

**Labrador Iron Mines**

**2009 Breeding Bird Monitoring Report – James, Redmond,  
Silver Yards, Knob Lake, Houston, Howse, and Proposed  
Road Crossing Areas**

draft for discussion • privileged and confidential • prepared at the request of counsel

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## Executive Summary

Labrador Iron Mines (LIM) has acquired control of most of the approximately 100 million tonnes of defined reserves and resources formerly held by the Iron Ore Company of Canada (IOC) in western Labrador. This part of Labrador contains one of the largest iron-ore resources in the world, and mining began in the area in the early 1950's. LIM plans to reactivate the development and mining of iron ore deposits in an area centered by Schefferville, Quebec that had been mined by IOC up until the mid-1980s. Specifically, LIM intends to reactivate the development of the Houston, Howse, James, Silver Yards and Redmond pits, as well as initiating development of the Knob Lake deposit. In addition, LIM intends to construct a road between the Redmond and Houston pits in order to make travel more efficient between the two locations.

In 2009, AECOM was retained to conduct annual breeding bird monitoring surveys in the six pit areas, in follow-up to the 2008 baseline studies, as well as to conduct baseline surveys along the corridor for the proposed road crossing between the Redmond and Houston pits. The methodology employed during the 2009 breeding bird surveys replicated that employed during the 2008 baseline surveys, and utilized the same point count stations and survey methods. In addition, 11 new point count stations were created in the new Proposed Road Crossing study area.

A total of 38 bird species was observed during point counts. This number increased to 46 when species observed outside of the point counts were included. The numbers of species and birds observed were lower than those observed during the 2008 survey, likely due to a later onset of spring weather conditions in 2009. Six of the species recorded in 2009 are considered as extra-limital as they were observed beyond their known breeding range.

The Gray-cheeked Thrush and the Rusty Blackbird are provincially-listed as Vulnerable on Schedule C in the Newfoundland and Labrador Endangered Species Act. Rusty Blackbird is also federally-listed as Special Concern by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC).

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## 1. Introduction

Labrador Iron Mines (LIM) has acquired control of most of the approximately 100 million tonnes of defined reserves and resources formerly held by the Iron Ore Company of Canada (IOC) in western Labrador. This part of Labrador contains one of the largest iron-ore resources in the world, and mining began in the area in the early 1950's. LIM plans to reactivate the development and mining of iron ore deposits in an area centered by Schefferville, Quebec that had been mined by IOC up until the mid-1980s. Specifically, LIM intends to reactivate the development of the Houston, Howse, James, Silver Yards and Redmond pits, as well as initiating development of the Knob Lake deposit. In addition, LIM intends to construct a road between the Redmond and Houston pits in order to make travel more efficient between the two locations.

In 2008, AECOM was retained by LIM to complete an Avifauna Baseline Monitoring Report for the existing and proposed pit areas, which was documented in two reports, entitled "*Labrador Iron Mines Baseline Avifauna Report – James, Redmond & Silver Yards*" (November 2008) and (Draft – October 2008).

In 2009, AECOM was retained to conduct annual breeding bird monitoring surveys in the six pit areas, in follow-up to the 2008 baseline studies, as well as to conduct baseline surveys along the corridor for the proposed road crossing between the Redmond and Houston pits. This report describes the field sampling techniques employed during the 2009 field season, summarizes the findings of the surveys, provides a discussion of the ecological significance of the species encountered and recommends actions for conserving these species during mine development.

## 2. Description of the Study Team

The 2009 breeding bird monitoring surveys were conducted by AECOM ecologists Sarah Richer and Vince Deschamps.

**Ms. Sarah Richer** is an Ecologist/Ornithologist at AECOM with over six years experience in conducting Species at Risk population and habitat surveys, environmental stewardship, and natural heritage interpretation. She obtained her BA (Hons) in Geography and B.Sc. minor in GIS and Environmental Analysis from the University of Guelph, and completed a Post-Graduate Certificate in Ecosystem Restoration at Niagara College. Sarah has applied her birding skills with various organizations in both the government and not-for-profit sector, including the Ontario Ministry of Natural Resources, Ducks Unlimited Canada, The Friends of Wye Marsh, and the Canadian Wildlife Service, in southern and central Ontario forests and marshes as well as Alberta prairies. She has a broad understanding of the vegetation communities of both forested and freshwater wetland ecosystems. She is also trained and experienced with the application of the Ecological Land Classification (ELC) System for Southern Ontario, is adept at conducting avifauna, herpefauna, and wetland floral inventories, assisting with fish and aquatic invertebrate sampling, monitoring vegetation communities, and evaluating natural heritage features and functions in both the Carolinian Zone and central Ontario.

**Mr. Vince Deschamps** is a Senior Environmental Planner based in AECOM's Guelph office. He has a broad range of experience in Canada and internationally, with over nineteen years of professional experience in environmental assessments, resource economics, conservation planning and biological inventories. Vince specializes in the impacts of mining on biodiversity, and has experience with large-scale gold and iron ore mine projects in Southeast Asia, Eastern Europe and Canada. Specific undertakings have included reviewing ecological baseline studies, developing and coordinating extensive ecological field investigations, managing expert staff and sub-consultants, analyzing data, developing management options and preparing technical reports and planning documents. In 2007/2008, Vince assisted the Iron Ore Company of Canada to assess the potential impacts of proposed community facilities in Labrador City on their long-term mine plan. Vince has conducted numerous breeding and migratory bird investigations in support of Environmental Impact Studies and monitoring requirements for mines, quarries, wind farms and residential land development. Vince has also managed bird conservation projects and initiatives as an employee for Bird Studies Canada, Parks Canada and the Wye Marsh Wildlife Centre.

### 3. Study Objectives

Breeding bird surveys were undertaken in 2009 as part of LIM's annual monitoring program, and to build upon the findings of the 2008 baseline surveys conducted by AECOM in the six pit areas (i.e., the Houston, Howse, James, Silver Yards and Redmond pits, and the Knob Lake deposit). In addition, baseline breeding bird surveys were conducted along the corridor for the proposed road between the Redmond and Houston sites.

The primary objective of the 2009 surveys was to characterize the populations of birds (in terms of species numbers and diversity) breeding on, and immediately adjacent to, the pits and proposed road corridor in order to fulfill LIM's Environmental Assessment requirements. As a secondary objective, the surveys intended to assist LIM in developing appropriate management strategies through the identification of federally- or provincially-listed Species at Risk (SAR) and/or unique species in the study area.

