



**NUNAVUT IMPACT REVIEW BOARD  
(NIRB) ANNUAL REPORT -2022**

**File no.21YN032**

**Clyde River Harbour Development**

**DFO ET025-222050/A**

**Submitted to:**

Public Services and Procurement Canada

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## 1. DESCRIPTION OF PROGRESS

The construction project was awarded to Pilitak Enterprises Ltd (PEL) in May 2022 by Public Services and Procurement Canada (PSPC) for the Department of Fisheries and Ocean (DFO).

### 1.1 ACTIVITIES UNDERTAKEN

At the end of August 2022, heavy equipment, camp facilities and material were delivered by sealift to Clyde River. The following activities were completed following the sealift's arrival, on August 29:

- Camp & garage installation.
- Explosive magazines installation and explosive transfer from marine containers.
- Truck scale installation at the construction site.
- Removal of surface material before drilling.
- Drilling and blasting. About 10,000 m3 were blasted from the east side of the existing quarry.
- Installation and testing of the rip rap plant, the screener plant and conveyors
- Quarry cleanup and blasted material removal
- Corestone production: 2,750 m3
- Filterstone production: 975 m3
- Aggregate production: 1,850 m3
- Road to quarry improvements
- Bridge to quarry improvements
- Winterization of the equipment and facilities

The non-local members of our crew were demobilized from Clyde River on November 4<sup>th</sup>, 2022.



### Camp, maintenance garage and staging area preparation



Camp installed



Weight scale installation





Maintenance garage installation



Maintenance garage installed



Drilling at the quarry



Drilling and blasting at the quarry





Road to quarry improvement



Rock processing plant



Processed products (filterstones and corestones)



Equipment winterization



## 1.2 LOCAL HIRING

The following occupations have been filled by local workers:

- Janitors
- Heavy equipment operator
- Truck drivers
- Wildlife monitor
- Labourers

A total of 13 local workers were employed. They worked a total of 3637 hours, which represents 30% of the total hours done at the site so far.

## 1.3 INITIATIVES

originally, this contract involved the installation of temporary culverts in order to cross the river to access the quarry. These culverts should have been installed and removed at the beginning and at the end of each construction season, until 2025. Instead, Pilitak proposed to upgrade the existing bridge in order to enhance it's bearing capacity. With the collaboration of the hamlet, application for permitting were submitted to the AHJ. The required steel piles, beams and lumbers were purchased and shipped to Clyde River by Sealift. The improvement works started on October 14 and were completed on October 30. A total of 16 steel piles were installed at a depth of 10 meters below ground to support 4 steel beams placed directly under the bridge superstructure. The existing wood deck was removed and replaced with new lumbers. These modifications now allow the bridge to support a maximum weight of 60 tons.



Bridge before improvements



Bridge during the improvements



Bridge improvement completed

## **1.4 MONITORING ACTIVITIES**

The following monitoring activities took place:

### **1.4.1 Daily wildlife monitoring**

The daily wildlife observations reported by the wildlife monitor on duty and other workers were recorded in the daily environmental reports. The summary of the wildlife observations is presented in the table 4.2 of the section 4 of the present document.

### **1.4.2 Erosion and sediment control**

Only preparation works were done this year. According to the site conditions, silt fences were installed at some specific locations to prevent the migration of fine material into adjacent waterbodies. The erosion and sediment control activities were recorded into the daily environmental reports.

### **1.4.3 Dust control**

The dust induced by our operations was monitored by the site superintendent. Considering that mostly preparation works were done this year and no massive volumes of rocks and granular material were transported, no dust control measure was required. Observations were noted into the daily environmental reports.

### **1.4.4 Spill**

The Spill Contingency and Prevention Plan was issued before our activities started at the site. The spill contingency materials were shipped to Clyde River and spill kits were installed at different locations. No spill occurred during our activities in 2022.

### **1.4.5 Vibrations**

Blasting operations were done at the quarry on September 25, 27, 28 and 29. There is only one building located within 1.5 kilometers of the quarry. The Learning Center is located to 1.4 km to the northwest of the quarry. A seismograph was installed on the concrete pad for the electrical transformer located beside the building. All recorded readings shown peak particle velocity lower than 6 mm/sec. No vibration was noted from the building occupants during the blasting operations.



