Fisheries and Aquaculture
1575A Lake Rd
Sandy Point, Nova Scotia
B0T 1W0
novascotia.ca

Public Notice – Adjudicative Application Posted

These documents have been submitted with respect to a New Marine Aquaculture Licence/Lease application. The application follows a Scoping period, during which the applicant collected information to support their application. The information in these documents is provided as part of the routine disclosure of information by the Department of Fisheries and Aquaculture. Some information may be redacted as business confidential information or personal information.

These documents were provided to the Department by the applicant (with the exception of the attached Schedule "A" which was generated by the Department). The Department is not responsible for the content of these documents, including, but not limited to, the accuracy, reliability, or currency of the information contained within.

Adjudicative Application for a New Aquaculture Licence and Lease	
Applicant: Paq'tnkek Mi'kmaw Nation	**Species:** American oyster
Application Received On: July 22, 2022	**Method of Cultivation:** Suspended Cultivation
Application File Number: AQ#1460	**Location:** Havre Boucher, Antigonish County (Option Area AQ#4028)

To learn more about the marine aquaculture lease and license application process, please visit https://novascotia.ca/fish/aquaculture/licensing-leasing/Aqua-Licensing-and-Leasing-Overview.pdf

For information on the Nova Scotia Aquaculture Review Board, please visit https://arb.novascotia.ca/

NOTICE

Posting Date of this Notice: August 24, 2023

Please note that this application is being reviewed pursuant to the *Canadian Navigable Waters Act* by Transport Canada. Written comments regarding the effect of this work on marine navigation may be submitted to Transport Canada as follows, for a period of 30 days following the posting date of this notice.

1. On line at : http://cps.canada.ca/ under the following:
   File AQ#1460: Registry #6136 / NPP#2022-207301
2. By Mail at: Manager
   Transport Canada - Navigation Protection Program
   6th floor-95 Foundry Street, Moncton, NB E1C 5H7

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NOVA SCOTIA

Office Use Only
Rec'd in office via email July 22/22

Aquaculture Licence/Lease Application

Applicant Information:

Applicant: Paqtnkek Mi'kmaw Nation Contact Person: Norma Prosper

Nova Scotia Registry of Joint Stocks Number: 3104962

Revenue Canada Business Number: [redacted]

Telephone No. (Work): 9023862781 (Home): _____ (Cell): [redacted]

Fax No.: 9023862043 E-mail: norma.prosper@paqtnkek.ca

Mailing Address: 7 Dillon St Afton Station

Antigonish County NS Postal Code: B0H1A0

Civic Address: 7 Dillon St. Afton Station

Antigonish Co. NS Postal Code: B0H1A0

Proposed Site Information:

Location of Site: Havre Boucher County: Antigonish Site Size (Ha): 4.3

Site Dimensions: 220 m X 195 m

Hydrographic Chart No.: RM-4462

Approximate Center Coordinates: Latitude: 45°41'6.05"N

Longitude: 61°31'10.22"W

Type of Licence Application
(Check appropriate boxes):

- ■ Commercial licence/lease
- ☐ Experimental licence/lease

☐ Marine Plants ☐ Finfish ■ Shellfish ☐ Other

Submit completed applications to: Nova Scotia Department of Fisheries and Aquaculture, Aquaculture Division
1575 Lake Road, Shelburne, NS B0T 1W0
E-mail: aquaculture@novascotia.ca

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- ☐ Land-based
  - ☐ Freshwater
  - ☐ Saltwater
  - ☐ U-Fish
  - ☐ Hatchery
  - ☐ Nursery Facility
  - ☐ Growout
- ■ Marine
  - ☐ Cage culture
  - ■ Suspended shellfish or marine plants
  - ☐ Bottom shellfish with gear
  - ☐ Bottom shellfish without gear

Application Materials

A complete application includes the following:

- Application fee (payable to Minister of Finance) according to Section 77 of the Aquaculture Licence and Lease Regulations for Nova Scotia made under Section 64, Chapter 25 of the Acts of 1996, *the Fisheries and Coastal Resources Act*
- Application Form
- Development Plan according to application
- Report on Public Engagement during Scoping (for all Marine applications and for other applications, as applicable)
- Copy of up-to-date Shareholder's Register which sets out the shareholdings of the company (if applicable, and if not already provided during the Option to Lease application process.

Public Notice and Disclosure

As part of the process for deciding on an aquaculture application, the Nova Scotia Department of Fisheries and Aquaculture ("Fisheries and Aquaculture") will disclose application information to other government bodies, including, if applicable, the Nova Scotia Aquaculture Review Board for use at an adjudicative hearing relating to the application.

In accordance with departmental policy, which seeks to promote public involvement in the process for deciding on aquaculture applications, Fisheries and Aquaculture may disclose application information – not including, however, personal or business confidential information – on the departmental website.

Privacy Statement

The personal and business confidential information collected as part of an aquaculture application will only be used or disclosed by Fisheries and Aquaculture for the purpose of deciding on the application.

NOVA SCOTIA

Office Use Only

All application information collected is subject to the Freedom of Information and Protection of Privacy Act ("FOIPOP") and will only be used or disclosed in accordance with FOIPOP.

By signing and submitting this form, I acknowledge that I have read, understand, and accept the above statements regarding the collection, use, and disclosure of the information provided on this form.

Signature of Applicant [redacted]

Date July 15, 2022

Signature of Nova Scotia Department of Fisheries and Aquaculture Designate [redacted]

Date Feb 16/23
* recd via email July 22/22

Submit completed applications to:

Nova Scotia Department of Fisheries and Aquaculture, Aquaculture Division
1575 Lake Road, Shelburne, NS B0T 1W0
E-mail: aquaculture@novascotia.ca

Ver. 170723-1

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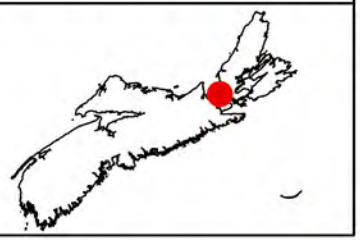
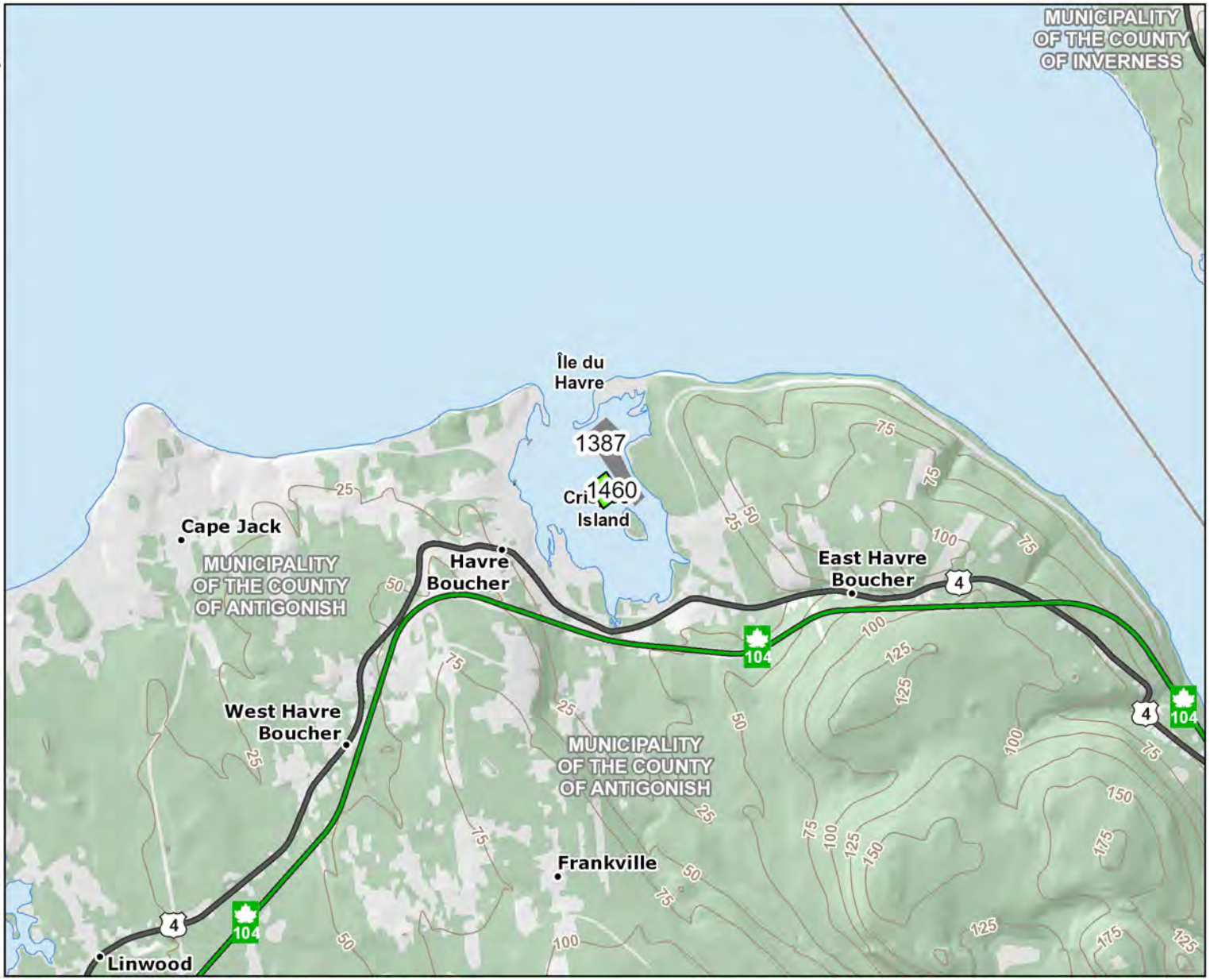
SCHEDULE A



Aquaculture Site
1460

Corner	Latitude	Longitude
1	45° 41' 11.080"	-61° 31' 9.640"
2	45° 41' 4.870"	-61° 31' 3.980"
3	45° 41' 1.170"	-61° 31' 11.090"
4	45° 41' 7.430"	-61° 31' 16.620"
Centre	45° 41' 6.078"	-61° 31' 10.263"

DATUM NAD 83 CSRS UTM Zone 20
The above coordinates are not from a legal survey



License/Lease Holder	County	Waterbody	Hectares	Species Type	Culture Type	Chart
Paqtnkek Mi'kmaw Nation	Antigonish	Havre Boucher	4.31	Shellfish	Suspended Culture	4446

Proposed Application
Other Issued Lease

0 0.5 1 2
Kilometers

NOVA SCOTIA
Fisheries and Aquaculture

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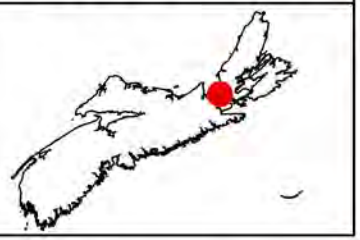
Date: 2022-09-27 Created By: MK

Internal Services Department

SCHEDULE A



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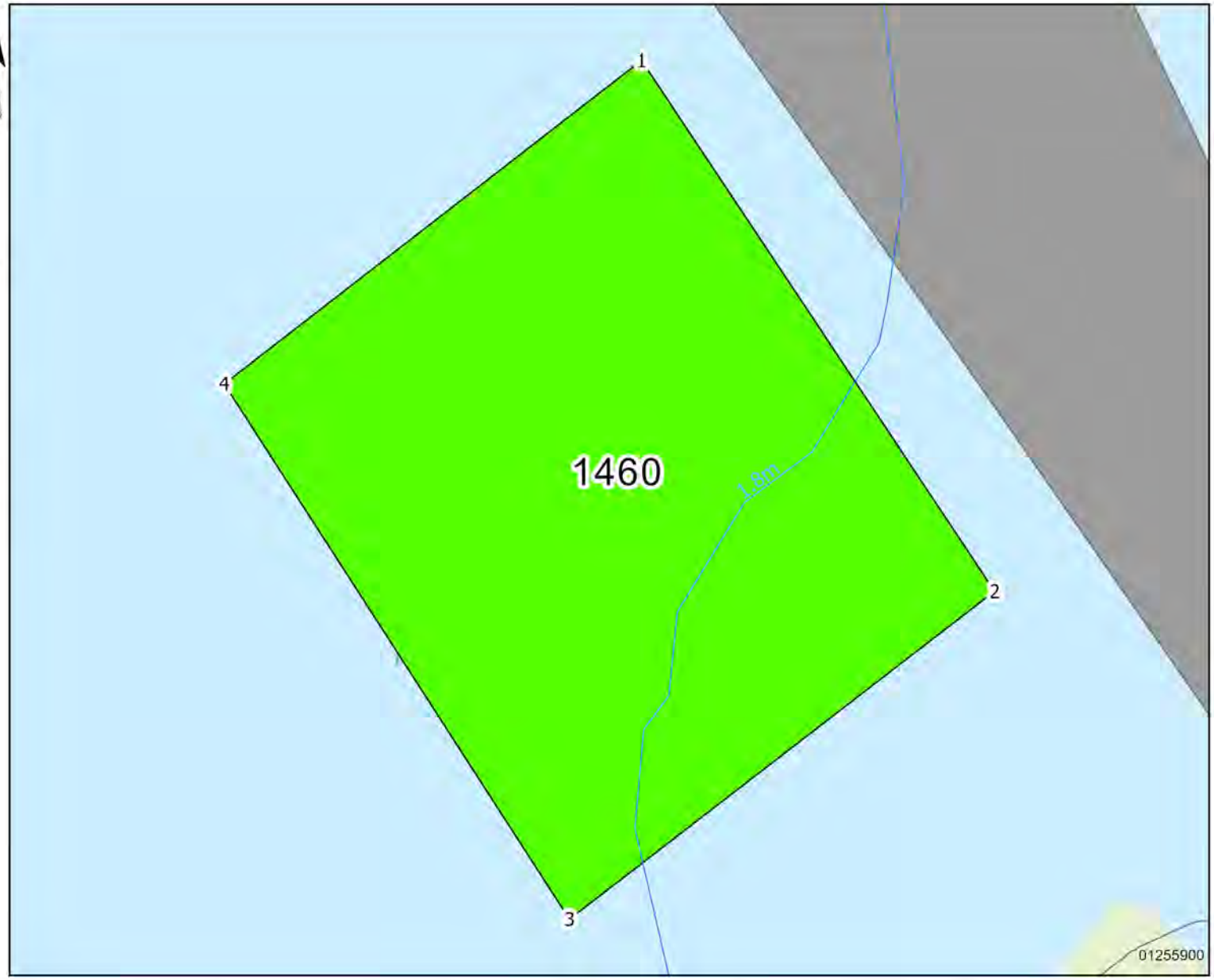

License/Lease Holder	County	Waterbody	Hectares	Species Type	Culture Type	Chart
Paqtnkek Mi'kmaw Nation	Antigonish	Havre Boucher	4.31	Shellfish	Suspended Culture	4446

Proposed Application
EC Restricted Area
TC Approved Area

0 20 40 80 120
Meters

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Fisheries and Aquaculture

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Date: 2022-09-27 Created By: MK

Marine Suspended Oyster Aquaculture Development Plan for Havre Boucher, NS

For more information, contact:
Norma Prosper
norma.prosper@paqtnkek.ca
Submitted: July 22. 2022
Revised: June 05, 2023

SECTION 1: THE OPTIMUM USE OF MARINE RESOURCES

Paqtnkek Mi'kmaw Nation is requesting a marine shellfish licence/lease in Havre Boucher harbour in Antigonish County, NS. This proposed site is within the Option to Lease # 4028. The proposed site will allow Paqtnkek to relay more than 300,000 oysters at a time, using suspended culture, once it reaches maximum production. The oysters to be relayed to this site will come from Paqtnkek's production site in Summerside, NS, which is restricted for harvesting shellfish but demonstrates good oyster seed collection and growth. Paqtnkek has submitted an application concurrently for the production site in Summerside.

It is anticipated that this oyster aquaculture development by Paqtnkek will contribute to the surrounding communities by supporting the employment of five persons for the two sites combined and promoting the purchase of goods and services from local suppliers.

The Havre Boucher wharf is a recognized significant port for fishing activities. The vast majority of commercial fishing activity occurs outside of the harbour in St. George's Bay and should not be impacted by the proposed oyster aquaculture site because of their relative locations. Commercial and recreational fisheries in the harbour should be minimally impacted by the proposed site due to its location away from the shoreline, its position adjacent to an existing aquaculture site, and the operational practices that will ensure that gear remains on site and waste is contained.

The oceanographic and biophysical characteristics of the public waters surrounding the operation are appropriate to support the planned oyster aquaculture activities. The success of the adjacent oyster site supports this assessment.

Beyond the fishers, the human users of the area are local residents and visitors to Havre Boucher who use the sheltered waters of the harbour for recreational purposes including boating, tubing, kayaking, canoeing, water-skiing, visiting Crispos Island, and providing safe refuge for recreational boats during inclement weather. In recognition of the importance of these activities, Paqtnkek adjusted the proposed location of the site to minimize navigational issues and ensure shoreline access. Operational procedures will include a waste management plan and procedures for ensuring that gear is properly maintained on site and frequent checks are performed for finding and retrieving loose gear. Risks to wildlife users of the region will also be mitigated via these management measures and other procedures that reduce interaction and the potential for interaction with wildlife, especially birds.

A Notice of Works application has been submitted. Outcomes from Transport Canada's assessment will be applied to ensure the public right of navigation through compliance with the Canadian Navigable Waters Act.

There is little information regarding the salmon populations in the area. And there are no known restoration efforts on the local river or tributaries. Regardless, the site is not adjacent to the mouth of the river where salmon may reside; and responsible farm practices, as described previously, will ensure little to no impact of operations on these populations, if they exist, or any future habitat restoration efforts.

The requested site is adjacent to an existing oyster aquaculture site. However, a positive relationship exists with the current operator and negative interactions are not anticipated.

The proposed operation has the potential to contribute to economic development of Paqtnkek Mi'kmaw Nation and the local region in general. Mitigation practices will reduce impacts to other users of the local waters, including the fishery, wildlife, and local residents. This includes the public right to navigation. Therefore, because of the expected minimal negative impacts and anticipated positive impacts described according to the factors to be considered in decisions related to marine aquaculture sites, this request should represent an optimum use of marine resources for the area requested.

It is notable that the Paqtnkek Mi'kmaq have traditionally used the ocean waters for their livelihood. The Nation looks forward to applying its knowledge of the waters to promote economic and food security for their people using the sustainable practice of oyster aquaculture. Development of this oyster aquaculture site is an economic and social venture that embodies the past, present and future of Paqtnkek Mi'kmaw Nation.

SECTION 2: THE CONTRIBUTION OF THE PROPOSED OPERATION TO COMMUNITY AND PROVINCIAL ECONOMIC DEVELOPMENT

2.1 Production plan

Method: Suspended
Species: American oyster (*Crassostrea virginica*)
Gear unit type*: Oyster Gro cages with 6 bags/unit (dimensions approximately 54" X 36" X 12")
Maximum number of gear units: 600 cages
Maximum number of lines: 20 lines
Maximum line length: 175 feet
Maximum shellfish introduced (annually): 800,000
Maximum shellfish on site: More than 300,000 (depends on market conditions)
Seed source: Market size oysters grown at lease/licence in Summerside, N.S. (An application was made for a commercial Summerside lease concurrently to this Havre Boucher site application.)
Expected time to achieve maximum production: 3-4 years

*Experimentation with a new suspended "BOBR" type gear is underway. These would hold oysters at a similar density within the lease area. Because outcomes from using BOBRs is unknown at this time, the production plan described above has been developed assuming the use of OysterGro gear.

This area is classified as "approved" for shellfish harvesting.

The intention is to relay oysters grown in a restricted area to this area to allow them to purge themselves prior to market, according to guidelines described in the Canadian Shellfish Sanitation Program.

2.2 Infrastructure

Paqtnkek has been operating an experimental aquaculture lease/licence in Church Cove (Summerside, N.S.) for the past four years. During this time, they have acquired a significant amount of the infrastructure necessary to conduct operations proposed for Havre Boucher. This includes the following:

- 4 of 40' trailers used for housing site-required equipment in a secure and tidy manner and a fresh water supply, both on the above-mentioned land
- Adjacent building with toilet and washing facilities available for use by the staff
- Steel quonset hut complete with office facilities to be used for maintenance, lab, and additional storage (e.g. for boats, truck, other equipment)
- Fenced in storage area adjacent to quonset hut
- Security system for equipment area
- 18' flat bottom aluminum boat (8' wide), stability tested and approved for use by Transport Canada, complete with outboard motor and 1000-lb winch and powerpack for lifting cages
- 10' aluminum boat

- 16’ fiberglass boat with 40hp motor
- Half-ton truck
- Two boat trailers
- Shaker grader
- Tumbler
- Power washer
- Totes
- Tractor

Infrastructure to be acquired to put the proposed Have Boucher site into operation follows:

- Insulated boxes
- Additional totes
- Anchors, rope, and gear for installation of lines
- Site marking buoys

2.3 Services and suppliers

Goods required for the farming operations include aquaculture specific equipment (e.g. OysterGro units and bags), aquaculture/fishery related equipment (personal protective equipment, gaffs, rope, other), general hardware (cable ties, knives, tools, etc.), fuel, and other day-to-day requirements. Although the OysterGro units will not likely be available locally, the other needs will be sourced from the nearest communities, with preference to Paqtnkek Mi’kmaw Nation. Services that will be required on an interim basis include welding, general contracting, cement production, carpentry, diving and others. Again, these will be preferentially sourced from Paqtnkek Mi’kmaw Nation then to surrounding communities. Such communities that are likely to benefit from the purchase of goods and services include Havre Boucher, Whycocomagh, Antigonish, Port Hawkesbury, Pictou, and New Glasgow.

The oysters to be relayed to this proposed lease will be from spat collected and grown out at an aquaculture site in Summerside, NS. The application for the Summerside site was submitted concurrently.

Although processing and sales may not be direct from Paqtnkek Mi’kmaw Nation initially, they will occur from the general area. It is anticipated that Paqtnkek will eventually develop its own processing capacity.

Current suppliers to the Paqtnkek Oyster Project are listed in Appendix A.

2.4 Employment

It is anticipated that the oyster development plans will employ five persons, total, for both sites that Paqtnkek has applied for. The Havre Boucher site will be operated by employees who also work at the Summerside site. These include a farm manager and four farm technicians. An additional person

acts as the project manager/administrator. Employees will be drawn from the Paqtnkek Mi'kmaw Nation, whenever possible. Additional direct local jobs may eventually be created in the processing of the oysters.

2.5 Other economic contributions to the local community and Province

Spin off economic benefits to the local communities would be expected to occur. A past report on the economic impact of aquaculture in Nova Scotia indicates that 1.55 indirect jobs result from every person directly employed at an aquaculture operation (Foster, 2019).

2.6 Financial viability

See business plan attached as Appendix B. Additional financial information is available upon request.

2.7 Adverse economic impacts

No adverse economic impacts are expected.

SECTON 3: FISHERIES ACTIVITIES IN THE PUBLIC WATERS SURROUNDING THE PROPOSED AQUACULTURAL OPERATION

3.1 Status of fisheries activities

Commercial fisheries serviced by Havre Boucher harbour: St. Georges Bay and surrounding areas
St. Georges Bay is the body of water north of Havre Boucher harbour. It is part of the Gulf Region, as defined by Fisheries and Oceans, Canada. See Figure A.

St. Georges Bay is an area of groundfish fisheries traditionally directed at white hake, plaice, winter flounder, and cod using longlines, gillnets, otter trawls and seines, with Havre Boucher harbour a recognized fishing port for this resource.[1] The Havre Boucher harbour is considered by DFO to be a core fishing harbour - critical to fishing and aquaculture industries.[2] The port of Havre Boucher within St. George's Bay is shown in Figure B.

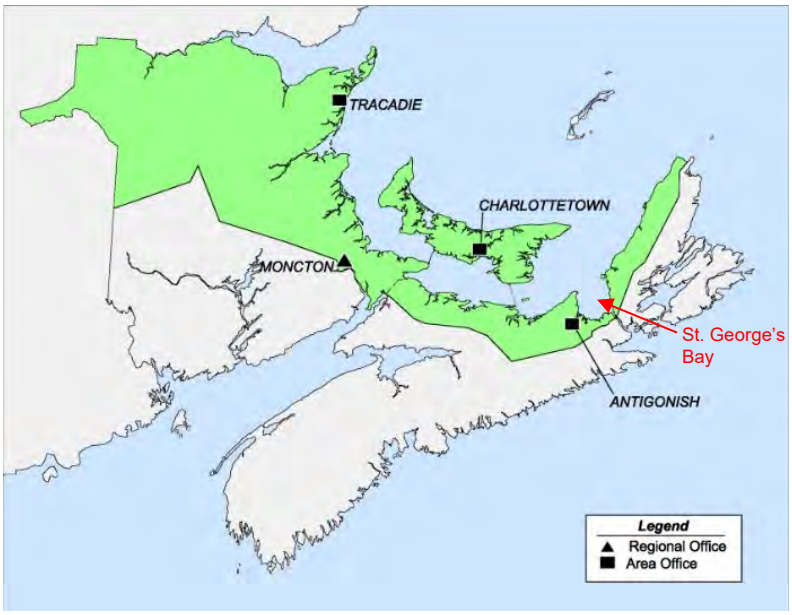


Figure A: Gulf Region of the Maritimes is shown in green, as defined by Fisheries and Oceans Canada. Source: https://www.qlf.dfo-mpo.gc.ca/en/map-gulf-region. Accessed July 13, 2022. St. George's Bay is indicated by the red arrow.

[1] Sinclair, A. 1999. Groundfisheries in St. Georges Bay. Fisheries and Oceans Canada Canadian Stock Assessment Secretariat Research Document 99/118.
[2] https://www.dfo-mpo.gc.ca/sch-ppb/maps-cartes-eng.html Accessed July 13, 2022.

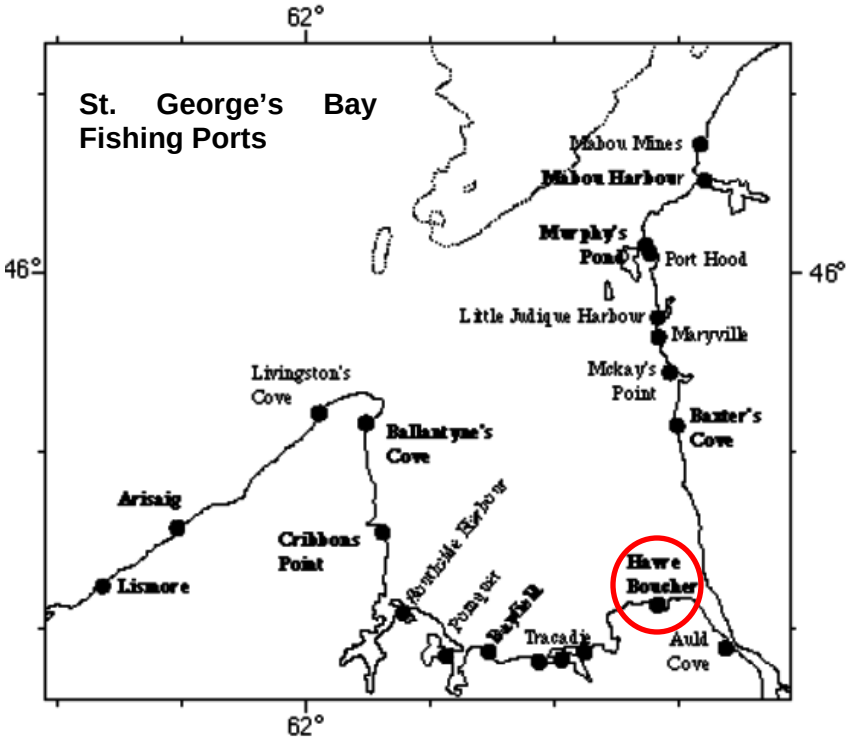


Figure B: Fishing ports of St. George's Bay. Have Boucher is circled in red. The map was sourced from: Sinclair, A. 1999. Ground fisheries in St. Georges Bay. Fisheries and Oceans Canada Canadian Stock Assessment Secretariat Research Document 99/118

Historical numbers of fishing licences for the Gulf Region of Nova Scotia are shown in Table 1. These numbers include areas beyond St. Georges Bay and encompass the entire Northumberland Strait side of Nova Scotia as well as the north west coast of Cape Breton, as shown in Figure A. They show a very flat trend, with little increase or decrease in licence numbers over the past ten years.

Table 1: Number of species' licences issued in Gulf NS Region over ten years, as collated from statistics posted by Fisheries and Oceans Canada (DFO), Fisheries Management at https://www.dfo-mpo.gc.ca/stats/commercial/licences-permis/licences-permis-atl-eng.htm#Species. Accessed July 13, 2022.

Species	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011
Groundfish	333	334	327	328	333	331	333	333	334	335
Herring	424	424	423	423	425	427	427	427	429	429
Mackerel	643	644	649	650	650	654	655	656	659	665
Swordfish	183	183	183	184	184	184	184	184	186	187
Tuna	162	144	125	125	107	146	146	145	125	125
Salmon	4	3	3	4	0	5	5	5	5	5
Capelin	0	0		0	0	0	0	0		
Clam	106	106	110	111	112	114	117	119	118	118
Scallop	199	159	131	131	176	178	195	197	199	195
Squid	382	381	381	382	381	381	382	382	384	388
Lobster	603	603	607	607	609	610	610	623	627	639
Shrimp	6	0	3	2	2	1	1	1	1	1
Crab	286	255	210	210	199	267	281	273	285	276
Other	1,774	1,701	1,651	2,308	2,172	1,746	1,743	1,770	1 753	1,730
Total Atlantic	**5,105**	**4,937**	**4,803**	**5,465**	**5,350**	**5,044**	**5,079**	**5,115**	**5 105**	**5,093**

The relevant fishing zones for the area are listed below in Table 2.

Table 2: Fishing zones relevant to St. Georges Bay and Havre Boucher, as collated from maps posted at https://www.glf.dfo-mpo.gc.ca/glf/en/fishing-area-maps. Accessed July 13, 2022.

Species	Fishing Zone
Capelin and Squid	16
Groundfish	4T8
Herring	16F
Mackerel	16
Rock crab	26A
Scallop	24
Snow crab	12
Lobster	26A2

The past five years of quota reports for the relevant fishing zone for individual species, excluding lobster, are shown in Figure C.

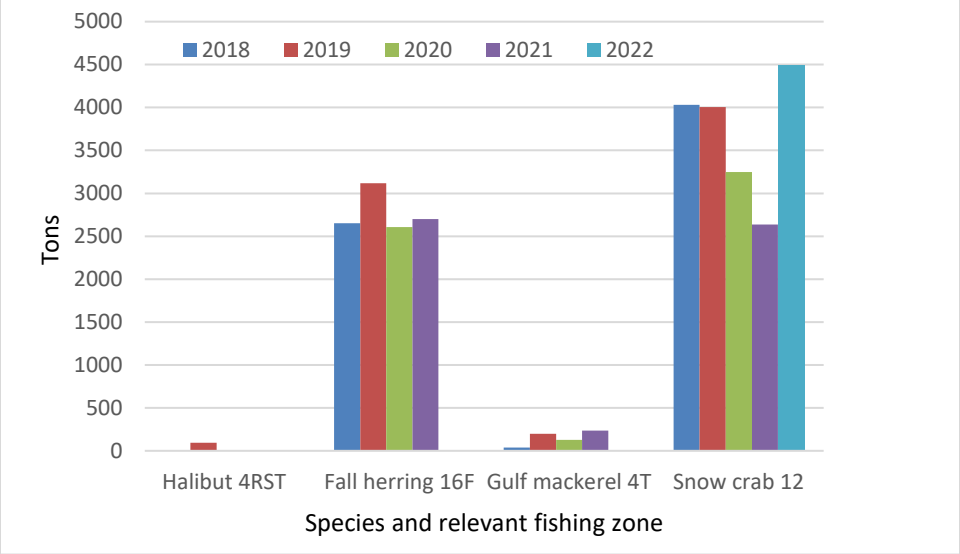


Figure C: Annual quota reports for fishing areas relevant to St. Georges Bay and Havre Boucher, in tons, grouped by species. Note that only snow crab was reported for 2022 at the time the data was accessed, and that all data is designated as "preliminary". Data acquired from https://inter-j01.dfo-mpo.gc.ca/qr/quota-monitoring . Accessed July 16, 2022.

Lobster

The commercial lobster fishery in the waters outside of Havre Boucher harbour is doing well. Management of the fishery is based on effort control as described in Table 3 and in the text.

Table 3: Fishing management measures for the lobster fishery in Lobster Fishing Area 26 A2 for 2020. Information acquired from: 2020 - Southern Gulf of St. Lawrence lobster fishery Conservation Harvesting Plan (CHP) for Lobster Fishing Areas (LFAs) 23, 24, 25, 26A and 26B. https://www.dfo-mpo.gc.ca/fisheries-peches/decisions/fm-2020-gp/atl-16-eng.html Accessed July 13, 2022.

