

**ENVIRONMENTAL ASSESSMENT REGISTRATION  
MISCOU FISH PRODUCTS INC.**

**WATER SUPPLY AND FACILITY EXPANSION  
MISCOU, NB**

**Our File No.: 369-15-00-C**

**February 2016**

Prepared for:

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16 February 2016

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**EIA file no.: 4561-3-1415**

Mr. Doucet:

*Subject: Environmental Impact Assessment Registration Document, Miscou Fish Products Water Supply and Facility Expansion, Miscou, NB.*

We are pleased to present you with this registration document for the above-mentioned project.

Thank you and please do not hesitate to contact us should you require further information or assistance.

Yours truly,

**Jonathan Burt, EP**  
Environmental Specialist  
ENVIRONMENT department

JB/SL

cc- (if applicable)

Enc.

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## EXECUTIVE SUMMARY

Miscou Fish Products Inc. (MFP) owns and operates a herring processing plant located on the southern shore of Miscou Island, on Miscou Wharf, adjacent to the Miscou Channel Bridge (NB Route 113). MFP produces approximately one million pounds of herring fish products annually at this site, which includes extracting the roe from herring. MFP is expanding its operation at this facility to include a snow crab and lobster processing line, which will include a grading, washing, cooking, cooling, freezing and packaging processing line.

The proposed expansion includes two separate components: the construction of an addition to the existing building and installation of various components for snow crab and lobster processing, and the development of a sustainable and dedicated water supply for the facility. Herring and snow crab/lobster are fished in separate seasons and therefore the facility does not require additional water resources for the addition of the snow crab and lobster line.

This report meets the requirements of the provincial environmental assessment process, under the New Brunswick *Environmental Impact Assessment Regulation*, and can be used in support of Section 67 of the Canadian Environmental Assessment Act, 2012.

No adverse environmental impacts are anticipated from the proposed development.



Photo No. 1: Miscou Fish Products Facility

## **THE PROPONENT**

### **1.1 NAME OF PROPONENT**

The proponent is Mr. Hiro Inoue, Miscou Fish Products Inc.

### **1.2 ADDRESS OF PROPONENT**

24 allée du quai de Miscou, Miscou, New Brunswick, E8T 2E9.

### **1.3 CHIEF EXECUTIVE OFFICER**

Mr. Hiro Inoue, Principal, Miscou Fish Products Ltd.

### **1.4 PRINCIPAL CONTACT PERSONS FOR THE PURPOSES OF THE ENVIRONMENTAL IMPACT ASSESSMENT**

The principal contacts for the Environmental Impact Assessment are:

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### **1.5 PROPERTY OWNERSHIP**

The subject property, SNB parcel identification (PID) number 20594883, is owned by the Canadian Crown – Fisheries and Oceans, and leased by the proponent.



## **2. THE UNDERTAKING**

### **2.1 NAME OF THE UNDERTAKING**

The undertaking is *Miscou Fish Products Facility Expansion and Water Supply Development*.

### **2.2 PROJECT OVERVIEW**

At present the Miscou Fish Products Inc. (MFP) facility processes herring roe for international markets during the fall herring season (August – October), providing seasonal employment to approximately 30 – 40 employees.

In order to ensure the financial viability of the facility, MFP is proposing to expand their facility to include a lobster / snow crab processing line, which will provide additional seasonal employment during the late spring/early summer, and provide a processing location for Miscou Island area crab and lobster fishermen. Additionally, MFP requires a sustainable and dependable freshwater supply for both herring and lobster/snow crab seasons.

The construction of the building expansion will consist of the various rooms required for the lobster/snow crab lines. The total area of the building expansion will be a wood-framed structure, approximately 1400m<sup>2</sup> in area, on a slab-on-grade foundation with metal siding and roof, in addition to the current facility's 420m<sup>2</sup> area.

The water supply development includes step-testing and pump testing the existing wells to determine their safe pumping rates and sustainable yields, while maintaining the quality of the water supply and protecting nearby domestic water supplies. Refer to Photo #2.

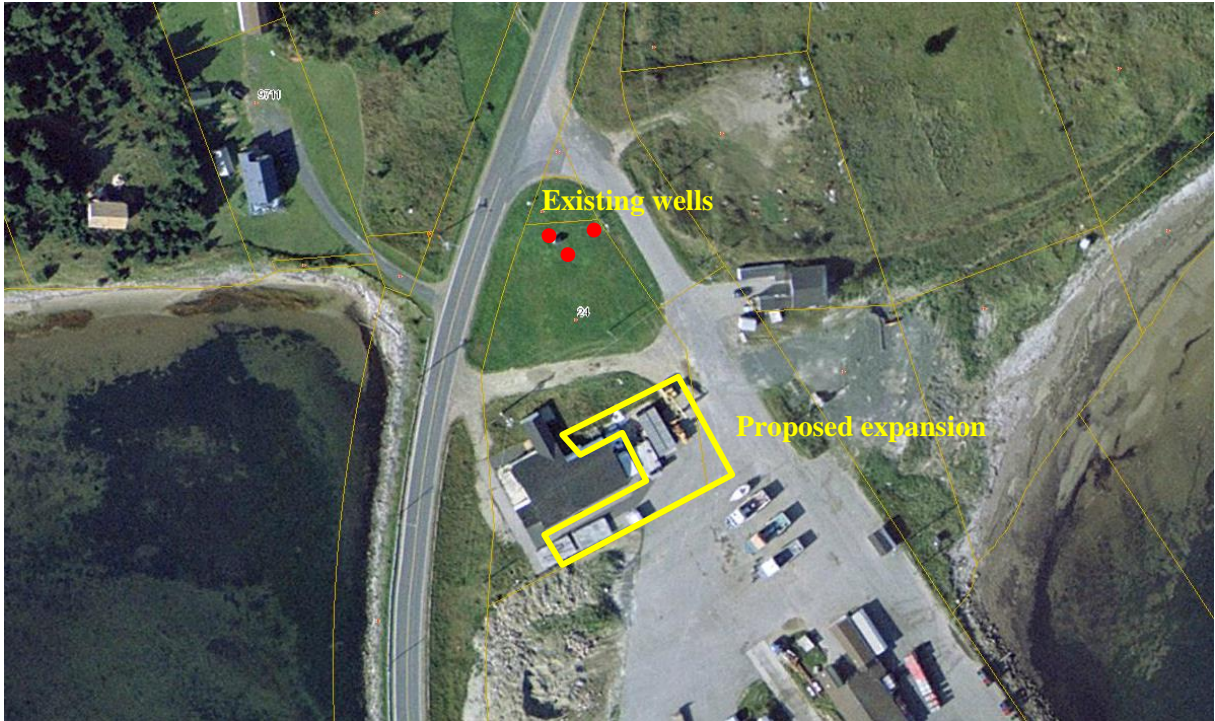


Photo #2: Proposed project aerial view.

### 2.2.1 WATER SUPPLY DEVELOPMENT

The proposed project involves developing and assessing a backup water supply for the current herring roe production lines. As the production lines use water and gravity to move the materials through the processing line, it is a water-intense process. A sustainable and reliable freshwater supply is critical to the facility.

Prior to the current project, the site contained two (2) freshwater supply wells approximately 10 metres (30 feet) deep. Well #1 was used primarily for the water needs of employees, including use in the kitchen and restrooms, as well as plant cleaning. However, in 2015 it was discovered that well #2 had partially collapsed and the casing was in disrepair. Therefore, to ensure the reliability of Well #2 for herring season, the casing was replaced with deeper casing, and a new 5hp submersible pump was installed. A new 5 horsepower (hp) pump was also installed in Well #1, which is located within a wooden pump house.

To ensure the reliability of the overall system and avoid water shortages during herring roe season, a third well (well #3) was drilled in 2015. This well is intended as a backup or auxiliary well, in the event that well #1 ceases to operate. Well #3 contains a new 10 hp submersible pump.

A step-test and 48-hour pump test, as approved by the DELG, was performed on the water supply, pumping well #2 and well #3 simultaneously and using well #1 as an observation well. The pump test took place outside of the recharge season (between January 25<sup>th</sup> and January 28<sup>th</sup>, 2016) as per the NB DELG Water Supply Source Assessment Guidelines. Water drawdown was measured electronically using level loggers, as well as manually, throughout the pump test.

Water quality samples were collected and submitted to RPC Environment and Engineering in Fredericton for analysis.

The goal of the hydrogeological investigation was to determine the maximum safe sustainable yield of the three-well water supply, while ensuring that the pumping rate meets Miscou Fish Products Inc. requirements and does not impact nearby water wells.

Refer to Appendix D for the comprehensive hydrogeological report.

### **2.2.2 BUILDING EXPANSION**

The proposed building expansion involves the construction of an addition to the existing facility structure approximately 1,400m<sup>2</sup> in size. The expansion of the facility will provide sufficient space for the new snow crab and lobster processing line; the herring processing lines will be removed for lobster/snow crab season, and re-placed in the summer for the herring season.