No pile driving, no near-water blasting and no underwater operation was performed during the 2022's work season.

#### **1.4.6 Water quality control**

No culverts were installed for the river crossing. The bridge improvement works were done when the water was frozen. No water quality monitoring was required.

#### **1.4.7 Fish and Fish Habitat**

##### **a. Small Craft Harbour Site**

No work in the water was done at the harbour site during the 2022's construction season.

##### **b. River Crossing**

Since we decided to improve the existing bridge instead of installing and removing culverts in the river each year, the potential impacts to fish habitats in this area is considerably reduce. However, the Ford crossing was used by the time that the bridge improvement was completed and will have to be used occasionally for some oversize equipment.

Shortly after the sealift arrival, empty dynamite magazines were installed nearby the quarry, on the south side of the bridge, according to the permit issued by Natural Ressources. The explosives required for the first working season were shipped on the sealift within 7 marine containers. According to the regulation, the explosives should be transferred as soon as possible into secured magazines. At this time, the bridge improvement was not done and the bridge was not having the proper bearing capacity to support the weight of a wheeled loader plus a fully loaded marine container. The marine containers were transported through the Ford Crossing during the period starting on August 31<sup>st</sup> and ending on September 5<sup>th</sup>. At this time, the fish migration was not completed. Before each crossing, the river bed was observed carefully to confirm the presence of fishes. No fish was observed before each crossing. The HTO told us that usually, when the Seagulls are leaving the bay, it indicates the end of the fish migration. This happened around September 17<sup>th</sup>. The Ford crossing was used after the fish migration, from September 22, to bring some equipment on the other side of the river. The fish presence was sill monitored before each crossing until the ice was enough thick to cross on it.



Ford crossing with empty dynamite magazines

## 2. WORK PLAN FOR THE UPCOMING YEAR

The following activities are currently planned for the next working season:

- Drilling and blasting at the quarry
- Rock and granular material production
- Construction of the southwest breakwater
- New mooring bollard construction
- Preparation of the storage area for the dredge spoil





## 3. COMMUNITY RELATIONS

### 3.1 COMMUNITY CONSULTATIONS

A community meeting was held in Clyde River on August 17, 2022. The following topics were discussed:

- Work planned for the current year
- General project schedule
- Safety
- Employment opportunities and training

Some questions were asked about the project. One remark was done about the challenges of renewing a class 3 driver licence in Clyde River. We contacted the Department of Economic Development and Transportation in Iqaluit. It appears that since the pandemic, the office is short staff and they were not able to send a licence certifier in Clyde River since a while. We are looking for alternate solution for the next spring in order to get the licences renewed.

A jointly site inspection was done at the end of the season with the SAO, the mayor, the consultant, the HTO and our site superintendent. The group went around the different sites (camp, river crossing and quarry) to show the progress and discuss about the potential issues. Everyone was happy with what has been achieved and no issue was raised.

### 3.2 TRANSIT THROUGH THE PROJECT AREA

Only preparation works were done this year. No work was performed at the harbour site except for the weight scale installation. The traffic through this area was not affected and the community residents were freely circulated. The bridge to the quarry was closed from October 13<sup>th</sup> to October 31<sup>st</sup>. A closing notice was posted on the project's Facebook page. The area located west of the quarry, along the shoreline, is used by some local hunters and some sleight dog owners. We discussed with two dog owners and the bridge closing was not an issue for them since they have other access than by the bridge.

## 4. ENVIRONMENTAL AND WILDLIFE MONITORING

### 4.1 ENVIRONMENTAL ISSUES

With heavy rain during many days before the sealift arrival, the original site selected for the camp installation turned into a muddy area and was no longer appropriate for the camp installation. With the help of the hamlet authorities, another site was found nearby the airport. The camp and the staging area were installed at this new location. The original camp location was reshaped. The area is flat and there is no issue with sediment control.

Unexploded dynamite was found into an abandoned borehole at the quarry. The location has been protected with a big rock and marked with orange paint. This will have to be addressed next season by our blaster.

In preparation of the weight scale installation between the community tank farm and the new harbour, hydrocarbon contaminated soils were encountered during an excavation. The consultant was advised and this area is under monitoring. The weight scale was installed in surface, without any excavation.

No other environmental issues have been experienced.