## 4. Description of the Study Area

The study area is comprised of the six pit areas (i.e., Houston, Howse, James, Silver Yards and Redmond pits, and the Knob Lake deposit) and the area that contains the corridor for the proposed road crossing between the Redmond and Houston sites. The pit areas were previously described in the respective Baseline Avifauna Reports prepared by AECOM in October and November 2008. All of these pits are located in the general vicinity of Schefferville, in the province of Quebec, although most of the pits and the road crossing corridor are located in Labrador. **Map 1** illustrates the study sites for the 2009 breeding bird surveys. Maps 2-8 illustrate the sampling locations for each of the study sites. A general description of the study area is as follows:

### 4.1 James Property

The James site (**Map 2**) was approximately 50% disturbed from past mining activities. The site was surveyed primarily from the edge of the service road, and was uniform in habitat composition. The site consisted of black spruce, lichen woodland, and alder thickets along the recently cleared roadsides and powerline right-of-ways. The site also contained several areas of wetland and bog near the road edges. The western part of this site had steep slopes, with the forest thinning towards the summit. Two pits are planned for the area, the James North and James South pits. They will be established on either side of a buffer which will be created around an upwelling that divides the two pits.

### 4.2 Redmond Property

The Redmond site (**Map 3**) had a wide range of habitat types, largely due to the presence of a former mine and pit operation. The habitats ranged from completely bare ore piles and service roads, to heavily blanketed areas with alder and willow thickets. This area also had a large, flooded pit in the southwest corner of the site. The undisturbed areas of the site contained mature black spruce at lower elevations, with stunted spruce-lichen along the ridge summits. This site also contained several wetland areas, most notably a large sedge fen enclosed by the former railway turning circle, as well as a lake/fen complex located where the main service road enters the Redmond site.

### 4.3 Silver Yards Property

The Silver Yards (**Map 4**) were similar in nature to the Redmond site, with numerous service roads encircling the flooded pits of the James sites. Although the former rail spur lines have been removed, linear infrastructure (roads and the spur rail bed) were still present and in good condition. In general, the Silver Yards site was a large valley bordered on the east by a talus slope forested at the base, and to the west by another slope heavily covered with spruce at the base thinning to almost bare near the summit. The service roads, along the north and south orientation, were extensively bordered with alder and willow regeneration. The pit edges had minimal to no vegetation cover, and while the open water component of the pits provided loafing areas for herring gulls, no viable waterbird nesting habitat was present. The south end of this site had more extensive vegetation cover, with some areas consisting of dense spruce, and extensive thicket habitat along the roadsides.

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**Map 1: 2009 Breeding Bird Survey Study Site Locations**

## Map 2: James Property

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**Map 3: Redmond Property**



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**Map 4: Silver Yards Property**

#### 4.4 Knob Lake Property

The Knob Lake site (**Map 5**) consisted of small black spruce of varying densities, depending on elevation. Lower lying areas were composed of larger trees with the slopes and summits consisting of some dwarf spruce, lichen and heath, however they were largely bare. The roadside edges consisted of shrubby alder regeneration, and the areas adjacent to the north shore of Le Jeune Lake were densely wooded with alder, spruce and lichen.

#### 4.5 Houston Property

The Houston site (**Map 6**) was accessed by a central service road that ran the length of the site, following the elevation changes and habitat characteristics of the area. Houston was dominated by spruce-lichen forest, of varying age and density. The lower moist areas had some patches of mature spruce as well as willow and alder thickets, mostly along roadsides and disturbed sites. Tamarack were scattered throughout. Higher elevations and ridge tops were sparsely vegetated with dwarf spruce and heath, and had some areas becoming nearly bare resembling an alpine desert condition. The area also contained scattered lakes and several fen-like wetlands along the eastern edge of this area, and the south west corner of the site, adjacent to Astray Lake, was a regenerating burn.

#### 4.6 Howse Property

Howse (**Map 7**) presented a unique site within the study area, consisting of vast open spaces and sparse tree cover throughout the southern two-thirds of the site. These open areas consisted of scattered small spruce, heath and lichen with some patches of shrubby ground cover, while some areas of the site could be considered sub-arctic tundra. The western edge of the site included Irony Mountain, which had slopes and summit that were alpine tundra in character, with an accompanying suite of breeding bird species more typical of these habitats. The northern edge of the site sloped towards a drainage feature and was wetter and had a denser tree cover than the rest of the site, consisting of some mature spruce and tamarack.

#### 4.7 Road Crossing Corridor

The area surveyed for the proposed Road Crossing corridor (**Map 8**) extended from the railway line to the immediate west of the mouth of the Gilling's River (i.e., the Redmond, or "west side" of the Road Crossing), eastward to the Houston central service road just north of Astray Lake (i.e., the Houston, or "east side" of the Road Crossing). As the exact location for the Road Crossing had yet to be determined at the time of the survey, a broad east-west "corridor" between the two terminuses was delineated, and a number of representative habitats were selected for baseline surveys. These habitats included alder-willow thickets, spruce forests, open rock, open vegetation (i.e., lichen-dominated), fens, lacustrine and riverine/riparian.

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**Map 5: Knob Lake Property**

### Map 6: Houston Property

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**Map 7: Howse Property**

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**Map 8: Road Crossing Corridor**

## 5. Methodology

The methodology employed during the 2009 breeding bird surveys was consistent with that employed during the 2008 baseline surveys, and consisted of background literature review and field sampling.

### 5.1 Background Literature Review

To aid in the field investigations the following reports and websites were reviewed as part of the 2008 baseline surveys to gain a better understanding of the study area:

- New Millennium Capital Group, Paul F. Wilkinson and Associates Inc. – Project Registration, Direct Shipping Ore Project. 2008.
- Ministry of Natural Resources, 2000. Significant Wildlife Habitat: Technical Guide.
- Natural Heritage Information Centre (NHIC) Global Status Ranks – webpage

In addition, the following were reviewed as part of the 2009 breeding bird surveys:

- Labrador Iron Mines Baseline Avifauna Report – James, Redmond & Silver Yards (AECOM, November 2008)
- Labrador Iron Mines Baseline Avifauna Report – Knob Lake, Houston & Howse (AECOM, Draft – October 2008)
- Government of Canada Species at Risk (SAR) Public Registry, available at: [http://www.sararegistry.gc.ca/sar/index/map\\_e.cfm](http://www.sararegistry.gc.ca/sar/index/map_e.cfm)

### 5.2 Field Sampling

Field surveys were conducted from July 15 to 22, 2009 and replicated the approach employed in the 2008 baseline surveys. This involved using the point-count method consistent with methods used by the Canadian Wildlife Service (CWS). Point-count stations established during the 2008 baseline surveys were located in the field (using GPS coordinates provided in the baseline reports) and flagged in order to make them easier to find in the future. For the Road Crossing corridor, which had not been surveyed as part of the 2008 baseline survey, new point-counts were established in representative habitats as described in Section 4.7, flagged in the field and their locations recorded with a hand-held GPS unit in NAD 83. Maps 2 to 8 illustrate the sampling locations for each of the study sites. GPS coordinates for the point-count stations are provided in Appendix A of this report. Appendix B provides representative photographs of each of the point-count stations.

