GroupeHemispheres

Common Nighthawk survey for the Howse Project, Labrador

HML
Howse Minerals Limited

Technical Report

Our file: PR185-23-15

September 2015

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LIST OF ABBREVIATIONS AND SYMBOLS

^{0}C	Degrees Celsius
AOU	American Ornithologists' Union
COSEWIC	Committee on the Status of Endangered Wildlife in Canada
DSO	Direct Shipping Ore
EIS	Environmental Impact Statement
EPR	Environment Protection Report
GNL	Government of Newfoundland and Labrador
hr	Hour
km	Kilometer
km/hr	Kilometer per hour
m	Meter
min	Minute
NLDEC	Newfoundland and Labrador Department of Conservation
SARA	Species at Risk Act
TSMC	TATA Steel Minerals Canada

1 INTRODUCTION

HML is currently studying the development of the Howse Project in Labrador, located about 25 km north-west of Schefferville, Quebec. In March 2015, Environment Canada raised concerns over the Common Nighthawk (*Chordeleis minor*) after the review of the first draft of the Howse EIS. Concern was based on the presence of suitable habitat for the Common Nighthawk in the vicinity of the Howse Project.

Previously, no standard studies have ever been conducted in the region to determine the presence of this species. In order to address this concern, an in-depth survey of the Common Nighthawk was conducted on the Howse property during summer 2015. Groupe Hémisphères was mandated by HML to conduct a survey dedicated to this species.

2 COMMON NIGHTHAWK - LITTERATURE REVIEW

2.1 Status

The Common Nighthawk has exhibited a sharp population decline since 1970 across Canada (COSEWIC, 2007). Reasons for this decline are not fully understood. However, it is suggested that the downward trend experienced by the Common Nighthawk, and of aerial insectivore populations in general, is linked to changes in populations of flying insects.

The common Nighthawk is designated threatened under the SARA and is listed on Schedule 1 (SARA, 2015) and by the COSEWIC (2015). It is also designated as threatened by GNL (NLDEC, 2015). The Common Nighthawk, its nests, and its eggs are protected under the federal Migratory Birds Convention Act, 1994.

2.2 Ecology

Common Nighthawk is a nocturnal species which show peak activity after dusk and before dawn (Fisher *et al*. 2004). Nesting habitat includes logged or slashburned areas of forest, woodland clearings, open forests, rock outcrops, and flat gravel rooftops of city building (Brigham *et al*. 2004). Typically, two eggs are laid on bare soil, gravel or flat rocks.

Nighthawk activity is influenced by weather, insect emergences, timing of nesting effort, time of day and may be influenced by lunar phase (Mills, 1986; Brigham and Barclay, 1992). Common Nighthawk forage anywhere between 1 and 80 m above ground and can be found between 125 m to 6 km from their day roost site (Fisher *et al*. 2004). Therefore, the study area encompasses a 6 km radius around the projected mining activities.

2.3 Distribution

In Newfoundland and Labrador, the Common Nighthawk breeds only in the southern part of Labrador and rarely seen in insular Newfoundland (NLDEC, 2015). Figure 1 presents the Labrador range. In the province of Quebec, the 54th parallel is considered its northern limit (COSEWIC, 2007). The species has never been recorded in Schefferville region (AONQ, 2015; ebird, 2015).

Source: NLDEC, 2015

Figure 1. Common Nighthawk Distribution in NFL

3 METHODOLOGY

3.1 Classification

The English, French and Latin names of birds are based on the 7th edition and 54th supplement to the list of birds North America (AOU, 2013).

3.2 Study Area

Considering that Common Nighthawk can be found between 125 m to 6 km from their day roost site (Fisher *et al*., 2004), location of potential point counts for the species revolves around a 6 km radius from the Howse mining activities. However, point counts closer to the project were prioritized in this survey.

3.3 Common Nighthawk Survey Technique

Common Nighthawk survey protocol was based on the Common Nighthawk Survey Protocol in Saskatchewan (Saskatchewan Ministry of Environment, 2015) which used the existing route system. Stops were spaced at least 800 m apart. Point counts were conducted in the evening, starting 1 hour before sunset and ending no later than 1 hour after sunrise. To ensure surveying the species during peak activity periods, a maximum of eight stops were conducted per night. Upon arriving at a survey location, all lights were extinguished, followed by 1 minute of silence before commencing the survey. Point counts consist of 3 consecutive 2-minute passive-listening intervals, followed by a 2-minute Common Nighthawk broadcast call playback, then another 2-minute listening period. Total time at each point count were a minimum of 12 minutes (+ one minute of silence from the start). Playback was carried out using mp3 player and speaker Pignose Legendary 7-100 model.