### 4.2 WILDLIFE MONITORING

As per contract requirement, a pre-construction wildlife survey was carried by a professional biologist before starting the work at the quarry. The studied area included the quarry expansion limits indicated on the project drawings. A few abandoned bird nests were observed. The biologist report conclusions were:

“For this study, Pilitak Enterprises LTD plans to remove the natural layer of the quarry this fall before working on it next summer. In addition, it is the intention of the company to begin material extraction in early spring, before migratory birds return. These measures are intended to encourage wildlife to settle outside the quarry area in order to avoid disturbing them once their nesting sites are found. As a result, it is unlikely that parasitic jaegers will return to nest within the study area. Regarding the snow bunting nest located outside the area concerned by these measures, due to its proximity to the work zone (20 m), it is also unexpected to find the species nesting at the same location. Therefore, there is no need to create setbacks or buffer

zones. Finally, given the small area that will be affected by the extraction work compared to the vastness of the surrounding territory, the impact on wildlife should be minimized.”

Polar bears were seen at a few occasions nearby the camp site and at the quarry. A wildlife monitor was hired to avoid or mitigate the potential interaction between the wildlife and our operations. The observation summary is presented in the table 4.2.

Table 4.2: Wildlife observation

Date	Observed species	Time	Location	Activity/observation	Mitigation/other
Aug 27	Polar bear (1)	11:30	Nearby sealift beach	--	Not required
Sept 11	Polar bear (1)	14:30	± 1.5 km SW of the quarry	The bear left to south	Not required
Sept 20	Polar bear (1)	09:00	Nearby camp area	Monitor it's movement	Not required
Oct 10	Arctic fox (1)	09:15	at the bridge to the quarry	The fox was observed nearby the bridge and left to north	Not required
Oct 24	Polar bear (1)	08:30	Nearby airport	Monitor it's displacement	The bear was shot by a local hunter having a proper tag for polar bear hunting

#### 4.2.1 Mitigation measures for wildlife

Only preparation works were performed during the short duration of the construction activities during the fall 2022. Very little wildlife interactions were experienced during this period and no significative mitigation measures was required. The presence of polar bears was monitored by our wildlife monitor and no special action was required from him.



## 5. HERITAGE SITE AND INUIT LAND USE

### 5.1 HERITAGE SITE

Prior the sealift arrival, an archeological assessment was carried out by the consultant at each of the locations that we planned to use. No heritage sites within these areas have been identified. No heritage features were seen or discovered during the works that were performed this year.

### 5.2 INUIT LAND USE NEARBY THE PROJECT

As mentioned earlier, only preparation works were done this year. Very little works were done at the harbour site and no impact was observed for the local users. The bridge improvements and the road to the quarry improvement could have impacted people who needed to go by this way during that time. However, as mentioned in the section 3.2, local hunters and some sleight dog owners were using an alternate way to reach out their facilities.

## 6. SUMMARY OF COMPLIANCE TO TERMS AND CONDITIONS

The Table 1 included in Appendix 1 presents the list of the project-specific terms and conditions according to the screening decision and summarizes the actions that were undertaken to comply with each item.

