

APPENDIX G
AECOM 2011 Winter Bird Survey

Black Point Quarry Project
Guysborough County, NS
SLR Project No.: 210.05913.00000

Memorandum

To	Mark Davies, Erdene	Page	1
CC			
Subject	Winter Bird Study Results		
From	Shawn Duncan, Janice Ray, Carrie Bentley, Candace Harding		
Date	February 3, 2011	Project Number	60190702

Background

A desktop exercise to assess the potential for winter birds was conducted for the Erdene Resource Development Corp. (Erdene) Black Point Quarry Project (the 'Project'). Existing baseline data for overwintering and breeding winter birds was collected from the following databases and information sources:

- Atlantic Canada Conservation Data Center (ACCDC) (100 km radius around the proposed Project area);
- The Maritime Breeding Bird Atlas (Guyborough area);
- The Audubon Christmas Bird Count (The Strait of Canso, approximately 30 km from the proposed Project area);
- The Nova Scotia Department of Natural Resources, Wildlife Division Species at Risk; and
- The Nova Scotia Significant Species and Habitat Database.

The results indicated that over 100 bird species could potentially overwinter within or within proximity to the proposed Project area. Seven (7) rare or uncommon bird species returned in the ACCDC search requested in support of this Project which have potential to overwinter within or within proximity to the proposed Project area (Table 1) (ACCDC 2010). In addition to these seven, two winter nesting species, the red crossbill (*Loxia curvirostra*) and the white-winged crossbill (*Loxia leucoptera*) were also identified. Although not provincially or federally ranked, both of these species and their nests are protected under the *Migratory Bird Convention Act*.

Based on the results of the desktop review, a winter bird survey of the Project study area was recommended by AECOM and subsequently authorized by Erdene.

Table 1 Rare or Uncommon Bird Species Potentially Overwintering Within or Within Proximity to the Project Area

Scientific Name	Common Name	ACCDC SRank	NSDNR Rank	SARA Rank	Overwintering Habitat*
<i>Accipiter gentilis</i>	Northern Goshawk	S3S4	YELLOW	-	Forested landscapes
<i>Bucephala clangula</i>	Common Goldeneye	S2B,S5N	GREEN	-	Broad shallow bays and inlets
<i>Calidris maritima</i>	Purple Sandpiper	S3N	YELLOW	-	Rocky shores on the Atlantic and Fundy coasts, and even in the sheltered Minas Basin.
<i>Histrionicus histrionicus</i>	Harlequin Duck	S2N	YELLOW	Special Concern Schedule 1	Wave-lashed coasts and jetties
<i>Icterus galbula</i>	Baltimore Oriole	S2S3B	GREEN	-	Edges of deciduous and mixed wood forests.
<i>Passerculus sandwichensis princeps</i>	Ipswich Sparrow	S1B	YELLOW	-	Outer dune beaches with grass cover and sheltered areas (valleys).
<i>Rissa tridactyla</i>	Black-legged Kittiwake	S2B,S4S5N	GREEN	-	Winters out at sea mainly on offshore waters, but it occasionally comes inshore and even inland as a result of storms at sea.

*Sources: ACCDC 2010; Nova Scotia Museum of Natural History 1998; Species at Risk in Nova Scotia 2008

Notes:

S1 = Extremely rare throughout its range in the province (typically 5 or fewer occurrences or very few remaining individuals). May be especially vulnerable to extirpation; S2 = Rare throughout its range in the province (6 to 20 occurrences or few remaining individuals). May be vulnerable to extirpation due to rarity or other factors; S3 = Uncommon throughout its range in the province, or found only in a restricted range, even if abundant in at some locations. (21 to 100 occurrences); S4 = Usually widespread, fairly common throughout its range in the province, and apparently secure with many occurrences, but the Element is of long term concern (e.g. watch list). (100+ occurrences); S5 = Demonstrably widespread, abundant, and secure throughout its range in the province, S5 and essentially ineradicably under present conditions; S#S# = Numeric range rank: A range between two consecutive numeric ranks. Denotes range of uncertainty about the exact rarity of the Element (e.g., S1S2); SH = Historical: Element occurred historically throughout its range in the province (with expectation that it may be rediscovered), perhaps having not been verified in the past 20 - 70 years (depending on the species), and suspected to be still extant; SU = Unrankable: Possibly in peril throughout its range in the province, but status uncertain; need more information; SX = Extinct/Extirpated: Element is believed to be extirpated within the province; S? = Unranked.B = Breeding: Basic rank refers to the breeding population of the element in the province; N = Non-breeding: Basic rank refers to the non-breeding (usually wintering) population of the element in the province; M = Migratory: Basic rank refers to the migratory stopover population in the province.