Management Measure	Restrictions
Number of traps per line	6
Maximum size entrance (hoop size) (mm)	152
Minimum legal carapace size (mm)	76
Female size restriction (window size) (mm)	115-129

In 2016, there were 682 Category A and 4 Category B licences for commercial lobster fishing in the Gulf of St. Lawrence Lobster Fishing Area (LFA) 26A. The trap limit in LFA 26A2 was 255 for commercial licence holders, with some Communal Commercial licence holders having a 275 trap limit. Lobster Fishing Areas and their sub-regions are shown in Figure D. The season for LFA 26 A2 runs annually from April 30 to June 30.[3]

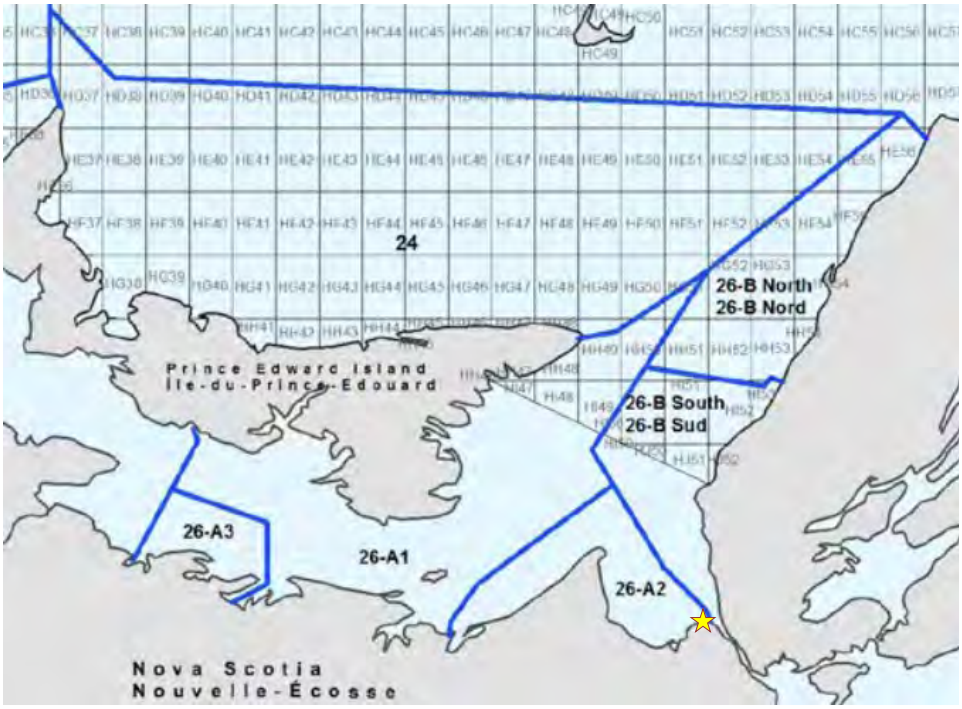


Figure D: Lobster Fishing Areas and sub-regions used for lobster fishing management, as designated by Fisheries & Oceans, Canada. Havre Boucher is indicated by the star on the map. Map extracted from: Fisheries and Oceans Canada. Notice to Fish Harvesters. April 24, 2018. LOBSTER CONSERVATION HARVESTING PLAN - NEW MANAGEMENT MEASURES FOR 2018 AND BEYOND (LFA 23, 24, 25, 26A AND 26B)

[3] DFO. 2016. Update of the stock status indicators for the American lobster (*Homarus americanus*) stocks in the southern Gulf of St. Lawrence. DFO Can. Sci. Advis. Sec. Sci. Resp. 2016/051 (Erratum: March 2017).

Historical landings from LFA 26A are shown in Figure E. These landings, and other stock assessment indicators used by DFO indicate that the lobster stocks are doing well.[4]

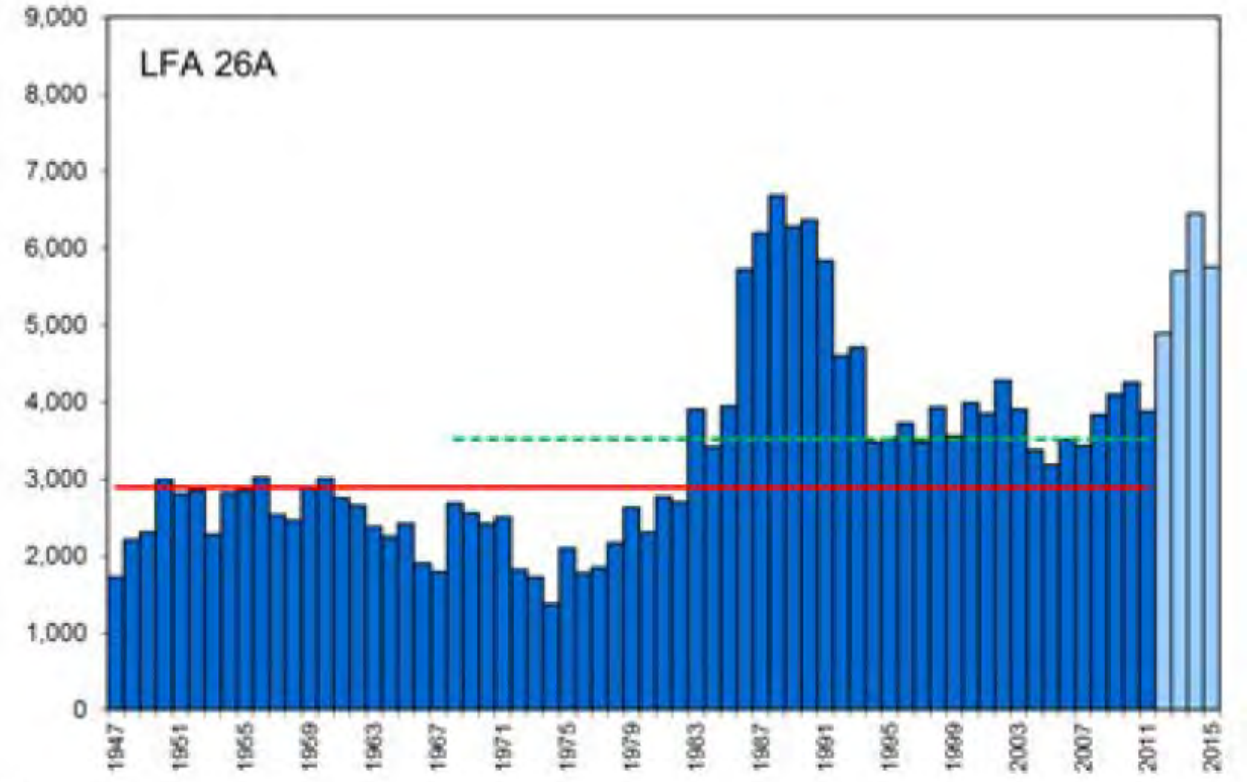


*Figure E: Historical lobster landings from LFA 26A in tons, 1947 to 2015. The solid horizontal line is the median value for 1947 to 2011. The green dashed horizontal line is the median value for 1968 to 2011. Bars shown in light blue are those that were added after the most recent full stock assessment. Graph sourced from: DFO. 2016. Update of the stock status indicators for the American lobster (*Homarus americanus*) stocks in the southern Gulf of St. Lawrence. DFO Can. Sci. Advis. Sec. Sci. Resp. 2016/051 (Erratum: March 2017).*

Landings at Havre Boucher Wharf

According to an economic study conducted by Gardner Pinfold in 2018, annual fisheries landings to the Havre Boucher wharf totaled 92MT, with a value of $1.414 million dollars. [5]

Fisheries within Havre Boucher harbour

Although statistics for fisheries inside the harbour could not be found, the 2021 Findings and Decision document for the Amendment Application of Matthew and Stephen Mattie for AQ#1387 (attached as Appendix C) reveals that fishing activities within the harbour occur, as described by local residents. Commercial berths for the eel fishery are located on the shoreline of the harbour. Use of traps and

[4] Update of the stock status indicators for the American lobster (Homarus americanus) stocks in the southern Gulf of St. Lawrence. DFO Can. Sci. Advis. Sec. Sci. Resp. 2016/051 (Erratum: March 2017).

[5] Gardner Pinfold. 2018. Economic Impact Study of independent Marine ports in Atlantic Canada. Prepared for Independent Marine Ports of Atlantic Canada (IMPAC), 65pp. https://docslib.org/doc/2517303/economic-impact-study-of-independent-marine-ports-in-atlantic-canada Accessed July 13, 2022.

nets in the harbour for fishing are mentioned within this document, as are fishing activities for oysters, mussels and clams, and gaspereau.

Recreational fisheries

Recreational fisheries for finfish in the general area include brown trout, sea trout and speckled trout, as well as bass, smelt, and salmon. This body of water is located in Recreational Fishing Area 2 (Antigonish, Guysborough and Pictou Counties).[6] A description of the status of local salmon populations can be found in Section 7.1. The recreational fishery is supported by the Antigonish Rivers Association whose goal is to "protect and enhance the ecological integrity of the aquatic habitats in Antigonish County in order to sustain a healthy fishery".[7] Little additional information could be found on the recreational fishery specifically in and around Havre Boucher. Digging for quahogs and spearing eels were mentioned as recreational fishing activities occurring in the harbour during the public scoping process.

Fish habitat

St. George's Bay (the body of water north of Havre Boucher harbour) has been designated an ecologically and biologically significant area (EBSA) by DFO. It is recognized for its significant role for meroplankton and groundfish and pelagic fish, as well as marine mammals.[8]

3.2 Impacts on fisheries activities

St. George's Bay is a significant fisheries resource and the Havre Boucher wharf services this area. The proposed lease is located to the southeast of the wharf and is not expected to impact access to the commercial fishery in St. George's Bay. For fishing boats that do not use this wharf and may need to traverse the harbour, the final proposed lease location is out of the way of travel of these boats. The final proposed lease location is not expected to impede access to St. George's Bay nor the habitat that supports the fishery.

The waters of Havre Boucher harbour itself are used for commercial and recreational fishing. A baseline of the bottom will determine if potential significant fish and nursery habitat exists beneath the site. Video footage taken at a location near the proposed site showed a muddy bottom with little vegetation and animal life. Similar bottom is expected for the proposed site.

It is not anticipated that the proposed site will impact the in-harbour fishing activities for eel, mussels, quahogs, or oysters since these are associated with the shoreline and the proposed location is well away from the shore. Gaspereau fishing is typically associated with migration of the fish to the rivers for spawning. Since the proposed site is not close to Wrights River, it is not expected to impact gaspereau fishing. Spearing eels is also conducted in the harbour according to feedback collected during public scoping. The final proposed lease location is positioned next to the other oyster site to be less obtrusive for other harbour activities such as spearing eels.

[6] https://beta.novascotia.ca/sites/default/files/documents/1-2412/anglers-handbook-en.pdf
[7] https://www.antigonishriversassociation.ca/
[8] DFO,2007. Ecologically and Biologically Significant Areas (EBSA) in the Estuary and Gulf of St. Lawrence: identification and characterization. DFO Ca. Sci. Advis. Sec., Sci. Adv. Rep. 2007/016.

Responsible farm practices will reduce risks of impact of operations on fisheries activities. In particular, waste management will be controlled under a waste management plan within the Farm Management Plan that is required for active aquaculture sites in Nova Scotia. Similarly, farm operations procedures, also required as part of the Farm Management Plan, will include the timely and regular maintenance of infrastructure and retrieval of loose gear.

SECTION 4: OCEANOGRAPHIC AND BIOPHYSICAL CHARACTERISTICS OF THE PUBLIC WATERS

4.1 Oceanographic environment

Currently available data on the biophysical characteristics of the site environment are tabled or stated below with supporting references and figures provided, as relevant.

Characteristic	Value	Reference	Comments
Speed of maximum wind gust (km/hr)	105-km/hr	Value stated for February 8, 2020 (25° direction) and March 12, 2022 (20° direction) at climate.weather.gc.ca. Accessed July 13, 2022[9]	Speed of maximum gust values for the past 5 years were reviewed, where available, for Port Hawkesbury - the closest weather station operated by Environment and Climate Change Canada. The site within Havre Boucher Harbour will likely be sheltered from such high winds.
Maximum wave height (m) and direction of maximum wave	Maximum wave height 2m with a direction worst wind NW and NE.	CMAR Nova Scotia Wind Generated Exposure Atlas	See Figure F.
Low water level	0.53-m	https://tides.gc.ca/en/stations/01580 Accessed July 1, 2022	As per nearest reporting station – Cape Jack.
Lowest astronomical tide	0.06-m	https://tides.gc.ca/en/stations/01580 Accessed July 1, 2022	As per nearest reporting station – Cape Jack.

9 https://climate.weather.gc.ca/climate_data/almanac_e.html?timeframe=4&Year=2021&month=12&day=31&hlyRange=2003-01-20%7C2022-02-06&dlyRange=2003-01-17%7C2022-02-06&mlyRange=2004-01-01%7C2007-07-01&StationID=41575&Prov=NS&urlExtension=_e.html&searchType=stnProv&optLimit=yearRange&StartYear=1840&EndYear=2018&selRowPerPage=25&Line=275&lstProvince=NS&time=LST

Characteristic	Value	Reference	Comments
High water level	1.17-m	https://tides.gc.ca/en/stations/01580 Accessed July 1, 2022	As per nearest reporting station – Cape Jack.
Highest astronomical tide	1.5-m	https://tides.gc.ca/en/stations/01580 Accessed July 1, 2022	As per nearest reporting station – Cape Jack.
Current speed range and averages (cm/sec)	Data for water currents within Havre Boucher could not be found. However, there is a successful oyster aquaculture site (AQ 1387) adjacent to this proposed site which has been successful at growing and holding oysters year-round. Current speed 0.1-0.2 meters per second.		
Water temperature	Data for water temperatures within Havre Boucher could not be found. However, there is a successful oyster aquaculture site (AQ 1387) adjacent to this proposed site which has been successful at growing and holding oysters year-round. Maximum (August) is 25 degrees, Minimum (March) is -1 degree.		
Salinity	Data for salinities within Havre Boucher could not be found. However, there is a successful oyster aquaculture site (AQ 1387) adjacent to this proposed site which has been successful at growing and holding oysters year-round. Maximum is 30ppt with a minimum of 15ppt except top 0.5 at 0.		
Depth of water at site corners	The depths at the corners will be listed within the baseline monitoring report for the EMP. A hydrographic chart of the area is shown as Figure G. Corner NW is 11 ft (3.35 m), corner NE is 10ft (3.1m), corner SE is 9ft (2.75m) and corner SW is 9ft (2.75m).		

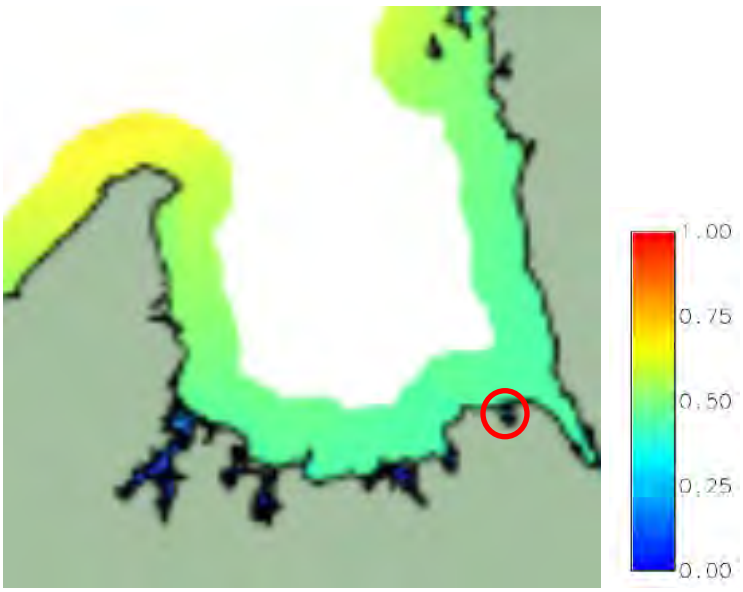


Figure F: Expected wave exposure indicated by color, as modelled for CMAR, according to CMAR Nova Scotia Wind-Generated Exposure Atlas. Havre Boucher Harbour – the general location for the proposed site, is circled in red.

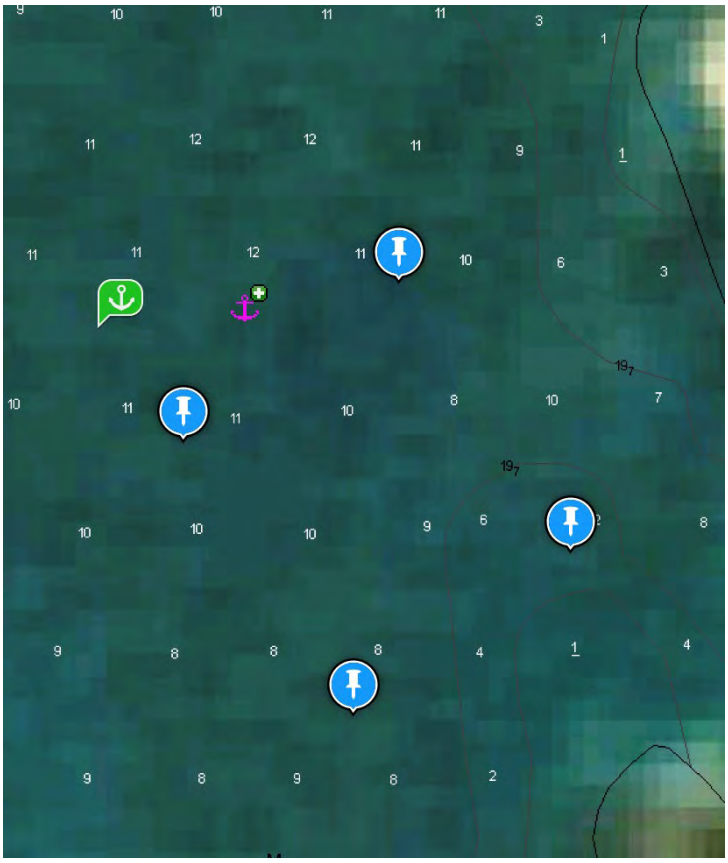


Figure G: Bathymetry of the proposed lease area, as snipped from a navigational chart produced by Navionics (navionics.com). The proposed lease corners are depicted by the pins. The water depths are depicted by the numbers - in feet.

Growing location classification

The area of the proposed site is currently classified as “approved” for shellfish harvesting.

Primary production information

No information on primary production could be found.

Biotoxin information

No information on biotoxins could be found.

4.2 Baseline environmental monitoring

Baseline monitoring was conducted at two locations in the harbour. However, ongoing discussions with the community of Havre Boucher caused Paqtnkek to move the proposed lease/licence to a different location than those monitored. This change in positioning of the lease was in order to cause

less of an impediment for recreational and fishing activities. The baseline information for the previously proposed sites is available. EFWC (Eskasoni Fish and Wildlife Commission) was contracted and completed the baseline environmental monitoring for the current proposed location according to NSDFA EMP SOPs. This data was submitted.

The video footage at the original proposed site locations showed mostly muddy bottom, with little plant and animal life.

4.3 Site design

Scale

The scale of the site has been chosen in order to accommodate holding all annual production from the growing site in Summerside. The intention will be to harvest 800,000 oysters annually.

Location

In terms of suitability for oyster aquaculture, the location was chosen primarily according to the bathymetry of the water, its classification as approved for harvesting shellfish, and the success of an adjacent oyster aquaculture site. This area of the harbour is deep enough to enable sinking of the oyster cages during the relay period and during the winter, keeping them below potentially damaging ice (Figure G).

The location is the closest suitable (classified as approved) oyster relay location relative to the proposed production lease in Summerside, N.S. and the local wharf enables it to be accessible for conducting on-lease activities.

Set-up

The long lines will be run in an east to west direction. They will be 175' long and spaced at 36'.

Diagrams of the gear configuration, to be submitted to Transport Canada follow: Figures H (side view), and I (top views). Corner coordinates are listed after Figure I. Note that adjustments of the corners between this proposed lease and the existing lease (AQ 1387) could be made if it would better support navigation between these two sites.

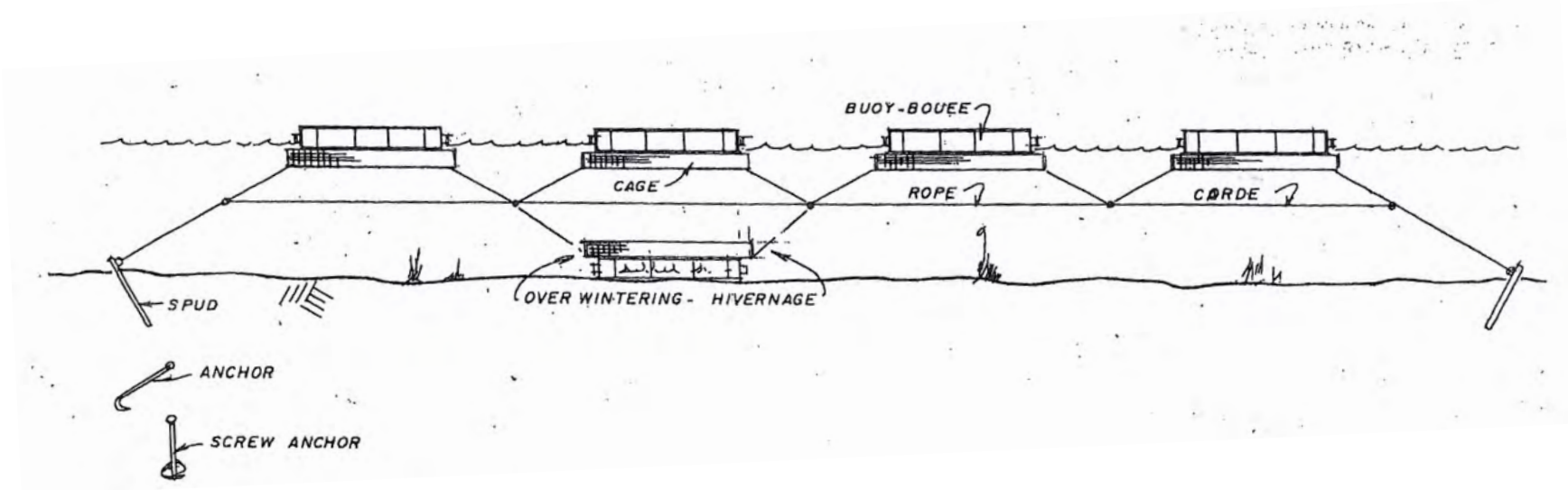


Figure H: SIde view of proposed oyster holding gear.

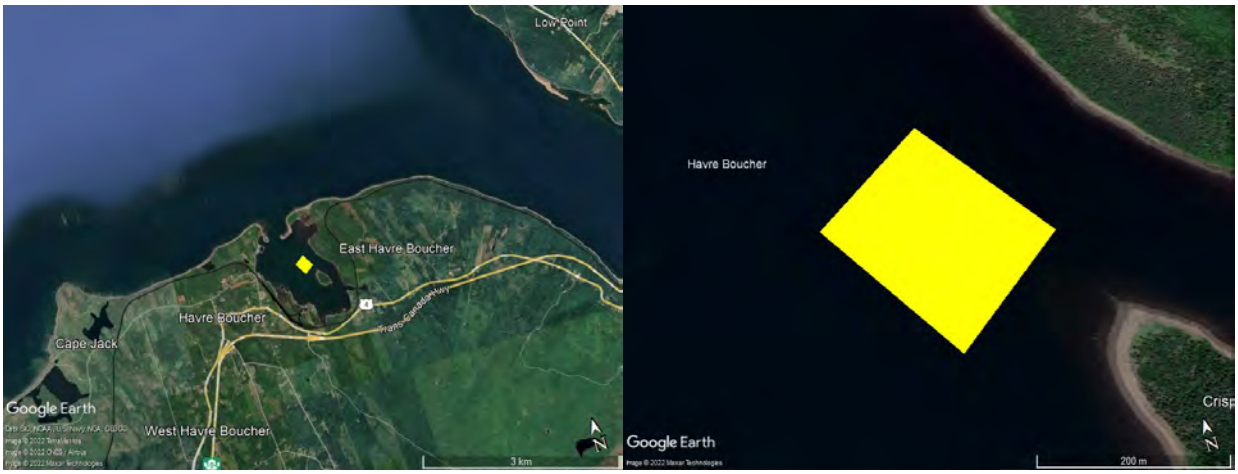


Figure I-a: Top views of the proposed lease area shown at two scales, as extracted from Google Earth. The proposed lease area is shown by the yellow polygon.

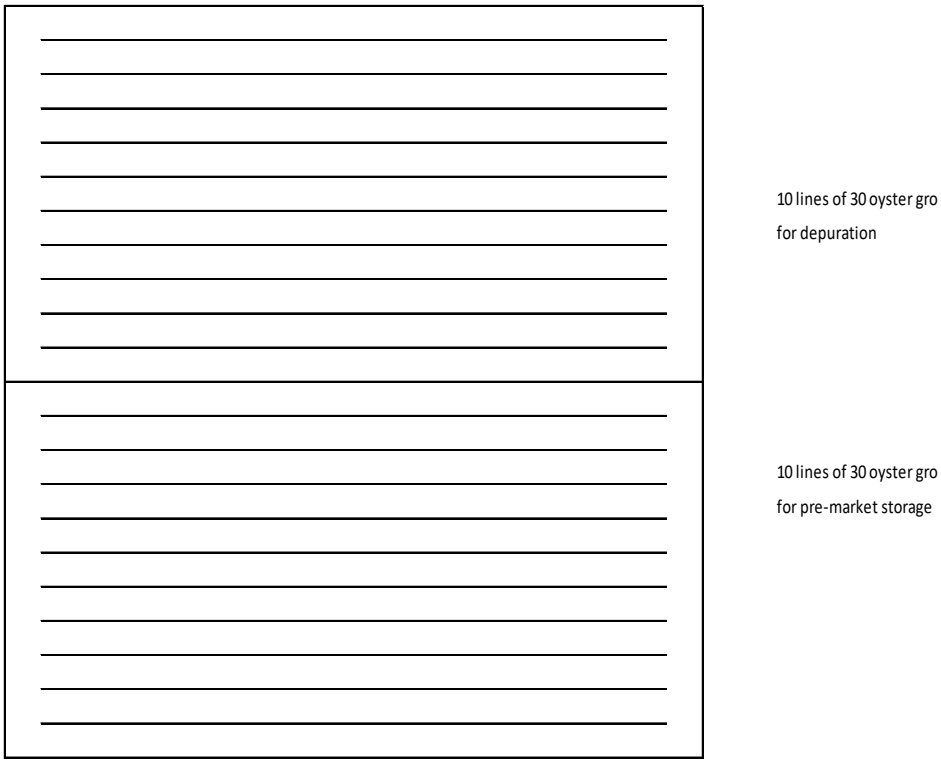


Figure I-b: Schematic of the top view of the configuration of the lines within the proposed lease area.

Corner coordinates:

45°41'11.08" 61°31'9.64"
45°41'4.87" 61°31'3.98"
45°41'1.17" 61°31'11.09"
45°41'7.43" 61°31'16.62"

Note that adjustments of the corners between this proposed lease and the existing lease (AQ 1387) could be made if it would better support navigation between these two sites.

SECTION 5: THE OTHER USERS OF THE PUBLIC WATERS SURROUNDING THE PROPOSED AQUACULTURAL OPERATION

5.1 Description of other users

Businesses and organizations that use the land area and potentially the waters surrounding the proposed operation have been grouped according to their proximity to the proposed site. Additional uses of the water are described near the end of this section as conveyed by community members.

Users within 250-m

As shown in Figure J, the proposed site is adjacent to another aquaculture site (AQ 1387) – to be described in Section 8.1. It is also adjacent to, and north of, Crispos Island. There are no developments on this island but the island is used by local persons for recreation, as identified during the scoping process. See the attached Public Scoping Report, Havre Boucher.

Figure J: Google Earth image of the proposed site area with a 250 m radius around the site center shown as a red circle. The proposed site center is shown as a yellow pin.

Users within 500-m

As shown in Figure K, two shorelines are within, or close to, 500m from the site center, in addition to the shoreline of Crispos Island, mentioned previously. Much of the shoreline east of the proposed site is owned by Carmen Anderson, and family, who have lived here since 1834, and wish to have clear water access to their property(ies), as identified during the scoping process. See the attached Public Scoping Report, Havre Boucher.

Figure K: Google Earth image of the proposed site area with a 500 m radius around the site center shown as a red circle. The proposed site center is shown as a yellow pin.

Users within 1-km

As shown in Figure L, the entire shoreline of Havre Boucher Harbour is within 1 km of the proposed site center. Although the east side of the harbour is relatively undeveloped, a large portion of the community of Havre Boucher is located to the west side of the harbour and is within 1 km. The community of Havre Boucher is a small farming and fishing community that borders a naturally protected harbour that opens into St. Georges Bay.[10] In addition to the fishing activities described in Section 3, the harbour is well-used by permanent local and seasonal residents for recreational boating, tubing, kayaking, canoeing, water-skiing, visits to Crispos Island, and providing safe refuge for recreational boats, including international sailing vessels, during storm events, as identified during the scoping process. See the attached Public Scoping Report, Havre Boucher.

Major developments or uses of this region are listed below with locations shown in Figure L according to their numbered listing.

L-1: Havre Boucher Wharf: Recently renovated wharf that accommodates commercial fishing vessels, sailboats and recreational watercraft.[11] Managed by a Harbour Authority responsible for managing, operating and maintaining the harbour through a lease agreement with the Small Craft Harbours program.

L-2: Gary's Rite Stop: Small, locally owned grocery store offering grocery items, baked goods, other necessities[12]

L-3: Havre Boucher Range Front Lighthouse: 32-foot-high square tower on the south-west shore of the harbour[13]

L-4: Scotia Sheet Metal Inc.: Branch office of Guildford's Group of Companies that provide building abatement, envelope, fire protection, insulation and protective coatings.[14]

L-5: Canada Post office

[10] https://www.havreboucher.com/ . Accessed July 14, 2022.

[11] https://www.havreboucher.com/index.php/community/organizations/cape-jack-wharf . Accessed July 14, 2022.

[12] https://havreboucher.com/index.php/local-businesses/local-business-directory/convenience-and-grocery-stores/1-gary-s-groceries . Accessed July 2, 2022.

[13] https://www.nslps.com/about-ns-lighthouses/lighthouse-lists?c=havre-boucher--front-range-light Accessed July 2, 2022.

[14] https://www.guildfords.com/about-us/ . Accessed July 14, 2022.

Figure L: Google Earth image of the proposed site area with a 1-km radius around the site center shown as a red circle. This encompasses some of the community of Have Boucher. The proposed site center is shown as a yellow pin.

Users within 2-km

As shown in Figure M, a number of other small businesses and developed properties are within 2-km of the proposed site center. Major developments or uses of this region are listed below with locations shown in Figure M according to their numbered listing.

M-1: The Havre Boucher and District Community Centre: Central hub for community events, activities and regular programming. Also houses a fitness center and a Nova Scotia Community Technology Site.[15]
M-2: St. Paul's Catholic Parish Church: Catholic church with more than 100 years' history; rebuilt in the late 1990's[16]
M-3: Arts of All Sorts and Embroidery: Machine embroidery services.[17]
M-4: Stanton Solar Power: Solar contractor with offices in Havre Boucher and Halifax.[18]
M-5: McEwan's Towing and Hotshot Services: Vehicle towing and roadside assistance service.[19]
M-6: Sacred Temple of Tattoos: Tattoo and piercing shop.[20]
M-7: The Havre Boucher Volunteer Fire Department: Established in 1974. Serves Havre Boucher and surrounding communities. [21]
M-8: Wrights River: River at the south end of Havre Boucher Harbour.

[15] https://www.havreboucher.com/index.php/community/havre-boucher-community-centre ; https://www.havreboucher.com/index.php/community/boucher-cap Accessed July 14, 2022
[16] https://www.havreboucher.com/index.php/community/organizations/st-pauls-parish. Accessed July 14, 2022
[17] https://artsofallsortsembroidery.business.site/ . Accessed July 14, 2022
[18] https://stantonsolar.com/about-us/ . Accessed July 14, 2022
[19] https://www.facebook.com/mcewanstowing/ . Accessed July 14, 2022
[20] https://www.facebook.com/sacredtempletattoos/ . Accessed July 14, 2022
[21] https://www.havreboucher.com/index.php/community/organizations/volunteer-fire-department . Accessed July 14, 2022

Figure M: Google Earth image of the proposed site area with a 2 km radius around the site center shown as a red circle. The proposed site center is shown as a yellow pin.

Users within 5-km

As shown in Figure N, a number of other small businesses and developed properties are within 5-km of the proposed site center. Major developments or uses of this region are listed below with locations shown in Figure N according to their numbered listing.

N-1: C.W. Bennett Cement Finishing Co. Ltd: Company specializing in concrete work, including foundations, driveways, basement floors, concrete slabs, steps and sidewalks, and saw cutting.[22]
N-2: Hyclass Ocean Campground: Offers tenting and RV berths as well as cabins for rent.[23]
N-3: Rest Ashored B&B: Two rooms for rent via Airbnb.[24]
N-4: Pets' Pals Boarding Kennels: Dog and cat boarding kennel.[25]
N-5: Mom's Quiltique: Long-arm quilting, fabric, quilting supplies, lessons.[26]
N-6: Cape Jack Beach: Barrier beach between St. George's Bay and a fresh water pond.[27]

[22] http://www.havreboucher.com/index.php/local-businesses/construction-and-manufacturing/21-bennett-cement . Accessed July 2, 2022.
[23] https://www.hyclass-campground.com/ . Accessed July 2, 2022.
[24] https://www.airbnb.ca/rooms/18072252?source_impression_id=p3_1657801474_5dWX1tNqgfIfYqj4 . Accessed July 2, 2022.
[25] http://www.petspals.ca/ . Accessed July 2, 2022.
[26] https://www.facebook.com/MomsQuiltique/ . Accessed July 2, 2022.
[27] http://nsbeaches.com/beaches/cape-jack-beach.php . Accessed July 2, 2022.

