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November 22, 2024
Project: NB24.01.352

EXP Services Inc.
555 Mapleton Road, Suite 100
Moncton, New Brunswick
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Attention : Adrian Thompson, M.Sc,E., P.Eng

Re: Flora and Fauna Desktop Study – Project No. 24430-00920
Taloyoak Sealift Improvement Project, Taloyoak, Nunavut

Hive Engineering Limited (“Hive”) has been retained by EXP Services Inc. (herein the “EXP” or the “Client”) to complete an environmental desktop study in support of the Taloyoak Sealift Improvement Project (herein the “Project” or “Project Area”). This assessment was limited to a desktop study of readily information pertaining to flora and fauna within the Project Area. However, due to its remote location, there is limited information for flora and fauna in the Kitikmeot region of Nunavut.

PROJECT DESCRIPTION

It is our understanding that the Government of Nunavut is proposing to construct a new 0.5-hectare sealift improvement area to increase the capacity and operational efficiency of sealift deliveries to the community of Taloyoak, as outlined in EXP’s *“Taloyoak Sealift Replacement 50% Design Report [Interim Report]”* dated November 11, 2024. The Project will include significant infill in Stanners Harbour; the 50% design drawings indicate that the Project will require approximately 47,700 m³ fill (12,200 m³ above the ordinary high-water mark and 35,500 m³ below the ordinary high-water mark).

SITE DESCRIPTION

In general, the Project Area is at the north end of Stanners Harbour, approximately 150 meters east of the Hamlet Garage.

The central coordinate of the Site is 69°32'15.0"N 93°31'08.7"W in Taloyoak. Taloyoak is a Hamlet located on the Boothia Peninsula in the Kitikmeot region of Nunavut. The area of assessment is presented in attached Figure 1 located in Appendix A.

SCOPE OF WORK

The scope of work for the desktop study consisted of the following:

- A search of conservation data records within the Project Area.
- Provide letter report (herein) with the information that was obtained from the conservation databases that were searched as part of the investigation.

No field studies were completed as part of this scope of work. This report is meant to provide a high-level assessment of the flora and fauna in the subject area for purposes of discussing potential environmental permits that may be required. The scope of work did not include a review of municipal by-laws, zoning, or regulations.

SUMMARY OF ENVIRONMENTAL REGULATIONS

The following federal regulations should be taken into consideration when evaluating the flora and fauna species in the area and the impact that the project may have on the species and/or its habitat:

- *Species at Risk Act* (S.C. 2002, c. 29, August 2022).
- *Migratory Birds Convention Act*. 1994.
- *Fisheries Act*, R.S.C., 1985, c. F-14

These agencies should be consulted to determine which environmental approvals, if any, are required for the Project to proceed.

TOPOGRAPHIC MAPPING AND FEATURES

The Site is located on the shore of Stanners Harbour. According to a recent topographic survey, the northernmost portion of the Project Area is at an elevation of 0 masl. Nearly the entire

footprint of the Project Area is within Stanners Harbour, with the limits of grading and placement of fill extending to a depth of approximately -8.5 meters.

CONSERVATION DATA SEARCHES AND REGISTRIES

Public iNaturalist Database

iNaturalist is an online database providing a network for sharing biodiversity information for species in Canada. iNaturalist returned 44 flora/fauna observations within the Boothia Peninsula section of the Kitikmeot region. None of the species reported in the iNaturalist were species of special concern. The full list of species, including the date observed and coordinates of the observation, is presented in Appendix B.

Species at Risk in Nunavut

According to the “*Species at risk in Nunavut 2021*” document issued by Environment and Climate Change Canada (ECCC), the study area has 12 species at risk that have been observed in or in immediate proximity to the Project Area; the species are presented in Table 1. Table 1 also includes the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) status and the Species at Risk Act (SARA) status along with the year that each individual species was last assessed. There are six mammalian species and six avian species.

Table 1: Species at risk in Nunavut, 2021 Identified within the Project Area

Location Sensitive Species						
Scientific Name	Common Name	COSEWIC Status	Year	SARA Status	Year	Within Range
<i>Rangifer tarandus</i>	Barren-ground Caribou	Threatened	2016	Under Consideration	-	YES
<i>Ursus arctos</i>	Grizzly Bear	Special Concern	2012	Special Concern	2018	YES
<i>Rangifer tarandus pearyi</i>	Peary Caribou	Threatened	2015	Endangered (under consideration for status change)	2011	YES
<i>Ursus maritimus</i>	Polar Bear	Special Concern	2018	Special Concern	2011	YES
<i>Gulo gulo</i>	Wolverine	Special Concern	2014	Special Concern	2018	YES
<i>Pusa hispida</i>	Ringed Seal	Special Concern	2019	Under Consideration	-	YES
<i>Tryngites subruficollis</i>	Buff-breasted Sandpiper	Special Concern	2012	Special Concern	2017	YES