Winter Bird Survey Results

Methods

AECOM conducted a winter bird survey within the Project study area on January 18 and 19, 2011 (Appendix A). The surveys were conducted between 8:00 am and 2:30 pm. A total of 13 sites were selected within and within close proximity of the study area (Appendix A: Figure 1). Sites were selected within the different habitat types of potential overwintering bird species within the study area. These habitats included: mature coniferous forest, rocky coast, forest edge, and small spruce and willow. For a minimum of 5 minutes, all species observed or heard were recorded representing 500 m on either side of the observer.

Results

Over the course of the survey, sixteen (16) different bird species were heard or observed (Table 2); none of which are red listed (i.e., known to be, or that is thought to be at risk) by Nova Scotia Department of Natural Resources (NSDNR). Two (2) species identified are yellow listed (i.e., sensitive to human activities or natural events) by NSDNR: the Gray Jay (*Perisoreus canadensis*) and the Boreal Chickadee (*Parus hudsonicus*). No winter breeding birds were observed or heard (i.e., red crossbill and white-winged crossbills).

Table 2 Birds and Mammals Observed or Heard within the Project Area

Scientific Name	Common Name	NSDNR Rank	AC CDC SRank	SARA Rank	Sign Type	Site Number*
<i>Anas platyrhynchos</i>	Mallard	GREEN	S5	-	Sound	S11
<i>Corvus brachyrhynchos</i>	American Crow	GREEN	S5	-	Sound	S2, S5
<i>Corvus corax</i>	Common Raven	GREEN	S5	-	Sound	S4
<i>Haliaeetus leucocephalus</i>	Bald Eagle	GREEN	S4	-	Observation	S11
<i>Larus argentatus</i>	Herring Gull	GREEN	S4S5	-	Sound	S11
<i>Larus philadelphia</i>	Bonaparte's Gull	GREEN	S5M	-	Observation	S11, S12
<i>Melanitta fusca</i>	White-winged Scoter	GREEN	S5N	-	Observation	S11, S13
<i>Melanitta nigra</i>	Black Scoter	GREEN	S5N	-	Observation	S11
<i>Mergus serrator</i>	Red-breasted Merganser	GREEN	S3B,S5N	-	Observation	S11, S12
<i>Perisoreus canadensis</i>	Gray Jay	YELLOW	S3S4	-	Observation	S6
<i>Phalacrocorax carbo</i>	Great Cormorant	GREEN	S3	-	Observation	S11, S12
<i>Picoides pubescens</i>	Downy Woodpecker	GREEN	S5	-	Sound	S2
<i>Podiceps auritus</i>	Horned Grebe	GREEN	S4N	-	Observation	S11
<i>Poecile atricapillus</i>	Black-capped Chickadee	GREEN	S5	-	Observation and Sound	S1, S9, S10
<i>Poecile hudsonica</i>	Boreal Chickadee	YELLOW	S3	-	Sound	S1, S8, S10
<i>Spinus tristis</i>	American Goldfinch	GREEN	S5	-	Sound	S3

*Please see Appendix A

Habitat Evaluation of Breeding Birds and Rare Birds

Habitats within the study area include: rocky coast, mature black and red spruce forest, forest edge, small spruce and willow with rocky outcrops, and wetlands (e.g. bog, fen, marsh, swamp, lake).