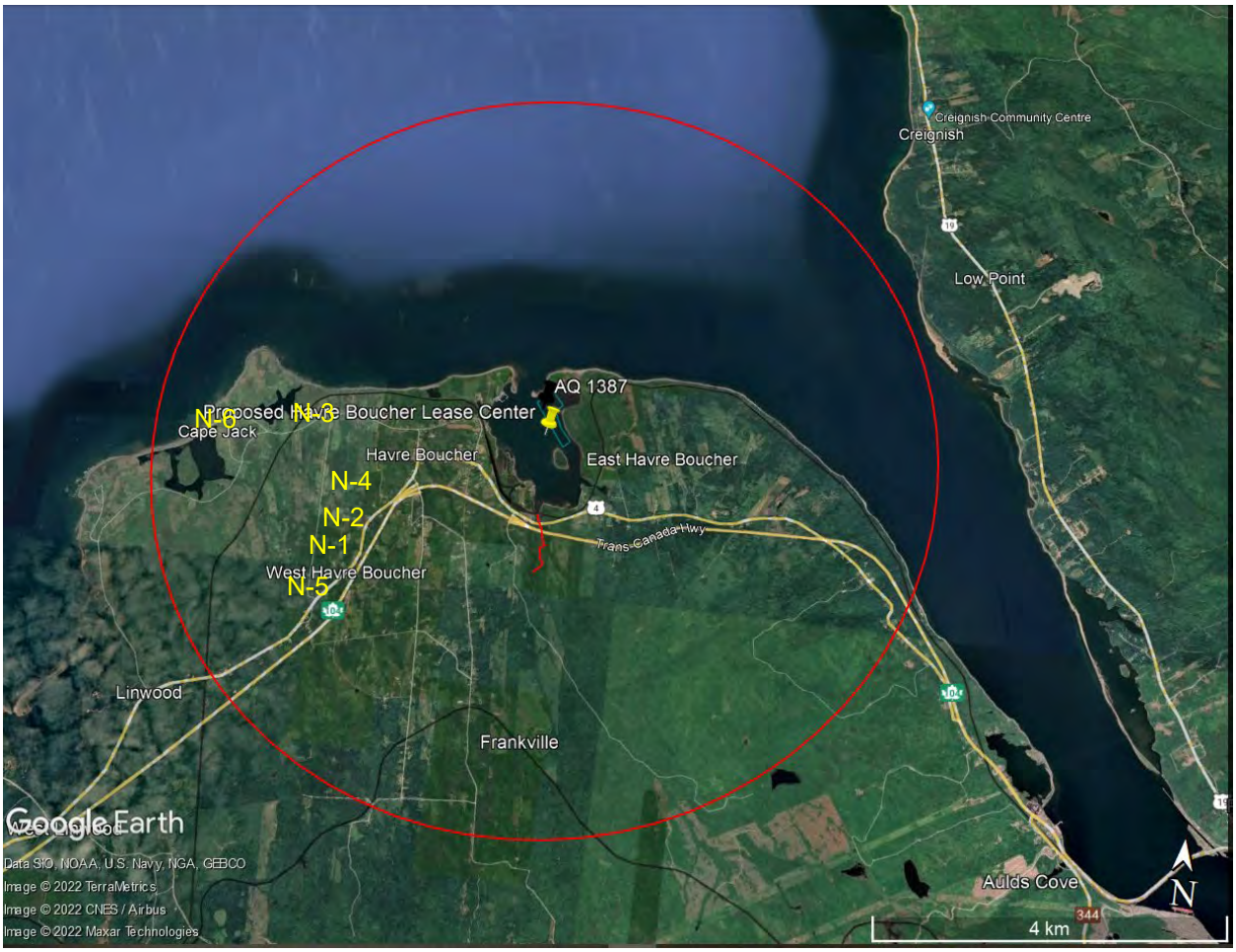


Figure N: Google Earth image of the proposed site area with a 5 km radius around the site center shown as a red circle. The proposed site center is shown as a yellow pin.

Uses of the harbour, as determined from community members

The attached Public Scoping Report, Havre Boucher clearly indicates the importance of the harbour to local residents and visitors to the area. Havre Boucher is a community that appreciates and enjoys access to the sheltered waters of the harbour.

The wharf near the mouth of the harbour is integral to supporting the fishing activities that are a major contributor to the local economy, as described in Section 3. It also provides a place for recreational boaters to moor their vessels, as well as a slipway for launching vessels.

Local residents partake in a variety of activities on the water. Fishing activities in the harbour are described in Section 3. Recreational use of the harbour water includes boating, tubing, kayaking, canoeing, water-skiing, visits to Crispos Island, and providing safe refuge for recreational boats during inclement weather.

Archaeological resources
During public scoping, the presence of a shipwreck on the south west side of Crispos Island was mentioned. The final proposed lease location is not in this area.

5.2 Significance of proposed area to wildlife

Known Managed and Significant Areas are identified in Figure O below, as extracted from: Atlantic Canada Conservation Data Centre, DATA REPORT 7146: Havre Boucher NS which is attached as Appendix D. A summary of the ecologically significant areas listed in the report follows.

The managed area within 5-km of the proposed site is the following:

- Cape Jack Protected Beach

The biologically significant areas within 5-km of the proposed site include the following:

- Cape Pond Significant Ecological Area
- Frankville Significant Ecological Area/IBP

These areas are all several kms away and unlikely to interact on a regular and significant basis with the proposed site location, other than via animals travelling between them. The animals of concern reported within 5 km of the proposed site are described below under the heading “Rare and Endangered Species”.

Figure O: Managed and Significant Areas in the vicinity of the proposed site, as identified by the Atlantic Canada Conservation Data Center (Extracted from Atlantic Canada Conservation Data Centre, DATA REPORT 7146: Havre Boucher, NS). The proposed site center is indicated by the star.

Rare and endangered species

The afore-mentioned data report from the Atlantic Canada Conservation Centre provides more in-depth detail on the possibility of the presence of rare and endangered species that may use the proposed development area. A summary follows.

Rare species list

Within 5-km of the proposed site center, records indicate the presence 35 species of rare or endangered vertebrates (all birds), and 1 species of rare or endangered invertebrate fauna. Records also indicate the presence of 5 rare or endangered vascular plants. The vast majority of the rare or endangered species are inland species. Near-water or in-water rare or endangered species whose presence has been recorded within 5-km of the proposed site are listed below.

Shoreside or wading species of birds:

- Common tern
- Bank swallow
- Nelson's sparrow
- Arctic tern

- Willet
- Cliff swallow
- Killdeer
- Spotted sandpiper

Waterbirds or ducks:
- Red-breasted merganser

The invertebrate found within 5-km would be expected near a salt water shore, nor in the water.

Shoreside flora:
- Seaside spurge

Species at Risk

Seven Species at Risk are on record as being in the region. They are listed in the table below. The bank swallow is the only coastal species, with the others occurring more inland.

Table 4: Species at Risk recorded within 5-km radius of proposed site as extracted from Atlantic Canada Conservation Center Report 7146. Species habitat and other comments were obtained from sources referenced in footnotes.

Scientific name	Common name	SARA status	Habitat, other comments
Riparia riparia	Bank Swallow	Threatened	Nests in burrows excavated in eroding banks of coastal cliffs and other steep vertical soft soil faces[28]
Dolichonyx oryzivorus	Bobolink	Threatened	Open grasslands and hayfields[29]
Contopus cooperi	Olive-sided Flycatcher	Threatened	Spruce and fir swamps and bogs[30]
Hirundo rustica	Barn Swallow	Threatened	Forage over a wide range of open country habitats. Nests are commonly situated inside or outside of buildings, under bridges and wharves and in road culverts. A small portion of the population nests on cliff faces. [31]
Cardellina canadensis	Canada warbler	Threatened	Forested swamps, shrub thicket swamps, riparian woodlands, moist forests, brushy ravines, northern

[28] https://novascotia.ca/natr/wildlife/species-at-risk/#bank-swallow. Accessed August 12, 2021
[29] https://novascotia.ca/natr/wildlife/species-at-risk/#bobolink. Accessed August 12, 2021.
[30] https://novascotia.ca/natr/wildlife/species-at-risk/#olive-sided-flycatcher. Accessed August 12, 2021.
[31] https://novascotia.ca/natr/wildlife/species-at-risk/docs/RECOVERY_PLAN_Adopted_BARN_SWALLOW.pdf . Accessed January 19, 2022.

Scientific name	Common name	SARA status	Habitat, other comments
			hardwood forests, mature forests, other treed areas.[32]
Euphagus carolinus	Rusty Blackbird	Special Concern	Utilize wetlands around lake edges, bogs, swamps and edges of fens for breeding.[33]
Coccothraustes vespertinus	Evening grosbeak	Special Concern	Open, mature mixed wood forests, where fir species and/or spruce are dominant.[34]

Location sensitive species

The only location sensitive species recorded in the region are bats (Little Brown Myotis, Long-eared Myotis, and Tri-colored Bat). They would not be expected to spend much time, if any, in the proposed area.

5.3 Impacts to other users including wildlife

Impacts to other human users

As described in previous sections and determined from the public scoping activities conducted, the sheltered waters of the harbour are well-used and appreciated by local residents and visitors to the area. Restriction to recreational activities was raised as a concern for the adjacent aquaculture lease when it was amended in 2021. (See Appendix C.) This was also a primary concern raised during communications and meetings with local residents during the public scoping completed for this application. (See the attached Public Scoping Report, Havre Boucher.)

Mitigation of impacts to human users by adjusting site location

Paqtnkek originally planned on requesting two sites in the harbour – one on each of the east and west sides of Crispos Island. Because of the obvious restrictions this would pose to recreational users of Crispos Island, this was next reduced to one site on the west side of Crispos Island. Because of the significance of this area for larger vessels traversing from the harbour mouth to the south of the harbour, and the concern of having the harbour broken up into multiple non-accessible areas for users of the water, the proposed site was subsequently moved to the north side of Crispos Island, adjacent to the existing oyster lease. It is anticipated that this final proposed location is the one that best minimize impacts to other users of the water. In particular, the location is intended to:

- Not disrupt access to the water and shore around Crispos Island.

[32] https://www.registrelep-sararegistry.gc.ca/virtual_sara/files/plans/rs_canada%20warbler_e_proposed.pdf
[33] https://novascotia.ca/natr/wildlife/species-at-risk/#rusty-blackbird. Accessed August 12, 2021.
[34] https://www.registrelep-sararegistry.gc.ca/virtual_sara/files/cosewic/sr_Evening%20Grosbeak_2016_e.pdf Accessed July 2, 2022.

- Not disrupt access of riparian land owners to their properties from the water.
- Not restrict access to a channel on the west side of Crispos Island traditionally used for larger vessels to traverse from the harbour mouth to the south side of the harbour.
- Position the existing aquaculture site and this proposed site in one area and thereby reduce disrupting navigation in the harbour waters as much as possible to allow safe use of the water by vessels for recreational activities and for those seeking refuge during inclement weather.

Mitigation of impacts to human users during operation

To mitigate impacts to human users during operation, the following will occur. The site will be marked according to Transport Canada requirements to permit safe navigation. The Farm Management Plan (FMP) will be used to describe procedures for ensuring that site markings following the Transport Canada requirements are maintained. Other responsible farm practices will minimize impacts of operations. These practices include procedures for ensuring that gear is properly maintained on site and frequent checks scheduled for finding and retrieving loose gear; properly containing and disposing of litter; and using all reasonable means to avoid spills or leaks of oil, including having a contingency plan to manage a spill. These procedures will be approved for implementation by NSDFA, as required within the Aquaculture Management Regulations for aquaculture sites in Nova Scotia.

Impacts to wildlife

Because of the small amount of on-water activity associated with the site and the contained shore-side activity, there are few interactions with wildlife expected.

To mitigate interactions with birds, in particular:

- Shore-side activity will be avoided, with the exception of clean-up of loose gear or other targeted shoreline clean-up activities. Clean-up will be scheduled at times that will not disturb nesting behaviour; and staff will not go ashore in areas where activity involving these birds is observed.
- Shoreside birds and other wildlife will be given a wide berth for all operations-related and clean-up activities, and physical interaction with birds will not be allowed, nor will scare tactics to disperse birds be allowed.
- When sensitive bird species are observed in the water or on shore, boat captains will reduce boat wake and keep as much distance as reasonably possible between the boat and the bird(s).
- Steady boat speeds will be maintained when moving to and from the work site.
- Vessels will be well-muffled to reduce noise and constant engine noise level will be maintained, as reasonably as possible, and the use of sharp or loud noises (e.g. horns or whistles) will be avoided.
- Litter will be properly contained and disposed of.
- All reasonable means will be taken to avoid spills or leaks of oil; and a contingency plan to manage a spill will be in place, complete with the needed equipment to carry out the plan.

The above impact mitigation measures will also serve to protect any sensitive vegetation that may be found along the shore.

Since the oyster gear will not inhabit the intertidal area and the above measures will be employed, feeding of migratory birds in the intertidal area should not be affected. Similarly, feeding and nesting of shoreline birds should be minimally affected.

5.4 Impacts by other users including wildlife

Although the gear is suspended, it will be sunk beneath the surface for the purpose of this lease since it will be a relay site. This will reduce the availability of providing an artificial roosting site for birds.

The harbour is well-used by residents and visitors so that travel adjacent to the site is likely. To mitigate interactions by water-users, the site will be marked according to Transport Canada requirements to permit safe navigation. The Farm Management Plan (FMP) will be used to describe procedures for ensuring that site markings following the Transport Canada requirements are maintained.

The greatest concern regarding other users is connected to the import of invasive species by boats from other locations. Invasive invertebrates or disease (e.g. MSX) may be transported by foreign boats that are not properly disinfected prior to being launched in this area. Education of boaters regarding these possibilities will be promoted by Paqtnkek to reduce this risk.

SECTION 6: THE PUBLIC RIGHT OF NAVIGATION

6.1 Navigation Protection Act (NPA) approval

A Notice of Works application was submitted online through Transport Canada's portal. The coordinates listed in the enclosed Schedule A are correct and confirmed in the field.

SECTION 7: THE SUSTAINABILITY OF WILD SALMON

7.1 Identification of local salmon populations

This site is within Salmon Fishing Area SFA 18A, which is included in Designatable Unit 12, as defined by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC). Possible salmon bearing rivers in the area, as reported by the Atlantic Salmon Federation (ASF)[35], are shown in Figure P. Wrights River opens into Havre Boucher harbour and its status is classified as unknown by the ASF.[36] Wrights River and Tracadie River are also recognized as potential Atlantic Salmon rivers by DFO, although little information is available regarding their characteristics or status.[37]

The closest index river is West River (Antigonish), approximately 35 km to the west. Here, catches from the recreational fishery were up in 2018 relative to the previous year, but down in 2019. Catches for both of these years were lower than historical values for both large and small salmon with the long-term trend of the median for the past 12 years showing a decline.[38]

[35] Rivers shown on the Atlantic Salmon Rivers of North America map produced by the Atlantic Salmon Federation (ASF) were highlighted in Google Earth to produce the figure. The rivers highlighted include all status classifications, including those that are unknown. For more information on the ASF map used as reference, see https://www.asf.ca/news-and-magazine/in-the-field/the-meaning-of-our-map.

[36] For more information on the ASF map used as reference, see https://www.asf.ca/news-and-magazine/in-the-field/the-meaning-of-our-map.

[37] DFO. 2022. Definition of Precautionary Approach Reference Points for Atlantic Salmon, DFO Gulf Region. DFO Can. Sci. Advis. Sec. Sci.Advis. Rep. 2022/027.

[38] DFO. 2020. Update of indicators of Atlantic Salmon (*Salmo salar)* in DFO Gulf Region Salmon Fishing Areas 15-18 for 2019. DFO Can. Sci. Advis. Sec. Sci. Resp. 2020/028

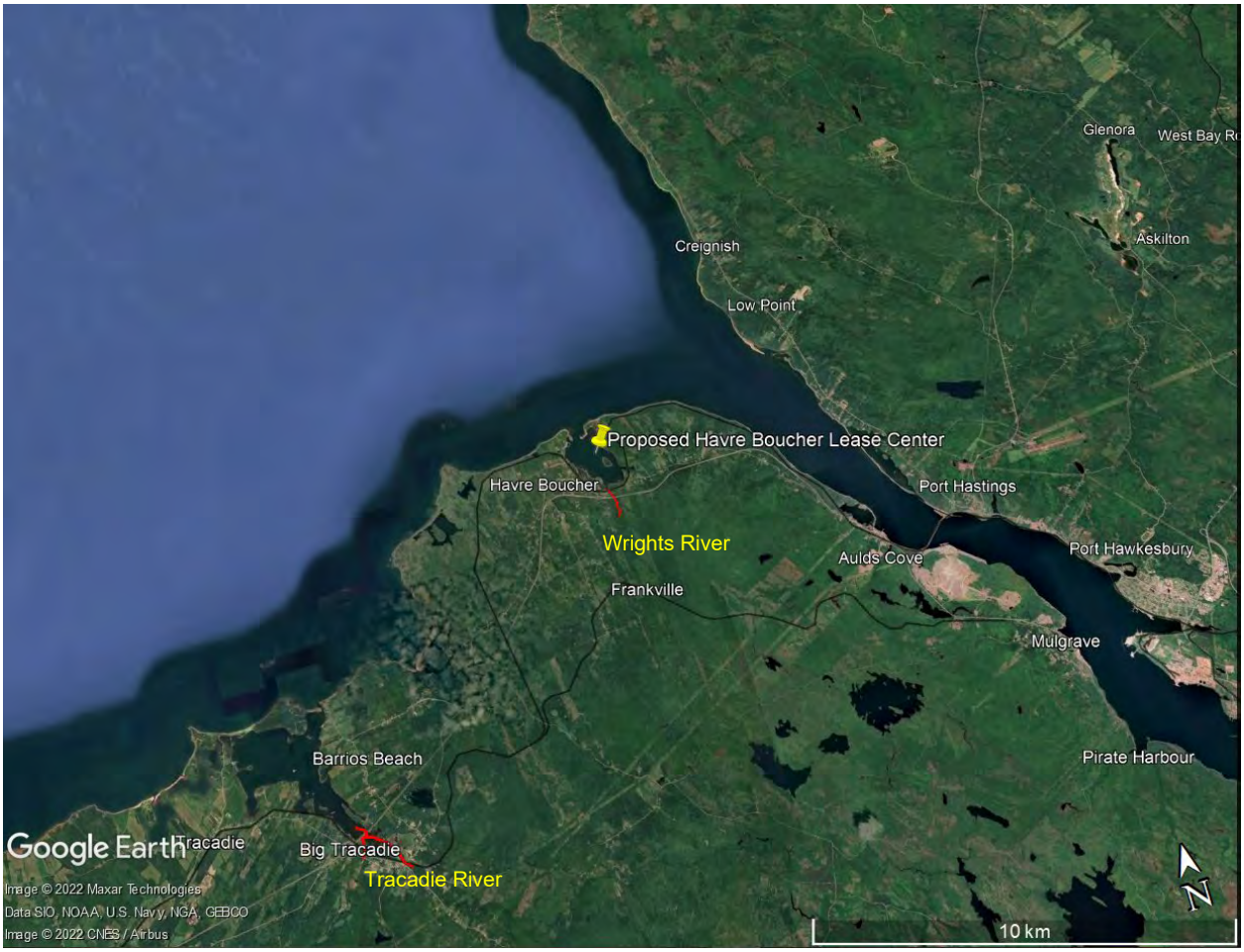


Figure P: *Potential salmon bearing rivers within the region of the site are indicated in red with labels in yellow. Rivers and locations were determined from the Atlantic Salmon Rivers of North America map produced by the Atlantic Salmon Federation. The proposed site center is indicated by the yellow pin.*

7.2 Support of the sustainability of wild salmon

It is not expected that the proposed lease will in any way affect the sustainability of wild salmon or salmon recovery or restoration efforts.

There are no known restoration efforts underway or planned for the rivers near Havre Boucher.

Responsible farm practices will minimize impact of operations. These practices include procedures for ensuring that gear is properly maintained on site and frequent checks scheduled for finding and retrieving loose gear; properly containing and disposing of litter; and using all reasonable means to avoid spills or leaks of oil, including having a contingency plan to manage a spill. These procedures will be approved for implementation by NSDFA, as required within the Aquaculture Management Regulations for aquaculture sites in Nova Scotia.

SECTION 8: THE NUMBER AND PRODUCTIVITY OF OTHER AQUACULTURE SITES IN THE PUBLC WATERS SURROUNDING THE PROPOSED AQUACULTURAL LOCATION

8.1 Identification of other aquaculture sites

Matthew Mattie and Stephen Mattie are presently the lease/licence holder for AQ 1387 – a commercial lease/licence authorized for American oysters. AQ 1387 is immediately adjacent to the proposed site, as shown in Figure Q.

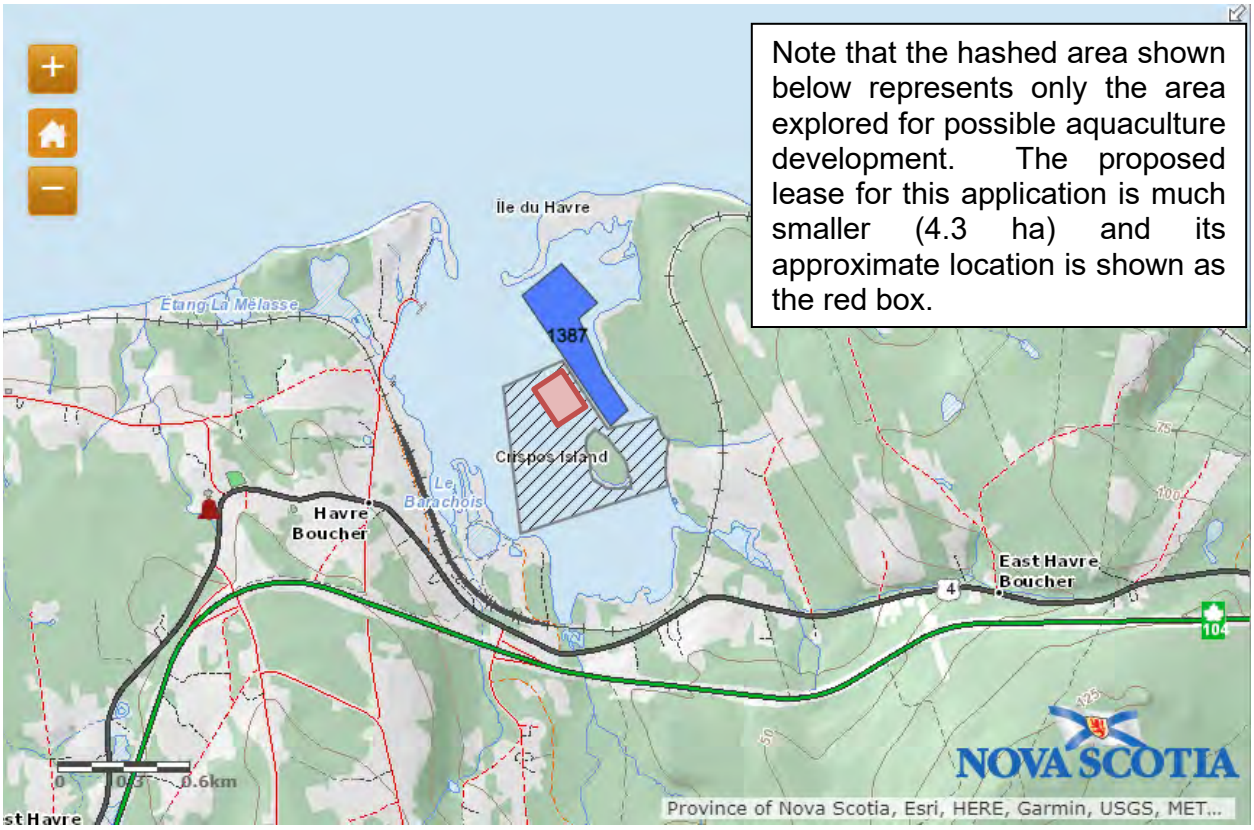


Figure Q: Map of the region showing the existing aquaculture site in the harbour: AQ 1387. It appears as a blue colored polygon. The approximate location of the proposed site is shown as a red box. The hashed polygon is the option area given to Paqtnkek to explore for possible aquaculture development. The base map was acquired from https://novascotia.ca/fish/aquaculture/site-mapping-tool/ Accessed July 1, 2022.

8.2 Interactions with other aquaculture operations

A good relationship exists between Paqtnkek and the operators of the current site (AQ 1387) with intentions to cooperate in the future. Both sites would be growing/holding the same species so that negative interactions are not anticipated.

As mentioned in Section 5.4, the greatest concern regarding other users is connected to the import of invasive species by boats from other locations.

Appendix A: Suppliers to Paqtnkek Oyster Project

Acadian Bay Enterprises
Admiral Auto Glass
Antigonish Farm and Garden Co-op
Antigonish Rent-all
Aquaculture Association of NS
Barrier Spray Foam
Bayside Development Corp
Bell Aliant
Best Western Glengary
Bio-liquid Waste Disposal Inc.
Bill & Stanley Oyster Company Ltd.
Bouctouche Bay Industries Ltd.
Bowman Electric
Casey Concrete ltd.
Caper Developments LTD
Capital Paper
Causeway Diver Supply
Denis Office Supplies
Dyna Medical Technical Service
East Coast Marine & Mechanical LTD
Eastern Fence Erectors Limited
East Coast Home Heating
Eastern Sanitation
Ed's Hydraulic & Marine Services
Entreprises Shippagan LTEE
FEEDSnNEEDS Antigonish
Fisheries Safety Association of Nova Scotia
Fraser Hatt Law
Francis Boyle Construction
GS Equipment Limited
GM MacDonald Welding Ltd
Grant Thornton
Gypsom Cove Oysters
Hampton Homewood Suites
Highland Building Supplies
Highland Marine Products
Highland Multimedia
J.R. Rahey Stores Ltd
K&D Pratt
Kent Building Supplies
Kmac Plumbing Services
Lengkeek Vessel Engineering
MacDonald Chrysler Limited
Marie's Flowers
Micro Machining 2016 Limited
Monastery Petro Can
Municipality County of Antigonish
Myers Welding inc
NAPA Antigonish Auto Parts
Paq'tnkek Gas Bar
Purolator Courier Ltd
Quality Concrete
Rainbow Net & Rigging Ltd
Redline Sport and Cycle
Robertson Electrical Supplies Ltd
Robotnik
[redacted]
S.A. Electrical
Scotia Diesel Services Ltd.
Sobeys Atlantic
Staples
Stevens Solutions & Design Inc.
Strait Engineering Ltd.
Strait Supplies
Leroy Supernault
Sustain Aqua
Transport Canada Marine Safety
Trouw Nutrition Can Inc
Vernon d'Eon Fishing Supplies Ltd
Waycobah First Nation

Findings and Decision- Amendment Application of Matthew and Stephen Mattie for AQ#1387

1. Overview:

On February 21, 2019, the Nova Scotia Department of Fisheries and Aquaculture (NSDFA) received an application from Matthew and Stephen Mattie to amend Aquaculture Licence and Lease #1387 (AQ#1387), as described below:

Table 1. Description of Aquaculture Licence and Lease #1387

Type: Marine	**Current Size:** 12.11 HA
Number: AQ#1387	**Current Cultivation Method**: Suspended cultivation
Applicant: Matthew and Stephen Mattie	**Current Species:** American oyster
Location: Havre Boucher, Antigonish County	**Proposed Amendment:** Boundary amendment with no increase in size

2. History

On March 5, 2015, AQ#1387 was first issued to Matthew and Hugh Mattie for a 10-year term from November 1, 2014 to November 1, 2024. On April 26, 2018, AQ#1387 was assigned from Matthew and Hugh Mattie to Matthew and Stephen Mattie. AQ#1387 was amended on August 23, 2018 to include suspended gear on a portion of the site.

3. Procedure

3.1 Performance Review

A performance review of the information submitted by the operator in support of their amendment application was completed. This review recommended that the site be amended based on the technical and biological assessment. This performance review is required pursuant to Subsection 72(c) of the Aquaculture Licence and Lease Regulations, and was completed on April 26, 2021.

3.2 Public Comment Period

Notice of the application for the amendment of AQ#1387 for the 30-day public comment period was published on NSDFA's website (http://novascotia.ca/fish/aquaculture/public-information/) for the period of July 23, 2020 to August 21, 2020. Notice of the application was also published in the Royal Gazette Part I on July 22, 29, August 5, 12, and 19th, 2020.

3.3 Submissions

6 submissions were received by NSDFA during the 30-day public comment period. All 6 of these submissions met criteria for consideration and are included with this document. Several items of note were raised that will be further discussed in the Factors to be Considered section of this document.

4. Factors to be considered

The amendment application for AQ#1387 was submitted to adjust the site boundaries, without increasing the size, to allow for the site to be located in optimum depth to allow for full site utilization. Review of the file indicates that the site has had production and employment in recent years. The information in support of the amendment application suggests continued production is planned for this site and continued employment. The proposed changes are expected to support and improve economic prosperity in the local community and province. This will be achieved through increased production at the site, which will lead to economic contributions in the community and increase shellfish exports for the province. Department staff will continue to monitor that production plans are implemented as submitted.

The performance review and public comment responses noted the presence of other fishery activities in the surrounding area of the proposed amended boundaries. A commercial wharf is located on the opposite side of the harbour.

One public comment identified concerns regarding access to commercial berths for eel fishery. The concern was shared with the related regulatory body, and a map was provided to identify the exact locations of concern. The existing site boundaries of AQ#1387 limited access to two (2) out of twelve (12) commercial berths via the water, due to the fact that the boundaries extended to the shoreline. The proposed boundary amendment would restore access to all twelve (12) commercial berths, as the amendment of AQ#1387 will shift the site away from the shoreline, allowing access to the commercial berths by water. AQ#1387 remains authorized to cultivate shellfish using suspended gear, and as such the gear must remain within the geographic boundaries of the site. Section 55 of the Licence and Lease Regulations requires an aquaculture licence holder to mark each of their sites in a manner determined by the Minister and keep each site marked during the term of their licence. Furthermore, AQ#1387 is required to maintain compliance with Transport Canada as it relates to Navigable Waters. The new boundaries of AQ#1387 requires an updated approval from Transport Canada.

Two public comments identified concerns regarding access to fishing within the harbour. The proposed change in boundaries does not result in an increase in the overall size of the site. Therefore, the proposed amendment would not result in a reduction in the area of the harbour available for commercial or recreational fishing.

There were no ecological concerns identified in the past performance of this site with respect to negative impacts on other fisheries, and the proposed boundary amendment does not indicate future negative impacts.

Several public comments were received, concerning the impact the proposed boundary amendment would have on the other users of the public waters surrounding the site, including the public right of navigation. One concern was regarding access around Crispos Island. Another concern was regarding access in and around the harbour. Following review, modifications were made to the proposed application to improve access and navigation near the site. Refer to the Decision section for further details. As the amendment of AQ#1387 will shift the site away from the shoreline, access around Crispos Island would not be impeded. Another concern was

regarding refuge for recreational boaters during inclement weather. As this boundary amendment will not result in an increase in the size of the site, there is no reduction in the area of the harbour accessible to recreational boaters.

There is no indication that development of the site for shellfish aquaculture will pose ecological concerns or have an impact on the sustainability of wild salmon.

AQ#1387 is located in the Northeastern portion of Havre Boucher. The nearest aquaculture site, AQ#0136, is located approximately 6.5km away. There is no evidence to suggest that the extent of existing aquaculture in the harbour has exceeded the carrying capacity of the harbour.

5. Decision

Based on the considerations above, Aquaculture Licence #1387 and Lease #1387 shall be amended with modifications to authorize the boundary amendment (without increasing the size). Except as expressly amended, Licence #1387 and Lease #1387 shall continue in full force and effect, including any terms and conditions. The Licence and Lease documents shall be prepared in accordance with the standard operating documents of NSDFA, and shall be made publicly available subject to the provisions of the *Freedom of Information and Protection of Privacy Act*.

Modifications:
A "no-gear" zone has been added to the site, to improve public navigation in the surrounding waters. The new boundaries of AQ#1387, including the no-gear zone is subject to approval from Transport Canada.

June 10, 2021

Robert Ceschiutti
Aquaculture Administrator
Nova Scotia Department of Fisheries and Aquaculture

Date

Spencer, Amanda L

From: Brad and Roxy Melong [redacted]
Sent: August 21, 2020 9:44 PM
To: Aquaculture Administrator
Subject: Re:Amendment application number AQ#1387

** EXTERNAL EMAIL / COURRIEL EXTERNE **
Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien

Dear Aquaculture Administrator:

My name is Brad Melong. I live at [redacted] Havre Boucher, Nova Scotia and my mailing address is [redacted] Havre Boucher, Nova Scotia, B0H 1P0. I can be reached at [redacted].

I am writing in regards to this amendment application number AQ#1387 put forth by Matthew and Stephen Mattie to amend their current boundary. I have issues concerning this boundary amendment because I currently have commercial berths for eel fishery where they are proposing to move to. I was not contacted, nor were any other fishermen from our harbour, including others that have eel licence and berths for this area. If you require further information concerning my eel licence and berths you can contact me anytime. I am quite concerned that an area that is technically reserved for another fishery is being looked at for something totally different than what is intended for. There is very little area in our harbour currently that isn't closed due to pollution so I think that considering they already have a portion of the harbour for American Oyster, that the remaining areas that contain eel berths should be left as is.

Thank you,
Brad Melong

Spencer, Amanda L

From: Richard Melong [redacted]
Sent: August 21, 2020 9:40 PM
To: Aquaculture Administrator
Cc: NPPATL-PPNATL@tc.gc.ca
Subject: Letter regarding amended application AQ@1387
Attachments: NS Dept of Fisheries & Aquaculture AQ#1387.docx

Good evening

please find attached a letter expressing my opposition and concerns regarding the amendment application AQ#1387 by Matthew & Stephen Mattie.

Regards
Richard Melong

Richard Melong
[redacted]
Havre Boucher, NS
B0H 1P0
[redacted]

August 21/2020

Nova Scotia Department of Fisheries & Aquaculture
1575 Lake Road, Shelburne, NS
B0T 1W0

To whom it may concern

My name is Richard Melong. I live at [redacted], I am a fisherman, my homeport is Havre Boucher, I am a member of the Havre Boucher Harbour Authority and I am a community member who uses the Havre Boucher harbour for recreational purposes such as tubing with my family and kayaking. I am writing in regards to the proposed amendment application #AQ1387 by Matthew & Stephen Mattie.