Point-counts were 5 minutes in duration and consisted of an unlimited radius, except where adjacent count circles overlapped. All birds heard or seen during the five-minute “count” were recorded. The highest level of breeding, as defined in the Ontario Breeding Bird Atlas, was recorded at each point-count station for each species encountered. The total number of individuals of each species was recorded, in order to develop an understanding of population dynamics at each site. Efforts were made to ensure that point-counts were conducted in conditions considered acceptable for proper data gathering (i.e., no rain, light winds, and good visibility) although weather conditions were not always optimal.



## 6. Results

A total of 38 bird species was observed during point counts. This number increased to 46 when species observed outside of the point counts were included. The following section summarizes the findings from the 2009 breeding bird surveys. Species observed as possible, probable, or confirmed breeders are listed for each site along with their global ranks. A comprehensive species list for the study area and each property is provided in Appendix C. Global ranks (G Ranks) are also included; these are assigned by a consensus of the network of Conservation Data Centres, scientific experts, and the Nature Conservancy to designate a rarity rank based on the range-wide status of a species, subspecies, or variety.

G1 Extremely Rare - usually 5 or fewer occurrences in the overall range or very few remaining individuals; or because of some factor(s) making it especially vulnerable to extinction.

G2 Very Rare - usually between 5 and 20 occurrences in the overall range or with many individuals in fewer occurrences; or because of some factor(s) making it vulnerable to extinction.

G3 Rare to Uncommon - usually between 20 and 100 occurrences; may have fewer occurrences, but with a large number of individuals in some populations; may be susceptible to large-scale disturbances.

G4 Common - usually more than 100 occurrences; usually not susceptible to immediate threats.

G5 Very Common - demonstrably secure under present conditions.

**Table 1** lists all the species recorded from the study area and their preferred habitat.

**Table 1: Observed Bird Species and Preferred Habitat**

<b>Common Merganser (<i>Mergus merganser</i>) – G5</b> <b>Preferred Habitat:</b> Deep, clear lakes and rivers; nests in tree cavities or on ground near ponds and rivers.
<b>Lesser Scaup (<i>Aythya affinis</i>) – G5</b> <b>Preferred Habitat:</b> Nests in marshy vegetation in or near lakes and ponds.
<b>Common Goldeneye (<i>Bucephala clangula</i>) – G5</b> <b>Preferred Habitat:</b> Wetlands, rivers or lakes with deep (~2 m) water; open lakes with nearby woodlands and marshy edges. May also be found in bulrushes in water 1 m deep. Species breeding distribution depends on availability of trees >30 cm diameter at breast height (dbh).
<b>Bufflehead (<i>Bucephala albeola</i>) – G5</b> <b>Preferred Habitat:</b> Lakes, harbours, and bays; nests in tree cavities near ponds and rivers.
<b>Surf Scoter (<i>Melanitta perspicillata</i>) – G5</b> <b>Preferred Habitat:</b> Uncommon to rare inland, more common on open salt water. Nests on the ground near ponds, often under low branches of spruce trees.
<b>Spruce Grouse (<i>Falcapennis canadensis</i>) – G5</b> <b>Preferred Habitat:</b> Uncommon in dense spruce forests with mossy ground; nests on ground, often sits quietly in spruce trees, unwary and usually solitary.
<b>Willow Ptarmigan (<i>Lagopus lagopus</i>) – G5</b> <b>Preferred Habitat:</b> Tundra; nests on a raised hummock or ridge on the ground.
<b>Common Loon (<i>Gavia immer</i>) – G5</b> <b>Preferred Habitat:</b> nests on ground, usually on islands with undisturbed shorelines on large rivers or lakes; always very near water.

<p><b>Osprey</b> (<i>Pandion haliaetus</i>) – G5  <b>Preferred Habitat:</b> Lakes, rivers. Species nests in trees near water's edge or over water. Species will use artificial structures as well as nest in small, loose colonies.</p>
<p><b>Semipalmated Plover</b> (<i>Charadrius semipalmatus</i>) – G5  <b>Preferred Habitat:</b> Nests on tundra, sand and gravel bars along rivers and lake shorelines, usually near water; feeds on shorelines.</p>
<p><b>Wilson's Snipe</b> (<i>Gallinago gallinago</i>) – G5  <b>Preferred Habitat:</b> Freshwater marshes and swamps. Species often frequents open landscapes.</p>
<p><b>Spotted Sandpiper</b> (<i>Actitis macularia</i>) – G5  <b>Preferred Habitat:</b> A variety of habitat types near water. Species often forages on floating logs.</p>
<p><b>Solitary Sandpiper</b> (<i>Tringa solitaria</i>) – G5  <b>Preferred Habitat:</b> Nests in a spruce tree in a bog, heavily forested wetland, stream, or fen; will reuse other songbird nests. Feeds on aquatic invertebrates by stalking shorelines.</p>
<p><b>Herring Gull</b> (<i>Larus argentatus</i>) – G5  <b>Preferred Habitat:</b> Nests singly or colonially on undisturbed islands, peninsulas, cliffs, or open beaches, usually with other gulls.</p>
<p><b>Three-toed Woodpecker</b> (<i>Picoides tridactylus</i>) – G5  <b>Preferred Habitat:</b> Moist, mature or old growth coniferous woodlands of cedar-balsam fir. Species may be found near burns with stands of dead timber, as well as riparian areas, bogs. Species is loosely colonial where nesting habitat is particularly suitable and food supply abundant, furthermore uses dead trees &gt; 30 cm dbh and needs extensive (&gt;40 ha) of forest.</p>
<p><b>Northern Flicker</b> (<i>Colaptes auratus</i>) – G5  <b>Preferred Habitat:</b> Open deciduous, coniferous or mixed woodlands; forest edges; suburbs, farm woodlots and wetlands. May also use dead or dying trees with a dbh &gt;30 cm. Very adaptable, not dependent on forest size.</p>
<p><b>Yellow-bellied Flycatcher</b> (<i>Empidonax flaviventris</i>) – G5  <b>Preferred Habitat:</b> Coniferous forest of pine and spruce with dense shrubs. Species can also be found in shrubby spruce/alder swamps, and wet thickets bordering ponds, streams, bogs, and talus slopes.</p>
<p><b>Alder Flycatcher</b> (<i>Empidonax alnorum</i>) – G5  <b>Preferred Habitat:</b> Open areas with thickets bordering lakes or streams; low damp thickets in or near bogs, and swamps or marshes. Species prefers alders, willows, alders or sumacs.</p>
<p><b>Northern Shrike</b> (<i>Lanius excubitor</i>) – G5  <b>Preferred Habitat:</b> Uncommon to rare, nests in open spruce woods. Perches on high exposed branch or wire when foraging.</p>
<p><b>Gray Jay</b> (<i>Perisoreus canadensis</i>) – G5  <b>Preferred Habitat:</b> Coniferous, mixed wood forests; forest openings, and bogs. Requires varied forest structure for food storage. Species is highly territorial.</p>
<p><b>Common Raven</b> (<i>Corvus corax</i>) – G5  <b>Preferred Habitat:</b> Relatively undisturbed habitat of boreal or mixed forest. May nest on steep cliffs or in tall trees, uses and builds onto same nest in consecutive years.</p>
<p><b>Tree Swallow</b> (<i>Tachycineta bicolor</i>) – G5  <b>Preferred Habitat:</b> Nests singly in bird houses or tree cavities in open fields or over water; often in large flocks, forages over fields or water for berries and insects.</p>
<p><b>Boreal Chickadee</b> (<i>Poecile hudsonicus</i>) – G5  <b>Preferred Habitat:</b> Conifers (spruce), wooded swamps, bogs, and thickets. Species nests in natural cavities, woodpecker holes, or their own excavation in decaying wood. Species territory is about 1-2 ha of woodland.</p>
<p><b>Ruby-crowned Kinglet</b> (<i>Regulus calendula</i>) – G5  <b>Preferred Habitat:</b> Coniferous or mixed woodlands with stands of fir, spruce, tamarack or pine, evergreen in a variety of habitats. Also coniferous open/edge areas with thickets of brush and bogs.</p>
<p><b>Gray-cheeked Thrush</b> (<i>Catharus minimus</i>) – G5  <b>Preferred Habitat:</b> Moist northern woodlands and riparian areas up to Arctic tundra.</p>
<p><b>Swainson's Thrush</b> (<i>Catharus ustulatus</i>) – G5  <b>Preferred Habitat:</b> Coniferous forest interiors (spruce, fir), with deciduous shrubs. May also be found in low, damp woods near water and riverbanks. The species may also be observed in young or mature stands and will also use mixed woods.</p>