Although the study area contained adequate habitat for red and white-winged crossbills, the potential for these birds to occur and breed in the study area at the time of assessment was considered to be low due to the lack of adequate food sources (seed bearing cones). The habitat evaluation of rare or uncommon bird species occurring or potentially occurring within or within close proximity to the study area at the time of assessment is described in Table 3 below:

Table 3 Habitat Evaluation and Potential for Rare or Uncommon Bird Species Potentially Overwintering Within or Within Proximity to the Project Area*

Species	Habitat Evaluation in Study Area**	Potential to Occur in Study Area**
Gray Jay (<i>Perisoreus Canadensis</i>)	<u>Good</u> : Owing to the presence of coniferous forest	<u>High</u> : Observed in study area
Boreal Chickadee (<i>Poecile hudsonica</i>)	<u>Good</u> : Owing to the presence of coniferous forest	<u>High</u> : Heard in study area
Northern Goshawk (<i>Accipiter gentilis</i>)	<u>Moderate to Good</u> : Owing to the presence of mature coniferous forest	<u>Low to Moderate</u> : Due to low numbers of mammalian prey
Purple Sandpiper (<i>Calidris maritima</i>)	<u>Moderate to Good</u> : Owing to abundant rocky coast within the study area.	<u>Moderate to High</u> : Owing to sufficient habitat
Harlequin Duck (<i>Histrionicus histrionicus</i>)	<u>Moderate</u> : Owing to the presence of coastal habitat	<u>Moderate</u> : Owing to sufficient habitat
Common Goldeneye (<i>Bucephala clangula</i>)	<u>Poor to Moderate</u> : Due to the presence of some inlets and sheltered areas.	<u>Low to Moderate</u> : Due to only some preferred habitat.
Ipswich Sparrow (<i>Passerculus sandwichensis princeps</i>)	<u>Poor to Moderate</u> : Due to very few areas of sheltered grassy areas	<u>Low to Moderate</u> : Due to few areas of preferred habitat.
Baltimore Oriole (<i>Icterus galbula</i>)	<u>Poor</u> : Due to a lack of deciduous forests	<u>Low</u> : Due to lack of preferred habitat
Black-legged Kittiwake (<i>Rissa tridactyla</i>)	<u>Poor</u> : These birds occur at sea during the winter months and sometimes come to shore during bad weather.	<u>Low</u> : Due to lack of sufficient habitat

*Sources: ACCDC 2010; Nova Scotia Museum of Natural History 1998; Species at Risk in Nova Scotia 2008

**These rankings are based on the study area at the time of assessment.

Signs of Other Wildlife

AECOM observed a lot of coyote (*Canis latrans*) activity (tracks and scat) within the study area. There was little sign (tracks) of white-tailed deer (*Odocoileus virginianus*), snowshoe hare (*Lepus americanus*), red squirrel (*Tamiasciurus hudsonicus*), and vole (sp). No signs of mammal species at risk were observed (e.g. moose, lynx, and marten).

References

Atlantic Canada Conservation Data Center (ACCDC) 2010. Data report 4313: Black Point, NS.
Prepared December 10, 2010.

Nova Scotia Museum of Natural History 1998. Birds of Nova Scotia. Available Online:
<http://museum.gov.ns.ca/mnh/nature/nsbirds/bons.htm#Categories>. [Accessed January 27,
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Species at Risk in Nova Scotia 2008. Species at risk in Nova Scotia: Identification & information
guide. Available Online: <http://www.speciesatrisk.ca/SARGuide/download/SAR%20Guide.pdf>.
[Accessed January 27, 2011]