The structure will consist of a slab-on-grade concrete foundation, including frost wall, steel siding and roof, and the necessary equipment for snow crab/lobster processing. The following areas will be included in the addition:

- Staff closet;
- Raw product staff restroom & breakroom;
- Cooked product staff restroom and breakroom;
- SAS room;
- Full-service kitchen;
- Chemical storage room;
- Packaging and maintenance room;
- Office;
- Process area (receiving, sorting, butchering, collection, cooking, cooling, freezing and packing);
- Brine room (brine, desalting, glazing, packing);
- Freezer room;
- Weighing and packaging, and
- Shipping room.

The new construction will contain sufficient areas and setbacks to ensure that raw product and finished/cooked product staff are kept separated to avoid potential food contamination. These separate areas and various setbacks are necessary to meet the criteria of the Canadian Food Inspection Agency (CFIA) and the BRC Global Standards © food health and safety standards.

Solid waste generated from the processing of lobster and crab will be collected and disposed of at a nearby approved waste disposal and composting facility. Liquid waste will be filtered and disposed of via the plant's existing water waste discharge pipe, located east of the wharf, extending approximately 110 metres beyond the normal high water mark.

No air emissions will be created as a result of this addition, with the exception of steam generated from the cooking of the lobster/crab.

No vegetation removal is anticipated for the construction of the proposed building expansion.

### 2.3 PURPOSE/RATIONALE/NEED FOR THE UNDERTAKING

Fish processing (in this case herring roe) is a water-intensive process requiring a sustainable and dependable source of freshwater. The assessment of their freshwater supply will provide MFP the safe yield and sustainable pumping rates of their water wells, and ensure production is not interrupted or lost due to water supply issues in the future.

The expansion of the building is necessary to allow MFP to expand its processing season (from 3 months per year to 8 months) and remain profitable. In order to market its snow crab and lobster in European, Asian and American markets, MFP must be certified and approved under the CFIA and BRC Global Standards© food safety system. The expansion's various setbacks and room sizes are required to meet these standards.

### 2.4 PROJECT LOCATION

The project is located on SNB property identification (PID) number 20594883, at civic location 24 allée du Quai de Miscou, Miscou Island, in the Parish of Shippagan, Gloucester County, New Brunswick. The centre of the property is geo-referenced at 46°07'07.84"N, 065°53'38.68W.

The project location is located within the Acadian Peninsula Regional Service Commission planning district and is zoned *mixed 1* (M1).

Refer to Photo 3 for project location.

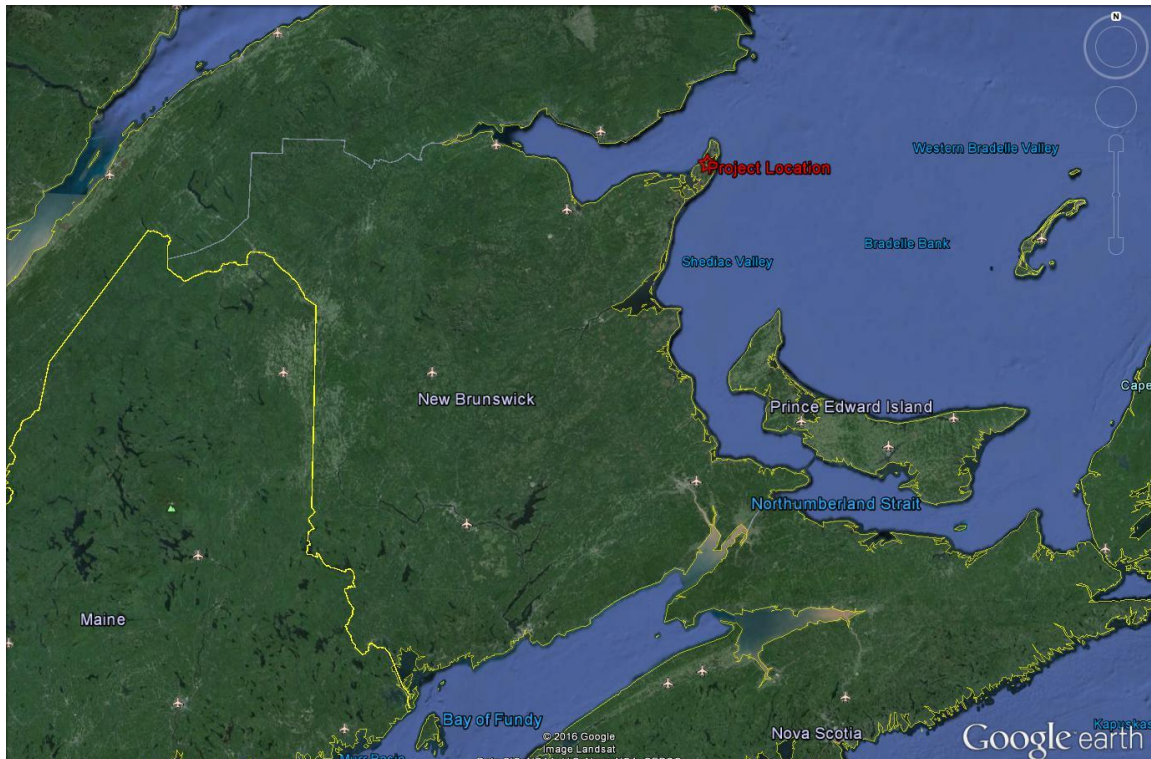


Figure 1. Project location (Google earth©).



## **2.5 SITING CONSIDERATIONS**

The location of the proposed undertaking is ideally suited for the intended purpose. The existing facility is owned by the proponent and has been established at this site since 1988. The land is zoned “mixed 1” (which is appropriate for the intended land use), is currently leased by the proponent, the infrastructure required for the expansion is already in place on site, and there is sufficient space for the proposed expansion. Furthermore, the site is ideally located for access to both the raw fish product and to the export sales markets.



Photo 3: Miscou Harbour.

## **2.6 PHYSICAL COMPONENTS AND DIMENSIONS OF THE UNDERTAKING**

### **2.6.1 WATER SUPPLY DEVELOPMENT**

The existing freshwater supply consists of three (3) potable water wells, each approximately 10m deep, located in the northern portion of the subject property (refer to Photo no. 2). Please refer to Appendix D for a detailed description of the water supply.

### **2.6.2 BUILDING EXPANSION**

The proposed building expansion will consist of a standard construction project, including levelling of the construction footprint, pouring the concrete foundation, building a wood-frame

structure with steel roof and siding, and installing all equipment necessary for the snow crab/lobster processing line.

The current facility is approximately 420m<sup>2</sup> in size, and consists of an office, kitchen, lunch room, electrical room, plumbing room, chemical and other storage rooms, the herring processing area, chemical storage room, and staff washrooms. The proposed expansion will be attached to the current structure to the south, east and north, and will be approximately 1,400m<sup>2</sup> in size.

The facility expansion is required to provide sufficient space for the proposed lobster/snow crab processing line, which must maintain full separation between raw and cooked products (and staff from each area) to meet CFIA and BRC Global Standards food health and safety criteria. The expansion will contain the following areas:

- Staff closet;
- Raw product staff restroom & breakroom;
- Cooked product staff restroom and breakroom;
- SAS room;
- Full-service kitchen;
- Chemical storage room;
- Packaging and maintenance room;
- Office;
- Process area (receiving, sorting, butchering, collection, cooking, cooling, freezing and packing);
- Brine room (brine, desalting, glazing, packing);
- Freezer room;
- Weighing and packaging, and
- Shipping room.

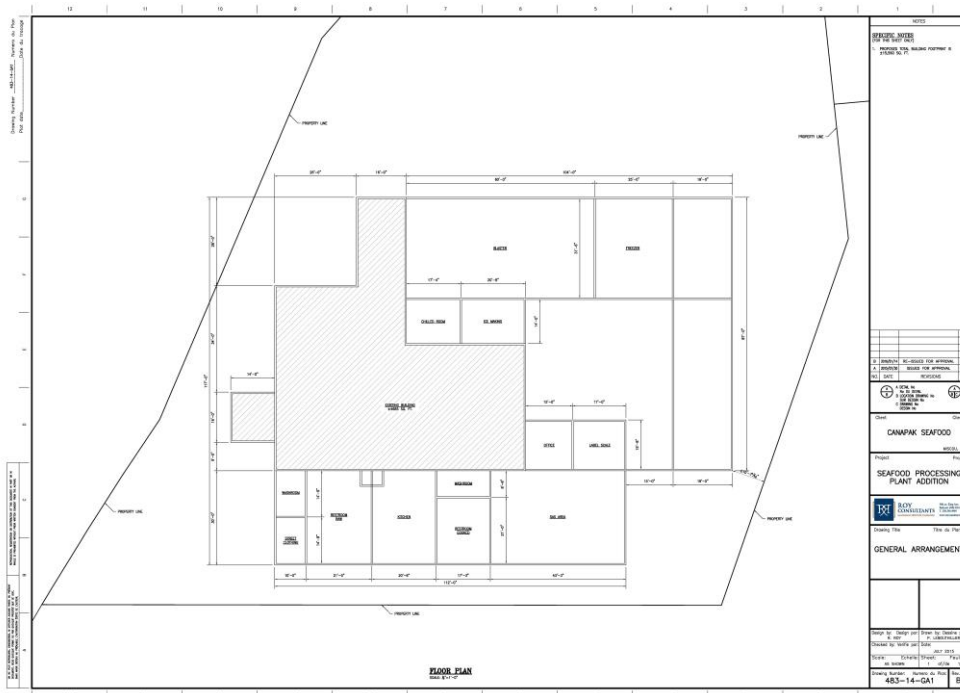


Figure 2. Diagram of proposed building expansion.