Location Sensitive Species						
Scientific Name	Common Name	COSEWIC Status	Year	SARA Status	Year	Within Range
<i>Zonotrichia querula</i>	Harris's Sparrow	Special Concern	2017	Under Consideration	-	YES
<i>Falco peregrinus anatum/tundrius</i>	Peregrine Falcon	Not at Risk	2017	Special Concern (under consideration for status change)	2012	YES
<i>Calidris canutus islandica</i>	Red Knot	Not at Risk	2020	Special Concern (under consideration for status change)	2012	YES (Less likely)
<i>Calidris canutus rufa</i>	Red Knot	Endangered	2020	Endangered	2020	YES
<i>Phalaropus lobatus</i>	Red-necked Phalarope	Special Concern	2014	Special Concern	2019	YES

In addition to the species presented in Table 1, which are known to be present in the area, Table 2 includes ten species that could have direct access by land or water to the Project Area but had not been specifically documented in the Project Area as of 2021. This includes six mammalian species, four of which are whales, and four avian species.

Table 2: Species at risk in Nunavut, 2021 with Access via Land or Water

Location Sensitive Species						
Scientific Name	Common Name	COSEWIC Status	Year	SARA Status	Year	Within Range
<i>Rangifer tarandus</i>	Dolphin and Union Caribou	Endangered	2017	Special Concern (under consideration for status change)	2011	NO
<i>Odobenus rosmarus rosmarus</i>	Atlantic Walrus	Special Concern	2017	under consideration	-	NO
<i>Delphinapterus leucas</i>	Beluga Whale	Endangered	2020	Threatened	2017	NO
<i>Balaena mysticetus</i>	Bowhead Whale	Special Concern	2009	Special Concern	2007	NO
<i>Orcinus orca</i>	Orca Whale	Special Concern	2008	Under Consideration	-	NO
<i>Monodon monoceros</i>	Narwhal	Special Concern	2004	Under Consideration	-	NO
<i>Numenius borealis</i>	Eskimo Curlew	Endangered	2009	Endangered	2003	NO

Location Sensitive Species						
Scientific Name	Common Name	COSEWIC Status	Year	SARA Status	Year	Within Range
<i>Histrionicus histrionicus</i>	Harlequin Duck	Special Concern	2013	Special Concern	2003	NO
<i>Rhodostethia rosea</i>	Ross's Gull	Threatened	2007	Threatened	2003	NO
<i>Asio flammeus</i>	Short-eared Owl	Special Concern	2008	Special Concern	2012	NO

The Global Biodiversity Information Facility (GBIF)

GBIF is an international network and data infrastructure by the world's governments aiming to provide open access to data about species across the globe. A total of 4,425 occurrences were recorded by GBIF. Of that, 4,306 occurrences were published by the International Barcode of Life Consortium based in Guelph, Ontario. These records included records under the following classes: insecta, arachnida, collembola, brachiopoda, malacostraca, ostracoda, copepoda and clitellate. Species in these classes (i.e. insects, spiders, worms, pancrustaceans, crustaceans) were not found to be species at risk in Nunavut.

The remaining 119 records were published by the Cornell Lab of Ornithology, the Lepidopterists' Society Season Summary and iNaturalist between the years 2000 and 2021. The full list of the 119 records is presented in Appendix C. None of the species identified in the GBIF database records were species at risk.

Department of Fisheries and Oceans (DFO) Consultation

DFO was contacted to provide information on species at risk. It is our understanding from DFO personnel that the toolkit utilized by DFO cannot be shared externally. Therefore, Hive utilized the publicly available Aquatic species at risk map provided by ECCC; no information was available within or near the Project Area. Additional species documented by the Nunavut Department of Environment are discussed below.

Conservation Data Centre Consultation

Hive also consulted with the Conservation Data Centre. The contact for the Conservation Data Centre informed Hive that the Nunavut Conservation Data Centre is still in very early stages of

development and does not have any mapped occurrences of species for the Taloyoak area. Most species are currently deemed “unrankable” in Nunavut due to the insufficient data.

Nunavut Department of Environment Coastal Resource Inventory (2014)

The Nunavut Coastal Resource Inventory (NCRI) is a report derived from the Hamlet of Taloyoak and refers to the collection of information on coastal resources and activities gained from community interviews, research, reports, maps and other sources. This information should be cross referenced with the aforementioned data pertaining to species protected under regulations.