Appendix A

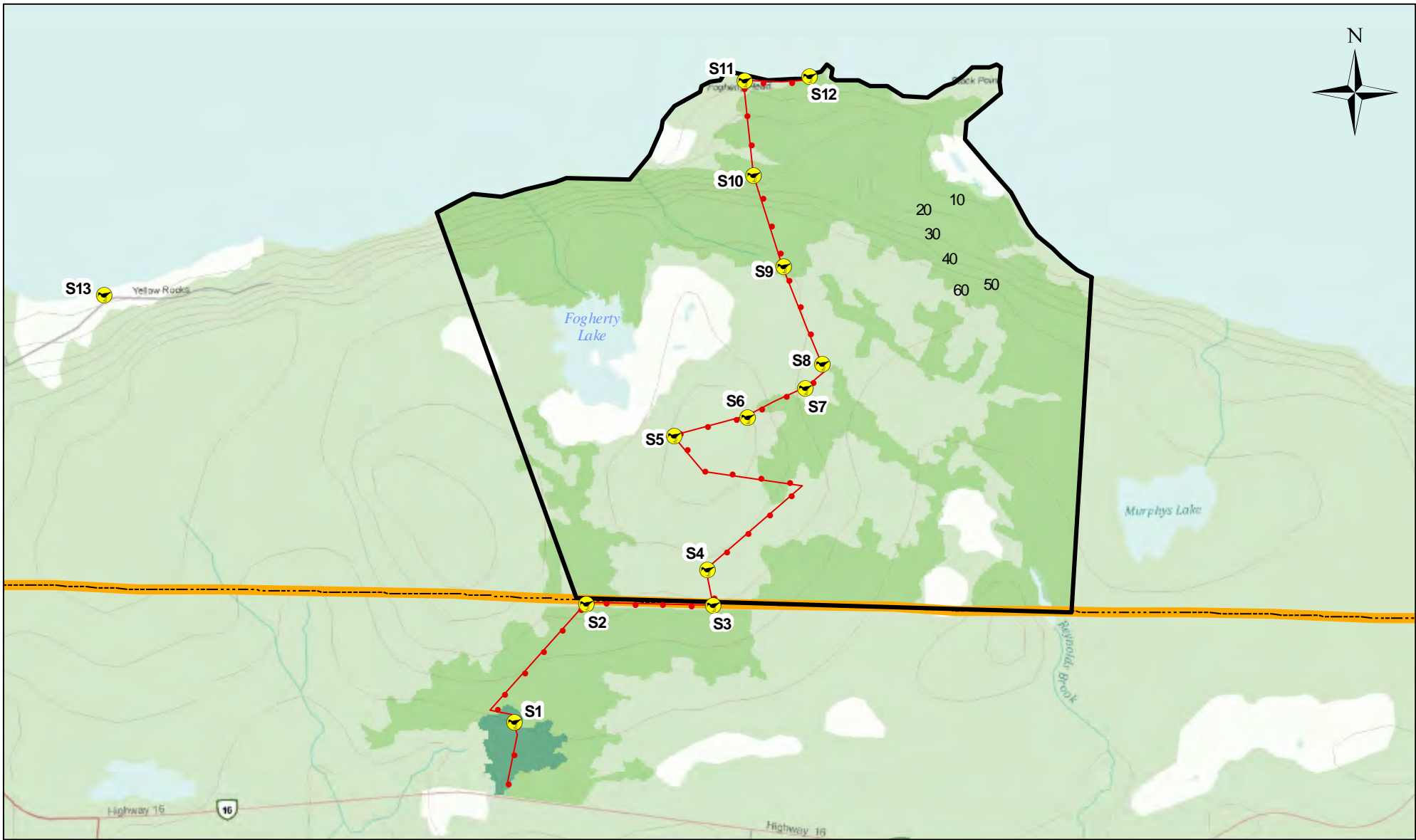
Addendum (2014 12 18)
Habitat Based Point Count Methodology

Point count surveys are a common and standard method of determining species abundance in various habitat types (EC and CWS 2007). A habitat-based point count survey was chosen to determine the abundance and presence/absence of bird species in and around the proposed Project site. AECOM conducted a winter bird survey between January 18 and 19, 2011 (Figure 1, Appendix A). On January, 18, twelve (12) point count locations were conducted within the Project study area between 8:00 am and 2:30 pm. On January 19, one point count location was conducted at 10:30 am along the coast within close proximity of the Project study area. Point count locations were selected within the different habitat types of potential overwintering bird species within the study area. These habitats included: mature coniferous forest, rocky coast, forest edge, and small spruce and willow (see photos and habitat map Figure 3). Each station was spaced at least 125m apart; however, a minimum distance of 250m between sites was targeted. For a minimum of 5 minutes, all species observed or heard were recorded.

