	White-crowned Sparrow	x	x	s	
Junco hyemalis	Dark-eyed Junco	x	x	s,f	
Calcarius lapponicus	Lapland Longspur	x			
Plectrophenax nivalis	Snow Bunting	x	x	w	
Pheucticus ludovicianus	Rose-breasted Grosbeak	x	x		
Agelaius phoeniceus	Red-winged Blackbird	x	x		
Euphagus carolinus	Rusty Blackbird	x		s	*SARA* : Special Concern; *ESA* : Vulnerable
Quiscalus quiscula	Common Grackle	x	x		
Molothrus ater	Brown-headed Cowbird	x			
Pinicola enucleator	Pine Grosbeak	x	x	w,s,f	
Carpodacus purpureus	Purple Finch	x	x		
Loxia curvirostra	Red Crossbill	x			
Loxia leucoptera	White-winged Crossbill	x	x	s	
Acanthis flammea	Common Redpoll	x	x	w	
Acanthis hornemanni	Hoary Redpoll	x	x		
Spinus pinus	Pine Siskin	x		s,f	
Spinus tristis	American Goldfinch	x		w,s,f	
Coccothraustes vespertinus	Evening Grosbeak	x			
Passer domesticus	House Sparrow	x			

1. eBird data for a radius of approximately 20 km around Labrador City, including all available data from 1931 to October 2012.
2. Christmas Bird Count data for 1998 - 2011. Accessed October 2012.
3. Summary of observations from present surveys of the three study areas. w = winter survey, s = summer (June and July), f = fall.

APPENDIX B

PHOTOGRAPHS

Photo 1. Typical open habitat on Wabush 3.

Photo 2. Rocky outcroppings on Wabush 3.

Photo 3. Open shrub habitat on Wabush 3.


Photo 4. Low alpine herb habitat on Wabush 3.

Photo 5. Shore of small lake on Wabush 3.


Photo 6. Open coniferous forest on Wabush 3.

Photo 7. Shrub and young mixed forest along ATV trail on Ski Hill site.

Photo 8. Open coniferous forest on Ski Hill site.

Photo 9. Hardwood forest overlooking conifer forest habitat on Ski Hill site

Photo 10. Young hardwood forest on CEP3 site.

Photo 11. Young mixed forest alongside site road on CEP3 site.


Photo 12. Osprey nest observed during aerial survey.