The document indicates the presence of the following species (including but not limited to) in the greater Taloyoak region:

- Fish (char, trout, whitefish, cod, sculpin, stickleback)
- Crustaceans (amphipods)
- Shellfish (cockles)
- Invertebrates (jellyfish)
- Mammals (polar bears, seals, whales, walrus)
- Birds (swans, geese, ducks, perching birds, shorebirds, gulls, raptors, ptarmigans, cranes, and loons)
- Marine and Terrestrial Plants (grasses, kelps, weeds)

The full document including maps with documented ranges for each species (when identified) can be found at https://www.gov.nu.ca/sites/default/files/documents/2022-07/ncri_taloyoak_en.pdf.

CLOSING COMMENTS

The information presented herein is a baseline flora and fauna study for species that are known to be in or within proximity to the Project Area. Our desktop study has confirmed the presence of the following:

- Species in the Project Area that are protected under the *Species at Risk Act*;
- Fish (including crustaceans, shellfish and marine animals) and fish habitat protected under the *Fisheries Act*; and,
- Birds and bird habitat protected under the *Migratory Birds Convention Act*.

We would recommend that this information be shared with the project team and regulatory agencies, including DFO and ECCC, to determine if environmental approvals (including any offsetting or habitat compensation) are required for the project to proceed.

We trust that this meets your requirements at this time. This report was prepared by Bryan Gallant, P.Tech. and reviewed by Andrea Kalafut, M.Sc.E., P. Eng., licensed professional environmental/civil engineer.

Please do not hesitate to contact the undersigned with any questions.

Sincerely,



Andrea Kalafut, M.Sc.E., P.Eng.
President and Senior Environmental Engineer
Hive Engineering Limited

Enclosures: Appendix A Figure
 Appendix B iNaturalist Data
 Appendix C GBIF Data



APPENDIX A

Figure



Stanners Harbour



Project

Flora & Fauna Desktop Study
Sealift Improvement Project
NB24.03.352
Taloyoak, NU

Legend

 Approximate Project Footprint

Scale

50 0 50 100 150 200 m



1:6000

APPENDIX B

iNaturalist Data

Scientific Name	Common Name	Latitude	Longitude	Date Observed
<i>Alopecosa hirtipes</i>	Wolf Spider	69.88287294	-92.38747953	2023-07-04
<i>Arctoparmelia centrifuga</i>	Concentric Ring Lichen	69.53855833	-92.06581944	2023-07-04
<i>Armeria maritima</i>	Sea Thrift	69.54242	-93.56318667	2019-07-07
<i>Boloria polaris</i>	Polaris Fritillary	69.68056757	-92.84600908	2023-07-04
<i>Boloria polaris</i>	Polaris Fritillary	69.68093579	-92.84237916	2023-07-04
Caryophyllaceae	pink family	69.542695	-93.56233333	2019-07-07
<i>Cassiope tetragona</i>	Arctic bell-heather	69.68058	-92.85224667	2023-07-04
<i>Draba</i>	Drabas	69.566305	-93.23527	2023-07-04
<i>Erebia rossii</i>	Ross's Alpine	69.53814167	-92.06135833	2023-07-04
<i>Eriophorum angustifolium</i>	Common Cotton-grass	69.54238	-93.56324667	2019-07-07
<i>Eriophorum scheuchzeri</i>	Scheuchzer's Cotton-grass	69.54238	-93.563255	2019-07-07
<i>Festuca</i>	Fescues	69.54241167	-93.563225	2019-07-07
<i>Fulmarus glacialis</i>	Northern Fulmar	70.00833281	-92.57813573	2023-08-22
<i>Fulmarus glacialis</i>	Northern Fulmar	69.39020015	-93.30922097	2023-08-25
<i>Lagopus muta</i>	Rock Ptarmigan	69.68019667	-92.84816667	2023-07-04
<i>Lepus arcticus</i>	Arctic Hare	69.54377913	-93.56523011	2019-02-26
<i>Mya truncata</i>	Truncate Softshell Clam	69.98846333	-92.19960833	2023-07-04
Nymphalidae	Brush-footed Butterflies	69.68025382	-92.84712024	2023-07-04
<i>Oeneis bore</i>	White-veined Arctic	69.88342945	-92.38747953	2023-07-04
<i>Oeneis polixenes</i>	Polixenes Arctic	69.68028333	-92.847795	2023-07-04
<i>Oxyria digyna</i>	alpine sorrel	69.88494667	-92.38421667	2023-07-04
<i>Papaver radicatum</i>	Arctic Poppy	69.88320278	-92.38347778	2023-07-04
<i>Pedicularis</i>	Louseworts	69.56394167	-93.23681667	2023-07-04
<i>Pedicularis capitata</i>	Capitate Lousewort	69.68063333	-92.85132	2023-07-04
<i>Pedicularis langsdoeffii</i>	Langsdoeff's lousewort	69.54267167	-93.56233333	2019-07-07
<i>Pedicularis langsdoeffii</i>	Langsdoeff's lousewort	69.67981667	-92.84959444	2023-07-04
Psathyrellaceae	Brittlestems and Allies	69.5370771	-93.5165989	2024-08-11
<i>Rhytisma</i>	Tar Spot Fungi	69.537082	-93.5165997	2024-08-11
<i>Salix arctica</i>	arctic willow	69.54247167	-93.56300333	2019-07-07
<i>Salix arctica</i>	arctic willow	69.54267167	-93.56237	2019-07-07
<i>Salix richardsonii</i>	Richardson's willow	69.54268667	-93.56227833	2019-07-07
<i>Silene acaulis</i>	Moss Champion	69.68095333	-92.85160833	2023-07-04
<i>Silene acaulis</i>	Moss Champion	69.53900278	-92.06800556	2023-07-04
<i>Stellaria longipes</i>	Longstalk starwort	69.542695	-93.56236333	2019-07-07
Tipulomorpha	Crane Flies	69.5672	-93.22737833	2023-07-04
<i>Urocitellus parryi</i>	Arctic Ground Squirrel	69.536886	-93.625956	2019-07-07
<i>Urocitellus parryi</i>	Arctic Ground Squirrel	69.54189893	-93.56475718	2019-07-07
<i>Urocitellus parryi</i>	Arctic Ground Squirrel	69.53500333	-93.53372167	2019-09-18
<i>Urocitellus parryi</i>	Arctic Ground Squirrel	69.68114483	-92.85216581	2023-07-04
<i>Vaccinium uliginosum</i>	bog bilberry	69.68091333	-92.847755	2023-07-04
<i>Vulpes lagopus</i>	Arctic Fox	69.54077833	-92.06739167	2023-07-04
<i>Vulpes lagopus</i>	Arctic Fox	69.98902167	-92.19522167	2023-07-04
<i>Woodsia glabella</i>	smooth woodsia	69.68058833	-92.84508667	2023-07-04