<p><b>Hermit Thrush</b> (<i>Catharus guttatus</i>) – G5  <b>Preferred Habitat:</b> Boreal forest or Great Lakes-St. Lawrence forest zones. Consisting of rocky, dry, jack pine forests, as well as dry sandy coniferous or deciduous woods with dense young undergrowth. Species may also be found in spruce bogs, borders of wooded swamps and damp forest, and brushy pasture. Species appears to need at least 100 ha of forest in south.</p>
<p><b>American Robin</b> (<i>Turdus migratorius</i>) – G5  <b>Preferred Habitat:</b> Residential areas, gardens, ornamental trees, shrubberies. May also be found in forest edges and openings, burns, cut-over areas, as well as fens, bogs; lake or river shores.</p>
<p><b>Nashville Warbler</b> (<i>Vermivora ruficapilla</i>) – G5  <b>Preferred Habitat:</b> Wet, open coniferous/deciduous/mixed woods of young secondary growth. Also cedar, spruce swamps; dry or moist overgrown pastures/old field with scattered trees and shrubs. Species nests in depressions in ground under dead, dry ferns.</p>
<p><b>Tennessee Warbler</b> (<i>Vermivora peregrine</i>) – G5  <b>Preferred Habitat:</b> Brushy, semi-open land including grassy openings in coniferous/deciduous/mixed woods with dense shrubs and scattered clumps of young trees. Species can also be found in treed fens or boggy areas, dry pine plantations and beach ridges.</p>
<p><b>Yellow Warbler</b> (<i>Dendroica petechia</i>) – G5  <b>Preferred Habitat:</b> Habitat: Open areas with dense scrub, shrubby wetland areas; stream and river banks or lakeshores with scattered small trees or dense shrubbery. May also be found in farmlands, orchards or suburban yards.</p>
<p><b>Yellow-rumped Warbler</b> (<i>Dendroica coronata</i>) – G5  <b>Preferred Habitat:</b> Dry coniferous or mixed forests dominated by fir, spruce, pine, hemlock or cedar with scattered openings from logging, fire or abandoned fields. May also be found in evergreen plantations; young coniferous growth at woodland edges as well as wetter habitat of black spruce or tamarack. Species is adaptable and opportunistic.</p>
<p><b>Blackpoll Warbler</b> (<i>Dendroica striata</i>) – G5  <b>Preferred Habitat:</b> Coniferous forests during breeding season; during migration found chiefly in tall deciduous/coniferous trees.</p>
<p><b>Yellow Palm Warbler</b> (<i>Dendroica palmarum</i>) – G5  <b>Preferred Habitat:</b> Open bogs with a border of spruce or other trees, will also use edge or open habitats like weedy fields, dunes.</p>
<p><b>Northern Waterthrush</b> (<i>Seiurus noveboracensis</i>) – G5  <b>Preferred Habitat:</b> Cool, shady wet ground with open shallow pools; shrubby tangles and fallen logs. May be found in wooded swamps, bogs, creeks, stream banks or lakeshores. Species nests in banks, upturned tree roots, under mossy logs or stumps.</p>
<p><b>Wilson's Warbler</b> (<i>Wilsonia pusilla</i>) – G5  <b>Preferred Habitat:</b> Boggy areas with cedar, tamarack or spruce. As well as swampy, brushy lands, streamside thickets and tangles. Species may also be found in wet, wooded high shrubs or low deciduous trees.</p>
<p><b>White-crowned Sparrow</b> (<i>Zonotrichia leucophrys</i>) – G5  <b>Preferred Habitat:</b> Nests on ground in open area/shrub growth; woodland or stream edge, forest burns, willow clumps on tundra.</p>
<p><b>White-throated Sparrow</b> (<i>Zonotrichia albicollis</i>) – G5  <b>Preferred Habitat:</b> Coniferous or mixed, semi-open forests with jack pine or spruce, balsam fir, aspen, and white birch. May also be found in old cut-overs or burns with forest regeneration and slash piles, brushy clearings, and borders of bogs. Nests on ground in brush piles or under logs.</p>
<p><b>American Tree Sparrow</b> (<i>Spizella arborea</i>) – G5  <b>Preferred Habitat:</b> Open areas with scattered trees, brush; low-lying tundra with stands of shrubs, stunted willow, birch, alder. During winter, species may be found in weedy, brushy fields, open country with groves of small trees, hedgerows, and marshes</p>
<p><b>Dark-eyed Junco</b> (<i>Junco hyemalis</i>) – G5  <b>Preferred Habitat:</b> Coniferous woodlands with aspen, birch and clearings; young jack pine stands; burned areas, and forest edges. Species may also be found in borders of streams or clearings. Nests in depression on ground, under cover (e.g., logs, roots, etc.).</p>
<p><b>Lincoln's Sparrow</b> (<i>Melospiza lincolni</i>) – G5  <b>Preferred Habitat:</b> Nests in dense brushy areas near water, usually solitary.</p>
<p><b>Fox Sparrow</b> (<i>Passerella iliaca</i>) – G5  <b>Preferred Habitat:</b> Thickets and edges of coniferous, mixed, or second-growth forests or chaparral.</p>
<p><b>Rusty Blackbird</b> (<i>Euphagus carolinus</i>) – G5  <b>Preferred Habitat:</b> Openings in coniferous woodlands bordering bodies of water as well as tree-bordered marshes, beaver ponds, muskegs, bogs, fens or wooded swamps. Species may also be found in stream borders with alder, willow; wooded islands on lakes.</p>