I am opposed to the proposed amendment that has been put forward by Matthew and Stephen Mattie. This amended proposal will impact both my commercial fishing and recreational activities in this harbour. For commercial fishing, this could limit traps and nets being put in the harbour that could affect my livelihood. From a Harbour Authority perspective, it could impact the recreational boating that we rely on to help fund and maintain the wharf and from a recreational perspective it would definitely effect the boating, tubing and kayaking that families enjoy during the summer months by blocking being able to fully access going around Crispo Island.

I am completely taken a-back by the lack of communication and notice that there has been in regards to this application, I would like to know what the proper protocol is for making such proposals known to the harbours and community members that these types of ventures will so greatly affect. The few people that I know, that have had any knowledge about this amendment, literally found out on Friday evening on August 21. I know of no community members, boaters, jet skiers or land owners who have any knowledge about the amended proposal, a proposal that will limit access to areas in our harbour that we would normally enjoy on a regular basis. Thanks to what appears to be a very sneaky attempt by the applicants, these community members will now, no longer have a chance to voice their opinions.

I have included my email and phone numbers and would like to hear from the NS Dept of Fisheries and Aquaculture Administrative Decision makers, hopefully before any decisions are made. This decision will have a lasting and great impact on me, my family and my community.

Regards

Richard Melong

Spencer, Amanda L

From: james a brow [redacted]
Sent: August 25, 2020 9:23 PM
To: Aquaculture Administrator
Subject: Oyster Lease

** EXTERNAL EMAIL / COURRIEL EXTERNE **
Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien
To Whom it may concern ..

I submitted a written submission on Aquaculture /Lease Number 1387 -Havre Boucher on August 21,2020 .

My Mailing Address James A Brow
[redacted]
Havre Boucher ,Nova Scotia
B0H 1P0

Phone Number [redacted]

Thank you James

Spencer, Amanda L

From: james a brow [redacted]
Sent: August 21, 2020 8:42 PM
To: Aquaculture Administrator
Cc: Heighton, Ralph
Subject: Oyster Lease

** EXTERNAL EMAIL / COURRIEL EXTERNE **
Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien
I neglected to put in this information .

it is lease number 1387 -AQ #1387 Havre Boucher .

thank you James

Spencer, Amanda L

From: james a brow [redacted]
Sent: August 21, 2020 8:37 PM
To: Aquaculture Administrator
Cc: Heighton, Ralph
Subject: oyster lease -Havre Boucher

** EXTERNAL EMAIL / COURRIEL EXTERNE **
Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien
To Who it May Concern ..

Over 50 %of Havre Boucher harbour is polluted .This site is planning to take 75% of what is left .This harbour is just not big enough .Mattie is not from here and for him to think he can walk all over us is not acceptable .At the meeting in Antigonish Mattie offered to include the fishermen in the lease but that was forgotten once the lease was approved .Also a lot of fishermen had eel sites for fyke traps myself included .in that area .We were all told we could not go there any more .Some of us have mussel and clam licences for that area also .We were displaced .

95 % of the fishermen from Havre Boucher were at the original meeting in Antigonish ...we were 100 % opposed to that lease coming here .There was a lot of animosity after Mattie came here .There was violence here and at other harbours that Mattie went to. I am sure you know that .

Mr Mattie caused some problems when he began harassing local boaters accusing them of stealing oysters .

Our concerns were totally ignored and to add insult to injury i was told there were no minutes kept of the meeting in Antigonish .I did express my concerns in emails to the department to Brendan G .Got one response then no more .

We asked for the original lease agreement to be reviewed .We were ignored .

We do not want to be ignored this time .

I grew up here and have been a fisherman for 50 years .

I am Metis as many us here are .We should not have to resort to violence to be heard .

sincerely James A Brow
Havre
Boucher

Spencer, Amanda L

From: Allan Macaskill <[redacted]>
Sent: August 21, 2020 7:13 PM
To: Aquaculture Administrator
Subject: AQ# 1387

** EXTERNAL EMAIL / COURRIEL EXTERNE **
Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien

I am sending this email to express my serious concerns about losing access to even more of our harbor. The Mattie boys (lease number AQ#1387) are liking to expand or move boundaries and none of us Commercial fishermen of Havre Boucher and also no members of Havre Boucher Harbour Authority have been informed about any of it. All of us have used the waterway around the island most every day we fish. I have used the area that the Mattie boys are trying to acquire for 30 years for my oysters and eel pots. And many times i fish my Gasperough nets in that area . The community uses this area every summer as well.
There is no need to have found out this way. The Matties should have come to the fishermen and talked about it . I would like to see them succeed but not this way.
This cannot go ahead as proposed.
Allen MacAskill
[redacted]
[redacted] Havre Boucher
Nova Scotia
B0H 1P0
[redacted]

Spencer, Amanda L

From: [redacted]
Sent: August 21, 2020 11:58 PM
To: Aquaculture Administrator
Subject: AQ#1387

** EXTERNAL EMAIL / COURRIEL EXTERNE **
Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien

To whom may concern,

As president of the Havre Boucher Harbour Authority there has been concerns of the reshaping of the current Oyster Lease in the harbour. First there is history of fishing activities in the harbour and particularly in the new proposed area of that have not been considered or consulted with the fisherman. Second our harbour provides a refuge from tourist/sailboats to take cover from weather and reducing the protected area is a concern for the safety of people. And third a member of our community the owns the land that borders new boundary of lease is in disagreement of the proposal at it will directly affect the value and future usage of the land. And finally our harbour has been used for multiple activities and it looks like the proposed area will limit people access around the island weather it be commercially or recreationally.
Believe further discussion needs to take place with members of our community.

Thanks Larry Meagher
President of Havre BoucherHarbour Authority

[redacted]
Havre Boucher NS
B0H1P0
[redacted]

Spencer, Amanda L

From: Roxanne Pelrine [redacted]
Sent: August 21, 2020 9:29 PM
To: Aquaculture Administrator
Subject: Havre Boucher Harbour

** EXTERNAL EMAIL / COURRIEL EXTERNE **
Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien

We are writing today regarding Matthew and Stephen Mattie, license #AQ1387.
We have just been informed in the last hour that they want to expand or move boundaries in our harbour in Havre Boucher. We own waterfront property near the area and feel this infringes upon the use of public water for not just our family but multiple others in the village and surrounding communities who enjoy fishing, boating, kayaking, canoeing, water skiing and tubing in the harbour and around the island . By granting this request it will cut off access to an area that has been enjoyed by many for decades. It should continue to be accessible to the public for recreational enjoyment.

Regards

Raymond and Roxanne Pelrine
[redacted]
East Havre Boucher
Ant.Co, NS
B0H 1P0
[redacted]

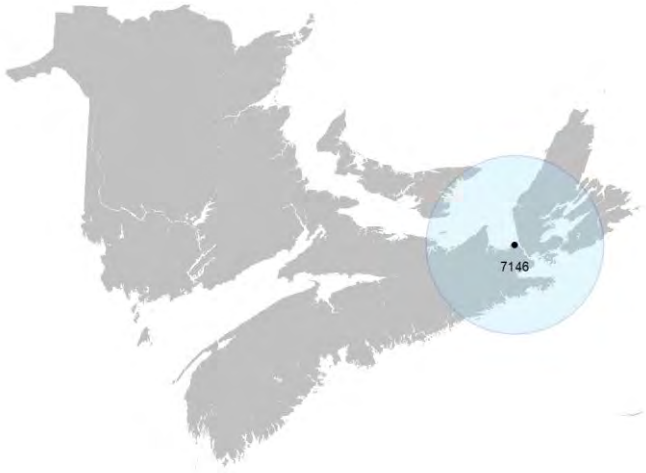
Sent from my iPad

Atlantic Canada Conservation Data Centre
Centre de données sur la conservation du Canada atlantique

DATA REPORT 7146: Havre Boucher, NS

Prepared 24 January 2022
by J. Churchill, Data Manager

CONTENTS OF REPORT



Map 1. A 100 km buffer around the study area

1.0 PREFACE

The Atlantic Canada Conservation Data Centre (AC CDC; www.accdc.com) is part of a network of NatureServe data centres and heritage programs serving 50 states in the U.S.A, 10 provinces and 1 territory in Canada, plus several Central and South American countries. The NatureServe network is more than 30 years old and shares a common conservation data methodology. The AC CDC was founded in 1997, and maintains data for the jurisdictions of New Brunswick, Nova Scotia, Prince Edward Island, and Newfoundland and Labrador. Although a non-governmental agency, the AC CDC is supported by 6 federal agencies and 4 provincial governments, as well as through outside grants and data processing fees.

Upon request and for a fee, the AC CDC queries its database and produces customized reports of the rare and endangered flora and fauna known to occur in or near a specified study area. As a supplement to that data, the AC CDC includes locations of managed areas with some level of protection, and known sites of ecological interest or sensitivity.

1.1 DATA LIST

Included datasets:

Filename	Contents
HrBoucherNS_7146ob.xls	Rare or legally-protected Flora and Fauna in your study area
HrBoucherNS_7146ob100km.xls	A list of Rare and legally protected Flora and Fauna within 100 km of your study area
HrBoucherNS_7146msa.xls	Managed and Biologically Significant Areas in your study area

1.2 RESTRICTIONS

The AC CDC makes a strong effort to verify the accuracy of all the data that it manages, but it shall not be held responsible for any inaccuracies in data that it provides. By accepting AC CDC data, recipients assent to the following limits of use:

a) Data is restricted to use by trained personnel who are sensitive to landowner interests and to potential threats to rare and/or endangered flora and fauna posed by the information provided.
b) Data is restricted to use by the specified Data User; any third party requiring data must make its own data request.
c) The AC CDC requires Data Users to cease using and delete data 12 months after receipt, and to make a new request for updated data if necessary at that time.
d) AC CDC data responses are restricted to the data in our Data System at the time of the data request.
e) Each record has an estimate of locational uncertainty, which must be referenced in order to understand the record's relevance to a particular location. Please see attached Data Dictionary for details.
f) AC CDC data responses are not to be construed as exhaustive inventories of taxa in an area.
g) The absence of a taxon cannot be inferred by its absence in an AC CDC data response.

1.3 ADDITIONAL INFORMATION

The accompanying Data Dictionary provides metadata for the data provided.

Please direct any additional questions about AC CDC data to the following individuals:

Plants, Lichens, Ranking Methods, All other Inquiries
Sean Blaney
Senior Scientist / Executive Director
(506) 364-2658
sean.blaney@accdc.ca

Animals (Fauna)
John Klymko
Zoologist
(506) 364-2660
john.klymko@accdc.ca

Plant Communities
Caitlin Porter
Botanist / Community Ecologist
(902) 719-4815
caitlin.porter@accdc.ca

Data Management, GIS
James Churchill
Conservation Data Analyst / Field Biologist
(902) 679-6146
james.churchill@accdc.ca

Billing
Jean Breau
Financial Manager / Executive Assistant
(506) 364-2657
jean.breau@accdc.ca

Questions on the biology of Federal Species at Risk can be directed to AC CDC: (506) 364-2658, with questions on Species at Risk regulations to: Samara Eaton, Canadian Wildlife Service (NB and PE): (506) 364-5060 or Julie McKnight, Canadian Wildlife Service (NS): (902) 426-4196.

For provincial information about rare taxa and protected areas, or information about game animals, deer yards, old growth forests, archeological sites, fish habitat etc., in New Brunswick, please contact Hubert Askanas, Energy and Resource Development: (506) 453-5873.

For provincial information about rare taxa and protected areas, or information about game animals, deer yards, old growth forests, archeological sites, fish habitat etc., in Nova Scotia, please contact Donna Hurlburt, NS DLF: (902) 679-6886. To determine if location-sensitive species (section 4.3) occur near your study site please contact a NS DLF Regional Biologist:

Western: Emma Vost
(902) 670-8187
Emma.Vost@novascotia.ca

Western: Sarah Spencer
(902) 541-0081
Sarah.Spencer@novascotia.ca

Central: Shavonne Meyer
(902) 893-0816
Shavonne.Meyer@novascotia.ca

Central: Kimberly George
(902) 890-1046
Kimberly.George@novascotia.ca

Eastern: Harrison Moore
(902) 497-4119
Harrison.Moore@novascotia.ca

Eastern: Maureen Cameron-MacMillan
(902) 295-2554
Maureen.Cameron-MacMillan@novascotia.ca

Eastern: Elizabeth Walsh
(902) 563-3370
Elizabeth.Walsh@novascotia.ca

For provincial information about rare taxa and protected areas, or information about game animals, fish habitat etc., in Prince Edward Island, please contact Garry Gregory, PEI Dept. of Communities, Land and Environment: (902) 569-7595.

2.0 RARE AND ENDANGERED SPECIES

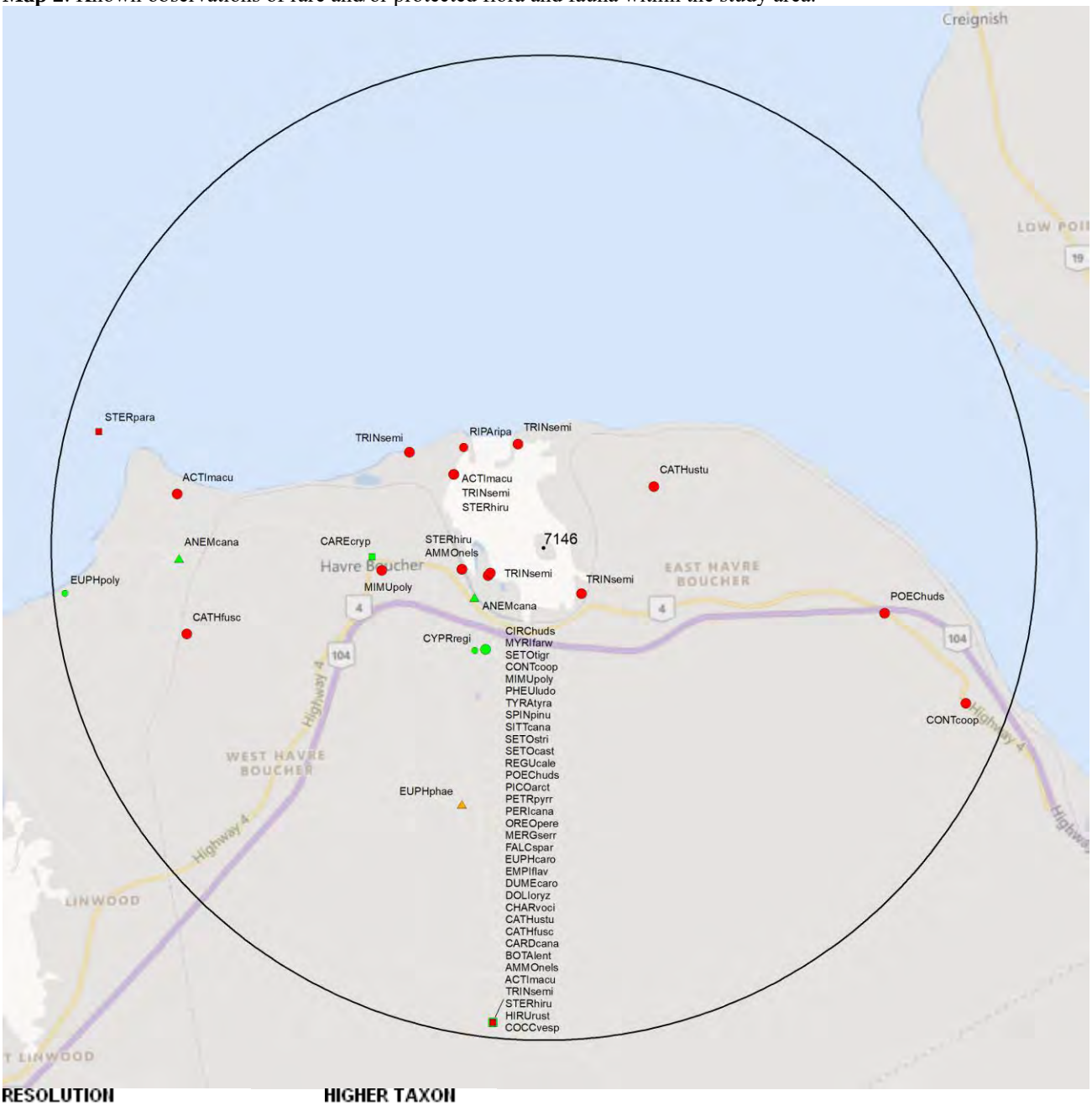
2.1 FLORA

The study area contains 7 records of 5 vascular, no records of nonvascular flora (Map 2 and attached: *ob.xls).

2.2 FAUNA

The study area contains 85 records of 35 vertebrate, 1 record of 1 invertebrate fauna (Map 2 and attached data files - see 1.1 Data List). Please see section 4.3 to determine if 'location-sensitive' species occur near your study site.

Map 2: Known observations of rare and/or protected flora and fauna within the study area.



3.0 SPECIAL AREAS

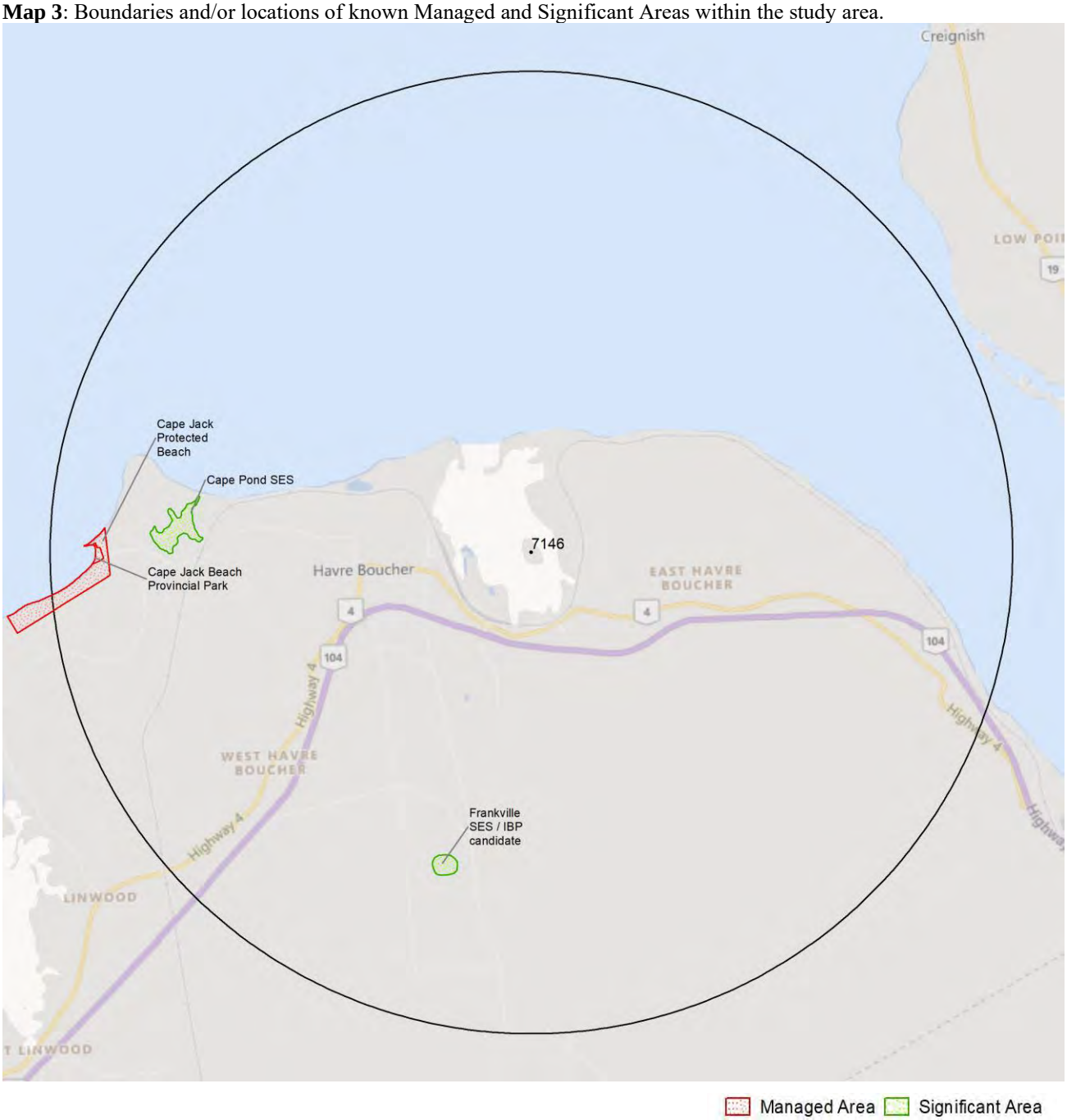
3.1 MANAGED AREAS

The GIS scan identified 2 managed areas in the vicinity of the study area (Map 3 and attached file: *msa.xls).

3.2 SIGNIFICANT AREAS

The GIS scan identified 2 biologically significant sites in the vicinity of the study area (Map 3 and attached file: *msa.xls).

Map 3: Boundaries and/or locations of known Managed and Significant Areas within the study area.



4.0 RARE SPECIES LISTS

Rare and/or endangered taxa (excluding "location-sensitive" species, section 4.3) within the study area listed in order of concern, beginning with legally listed taxa, with the number of observations per taxon and the distance in kilometers from study area centroid to the closest observation (± the precision, in km, of the record). [P] = vascular plant, [N] = nonvascular plant, [A] = vertebrate animal, [I] = invertebrate animal, [C] = community. Note: records are from attached files *ob.xls/*ob.shp only.

4.1 FLORA

	Scientific *Name*	Common Name	COSEWIC	SARA	Prov Legal Prot	Prov Rarity Rank	# recs	Distance (km)
P	*Myriophyllum farwellii*	Farwell's Water Milfoil				S2	1	4.8 ± 7.0
P	*Anemonastrum canadense*	Canada Anemone				S2	2	0.9 ± 3.0
P	*Cypripedium reginae*	Showy Lady's-Slipper				S2	2	1.2 ± 0.0
P	*Euphorbia polygonifolia*	Seaside Spurge				S2S3	1	4.9 ± 0.0
P	*Carex cryptolepis*	Hidden-scaled Sedge				S3	1	1.7 ± 5.0

4.2 FAUNA

	Scientific *Name*	Common Name	COSEWIC	SARA	Prov Legal Prot	Prov Rarity Rank	# recs	Distance (km)
A	*Riparia riparia*	Bank Swallow	Threatened	Threatened	Endangered	S2S3B	1	1.3 ± 0.0
A	*Dolichonyx oryzivorus*	Bobolink	Threatened	Threatened	Vulnerable	S3S4B	2	4.8 ± 7.0
A	*Euphagus carolinus*	Rusty Blackbird	Special Concern	Special Concern	Endangered	S2B	1	4.8 ± 7.0
A	*Contopus cooperi*	Olive-sided Flycatcher	Special Concern	Threatened	Threatened	S2B	6	4.6 ± 0.0
A	*Hirundo rustica*	Barn Swallow	Special Concern	Threatened	Endangered	S2S3B	2	4.8 ± 7.0
A	*Cardellina canadensis*	Canada Warbler	Special Concern	Threatened	Endangered	S3B	1	4.8 ± 7.0
A	*Coccothraustes vespertinus*	Evening Grosbeak	Special Concern	Special Concern	Vulnerable	S3S4B,S3N	3	4.8 ± 7.0
A	*Sterna hirundo*	Common Tern	Not At Risk			S3B	6	0.9 ± 0.0
A	*Circus hudsonius*	Northern Harrier	Not At Risk			S3S4B	4	4.8 ± 7.0
A	*Ammospiza nelsoni*	Nelson's Sparrow	Not At Risk			S3S4B	3	0.9 ± 0.0
A	*Mimus polyglottos*	Northern Mockingbird				S1B	2	1.7 ± 0.0
A	*Setophaga tigrina*	Cape May Warbler				S2B	1	4.8 ± 7.0
A	*Spinus pinus*	Pine Siskin				S2S3	1	4.8 ± 7.0
A	*Tringa semipalmata*	Willet				S2S3B	10	0.6 ± 0.0
A	*Petrochelidon pyrrhonota*	Cliff Swallow				S2S3B	1	4.8 ± 7.0
A	*Pheucticus ludovicianus*	Rose-breasted Grosbeak				S2S3B	1	4.8 ± 7.0
A	*Perisoreus canadensis*	Canada Jay				S3	1	4.8 ± 7.0
A	*Poecile hudsonicus*	Boreal Chickadee				S3	3	3.5 ± 0.0
A	*Sitta canadensis*	Red-breasted Nuthatch				S3	3	4.8 ± 7.0
A	*Falco sparverius*	American Kestrel				S3B	2	4.8 ± 7.0
A	*Charadrius vociferus*	Killdeer				S3B	1	4.8 ± 7.0
A	*Sterna paradisaea*	Arctic Tern				S3B	1	4.7 ± 7.0
A	*Tyrannus tyrannus*	Eastern Kingbird				S3B	1	4.8 ± 7.0
A	*Dumetella carolinensis*	Gray Catbird				S3B	1	4.8 ± 7.0
A	*Picoides arcticus*	Black-backed Woodpecker				S3S4	1	4.8 ± 7.0
A	*Botaurus lentiginosus*	American Bittern				S3S4B	2	4.8 ± 7.0
A	*Actitis macularius*	Spotted Sandpiper				S3S4B	4	1.2 ± 0.0
A	*Empidonax flaviventris*	Yellow-bellied Flycatcher				S3S4B	4	4.8 ± 7.0
A	*Regulus calendula*	Ruby-crowned Kinglet				S3S4B	4	4.8 ± 7.0
A	*Catharus fuscescens*	Veery				S3S4B	3	3.7 ± 0.0
A	*Catharus ustulatus*	Swainson's Thrush				S3S4B	4	1.3 ± 0.0
A	*Oreothlypis peregrina*	Tennessee Warbler				S3S4B	1	4.8 ± 7.0
A	*Setophaga castanea*	Bay-breasted Warbler				S3S4B	1	4.8 ± 7.0
A	*Setophaga striata*	Blackpoll Warbler				S3S4B	1	4.8 ± 7.0
A	*Mergus serrator*	Red-breasted Merganser				S3S4B,S5N	2	4.8 ± 7.0
I	*Euphydryas phaeton*	Baltimore Checkerspot				S2S3	1	2.7 ± 1.0

4.3 LOCATION SENSITIVE SPECIES

The Department of Natural Resources in each Maritimes province considers a number of species "location sensitive". Concern about exploitation of location-sensitive species precludes inclusion of precise coordinates in this report. Those intersecting your study area are indicated below with "YES".

Nova Scotia

Scientific *Name*	Common Name	SARA	Prov Legal Prot	Known within the Study Site?
Fraxinus nigra	Black Ash		Threatened	No
Emydoidea blandingii	*Blanding's Turtle - Nova Scotia pop.*	Endangered	Vulnerable	No
Glyptemys insculpta	Wood Turtle	Threatened	Threatened	No
Falco peregrinus pop. 1	Peregrine Falcon - anatum/tundrius pop.	Special Concern	Vulnerable	No
Bat hibernaculum or bat species occurrence		**[Endangered][1]**	**[Endangered][1]**	**YES**

1 *Myotis lucifugus* (Little Brown Myotis), *Myotis septentrionalis* (Long-eared Myotis), and *Perimyotis subflavus* (Tri-colored Bat or Eastern Pipistrelle) are all Endangered under the Federal Species at Risk Act and the NS Endangered Species Act.

4.4 SOURCE BIBLIOGRAPHY

The recipient of these data shall acknowledge the AC CDC and the data sources listed below in any documents, reports, publications or presentations, in which this dataset makes a significant contribution.

# recs	CITATION
71	Lepage, D. 2014. Maritime Breeding Bird Atlas Database. Bird Studies Canada, Sackville NB, 407,838 recs.
8	Erskine, A.J. 1992. Maritime Breeding Bird Atlas Database. NS Museum & Nimbus Publ., Halifax, 82,125 recs.
6	Benjamin, L.K. (compiler). 2012. Significant Habitat & Species Database. Nova Scotia Dept Natural Resources, 4965 recs.
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1	eBird. 2020. eBird Basic Dataset. Version: EBD_relNov-2019. Ithaca, New York. Nov 2019, Cape Breton Bras d'Or Lakes Watershed subset. Cornell Lab of Ornithology.
1	iNaturalist. 2018. iNaturalist Data Export 2018. iNaturalist.org and iNaturalist.ca, Web site: 11700 recs.
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1	NS DOE. 1991-1992. Nova Scotia Protected Areas database. Nova Scotia Department of Environment.
1	Pronych, G. & Wilson, A. 1993. Atlas of Rare Vascular Plants in Nova Scotia. Nova Scotia Museum, Halifax NS, I:1-168, II:169-331. 1446 recs.
1	Robinson, S.L. 2014. 2013 Field Data. Atlantic Canada Conservation Data Centre.
1	Zinck, M. & Roland, A.E. 1998. Roland's Flora of Nova Scotia. Nova Scotia Museum, 3rd ed., rev. M. Zinck; 2 Vol., 1297 pp.

5.0 RARE SPECIES WITHIN 100 KM

A 100 km buffer around the study area contains 35058 records of 149 vertebrate and 747 records of 58 invertebrate fauna; 6032 records of 258 vascular, 2900 records of 119 nonvascular flora (attached: *ob100km.xls).

Taxa within 100 km of the study site that are rare and/or endangered in the province in which the study site occurs (including "location-sensitive" species). All ranks correspond to the province in which the study site falls, even for out-of-province records. Taxa are listed in order of concern, beginning with legally listed taxa, with the number of observations per taxon and the distance in kilometers from study area centroid to the closest observation (± the precision, in km, of the record).