The following information was recorded in Bird Survey Loadform at each stop:

- Temperature
- Wind velocity
- Cloud cover
- Start time and date
- Presence or absence of Common Nighthawk
- Description of the surrounding habitat
- Other species of interest
- Photographs (whenever possible)

Figure 1 (in Appendix I) presents the eight point counts spaced 800 m apart along the road. One point count was located in Howell River Valley since the temperature was expected to be warmer at this site, therefore resulting in a better foraging habitat for an aerial insectivorous. All point counts were visited twice, once on June 23rd and once on July 15th 2015.

3.4 Other species of interest

In order to add complementary information on locally-breeding species, other observations were also compiled.

4 RESULTS AND DISCUSSION

4.1 Survey Conditions

Observation conditions varied from good to excellent with temperature variation between 7°C and 20°C. Cloud cover was variable during the rest of the survey period, but no rain and fog were encountered. On June 23rd, the survey took place between 20:06 and 22:10 while on July 15th, surveys took place between 20:05 and 22:13.

Detailed conditions are presented in Appendix II.

4.2 Effort

Table 1 shows the effort for the Common Nighthawk point counts per biotope. A total of 3:12 hours were dedicated to the detection of the Common Nighthawk at 8 different point counts.

Table 1. Survey Effort in Common Nighthawk Point Counts

BIOTOPE	CONIFEROUS FOREST	SHRUBLAND	TUNDRA	ROCK OUTCROP / BARE GROUND
Point counts per biotope	4	2	1	1
Amount of Time Per biotope	1 h 36	0 h 48	0 h 24	0 h 24
Point counts Name	ENAM05, ENAM06, ENAM07, ENAM08	ENAM21, ENAM47	ENAM34	ENAM43

4.3 Common Nighthawk Presence

No Common Nighthawk were found during the surveys despite the use of playback. However, considering that there are no previous historical records in Schefferville region (Groupe Hémisphères, 2008; AECOM, 2009; Group Hémisphères, 2009; 2012; ebird, 2015), it was not unexpected that the species would not be found on the Howse property. In particular, local weather conditions are suboptimal for a nocturnal insectivorous bird. Records at the Schefferville weather station (Environment Canada, 2015) show that in June 2015, 20 days out of 30 had a minimum nightly temperature below 7°C while in July of the same year, there were 15 days out of 31 with the same conditions. Temperatures below 7°C are considered critical for nighthawk foraging behavior due to low insect activity rates (Saskatchewan Ministry of Environment, 2015). Therefore, it appears unlikely that breeding could occur under such severe conditions. Further, the Howse area is approximately 100 meters higher in elevation than the Schefferville weather station and even colder temperatures are expected to occur.

4.4 Other species

As complementary information, Table 2 shows a complete list of the 35 species of birds that were found on Howse property during summer 2015.

Table 2. List of birds encountered in the Howse Local study area during summer 2015