<b>Pine Grosbeak</b> ( <i>Pinicola enucleator</i> ) – G5 <b>Preferred Habitat:</b> Open coniferous forests with spruce or fir as well as forest edges, and clearings.
<b>White-winged Crossbill</b> ( <i>Loxia leucoptera</i> ) – G5 <b>Preferred Habitat:</b> Boreal forest with tamarack, spruce, fir or hemlock.
<b>Common Redpoll</b> ( <i>Carduelis flammea</i> ) – G5 <b>Preferred Habitat:</b> Low shrub tundra or barren-lands with patches of spruce, tamarack, alder, and willow thickets. Species winters near alder/birches in snow-covered weedy fields, frequents feeders.

## 6.1 James Property

A total of 27 species was observed at the James property, all of which displayed some level of breeding activity. One of the 27 species was a confirmed breeder, one was a probable breeder, and the remainder were classified as possible breeders.

## 6.2 Redmond Property

A total of 21 species was recorded at the Redmond property, all of which demonstrated some level of breeding activity. Two species were confirmed breeders, two were probable breeders, and the remainder were classified as possible breeders.

## 6.3 Silver Yards Property

A total of 17 species was observed at the Silver Yards property, all of which displayed some level of breeding activity. One species was classified as a confirmed breeder; the remainder were classified as possible breeders.

## 6.4 Knob Lake Property

A total of 18 species was observed at the Knob Lake property, 16 of which displayed some level of breeding activity. Four of these species were confirmed breeders; the remainder were classified as possible breeders. Two Herring Gulls and a Common Raven were observed, though they did not display any evidence of breeding at the site.

## 6.5 Houston Property

A total of 20 species was observed at the Houston property, 18 of which displayed some level of breeding activity. Two species were confirmed breeders, two were probable, and the remainder were possible breeders. A Herring Gull and a Common Goldeneye were observed but exhibited no evidence of breeding on the site.

## 6.6 Howse Property

Despite the unique characteristics associated with the Howse property, the site had populations of breeding birds similar to those recorded in the other, more heavily-forested study sites. A total of 15 species was observed at the Howse property, all of which displayed some level of breeding activity. One species was a confirmed breeder, one was classified as a probable breeder, and the remainder were classified as possible breeders.

## 6.7 Road Crossing Corridor

A total of 17 species was observed along the proposed road crossing corridor, all of which displayed some level of breeding activity. One was a confirmed breeder, two were probable, and the remainder were classified as possible breeders.

## 6.8 Other Observations

### 6.8.1 Species Observed Outside of Point Counts

Some species were not observed while conducting point counts but were observed either after the survey period or while travelling to and from study sites. Those species are listed in **Table 2**.

**Table 2: Species Observed Outside of Point Counts**

Scientific Name	Common Name	Total Observed	Location	Notes on Observation/Breeding Evidence
<i>Gavia immer</i>	Common Loon	3	Houston, Town of Schefferville	One observed flying south over town, and a pair observed calling loudly while circling overhead of main road in Houston, over suitable breeding habitat
<i>Falcapennis canadensis</i>	Spruce Grouse	1	Houston	A female observed flying away from the road, in suitable breeding habitat
<i>Lagopus lagopus</i>	Willow Ptarmigan	1	Howse	A female observed running into cover, in suitable breeding habitat
<i>Charadrius semipalmatus</i>	Semipalmated Plover	1	Howse	One observed foraging in a small drainage area by the main service road, not in suitable breeding habitat
<i>Tringa solitaria</i>	Solitary Sandpiper	1	Redmond	One observed agitated, calling from atop a spruce, in suitable breeding habitat
<i>Lanius excubitor</i>	Northern Shrike	1	Redmond	One observed hunting insects from a tree perch, in suitable breeding habitat
<i>Tachycineta bicolor</i>	Tree Swallow	7	Town of Schefferville	Several pairs confirmed breeding, observed using nest boxes and feeding young
<i>Melospiza lincolnii</i>	Lincoln's Sparrow	4	Town of Schefferville	Several males heard singing on town periphery from suitable breeding habitat

## 6.8.2 Mammals

All mammals or mammal signs observed within or adjacent to the study area were recorded, both during and outside of the point count periods. A list of mammals observed is provided in Table 3.

**Table 3: Mammals Observed Within/Adjacent to Study Area**

Scientific Name	Common Name	Number	Location	Notes on Observation
<i>Rangifer tarandus</i>	Woodland Caribou	-	Howse	Relatively fresh scat was observed in the middle of the main service road, at the far north end of Howse.
<i>Lynx canadensis</i>	Lynx	1	Road Crossing (West), by Point 3	Single adult observed walking north on the railway.
<i>Mustela erminea</i>	Short-tailed Weasel	1	Silver Yard Point 2	Single adult observed taking cover on a talus slope.
<i>Ursus americanus</i>	Black Bear	Minimum of 11	Schefferville Dump	Scat and tracks observed throughout study area. Adults and one yearling observed foraging at dump. One adult observed by James point count station 1.
<i>Canis lupus</i>	Gray Wolf	1	Beside road by Dump	Scat and tracks observed throughout study area. One adult observed along main road outside of dump.
<i>Vulpes vulpes</i>	Red Fox	1	Silver Yard Point 7	One adult observed foraging along bare rock at Silver Yards. Scats and/or tracks at Houston, Howse and Silver Yard.
<i>Tamiasciurus hudsonicus</i>	Red Squirrel	11	Throughout study area	Typically observed by their scolding calls.
<i>Lepus americanus</i>	Snowshoe Hare	2	Road Crossing (West)	Smaller individuals (possibly young of year) observed taking cover off ATV trail while en route back from surveying.

## 7. Discussion

In comparison with the 2008 results, the 2009 surveys yielded lower species diversity and overall numbers of birds, particularly waterfowl and land passerines, being recorded throughout the study area. The only species observed in 2009 that was not observed in 2008 is the Bufflehead; Table 4 lists the species observed in 2008 that were not observed in 2009.