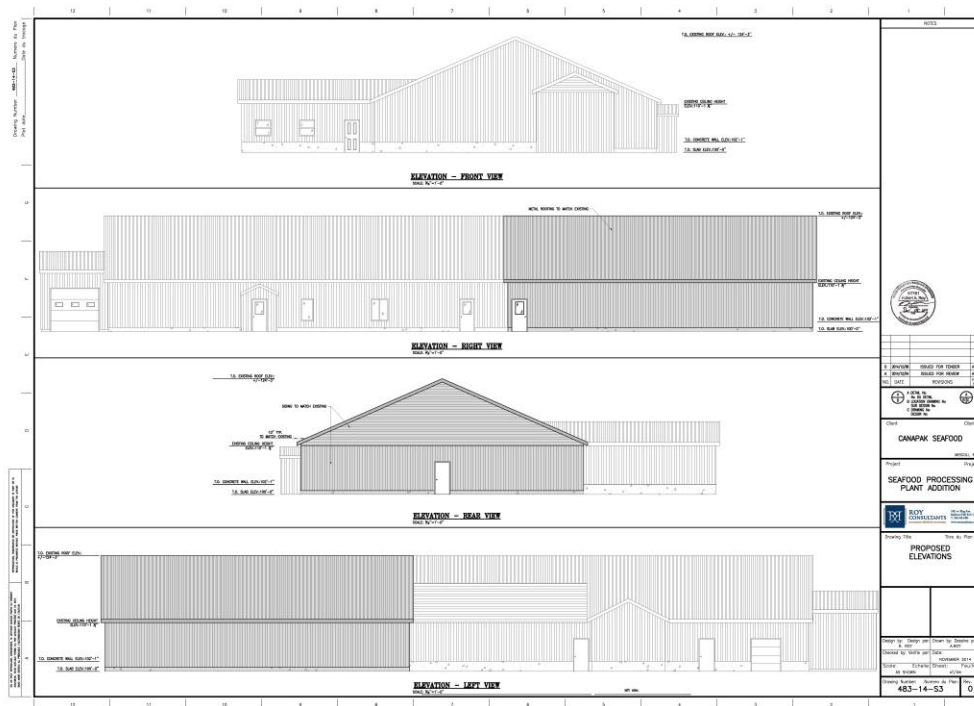


Figure 3. Rendering of the building expansion exterior.

## 2.7 CONSTRUCTION, OPERATION AND MAINTENANCE DETAILS

### 2.7.1 WATER SUPPLY DEVELOPMENT

#### 2.7.1.1. SITE PREPARATION

Refer to the attached Comprehensive Hydrogeological Report for a detailed account of the step test and 48-hour pump test (Appendix D).

### 2.7.2 FACILITY EXPANSION

#### 2.7.2.1. SITE PREPARATION

The construction of the expansion will be a typical building construction project. The project footprint will be levelled where necessary, and a concrete slab/frostwall will be installed.

No vegetation removal will be necessary, and no infilling will be required. Snow removal may take place as necessary.

### **2.7.2..2. CONSTRUCTION**

Construction of the building expansion will consist of typical building construction activities:

- Pouring of concrete slab and frostwall;
- Framing of building (wood frame) – to be joined to existing structure;
- Steel siding and steel roof to be installed;
- Insulation and windows/doors, etc;
- Installation of electrical, plumbing, painting, and all other additional construction materials;
- Installation of snow crab / lobster processing equipment.

MFP will contract local, certified and insured contractors to complete the construction work.

Refer to Appendix B for additional drawings.

### **2.7.2..1. OPERATION AND MAINTENANCE**

The expansion, processing equipment and waste treatment/filtration system will be maintained as necessary to ensure continuous and uninterrupted operation during the processing seasons. The existing herring roe processing lines will be removed during lobster/snow crab season, and vice versa to maximize efficient use of the facility area. Interior surfaces will consist of easy-to-clean sanitary surfaces which will be cleaned and maintained regularly, as per Health Canada, CFIA and BRC Global Standards© requirements.

Operation and monitoring of the facility will be conducted as per the DELG Approval to Operate.

## **2.8 CHEMICALS ON SITE**

With the exception of cleaning and disinfecting the herring roe lines, the processing of herring roe, snow crab and lobster requires little/no chemicals – it is a process that is performed manually by staff. However, to meet CFIA and BFC Global Standards food health and safety standards, disinfection of the processing line, equipment and the facility is required.

The following Sani-Marc cleaning products are stored (in 5-gallon containers) in a locked room with signage that identifies the area as chemical storage, and which contains a concrete secondary containment in the event of a spill (refer to photo #8):

- Blizzard © degreaser (code 05-1005);
- Power Quat © germicide and disinfectant (code 09-10073);
- Colinon-WW© germicide and disinfectant (code 09-12020);
- Eliminator © acid product (code 07-10043);
- Boomerang © acid product (code 07-10100), and
- Dexterra© antimicrobial foaming hand soap (code 13-12375).





Photo no. 8. Chemical / disinfectant storage area.

For more information on the Sani-Marc disinfection program, please refer to <http://b2b.sanimarc.com/home.aspx?&catid=1141&page=1>.

No petroleum products are stored on site.

## **2.9 FUTURE MODIFICATIONS, EXTENSIONS OR ABANDONMENT**

As of the date of preparation of this report, no additional expansion or abandonment of the facility is planned or anticipated.

If necessary in the future, any abandonment of a water well would be completed as per the requirements of the NB DELG *Guidelines for decommissioning (abandonment) of Water Wells*.

## **2.10 PROJECT-RELATED DOCUMENTS**

Refer to Appendix E for the following project-related documents:

- NB DELG Approval to Construct and Operate #I-9161;

### **3. DESCRIPTION OF THE EXISTING ENVIRONMENT**

#### **3.1 PHYSICAL AND NATURAL FEATURES**

##### **3.1.1 GENERAL**

The site of the proposed project is an existing commercial/industrial property located adjacent to the Miscou wharf. The area surrounding the existing fish plant building has been levelled and graded, with portions consisting of gravel, paved asphalt and grassed areas (lawn).

The site is immediately adjacent to the Miscou Wharf, approximately 80m from the normal high water mark of Miscou Harbour. A coastal Provincially Significant Wetland (PSW) is located approximately 80 metres to the west, across Route 113 from the project site. No freshwater watercourses or wetlands are located within or adjacent to the subject.

##### **3.1.2 GEOLOGY**

Refer to the attached Comprehensive Hydrogeological Report for a detailed description of the geology of the Miscou Harbour area (Appendix D).

##### **3.1.3 SOILS**

Refer to the attached Comprehensive Hydrogeological Report for a detailed description of the soils in the Miscou Harbour area (Appendix D).

##### **3.1.4 TOPOGRAPHY**

Refer to the attached Comprehensive Hydrogeological Report for a detailed description of the topography of the subject site and Miscou Harbour area (Appendix D).

##### **3.1.5 SURFACE WATER**

According to Geo NB and as confirmed by a site visit, no surface watercourses or wetlands are located within 30 metres of the proposed project. Surface water runoff from the site is directed towards Miscou Bay via overland flow, which discharges to Miscou Bay via a manhole near the wharf.

Miscou Harbour is located on the north shore of the Miscou Channel, which connects Miscou Bay to the Bay de Chaleur. Miscou Bay is a relatively shallow body of water within an area of approximately 31km<sup>2</sup>. The Bay protected to the east by an extensive dune system extending north/south, and is connected to the Northumberland Strait via 2 gullies. Depth of the Bay ranges between 0.3m and 16.7m, and the mean tidal range is between 0.1m and 1.8m (low to high tidal range). No rare or sensitive marine mammal species are identified within the Bay (Transport Canada, 2007 and ACCDC).

At present, there are no other active fish processing plants which discharge effluent into Miscou Bay, with the exception of a small mussel processing plant adjacent to the MFP facility.

### **3.1.6 VEGETATION**

As the site is an existing commercial/industrial site, vegetation on the site is limited to grass (lawn). No trees or shrubs are located within the subject property.

### **3.1.7 ENVIRONMENTALLY SIGNIFICANT AREAS**

A request for information related to Environmentally Significant Areas (ESAs) within a 5km radius of the project site was submitted to the NB DELG, and to the Atlantic Canada Conservation Data Centre (ACCDC) for Managed Areas (MAs) including Important Bird Areas (IBAs).

The following areas were identified within a 5 km radius of the project site:

#### **3.1.7.1 Goose Lake ESA #085**

Goose Lake ESA is located along the west coast of Miscou Island, from Miscou Centre to Herring Creek, and consists of the only freshwater marsh on the island, and the only wetland with a Golet productivity score over 70. There are also dunes of 2 metres high and is a unique site for its diversity of habitats in one area.