COMMON NAME	SCIENTIFIC NAME	COMMON NAME	SCIENTIFIC NAME
Green-winged Teal	*Anas crecca*	Ruby-crowned Kinglet	*Regulus calendula*
Surf Scoter	*Melanitta perspicillata*	Gray-cheeked Thrush *	*Catharus minimus*
Semipalmated Plover	*Charadrius semipalmatus*	Swainson's Thrush	*Catharus ustulatus*
Solitary Sandpiper	*Tringa solitaria*	American Robin	*Turdus migratorius*
Least Sandpiper	*Calidris minutilla*	Northern Waterthrush	*Parkesia noveboracensis*
Red-necked Phalarope *	*Phalaropus lobatus*	Blackpoll Warbler	*Setophaga striata*
Wilson's Snipe	*Gallinago delicata*	Yellow-rumped Warbler	*Setophaga coronata*
Great Black-backed Gull	*Larus marinus*	Wilson's Warbler	*Cardellina pusilla*
Herring Gull	*Larus argentatus*	American Tree Sparrow	*Spizelloides arborea*
Glaucous Gull	*Larus hyperboreus*	Lincoln's Sparrow	*Melospiza lincolni*
American Three-toed Woodpecker	*Picoides dorsalis*	White-throated Sparrow	*Zonotrichia albicolis*
Yellow-bellied Flycatcher	*Cardellina canadensis*	White-crowned Sparrow	*Zonotrichia leucophrys*
Gray Jay	*Perisoreus canadensis*	Dark-eyed Junco	*Junco hyemalis*
Common Raven	*Corvus corax*	Rusty Blackbird *	*Euphagus carolinensis*
Tree Swallow	*Tachycineta bicolor*	Pine Grosbeak	*Pinicola enucleator*
Bank Swallow *	*Riparia riparia*	White-winged Crossbill	*Loxia leucoptera*
Boreal Chickadee	*Poecile hudsonicus*	Common Redpoll	*Acanthis flammea*
Winter Wren	*Troglodytes hiemalis*		

* Species at risk

4.5 Species at risk

The Gray-cheeked Thrush and the Rusty Blackbird were already known to occur in coniferous habitats and wetlands on Howse property (AECOM, 2009). However, two new species at risk were found during Common Nighthawk survey: the Bank Swallow and the Red-necked Phalarope.

4.5.1 Bank Swallow

The Bank Swallow is well known for nesting in the streamside (riparian) banks and bluffs of rivers and streams. This species is a highly social land bird with a Holarctic breeding distribution. It nests in colonies ranging from 10 to almost 2,000 active nests. This widespread species has exhibited a severe long-term decline of 98% of its Canadian population over the last 40 years and is considered as threatened by COSEWIC (COSEWIC, 2013). Before 2015, there were no known records of the Bank Swallow presence in the Schefferville region. However, the species was known to occur near Labrador City and Kuujjuaq (ebird, 2015) and was not completely unexpected regionally. On June 25th, a small colony (approximatively 10 nests) was found on a vertical bank of the mining pit Timmins 4 south (DSO Mines). The swallows were still active at the colony on July 15th. It is assumed that if new similar habitats (e.g. sandy vertical banks) are created in the Howse area, this species could potentially find new proper breeding habitats.

Location of the Bank Swallow colony can be seen on Figure 2 (Appendix I) while pictures are presented in Appendix III.

4.5.2 Red-necked Phalarope

The Red-necked Phalarope has declined over the last 40 years in an important staging area; however, overall population trends in Canada during the last three generations are unknown. The species faces potential threats on its breeding grounds, including habitat degradation associated with climate change. It is also susceptible to pollutants and oil exposure during winter migration. This is because birds gather in large numbers on the ocean, especially where currents concentrate pollutants. This species is considered of special concern by COSEWIC (COSEWIC, 2015)

An agitated adult male Red-necked Phalarope was observed in its breeding habitat on July 15th on a small pond with abundant aquatic vegetation. The pond was part of Burnetta Creek. Location of the Red-necked Phalarope can be seen on Figure 2 (in Appendix I) while a picture of the bird and its habitat is presented in Appendix III.

5 CONCLUSION

Groupe Hémisphères was mandated by HML to conduct a Common Nighthawk survey during summer 2015. Point counts spaced at least 800 m apart were conducted in the evening with use of Common Nighthawk broadcast call playback. Two visits were carried out.

Despite searching for the species under conditions that were most likely to elicit a sighting, no Common Nighthawk were found during these surveys and considering that the species has never been encountered in the area, it can be considered as absent and as a non-potential breeder in Howse area. However, 36 species of birds were observed including two new species at risk: Bank Swallow and Red-necked Phalarope.

6 SCOPE AND LIMITATIONS OF THE STUDY

This document is published in accordance with and subject to an agreement between Groupe Hémisphères and the client for whom it has been prepared. It is restricted to those issues that have been raised by the client in its engagement and prepared using the standard of skill and care ordinarily exercised by Environmental Scientists in the preparation of such documents. This document is meant to be read as a whole, and sections or parts thereof should thus not be read or relied upon out of context. This document is confidential and the property of the client

7 QUALITY ASSURANCE

Groupe Hémisphères has an internal system of quality control inspired by ISO 9001: 2008 certification. This system requiring the verification and approval by a senior professional of any concept or report. It takes account the responsibility of management, the documentation and data control, the continuous staff training and the quality assurance for deliverables. This system also includes a strict control over the field's methodologies and safety measures specific to the project.