**Table 4: Species Observed in 2008 That Were Not Observed in 2009**

Scientific Name	Common Name
<i>Anas crecca</i>	Green-winged Teal
<i>Aythya collaris</i>	Ring-necked Duck
<i>Aythya marila</i>	Greater Scaup
<i>Melanitta fusca</i>	White-winged Scoter
<i>Haliaeetus leucocephalus</i>	Bald Eagle
<i>Tringa melanoleuca</i>	Greater Yellowlegs
<i>Limnodromus griseus</i>	Short-billed Dowitcher
<i>Troglodytes troglodytes</i>	Winter Wren
<i>Anthus rubescens</i>	American Pipit
<i>Vermivora celata</i>	Orange-crowned Warbler
<i>Carduelis pinus</i>	Pine Siskin

The likely reason for the lower diversity and overall numbers recorded in 2009 was a significantly late onset of spring weather combined with a cooler-than-average summer in the study area. Residents of Schefferville stated that 2009's spring snow melt was later than usual, and that the summer seemed cooler and less sunny. Residents also stated that the local wild berry crop was far less than previous summers. These conditions are likely to negatively affect all wildlife populations as well, including birds.

### 7.1 James Property

The most frequently recorded species at the James property preferred spruce forest, followed by those that preferred wetland, open, successional, or shrub habitat (see Table 5). Dark-eyed Junco was the most commonly-observed species, and was recorded from the most locations. Northern Waterthrush was found on 8 of 13 counts and is commonly associated with wetland-adjacent alder thickets. White-throated Sparrow was recorded on 7 of 13 point count stations and was usually found in moist or bog-like habitats.

**Table 5: Most Frequently Observed Species - James Property**

	Species	Number of Survey Points Recorded	Total Number of Observations	Average Number per Point Count	Foraging Guild
1	Dark-eyed Junco	11 / 13	19	0.7	spruce
2	Fox Sparrow	10 / 13	15	1.2	spruce

	Species	Number of Survey Points Recorded	Total Number of Observations	Average Number per Point Count	Foraging Guild
3	Swainson's Thrush	9 / 13	17	1.3	spruce
4	Northern Waterthrush	8 / 13	10	0.8	wetland / successional
5	American Robin	8 / 13	10	0.8	spruce / open
6	White-throated Sparrow	7 / 13	8	0.6	spruce / wetland
7	Blackpoll Warbler	7 / 13	10	0.8	spruce / shrub
8	White-crowned Sparrow	7 / 13	9	0.7	spruce / open

Species of note included:

**Alder Flycatcher** - Three birds noted on three counts. This observation is marginally north of its mapped range.

**White-throated Sparrow** - Eight birds noted on seven counts. Observations are marginally north of its mapped range.

**Swainson's Thrush** - A total of 17 birds noted on nine counts. Observations are marginally north of its mapped range.

**Gray-cheeked Thrush** - Two individuals noted on one point count, listed as 'Vulnerable' [Schedule C] for Newfoundland and Labrador.

**Nashville Warbler** - One male noted on one count. This observation is marginally north of where it is mapped as rare.

**Yellow Palm Warbler** - One bird noted on one count. This observation is approximately 250 km north of its mapped range.

**Rusty Blackbird** - One bird noted on one count. COSEWIC Special Concern species, listed as 'Vulnerable' [Schedule C] for Newfoundland and Labrador.

## 7.2 Redmond Property

The most frequently recorded species at the Redmond property were those that preferred primarily spruce forest, followed by those that preferred open, wetland, shrub and successional habitat (see Table 6). White-crowned Sparrow was the most common species, both in terms of the number of individuals and point count stations where they were observed. Alder Flycatcher and Northern Waterthrush were recorded at four of the 24 counts and were commonly associated with wetlands and shrub/alder/successional habitat.

**Table 6: Most Frequently Observed Species - Redmond Property**

	Species	Number of Survey Points Recorded	Total Number of Observations	Average Number per Point Count	Foraging Guild
1	White-crowned Sparrow	16 / 24	26	1.1	spruce / open
2	Dark-eyed Junco	12 / 24	19	0.8	spruce



	Species	Number of Survey Points Recorded	Total Number of Observations	Average Number per Point Count	Foraging Guild
3	Swainson's Thrush	10 / 24	13	0.5	spruce
4	Fox Sparrow	9 / 24	12	0.5	spruce
5	White-winged Crossbill	8 / 24	12	0.5	spruce
6	American Robin	7 / 24	9	0.4	spruce / open
7	Alder Flycatcher	4 / 24	4	0.2	alder / shrub / wetland
8	Northern Waterthrush	4 / 24	5	0.2	wetland / successional

Species of note included:

**Alder Flycatcher** - Four birds recorded at four point count stations. Observations are marginally north of its mapped range.

**Swainson's Thrush** - A total of 13 birds recorded at 10 point count stations. Observations are marginally north of its mapped range.

**White-throated Sparrow** - Three birds recorded at three point count stations. Observations are marginally north of its mapped range.

**Rusty Blackbird** - One bird recorded at one point count station. COSEWIC Special Concern species, listed as 'Vulnerable' [Schedule C] in Newfoundland and Labrador.

### 7.3 Silver Yards Property

The most frequently recorded species at the Silver Yards property preferred spruce forest (see Table 7). This site had the highest number of species that favour wetlands and successional/shrub habitats, such as Alder Flycatcher, Yellow Warbler and Northern Waterthrush. White-crowned Sparrow was the most common species, both in terms of the number of individuals and point count stations where they were observed. The occurrences of Common Raven could be directly attributed to the proximity of the Schefferville dump, or the nearby cliffs that may have served as nesting grounds.

**Table 7: Most Frequently Observed Species - Silver Yards Property**

	Species	Number of Survey Points Recorded	Total Number of Observations	Average Number per Point Count	Foraging Guild
1	White-crowned Sparrow	6 / 7	12	1.7	spruce / open
2	Fox Sparrow	5 / 7	7	1.0	spruce
3	Yellow-rumped Warbler	5 / 7	6	0.9	spruce
4	Common Raven	4 / 7	6	0.9	various
5	Alder Flycatcher	3 / 7	3	0.4	alder / shrub / wetland
6	Blackpoll Warbler	3 / 7	3	0.4	spruce / shrub
7	Swainson's Thrush	2 / 7	2	0.3	spruce
7	Yellow Warbler	2 / 7	2	0.3	shrub / wetland / successional

	Species	Number of Survey Points Recorded	Total Number of Observations	Average Number per Point Count	Foraging Guild
7	Northern Waterthrush	2 / 7	2	0.3	wetland / successional
7	Dark-eyed Junco	2 / 7	2	0.3	spruce

Species of note included:

**Alder Flycatcher** - Three birds recorded at three point count stations. Observations are marginally north of its mapped range.