**Clyde River Harbour Development  
(NIRB) Annual Report, File no.21YN032**

**APPENDIX 1**

**TABLE 1: Compliance to terms and conditions**

Clyde River Harbour Development, annual report for NIRB, File no. 21YN032

TABLE 1 : Compliance to terms and conditions

Project-Specific Terms and Conditions	Compliance Y: Yes / NC: No NA: not applicable	Additional information
1 A copy of the project terms and conditions shall be at	Y	All documents are on site
2 NIRB and NPC files shall be at the site	Y	All documents are on site
3 Site to be operated according to applicable acts, regulations and guidelines	Y	Bridge improvement was done according to obtained permits from AHJ. Other activities were done according to contract specifications, permits and applicable regulations.
4 Site to be operated according to applicable standards, permits and licences	Y	Conditions of the applicable permits and licences where followed.
5 Adequate training for all personnel	Y	Mainly health & safety training was done this season.
6 Waste and hazardous waste management	Y	Refer to the our Waste Management Plan
7 Spill Contingency Plan in place	Y	Refer to our Spill Prevention & Response Plan
8 Wildlife deterrent to keep wildlife away in case of spill	NA	No spill
9 Spill of 100 L and more to be reported immediately to	NA	No spill
10 Dust suppression measures	NA	Dust suppressor was shipped on site but was not required for the activities performed during the fall 2022.
11 Eliminate unnecessary idling	Y	Promoted by the site superintendent through tool box meetings.
12 Avoid alter or damage or destroy any wildlife habitat	Y	Refer to the following report: Wildlife Survey for Quarry Expansion.
13 Do not chase, weary, harass or molest wildlife	Y	
14 No hunting and fishing unless proper authorization in place	Y	No hunting is permitted. Employees who would like to fish requires a valid fishing licence to be issued by the HTO.
15 Give wildlife right of way on any roads and trails	NA	No wildlife observed on roads
16 Enforce speed limits	Y	Speed limits enforced through tool box meetings
17 Protect migratory birds	Y	Refer to the following report: Wildlife Survey for Quarry Expansion
18 Do not disturb or destroy nests or eggs of any birds	Y	Refer to the following report: Wildlife Survey for Quarry Expansion
19 Avoid seaward site of seabirds colonies	NA	No activity nearby water was performed.



Project-Specific Terms and Conditions	Compliance Y: Yes / NC: No NA: not applicable	Additional information
20 Do not pursue seabirds or waterbirds	NA	No activity on water was performed.
21 Do not move equipment where ground capacity is inadequate	Y	Additional granular material was placed on the quarry road.
22 Install silt fence down stream of any quarry activities	Y	Silt fences installed where needed.
23 Do not obstruct natural drainage flooding or channel diversion	Y	New culverts were installed on the road to the quarry.
24 Locate screening and crushing equipment on a stable ground	Y	The rip-rap unit and screeners were installed beside the quarry, on a pad made of blasted rocks.
25 Stake and flag pit and quarry boundaries	Y	Limits of the quarry expansion were marked.
26 Locate pit and quarry sites away from recreational area	NA	Contractual location for the quarry site.
27 Avoid drilling waste to spread the surrounding lands or water bodies	Y	Cuttings were collected while drilling the holes for the bridge improvements.
28 Ensure that no deleterious substances enter into water	Y	No spill of any substance in water did happen.
29 Ensure that drill areas are built to minimize the footprint	Y	Drilling for the bridge improvement was done from the bridge decking. Drilling at the quarry was done on cleaned bedrock.
30 In the case where artesian flow is encountered, plug hole immediately	NA	No artesian flow was observed while drilling.
31 Sump/depression capacities have a sufficient volume	NA	No sump was needed for our operations.
32 Drill hole are backfilled or capped	NA	Steel casing were installed into drilled holes at the bridge. Each casing was filled with a sand slurry and concrete. The holes add the quarry were used for blasting operations.
33 Use existing trails where possible	Y	No new roads/trails were developed.
34 Ensure that Land use area is kept clean and tidy at all times	Y	Debris from uncrating our supplies and equipment were collected and disposed / reused on a daily base.
35 Avoid disturbances on existing slopes	Y	Except for the quarry development, no work was done on existing slopes.
36 Remove garbage, fuel & equipment at end of season and project	Y	Hazardous waste and some scrap metal to be shipped off-site on the next sealift.
37 Restore all disturbed areas	NA	Work areas are currently under a development phase.

Project-Specific Terms and Conditions	Compliance Y: Yes / NC: No NA: not applicable	Additional information
38 Ensure that camp is located on a durable surface	Y	The camp location was changed. The area selected at first became too soft with heavy rain. The new location is more appropriate.
39 Do not erect camp or store material on surface ice of lakes or streams	Y	All equipment and supplies that were used during the bridge improvement were removed from ice surface under the bridge.
40 Consult and inform the local resident	Y	Community meeting was done at the beginning of the season. Information on operations was provided on the project's Facebook page. Local knowledge was used to determine the end of the fish migration period.
41 Ensure that project activities do not interfere with Inuit wildlife harvesting or traditional land use activities	Y	Prior and during the bridge improvements, the local people who are using the bridge for accessing their facilities were met.
42 Hire local people and access local services	Y	Inuit hiring met our project target percentage of 30%

# Quarry expansion: wildlife survey Clyde River, Nunavut

Presented to :

**Pilitak Enterprises LTD**

October 2022

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## INTRODUCTION

Pilitak Enterprises LTD is planning to proceed with construction activities to expand the existing quarry to supply the project of the harbor development with granular material. This granular material will be used to build a new dock for fishing boats. In these circumstances, a pre-construction wildlife survey was conducted to identify all sensitive wildlife features on the quarry area.