Taxonomic Group	Scientific Name	Common Name	COSEWIC	SARA	Prov Legal Prot	Prov Rarity Rank	# recs	Distance (km)	Prov
A	*Myotis lucifugus*	Little Brown Myotis	Endangered	Endangered	Endangered	S1	67	14.0 ± 0.0	NS
A	*Myotis septentrionalis*	Northern Long-eared Myotis	Endangered	Endangered	Endangered	S1	29	92.8 ± 0.0	PE
A	*Salmo salar pop. 4*	Atlantic Salmon - Eastern Cape Breton pop.	Endangered			S1	36	18.6 ± 0.0	NS
A	*Salmo salar pop. 6*	Altantic Salmon - Nova Scotia Southern Upland pop.	Endangered			S1	24	26.8 ± 1.0	NS
A	*Eubalaena glacialis*	North Atlantic Right Whale	Endangered	Endangered		S1	1	64.3 ± 1.0	NS
A	*Charadrius melodus melodus*	Piping Plover melodus ssp	Endangered	Endangered	Endangered	S1B	1442	6.4 ± 0.0	NS
A	*Sterna dougallii*	Roseate Tern	Endangered	Endangered	Endangered	S1B	67	48.9 ± 7.0	NS
A	*Dermochelys coriacea (Atlantic pop.)*	Leatherback Sea Turtle - Atlantic pop.	Endangered	Endangered		S1S2N	2	8.1 ± 0.0	NS
A	*Antrostomus vociferus*	Eastern Whip-Poor-Will	Threatened	Threatened	Threatened	S1?B	3	31.0 ± 7.0	NS
A	*Catharus bicknelli*	Bicknell's Thrush	Threatened	Threatened	Endangered	S1S2B	23	49.7 ± 7.0	NS
A	*Asio flammeus*	Short-eared Owl	Threatened	Special Concern		S1S2B	8	55.8 ± 7.0	NS
A	*Limosa haemastica*	Hudsonian Godwit	Threatened			S1S2M	8	29.7 ± 0.0	NS
A	*Glyptemys insculpta*	Wood Turtle	Threatened	Threatened	Threatened	S2	3884	10.0 ± 0.0	NS
A	*Acipenser oxyrinchus*	Atlantic Sturgeon	Threatened			S2	1	97.1 ± 0.0	NS
A	*Anguilla rostrata*	American Eel	Threatened			S2	2	42.6 ± 0.0	NS
A	*Chaetura pelagica*	Chimney Swift	Threatened	Threatened	Endangered	S2B,S1M	180	23.8 ± 0.0	NS
A	*Riparia riparia*	Bank Swallow	Threatened	Threatened	Endangered	S2S3B	1046	1.3 ± 0.0	NS
A	*Oceanodroma leucorhoa*	Leach's Storm-Petrel	Threatened			S3B,S5M	28	8.2 ± 0.0	NS
A	*Tringa flavipes*	Lesser Yellowlegs	Threatened			S3M	291	9.2 ± 0.0	NS
A	*Dolichonyx oryzivorus*	Bobolink	Threatened	Threatened	Vulnerable	S3S4B	474	4.8 ± 7.0	NS
A	*Sturnella magna*	Eastern Meadowlark	Threatened	Threatened		SHB	2	48.9 ± 7.0	NS
A	*Hylocichla mustelina*	Wood Thrush	Threatened	Threatened		SUB	10	27.0 ± 7.0	NS
A	*Salmo salar pop. 12*	Atlantic Salmon - Gaspe - Southern Gulf of St Lawrence pop.	Special Concern			S1	26	11.3 ± 1.0	NS
A	*Passerculus sandwichensis princeps*	Savannah Sparrow princeps ssp	Special Concern	Special Concern		S1B	2	64.4 ± 0.0	NS
A	*Bucephala islandica (Eastern pop.)*	Barrow's Goldeneye - Eastern pop.	Special Concern	Special Concern		S1N	6	79.7 ± 4.0	NS
A	*Euphagus carolinus*	Rusty Blackbird	Special Concern	Special Concern	Endangered	S2B	221	4.8 ± 7.0	NS
A	*Chordeiles minor*	Common Nighthawk	Special Concern	Threatened	Threatened	S2B	213	9.6 ± 0.0	NS
A	*Contopus cooperi*	Olive-sided Flycatcher	Special Concern	Threatened	Threatened	S2B	1026	4.6 ± 0.0	NS
A	*Histrionicus histrionicus pop. 1*	Harlequin Duck - Eastern pop.	Special Concern	Special Concern	Endangered	S2N	25	39.8 ± 16.0	NS
A	*Balaenoptera physalus*	Fin Whale	Special Concern	Special Concern		S2S3	2	78.4 ± 0.0	NS
A	*Hirundo rustica*	Barn Swallow	Special Concern	Threatened	Endangered	S2S3B	869	4.8 ± 7.0	NS
A	*Morone saxatilis pop. 1*	Striped Bass- Southern Gulf of St Lawrence pop.	Special Concern			S2S3N	1	31.9 ± 1.0	NS
A	*Chelydra serpentina*	Snapping Turtle	Special Concern	Special Concern	Vulnerable	S3	87	27.1 ± 0.0	NS
A	*Cardellina canadensis*	Canada Warbler	Special Concern	Threatened	Endangered	S3B	594	4.8 ± 7.0	NS
A	*Contopus virens*	Eastern Wood-Pewee	Special Concern	Special Concern	Vulnerable	S3S4B	501	6.5 ± 0.0	NS
A	*Coccothraustes vespertinus*	Evening Grosbeak	Special Concern	Special Concern	Vulnerable	S3S4B,S3N	763	4.8 ± 7.0	NS

Taxonomic Group	Scientific Name	Common Name	COSEWIC	SARA	Prov Legal Prot	Prov Rarity Rank	# recs	Distance (km)	Prov
A	*Phocoena phocoena*	Harbour Porpoise	Special Concern			S4	2	8.1 ± 0.0	NS
A	*Podiceps auritus*	Horned Grebe	Special Concern	Special Concern		S4N	8	29.8 ± 0.0	NS
A	*Chrysemys picta picta*	Eastern Painted Turtle	Special Concern			S4S5	2	47.4 ± 1.0	NS
A	*Ammodramus savannarum pratensis*	Grasshopper Sparrow, pratensis subspecies	Special Concern	Special Concern			1	86.0 ± 4.0	NS
A	*Lynx canadensis*	Canadian Lynx	Not At Risk		Endangered	S1	41	23.3 ± 1.0	NS
A	*Accipiter cooperii*	Cooper's Hawk	Not At Risk			S1?B	1	99.9 ± 0.0	NS
A	*Fulica americana*	American Coot	Not At Risk			S1B	3	63.5 ± 0.0	NS
A	*Chlidonias niger*	Black Tern	Not At Risk			S1B	3	19.0 ± 0.0	NS
A	*Falco peregrinus pop. 1*	Peregrine Falcon - anatum/tundrius	Not At Risk	Special Concern	Vulnerable	S1B,SNAM	5	6.9 ± 0.0	NS
A	*Sorex dispar*	Long-tailed Shrew	Not At Risk			S2	8	52.2 ± 0.0	NS
A	*Aegolius funereus*	Boreal Owl	Not At Risk			S2?B	7	28.0 ± 0.0	NS
A	*Hemidactylium scutatum*	Four-toed Salamander	Not At Risk			S3	19	7.2 ± 0.0	NS
A	*Megaptera novaeangliae*	Humpback Whale (NW Atlantic pop.)	Not At Risk			S3	2	8.1 ± 0.0	NS
A	*Sterna hirundo*	Common Tern	Not At Risk			S3B	544	0.9 ± 0.0	NS
A	*Sialia sialis*	Eastern Bluebird	Not At Risk			S3B	17	14.8 ± 7.0	NS
A	*Buteo lagopus*	Rough-legged Hawk	Not At Risk			S3N	6	22.2 ± 0.0	NS
A	*Accipiter gentilis*	Northern Goshawk	Not At Risk			S3S4	159	10.6 ± 7.0	NS
A	*Lagenorhynchus acutus*	Atlantic White-sided Dolphin	Not At Risk			S3S4	4	8.6 ± 0.0	NS
A	*Circus hudsonius*	Northern Harrier	Not At Risk			S3S4B	280	4.8 ± 7.0	NS
A	*Ammospiza nelsoni*	Nelson's Sparrow	Not At Risk			S3S4B	116	0.9 ± 0.0	NS
A	*Calidris canutus rufa*	Red Knot rufa subspecies	E,SC	Endangered	Endangered	S2M	24	18.9 ± 0.0	NS
A	*Morone saxatilis*	Striped Bass	E,SC			S2S3	6	29.2 ± 0.0	NS
A	*Martes americana*	American Marten			Endangered	S1	15	53.9 ± 1.0	NS
A	*Alces americanus*	Moose			Endangered	S1	84	30.6 ± 0.0	NS
A	*Picoides dorsalis*	American Three-toed Woodpecker				S1?	9	37.3 ± 0.0	NS
A	*Passerina cyanea*	Indigo Bunting				S1?B	4	24.4 ± 0.0	NS
A	*Uria aalge*	Common Murre				S1?B,S5N	1	50.5 ± 0.0	NS
A	*Nycticorax nycticorax*	Black-crowned Night-heron				S1B	2	31.0 ± 7.0	NS
A	*Anas acuta*	Northern Pintail				S1B	9	27.7 ± 1.0	NS
A	*Oxyura jamaicensis*	Ruddy Duck				S1B	3	41.3 ± 0.0	NS
A	*Haematopus palliatus*	American Oystercatcher				S1B	7	52.6 ± 7.0	NS
A	*Myiarchus crinitus*	Great Crested Flycatcher				S1B	1	70.0 ± 3.0	NS
A	*Mimus polyglottos*	Northern Mockingbird				S1B	23	1.7 ± 0.0	NS
A	*Toxostoma rufum*	Brown Thrasher				S1B	4	18.5 ± 0.0	NS
A	*Vireo gilvus*	Warbling Vireo				S1B	6	20.2 ± 7.0	NS
A	*Setophaga pinus*	Pine Warbler				S1B	4	13.8 ± 0.0	NS
A	*Calidris minutilla*	Least Sandpiper				S1B,S3M	194	6.4 ± 0.0	NS
A	*Charadrius semipalmatus*	Semipalmated Plover				S1B,S3S4M	364	9.2 ± 0.0	NS
A	*Vespertilionidae sp.*	bat species				S1S2	98	4.4 ± 0.0	NS
A	*Pluvialis dominica*	American Golden-Plover				S1S2M	31	29.7 ± 0.0	NS
A	*Microtus chrotorrhinus*	Rock Vole				S2	12	52.2 ± 0.0	NS
A	*Vireo philadelphicus*	Philadelphia Vireo				S2?B	17	30.6 ± 0.0	NS
A	*Spatula clypeata*	Northern Shoveler				S2B	7	43.5 ± 0.0	NS
A	*Mareca strepera*	Gadwall				S2B	7	21.1 ± 7.0	NS
A	*Empidonax traillii*	Willow Flycatcher				S2B	9	30.9 ± 7.0	NS
A	*Setophaga tigrina*	Cape May Warbler				S2B	184	4.8 ± 7.0	NS
A	*Piranga olivacea*	Scarlet Tanager				S2B	14	46.8 ± 7.0	NS
A	*Pooecetes gramineus*	Vesper Sparrow				S2B	9	20.2 ± 7.0	NS
A	*Molothrus ater*	Brown-headed Cowbird				S2B	56	20.1 ± 7.0	NS
A	*Alca torda*	Razorbill				S2B,S4N	11	62.9 ± 0.0	NS
A	*Bucephala clangula*	Common Goldeneye				S2B,S5N	214	11.5 ± 0.0	NS
A	*Branta bernicla*	Brant				S2M	1	39.8 ± 16.0	NS
A	*Phalacrocorax carbo*	Great Cormorant				S2S3	347	9.0 ± 0.0	NS
A	*Asio otus*	Long-eared Owl				S2S3	30	10.6 ± 7.0	NS

Taxonomic Group	Scientific Name	Common Name	COSEWIC	SARA	Prov Legal Prot	Prov Rarity Rank	# recs	Distance (km)	Prov
A	*Spinus pinus*	Pine Siskin				S2S3	598	4.8 ± 7.0	NS
A	*Cathartes aura*	Turkey Vulture				S2S3B	5	42.8 ± 0.0	NS
A	*Rallus limicola*	Virginia Rail				S2S3B	15	16.2 ± 0.0	NS
A	*Tringa semipalmata*	Willet				S2S3B	670	0.6 ± 0.0	NS
A	*Petrochelidon pyrrhonota*	Cliff Swallow				S2S3B	190	4.8 ± 7.0	NS
A	*Pheucticus ludovicianus*	Rose-breasted Grosbeak				S2S3B	368	4.8 ± 7.0	NS
A	*Icterus galbula*	Baltimore Oriole				S2S3B	30	10.6 ± 7.0	NS
A	*Pinicola enucleator*	Pine Grosbeak				S2S3B,S5N	173	10.6 ± 7.0	NS
A	*Numenius phaeopus hudsonicus*	Hudsonian Whimbrel				S2S3M	78	29.7 ± 0.0	NS
A	*Calidris melanotos*	Pectoral Sandpiper				S2S3M	33	29.7 ± 0.0	NS
A	*Perisoreus canadensis*	Canada Jay				S3	572	4.8 ± 7.0	NS
A	*Poecile hudsonicus*	Boreal Chickadee				S3	1231	3.5 ± 0.0	NS
A	*Sitta canadensis*	Red-breasted Nuthatch				S3	1182	4.8 ± 7.0	NS
A	*Alosa pseudoharengus*	Alewife				S3	35	18.6 ± 0.0	NS
A	*Salvelinus fontinalis*	Brook Trout				S3	54	10.4 ± 0.0	NS
A	*Menidia menidia*	Atlantic Silverside				S3	2	50.1 ± 0.0	NS
A	*Synaptomys cooperi*	Southern Bog Lemming				S3	4	52.2 ± 0.0	NS
A	*Pekania pennanti*	Fisher				S3	6	33.3 ± 0.0	NS
A	*Calidris maritima*	Purple Sandpiper				S3?N	32	18.1 ± 10.0	NS
A	*Calcarius lapponicus*	Lapland Longspur				S3?N	1	29.9 ± 0.0	NS
A	*Falco sparverius*	American Kestrel				S3B	314	4.8 ± 7.0	NS
A	*Charadrius vociferus*	Killdeer				S3B	236	4.8 ± 7.0	NS
A	*Gallinago delicata*	Wilson's Snipe				S3B	688	10.6 ± 7.0	NS
A	*Sterna paradisaea*	Arctic Tern				S3B	96	4.7 ± 7.0	NS
A	*Coccyzus erythropthalmus*	Black-billed Cuckoo				S3B	60	22.1 ± 0.0	NS
A	*Tyrannus tyrannus*	Eastern Kingbird				S3B	109	4.8 ± 7.0	NS
A	*Dumetella carolinensis*	Gray Catbird				S3B	271	4.8 ± 7.0	NS
A	*Cardellina pusilla*	Wilson's Warbler				S3B	152	10.6 ± 7.0	NS
A	*Tringa melanoleuca*	Greater Yellowlegs				S3B,S3S4M	390	7.6 ± 0.0	NS
A	*Rissa tridactyla*	Black-legged Kittiwake				S3B,S5N	8	13.5 ± 3.0	NS
A	*Fratercula arctica*	Atlantic Puffin				S3B,S5N	8	62.8 ± 0.0	NS
A	*Pluvialis squatarola*	Black-bellied Plover				S3M	264	9.2 ± 0.0	NS
A	*Arenaria interpres*	Ruddy Turnstone				S3M	131	6.4 ± 0.0	NS
A	*Calidris pusilla*	Semipalmated Sandpiper				S3M	274	9.2 ± 0.0	NS
A	*Calidris fuscicollis*	White-rumped Sandpiper				S3M	72	29.7 ± 0.0	NS
A	*Limnodromus griseus*	Short-billed Dowitcher				S3M	146	29.7 ± 0.0	NS
A	*Calidris alba*	Sanderling				S3M,S2N	185	23.2 ± 0.0	NS
A	*Chroicocephalus ridibundus*	Black-headed Gull				S3N	22	36.5 ± 0.0	NS
A	*Somateria mollissima*	Common Eider				S3S4	435	8.3 ± 0.0	NS
A	*Picoides arcticus*	Black-backed Woodpecker				S3S4	110	4.8 ± 7.0	NS
A	*Loxia curvirostra*	Red Crossbill				S3S4	93	17.7 ± 0.0	NS
A	*Sorex palustris*	American Water Shrew				S3S4	1	93.0 ± 0.0	PE
A	*Botaurus lentiginosus*	American Bittern				S3S4B	254	4.8 ± 7.0	NS
A	*Spatula discors*	Blue-winged Teal				S3S4B	121	21.1 ± 7.0	NS
A	*Actitis macularius*	Spotted Sandpiper				S3S4B	814	1.2 ± 0.0	NS
A	*Empidonax flaviventris*	Yellow-bellied Flycatcher				S3S4B	1222	4.8 ± 7.0	NS
A	*Regulus calendula*	Ruby-crowned Kinglet				S3S4B	3682	4.8 ± 7.0	NS
A	*Catharus fuscescens*	Veery				S3S4B	536	3.7 ± 0.0	NS
A	*Catharus ustulatus*	Swainson's Thrush				S3S4B	2590	1.3 ± 0.0	NS
A	*Oreothlypis peregrina*	Tennessee Warbler				S3S4B	434	4.8 ± 7.0	NS
A	*Setophaga castanea*	Bay-breasted Warbler				S3S4B	415	4.8 ± 7.0	NS
A	*Setophaga striata*	Blackpoll Warbler				S3S4B	145	4.8 ± 7.0	NS
A	*Passerella iliaca*	Fox Sparrow				S3S4B	171	5.2 ± 7.0	NS
A	*Mergus serrator*	Red-breasted Merganser				S3S4B,S5N	187	4.8 ± 7.0	NS
A	*Bucephala albeola*	Bufflehead				S3S4N	47	15.0 ± 0.0	NS
A	*Lanius borealis*	Northern Shrike				S3S4N	9	50.5 ± 1.0	NS
A	*Leucophaeus atricilla*	Laughing Gull				SHB	4	56.0 ± 0.0	NS

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A	*Progne subis*	Purple Martin				SHB	4	64.5 ± 0.0	NS
A	*Morus bassanus*	Northern Gannet				SHB,S5M	80	8.7 ± 0.0	NS
I	*Bombus (Psithyrus) bohemicus*	Gypsy Cuckoo Bumble Bee	Endangered	Endangered	Endangered	S1	10	29.7 ± 5.0	NS
I	*Danaus plexippus*	Monarch	Endangered	Special Concern	Endangered	S2B	62	30.7 ± 0.0	NS
I	*Alasmidonta varicosa*	Brook Floater	Special Concern	Special Concern	Threatened	S1S2	8	33.9 ± 0.0	NS
I	*Bombus terricola*	Yellow-banded Bumblebee	Special Concern	Special Concern	Vulnerable	S3	88	35.1 ± 0.0	NS
I	*Coccinella transversoguttata richardsoni*	Transverse Lady Beetle	Special Concern		Endangered	SH	1	45.1 ± 2.0	NS
I	*Papilio brevicauda bretonensis*	Short-tailed Swallowtail				S1	11	74.4 ± 2.0	NS
I	*Satyrium acadica*	Acadian Hairstreak				S1	5	93.8 ± 2.0	NS
I	*Neurocordulia michaeli*	Broadtailed Shadowdragon				S1	26	64.1 ± 0.0	NS
I	*Coenagrion interrogatum*	Subarctic Bluet				S1	1	93.3 ± 0.0	NS
I	*Lycaena dorcas*	Dorcas Copper				S1?	31	35.2 ± 0.0	NS
I	*Polygonia satyrus*	Satyr Comma				S1?	2	70.0 ± 2.0	NS
I	*Strymon melinus*	Grey Hairstreak				S1S2	2	43.7 ± 0.0	NS
I	*Nymphalis l-album*	Compton Tortoiseshell				S1S2	3	78.6 ± 2.0	NS
I	*Coenagrion resolutum*	Taiga Bluet				S1S2	10	92.3 ± 1.0	PE
I	*Haematopota rara*	Shy Cleg				S1S3	1	64.5 ± 0.0	NS
I	*Lycaena hyllus*	Bronze Copper				S2	9	36.3 ± 0.0	NS
I	*Lycaena dospassosi*	Salt Marsh Copper				S2	7	42.8 ± 0.0	NS
I	*Satyrium calanus*	Banded Hairstreak				S2	1	88.6 ± 2.0	NS
I	*Boloria chariclea*	Arctic Fritillary				S2	2	78.6 ± 2.0	NS
I	*Aglais milberti*	Milbert's Tortoiseshell				S2	3	75.5 ± 2.0	NS
I	*Somatochlora septentrionalis*	Muskeg Emerald				S2	8	72.4 ± 0.0	NS
I	*Somatochlora williamsoni*	Williamson's Emerald				S2	8	79.0 ± 0.0	NS
I	*Margaritifera margaritifera*	Eastern Pearlshell				S2	86	11.1 ± 0.0	NS
I	*Pantala hymenaea*	Spot-Winged Glider				S2?B	2	70.6 ± 1.0	NS
I	*Thorybes pylades*	Northern Cloudywing				S2S3	24	29.2 ± 0.0	NS
I	*Amblyscirtes hegon*	Pepper and Salt Skipper				S2S3	9	29.3 ± 1.0	NS
I	*Satyrium liparops*	Striped Hairstreak				S2S3	5	88.1 ± 2.0	NS
I	*Euphydryas phaeton*	Baltimore Checkerspot				S2S3	34	2.7 ± 1.0	NS
I	*Gomphus descriptus*	Harpoon Clubtail				S2S3	16	18.6 ± 0.0	NS
I	*Ophiogomphus aspersus*	Brook Snaketail				S2S3	5	18.6 ± 0.0	NS
I	*Ophiogomphus mainensis*	Maine Snaketail				S2S3	14	50.6 ± 0.0	NS
I	*Ophiogomphus rupinsulensis*	Rusty Snaketail				S2S3	36	64.1 ± 0.0	NS
I	*Somatochlora forcipata*	Forcipate Emerald				S2S3	7	67.9 ± 1.0	NS
I	*Somatochlora franklini*	Delicate Emerald				S2S3	1	95.7 ± 1.0	PE
I	*Alasmidonta undulata*	Triangle Floater				S2S3	5	43.1 ± 0.0	NS
I	*Naemia seriata*	a Ladybird beetle				S3	1	38.0 ± 0.0	NS
I	*Iphthiminus opacus*	a Darkling Beetle				S3	1	35.8 ± 0.0	NS
I	*Monochamus marmorator*	a Longhorned Beetle				S3	2	68.6 ± 0.0	NS
I	*Callophrys henrici*	Henry's Elfin				S3	2	56.0 ± 0.0	NS
I	*Speyeria aphrodite*	Aphrodite Fritillary				S3	7	29.9 ± 2.0	NS
I	*Polygonia faunus*	Green Comma				S3	18	29.6 ± 0.0	NS
I	*Megisto cymela*	Little Wood-satyr				S3	3	39.9 ± 1.0	NS
I	*Oeneis jutta*	Jutta Arctic				S3	7	30.2 ± 0.0	NS
I	*Aeshna clepsydra*	Mottled Darner				S3	3	10.2 ± 0.0	NS
I	*Aeshna constricta*	Lance-Tipped Darner				S3	3	92.9 ± 0.0	PE
I	*Boyeria grafiana*	Ocellated Darner				S3	7	68.9 ± 0.0	NS
I	*Gomphaeschna furcillata*	Harlequin Darner				S3	3	12.0 ± 0.0	NS
I	*Somatochlora tenebrosa*	Clamp-Tipped Emerald				S3	1	89.0 ± 0.0	NS
I	*Nannothemis bella*	Elfin Skimmer				S3	3	12.0 ± 0.0	NS
I	*Sympetrum danae*	Black Meadowhawk				S3	8	14.9 ± 0.0	NS
I	*Enallagma vernale*	Vernal Bluet				S3	8	11.8 ± 0.0	NS
I	*Amphiagrion saucium*	Eastern Red Damsel				S3	11	36.0 ± 0.0	NS
I	*Polygonia interrogationis*	Question Mark				S3B	28	35.0 ± 0.0	NS

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I	*Erynnis juvenalis*	Juvenal's Duskywing				S3S4	1	36.0 ± 1.0	NS
I	*Amblyscirtes vialis*	Common Roadside-Skipper				S3S4	11	40.5 ± 0.0	NS
I	*Polygonia progne*	Grey Comma				S3S4	35	18.6 ± 1.0	NS
I	*Lanthus parvulus*	Northern Pygmy Clubtail				S3S4	23	24.7 ± 1.0	NS
I	*Lampsilis radiata*	Eastern Lampmussel				S3S4	18	9.7 ± 0.0	NS
N	*Erioderma pedicellatum (Atlantic pop.)*	Boreal Felt Lichen - Atlantic pop.	Endangered	Endangered	Endangered	S1	510	38.0 ± 0.0	NS
N	*Erioderma mollissimum*	Graceful Felt Lichen	Endangered	Endangered	Endangered	S1S2	15	84.4 ± 0.0	NS
N	*Peltigera hydrothyria*	Eastern Waterfan	Threatened	Threatened	Threatened	S1	35	13.6 ± 0.0	NS
N	*Pannaria lurida*	Wrinkled Shingle Lichen	Threatened	Threatened	Threatened	S1S2	23	69.4 ± 0.0	NS
N	*Anzia colpodes*	Black-foam Lichen	Threatened	Threatened	Threatened	S3	8	69.1 ± 1.0	NS
N	*Sclerophora peronella (Atlantic pop.)*	Frosted Glass-whiskers (Atlantic population)	Special Concern	Special Concern		S1?	19	21.6 ± 0.0	NS
N	*Pectenia plumbea*	Blue Felt Lichen	Special Concern	Special Concern	Vulnerable	S3	472	6.2 ± 0.0	NS
N	*Fissidens exilis*	Pygmy Pocket Moss	Not At Risk			S1S2	7	29.1 ± 0.0	NS
N	*Pseudevernia cladonia*	Ghost Antler Lichen	Not At Risk			S2S3	3	47.1 ± 0.0	NS
N	*Cinclidium stygium*	Sooty Cupola Moss				S1	2	39.1 ± 0.0	NS
N	*Cladonia brevis*	Short Peg Lichen				S1	1	65.4 ± 0.0	NS
N	*Lathagrium cristatum*	Fingered Jelly Lichen				S1	1	58.2 ± 0.0	NS
N	*Peltigera lepidophora*	Scaly Pelt Lichen				S1	2	58.4 ± 0.0	NS
N	*Hypogymnia hultenii*	Powdered Honeycomb Lichen				S1	19	48.0 ± 0.0	NS
N	*Eocalypogeia schusteriana*	Schuster's Pouchwort				S1?	2	81.5 ± 0.0	NS
N	*Moerckia hibernica*	Irish Ruffwort				S1?	2	81.5 ± 0.0	NS
N	*Brachythecium erythrorrhizon*	Taiga Ragged Moss				S1?	4	81.5 ± 0.0	NS
N	*Conardia compacta*	Coast Creeping Moss				S1?	2	45.7 ± 2.0	NS
N	*Oligotrichum hercynicum*	Hercynian Hair Moss				S1?	3	72.3 ± 0.0	NS
N	*Paludella squarrosa*	Tufted Fen Moss				S1?	1	75.6 ± 5.0	NS
N	*Polychidium muscicola*	Eyed Mossthorns Woollybear Lichen				S1?	1	23.6 ± 0.0	NS
N	*Parmeliella parvula*	Poor-man's Shingles Lichen				S1?	17	38.3 ± 0.0	NS
N	*Buxbaumia minakatae*	Hump-Backed Elves				S1S2	1	80.3 ± 100.0	NS
N	*Sphagnum platyphyllum*	Flat-leaved Peat Moss				S1S2	4	38.0 ± 0.0	NS
N	*Hamatocaulis vernicosus*	a Moss				S1S2	1	40.0 ± 0.0	NS
N	*Enchylium bachmanianum*	Bachman's Jelly Lichen				S1S2	1	64.0 ± 0.0	NS
N	*Peltigera ponojensis*	Pale-bellied Pelt Lichen				S1S2	1	99.7 ± 0.0	NS
N	*Sticta limbata*	Powdered Moon Lichen				S1S2	2	44.7 ± 2.0	NS
N	*Barbilophozia lycopodioides*	Greater Pawwort				S1S3	1	70.6 ± 0.0	NS
N	*Odontoschisma sphagni*	Bog-Moss Flapwort				S1S3	1	86.5 ± 0.0	NS
N	*Peltigera neckeri*	Black-saddle Pelt Lichen				S1S3	2	35.0 ± 0.0	NS
N	*Nephroma resupinatum*	a lichen				S2	1	31.3 ± 0.0	NS
N	*Riccardia multifida*	Delicate Germanderwort				S2?	1	68.6 ± 0.0	NS
N	*Anacamptodon splachnoides*	a Moss				S2?	1	11.5 ± 0.0	NS
N	*Anomodon viticulosus*	a Moss				S2?	1	45.2 ± 0.0	NS
N	*Atrichum angustatum*	Lesser Smoothcap Moss				S2?	2	38.2 ± 3.0	NS
N	*Drepanocladus polygamus*	Polygamous Hook Moss				S2?	2	62.1 ± 0.0	NS
N	*Pseudocampylium radicale*	Long-stalked Fine Wet Moss				S2?	1	33.7 ± 0.0	NS
N	*Dicranum condensatum*	Condensed Broom Moss				S2?	2	89.9 ± 0.0	PE
N	*Fissidens taxifolius*	Yew-leaved Pocket Moss				S2?	2	45.2 ± 0.0	NS
N	*Fontinalis sullivantii*	Sullivant's Water Moss				S2?	1	80.3 ± 100.0	NS
N	*Grimmia anomala*	Mountain Forest Grimmia				S2?	1	94.5 ± 0.0	NS
N	*Philonotis marchica*	a Moss				S2?	1	88.2 ± 0.0	NS
N	*Platydictya jungermannioides*	False Willow Moss				S2?	3	31.5 ± 0.0	NS
N	*Pohlia sphagnicola*	a moss				S2?	2	53.7 ± 0.0	NS
N	*Scorpidium scorpioides*	Hooked Scorpion Moss				S2?	11	33.7 ± 0.0	NS
N	*Sphagnum subnitens*	Lustrous Peat Moss				S2?	2	65.2 ± 0.0	NS

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N	*Tetraplodon angustatus*	Toothed-leaved Nitrogen Moss				S2?	2	19.0 ± 0.0	NS
N	*Tortella fragilis*	Fragile Twisted Moss				S2?	7	52.7 ± 0.0	NS
N	*Cyrtomnium hymenophylloides*	Short-pointed Lantern Moss				S2?	1	81.5 ± 0.0	NS
N	*Scytinium teretiusculum*	Curly Jellyskin Lichen				S2?	5	31.8 ± 0.0	NS
N	*Cladonia labradorica*	Labrador Lichen				S2?	1	46.4 ± 0.0	NS
N	*Rostania occultata*	Crusted Tarpaper Lichen				S2?	4	43.3 ± 5.0	NS
N	*Scytinium imbricatum*	Scaly Jellyskin Lichen				S2?	1	55.6 ± 0.0	NS
N	*Nephroma arcticum*	Arctic Kidney Lichen				S2?	2	67.4 ± 0.0	NS
N	*Peltigera collina*	Tree Pelt Lichen				S2?	72	19.6 ± 0.0	NS
N	*Tetraplodon mnioides*	Entire-leaved Nitrogen Moss				S2S3	1	56.9 ± 0.0	NS
N	*Scorpidium revolvens*	Limprichtia Moss				S2S3	7	37.9 ± 0.0	NS
N	*Collema leptaleum*	Crumpled Bat's Wing Lichen				S2S3	37	46.1 ± 0.0	NS
N	*Solorina saccata*	Woodland Owl Lichen				S2S3	6	10.1 ± 0.0	NS
N	*Ahtiana aurescens*	Eastern Candlewax Lichen				S2S3	3	74.7 ± 6.0	NS
N	*Cetraria muricata*	Spiny Heath Lichen				S2S3	2	53.0 ± 1.0	NS
N	*Cladonia incrassata*	Powder-foot British Soldiers Lichen				S2S3	1	85.5 ± 0.0	NS
N	*Scytinium tenuissimum*	Birdnest Jellyskin Lichen				S2S3	13	31.4 ± 0.0	NS
N	*Parmelia fertilis*	Fertile Shield Lichen				S2S3	5	31.4 ± 0.0	NS
N	*Parmeliopsis ambigua*	Green Starburst Lichen				S2S3	3	52.9 ± 0.0	NS
N	*Usnea mutabilis*	Bloody Beard Lichen				S2S3	1	31.4 ± 0.0	NS
N	*Usnea rubicunda*	Red Beard Lichen				S2S3	3	55.8 ± 0.0	NS
N	*Stereocaulon condensatum*	Granular Soil Foam Lichen				S2S3	6	57.0 ± 0.0	NS
N	*Cladonia coccifera*	Eastern Boreal Pixie-cup Lichen				S2S3	3	56.6 ± 0.0	NS
N	*Ramalina thrausta*	Angelhair Ramalina Lichen				S3	10	12.3 ± 0.0	NS
N	*Enchylium tenax*	Soil Tarpaper Lichen				S3	4	45.3 ± 0.0	NS
N	*Collema nigrescens*	Blistered Tarpaper Lichen				S3	2	98.8 ± 0.0	NS
N	*Sticta fuliginosa*	Peppered Moon Lichen				S3	17	33.2 ± 0.0	NS
N	*Scytinium subtile*	Appressed Jellyskin Lichen				S3	7	41.9 ± 0.0	NS
N	*Fuscopannaria ahlneri*	Corrugated Shingles Lichen				S3	74	21.3 ± 0.0	NS
N	*Heterodermia speciosa*	Powdered Fringe Lichen				S3	10	34.9 ± 0.0	NS
N	*Heterodermia squamulosa*	Scaly Fringe Lichen				S3	6	88.5 ± 0.0	NS
N	*Leptogium corticola*	Blistered Jellyskin Lichen				S3	10	79.1 ± 0.0	NS
N	*Scytinium lichenoides*	Tattered Jellyskin Lichen				S3	12	10.1 ± 0.0	NS
N	*Nephroma bellum*	Naked Kidney Lichen				S3	8	38.5 ± 1.0	NS
N	*Placynthium nigrum*	Common Ink Lichen				S3	1	91.5 ± 10.0	NS
N	*Platismatia norvegica*	Oldgrowth Rag Lichen				S3	146	41.9 ± 0.0	NS
N	*Moelleropsis nebulosa ssp. frullaniae*	Blue-gray Moss Shingle Lichen				S3	1	87.6 ± 0.0	NS
N	*Moelleropsis nebulosa*	Blue-gray Moss Shingle Lichen				S3	31	46.4 ± 0.0	NS
N	*Fuscopannaria sorediata*	a Lichen				S3	10	25.4 ± 0.0	NS
N	*Ephebe lanata*	Waterside Rockshag Lichen				S3	1	21.6 ± 0.0	NS
N	*Calliergon giganteum*	Giant Spear Moss				S3?	3	55.0 ± 0.0	NS
N	*Anomodon tristis*	a Moss				S3?	1	94.7 ± 0.0	NS
N	*Mnium stellare*	Star Leafy Moss				S3?	2	81.5 ± 0.0	NS
N	*Sphagnum riparium*	Streamside Peat Moss				S3?	2	72.0 ± 0.0	NS
N	*Phaeophyscia pusilloides*	Pompom-tipped Shadow Lichen				S3?	7	41.6 ± 0.0	NS
N	*Cladonia pocillum*	Rosette Pixie-cup Lichen				S3?	1	81.5 ± 0.0	NS
N	*Cladonia stygia*	Black-footed Reindeer Lichen				S3?	3	90.1 ± 0.0	NS
N	*Dicranella varia*	a Moss				S3S4	4	39.6 ± 0.0	NS
N	*Dicranum leioneuron*	a Dicranum Moss				S3S4	1	41.0 ± 0.0	NS
N	*Encalypta procera*	Slender Extinguisher Moss				S3S4	7	32.1 ± 0.0	NS