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APPENDICES

Appendix I

Figures

618000 6092000 620000 6090000 622000 6086000 624000 6084000

616000 6092000 614000 624000 622000 6080000 6082000

Lac Inukshuk
QC/QC
NL/LT-N-L
Lac Messeku Nipi
Lac des 3 épinettes
QC/QC
NL/LT-N-L
Morley Lake
Goodream Lake
GDR2
GDR4
Timmins 6
Timmins2
Timmins 4
ENAM43
Dizzle Lake
Goodream Creek
GDR3
Overburden Stockpile
Waste Dump
Timmins 1
GDR1
Two Ponds
Site Infrastructure
Topsoil Stockpile
ENAM47
Triangle Lake
Menehik shakainiss
Howse Pit
In-Pit Dump
ENAM21
Pinette Lake
ENAM05
ENAM34
Burnetta Creek
ENAM06
Boot Lake
Curlingstone Lake
Sunset Creek
Elross Creek
Kauteitnat
(Irony Mountain)
ENAM07
Irony Mountain
Ione Lake
Burnetta Lake
ENAM08

LEGEND

- Local Study Area
- Common Nighthawk Point Counts

Infrastructure and Mining Components

- Proposed Howse Pit
- Proposed Topsoil/ Overburden Stockpile
- Proposed Site Infrastructure
- Proposed In-Pit Dump /Waste Dump
- Existing Sedimentation Pond
- Road to DSO Area 4
- Existing Railroad

Basemap

- Permanent Watercourse
- Intermittent Watercourse
- Storm Runoff
- Disappearing Stream
- Artesian Spring
- Water Body
- Provincial Border
- Existing Road
- Main Access Road
- Wetland

*Hydronyms are oriented along the direction of water flow

FILE, PROJECT, DATE, AUTHOR:
GH-0655 , PR185-23-14, 2015-07-30, edickoum

0 500 1 000 1 500
Meters

UTM 19N NAD 83

SCALE: 1:30 000

SOURCES:
Basemap
Government of Canada, NTDB, 1:50,000, 1979
Government of NL and Government of Quebec, Boundary used for claims
Groupe Hémisphères, Hydrology, 2013.

Infrastructure and Mining Components
New Millennium Capital Corp., Mining sites and roads
TATA Steel Minerals Canada Limited/ MET-CHEM, Howse Deposit Design for General Layout, 2013

COMMON NIGHTHAWK SURVEY FOR HOWSE MINING PROJECT
TECHNICAL REPORT

Common Nighthawk Point Counts

Howse Minerals Limited

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1453, rue Beaubien est, Bureau 301, Montréal (QC) Canada, H2G 3C6