**Swainson’s Thrush**- Two birds recorded at two point count stations. Observations are marginally north of mapped range.

**Gray-cheeked Thrush** - One bird recorded at one point count station; listed as ‘Vulnerable’ [Schedule C] in Newfoundland and Labrador.

**Nashville Warbler** - Three males recorded at one point count station. Observations are marginally north of where it is mapped as rare.

**White-throated Sparrow** - Two birds recorded at one point count station. Observations are marginally north of its mapped range.

## 7.4 Knob Lake Property

The most frequently recorded species from the Knob Lake property were those that preferred spruce forest and open habitat. Dark-eyed Junco was the most frequently-recorded species and, along with White-crowned Sparrow, was recorded at eight of the nine point count stations (see Table 8).

**Table 8: Most Frequently Observed Species - Knob Lake Property**

	Species	Number of Survey Points Recorded	Total Number of Observations	Average Number per Point Count	Foraging Guild
1	Dark-eyed Junco	8 / 9	11	1.2	spruce
2	White-crowned Sparrow	8 / 9	9	1.0	spruce / open
3	American Robin	6 / 9	6	0.7	spruce / open
4	Yellow-rumped Warbler	5 / 9	6	0.7	spruce
5	Gray Jay	4 / 9	6	0.7	spruce / open
6	Swainson’s Thrush	4 / 9	4	0.4	spruce
7	Blackpoll Warbler	4 / 9	5	0.6	spruce / shrub
8	Fox Sparrow	4 / 9	6	0.7	spruce

Species of note included:

**Bufflehead** - One adult female with a brood of four downy young. This observation is well north of its mapped breeding range, by approximately 700 km.

**Swainson’s Thrush** - Four birds recorded at four point count stations. Observations are marginally north of mapped range.

**White-throated Sparrow** - One bird recorded at one point count station. This observation is marginally north of its mapped range.

**Rusty Blackbird** - One bird recorded at one point count station. COSEWIC Special Concern species, listed as ‘Vulnerable’ [Schedule C] in Newfoundland and Labrador.

## 7.5 Houston Property

The most frequently recorded species from the Houston property preferred spruce forest and/or open habitat. White-crowned Sparrow was the most frequently-recorded species, while Dark-eyed Junco was recorded at the most locations. Fox Sparrow and American Robin were also common, and were recorded at 11 and 10 of the 20 point count stations, respectively. All other species observed were recorded in lower numbers (see Table 9).

**Table 9: Most Frequently Observed Species - Houston Property**

	Species	Number of Survey Points Recorded	Total Number of Observations	Average Number per Point Count	Foraging Guild
1	Dark-eyed Junco	13 / 20	13	0.7	spruce
2	White-crowned Sparrow	12 / 20	27	1.4	spruce / open
3	Fox Sparrow	11 / 20	12	0.6	spruce
4	American Robin	10 / 20	15	0.8	spruce / open
5	Boreal Chickadee	4 / 20	4	0.2	spruce /
6	Swainson’s Thrush	3 / 20	3	0.2	spruce
7	Common Redpoll	3 / 20	5	0.3	successional / alder
8	Blackpoll Warbler	2 / 20	3	0.2	spruce / shrub
8	Pine Grosbeak	2 / 20	3	0.2	spruce
8	Gray Jay	2 / 20	2	0.1	spruce / open
8	Yellow-rumped Warbler	2 / 20	2	0.1	spruce

Species of note included:

**Alder Flycatcher** - One bird recorded at one point count station. This observation is marginally north of its mapped range.

**Swainson’s Thrush** - Three birds recorded at three point count stations. Observations are marginally north of its mapped range.

**White-throated Sparrow** - One bird recorded at one point count station. This observation is marginally north of its mapped range.

## 7.6 Howse Property

The most frequently recorded species at the Howse property was White-crowned Sparrow, which prefers spruce and/or open habitats. American Tree Sparrow, which prefers taiga or open habitats, was observed at seven of the 13 survey points (see Table 10). Common Redpoll, which prefers successional or thicket habitat, was observed at six of the 13 point count stations.

**Table 10: Most Frequently Observed Species - Howse Property**

	Species	Number of Survey Points Recorded	Total Number of Observations	Average Number per Point Count	Foraging Guild
1	White-crowned Sparrow	11 / 13	30	2.3	spruce / open
2	American Tree Sparrow	7 / 13	11	0.8	taiga / open
3	American Robin	6 / 13	8	0.6	spruce / open
4	Common Redpoll	6 / 13	7	0.5	successional / alder
5	Blackpoll Warbler	3 / 13	3	0.2	spruce / shrub
6	Dark-eyed Junco	3 / 13	4	0.3	spruce
7	Gray Jay	2 / 13	2	0.2	spruce / open
8	Fox Sparrow	2 / 13	2	0.2	spruce

Species of note included:

**Swainson's Thrush** - One bird recorded at one point count station. This observation is marginally north of its mapped range.

**Yellow Palm Warbler** - One bird recorded at one point count station. This observation is approximately 250 km north of its mapped range.

**Rusty Blackbird** - A pair of adult birds, one carrying food in its beak, was recorded at one point count station. COSEWIC Special Concern species, listed as 'Vulnerable' [Schedule C] in Newfoundland and Labrador.

## 7.7 Road Crossing Corridor

The most frequently recorded species from the Road Crossing corridor preferred spruce forest or a mix of spruce forest and open areas (see Table 11). Swainson's Thrush was the most common species, and was observed at all of the point count stations.

**Table 11: Most Frequently Observed Species – Proposed Road Crossing Corridor**

	Species	Number of Survey Points Recorded	Total Number of Observations	Average Number per Point Count	Foraging Guild
1	Swainson's Thrush	11 / 11	18	1.6	spruce
2	White-throated Sparrow	9 / 11	13	1.2	spruce / wetland
3	American Robin	7 / 11	7	0.6	spruce / open
4	White-crowned Sparrow	6 / 11	9	0.8	spruce / open
5	Fox Sparrow	5 / 11	5	0.5	spruce
6	Dark-eyed Junco	5 / 11	8	0.7	spruce
7	Yellow-rumped Warbler	3 / 11	4	0.4	spruce
8	Hermit Thrush	3 / 11	4	0.4	spruce / shrub

Species of note included:

**Swainson's Thrush** - 18 birds recorded at 11 point count stations. Observations are marginally north of its mapped range.

**White-throated Sparrow** - 13 birds recorded at 11 point count stations. Observations are marginally north of its mapped range.