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N	*Sphagnum lindbergii*	Lindberg's Peat Moss				S3S4	4	53.7 ± 0.0	NS
N	*Splachnum ampullaceum*	Cruet Dung Moss				S3S4	1	63.8 ± 0.0	NS
N	*Thamnobryum alleghaniense*	a Moss				S3S4	25	74.5 ± 0.0	NS
N	*Schistidium agassizii*	Elf Bloom Moss				S3S4	1	69.4 ± 3.0	NS
N	*Hylocomiastrum pyrenaicum*	a Feather Moss				S3S4	1	62.1 ± 3.0	NS
N	*Arctoparmelia incurva*	Finger Ring Lichen				S3S4	4	58.3 ± 0.0	NS
N	*Hypogymnia vittata*	Slender Monk's Hood Lichen				S3S4	279	20.4 ± 0.0	NS
N	*Leptogium acadiense*	Acadian Jellyskin Lichen				S3S4	18	35.8 ± 0.0	NS
N	*Cladonia floerkeana*	Gritty British Soldiers Lichen				S3S4	3	65.6 ± 0.0	NS
N	*Vahliella leucophaea*	Shelter Shingle Lichen				S3S4	23	55.0 ± 0.0	NS
N	*Melanohalea olivacea*	Spotted Camouflage Lichen				S3S4	4	71.9 ± 0.0	NS
N	*Parmeliopsis hyperopta*	Gray Starburst Lichen				S3S4	2	52.9 ± 0.0	NS
N	*Parmotrema perlatum*	Powdered Ruffle Lichen				S3S4	1	88.6 ± 0.0	NS
N	*Peltigera hymenina*	Cloudy Pelt Lichen				S3S4	2	22.4 ± 0.0	NS
N	*Physconia detersa*	Bottlebrush Frost Lichen				S3S4	5	38.3 ± 0.0	NS
N	*Sphaerophorus fragilis*	Fragile Coral Lichen				S3S4	1	59.3 ± 0.0	NS
N	*Coccocarpia palmicola*	Salted Shell Lichen				S3S4	648	38.3 ± 0.0	NS
N	*Physcia tenella*	Fringed Rosette Lichen				S3S4	1	91.9 ± 3.0	NS
N	*Anaptychia palmulata*	Shaggy Fringed Lichen				S3S4	50	21.3 ± 0.0	NS
N	*Evernia prunastri*	Valley Oakmoss Lichen				S3S4	5	30.2 ± 0.0	NS
N	*Dermatocarpon luridum*	Brookside Stippleback Lichen				S3S4	8	46.7 ± 0.0	NS
N	*Heterodermia neglecta*	Fringe Lichen				S3S4	50	20.3 ± 0.0	NS
P	*Fraxinus nigra*	Black Ash	Threatened		Threatened	S1S2	135	18.7 ± 0.0	NS
P	*Juncus caesariensis*	New Jersey Rush	Special Concern	Special Concern	Vulnerable	S2	190	62.8 ± 0.0	NS
P	*Floerkea proserpinacoides*	False Mermaidweed	Not At Risk			S2	21	13.4 ± 0.0	NS
P	*Salix candida*	Sage Willow			Endangered	S1	47	53.5 ± 0.0	NS
P	*Thuja occidentalis*	Eastern White Cedar			Vulnerable	S1	4	20.9 ± 0.0	NS
P	*Sanicula odorata*	Clustered Sanicle				S1	6	30.6 ± 0.0	NS
P	*Zizia aurea*	Golden Alexanders				S1	7	27.1 ± 5.0	NS
P	*Arnica lonchophylla*	Northern Arnica				S1	1	39.8 ± 7.0	NS
P	*Bidens hyperborea*	Estuary Beggarticks				S1	3	31.3 ± 1.0	NS
P	*Ageratina altissima*	White Snakeroot				S1	2	30.9 ± 7.0	NS
P	*Cardamine dentata*	Toothed Bittercress				S1	4	33.7 ± 0.0	NS
P	*Cochlearia tridactylites*	Limestone Scurvy-grass				S1	6	54.8 ± 0.0	NS
P	*Draba norvegica*	Norwegian Whitlow-Grass				S1	1	94.2 ± 2.0	NS
P	*Stellaria crassifolia*	Fleshy Stitchwort				S1	2	40.8 ± 2.0	NS
P	*Hudsonia tomentosa*	Woolly Beach-heath				S1	12	23.1 ± 1.0	NS
P	*Desmodium canadense*	Canada Tick-trefoil				S1	10	90.9 ± 0.0	NS
P	*Fraxinus pennsylvanica*	Red Ash				S1	1	96.4 ± 0.0	PE
P	*Bistorta vivipara*	Alpine Bistort				S1	1	49.2 ± 1.0	NS
P	*Montia fontana*	Water Blinks				S1	2	14.4 ± 1.0	NS
P	*Agalinis purpurea var. parviflora*	Small-flowered Purple False Foxglove				S1	2	34.2 ± 0.0	NS
P	*Scrophularia lanceolata*	Lance-leaved Figwort				S1	2	28.0 ± 1.0	NS
P	*Pilea pumila*	Dwarf Clearweed				S1	2	72.8 ± 6.0	NS
P	*Carex alopecoidea*	Foxtail Sedge				S1	2	21.6 ± 0.0	NS
P	*Carex granularis*	Limestone Meadow Sedge				S1	21	34.9 ± 0.0	NS
P	*Carex gynocrates*	Northern Bog Sedge				S1	16	34.7 ± 0.0	NS
P	*Carex haydenii*	Hayden's Sedge				S1	3	34.7 ± 0.0	NS
P	*Carex pellita*	Woolly Sedge				S1	7	90.8 ± 0.0	NS
P	*Carex tenuiflora*	Sparse-Flowered Sedge				S1	3	57.5 ± 1.0	NS
P	*Carex tincta*	Tinged Sedge				S1	1	21.6 ± 1.0	NS
P	*Carex viridula var. elatior*	Greenish Sedge				S1	54	34.6 ± 0.0	NS
P	*Carex grisea*	Inflated Narrow-leaved Sedge				S1	6	32.2 ± 0.0	NS
P	*Cyperus lupulinus ssp. macilentus*	Hop Flatsedge				S1	15	22.2 ± 0.0	NS

Taxonomic Group	Scientific Name	Common Name	COSEWIC	SARA	Prov Legal Prot	Prov Rarity Rank	# recs	Distance (km)	Prov
P	*Eleocharis erythropoda*	Red-stemmed Spikerush				S1	7	45.3 ± 0.0	NS
P	*Rhynchospora capillacea*	Slender Beakrush				S1	8	48.7 ± 1.0	NS
P	*Scirpus atrovirens*	Dark-green Bulrush				S1	1	55.0 ± 0.0	NS
P	*Iris prismatica*	Slender Blue Flag				S1	3	58.2 ± 1.0	NS
P	*Luzula spicata*	Spiked Woodrush				S1	1	32.3 ± 0.0	NS
P	*Triantha glutinosa*	Sticky False-Asphodel				S1	14	53.5 ± 0.0	NS
P	*Malaxis monophyllos var. brachypoda*	North American White Adder's-mouth				S1	1	14.8 ± 7.0	NS
P	*Bromus latiglumis*	Broad-Glumed Brome				S1	11	18.4 ± 0.0	NS
P	*Calamagrostis stricta ssp. inexpansa*	Slim-stemmed Reed Grass				S1	1	62.8 ± 0.0	NS
P	*Elymus wiegandii*	Wiegand's Wild Rye				S1	13	18.7 ± 0.0	NS
P	*Elymus hystrix*	Spreading Wild Rye				S1	1	88.4 ± 1.0	NS
P	*Phleum alpinum*	Alpine Timothy				S1	2	99.4 ± 0.0	NS
P	*Graphephorum melicoides*	Purple False Oats				S1	2	87.9 ± 0.0	NS
P	*Potamogeton nodosus*	Long-leaved Pondweed				S1	1	84.7 ± 5.0	NS
P	*Sparganium androcladum*	Branching Bur-Reed				S1	3	55.8 ± 1.0	NS
P	*Dryopteris goldiana*	Goldie's Woodfern				S1	1	75.1 ± 0.0	NS
P	*Equisetum palustre*	Marsh Horsetail				S1	8	40.3 ± 0.0	NS
P	*Solidago hispida*	Hairy Goldenrod				S1?	1	97.4 ± 7.0	NS
P	*Bolboschoenus robustus*	Sturdy Bulrush				S1?	2	75.0 ± 5.0	NS
P	*Dichanthelium lindheimeri*	Lindheimer's Panicgrass				S1?	1	85.9 ± 0.0	NS
P	*Rudbeckia laciniata*	Cut-Leaved Coneflower				S1S2	2	30.9 ± 7.0	NS
P	*Betula minor*	Dwarf White Birch				S1S2	1	67.9 ± 0.0	NS
P	*Cornus suecica*	Swedish Bunchberry				S1S2	2	55.8 ± 0.0	NS
P	*Anemone virginiana var. alba*	Virginia Anemone				S1S2	6	41.7 ± 0.0	NS
P	*Ranunculus sceleratus*	Cursed Buttercup				S1S2	1	71.5 ± 7.0	NS
P	*Parnassia parviflora*	Small-flowered Grass-of-Parnassus				S1S2	16	44.0 ± 1.0	NS
P	*Carex livida*	Livid Sedge				S1S2	24	29.7 ± 0.0	NS
P	*Juncus greenei*	Greene's Rush				S1S2	1	23.1 ± 1.0	NS
P	*Juncus alpinoarticulatus ssp. americanus*	Northern Green Rush				S1S2	11	30.9 ± 5.0	NS
P	*Platanthera huronensis*	Fragrant Green Orchid				S1S2	7	37.7 ± 0.0	NS
P	*Calamagrostis stricta ssp. stricta*	Slim-stemmed Reed Grass				S1S2	2	75.8 ± 1.0	NS
P	*Cinna arundinacea*	Sweet Wood Reed Grass				S1S2	24	18.4 ± 0.0	NS
P	*Sparganium hyperboreum*	Northern Burreed				S1S2	4	44.8 ± 1.0	NS
P	*Cryptogramma stelleri*	Steller's Rockbrake				S1S2	17	43.3 ± 0.0	NS
P	*Selaginella selaginoides*	Low Spikemoss				S1S2	5	57.9 ± 0.0	NS
P	*Carex vacillans*	Estuarine Sedge				S1S3	2	21.6 ± 0.0	NS
P	*Osmorhiza longistylis*	Smooth Sweet Cicely				S2	31	29.3 ± 1.0	NS
P	*Erigeron philadelphicus*	Philadelphia Fleabane				S2	8	40.8 ± 7.0	NS
P	*Symphyotrichum ciliolatum*	Fringed Blue Aster				S2	4	32.3 ± 0.0	NS
P	*Impatiens pallida*	Pale Jewelweed				S2	25	18.3 ± 1.0	NS
P	*Caulophyllum thalictroides*	Blue Cohosh				S2	27	18.6 ± 0.0	NS
P	*Boechera stricta*	Drummond's Rockcress				S2	1	96.1 ± 0.0	NS
P	*Draba arabisans*	Rock Whitlow-Grass				S2	3	45.3 ± 1.0	NS
P	*Lobelia kalmii*	Brook Lobelia				S2	94	32.8 ± 0.0	NS
P	*Stellaria humifusa*	Saltmarsh Starwort				S2	7	83.0 ± 0.0	NS
P	*Stellaria longifolia*	Long-leaved Starwort				S2	1	18.4 ± 0.0	NS
P	*Oxybasis rubra*	Red Goosefoot				S2	6	31.0 ± 7.0	NS
P	*Hudsonia ericoides*	Pinebarren Golden Heather				S2	10	89.9 ± 0.0	PE
P	*Hypericum majus*	Large St John's-wort				S2	2	61.7 ± 1.0	NS
P	*Crassula aquatica*	Water Pygmyweed				S2	3	49.7 ± 7.0	NS
P	*Myriophyllum farwellii*	Farwell's Water Milfoil				S2	4	4.8 ± 7.0	NS
P	*Myriophyllum verticillatum*	Whorled Water Milfoil				S2	4	55.0 ± 0.0	NS

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P	*Utricularia resupinata*	Inverted Bladderwort				S2	1	72.3 ± 0.0	NS
P	*Oenothera fruticosa ssp. tetragona*	Narrow-leaved Evening Primrose				S2	2	65.1 ± 1.0	NS
P	*Persicaria arifolia*	Halberd-leaved Tearthumb				S2	7	33.8 ± 0.0	NS
P	*Rumex triangulivalvis*	Triangular-valve Dock				S2	8	20.2 ± 10.0	NS
P	*Anemonastrum canadense*	Canada Anemone				S2	2	0.9 ± 3.0	NS
P	*Anemone quinquefolia*	Wood Anemone				S2	14	64.3 ± 0.0	NS
P	*Anemone virginiana*	Virginia Anemone				S2	31	30.3 ± 0.0	NS
P	*Caltha palustris*	Yellow Marsh Marigold				S2	39	41.5 ± 0.0	NS
P	*Galium labradoricum*	Labrador Bedstraw				S2	81	30.9 ± 0.0	NS
P	*Salix pedicellaris*	Bog Willow				S2	13	32.0 ± 0.0	NS
P	*Salix sericea*	Silky Willow				S2	1	74.0 ± 0.0	NS
P	*Comandra umbellata*	Bastard's Toadflax				S2	32	21.9 ± 0.0	NS
P	*Saxifraga paniculata ssp. laestadii*	Laestadius' Saxifrage				S2	4	40.2 ± 7.0	NS
P	*Tiarella cordifolia*	Heart-leaved Foamflower				S2	2	23.6 ± 3.0	NS
P	*Viola nephrophylla*	Northern Bog Violet				S2	12	19.2 ± 0.0	NS
P	*Carex bebbii*	Bebb's Sedge				S2	33	33.9 ± 7.0	NS
P	*Carex castanea*	Chestnut Sedge				S2	17	36.9 ± 0.0	NS
P	*Carex comosa*	Bearded Sedge				S2	2	67.8 ± 1.0	NS
P	*Carex hystericina*	Porcupine Sedge				S2	39	21.5 ± 0.0	NS
P	*Carex scirpoidea*	Scirpuslike Sedge				S2	2	96.6 ± 4.0	NS
P	*Carex tenera*	Tender Sedge				S2	3	5.6 ± 1.0	NS
P	*Carex tuckermanii*	Tuckerman's Sedge				S2	2	79.1 ± 0.0	NS
P	*Carex atratiformis*	Scabrous Black Sedge				S2	2	45.7 ± 1.0	NS
P	*Eleocharis quinqueflora*	Few-flowered Spikerush				S2	29	34.2 ± 0.0	NS
P	*Vallisneria americana*	Wild Celery				S2	1	99.7 ± 10.0	NS
P	*Juncus stygius ssp. americanus*	Moor Rush				S2	30	57.8 ± 1.0	NS
P	*Allium schoenoprasum*	Wild Chives				S2	1	93.8 ± 3.0	NS
P	*Allium schoenoprasum var. sibiricum*	Wild Chives				S2	1	42.2 ± 7.0	NS
P	*Lilium canadense*	Canada Lily				S2	47	20.3 ± 0.0	NS
P	*Cypripedium parviflorum var. pubescens*	Yellow Lady's-slipper				S2	33	9.7 ± 0.0	NS
P	*Cypripedium parviflorum var. makasin*	Small Yellow Lady's-Slipper				S2	17	17.7 ± 0.0	NS
P	*Cypripedium reginae*	Showy Lady's-Slipper				S2	360	1.2 ± 0.0	NS
P	*Platanthera flava var. herbiola*	Pale Green Orchid				S2	1	25.9 ± 1.0	NS
P	*Spiranthes lucida*	Shining Ladies'-Tresses				S2	32	33.0 ± 0.0	NS
P	*Calamagrostis stricta*	Slim-stemmed Reed Grass				S2	5	94.2 ± 0.0	PE
P	*Dichanthelium linearifolium*	Narrow-leaved Panic Grass				S2	1	91.7 ± 7.0	NS
P	*Potamogeton friesii*	Fries' Pondweed				S2	13	18.9 ± 0.0	NS
P	*Potamogeton richardsonii*	Richardson's Pondweed				S2	10	18.7 ± 0.0	NS
P	*Cystopteris laurentiana*	Laurentian Bladder Fern				S2	6	45.6 ± 1.0	NS
P	*Dryopteris fragrans*	Fragrant Wood Fern				S2	4	17.6 ± 7.0	NS
P	*Polystichum lonchitis*	Northern Holly Fern				S2	5	31.2 ± 5.0	NS
P	*Woodsia glabella*	Smooth Cliff Fern				S2	6	45.6 ± 0.0	NS
P	*Symphyotrichum boreale*	Boreal Aster				S2?	59	34.1 ± 0.0	NS
P	*Cuscuta cephalanthi*	Buttonbush Dodder				S2?	7	21.1 ± 7.0	NS
P	*Epilobium coloratum*	Purple-veined Willowherb				S2?	7	9.0 ± 0.0	NS
P	*Rumex persicarioides*	Peach-leaved Dock				S2?	1	64.4 ± 0.0	NS
P	*Crataegus submollis*	Quebec Hawthorn				S2?	2	50.7 ± 7.0	NS
P	*Eleocharis ovata*	Ovate Spikerush				S2?	1	38.5 ± 0.0	NS
P	*Scirpus pedicellatus*	Stalked Bulrush				S2?	6	18.4 ± 0.0	NS
P	*Hieracium robinsonii*	Robinson's Hawkweed				S2S3	5	96.4 ± 2.0	NS
P	*Senecio pseudoarnica*	Seabeach Ragwort				S2S3	10	16.1 ± 1.0	NS

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P	*Betula michauxii*	Michaux's Dwarf Birch				S2S3	15	56.4 ± 0.0	NS
P	*Sagina nodosa*	Knotted Pearlwort				S2S3	3	55.8 ± 5.0	NS
P	*Sagina nodosa ssp. borealis*	Knotted Pearlwort				S2S3	1	91.2 ± 5.0	PE
P	*Hypericum x dissimulatum*	Disguised St. John's-wort				S2S3	2	36.0 ± 1.0	NS
P	*Triosteum aurantiacum*	Orange-fruited Tinker's Weed				S2S3	178	24.1 ± 0.0	NS
P	*Shepherdia canadensis*	Soapberry				S2S3	135	39.9 ± 0.0	NS
P	*Empetrum atropurpureum*	Purple Crowberry				S2S3	2	56.1 ± 3.0	NS
P	*Euphorbia polygonifolia*	Seaside Spurge				S2S3	13	4.9 ± 0.0	NS
P	*Halenia deflexa*	Spurred Gentian				S2S3	23	10.2 ± 0.0	NS
P	*Hedeoma pulegioides*	American False Pennyroyal				S2S3	2	45.3 ± 5.0	NS
P	*Polygonum aviculare ssp. buxiforme*	Box Knotweed				S2S3	2	88.0 ± 0.0	NS
P	*Polygonum oxyspermum ssp. raii*	Ray's Knotweed				S2S3	11	21.8 ± 3.0	NS
P	*Amelanchier fernaldii*	Fernald's Serviceberry				S2S3	4	51.6 ± 1.0	NS
P	*Potentilla canadensis*	Canada Cinquefoil				S2S3	1	31.6 ± 2.0	NS
P	*Galium aparine*	Common Bedstraw				S2S3	2	32.5 ± 0.0	NS
P	*Salix pellita*	Satiny Willow				S2S3	4	15.8 ± 1.0	NS
P	*Carex adusta*	Lesser Brown Sedge				S2S3	1	86.9 ± 5.0	NS
P	*Carex hirtifolia*	Pubescent Sedge				S2S3	22	18.6 ± 0.0	NS
P	*Eleocharis flavescens var. olivacea*	Bright-green Spikerush				S2S3	3	37.2 ± 5.0	NS
P	*Eriophorum gracile*	Slender Cottongrass				S2S3	8	32.2 ± 0.0	NS
P	*Oreojuncus trifidus*	Highland Rush				S2S3	5	54.9 ± 0.0	NS
P	*Cypripedium parviflorum*	Yellow Lady's-slipper				S2S3	99	26.5 ± 0.0	NS
P	*Poa glauca*	Glaucous Blue Grass				S2S3	9	45.4 ± 1.0	NS
P	*Stuckenia filiformis*	Thread-leaved Pondweed				S2S3	46	21.3 ± 0.0	NS
P	*Botrychium lanceolatum ssp. angustisegmentum*	Narrow Triangle Moonwort				S2S3	9	29.0 ± 3.0	NS
P	*Botrychium simplex*	Least Moonwort				S2S3	3	31.1 ± 5.0	NS
P	*Angelica atropurpurea*	Purple-stemmed Angelica				S3	28	18.4 ± 0.0	NS
P	*Erigeron hyssopifolius*	Hyssop-leaved Fleabane				S3	78	32.5 ± 0.0	NS
P	*Bidens beckii*	Water Beggarticks				S3	11	40.6 ± 0.0	NS
P	*Packera paupercula*	Balsam Groundsel				S3	160	9.3 ± 5.0	NS
P	*Betula pumila var. pumila*	Bog Birch				S3	2	49.2 ± 7.0	NS
P	*Betula pumila*	Bog Birch				S3	10	33.1 ± 0.0	NS
P	*Campanula aparinoides*	Marsh Bellflower				S3	9	44.4 ± 5.0	NS
P	*Viburnum edule*	Squashberry				S3	4	93.9 ± 7.0	NS
P	*Empetrum eamesii*	Pink Crowberry				S3	4	77.4 ± 0.0	NS
P	*Vaccinium boreale*	Northern Blueberry				S3	15	40.2 ± 7.0	NS
P	*Vaccinium cespitosum*	Dwarf Bilberry				S3	41	63.9 ± 0.0	NS
P	*Vaccinium uliginosum*	Alpine Bilberry				S3	3	91.7 ± 0.0	NS
P	*Bartonia virginica*	Yellow Bartonia				S3	1	50.0 ± 0.0	NS
P	*Proserpinaca palustris*	Marsh Mermaidweed				S3	51	18.4 ± 0.0	NS
P	*Teucrium canadense*	Canada Germander				S3	74	7.9 ± 0.0	NS
P	*Decodon verticillatus*	Swamp Loosestrife				S3	5	39.0 ± 7.0	NS
P	*Epilobium hornemannii*	Hornemann's Willowherb				S3	11	77.9 ± 2.0	NS
P	*Epilobium strictum*	Downy Willowherb				S3	26	20.7 ± 0.0	NS
P	*Polygala sanguinea*	Blood Milkwort				S3	4	47.8 ± 0.0	NS
P	*Persicaria pensylvanica*	Pennsylvania Smartweed				S3	16	15.0 ± 5.0	NS
P	*Fallopia scandens*	Climbing False Buckwheat				S3	26	18.4 ± 0.0	NS
P	*Plantago rugelii*	Rugel's Plantain				S3	2	46.9 ± 0.0	NS
P	*Primula laurentiana*	Laurentian Primrose				S3	1	90.0 ± 7.0	NS
P	*Samolus parviflorus*	Seaside Brookweed				S3	21	32.3 ± 0.0	NS
P	*Pyrola asarifolia*	Pink Pyrola				S3	9	31.5 ± 0.0	NS
P	*Pyrola minor*	Lesser Pyrola				S3	7	46.2 ± 2.0	NS
P	*Ranunculus gmelinii*	Gmelin's Water Buttercup				S3	133	15.8 ± 0.0	NS

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P	*Endotropis alnifolia*	alder-leaved buckthorn				S3	465	19.0 ± 0.0	NS
P	*Agrimonia gryposepala*	Hooked Agrimony				S3	265	12.9 ± 0.0	NS
P	*Amelanchier spicata*	Running Serviceberry				S3	9	17.2 ± 5.0	NS
P	*Galium kamtschaticum*	Northern Wild Licorice				S3	10	41.6 ± 0.0	NS
P	*Geocaulon lividum*	Northern Comandra				S3	74	11.8 ± 2.0	NS
P	*Limosella australis*	Southern Mudwort				S3	8	59.0 ± 5.0	NS
P	*Lindernia dubia*	Yellow-seeded False Pimperel				S3	11	18.4 ± 0.0	NS
P	*Laportea canadensis*	Canada Wood Nettle				S3	23	18.5 ± 0.0	NS
P	*Verbena hastata*	Blue Vervain				S3	48	24.8 ± 0.0	NS
P	*Carex cryptolepis*	Hidden-scaled Sedge				S3	12	1.7 ± 5.0	NS
P	*Carex eburnea*	Bristle-leaved Sedge				S3	163	30.9 ± 5.0	NS
P	*Carex lupulina*	Hop Sedge				S3	11	31.7 ± 0.0	NS
P	*Carex rosea*	Rosy Sedge				S3	8	37.5 ± 0.0	NS
P	*Carex tribuloides*	Blunt Broom Sedge				S3	15	15.3 ± 1.0	NS
P	*Carex wiegandii*	Wiegand's Sedge				S3	3	19.3 ± 0.0	NS
P	*Carex foenea*	Fernald's Hay Sedge				S3	2	57.2 ± 0.0	NS
P	*Schoenoplectus americanus*	Olney's Bulrush				S3	1	32.3 ± 0.0	NS
P	*Elodea canadensis*	Canada Waterweed				S3	8	58.1 ± 0.0	NS
P	*Juncus subcaudatus*	Woods-Rush				S3	9	43.2 ± 0.0	NS
P	*Juncus dudleyi*	Dudley's Rush				S3	91	33.0 ± 0.0	NS
P	*Goodyera oblongifolia*	Menzies' Rattlesnake-plantain				S3	12	68.0 ± 10.0	NS
P	*Goodyera repens*	Lesser Rattlesnake-plantain				S3	32	19.6 ± 0.0	NS
P	*Neottia bifolia*	Southern Twayblade				S3	49	14.7 ± 0.0	NS
P	*Platanthera grandiflora*	Large Purple Fringed Orchid				S3	50	6.0 ± 1.0	NS
P	*Platanthera hookeri*	Hooker's Orchid				S3	3	14.7 ± 0.0	NS
P	*Platanthera orbiculata*	Small Round-leaved Orchid				S3	11	17.5 ± 0.0	NS
P	*Spiranthes ochroleuca*	Yellow Ladies'-tresses				S3	9	33.9 ± 0.0	NS
P	*Alopecurus aequalis*	Short-awned Foxtail				S3	17	18.6 ± 0.0	NS
P	*Dichanthelium clandestinum*	Deer-tongue Panic Grass				S3	81	63.9 ± 0.0	NS
P	*Potamogeton obtusifolius*	Blunt-leaved Pondweed				S3	21	18.9 ± 0.0	NS
P	*Potamogeton praelongus*	White-stemmed Pondweed				S3	14	41.2 ± 0.0	NS
P	*Potamogeton zosteriformis*	Flat-stemmed Pondweed				S3	11	53.3 ± 0.0	NS
P	*Sparganium natans*	Small Burreed				S3	14	33.0 ± 0.0	NS
P	*Asplenium trichomanes*	Maidenhair Spleenwort				S3	6	14.7 ± 0.0	NS
P	*Asplenium viride*	Green Spleenwort				S3	26	10.9 ± 0.0	NS
P	*Equisetum pratense*	Meadow Horsetail				S3	22	26.8 ± 0.0	NS
P	*Equisetum variegatum*	Variegated Horsetail				S3	44	20.7 ± 0.0	NS
P	*Isoetes tuckermanii ssp. acadiensis*	Acadian Quillwort				S3	3	37.3 ± 0.0	NS
P	*Diphasiastrum sitchense*	Sitka Ground-cedar				S3	24	18.9 ± 0.0	NS
P	*Huperzia appressa*	Mountain Firmoss				S3	2	38.7 ± 1.0	NS
P	*Sceptridium dissectum*	Dissected Moonwort				S3	3	57.8 ± 1.0	NS
P	*Polypodium appalachianum*	Appalachian Polypody				S3	4	44.2 ± 0.0	NS
P	*Bidens vulgata*	Tall Beggarticks				S3?	1	89.3 ± 0.0	NS
P	*Persicaria amphibia var. emersa*	Long-root Smartweed				S3?	1	46.9 ± 0.0	NS
P	*Diphasiastrum x sabinifolium*	Savin-leaved Ground-cedar				S3?	11	45.7 ± 1.0	NS
P	*Atriplex glabriuscula var. franktonii*	Frankton's Saltbush				S3S4	5	18.8 ± 0.0	NS
P	*Suaeda calceoliformis*	Horned Sea-blite				S3S4	7	26.0 ± 0.0	NS
P	*Myriophyllum sibiricum*	Siberian Water Milfoil				S3S4	15	18.9 ± 0.0	NS
P	*Nuphar microphylla*	Small Yellow Pond-lily				S3S4	1	97.3 ± 2.0	NS
P	*Sanguinaria canadensis*	Bloodroot				S3S4	200	18.5 ± 0.0	NS
P	*Polygonum fowleri*	Fowler's Knotweed				S3S4	2	30.6 ± 0.0	NS
P	*Rumex fueginus*	Tierra del Fuego Dock				S3S4	6	85.1 ± 0.0	PE
P	*Fragaria vesca ssp.*	Woodland Strawberry				S3S4	71	10.2 ± 0.0	NS

Taxonomic Group	Scientific Name	Common Name	COSEWIC	SARA	Prov Legal Prot	Prov Rarity Rank	# recs	Distance (km)	Prov
	americana								
P	*Fragaria vesca*	Woodland Strawberry				S3S4	2	55.3 ± 0.0	NS
P	*Salix petiolaris*	Meadow Willow				S3S4	4	32.0 ± 0.0	NS
P	*Agalinis neoscotica*	Nova Scotia Agalinis				S3S4	2	52.2 ± 0.0	NS
P	*Carex argyrantha*	Silvery-flowered Sedge				S3S4	2	66.1 ± 0.0	NS
P	*Eriophorum russeolum*	Russet Cottongrass				S3S4	5	15.3 ± 5.0	NS
P	*Triglochin gaspensis*	Gasp ├ Arrowgrass				S3S4	9	23.1 ± 0.0	NS
P	*Juncus acuminatus*	Sharp-Fruit Rush				S3S4	4	43.4 ± 0.0	NS
P	*Luzula parviflora ssp. melanocarpa*	Black-fruited Woodrush				S3S4	10	68.0 ± 10.0	NS
P	*Liparis loeselii*	Loesel's Twayblade				S3S4	16	20.0 ± 0.0	NS
P	*Panicum philadelphicum*	Philadelphia Panicgrass				S3S4	1	33.8 ± 0.0	NS
P	*Trisetum spicatum*	Narrow False Oats				S3S4	7	55.2 ± 0.0	NS
P	*Cystopteris bulbifera*	Bulblet Bladder Fern				S3S4	393	14.7 ± 1.0	NS
P	*Equisetum hyemale ssp. affine*	Common Scouring-rush				S3S4	43	13.3 ± 0.0	NS
P	*Equisetum scirpoides*	Dwarf Scouring-Rush				S3S4	72	26.9 ± 0.0	NS
P	*Diphasiastrum complanatum*	Northern Ground-cedar				S3S4	3	39.0 ± 5.0	NS
P	*Schizaea pusilla*	Little Curlygrass Fern				S3S4	14	17.9 ± 0.0	NS
P	*Viola canadensis*	Canada Violet				SH	1	43.5 ± 0.0	NS

5.1 SOURCE BIBLIOGRAPHY (100 km)

The recipient of these data shall acknowledge the AC CDC and the data sources listed below in any documents, reports, publications or presentations, in which this dataset makes a significant contribution.

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Public Scoping Report, Havre Boucher, NS

Review of Decision Document for AQ 1387

The public scoping began with a review of a Decision Document for an existing oyster aquaculture site in Havre Boucher harbour: AQ 1387, dated June 10, 2021, attached as Appendix A. This decision was for a request for the site to change its boundaries without increasing its size. Because of the high level of engagement of the Havre Boucher Harbour Authority regarding this application, Paqtnkek reached out to the Havre Boucher Harbour Authority as the initial step to discuss plans.

Meeting with Harbour Authority President and Members, June 1, 2022

A letter was sent to [redacted], [redacted], [redacted], and [redacted] to invite members of the Harbour Authority to a meeting to discuss aquaculture development plans with Paqtnkek. The meeting was set for June 1, 2022, 2:30 pm at the Havre Boucher Community Centre, by mutual agreement. This meeting was attended by three representatives of Paqtnkek: Norma Prosper, [redacted], and [redacted], and ten members of the Harbour Authority, including their president [redacted]).

The letter inviting persons from the Harbour Authority, a record of the minutes for this meeting as well as the maps printed off and presented in hard copy are attached as Appendix B. The minutes were sent to the President of the Harbour Authority for his review and reference.

Perspectives from this June 1 meeting are listed in Table 1 located at the end of this document, organized according to the factors that must be considered in decisions related to marine aquaculture sites.

General Public Meeting, June 12, 2022

The venue and the date for a general public meeting were set to ensure access to as many community members as possible – the location was the Havre Boucher Community Centre and the date was Sunday, June 12, 4:00 pm. Scheduling on a Sunday was intentional to enable lobster fishers who generally do not fish on Sundays to attend, and to enable persons who work during the week to be able to attend. Plans for the location, time, and advertisement were sent to NSDFA for their review. The letter to NSDFA and their response are shown in Appendix C.

Notice of public meeting

The meeting notice was posted in the community of Havre Boucher at the local Credit Union, the post office, and Gary's Rite Stop. It was also posted on a community Facebook page by [redacted]. The notice and photos of its posting can be found in Appendix D.

General organization of the public meeting

The Havre Boucher Community Centre was rented and set up with a table in front for representatives from Paqtnkek, a screen and projector for a Power Point Presentation, and approximately 90 chairs for attendees. Refreshments (water, cookies, pie) were available to attendees. The Paqtnkek representatives that provided information were [redacted], Norma Prosper, [redacted], and [redacted].

Attendees were asked to sign in upon entry. And forms were available upon entry for attendees to record their questions and concerns. The sign in-sheet, form for recording concerns and general set up of the entryway and room are shown in pictures in Appendix E.

87 people signed in. However, many attendees refused to sign in. It was estimated that there were over 120 people at the meeting since all 90 chairs were full and about 30 people stood along the back wall of the gym. Signatures collected at the meeting are found within Appendix E.

Meeting format

The intended meeting format was for Paqtnkek to present the plans for the oyster aquaculture development with a Power Point presentation and follow it with a question-and-answer period.

The presentation given is attached as Appendix F.

Notes taken during this public meeting are documented in Appendix E, as are written questions or concerns received at the meeting.

A hard copy of the presentation and/or the map of the proposed location, was given to those attendees that asked.

After the meeting, several community members approached the Paqtnkek representatives to ask for additional information or follow up.

As a result of this, email correspondence was sent to [redacted] to answer a question he asked for help with. This email can be found within Appendix E.

Outcomes

Perspectives from this June 12 meeting are listed in Table 1 located at the end of this document, organized according to the factors that must be considered in decisions related to marine aquaculture sites.

In response to the public meeting and comments received, Paqtnkek re-explored the harbour for possible sites for the lease that would meet the requests of the community members. A new location was chosen that was anticipated to mitigate concerns that were expressed and continued communication with the Harbour Authority and key stakeholders was planned.

Meeting with Havre Boucher Key Stakeholders, July 6, 2022

Key stakeholders (Harbour Authority members, fishers, boat owner, municipal councilor) were invited to discuss Paqtnkek's new proposed site for oyster holding in Havre Boucher. The meeting was set for July 6, 2022, 5:30pm at the Havre Boucher Community Centre, by mutual agreement. This meeting was attended by four representatives of Paqtnkek, three members of the Harbour Authority, including their president ([redacted]), a municipal councilor, and a local resident knowledgeable with traversing the harbour with large boats.

A map with the revised site location was distributed in hard copy and discussions began.

A record of the minutes for this meeting as well as the maps printed off and presented in hard copy are attached as Appendix G. The group was invited to submit comments regarding the revised site by the following Friday (July 15). None were received.