Woodsia glabella	smooth woodsia	69.68075	-92.84472778	2023-07-04
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APPENDIX C

GBIF Data

[illegible]

[illegible]

Larus hyperboreus	Nunavut	69.54254	-93.56541
Larus hyperboreus	Nunavut	69.54254	-93.56541
Larus hyperboreus	Nunavut	69.54254	-93.56541
Larus hyperboreus	Nunavut	69.54254	-93.56541
Larus hyperboreus	Nunavut	69.54254	-93.56541
Larus hyperboreus	Nunavut	69.54254	-93.56541
Larus hyperboreus	Nunavut	69.54254	-93.56541
Larus hyperboreus	Nunavut	69.5427	-93.56334
Larus hyperboreus	Nunavut	69.5427	-93.56334
Larus hyperboreus	Nunavut	69.5427	-93.56334
Larus hyperboreus	Nunavut	69.5427	-93.56334
Larus hyperboreus	Nunavut	69.5427	-93.56334
Larus hyperboreus	Nunavut	69.5427	-93.56334
Larus hyperboreus	Nunavut	69.5427	-93.56334
Larus hyperboreus	Nunavut	69.5427	-93.56334
Larus hyperboreus	Nunavut	69.535324	-93.529655
Lepus arcticus	Nunavut	69.543779	-93.56523
Lycaena phlaeas	Nunavut	69.533333	-93.533333
Oeneis bore	Nunavut	69.533333	-93.533333
Plectrophenax nivalis	Nunavut	69.54254	-93.56541
Plectrophenax nivalis	Nunavut	69.54254	-93.56541
Plectrophenax nivalis	Nunavut	69.54254	-93.56541
Plectrophenax nivalis	Nunavut	69.54254	-93.56541
Plectrophenax nivalis	Nunavut	69.54254	-93.56541
Plectrophenax nivalis	Nunavut	69.54254	-93.56541
Plectrophenax nivalis	Nunavut	69.54254	-93.56541
Plectrophenax nivalis	Nunavut	69.54254	-93.56541
Plectrophenax nivalis	Nunavut	69.54254	-93.56541
Plectrophenax nivalis	Nunavut	69.54254	-93.56541
Plectrophenax nivalis	Nunavut	69.535324	-93.529655
Salix arctica	Nunavut	69.542672	-93.56237
Urocitellus parryi	Nunavut	69.541899	-93.564757