## 7.8 Extra-limital Species

At this time there are no Breeding Bird Atlas data available for northern Quebec and Labrador that include the study area. As such, the range limits used in this report are based on The Sibley Field Guide to Birds of Eastern North America (2003). Based on the range maps provided in that field guide, six species recorded during the 2009 surveys are considered to be extra-limital (i.e., recorded outside of their recognized range). Descriptions of these species, and their observations during the 2009 surveys, are as follows:

**Bufflehead** was found at three point count stations: one adult female at **Houston**, one adult female at **James**, and one adult female with four ducklings at **Knob Lake**. These observations are well north, approximately 700 to 800 km, of the species' known breeding range, and they are considered rare on the north-northeast shore of Labrador approximately 600 km to the east. This breeding record and the observation of two separate single females show that this species may be more common inland than previous sources indicate.

**Alder Flycatcher** was found at 13 point count stations: five points in **James**, four points in **Redmond**, one point in **Houston** and three points in **Silver Yard**. These observations are marginally north (~100 km) of the species' known breeding range. This species was also observed during the 2008 survey.

**Swainson's Thrush** was found at 29 point count stations, distributed throughout all of the study sites. The Sibley Guide shows that these observations are marginally north (~100 km) of the species' known breeding range. This species was also observed during the 2008 survey.

**Nashville Warbler** was found at two point count stations: one singing male at the **James** property, and another three singing males at one point count station at the **Silver Yard** site. These observations are

marginally north of where the species is mapped as rare. The four observations of this species, especially the occurrence of three singing males at the same station, suggest that Nashville Warbler is a more regular visitor than its mapped distribution would indicate. This species was also observed during the 2008 survey.

**Yellow Palm Warbler** was found at two point count stations; one singing male at **Howse**, and another singing male at **James**. These observations are approximately 250 km north of its mapped range. This species was also observed during the 2008 survey.

**White-throated Sparrow** was found at 24 point counts, at all of the study sites except **Howse**. The Sibley Guide shows that these observations are marginally north (~100 km) of the species' known breeding range. This species was also observed during the 2008 survey.

The observations of extra-limital species could reflect either a lack of knowledge of these species' northern limits, or an example of natural or climate change-based northward range expansion since the period their ranges were last documented. Although the Bufflehead observations were far enough from their known range to designate them as vagrant records, the fact that more than one Bufflehead was observed (including an observation of an adult female with young), indicates that they are more likely representative of a previously undocumented inland-Labrador breeding population, the extent of which would require further study by the scientific ornithological community. None of the extra-limital species observed are ranked as a species at risk either provincially or nationally.

## 7.9 Assessment of Significance

This section summarizes globally, nationally and provincially significant bird species that have been found in the study area.

### 7.9.1 Globally Significant

All birds observed are ranked as G5, which means they are considered to be "very common". No globally significant bird species were observed within the study area.

### 7.9.2 Federally Significant

Rusty Blackbird: Classified as "Special Concern" by COSEWIC. The species was observed at the James, Redmond, Knob Lake, and Howse properties during the 2009 surveys. Only one bird was recorded during the 2008 surveys. The entire study area is well within this species' core range, and suitable breeding and foraging habitats (i.e., spruce trees beside bogs and wetlands, wooded swamps) are widespread. It is likely that this species is more common and widespread throughout the study area than indicated by the surveys conducted to date.

### 7.9.3 Provincially Significant

Rusty Blackbird: listed as 'Vulnerable' [Schedule C] in Newfoundland and Labrador. See description in Section 7.9.2.

Gray-cheeked Thrush: listed as 'Vulnerable' [Schedule C] in Newfoundland and Labrador. The species was recorded at both the James and Silver Yard properties during the 2009 surveys. During the 2008 surveys, it was recorded with possible or probable breeding evidence in all survey locations. The entire study area is well within this species' core range, and it is likely that all resident birds are breeding on-site.

## 8. Conclusions and Recommendations

As LIM prepares to initiate the development of the pits and construct the new road crossing, efforts should be made to minimize negative impacts to wildlife, and generally avoid any nesting birds or significant bird habitats. The lack of observations of species during either survey season does not preclude their presence, as many species expected to occur within that area of Labrador and Quebec can be cryptic and difficult to detect even under ideal survey conditions. Any other bird species whose status changes during the interim period between this report and the mining/land clearing activities should be handled on a case-by-case basis by evaluating habitat requirements, local status and abundance, and alternatives designed to lessen impacts. Certain habitat types should be given higher levels of scrutiny, based on their comparative rarity within the study areas. These would include all wetland habitats (marshes, bogs, fens, etc.) as well as locally unusual areas such as sub-arctic tundra and alpine tundra. Although all species of birds potentially affected by mining activities should be given due consideration, this section focuses on species with an at-risk status that are likely to be affected.

Rusty Blackbird – The Rusty Blackbird is listed by COSEWIC as a species of Special Concern, and is listed as 'Vulnerable' on Schedule C of the Newfoundland and Labrador Endangered Species Act. In 2009, a total of five birds were observed from four study sites, which is more than the single bird recorded during the 2008 surveys. However, the lack of observations in other study sites does not preclude their presence. This species would be affected where their breeding and foraging habitat (spruce trees beside bogs and wetlands, wooded swamps) is disturbed or removed.

There are numerous areas of habitat suitable for this species within and adjacent to the study area. In order to lessen potential impacts, the clearing of vegetation generally takes place in the fall or winter after the bird breeding season to limit the destruction of bird nests to adhere to the federal Migratory Bird Act. Also, a 15 m buffer from bodies of water or watercourses is standard in accordance with the Newfoundland and Labrador Policy for Flood Plain Management as administered by the Department of Environment and Conservation (Government of Newfoundland and Labrador, 1996). Displacement of Rusty Blackbird is not likely to be a significant impact as this species may likely relocate to other nearby suitable habitat. It is recommended that land clearing for any purpose must be undertaken during breeding periods (the months of May through mid-August specifically). A qualified ornithologist should perform nest searches in any area that will be affected by the mining activities, to ensure that nesting birds are not disturbed or displaced.

Gray-cheeked Thrush – This species is listed as 'Vulnerable' on Schedule C of the Newfoundland and Labrador Endangered Species Act. Although it was found in only two study locations during the 2009 survey period, it was found in all study locations during the 2008 season. As such, the lack of observations in other study locations this year does not preclude their presence. This species would likely be affected by the mining activities due to the widespread distribution of its habitat (spruce woods) within the study site. As with the Rusty Blackbird, displacement of this species is not likely to be a significant impact as this species may likely relocate to other nearby suitable habitat. At a minimum, all land clearing should be undertaken outside of the breeding periods. It is recommended that land clearing be undertaken during breeding periods (the months of May through mid August specifically). A qualified ornithologist should perform nest searches in any area that will be affected by the mining activities, to ensure that nesting birds, especially those that are listed species at risk, are not disturbed or displaced.

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