Perspectives from this July 6, 2022 meeting are listed in Table 1 located at the end of this document, organized according to the factors that must be considered in decisions related to marine aquaculture sites.

Table 1: Concerns, issues and perspectives collected during the public scoping for Havre Boucher, organized according to the eight factors that must be considered in decisions related to marine aquaculture sites.

Factor	Concern/Issue/Perspective	Method concern was raised	Mitigation
The contribution of the proposed operation to community and Provincial economic development	Are there possible employment opportunities for Havre Boucher community?	June 1 Harbour Authority meeting	Possibility of employment in the future
The contribution of the proposed operation to community and Provincial economic development	Concern about cutting off recreation and tourism	June 12 Public Meeting	The location was moved so that the final proposed location is positioned next to the other oyster site to be less obtrusive for other harbour activities.
Fishery activities in the public waters surrounding the proposed aquacultural operation	Concern about impact on recreational fishing licences for digging quahogs on Crispos Island, fishing eels with spears	June 1 Harbour Authority meeting	Final proposed location is away from the shoreline and will not impact quahog digging. Positioned next to the other oyster site to be less obtrusive for other harbour activities.
Fishery activities in the public waters surrounding the proposed aquacultural operation	Concern about impact on smelt and eel fishing	June 1 Harbour Authority meeting	Final proposed location positioned next to the other oyster site to be less obtrusive for other harbour activities.
Fishery activities in the public waters surrounding the proposed aquacultural operation	General concern about impact on current fishing licenses	June 12 Public Meeting	Final proposed location positioned next to the other oyster site to be less obtrusive for other harbour activities and away from shore to reduce impact on shore side fishery.
Fishery activities in the public waters surrounding the proposed aquacultural operation	General concern about the small size of the harbour and limited fishing area	July 6 Meeting with stakeholders	Final proposed location positioned next to the other oyster site to be less obtrusive for other harbour activities.
The oceanographic and biophysical characteristics of the public waters surrounding the proposed aquacultural operation	Possible issues with sea ice for the farm	June 1 Harbour Authority meeting	Final proposed site location chosen to ensure water depth sufficient to sink cages below ice

Factor	Concern/Issue/Perspective	Method concern was raised	Mitigation
The oceanographic and biophysical characteristics of the public waters surrounding the proposed aquacultural operation	High level of fresh water drains into the harbour. Will this affect the oysters?	June 1 Harbour Authority meeting	No mitigation required. Oysters can withstand low salinity for several days
The other users of the public waters surrounding the proposed aquacultural operation	Concern about impact on recreational sailing around Crispos Island	June 1 Harbour Authority meeting	The location was moved so that the final proposed location is positioned next to the other oyster site to be less obtrusive for other harbour activities.
The other users of the public waters surrounding the proposed aquacultural operation	Concern about private dock inside the harbour used by other fishing boats and access for traversing the harbour from this dock.	June 1 Harbour Authority meeting	The location was moved so that the final proposed location is positioned next to the other oyster site to be less obtrusive for other harbour activities and out of the way of the deeper channel on the west side of Crispos Island often used for larger boats traversing the harbour.
The other users of the public waters surrounding the proposed aquacultural operation	Concern about public access to the shores and beaches.	June 12 Public Meeting, written question	The location was moved so that the final proposed location is further away from all shorelines.
The other users of the public waters surrounding the proposed aquacultural operation	Concern about riparian land owner access	July 6 Meeting with stakeholders	The final proposed location is a significant distance away from shorelines and should not impede riparian land owner access.
The public right of navigation	Concern about being able to paddle board	June 12 Public Meeting	The location was moved so that the final proposed location is positioned next to the other oyster site to be less obtrusive for other harbour activities.
The public right of navigation	Concern about use of the water for waterskiing	June 12 Public Meeting	The location was moved so that the final proposed location is positioned next to the other oyster site to be less obtrusive for other harbour activities.
The public right of navigation	Concern about the proposed site being right in the path of boats.	June 12 Public Meeting	The location was moved so that the final proposed location is positioned next to

Factor	Concern/Issue/Perspective	Method concern was raised	Mitigation
			the other oyster site to be less obtrusive for other harbour activities and out of the channel used by boats traversing the harbour.
The public right of navigation	Concern about cutting off the channel that is used for large boats	June 12 Public Meeting: asked orally and in written form	The location was moved so that the final proposed location is positioned next to the other oyster site to be less obtrusive for other harbour activities and out of the way of the deeper channel on the west side of Crispos Island often used for larger boats.
The public right of navigation	Concern about limiting use of the harbour for sailboats that anchor in the harbour	June 12 Public Meeting, July 6 Meeting with stakeholders	The location was moved so that the final proposed location is positioned next to the other oyster site to be less obtrusive for other harbour activities such as use of the harbour for sailboats.
The public right of navigation	Concern about limiting use of the harbour for kayaking, shelter (of boats)	June 12 Public Meeting	The location was moved so that the final proposed location is positioned next to the other oyster site to be less obtrusive for other harbour activities.
The public right of navigation	Concern about wanting to use the deepest part of the channel	June 12 Public Meeting	The location was moved so that the final proposed location is positioned next to the other oyster site to be less obtrusive for other harbour activities and out of the way of the deeper channel on the west side of Crispos Island.
The public right of navigation	Concern about access to and around the island via kayaks and small boats	June 12 Public Meeting written question	The location was moved so that the final proposed location is further away from the shoreline of Crispos Island.
The public right of navigation	Concern about restriction to water access	June 12 Public Meeting written question	The location was moved so that the final proposed location is positioned next to

Factor	Concern/Issue/Perspective	Method concern was raised	Mitigation
			the other oyster site to be less obtrusive for other harbour activities and further away from the shoreline.
The public right of navigation	Concern about navigation between the final proposed lease and the current aquaculture lease	July 6 Meeting with stakeholders	The lease will accommodate navigating between the leases. The placement of the west border can be adjusted, as required.
Other	Concern about keeping communication open moving forward	June 1 Harbour Authority meeting	Possible formation of Community Liaison Committee to ensure open communication.
Other	Concern about lack of consultation regarding the other aquaculture lease in the area regarding where it is and how the method of culture was changed, from bottom to off bottom.	June 1 Harbour Authority meeting	Intend to keep open communication with the community and Harbour Authority to establish positive relationship. Possible formation of Community Liaison Committee to ensure open communication.
Other	Is it possible to have Harbour Authority as a lease holder	June 1 Harbour Authority meeting	Keep open communication with the community and Harbour Authority to establish positive relationship. Possible formation of Community Liaison Committee to ensure open communication.
Other	Could Paqtnkek use the existing wharf infrastructure?	June 1 Harbour Authority meeting	No mitigation required, Paqtnkek hopes to use the resources in place.
Other	Old ship sunk on south west side of Crispos Island	June 1 Harbour Authority meeting	Final proposed site location is not in this area
Other	Issues with current lease holder regarding harassment of boaters over possible oyster theft	June 1 Harbour Authority meeting	Keep open communication with the community and Harbour Authority to establish positive relationship
Other	Concern about the possibility of the oysters polluting or contaminating the harbour	June 12 Public Meeting, July 6	No mitigation required. Oysters are an extractive species and are not fed. They

Factor	Concern/Issue/Perspective	Method concern was raised	Mitigation
		Meeting with stakeholders	will not contaminate the harbour when they are flushing during the relay period.
Other	Concern about it killing the eelgrass	June 12 Public Meeting	Baseline environmental monitoring will be conducted to determine the presence of eelgrass.
Other	Questions regarding types of cages to be used to ensure no contamination and concern regarding mussel growth and de-fouling that will have to be done	July 6 Meeting with stakeholders	No mitigation required. Cages to be used will be Oyster Gro and/or BOBR type. They will be sunk for the relay period. De-fouling of the cages is done passively by air drying them.
Other	Concern about managing gear when it gets loose and reaches the shore	June 12 Public Meeting written question	Responsible farm practices to be used include procedures for ensuring that gear is properly maintained on site and frequent checks scheduled for finding and retrieving loose gear. These procedures will be part of the Farm Management Plan that will be approved for implementation by NSDFA, as required within the Aquaculture Management Regulations for aquaculture sites in Nova Scotia.
Other	Concern about oyster shell litter	June 12 Public Meeting written question	Responsible farm practices to be used include procedures for properly containing and disposing of litter. These procedures will be part of the Farm Management Plan that will be approved for implementation by NSDFA, as required within the Aquaculture Management Regulations for aquaculture sites in Nova Scotia.
Other	Concern about making sure community members are respected, with their voices heard and transparency for future plans.	June 12 Public Meeting written question	Keep open communication with the community and Harbour Authority to establish positive relationship. Possible formation of Community Liaison

Factor	Concern/Issue/Perspective	Method concern was raised	Mitigation
			Committee to ensure open communication.

Findings and Decision- Amendment Application of Matthew and Stephen Mattie for AQ#1387

1. Overview:

On February 21, 2019, the Nova Scotia Department of Fisheries and Aquaculture (NSDFA) received an application from Matthew and Stephen Mattie to amend Aquaculture Licence and Lease #1387 (AQ#1387), as described below:

Table 1. Description of Aquaculture Licence and Lease #1387

Type: Marine	**Current Size:** 12.11 HA
Number: AQ#1387	**Current Cultivation Method**: Suspended cultivation
Applicant: Matthew and Stephen Mattie	**Current Species:** American oyster
Location: Havre Boucher, Antigonish County	**Proposed Amendment:** Boundary amendment with no increase in size

2. History

On March 5, 2015, AQ#1387 was first issued to Matthew and Hugh Mattie for a 10-year term from November 1, 2014 to November 1, 2024. On April 26, 2018, AQ#1387 was assigned from Matthew and Hugh Mattie to Matthew and Stephen Mattie. AQ#1387 was amended on August 23, 2018 to include suspended gear on a portion of the site.

3. Procedure

3.1 Performance Review

A performance review of the information submitted by the operator in support of their amendment application was completed. This review recommended that the site be amended based on the technical and biological assessment. This performance review is required pursuant to Subsection 72(c) of the Aquaculture Licence and Lease Regulations, and was completed on April 26, 2021.

3.2 Public Comment Period

Notice of the application for the amendment of AQ#1387 for the 30-day public comment period was published on NSDFA's website (http://novascotia.ca/fish/aquaculture/public-information/) for the period of July 23, 2020 to August 21, 2020. Notice of the application was also published in the Royal Gazette Part I on July 22, 29, August 5, 12, and 19th, 2020.

3.3 Submissions

6 submissions were received by NSDFA during the 30-day public comment period. All 6 of these submissions met criteria for consideration and are included with this document. Several items of note were raised that will be further discussed in the Factors to be Considered section of this document.

4. Factors to be considered

The amendment application for AQ#1387 was submitted to adjust the site boundaries, without increasing the size, to allow for the site to be located in optimum depth to allow for full site utilization. Review of the file indicates that the site has had production and employment in recent years. The information in support of the amendment application suggests continued production is planned for this site and continued employment. The proposed changes are expected to support and improve economic prosperity in the local community and province. This will be achieved through increased production at the site, which will lead to economic contributions in the community and increase shellfish exports for the province. Department staff will continue to monitor that production plans are implemented as submitted.

The performance review and public comment responses noted the presence of other fishery activities in the surrounding area of the proposed amended boundaries. A commercial wharf is located on the opposite side of the harbour.

One public comment identified concerns regarding access to commercial berths for eel fishery. The concern was shared with the related regulatory body, and a map was provided to identify the exact locations of concern. The existing site boundaries of AQ#1387 limited access to two (2) out of twelve (12) commercial berths via the water, due to the fact that the boundaries extended to the shoreline. The proposed boundary amendment would restore access to all twelve (12) commercial berths, as the amendment of AQ#1387 will shift the site away from the shoreline, allowing access to the commercial berths by water. AQ#1387 remains authorized to cultivate shellfish using suspended gear, and as such the gear must remain within the geographic boundaries of the site. Section 55 of the Licence and Lease Regulations requires an aquaculture licence holder to mark each of their sites in a manner determined by the Minister and keep each site marked during the term of their licence. Furthermore, AQ#1387 is required to maintain compliance with Transport Canada as it relates to Navigable Waters. The new boundaries of AQ#1387 requires an updated approval from Transport Canada.

Two public comments identified concerns regarding access to fishing within the harbour. The proposed change in boundaries does not result in an increase in the overall size of the site. Therefore, the proposed amendment would not result in a reduction in the area of the harbour available for commercial or recreational fishing.

There were no ecological concerns identified in the past performance of this site with respect to negative impacts on other fisheries, and the proposed boundary amendment does not indicate future negative impacts.

Several public comments were received, concerning the impact the proposed boundary amendment would have on the other users of the public waters surrounding the site, including the public right of navigation. One concern was regarding access around Crispos Island. Another concern was regarding access in and around the harbour. Following review, modifications were made to the proposed application to improve access and navigation near the site. Refer to the Decision section for further details. As the amendment of AQ#1387 will shift the site away from the shoreline, access around Crispos Island would not be impeded. Another concern was

regarding refuge for recreational boaters during inclement weather. As this boundary amendment will not result in an increase in the size of the site, there is no reduction in the area of the harbour accessible to recreational boaters.

There is no indication that development of the site for shellfish aquaculture will pose ecological concerns or have an impact on the sustainability of wild salmon.

AQ#1387 is located in the Northeastern portion of Havre Boucher. The nearest aquaculture site, AQ#0136, is located approximately 6.5km away. There is no evidence to suggest that the extent of existing aquaculture in the harbour has exceeded the carrying capacity of the harbour.

5. Decision

Based on the considerations above, Aquaculture Licence #1387 and Lease #1387 shall be amended with modifications to authorize the boundary amendment (without increasing the size). Except as expressly amended, Licence #1387 and Lease #1387 shall continue in full force and effect, including any terms and conditions. The Licence and Lease documents shall be prepared in accordance with the standard operating documents of NSDFA, and shall be made publicly available subject to the provisions of the *Freedom of Information and Protection of Privacy Act*.

Modifications:
A "no-gear" zone has been added to the site, to improve public navigation in the surrounding waters. The new boundaries of AQ#1387, including the no-gear zone is subject to approval from Transport Canada.

June 10, 2021

Robert Ceschiutti
Aquaculture Administrator
Nova Scotia Department of Fisheries and Aquaculture

Date

Spencer, Amanda L

From: Brad and Roxy Melong [redacted]
Sent: August 21, 2020 9:44 PM
To: Aquaculture Administrator
Subject: Re:Amendment application number AQ#1387

** EXTERNAL EMAIL / COURRIEL EXTERNE **
Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien

Dear Aquaculture Administrator:

My name is Brad Melong. I live at [redacted] Havre Boucher, Nova Scotia and my mailing address is [redacted] Havre Boucher, Nova Scotia, B0H 1P0. I can be reached at [redacted].

I am writing in regards to this amendment application number AQ#1387 put forth by Matthew and Stephen Mattie to amend their current boundary. I have issues concerning this boundary amendment because I currently have commercial berths for eel fishery where they are proposing to move to. I was not contacted, nor were any other fishermen from our harbour, including others that have eel licence and berths for this area. If you require further information concerning my eel licence and berths you can contact me anytime. I am quite concerned that an area that is technically reserved for another fishery is being looked at for something totally different than what is intended for. There is very little area in our harbour currently that isn't closed due to pollution so I think that considering they already have a portion of the harbour for American Oyster, that the remaining areas that contain eel berths should be left as is.

Thank you,
Brad Melong

Spencer, Amanda L

From: Richard Melong [redacted]
Sent: August 21, 2020 9:40 PM
To: Aquaculture Administrator
Cc: NPPATL-PPNATL@tc.gc.ca
Subject: Letter regarding amended application AQ@1387
Attachments: NS Dept of Fisheries & Aquaculture AQ#1387.docx

Good evening

please find attached a letter expressing my opposition and concerns regarding the amendment application AQ#1387 by Matthew & Stephen Mattie.

Regards
Richard Melong

Richard Melong
[redacted]
Havre Boucher, NS
B0H 1P0
[redacted]

August 21/2020

Nova Scotia Department of Fisheries & Aquaculture
1575 Lake Road, Shelburne, NS
B0T 1W0

To whom it may concern

My name is Richard Melong. I live at [redacted], I am a fisherman, my homeport is Havre Boucher, I am a member of the Havre Boucher Harbour Authority and I am a community member who uses the Havre Boucher harbour for recreational purposes such as tubing with my family and kayaking. I am writing in regards to the proposed amendment application #AQ1387 by Matthew & Stephen Mattie.

I am opposed to the proposed amendment that has been put forward by Matthew and Stephen Mattie. This amended proposal will impact both my commercial fishing and recreational activities in this harbour. For commercial fishing, this could limit traps and nets being put in the harbour that could affect my livelihood. From a Harbour Authority perspective, it could impact the recreational boating that we rely on to help fund and maintain the wharf and from a recreational perspective it would definitely effect the boating, tubing and kayaking that families enjoy during the summer months by blocking being able to fully access going around Crispo Island.

I am completely taken a-back by the lack of communication and notice that there has been in regards to this application, I would like to know what the proper protocol is for making such proposals known to the harbours and community members that these types of ventures will so greatly affect. The few people that I know, that have had any knowledge about this amendment, literally found out on Friday evening on August 21. I know of no community members, boaters, jet skiers or land owners who have any knowledge about the amended proposal, a proposal that will limit access to areas in our harbour that we would normally enjoy on a regular basis. Thanks to what appears to be a very sneaky attempt by the applicants, these community members will now, no longer have a chance to voice their opinions.

I have included my email and phone numbers and would like to hear from the NS Dept of Fisheries and Aquaculture Administrative Decision makers, hopefully before any decisions are made. This decision will have a lasting and great impact on me, my family and my community.

Regards

Richard Melong

Spencer, Amanda L

From: james a brow [redacted]
Sent: August 25, 2020 9:23 PM
To: Aquaculture Administrator
Subject: Oyster Lease

** EXTERNAL EMAIL / COURRIEL EXTERNE **
Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien
To Whom it may concern ..

I submitted a written submission on Aquaculture /Lease Number 1387 -Havre Boucher on August 21,2020 .

My Mailing Address James A Brow
[redacted]
Havre Boucher ,Nova Scotia
B0H 1P0

Phone Number [redacted]

Thank you James

Spencer, Amanda L

From: james a brow [redacted]
Sent: August 21, 2020 8:42 PM
To: Aquaculture Administrator
Cc: Heighton, Ralph
Subject: Oyster Lease

** EXTERNAL EMAIL / COURRIEL EXTERNE **
Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien
I neglected to put in this information .

it is lease number 1387 -AQ #1387 Havre Boucher .

thank you James

Spencer, Amanda L

From: james a brow [redacted]
Sent: August 21, 2020 8:37 PM
To: Aquaculture Administrator
Cc: Heighton, Ralph
Subject: oyster lease -Havre Boucher

** EXTERNAL EMAIL / COURRIEL EXTERNE **
Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien
To Who it May Concern ..

Over 50 %of Havre Boucher harbour is polluted .This site is planning to take 75% of what is left .This harbour is just not big enough .Mattie is not from here and for him to think he can walk all over us is not acceptable .At the meeting in Antigonish Mattie offered to include the fishermen in the lease but that was forgotten once the lease was approved .Also a lot of fishermen had eel sites for fyke traps myself included .in that area .We were all told we could not go there any more .Some of us have mussel and clam licences for that area also .We were displaced .

95 % of the fishermen from Havre Boucher were at the original meeting in Antigonish ...we were 100 % opposed to that lease coming here .There was a lot of animosity after Mattie came here .There was violence here and at other harbours that Mattie went to. I am sure you know that .

Mr Mattie caused some problems when he began harassing local boaters accusing them of stealing oysters .

Our concerns were totally ignored and to add insult to injury i was told there were no minutes kept of the meeting in Antigonish .I did express my concerns in emails to the department to Brendan G .Got one response then no more .

We asked for the original lease agreement to be reviewed .We were ignored .

We do not want to be ignored this time .

I grew up here and have been a fisherman for 50 years .

I am Metis as many us here are .We should not have to resort to violence to be heard .

sincerely James A Brow
Havre
Boucher

Spencer, Amanda L

From: Allan Macaskill <[redacted]>
Sent: August 21, 2020 7:13 PM
To: Aquaculture Administrator
Subject: AQ# 1387

** EXTERNAL EMAIL / COURRIEL EXTERNE **
Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien

I am sending this email to express my serious concerns about losing access to even more of our harbor. The Mattie boys (lease number AQ#1387) are liking to expand or move boundaries and none of us Commercial fishermen of Havre Boucher and also no members of Havre Boucher Harbour Authority have been informed about any of it. All of us have used the waterway around the island most every day we fish. I have used the area that the Mattie boys are trying to acquire for 30 years for my oysters and eel pots. And many times i fish my Gasperough nets in that area . The community uses this area every summer as well.
There is no need to have found out this way. The Matties should have come to the fishermen and talked about it . I would like to see them succeed but not this way.
This cannot go ahead as proposed.
Allen MacAskill
[redacted]
[redacted] Havre Boucher
Nova Scotia
B0H 1P0
[redacted]

Spencer, Amanda L

From: [redacted]
Sent: August 21, 2020 11:58 PM
To: Aquaculture Administrator
Subject: AQ#1387

** EXTERNAL EMAIL / COURRIEL EXTERNE **
Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien

To whom may concern,

As president of the Havre Boucher Harbour Authority there has been concerns of the reshaping of the current Oyster Lease in the harbour. First there is history of fishing activities in the harbour and particularly in the new proposed area of that have not been considered or consulted with the fisherman. Second our harbour provides a refuge from tourist/sailboats to take cover from weather and reducing the protected area is a concern for the safety of people. And third a member of our community the owns the land that borders new boundary of lease is in disagreement of the proposal at it will directly affect the value and future usage of the land. And finally our harbour has been used for multiple activities and it looks like the proposed area will limit people access around the island weather it be commercially or recreationally.
Believe further discussion needs to take place with members of our community.

Thanks Larry Meagher
President of Havre BoucherHarbour Authority

[redacted]
Havre Boucher NS
B0H1P0
[redacted]

Spencer, Amanda L

From: Roxanne Pelrine [redacted]
Sent: August 21, 2020 9:29 PM
To: Aquaculture Administrator
Subject: Havre Boucher Harbour

** EXTERNAL EMAIL / COURRIEL EXTERNE **
Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien

We are writing today regarding Matthew and Stephen Mattie, license #AQ1387.
We have just been informed in the last hour that they want to expand or move boundaries in our harbour in Havre Boucher. We own waterfront property near the area and feel this infringes upon the use of public water for not just our family but multiple others in the village and surrounding communities who enjoy fishing, boating, kayaking, canoeing, water skiing and tubing in the harbour and around the island . By granting this request it will cut off access to an area that has been enjoyed by many for decades. It should continue to be accessible to the public for recreational enjoyment.

Regards

Raymond and Roxanne Pelrine
[redacted]
East Havre Boucher
Ant.Co, NS
B0H 1P0
[redacted]

Sent from my iPad

May 13, 2022

[redacted]
Harbour Authority Havre Boucher
[redacted]

Re: Meeting request with Paqtnkek Mi'kmaw Nation Oysters on the lease application location Havre Boucher, NS.

Dear [redacted],

The Paqtnkek Mi'kmaw community Oyster program would like to have an opportunity to meet with the members of the Havre Boucher Harbour Authority to discuss our marine shellfish (oyster) NSDFA lease application, to address any questions or concerns with the plans of depuration and holding of oysters within the Havre Boucher Harbour. Norma Prosper and [redacted] are willing to meet via zoom or in person, any time at your earliest convenance. You can contact us via email norma.prosper@paqtnkek.ca cell [redacted], [redacted] cell [redacted].

Respectfully,

Norma Prosper
Paqtnkek Oyster Administration
7 Dillon Street
Afton Station, Antigonish Co.
NS B0H1A0
Office: 902-386-2781
[redacted]
cc. [redacted]

Meeting Wednesday June 01, 2022, 2:30 pm

Place: Havre Boucher Community Centre

Attendees Paqtnkek: Norma Prosper, Paqtnkek Oyster Project Administrator, [redacted], Paqtnkek Councillor, [redacted], Paqtnkek Oyster Consultant

Attendees Havre Boucher Harbour Authority: [redacted].

Summary of Discussions:
[redacted] gave an introduction about Paqtnkek Oysters, Pomquet Harbour and how oysters live.

Paqtnkek oysters began around seven years as a spat collecting/seed sales project and because of a small market, eventually evolved into growing full-size oysters within the last few years at the Summerside site, which is part of the Paqtnkek community.

Due to the contamination status, and closure of Pomquet Harbour in the 70's, the need for a clean area to hold oysters before selling is needed. Havre Boucher (HB) was deemed the closest clean harbour from the Summerside farm site to relay marketable oyster for holding.

A picture of two maps was passed around. One map showed the original locations that were considered, showing two areas marked off on both sides of Crispos Island. The other map showed just one site marked off on the western side of the island, which is what Paqtnkek would like to propose for a holding area for the oysters. The reasoning for reducing to one site was to lessen the impact for recreational activities for the harbour users.

There was extensive talk about the sea ice that comes into the Havre Boucher site and the damage it has caused this year and previous years to the wharf and the lobster holding area. Because of the depth of the oysters within the harbour, can possibly have damage caused by sea ice. Big winds from the NW are problematic and have been for the Mattie farm, with cages damaged due to the ice.

[redacted] spoke about the OysterGro cages that are being used and the BOBR cages that will be used to hold oysters.

There was mention of an old ship that had sunk in the area of the proposed lease, on the south west side of the Island. [redacted] hauled an old anchor from this site.

[redacted] spoke about the benefits of oysters healing the harbour and contamination sites not going to go away because of land use practices. Oysters are filter feeders and work

at cleaning the waters around them, they are also a good source of protein and great for food security for Paqtnkek.

The cages would be sunk on the potential holding site in HB Harbour, only corner buoys would be visible.

New cages, like the BOBR system used in Big Island, will be introduced on the Paqtnkek farm; these are simplistic with a low profile. Cages would be sunk due to the potential contamination of bird feces on the cages.

It was mentioned that there were some issues with the lease holders located in the same area: harassment of boaters over possible oyster theft.

The area has natural oysters in the HB harbour, with most fishermen having licenses for everything. There have been problems with the Federal government issuing licenses and the Provincial government allowing leases that could potentially affect their licenses. The two government agencies are not communicating with one another on the activities happening in the same area.

Assurances were given that the Paqtnkek community would work with the HB community, and be transparent in our activities within the HB harbour.

The question was raised about any possible employment opportunities for the community. It was mentioned that besides the employment the oyster farm provides for the Paqtnkek community, security would be needed in HB area; this may be provided from Paqtnkek's own security or someone local. It was mentioned that Paqtnkek did provide security training and employment for Paqtnkek community members along with members from surrounding communities, along with other training for other positions at the new gas bar located off the highway at Paqtnkek.

[redacted] asked if the HB Harbour Authority be named on the lease. It was mentioned that probably not, but a committee could be formed from members from the HB Harbour Authority and the Paqtnkek community to ensure transparency in the activities of the lease.

[redacted] mentioned he has recreational licenses, as examples, digging quahogs at Crispos Island, fishing eels with spears.

[redacted] assured that Paqtnkek is not wanting to monopolize the area, and wants to make sure that the area is still available for recreational use.

[redacted] asked if fresh water would be a concern for the health of the oysters because of all the fresh water that drains into the Harbour and the lobster holding areas have seen mortality due to freshwater introduction. No not really, oysters can withstand 2-3 days of fresh water.

There was mention of recreational sailing around Crispos Island, and would that be affected? People could still boat, they would have to be mindful of the buoys.

There was mention of maybe the Harbour would be a good spot as it was deemed so for lobster. Not really.

HB Harbour Authority would consider a CLC, a community liaison committee, and deemed it would be a good idea so the lines of communication would be open.

Paqtnkek is working with a communication company to update our present website on the farm activities.

There was concern about the existing lease that occupies the harbour. The applicants said everyone would be involved and lines of communication open, which hasn't been the case.

Is there local representation from the NS Fisheries and Aquaculture, e.g. Ralph Heighton? [redacted] mentioned Leanna Braid.

It was also mentioned that smelt fishing was disrupted by the province giving the lease to the existing farm, while the federal government issued the smelt license for the same area. Eel spearing used to take place where the existing oyster farm is located. No public consultation happened, no transparency. There was extensive talk about how the farm was a bottom lease at first and then changed.

It was asked if Paqtnkek could use the wharf/infrastructure there in HB. Asked what was needed and Paqtnkek needs would be a slipway and possible boom services.

It was mentioned that there was another farm that existed there in the early 80's, before the Mattie's, on the back side of the island.

It was mentioned that there is a private dock that is used by some fishing boats. They will be concerned about their access in and out of the harbour with the proposed lease. It was assured that there would be accommodations for their access.

How long is the lease? 10 years. Is there going to be floating cages? No, sunk cages.

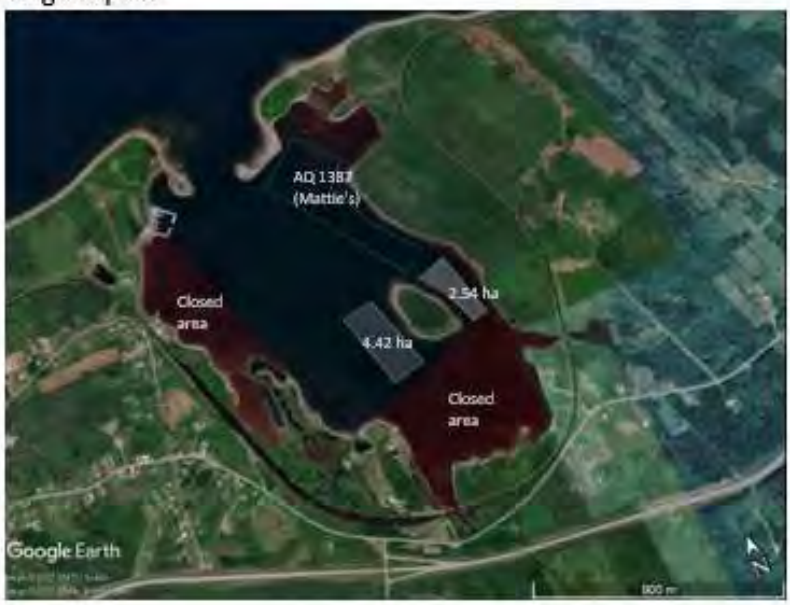
Where can we post signs of the meeting? Credit Union, Gary's Grocery and the post office. [redacted] will post on the community website also.

It was mentioned to [redacted] that meeting notes would be typed up and sent along to him so he can share with the group or anyone interested.

Meeting adjourned at approximately 4:30 pm

Appendix to Meeting Notes: Copy of the document with the maps brought to the meeting:

Original plan



Current proposed plan

Contact information: Norma Prosper E-mail: norma.prosper@pqtnkek.ca , Tel: 902-714-4681
Kerry Prosper E-mail: kerryp@pqtnkek.ca , Tel: 902-870-7491

MI'KMAW NATION
PAQTNKEK
~HONOURING CULTURE~
KEPMITE'TMU'KW TA'N WEMI'KW

May 20,2022

Hello Amanda:

Paqtnkek wishes to share their intended public engagement plans for their lease applications in Summerside and Havre Boucher. These are the applications described in the recent presentation given to NSDFA and network partners (May 3, 2022). The public engagement plans are below:

Summerside location: Public, outdoor meeting at the community gazebo in Summerside, tentatively scheduled for 1-3pm June 12, 2022. There will be a poster of the proposed lease location and handouts with information. Public notice to be given by posting paper notices at public venues in Summerside, Heatherton and Bayfield. It will also be posted on Paqtnkek's website (https://paqtnkek.ca) in the "Latest News and Events" section. There is no community newspaper that would be appropriate to cover that location so notice in a newspaper is not intended. Attempts will also be made to contact the occupants of properties adjacent to the intended site by going door-to-door with information in hand. PLEASE CONFIRM THIS MEANS OF PUBLIC ENGAGEMENT AND ADVERTISEMENT IS SUFFICIENT FOR SUMMERSIDE.

Havre Boucher location: Public, indoor meeting at the community hall or firehall in Havre Boucher, tentatively scheduled for 6-8pm June 12, 2022. There will be a presentation given to the attendees as well as handouts with information. Public notice to be given by posting paper notices at public venues in Havre Boucher. It will also be posted on Paqtnkek's website (https://paqtnkek.ca) in the "Latest News and Events" section. There is no community newspaper that would be appropriate to cover that location so notice in a newspaper is not intended. The Havre Boucher Harbour Authority has been contacted with an intention to meet with them prior to this public meeting. PLEASE CONFIRM THIS MEANS OF PUBLIC ENGAGEMENT AND ADVERTISEMENT IS SUFFICIENT FOR HAVRE BOUCHER.

The meetings were intentionally scheduled on a Sunday to accommodate lobster fishers who traditionally choose to not fish on Sunday.

As the date is fast approaching, comments on the above plans would be appreciated.

Kind regards,

[redacted]

Norma Prosper
Paqtnkek Oyster Administrator

Paqtnkek Mi'kmaw Nation 7 Dillon Street Antigonish, Nova Scotia B0H 1A0 TELEPHONE (902) 386-2781 FACSIMILE (902) 386-2043

[redacted]

From: [redacted] >
Sent: Tuesday, May 31, 2022 11:20 AM
To: [redacted]
Subject: Fwd: AQ#4028 & 4029 Public Engagement Plans
Attachments: Public Engagement Letter Amanda.pdf; Untitled attachment 00490.htm

Begin forwarded message:

From: "Feehan, Jennifer" <Jennifer.Feehan@novascotia.ca>
Date: May 31, 2022 at 11:16:56 AM ADT
To: Norma Prosper <norma.prosper@paqtnkek.ca>
Cc: "Greenwood, Megan N" <Megan.Greenwood@novascotia.ca>, "Ceschiutti, Robert" <Robert.Ceschiutti@novascotia.ca>, "Feindel, Nathaniel J" <Nathaniel.Feindel@novascotia.ca>, [redacted] >, [redacted]
Subject: RE: AQ#4028 & 4029 Public Engagement Plans

Hi Norma,

Thank you for providing the letter outlining your intended public engagement plans in Summerside and Havre Boucher for Options AQ#4028 and AQ#4029.