## 1. OBJECTIVES

The purpose of the wildlife survey is to collect data to document the receiving environment for the proposed quarry expansion in the community of Clyde River.

Specifically, this report aims to:

- Identify all sensitive wildlife features (active bird nest, active dens, wildlife foraging or traveling);
- Delimit and characterize potential nesting habitats for migratory birds.

## 2. STUDY AREA

The study area is located near the quarry of Clyde River (Kangiqtugaapik ᑭᐱᑭᑭᑭᑭᑭᑭ), on the northeast coast of Baffin Island in Nunavut, Canada (Map 1).

Located on a flood plain in mountainous terrain that is part of the Arctic Cordillera, Clyde River is surrounded by impressive fiords that extend to the Barnes Ice Cap. Ice and rock reign in the Arctic Cordillera Ecozone. Remainder is mainly colluvial and morainal debris. Massive ice caps and tonguing glaciers mask many of the rugged mountains. Because of the extreme cold, high winds, and lack of soil, the higher portions of this ecozone are largely devoid of plants and animals. Ice barrens and frost-shattered rock prevail over much of the landscape. At lower elevations, pockets of tundra meadow dotted with arctic flowers and ground-hugging shrubs occupy sheltered valleys, streambanks and coastlines. The land cover consists of scattered clumps of dwarf prostrate shrubs (1–3 cm high) of willow and mountain avens, with small cushion plants (e.g., species of drabas, saxifrage, chickweed, and poppy) and abundant lichens and mosses; or areas of lichens, mosses, scattered clumps of grasses and rushes, and cushion plants. During the brief arctic summer, these lands (polar semi-deserts) are oases of concentrated life.

The geographic coordinates of the center of the study area are:

- 70.467428 N
- -68.532261 O

The study area covers a total area of 40,000 m<sup>2</sup>, including the existing quarry (3500 m<sup>2</sup>) (Map 2).

# Quarry expansion: wildlife survey

## Location of the study area



### 3. METHODOLOGY

In order to obtain a better understanding of the species that may nest on the territory, several sources of information were consulted:

- Committee on the Status of Endangered Wildlife in Canada (COSEWIC) data on special-status wildlife species ;
- Government of Canada Species at Risk descriptive sheets ;
- Arctic Program for Regional and International Shorebird Monitoring (PRISM)