At each station the following data additional was collected:

- UTM coordinates
- Start time and end time of point count survey
- Date
- Weather conditions (Point Count surveys were not conducted during rain or during wind speeds of >25 km/h).
- Habitat type
- A list of additional species that may have been heard before and after the survey
- Photograph of habitat type
- Name of surveyors

Environment Canada and Canadian Wildlife Service (EC and CWS) 2007. Recommended protocols for monitoring impacts of wind turbines on birds. Available Online: <http://www.ec.gc.ca/Publications/C8CE090E-9F69-4080-8D47-0622E115A4FF%5CCWSWindTurbineAndBirdsMonitoringGuide2007.pdf>



LEGEND

- Bird Survey Location
- Study Area Boundary
- Waterbody
- Forested Area (Black/Red Spruce)
- Forested Area (Unconfirmed Species)
- Bird Survey Track
- Transmission Line
- Rivers/Streams
- Highway
- Road
- Contour Line

Date: Jan 26, 2011
 Job No.: 60190702
 Revisions: 1
 Drawn: MEF

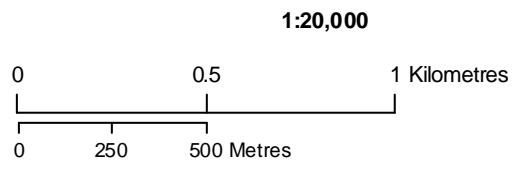


Figure 1
 Bird Survey Location Map
 Erdene Resource Development Corp.
 Black Point Quarry Project



Project: Erdene: 60190702

Date: January 18 and 19, 2011

Crew: Maureen Flinn, Candace Harding, Carrie Bentley, Blair George

Distance Traveled:

Potential for Breeding Crossbills: Low due to no sign, not enough food source for breeding

Mammal Sign: Snowshoe hare (2 tracks), Coyote (4 to 6, tracks and scat), White-tailed deer (1 track), Red Squirrel (3 tracks), vole (1 track)

General Comments: Fogerty Lake was iced over which eliminates potential for waterfowl species in the lake. Lots of coyote activity, likely a pack living in area. Low numbers of deer, hare, vole and squirrel. Not many cones on spruce trees.

Low potential for marten, lynx or cougar due to low numbers of prey (hare, squirrel, deer). Moderate potential for moose owing to abundant willow