Due to its location/distance from , the proposed project is not anticipated to impact this ESA and therefore is not discussed further in this report.

#### **3.1.7.2 Campbell's River Heron Colony ESA #081**

Campbell's River Heron Colony is located South of Campbell's Point, east of Route 310, near the ferry landing on Lamèque Island. The site consists of two (2) small heron colonies of 10 nests each.

Due to its location, the proposed project is not anticipated to impact this ESA and therefore is not discussed further in this report.

#### **3.1.7.3 Miscou Island Beaches and Lagoons IBA**

The beaches of Miscou Island, in 1991, contained 17 Piping Plovers (*Charadrius melodus*), representing 3.3% of the Atlantic Canada population (509 birds). In 1996, the Atlantic Canada Piping Plover population was estimated to be 422, of which 22 (5.2%) were recorded on the beaches of Miscou Island.

Over the last ten years, the main Piping Plover nesting areas on the Island have been Grande Plaine, Lac Frye and Wilson Point North. Nesting also occurs on the islands other beaches, and given the proximity of these beaches and the tendency for Piping Plovers to shift nesting areas depending on local conditions, all should be considered significant.

Relatively large numbers of shorebirds and waterfowl also use the beaches and lagoons on Miscou Island during the fall migration.

Due to the nature of the proposed project and its distance from Miscou beaches and lagoons, the proposed project is not anticipated to impact this IBA and therefore is not discussed further in this report.

The following areas were identified in proximity to the site, but outside of the 5 km radius:

- 3.1.7.4 Pigeon Hill Beach ESA# 094;
- 3.1.7.5 Pigeon Hill Sandspit/Fox Den's Beach ESA# 096;
- 3.1.7.6 Wilson's Point/Sandy Point ESA# 103;

Similar to the *Miscou Beaches and Lagoons IBA*, these ESAs house nesting pairs of piping plovers. Due to the nature of the proposed project and distance from these ESAs, the proposed project is not anticipated to impact these ESAs and therefore is not discussed further in this report.

### **3.1.8 ARCHAEOLOGICAL AND HERITAGE RESOURCES**

The existing Miscou Fish Products facility has been on site since 1988. Based on aerial photos obtained from the NB Department of Natural Resources, there has been a wharf at this site since 1939 (DNR air photo no. 1939-A6592-008, refer to Appendix C). Based on the past development of the site, and the nature of the proposed project, no archaeological and heritage resources are anticipated within the project footprint, and is therefore not discussed further in this report.

As with any project registered for an EIA in New Brunswick, during excavation of the site, should any archaeological resources be discovered, all work will cease and the Archaeological Services Unit of the NB Department of Tourism, Heritage and Culture will be contacted immediately.

### **3.1.9 LAND USE**

The subject property for the proposed site consists of a developed commercial/industrial site, and is zoned "Mixed" or M1 under the current rural plan for the area. The site is conveniently located on federal Crown land adjoined to the Miscou Wharf, so that fresh fish can be unloaded directly off fishing boats to the facility for processing.

Down-gradient and adjacent to the subject site is Miscou Wharf, a full-service wharf which contains berths for approximately 50 commercial and 10-15 recreational vessels. The wharf contains a refueling station, an ice shack, and other miscellaneous harbour facilities. South of the MFP facility and located on the southwestern side of the wharf, is the restaurant "La Terrasse Steve".

Upgradient of the subject site is a residential area, consisting of approximately fifteen (15) homes and cottages within a 500m radius (along Beaudin Street, Route 113, and Miscou Harbour Road).

The proposed project is not anticipated to impact or conflict with land uses in the area and therefore is not discussed further in this report.

### **3.1.10 GROUNDWATER**

Refer to the attached Comprehensive Hydrogeological Report for a detailed description of the groundwater resources in the Miscou Harbour area (Appendix D).

### **3.1.11 MIGRATORY BIRDS**

Environment Canada is responsible for implementing the Migratory Birds Convention Act (MBCA), which protects migratory birds, their eggs, nests, and their young through the Migratory Birds Regulations (MBR):

“Under Section 6 of the *Migratory Birds Regulations* (MBR), no person shall disturb, destroy or take a nest or egg of a migratory bird; or to be in possession of a live migratory bird, or its carcass, skin, nest or egg, except under authority of a permit. It is important to note that under the current MBR, no permits can be issued for the incidental take of migratory birds caused by development projects or other economic activities. Furthermore, Section 5.1 of the MBCA describes prohibitions related to deposit of substances harmful to migratory birds:

Migratory birds protected by the MBCA include all seabirds except cormorants and pelicans, all waterfowl, all shorebirds, and most landbirds (birds with principally terrestrial life cycles). Most of these birds are specifically named in the Environment Canada publication, *Birds Protected in Canada under the Migratory Birds Convention Act, Canadian Wildlife Service Occasional Paper No. 1.*

It is the responsibility of the proponent to ensure that activities comply with the MBCA and regulations.”

Due to the industrial/commercial nature of the site, and based on site observations, the proposed project is not anticipated to impact or conflict with migratory birds; therefore this will no longer be discussed in this report.

### **3.1.12 WILDLIFE**

During the site visit, no signs of wildlife were observed on site. The subject property is a developed commercial/industrial site with some areas of lawn/grass. No use of the site by wildlife is anticipated, with the exception of common rodents and insects within these grassed areas.

Due to the industrial/commercial nature of the site, and based on site observations, the proposed project is not anticipated to impact or conflict with wildlife; therefore wildlife impacts will no longer be discussed in this report.

### **3.1.13 SPECIES AT RISK**

Canada’s Species at Risk Act (SARA) is one of three major components in the Government of Canada Strategy for the Protection of Species at Risk. It is designed as a key tool for the conservation and protection of Canada’s biological diversity and fulfils an important commitment

under the United Nations Convention on Biological Diversity. New Brunswick also has a Species at Risk Act, which complements the federal act.

The purpose of SARA is to:

- A. Prevent wildlife species from becoming extinct or extirpated (lost from the wild in Canada);
- B. Help in the recovery of extirpated, endangered or threatened species; and
- C. Ensure that species of special concern do not become endangered or threatened.

The construction and operation of the project has the potential to impact birds, mammals and plant species of conservation concern found within the PDA.

A scan of available information was obtained from the Atlantic Canada Conservation Data Centre, which identified potential Species at Risk and protected areas within a 5km radius of the subject site. Refer to Table 1 for the definitions of Wildlife Rarity Rankings, Table 2 for the species identified by ACCDC, and Appendix C for the complete ACCDC report.

Table 1: Wildlife Rarity Ranking Definitions.

<b>Atlantic Canada Conservation Data Centre (ACCDC) S-Rank</b> <a href="http://www.accdc.com/en/rank-definitions.html">www.accdc.com/en/rank-definitions.html</a>	
<b>S-RANK DEFINITIONS</b>	
<b>SX</b>	<b>Presumed Extirpated:</b> Species or community is believed to be extirpated from the province. Not located despite intensive searches of historical sites and other appropriate habitat, and virtually no likelihood that it will be rediscovered.
<b>S1</b>	<b>Critically Imperiled</b> - Critically imperiled in the province because of extreme rarity (often 5 or fewer occurrences) or because of some factor(s) such as very steep declines making it especially vulnerable to extirpation from the state/province.
<b>S2</b>	<b>Imperiled</b> - Imperiled in the province because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the nation or state/province.
<b>S3</b>	<b>Vulnerable</b> - Vulnerable in the province due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation.
<b>S4</b>	<b>Apparently Secure</b> - Uncommon but not rare; some cause for long-term concern due to declines or other factors.
<b>S5</b>	<b>Secure</b> - Common, widespread, and abundant in the province.
<b>SNR</b>	<b>Unranked</b> - Nation or state/province conservation status not yet assessed.
<b>SU</b>	<b>Unrankable</b> - Currently unrankable due to lack of information or due to substantially conflicting information about status or trends.
<b>SNA</b>	<b>Not Applicable</b> - A conservation status rank is not applicable because the species is not a suitable target for conservation activities.
<b>S#S#</b>	<b>Range Rank</b> - A numeric range rank (e.g., S2S3) is used to indicate any range of uncertainty about the status of the species or community. Ranges cannot skip more than one rank (e.g., SU is used rather than S1S4).
<b>Not Provided</b>	Species is not known to occur in the province.
<b>BREEDING STATUS QUALIFIERS</b>	
<b>N</b>	<b>Nonbreeding</b> - Conservation status refers to the non-breeding population of the species in the province.
<b>B</b>	<b>Breeding</b> - Conservation status refers to the breeding population of the species in the province.
<b>M</b>	<b>Migrant</b> - Migrant species occurring regularly on migration at particular staging areas or concentration spots where the species might warrant conservation attention. Conservation status refers to the aggregating transient population of the species in the province.
<b>?</b>	<b>Inexact or uncertain:</b> Denotes inexact or uncertain numeric rank.
<b>Species at Risk Act (SARA) (Canada and New Brunswick)</b>	
<b>Extirpated</b>	A wildlife species that no longer exists in the wild in Canada, but exists elsewhere in the wild.
<b>Endangered</b>	A wildlife species facing imminent extirpation or extinction.