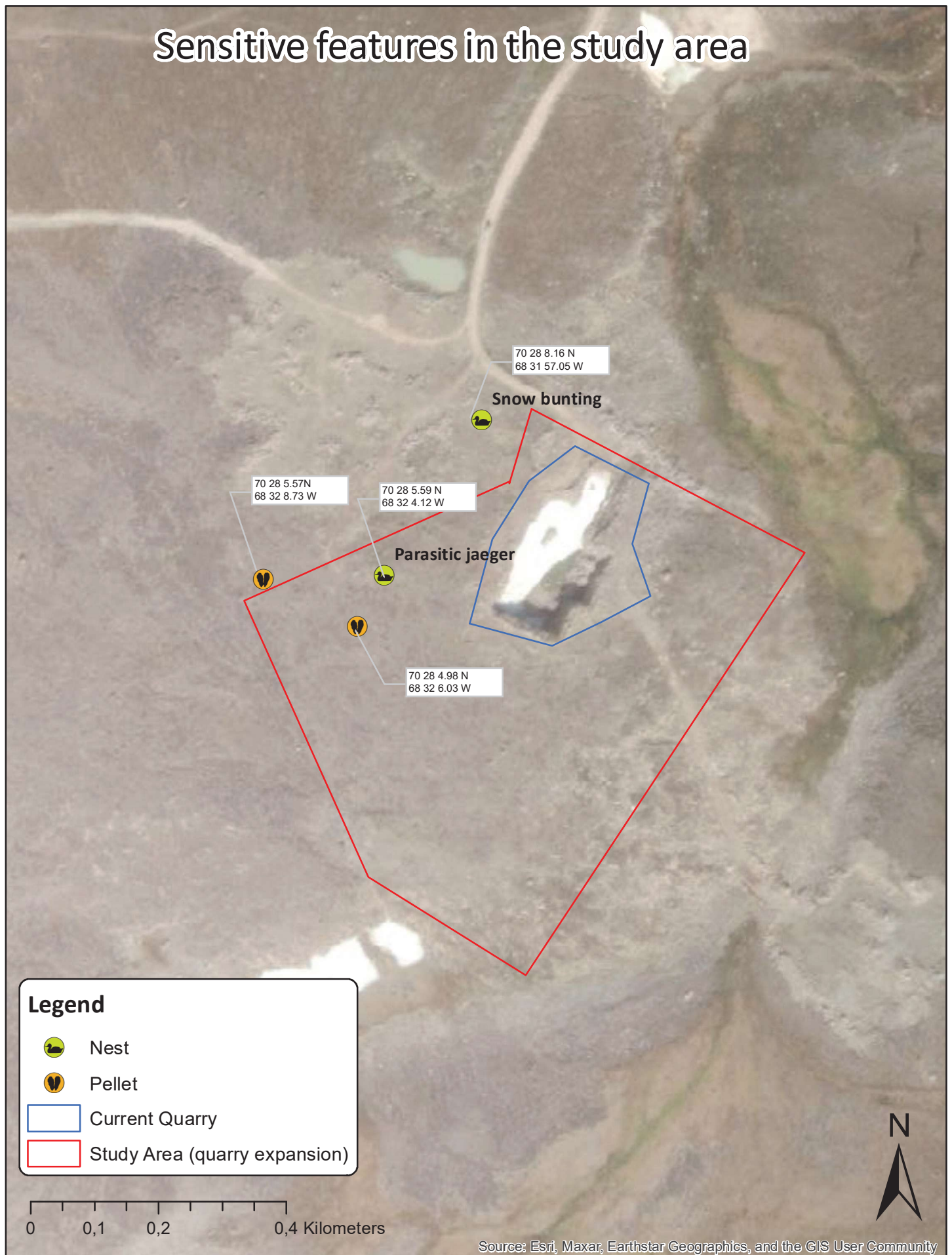
The field survey was conducted on August 16, 2022, by Gwenaëlle Minot-Kohl, Biologist, M.Sc. Descriptive elements of the study area were located using a GPS (Garmin eTrex 20X). All data collected was integrated into the ArcGIS geographic information system (version 10.4.1) in shapefile format. Photographs were also taken.

The observer walked through the entire study area to locate all sensitive wildlife features sign. He made parallel transects spaced 2 meters apart from each other. The study area was walked in its entirety twice. The transects were carried out first in the direction of the length and then in the direction of the width.

Each sensitive wildlife features detected was georeferenced, identified, photographed and left in place.



# Sensitive features in the study area



## 4. RESULTS

Vegetation on the site is mainly composed of arctic willow (*Salix arctica*), arctic bell heather (*Cassiope tetragona*) and lichens.

During the field survey, a few bird species were heard or observed in the study area:

- Common raven (*Corvus corax*);
- Horned lark (*Eremophila alpestris*);
- Snow bunting (*Plectrophenax nivalis*).

Two nests were found. A parasitic jaeger (*Stercorarius parasiticus*) nest and a snow bunting nest, located outside the study area, but close to its northern limit. The nest of the parasitic jaeger is recognizable because very rudimentary, no material is added, it is a depression scraped in the soil of the Arctic tundra. Their nest is usually found on a small mound where they can keep an eye on their territory and protect their nest from predators. In the study area it was located at the most elevated point, moreover, two pellets of this species were identified near the nesting area. These birds are very territorial and faithful to their breeding site (Map 2).

The snow bunting's nest is built on the ground and placed in a cavity, a rock crevice or a hole in the ground. Plant elements (leaves, mosses, lichens) are used to shape the cup-shaped structure. The nest found was dug in the ground under the shelter of a rock.

Although no special-status wildlife species were observed during the field survey, others likely frequent the study area. The Committee on the Status of Endangered Wildlife in Canada (COSEWIC, 2021) provides a list of various special-status species that may occur in Nunavut. An initial screening of the species on this list was done based on the range of the species and the habitats present in the study area.