Species	#of Birds	NSDNR Rank	Date	Time	Elevation	Zone	Easting	Northing	Waypoint	Habitat	Sign	Photo #	Weather	Temperature	Comments
Boreal Chickadee	1	Yellow	18-Jan-11	8:07	82m	20	643835	5021994	29		sound	none	sunny, low wind (6 to 9 km/hr)	-12	
Black Capped Chickadee	3	Green	18-Jan-11	8:07	82m	20	643835	5021994	29		sound	none	sunny, low wind (6 to 9 km/hr)	-12	
Boreal Chickadee	1	Yellow	18-Jan-11	9:22	72m	20	644978	5023328	36	Spruce forest with willow	sound	3 to 4	sunny, low wind (6 to 9 km/hr)	-10	
Black Capped Chickadee	4	Green	18-Jan-11	12:00	77m	20	644837	5023688	37	mature spruce forest (dense)	observation	5 to 6	clouds with some sun, wind 13 to 17 km/hr	-5	
Boreal Chickadee	2	Yellow	18-Jan-11	9:51	43m	20	644725	5024024	38	mature spruce forest, steep incline	sound	7 to 9	sunny, low wind (6 to 9 km/hr)	-8	
Black Capped Chickadee	3	Green	18-Jan-11	9:45	43m	20	644725	5024024	38	mature spruce forest, steep incline	sound	7 to 9	sunny, low wind (6 to 9 km/hr)	-8	
Great Cormorant	2	Green	18-Jan-11	10:10	16m	20	644689	5024377	39	Rocky Coast	observation	10 to 11	sunny, low wind (6 to 9 km/hr)	-8	
Herring Gull	1	Green	18-Jan-11	10:10	16m	20	644689	5024377	39	Rocky Coast	observation	10 to 11	sunny, low wind (6 to 9 km/hr)	-8	
Red Breasted Merganser	2	Green	18-Jan-11	10:10	16m	20	644689	5024377	39	Rocky Coast	observation	10 to 11	sunny, low wind (6 to 9 km/hr)	-8	
Black Scoter	1	Green	18-Jan-11	10:10	16m	20	644689	5024377	39	Rocky Coast	observation	10 to 11	sunny, low wind (6 to 9 km/hr)	-8	
Bald Eagle	1	Green	18-Jan-11	10:10	16m	20	644689	5024377	39	Rocky Coast	observation	10 to 11	sunny, low wind (6 to 9 km/hr)	-8	
Mallard	2	Green	18-Jan-11	10:10	16m	20	644689	5024377	39	Rocky Coast	observation	10 to 11	sunny, low wind (6 to 9 km/hr)	-8	
White-winged scoter	2	Green	18-Jan-11	10:10	16m	20	644689	5024377	39	Rocky Coast	observation	10 to 11	sunny, low wind (6 to 9 km/hr)	-8	
Horned Grebe	2	Green	18-Jan-11	10:10	16m	20	644689	5024377	39	Rocky Coast	observation	10 to 11	sunny, low wind (6 to 9 km/hr)	-8	
Bonaparte's Gull	2	Green	18-Jan-11	10:10	16m	20	644689	5024377	39	Rocky Coast	observation	10 to 11	sunny, low wind (6 to 9 km/hr)	-8	
Bonaparte's Gull	2	Green	18-Jan-11	11:08	8m	20	644932	5024396	40	Rocky Coast	observation	none	sunny, low wind (6 to 9 km/hr)	-5	
Great Cormorant	1	Green	18-Jan-11	11:08	8m	20	644932	5024396	40	Rocky Coast	observation	none	sunny, low wind (6 to 9 km/hr)	-5	
Red Breasted Merganser	1	Green	18-Jan-11	11:08	8m	20	644932	5024396	40	Rocky Coast	observation	none	sunny, low wind (6 to 9 km/hr)	-5	
none	0	n/a	18-Jan-11	12:17	76m	20	644919	5023235	42	Edge habitat, spruce and willow	n/a	12 to 13	clouds with some sun, wind 13 to 17 km/hr	-5	
Gray Jay	2	Yellow	18-Jan-11	12:33	88m	20	644704	5023129	44	sparse stunted spruce and willow	observation	14 to 15	clouds with some sun, wind 13 to 17 km/hr	-5	
American Crow	1	Green	18-Jan-11	12:46	97m	20	644431	5023060	45	sparse stunted spruce and willow, over	sound	16 to 18	clouds with some sun, wind 13 to 17 km/hr	-3	no signs of nests
Raven	1	Green	18-Jan-11	13:01	87m	20	644553	5022559	47	spruce and willow	sound	20 to 21	clouds with some sun, wind 13 to 17 km/hr	-3	red squirrel tracks
American Goldfinch	1	Green	18-Jan-11	13:13	78m	20	644572	5022427	48	spruce and willow	sound	none	clouds with some sun, wind 13 to 17 km/hr	-3	
American Crow	1	Green	18-Jan-11	1:25	70m	20	644105	5022434	49	spruce and willow	sound	none	clouds with some sun, wind 13 to 17 km/hr	-3	
Downy Woodpecker	1	Green	18-Jan-11	2:00	70m	20	644105	5022434	49	spruce and willow	pecking sound	none	clouds with some sun, wind 13 to 17 km/hr	-3	
White-winged scoter	3	Green	19-Jan-11	10:51	4m	20	642310	5023583	53	rocky gravel coast	observation		heavy rain, fog, wind 28 km/hr, waves		4 difficult to identify birds

PHOTOS

Black Point Quarry Project
Guysborough County, NS
SLR Project No.: 210.05913.00000

Photo 1



Photo 2



Photo 3



Photo 4



Photo 5



Photo 6



Photo 7



Photo 8



Photo 9



Photo 10



Photo 11



Photo 12



Photo 13



Photo 14



Photo 15



Photo 16



Photo 17



Photo 18



Photo 20



Photo 21



Photo 22