<b>(E)</b>	
<b>Threatened (T)</b>	A wildlife species that is likely to become endangered if nothing is done to reverse the factors leading to its extirpation or extinction.
<b>Special Concern (SC)</b>	A wildlife species that may become threatened or endangered because of a combination of biological characteristics and identified threats.
<b>NBDNR General Status of Wildlife</b>	
<i>At risk</i>	Species for which a formal assessment has been completed, and determined to be at risk of extirpation or extinction. To be described by this category, a species must be either listed as endangered or threatened by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC), or the New Brunswick equivalent.
<i>May be at risk</i>	Species or populations that may be at risk of extirpation or extinction, and are therefore candidates for a detailed risk assessment by COSEWIC or the New Brunswick equivalent.
<i>Sensitive</i>	Species which are not believed to be at risk of extirpation or extinction, but which may require special attention or protection to prevent them from becoming at risk.
<i>Secure</i>	Species that are not believed to be at risk, may be at risk, or sensitive. These are generally species that are widespread and/or abundant. Although some secure species may be declining, their level of decline is not felt to be a threat to their status in the province.
<b>COSEWIC</b>	
<b>Extinct</b>	A wildlife species that no longer exists.
<b>Extirpated</b>	A wildlife species that no longer exists in the wild in Canada, but exists elsewhere.
<b>Endangered</b>	A wildlife species facing imminent extirpation or extinction.
<b>Threatened</b>	A wildlife species that is likely to become an endangered if nothing is done to reverse the factors leading to its extirpation or extinction.
<b>Special Concern</b>	A wildlife species that may become threatened or endangered because of a combination of biological characteristics and identified threats.
<b>Not At Risk (NAR)</b>	A wildlife species that has been evaluated and found to be not at risk of extinction given the current circumstances.
<b>Data Deficient (DD)</b>	A category that applies when the available information is insufficient (a) to resolve a wildlife species' eligibility for assessment or (b) to permit an assessment of the wildlife species' risk of extinction.

Table 2 outlines the rare or endangered wildlife species ACCDC identified occurring within a 5km radius of the proposed project site.

Table 2: ACCDC scan results.

*	Scientific Name	Common Name	COSEWIC	SARA	Prov. Legal Protection	Provincial Rarity Rank	Provincial GS Rank	No. Recs.	Dist. (km)
p	<i>Puccinellia ambigua</i>	Dwarf Alkali Grass				S1	5 Undetermined	1	3.1±0.0
P	<i>Sanguisorba canadensis</i>	Canada Burnet				S2	4 Secure	4	1.9±1.0
P	<i>Carex salina</i>	Saltmarsh Sedge				S2	3 Sensitive	3	3.1±0.0
p	<i>Blasmus rufus</i>	Red Bulrush				S2	3 Sensitive	1	3.1±0.0
p	<i>Puccinellia laurentiana</i>	Nootka Alkali Grass				S2	3 Sensitive	1	3.3±0.0
P	<i>Puccinellia phryganodes</i>	Creeping Alkali Grass				S2	3 Sensitive	2	3.3±0.0
P	<i>Stellaria humifusa</i>	Saltmarsh Starwort				S3	4 Secure	2	3.1±0.0
P	<i>Rubus chamaemorus</i>	Cloudberry				S3	4 Secure	2	4.3±0.0
P	<i>Geocaulon lividum</i>	Northern Comandra				S3	4 Secure	4	0.7±0.0

*	Scientific Name	Common Name	COSEWIC	SARA	Prov. Legal Protection	Provincial Rarity Rank	Provincial GS Rank	No. Recs.	Dist. (km)
P	<i>Triglochin gaspensis</i>	Gaspé Arrowgrass				S3	4 Secure	1	3.1±0.0
P	<i>Rumex maritimus</i>	Sea-Side Dock				S3S4	4 Secure	1	0.4±0.0
p	<i>Polygonum raii</i>	Sharp-fruited Knotweed				SH	0.1 Extirpated	1	0.1±1.0
A	<i>Charadrius melodus melodus</i>	Piping Plover melodus ssp	Endangered	Endangered	Endangered	S2B	1 At Risk	24	0.4±0.0
A	<i>Calidris canutus rufa</i>	Red Knot rufa ssp	Endangered	Threatened	Endangered	S3M	1 At Risk	2	1.7±0.0
A	<i>Hirundo rustica</i>	Barn Swallow	Threatened		Threatened	S3B	3 Sensitive	1	4.9±2.0
A	<i>Riparia riparia</i>	Bank Swallow	Threatened			S3B	3 Sensitive	3	3.2±7.0
A	<i>Contopus cooperi</i>	Olive-Sided Flycatcher	Threatened	Threatened	Threatened	S3S4B	1 At Risk	3	3.2±7.0
A	<i>Dolichonyx oryzivorus</i>	Bobolink	Threatened		Threatened	S3S4B	3 Sensitive	1	3.2±7.0

*	Scientific Name	Common Name	COSEWIC	SARA	Prov. Legal Protection	Provincial Rarity Rank	Provincial GS Rank	No. Recs.	Dist. (km)
A	<i>Contopus virens</i>	Eastern Wood-Pewee	Special Concern		Special Concern	S4B	4 Secure	1	3.2±7.0
A	<i>Aegolius funereus</i>	Boreal Owl	Not at Risk			S1S2B	2 May be at Risk	1	3.2±7.0
A	<i>Sterna hirundo</i>	Common Tern	Not at Risk			S3B	3 Sensitive	5	3.2±0.0
A	<i>Phalaropus tricolor</i>	Wilson's Phalarope				S1B	3 Sensitive	1	4.3±1.0
A	<i>Hyticorax nycticorax</i>	Black-crowned Night-heron				S1S2B	3 Sensitive	5	0.5±0.0
A	<i>Eremophila alpestris</i>	Horned Lark				S2B	2 May be at Risk	1	3.6±7.0
A	<i>Tringa solitaria</i>	Solitary Sandpiper				S2B, S5M	4 Secure	1	1.7±0.0
A	<i>Asio otus</i>	Long-eared Owl				S2S3	5 Underdetermined	1	3.2±7.0
A	<i>Tringa semipalmata</i>	Willet				S2S3B	3 Sensitive	2	3.2±7.0

*	Scientific Name	Common Name	COSEWIC	SARA	Prov. Legal Protection	Provincial Rarity Rank	Provincial GS Rank	No. Recs.	Dist. (km)
A	<i>Anas acuta</i>	Northern Pintail				S3B	3 Sensitive	3	3.2±7.0
A	<i>Anas Americana</i>	American Wigeon				S3B	4 Secure	1	3.2±7.0
A	<i>Charadrius vociferous</i>	Killdeer				S3B	3 Sensitive	1	1.7±0.0
A	<i>Mimus polyglottos</i>	Northern Mockingbird				S3B	3 Sensitive	1	4.3±1.0
A	<i>Mergus serrator</i>	Red-breasted Merganser				S3B, S4S5N	4 Secure	4	3.2±7.0
A	<i>Pluvialis dominica</i>	American Golden-Plover				S3M	3 Sensitive	2	1.7±0.0
A	<i>Melanitta nigra</i>	Black Scoter				S3M, S2S3N	3 Sensitive	1	2.9±5.0
A	<i>Tyrannus tyrannus</i>	Eastern Kingbird				S3S4B	3 Sensitive	1	3.2±7.0
A	<i>Petrochelidon pyrrhonota</i>	Cliff Swallow				S3S4B	3 Sensitive	1	3.2±7.0
A	<i>Odobenus rosmarus rosmarus</i>	Atlantic Walrus	Special Concern		Extirpated	SX		1	2.7±1.0

*	Scientific Name	Common Name	COSEWIC	SARA	Prov. Legal Protection	Provincial Rarity Rank	Provincial GS Rank	No. Recs.	Dist. (km)
I	<i>Cicindela hirticollis</i>	Hairy-necked Tiger Beetle				S2S3	4 Secure	1	3.0±1.0
I	<i>Lycaena dospassosi</i>	Salt Marsh Copper				S3	4 Secure	3	0.7±0.0
<b>LOCATION SENSITIVE SPECIES Known Within 5km of Subject Site</b>									
*	Scientific Name	Common Name	COSEWIC	SARA	Prov. Legal Protection				
A	<i>Falco peregrinus pop. 1</i>	Peregrine Falcon – anatum/tundrius pop.		Special Concern	Endangered				

Based on a review of the habitat requirements of the species identified in the ACCDC scan, and due to the commercial/industrial nature of the site and the lack of habitat within the project footprint, the project is not anticipated to impact species at risk and is therefore no longer discussed in this report.

### 3.1.14 WASTE MANAGEMENT

Development and assessment of the facility's water supply is not anticipated to produce waste. Fresh water pumped from the wells during the 48-hour pump test was discharged directly to Miscou Bay at the location of the facility's waste discharge, east of the wharf and as approved by DELG.