Total of 3 species were selected. The habitat potential of these species in the study area is presented in table 1. It is important to note that the number of special-status species likely to be found in the study area is probably overestimated. The habitat potential is derived from the distribution maps for each species and the type of environment present observed in the study area. These distribution maps encompass large areas, while these species are rare and often have discontinuous ranges.

No signs of mammalian wildlife were observed at the quarry during the site visit.



**Table 1 Special-status bird species likely to occur in the study area and habitat potential**

Common name	Scientific name	SARA*			Habitat potential	Justification
		Endangered	Threatened	Special Concern		
Falcon anatum/tundrius, Peregrine	<i>Falco peregrinus anatum/tundrius</i>			X	Low	Peregrine falcon prefers open habitats and usually nests alone on cliff ledges or crevices. Nests are usually scrapes made on cliff ledges on steep cliffs, including artificial cliffs such as quarries. The Peregrine Falcon primarily feeds on birds that it typically catches in flight.
Gull, Ivory	<i>Pagophila eburnea</i>	X			Low	Ivory gull nests on flat terrain or on sheer cliffs above ice sheets, The nest is made of moss, lichens and grasses and is placed on the ground or on a cliff ledge. Ivory gull is foraging primarily on small fish but during the breeding season, it also feeds on small mammals, such as lemmings.
Phalarope, Red-necked	<i>Phalaropus lobatus</i>			X	Low	Red-necked Phalaropes breed in low- and sub-Arctic wetlands, near freshwater ponds, lakes, or streams. Nests are a simple scrape containing 4 eggs.

\* Species at Risk Act

No protected and conserved areas are located near (20 km radius) or within the study area.

One protected area is found northwest of Clyde River, Tallurutiup Imanga National Marine Conservation Area, in the Bylot Island area, and one protected area is found southeast, Ninginganiq National Wildlife Area, in the Aulitvik Island area.

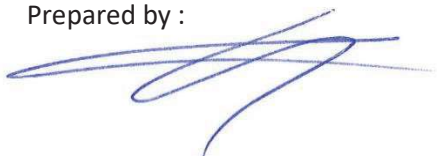
## CONCLUSION

Only two nests were found. A parasitic jaeger nest was inside the study area and a snow bunting nest was located outside the northern limit of the study area. The results are poor due to the short survey period and the time of year in which it took place. Indeed, for this region of the world, the survey took place late in the season, after mid-August, the migratory birds (adults and juveniles) have left the nesting area. It was therefore more difficult to observe active bird nesting, wildlife foraging or traveling.

In July, when the birds are present on their nesting site, it would facilitate the observation of breeding behaviors, the location of the nesting area and the identification of the species. In terms of methodology, for a study conducted during the breeding season, in addition to walking through the entire study area as was done for this study, it could also be interesting to spend several days in the same place, without moving, in order to observe the different wildlife's behaviors. The first aspect would give an idea of where the nests are located by having the birds fly away when we pass by. The second aspect would allow us to witness behaviors related to nesting, feeding and predation, thus confirming other criteria concerning the biology of the species.

For this study, Pilitak Enterprises LTD plans to remove the natural layer of the quarry this fall before working on it next summer. In addition, it is the intention of the company to begin material extraction in early spring, before migratory birds return. These measures are intended to encourage wildlife to settle outside the quarry area in order to avoid disturbing them once their nesting sites are found. As a result, it is unlikely that parasitic jaegers will return to nest within the study area. Regarding the snow bunting nest located outside the area concerned by these measures, due to its proximity to the work zone (20 m), it is also unexpected to find the species nesting at the same location. Therefore, there is no need to create setbacks or buffer zones. Finally, given the small area that will be affected by the extraction work compared to the vastness of the surrounding territory, the impact on wildlife should be minimized.

Prepared by :




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Gwenaëlle Minot-Kohl, biologist, M. Sc.


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- SIBLEY, D., 2006. The Sibley Guide to Birds of Eastern North America. Edition Michel Quintin. 433p.