Figure 1

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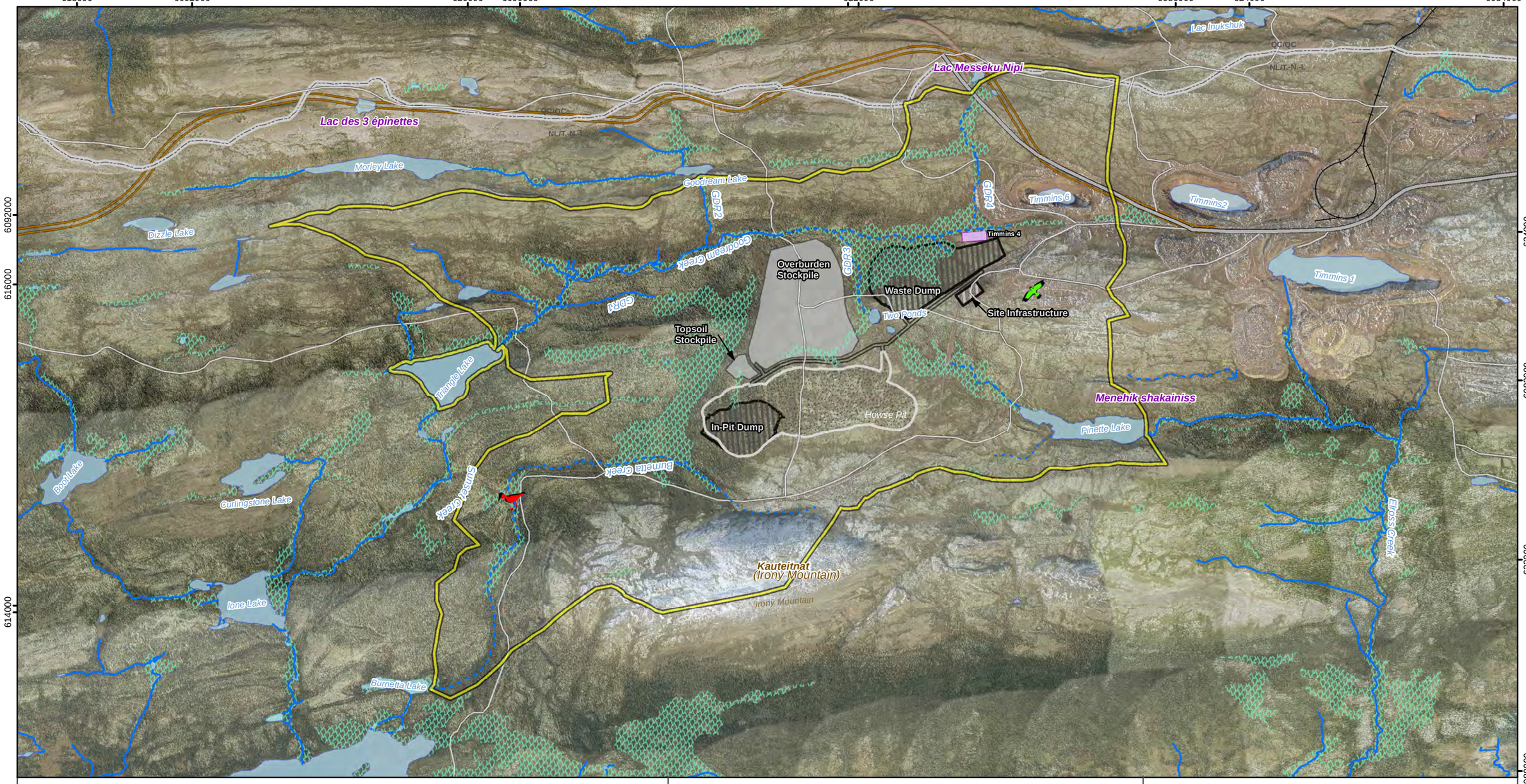

LEGEND

Local Study Area

Sepcies at Risk

- Bank Swallow Colony
- Red-necked Phalarope

Infrastructure and Mining Components

- Proposed Howse Pit
- Proposed Topsoil/ Overburden Stockpile
- Proposed Site Infrastructure
- Proposed In-Pit Dump /Waste Dump
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- Road to DSO Area 4
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Basemap

- Permanent Watercourse
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0 500 1 000 1 500
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UTM 19N NAD 83

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TECHNICAL REPORT

Species at Risk

Howse Minerals Limited

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Figure 2

Appendix II

Survey Conditions

Meteorological Data Recorded During Bird Surveys

Site / Survey	Date / hrs	Temperature (°C)	Nebulosity (0 to 100%)	Precipitation (0 to 10)*	Wind (Beaufort)	direction	Condition
HOWSE MINING PROJET							
COMMON NIGHTHAWK SURVEY							
23-06-2015							
	20:06	20	8	0	2	SE	Excellent
	20:24	20	8	0	1	SE	Excellent
	20:43	18	8	0	3	SE	Excellent
	21:00	18	8	0	2	SE	Excellent
	21:13	17	8	0	3	SE	Good
	21:28	16	8	0	2	SE	Excellent
	21:42	14	8	0	3	SE	Excellent
	21:58	14	8	0	3	SE	Good
15-07-2015							
	20:05	8	8	0	2	O	Excellent
	20:20	8	8	0	2	O	Excellent
	20:43	8	8	0	2	O	Excellent
	20:59	8	8	0	2	O	Excellent
	21:16	7	8	0	3	O	Excellent
	21:31	7	8	0	3	O	Good
	21:46	7	8	0	3	O	Good
	22:01	7	8	0	3	O	Good