Construction of the expansion will produce typical construction waste. Construction waste will be managed by the certified contractor on site, and disposed of at an approved waste disposal facility.

No hazardous waste is anticipated to be generated or stored on site. Construction waste generated by the project is not anticipated to cause adverse environmental effects; therefore it is no longer discussed in this report.

## **4. POTENTIAL ENVIRONMENTAL IMPACTS**

Based on the project description and the existing environment at the proposed location, the following potential environmental impacts were identified and scoped in the EIA:

- a) Groundwater quality;
- b) Marine Fish Habitat;
- c) Labour and economy.

The following sections outline the potential impacts to each VEC from the construction and operation of the proposed project. Proposed mitigation is outlined in Section 5.

### **4.1 GROUNDWATER QUALITY**

The groundwater quality of an aquifer can be negatively impacted by over-pumping a water supply; saltwater intrusion in particular can occur when water supplies are located in close proximity to a marine environment.

Over-pumping can also result in impacting water quantities of other, nearby water supplies.

Refer to section 5.1 for mitigation measures relating to groundwater quality.

### **4.2 MARINE FISH HABITAT**

The MFP facility currently operates as per the NB DELG Approval to Operate no. I-9161, which permits the facility to discharge fish processing wastewater into Miscou Bay after physically removing the solids. This wastewater is discharged via a pipe which extends approximately 110m into the bay, beyond the inter-tidal zone.

The proposed facility expansion and water supply development will not increase the discharge volumes during herring roe processing season; however, it will require the discharge of waste water from the spring/summer lobster and snow crab processing season. As lobster/snow crab processing requires less water overall, it is estimated that this represents an annual increase of up to approximately 10% total effluent volume.

Fish plants are permitted to discharge wastewater subject to Approval to Operate conditions issued by the DELG. From a federal perspective, no Environmental Effects Monitoring is required for fish plant effluents. Nevertheless, Biological Oxygen Demand (BOD), Total Suspended Solids (TSS) and nutrient-loading can become environmental concerns at the outfall locations if the end-of-pipe is not properly located and flushing does not occur. This can result in localized changes to flora/fauna, sediment appearance, and bacterial growth.

Based on discussions with DELG, no past odour complaints or other environmental issues have been observed from the MFP discharge location (Gaetan Landry, P.Eng., personal comm.).

Refer to section 5.2 for mitigation measures relating to marine fish habitat.



### **4.3 LABOUR AND ECONOMY**

At present, Miscou Fish Products Inc. employs between 30 and 40 full-time, seasonal employees for the duration of the herring roe processing season (August through October). The proposed construction of the lobster and snow crab expansion will provide additional seasonal employment during the spring/summer fishing season for up to 50 employees. This will have a net positive economic impact on the Miscou area.

MFP will hire local, certified and insured contractors for the construction of the addition and installation of the processing equipment. This work is estimated to provide income for an additional 12 – 15 construction / trade workers.

Refer to section 5.3 for mitigation measures relating to labour and economy.

## 5. MITIGATION OF ENVIRONMENTAL IMPACTS

### 5.1 GROUNDWATER QUALITY

#### Existing Conditions

At present, Miscou Fish Products Inc. has three (3) freshwater water wells on site, which supply their facility with clean process water. At present, no limits have been imposed on the pumping rates of this water supply (either separately or combined).

#### Description of Potential Effect

Over-pumping of the freshwater water wells could result in negative impacts to water quality of the aquifer (saltwater intrusion) or to quantities of other, nearby water supplies.

#### Description of Recommended Mitigation

Miscou Fish Products Inc. commissioned a comprehensive hydrogeological investigation for the proposed project, consisting of a 3-step Step Test and 48-hour Pump Test. The purpose of the investigation was to accurately determine the sustainable yield of the water supply, and to determine pumping rates which will preserve the quality of the aquifer while avoiding impacts to nearby, potentially effected water supplies.

Additionally, mechanical measures may be implemented on the water supply system to ensure that pumping rates are maintained within proper parameters, as per the results of the pump test and the Conditions of the Certificate of Determination.

For a more detailed description of the results of the pump test, please refer to the attached Comprehensive Hydrogeological Assessment Report (Appendix D).

### 5.2 MARINE FISH HABITAT

#### Existing Conditions:

At present, MFP possesses an Approval to Operate which permits the discharge of fish processing wastewater into Miscou Bay. DELG is not aware of any complaints related to the wastewater discharge. No other fish processing plants currently discharge wastewater into Miscou Bay, and no sensitive marine mammal species have been identified within the Miscou Bay area.

#### Project – VEC Interactions, Potential Environmental Effects and Mitigation Measures:

Section 35(1) of the Fisheries Act states: *No person shall carry on any work, undertaking or activity that results in serious harm to fish that are part of a commercial, recreational or Aboriginal fishery, or to fish that support such a fishery.*

#### Description of Potential Effect 1:

Fish processing wastewater can create localized, adverse environmental impacts if the end-of-pipe is not properly located and regular flushing of the mixing zone does not occur. These can

include localized sediment deposition, floral/faunal changes, nutrient loading and bacterial growth.

Description of Recommended Mitigation 1:

1. MFP will maintain its waste filtration system in good working order;
2. MFP will continue to adhere to the criteria as set forth in the Conditions of DELG Approval to Operate I-9161;
3. MFP will minimize, to the extent practical, the amount of water used in processing at the facility, thereby minimizing waste water effluent volumes;
4. The discharge end-of-pipe location is approximately 110m into Miscou Bay, beyond the intertidal zone, to maximize flushing of the mixing zone, and
5. MFP staff will visually monitor the end-of-pipe location during the placement and removal of the pipe for visual cues that may signify changes in the marine environment – primarily, the colour of sediment at the discharge location and presence of polychete worms/worm holes.

### **5.3 LABOUR AND ECONOMY**

The proposed project is anticipated to have a net positive effect on the Miscou area by providing employment to approximate 40 – 50 staff, therefore no mitigation is required.

### **5.4 MITIGATION SUMMARY**

Refer to Table 3 for a summary of Valued Environmental Components, mitigation measures and significance.

Significance of residual impacts rated as follows:

0=None, 1=Not Likely/ Not Significant, 2=Likely/Significant, 3=Unknown, + =Positive,  
- =Negative

Table 3: Summary of mitigation measures and residual effects.

Valued Ecosystem/ Social Component (VEC/VSC)	Description of Potential Project Interaction with VEC/VSC	Mitigation	Residual Effects		Further Study or Follow-up
			Likelihood	Significance	
Groundwater Quality	Over-pumping may result in negative impacts to the aquifer through saltwater intrusion;  Over-pumping may impact water quantities in nearby domestic water supplies.	1-Comprehensive Hydrogeological Assessment 2-Max. pumping limits on each well 3-Addition of flow metres or automatic shutoffs as per the requirements of the NB DELG Certificate of Determination.	1	1	0
Marine Fish Habitat	Discharge of fish plant effluent may negatively impact the water quality at the end-of-pipe.	1-MFP will maintain its filtration system in good working order; 2-End-of-pipe is extended 110m into the Miscou Channel for max. flushing; 3-MFP will continue to operate within the criteria as set forth in the Conditions of DELG Approval to Operate I-9161; 4-MFP will minimize, to the extent practical, the amount of water used in processing at the facility, thereby minimizing waste water effluent volumes, and 5-MFP staff will visually monitor the end-of-pipe location during the placement and removal of the pipe for visual cues that may signify changes in the marine environment – primarily, the colour of sediment at the discharge location and presence of polychete worms/worm holes.	1	1	0
Labour & Economy	The proposed project will create positive economic impacts in the Miscou area by creating permanent employment.	No mitigation required.	+1	+1	0

## 6. CUMULATIVE EFFECTS

Cumulative effects are “changes to the environment that are caused by an action in combination with other past, present and future human actions”. Cumulative effects can appear to be minor effects when assessed individually, but when examined within a larger spatial context, “can pose a serious threat to the environment and result in the degradation of important resources”.

In general, the process to analyze cumulative effects of a project or process includes the following steps:

1. Identify the effects, which may be (or become) regional issues of concern;
2. Determine an appropriate spatial and temporal assessment scale;
3. Identify other actions that may create effects, which overlap the regional issue of concern, and
4. Evaluate the significance of the cumulative effects at the spatial and temporal scale chosen.

The potential cumulative effects of the proposed project were examined at the local (end-of-pipe) and regional (Miscou Bay) scales for cumulative marine habitat/water quality impacts. Negative impacts from fish plant effluent discharges, if the areas (local and regional) are not flushed properly, can create localized sediment deposition, floral/faunal changes, nutrient loading and bacterial growth. This can be signified by increased algae growth, sediment colour changes, and pervasive odours.

Based on personal communication with the production quality manager of the facility, conditions at end-of-pipe are adequate for proper flushing of the mixing zone. The current in Miscou Channel is considered strong, particularly during and after storm events and times of high winds, which occur frequently.