# Gwenaëlle Minot-Kohl

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 522, Arago Ouest Street, Quebec (QC) G1N 2M3

## Biologist

### PROFILE

#### Key competencies

- Field diagnostics, naturalist surveys and wildlife monitoring
- Data collection and analysis
- Mapping and spatial analysis (QGIS and ArcGIS)
- Report writing and environmental authorizations
- Languages : French and English
- Software : Microsoft Pack Office and WordPress
- Use of GPS devices

#### Know-how

- Autonomy, thoroughness, perseverance, dynamism
- Ability to adapt and learn
- Spirit of synthesis, concern for solutions
- Collaborative and community spirit
- Strength and passion when on the field
- Comfortable in isolated environments
- Good mood in all circumstances

### PERSONAL COMMITMENT

<b>Assistance to banders during fall migration (Tadoussac Bird Observatory)</b> Passerine Bird Monitoring Project at Cap Tourmente National Wildlife Area	10-2021
<b>Wilderness Survival Training (<i>Les Primitifs</i>)</b> Training on the basics of survival in natural environments without using modern equipment	12-2020
<b>Advanced Wilderness First Aid (SIRIUSMEDx)</b> 40 hour training + CPR/AED	11-2019
<b>Monitoring of the Arctic fox population in Iceland (Arctic Fox Center)</b> Data collection to study the impact of tourism on fox populations in Hornstrandir Nature Reserve (remote camping experience)	06-2019
<b>Introduction to Northern Research and Issues Training (<i>Institut nordique du Québec</i>)</b> 5-day training to be able to carry out research in a northern context, as well as to create sustainable links with local communities	05-2019
<b>MOOC Northern Quebec : Issues, Spaces and Cultures (<i>Université Laval</i>)</b>	04-2019
<b>Wolf inventory at Kenauk (Nature Conservancy of Canada)</b> Inventory of the eastern wolf on the Kenauk territory. Search by cross-country skiing for signs of wolf presence (tracks, feces, urine, etc.), to confirm its presence on the territory	02-2019
<b>Canadian Firearms Safety Course (CFSC)</b>	2018
<b>Monitoring of the Bearded Vulture (<i>Gypaetus barbatus</i>) in the Sixt-Passy Nature Reserve (ASTERS)</b>	2013
<b>Study of behavioral changes in a wolf pack following the birth of cubs (Orlu)</b>	2010

### WORK EXPERIENCE

**Biologist, Project Manager**

Groupe Del Degan, Massé et Associés inc. (DDM), Québec

2019 – 2022

- Monitoring of forest birds on the Rupert River in James Bay (listening points)
- Characterization of vernal pools and amphibian inventories
- Characterization of fish habitat and erosion of the Kuuguluk River in Salluit
- Study of three potential routes for an access road to a new granular borrow pit in Puvirnituq
- Monitoring of wildlife movements during the impoundment of the Romaine 4 reservoir
- Field monitoring of bird collisions with power lines
- Applications for environmental authorizations

**Biodiversity Project Officer**

Nature Québec, Québec

2014 – 2019

- Collaborate in the implementation of biodiversity projects
- Plan events on natural environment conservation and ensure logistics
- Facilitate awareness-raising workshops on urban agriculture in school organizations
- Contribute to the realization of greening projects and green alleys

**Natura 2000 Project Manager***Ligue pour la protection des oiseaux* (League for the protection of birds), France

2012

- Study of the avifauna of an alluvial grassland agrosystem, monitoring of 7 declining species
- Data analysis and development of a project designed to protect the species
- Implementation of conservation tools
- Mediation and communication between the various stakeholders of the environment

**Natural Areas Technician – Intern**

National Museum of Natural History, France

2008

- Telemetric monitoring of dispersal potential of young birds, in an unknown urban environment
- Capture of passerines with mist nets
- Banding and installation of a transmitter
- Proposed management and design measures to promote dispersal

**TRAINING**

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**Master's and Bachelor's degrees in Ecology and Population Biology**

Université de Poitiers, France

2012

**University exchange in Master's studies : "Fisheries and Wildlife"**

Oregon State University, Oregon, USA

2011

**Brevet de technicien supérieur (BTS) (Senior Technologist's Certificate) Management and Protection of Nature**

LEGTA de Sées, France (Comparable to a technical college diploma)

2007

**AREAS OF INTEREST**

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- The Arctic, wildlife viewing; the mountains
- Outdoor sports : hiking, camping, trail running, mountain biking, kayaking, horseback riding
- Manual work : painting, drawing, woodworking, gardening