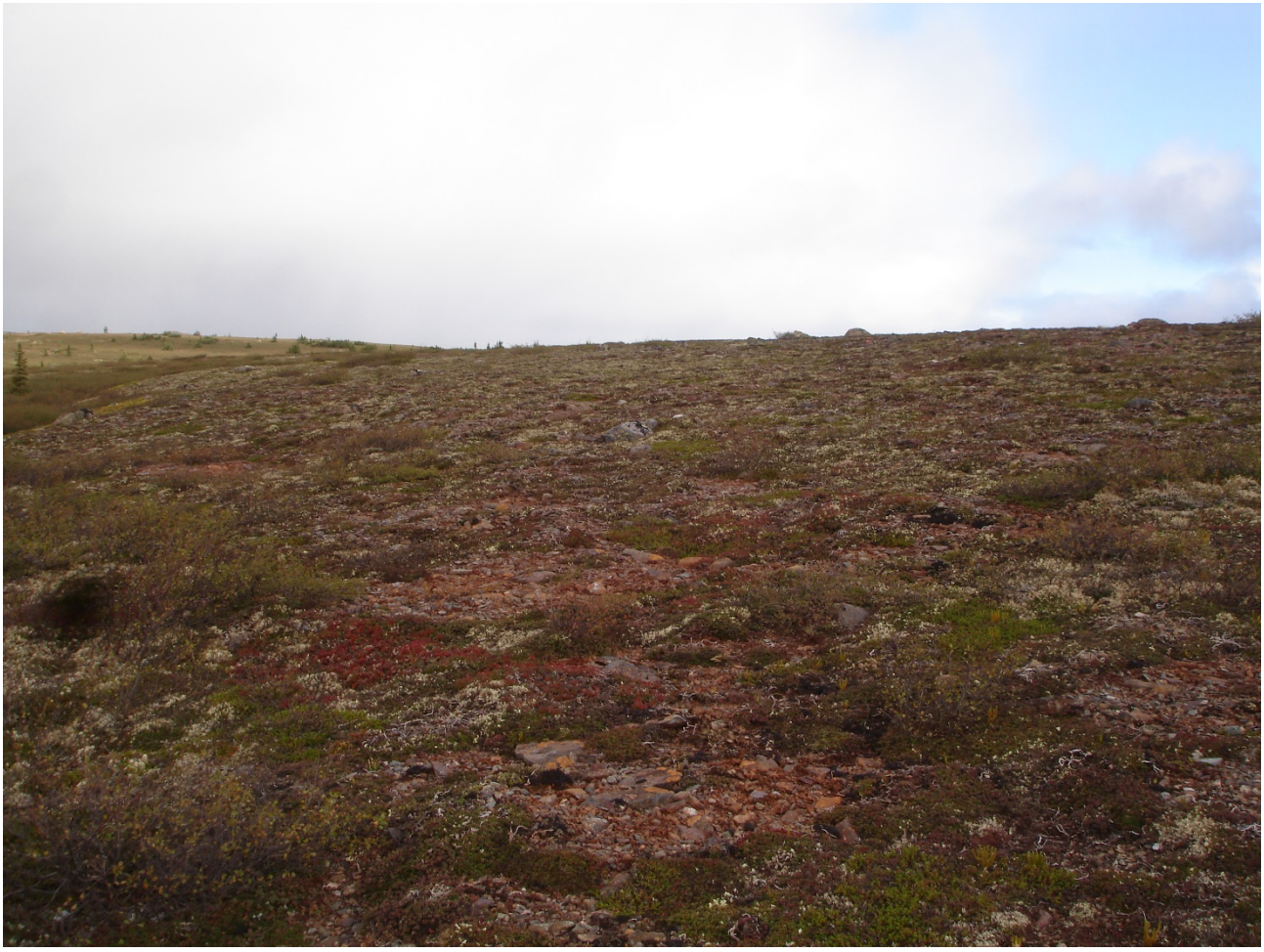
* 0 when no precipitation and 10 for large shower