At present, there are no other fish processing plants operating within Miscou Bay. To date, no odour complaints have been received in relation to the water quality near Miscou Harbour or in Miscou Bay from the current or past operations (Gaetan Landry, DELG, pers. comm.).

Based on the mitigation measures noted in section 5.2 above, maintaining the current operating discharge volumes during herring roe season, the reduced volume of effluent in the spring/summer lobster/snow crab season, the flushing conditions at the end-of-pipe, and the fact that there are no other large-scale fish plants operating in Miscou Bay, cumulative effects of this project are considered *not significant*.

## **7. PUBLIC INVOLVEMENT PROGRAM**

As per the DELG publication *A Guide to Environmental Impact Assessment in New Brunswick*, “Open and transparent public involvement is required for all registered projects. In order to fulfill the requirements of Section 6(1) of the EIA Regulation, the proponent must demonstrate that the affected public and other stakeholders have been given the opportunity to become involved in reviewing the project, and must indicate how the proponent has considered or addressed any resultant questions and concerns. The opportunity for public involvement benefits citizens most when they take an active role at an early stage in the process, and clearly articulate their specific questions or concerns”.

In preparation for the EIA process, Miscou Fish Products Inc. submitted a proposed Stakeholder Involvement Program strategy to the DELG for approval. Miscou Fish Products Inc. then initiated the program, as per Schedule C of the *Guide*.

No opposition to the proposed project was identified during the stakeholder involvement program (Roy Consultants, 2016).

## **8. APPROVAL OF THE UNDERTAKING**

### **8.1 PROVINCIAL**

The project requires a Certificate of Determination as per Section 5(1) of the *Environmental Impact Assessment Regulation - Clean Environment Act*, as well as an Approval to Operate – *Water Quality Regulation*.

### **8.2 FEDERAL**

The project requires approval from the Regulatory Authority under Section 67 of the Canadian Environmental Assessment Act, 2012 (CEAA 2012). As such, a copy of this report has been provided to DFO-SCH in Tracadie-Sheila, NB.

#### **8.2.1 DETERMINATION OF PROJECT ELIGIBILITY**

To determine if the project meets the basic criteria triggering a Section 67 assessment requirement under CEAA 2012, the following questions must be addressed:

- Is the activity a *designated project* as defined by CEAA 2012 and the *Designated Projects Regulations*?
- Is the proposed activity a “project” as defined by CEAA 2012?
- Will the authority carry out or exercise a power, or perform a duty or function in relation to the project?
- Is the project exempted under CEAA 2012 Section 70?

The answers to the above questions are presented in the following sections.

#### **8.2.2 DESIGNATED PROJECT DETERMINATION**

Only designated projects must undergo an *environmental assessment* under CEAA 2012 and are projects considered to have the greatest potential to cause significant adverse environmental effects. These projects are listed in the *Regulations Designating Physical Activities*. Based on a review of the regulations and specifically the Schedule of Physical Activities, the proposed project – construction of a fish plant expansion and water supply development – is not considered a designated project.

#### **8.2.3 PROJECT DETERMINATION**

Section 66 of CEAA 2012 defines a *project* as a physical activity that is carried out on federal lands or outside of Canada and is not a designated project.

In order to be considered a project, the proposed activity must constitute a physical activity in relation to a physical work located on federal lands.

A physical activity consists of carrying out tasks or actions involved with construction, modification, operation and decommissioning (i.e. involving a degree of physical effort). A physical work includes structures that have been built by humans and that have a defined area and fixed locality (i.e. has a local permanence). Federal lands as defined by section 2(1) of CEAA 2012 include:

- lands that belong to Her Majesty in right of Canada, or that Her Majesty in right of Canada has the power to dispose of, and all waters on and airspace above those lands, other than lands under the administration and control of the Commissioner of Yukon, the Northwest Territories or Nunavut;
- the following lands and areas:
  - (i) the internal waters of Canada, in any area of the sea not within a province,
  - (ii) the territorial sea of Canada, in any area of the sea not within a province,
  - (iii) the exclusive economic zone of Canada, and
  - (iv) the continental shelf of Canada; and
- reserves, surrendered lands and any other lands that are set apart for the use and benefit of a band and that are subject to the Indian Act, and all waters on and airspace above those reserves or lands.

The proposed development meets the definition of a *project* under CEAA 2012 Section 66.

#### **8.2.4 FEDERAL AUTHORITY**

The Authority for the project is the Department of Fisheries and Oceans – Small Craft Harbours (DFO-SCH). DFO-SCH grants a license or interest in the land (in this case, a lease agreement) in order to enable the project to proceed: in cases where a permit, approval or authorization is required for a project to proceed, the issuing Authority has a responsibility to make a determination under section 67. Therefore, a responsibility under section 67 to determine the significance of adverse environmental effects is triggered.

#### **8.2.5 PROJECT EXEMPTION**

An Authority will not have to determine whether a project is likely to cause significant adverse environmental effects before the project can proceed on federal lands if it meets specific circumstances identified under section 70 of CEAA 2012. These include:

- Instances where there are matters of national security in relation to a project;
- When a project is to be carried out in response to a national emergency for which special emergency measures are being taken under the Emergencies Act;
- A project that is carried out in response to an emergency, and carrying out of the project without delay is in the interest of preventing damage to property or the environment or is in the interest of public health and safety.



The proposed project is not exempted under section 70 of CEAA 2012. The proposed activity meets all the criteria under CEAA 2012 in order to require a determination of the likelihood of significant adverse environmental effects.

## 8.2.6 PROJECT CLASSIFICATION

An Authority must classify projects as either basic or non-basic, by predicting the project's level of risk to cause adverse environmental effects. Basic projects are well understood and known to have insignificant adverse environmental effects or considered unlikely to have residual adverse environmental effects associated with them after mitigation measures in effect. Non-basic projects are projects for which there is uncertainty around the potential for environmental effects and where mitigation measures are not known to be effective and established. The proposed pipeline is classified as a basic project. Refer to Appendix B for the completed CEAA documentation including the *Project Classification Checklist (Step 2a)* and the *MMF: Basic Project Mitigation Measures Form (Step 3a)*.

## 9. FUNDING

This project is being privately funded.

## 10. REFERENCES

- Atlantic Canada Conservation Data Centre. *Data Report 5490: Miscou Wharf, NB*. Prepared by James Churchill, Data Manager. 12 January 2016.
- Transport Canada. *Replacement Class Screening Report for Water Column Oyster Aquaculture in New Brunswick*. Report for the Canadian Environmental Assessment Agency. Moncton, NB. 2007. 124p.
- Theriault, M.H., Courtney, S., Munkittrick, K., and Chiasson, A. *The Effect of Seafood Processing Plant Effluent on Sentinel Fish Species in Coastal Waters of the Southern Gulf of St. Lawrence, New Brunswick*. Water Quality Resources Journal Canada, Vol. 42, no. 3, Pp. 172-183. 2007.
- Department of Fisheries and Oceans. *Fish Plant Effluents: A Workshop on Sustainability*. Canadian Industry Report of Fisheries and Aquatic Sciences 271. Ed: Murray, C.J., Chadwick, M., Courtenay, S. and Mallet, P. 2003.
- Canada. Canadian Environmental Assessment Act, 2012. S.C. 2012, c.19, s. 52. Assented to 2012-06-29.
- New Brunswick. Regulation 87-83. *Environmental Impact Assessment Regulation – Clean Environment Act*. O.C. 87-558. Filed June 30, 1987.
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- New Brunswick. *Water Supply Source Assessment Guidelines*. Department of Environment and Local Government. March, 2014.
- Roy Consultants. *Draft Stakeholder Involvement Summary Report. Miscou Fish Products Inc.* February, 2016.

## **APPENDICES**

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- Appendix A: Site Photos
- Appendix B: ACCDC Information
- Appendix C: Approval to Operate
- Appendix D: CEAA 2012 Project Checklist
- Appendix E: Comprehensive Hydrogeological Report

Appendix A: Site Photos



Photo no. 1: Miscou Bay – looking south towards discharge location.



Photo no. 2: Current fish (herring roe) processing lines.



Photo no. 3: Construction footprint east of existing structure.



Photo no. 4: Miscou Harbour looking north from Miscou Harbour Bridge/Route 113.