The information presented in your letter appears to meet the minimum requirements for Public Meeting and Notice as outlined in the Proponent's Guide to Scoping (found here: https://novascotia.ca/fish/aquaculture/licensing-leasing/Scoping_Guide.pdf). The scoping guide describes advertising in a local newspaper as a suggestion for public notice, not a requirement, so you the methods you have described should be sufficient. Please be sure to document all methods of public notification and include in your report on the scoping process.

I also wanted to note that the Department will assess that the minimum requirements for scoping are met; however, we do not assess the adequacy of the scoping. That is something that would be taken into consideration by the Nova Scotia Aquaculture Review Board.

Please do not hesitate to reach out if you have any additional questions.

Kind regards,
Jennifer

Jennifer Feehan
Aquaculture Advisor
Nova Scotia Department of Fisheries and Aquaculture
1800 Argyle Street, 6th Floor WTCC
Halifax, NS B3J 2R5
902-237-0771
jennifer.feehan@novascotia.ca

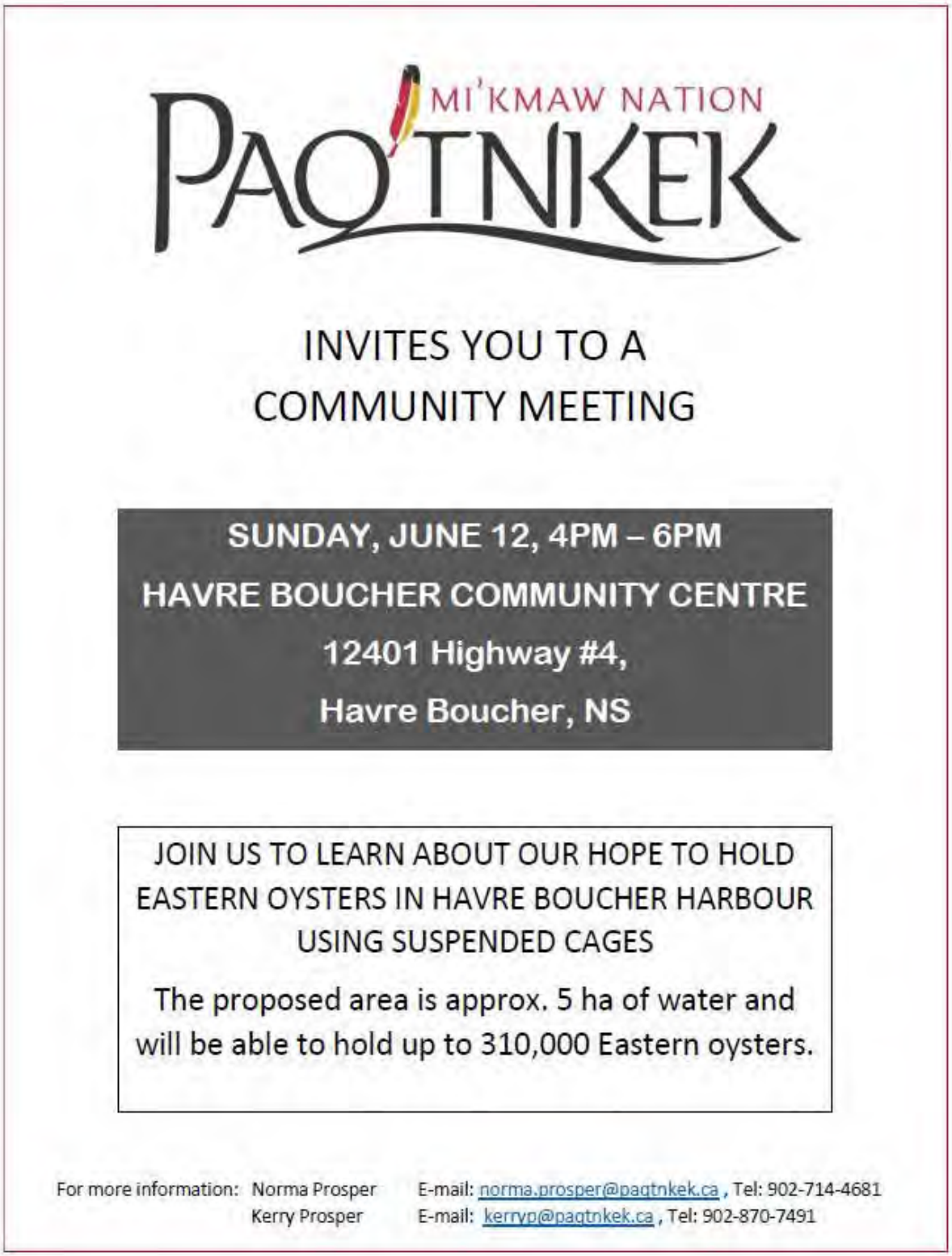


Figure A: Public notice of community meeting, Havre Boucher

Figure B: Posting at the Havre Boucher Credit Union

Figure C: Posting at the Havre Boucher Post Office

Figure D: Posting at Gary's Rite Stop

Record of Havre Boucher Public Meeting

Photos of meeting set up

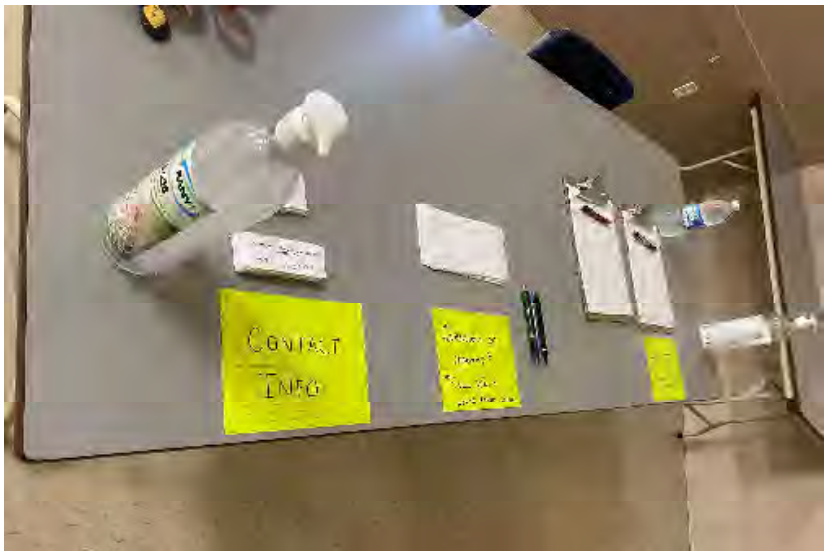


Figure A: Table at entry to meeting

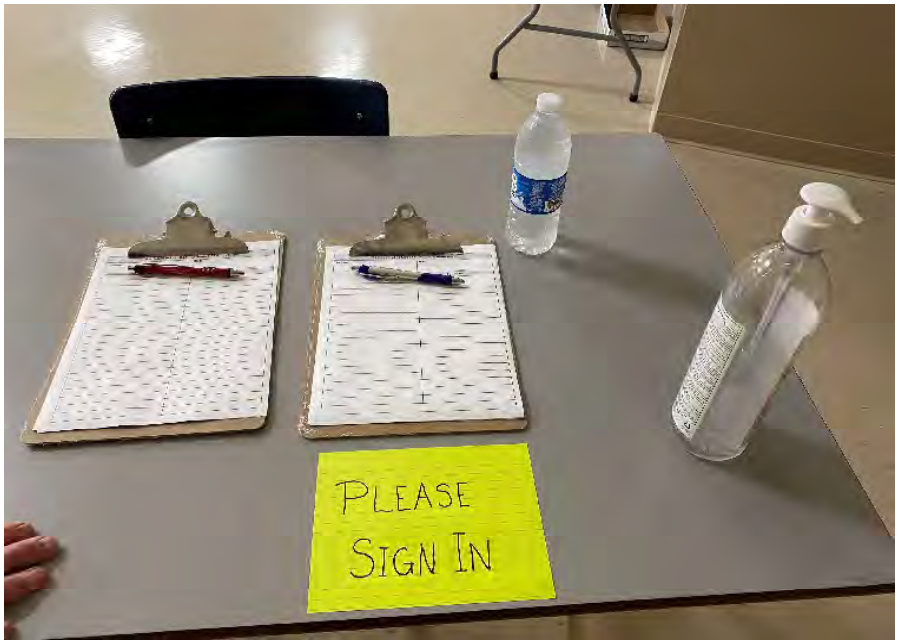


Figure B: Sign in sheet

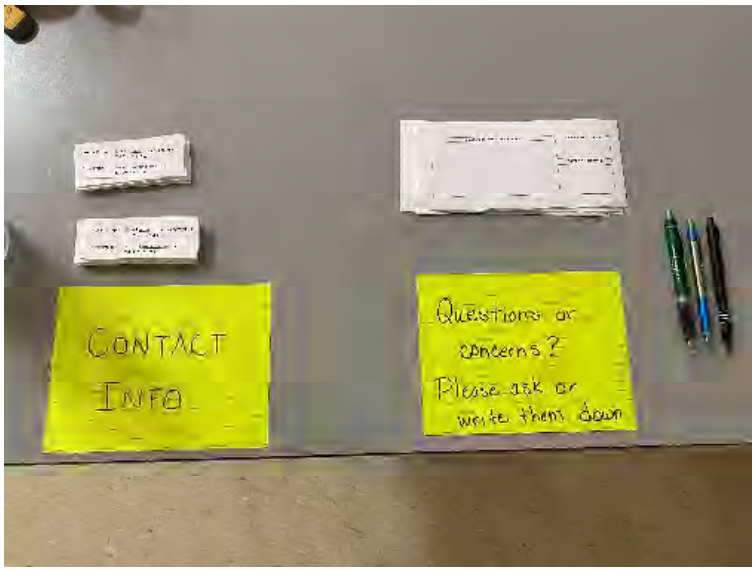


Figure C: Contact cards and forms for questions at entrance to meeting

Figure D: Meeting set up with attendees. Note that more persons joined after the time the photo was taken so that the chairs were full and people were standing along the back wall of the gym.

Havre Boucher Public Meeting
June 12, 2022
Havre Boucher Community Hall

Minutes and Notes

Impromptu Question and Answer:

(Prior to the official start of the meeting, some questions were voiced to the assembly.)

Q: Can you clarify if this is an information session or a proposal?
A: We are requesting an area to clean oysters. We need 30 days to clean them. Oysters will be below the surface.

Q: Where are the oysters going now?
A: Wine Harbour

Q: If you don't have a place to clean the oysters what was the plan?
A: Originally looked at selling seed as a business. Our site in Summerside worked well to collect seed but making money selling seed is limited so we want to grow them out as well.

Attendees were then asked to wait until the session formally began for more questions. Attendees were told that we would begin with a presentation and questions would follow.

Presentation

[redacted] began a speaking with a PowerPoint presentation that is shown in Appendix XXX.

Paqtnkek is a small community near here with about 600 people. We have always used Pomquet Harbour for fishing and as a food source but we can no longer do so now since it is closed to harvesting. We are interested in growing oysters because it represents an opportunity for us. We are concerned about food security and oysters have the potential to provide that. We hired [redacted] to help get it going. This public meeting is part of the process.

We collect spat in our area. Spat collects on cement hangers hung in the water. We bring it in and sort it according to size. The plan initially was to collect spat and sell it to other farmers. This was a big process and required lots of permits and was a sharp learning curve. We were able to sell some but other farmers tended to collect their own seed.

We have relied on grant money to support operations but now we need to make some money and market oysters. But Pomquet is closed to harvesting. Only way to get the oysters to market is to bring them to an area where they can clean out. We are in the process of trying to open Pomquet Harbour to harvesting but we are probably about 5 years away. We are doing extensive water quality monitoring.

(Interruption) We lobster fish here.
[redacted] We are aware of the requirement for others to use the waters. We would like to lease a place.

The oysters would be submerged in this area for about a month before they are sold. The area would be marked off. We know that ice would be an issue. We think the site shown should be feasible. There are other areas in the harbour that are closed off. (Shown in the map.) We looked at a spot between the island and the shore but thought it may restrict use of the island.

Question (or comment) and Answer:

There was a fair amount of unsolicited shouted comments and interruptions throughout the presentation and question and answer period. As a result, some questions many not have been answered fully. Some comments were not recorded as they were egregious insults that do not merit recognition.

Q: Is this a meeting to get feedback from the residents?
(Interruption) We do not want the oyster farm anywhere in the harbour. (Shouting, etc.)
The one we have is blocking access to property and cottages.

Q: You say this is the closest harbour. But where is the next closest harbour, did you look at that?
A: There are not many open harbours. Antigonish is not open. Tracadie is not open.

Q: What does cleaning mean?
A: Oysters eat what is in the water…

Q: Will it pollute the harbour?
A: No.

Q: Can we paddle board?
A: TC will prefer that people do not go on the area.

Q: The concern is that it is right in the path of the boats.

Q: Will it kill the eelgrass?
A: Oysters and eelgrass are compatible. No ecological damage is expected.

Q: You say you only want a little bit of the Harbour but the province website says you will take almost all of the harbour?
A: The website shows the area that was explored to see where a lease could be placed within that area. The area shown (on the map projected on the wall) is what is being requested.
Q: But the website shows a bigger area blocked off.
(This went back and forth a few times, repeating the same concern, repeating the explanation.)

Q: How many buoys will be there?
A: Likely 12 altogether. Transport Canada will tell us minimum requirements. The corners will be spar buoys.

Q: Will it be expanded? And will it be discussed, if yes?
A: Paqtnkek is doing water quality testing to try to get that (Summerside) area cleared. Source of contamination there is likely less now. This is only holding for oysters to clean themselves.

Q: How big are the cages?
A: They look like this. (One was in the room.)

Q: You say these will be 8 feet down – is that at low tide or high tide? There is not a lot of deep water there. Is there a possibility that it will be less than 8 feet?

Q: Will you overwinter them there?
A: That is not the plan.

Q: If you bring contamination into the harbour, where does it go?
A: The harbour they are coming out of may not even be contaminated. The concentration will not be high enough. We've had oysters (from Summerside) tested in the last year. They have been clean.

Q: When they are there for 30 days, what actions do they see? What kind of activity?
A: There is only one boat.

Q: Is there a constant rotation? Would you set the whole section for a month?
A: There could be oysters coming in on a weekly basis. The preferred way is to keep them in Pomquet Harbour. Hope to be able to do that.

Q: Why can't the oysters be cleaned outside of the harbour?

Q: We have a wharf in the area. We don't want you here. We water ski and enjoy the water.

Q: Do you know the area you are asking for?

Q: We have four large boats entering and exiting the harbour. You are cutting off our channel, our right of way.

Q: Sailboats come in and anchor here, in the harbour. Up to two to three per day. We are concerned this will affect that.

Q: What kind of study has been done? You are cutting off a lot of recreation, tourism. What study did you do to say this is good for our community?

Q: Is this a proposal?
A: Yes, we are getting feedback.

Q: When the current site went in (ie AQ 1387), letters went on to NSDFA, several wrote letters. Apparently that doesn't work.

Q: This is an intelligent community. Let's begin now. Defend our rights. Get information together now, before we have to fight.

Q: You say you are bringing forth a proposal. Does anything we say matter? The water is well used and a big part of Havre Boucher. Why could you not consider somewhere else?
A: We know your concerns. We have been here a long time. We are trying to make a living. We have had a lot of things taken from us. How can we share?

Q: I am the local councilor for the area. We have a lot of people kayaking, using the area, including for shelter. We need clear access. We need more information on this. Land owners have concerns. We need more information on this. There has not been enough time. We need a committee to discuss.

Q: There have to be benefits to the Havre Boucher Community.

Q: You want the deepest part of the channel.
A: We are hearing your feedback that we are blocking off the channel. Is there some way we can accommodate the channel? Is there a workable compromise?

Q: (Stated they were from Antigonish) Shame on you, shame on you…sitting there so complacently. Shame on you. This community needs to fight you on this. You are polluting our harbours because it doesn't affect you. (This carried on for a few minutes, repeating the same thing.)

Q: How has the current lease benefitted the community? There is already no access because of that lease. And the shore is white with shells.

(Current leaseholder): We have the farm in the harbour. The shells are trucked away.

Q: When the Harbour Authority met with you, you had two leases. Now you have only one. Why?
A: It was apparent that the lease on the inside of the island would block too much of the island. We didn't want to do that.

Q: Was East Tracadie Harbour explored as well?
A: The area is closed to the harvesting of oysters.

Q: If this went through, how long until it starts? If the main goal is to go on land, why not go there first?
A: Going on land is too expensive.

Q: I have been a fisherman here since the 70's. Did anyone check the impact on the current licences? The lease there now does. I sent letters but got no response.

Q: Will a negative response deter you?
We don't want to go to the agency if we are not wanted. If we can accommodate, we will.

Q: What would happen if someone travelled through the lease?
A: Transport Canada will put the lease on its charts.

Q: But what if someone did?
A: That would depend on if someone got hurt.

Q: Is there a proposed timeframe?

A: If Summerside is approved, we will not be here.

A: We know that we have to relook at the area in terms of the water depths and the boat traffic. We need to really look at that.

Q: Would you give the boaters permission to use the area?

Q: (To [redacted]) What is your role? What do you have to gain from this?
A: I am just a biologist working as a consultant.

C: Does anyone here know [redacted]? I do. I have dealt with him and follow him on YouTube.

A: You try to do stuff for your community. We all want the same thing. We want to have our rights recognized too. We've been pushed aside but want to make our own way. We've stated what we are looking for.

Questions or concerns you may have	Community you are from
(1) ~~How~~ How will ya manage your Gear when it gets Loose AND Reaches the Shore. (2) How Long will Farming Last	Haute Bocher Contact info (optional)

Questions or concerns you may have	Community you are from
OUR Beaches Are ALREADY Full of oyster shells. How DO ya PLAN on KeePing them off Beaches/shore.	Contact info (optional)

Questions or concerns you may have	Community you are from
How will community members be respected through this process? Will there be transparency, and will community members be addressed with any concerns. How do you plan on making sure people's voices are heard and respected.	Haute Boucher Contact info (optional) [redacted]

Questions or concerns you may have	Community you are from
1) Will the ISLAND STILL HAVE ACCESS VIA KAYAK/SMALL BOAT 2) will KAYAK/SMALL BOAT STILL be able to move freely around the island 3) How are you MANAGING PUBLIC ACCESS to the shores/beaches	HAVRE BOUCHER Contact info (optional) [redacted]

Questions or concerns you may have	Community you are from
could it be moved out of the only access channel and made into 2 other smaller spots that don't impede access.	Havre Boucher Contact info (optional) [redacted]

Questions or concerns you may have	Community you are from
WILL WATER ACCESS BE RESTRICTED & WHY?	H.B Contact info (optional) [redacted]

Paqtnkek Public Meeting Record of Attendance

Location: Havre Boucher community Hall	Date: Sunday, June 12th, 2022

Name	Community
[redacted]	Antigonish.
	Havre Boucher
	Havre Boucher
	Havre Boucher
	Havre Boucher.
	"
	Havre Boucher.
	Havre Boucher
	Havre Boucher
	HAVRE BOUCHER
	East Havre Boucher
	N.B
	H.B.
	Havr. Boucher
	Havre Boucher
	Havre Boucher
	Havre Boucher
	Cape Jack
	E. Havre Boucher
	HavreBoucher

Paqtnkek Public Meeting Record of Attendance

Location: Havre Boucher Community Hall

Date: Sunday, June 12th, 2022

Name	Community
[redacted]	Havre Boucher
	Havre Boucher.
	Havre Boucher
	Havre Boucher
	Havre Boucher
	Havre Boucher
	" "
	Lunenburg
	Frankville.
	Havre Boucher
	Frankville
	Havre Boucher.
	Havre Boucher
	Havre Boucher
	Monastery
	Havre Boucher.
	Havre Boucher
	CAPE JACK
	HAVRE BOUCHER
	H.B.

Paqtnkek Public Meeting Record of Attendance

Location: Havre Boucher Community hall	Date: June 12th, 2022

Name	Community
[redacted]	Havre Boucher
	East Havre Boucher.
	EHB
	EHB
	Havre Boucher
	HAVRE BOUCHER
	Havre Boucher
	Havre Boucher
	HAVRE BOUCHER
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	Havre Boucher
	Havre Boucher

Paqtnkek Public Meeting Record of Attendance

Location: Havre Boucher Community Hall	Date: Sunday, June 12th, 2022

Name	Community
[redacted]	Havre Boucher
	Hare Boucher
	Havre Boucher
	FRANKVILLE
	Havre Boucher
	Cape Jack.
	HAVRE BOUCHER
	HAVRE BOUCHER
	Havre Boucher
	Havre Boucher
	Havre Boucher
	Have Boucher.
	Havre Boucher
	Afton
	Havre Boucher
	Havre Boucher
	Havre Boucher
	Havre Boucher.
	Have Boucher
	Havre Boucher

Paqtnkek Public Meeting Record of Attendance

Location: Havre Boucher Community Hall	Date: Sunday, June 12th, 2022

Name	Community
[redacted]	Havre Boucher
	Havre B.
	Havre Boucher
	Havre Boucher
	Havre Boucher
	CAPE JACK

[redacted]

From: [redacted] >
Sent: Monday, June 13, 2022 12:12 PM
To: [redacted]
Subject: Re: Follow up to Havre Boucher Community Meeting

Thank you [redacted] for such a quick response to my questions. I will certainly be contacting you if I have any other questions. Have an excellent day. My educational background is Chemistry major and Biology minor. I worked with the Fisheries Research and Technology lab at the Technical University of Nova Scotia (now Dal Tech) from 1981-1982 [redacted]

Sent from my iPhone

On Jun 13, 2022, at 11:17 AM, [redacted] wrote:

Good morning [redacted]:
First, thank-you for attending the public meeting yesterday, listening and contributing.

As a follow up to your questions regarding access to your property from the water, I suggest the following contacts:

General email NSDFA: Aquaculture@novascotia.ca
Manager of Leasing and Licensing, NSDFA: Robert Ceschuitti: Robert.Ceschiutti@novascotia.ca Phone: 902-875-7430

You my also want to try the Coastal Resource Coordinator for your Area: Ralph Heighton: Ralph.Heighton@novascotia.ca Phone: (902) 485-7005

And lastly, Transport Canada is responsible for navigable waters protection. There is a local office in Port Hawkesbury, but I don't know any people there. Tel: 1-855-859-3123 or 902-625-0803

I also understand you had a concern regarding eelgrass. You may be interested to know that in Nova Scotia, a baseline study of sites proposed for aquaculture – using video recordings of the bottom – is required. Both DFO and NSDFA examine this footage to determine if placement is over sensitive bottom. Eelgrass is recognized as being a significant nursery area for a variety of finfish and crustaceans and is protected.

Finally, you may be wondering how I am involved in this project? I am an independent biologist assisting Paqtnkek with the licensing and leasing process. It is fairly complicated as the waters used for marine aquaculture are shared by many users – such as yourself and your family. So, any other questions in that regard (regulations), please feel free to reach out. Otherwise, I hope you collected [redacted] & Norma's contact info.

Kind regards,
[redacted]

[redacted]
Phone [redacted]
Fax [redacted]

[redacted]

MI'KMAW NATION
PAQ'TNKEK

Proposed Oyster Holding Plan Havre Boucher

Public Meeting

June 12, 2022

Introduction

- The name Paqtnkek, meaning “by the bay”, is a distinction emphasizing the importance of the local bay and its resources to the Mi’kmaw people.
- Living by the water in a harmonious manner has been a central part of Paqtnkek culture for generations.
- Paqtnkek Mi’kmaw Nation looks forward to applying our knowledge of the waters to promote economic and food security for our people using the sustainable practice of oyster aquaculture (American oyster: *Crassostrea virginica*).
- Oysters are filter feeders and work at cleaning the waters around them. They are also a good source of protein.

Background and Plans

- Paqtnkek's main oyster farming activities will occur in Summerside.
- In Summerside, we have been collecting oyster spat for seven years and growing oysters for the past four years.
  - We have demonstrated the feasibility of suspended oyster aquaculture in the area.
  - We have built knowledge and skills to farm the oysters.
- But we need a place to hold them prior to market.
  - Pomquet Harbour was closed to shellfish harvesting in the 70's due to contamination (bacteria) from activities on the land, so an open area to hold oysters before selling is needed.
  - Havre Boucher was deemed the closest open harbour from the Summerside farm site to relay marketable oysters.
  - We hope to hold oysters on a site in Havre Boucher prior to market.

PAQTNKEK

Havre Boucher Proposed Location

The proposed Havre Boucher holding site for the oysters is shown in the map.

Site Plan

- 325m X 132m = 4.3 ha
- 18 backlines with 24 Oyster Gro cages/ line (sunk below surface)
- 311,000 oyster holding capacity

Why There?

- We need to hold oysters in an area that is open for shellfish harvesting; and this is the closest open harbour to Summerside.
- We have to stay out of areas restricted for harvesting shellfish (shown in red)
- The proposed location should allow clear access around the east side of Crispos Island and room for recreational water activities and fishing.
- We have been made aware of the potential for sea ice to enter harbour

Next Steps and Timeline

- We will continue public outreach for the lease applications – please contact us with questions or concerns.
- We will submit an application in July 2022.
- We will continue farming at the Summerside location.
- We can set up a Community Liaison Committee with interested participants, including the Harbour Authority to keep everyone aware of what is happening.
- We hope to begin holding oysters in Havre Boucher in 2024.

PAQTNKEK


Wela'lioq
Thank-you
MI'KMAW NATION
PAQ'TNKEK
~HONOURING CULTURE~
KEPMITE'TMU'KW TA'N WENI'KW

Meeting with Havre Boucher Harbour Authority, other stakeholders.

July 06, 5:30-7 pm

Attendees:

Paqtnkek: [redacted], [redacted], Norma Prosper, [redacted] (on phone)

Havre Boucher: [redacted], Owner of several boats, wharf located on the SW end of the map; [redacted], HB HA; [redacted], County Councillor; [redacted], HB HA; [redacted], HB HA, main contact for communicating

Summary of Discussions:

Recorded by Norma Prosper

Paqtnkek began with a brief introduction: we heard your concerns at the last community meeting and decided to have a more focused meeting with selected individuals that had concerns with the selected site. Gave out the map showing the newly selected site along with the map of the option area and explained both, that our site had to be within the option site.
We went with an area that hopefully would meeting your needs and ours and welcomed any comments with the area selected.
We actually went with a suggested area that was closer to the Matties farm and out of the way of the access for [redacted]. I had asked [redacted] to provide written comments by the end of next week.

There was mention of Sail boats that come into the harbour for protection from the wind, being the harbour is the last harbour before the causeway.
It was mentioned about the peninsula where they are hoping to develop, [redacted] family and how the Matties farm disrupted the area. Concerns about the riparian access to their property and it was assured that the newly selected site would not impede access.

They asked how big the section was, and how many feet between the Matties farm, can a boat turn around in the area, what about kayaks and row boats.

It was pointed out that there should be no problem for boats to maneuver around the buoys that will mark the lease.

Bird contamination, [redacted] asked what would be used to hold the oysters, what type of cages to assure no contamination, it was explained they two types of cages what will be used, OysterGro and BOBR. Asked if they would be sitting on the top of the water or sunk, answered, they will be sunk.

It was asked about mussel sets in cages and the basic maintenance of de-fouling the oysters, was explained.

There was some discussion around harvesting in the winter months, through ice or cold storage. Sampling oysters and contamination, how heavy rain events affect oysters and if PEI has the same issues.

The closure line in red that was on the last map, was asked if it was getting any bigger, meaning including more area, [redacted] explained that David McArthur does upkeep that information and explained the traceability of oysters with CFIA requirements.

[redacted] mentions about his fishing licences and asked if HB is considered a small harbour and that there are not that many places to go anymore.

It was asked about what type of bottom does the oysters require and [redacted] mentions a firm bottom, is mostly mud in Pomquet Harbour.

Can we have enough oysters in the water to prevent contamination of the Harbour. Discussion were around contamination and where does the contamination go when the oyster depurate in HB harbour, [redacted] explain about how oyster clean the harbour, filter feeders, bivalves, high costs of depuration facility.

[redacted] spoke about back in the day, there was someone who raked oysters, through the ice in the in the spring. [redacted] spoke about [redacted], a Paqtnkek community member who fished oysters in Summerside until DFO closed it. [redacted] spoke about a relay fishery, wild fishery.

It was asked about our Summerside lease and if we intend to go ahead with going through the motions of opening up our closed area; the answer is yes Paqtnkek does plan on it but it will probably a minimum of three years, two years testing and one year wait.

[redacted] asked if this was a temporary solution, and the answer was yes, Paqtnkek hopes to be able to farm and sell right from our own lease one day.

Extensive discussion on DFO and regulation of oyster fishery, priority given to Snow crab and lobster, DFO shutting things down one by one, not taking into the community consideration or input, DFO making decisions on things they don’t know about, communities needing more science and info as to why they make the decisions they make, how do they know if the fishery is improving or not.

[redacted] asked if the harbour ever had to be dredged, no, only to build the wharf but mentioned that the channel had two openings at one time, one filled in.

[redacted] asked for the coordinates for the newly selected area to see he can navigate around it, coordinates provided and emailed to [redacted] and [redacted] to share with the group.

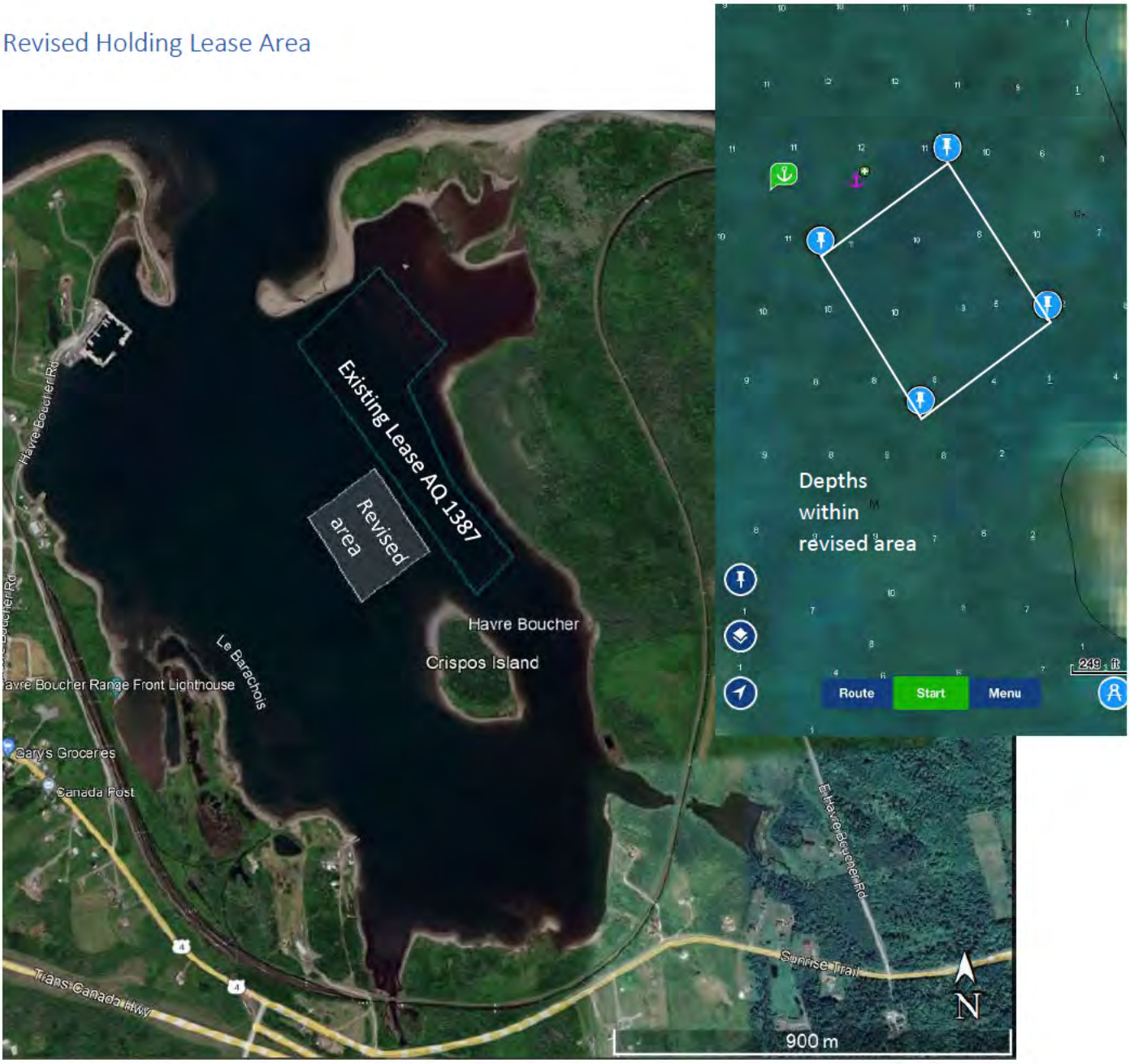
It seemed like the meeting was coming to a close so Norma mentioned again that if [redacted] can email me with comments from the group about today's meeting and the newly selected site by the end of next week (Friday, July 15)

There was some discussion around water temperatures and times of year, like august where the water is hotter, how the oysters grow faster in warmer water.

The meeting adjourned around 7pm.

Just a note, the meeting was scheduled for 6-7:30 pm, we showed up at 5:30pm with the county councilor there at the same time, the rest showed up at 6.

Revised Holding Lease Area



Dimensions:

189m X 226m

10.7 acres

Area we must stay within for lease request (outlined in red)