Appendix III

Pictures Taken in Howse area

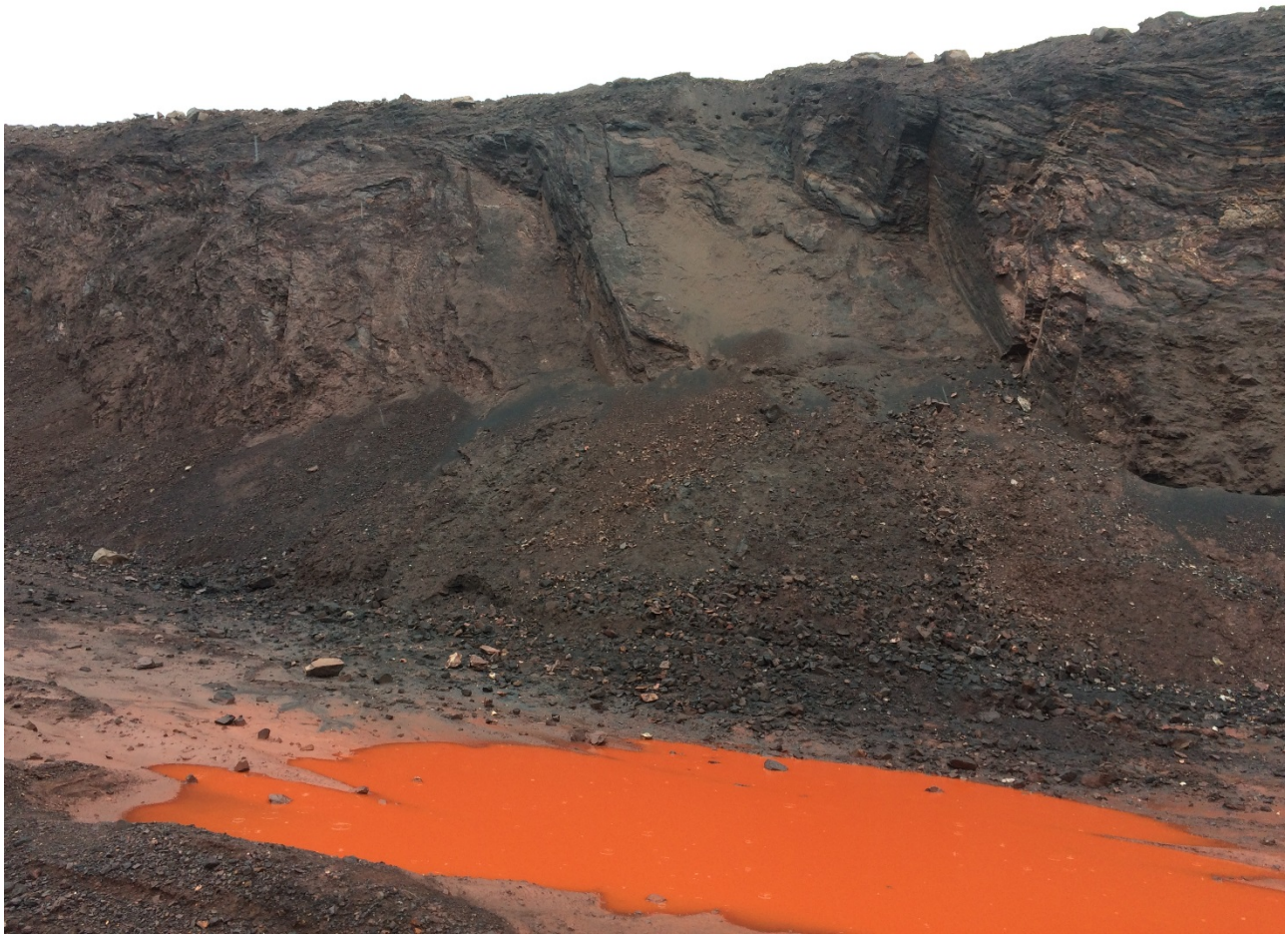
Surveyed habitat: Coniferous forest (open taiga)

Surveyed Habitat : Shrubland



Surveyed habitat : tundra

Surveyed habitat : rock outcrop, bareground



Location of Bank Swallow colony, DSO Mines, Timmins 4 South. July 2015

Bank Swallow foraging, DSO Mines, Timmins 4 South, July 2015

Red-necked Phalarope, adult male, Burnetta Creek, July 2015