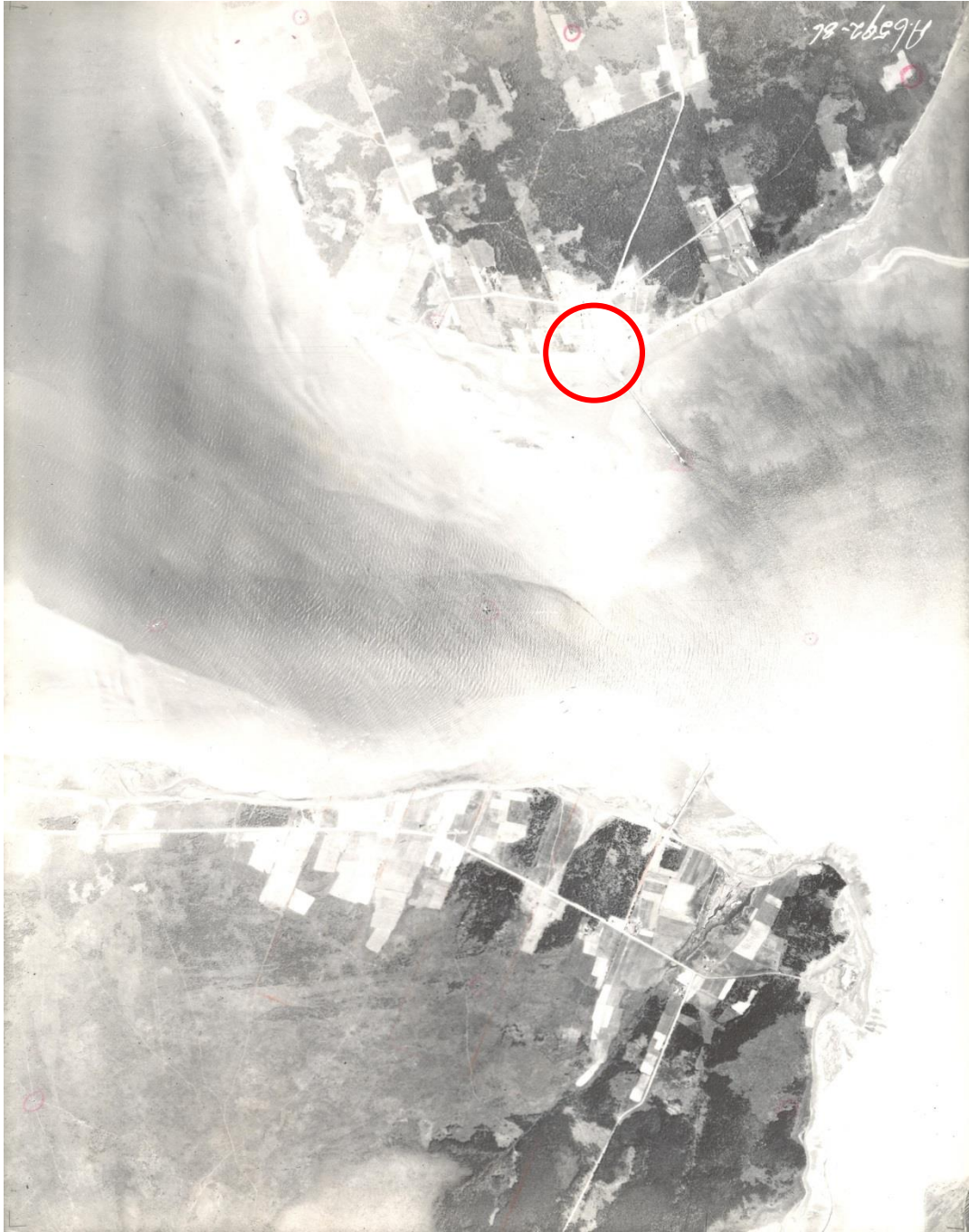


Photo no. 5. 1939 DNR aerial photo (project site circled in red).



Photo no. 6. 1963 DNR aerial photo (project site circled in red).





Photo no. 7. 1985 DNR aerial photo (project site circled in red).



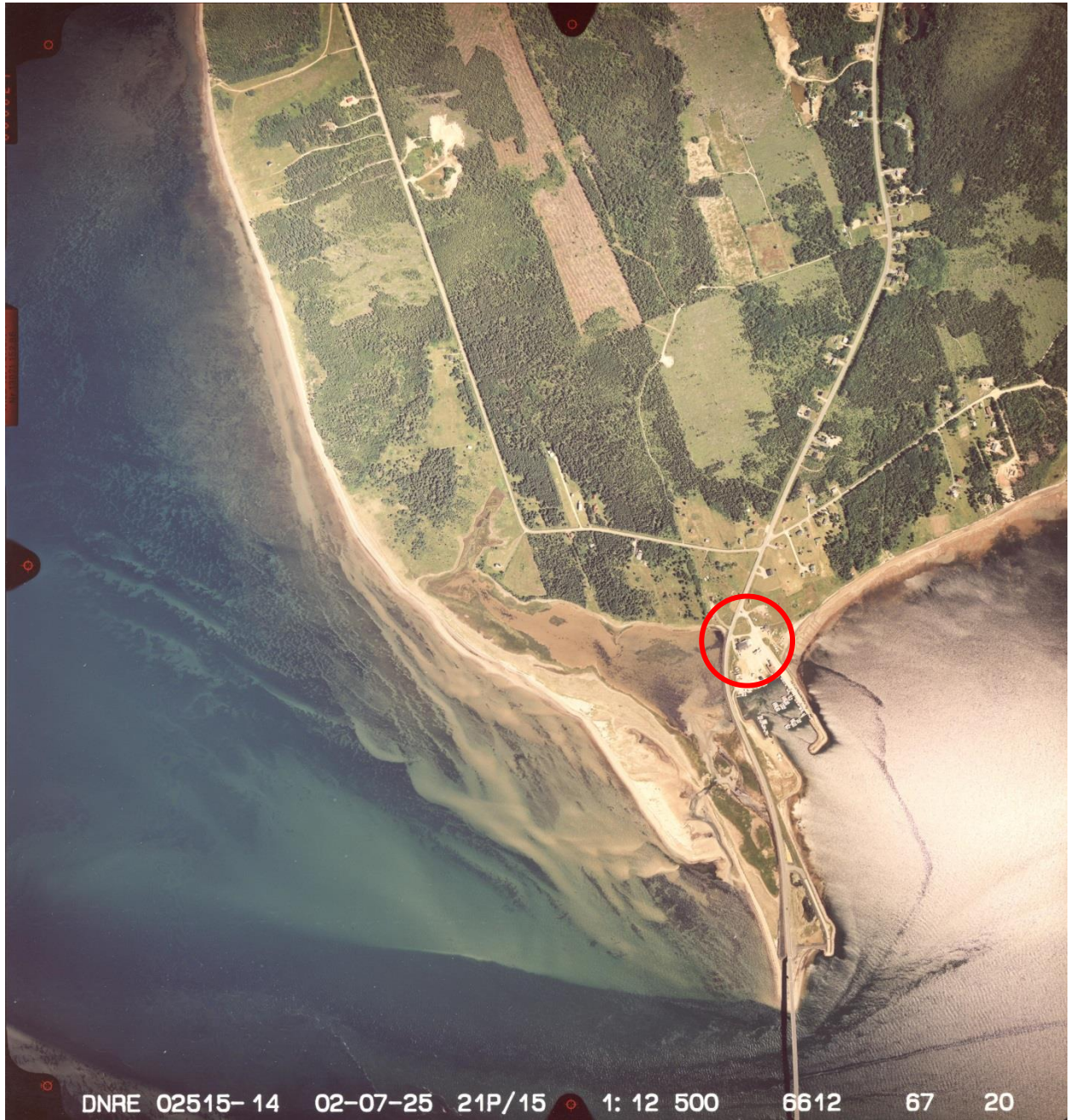


Photo no. 8. 2002 DNR aerial photo (project site circled in red).





Photo no. 9. 2012 DNR aerial photo (project site circled in red).

Appendix B: ACCDC Information



## DATA REPORT 5490: Miscou Wharf, NB

Prepared 12 January 2016  
by J. Churchill, Data Manager

### CONTENTS OF REPORT

#### 1.0 Preface

- 1.1 Data List
- 1.2 Restrictions
- 1.3 Additional Information
- Map 1: Buffered Study Area

#### 2.0 Rare and Endangered Species

- 2.1 Flora
- 2.2 Fauna
- Map 2: Flora and Fauna

#### 3.0 Special Areas

- 3.1 Managed Areas
- 3.2 Significant Areas
- Map 3: Special Areas

#### 4.0 Rare Species Lists

- 4.1 Fauna
- 4.2 Flora
- 4.3 Location Sensitive Species
- 4.4 Source Bibliography

#### 5.0 Rare Species within 100 km

- 5.1 Source Bibliography



Map 1. A 100 km buffer around the study area

## 1.0 PREFACE

The Atlantic Canada Conservation Data Centre (ACCDC) 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 ACCDC 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 ACCDC is supported by 6 federal agencies and 4 provincial governments, as well as through outside grants and data processing fees. URL: [www.ACCDC.com](http://www.ACCDC.com).

Upon request and for a fee, the ACCDC 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 ACCDC 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
MiscouWharfNB_5490ob.xls	All Rare and legally protected <i>Flora and Fauna</i> within 5 km of your study area
MiscouWharfNB_5490ob100km.xls	A list of Rare and legally protected <i>Flora and Fauna</i> within 100 km of your study area
MiscouWharfNB_5490sa.xls	All <i>Significant Natural Areas</i> in your study area
MiscouWharfNB_5490bc.xls	Rare and common <i>Colonial Birds</i> in your study area

## 1.2 RESTRICTIONS

The ACCDC 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 ACCDC 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 ACCDC 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) ACCDC 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) ACCDC 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 ACCDC data response.

## 1.3 ADDITIONAL INFORMATION

The attached file DataDictionary 2.1.pdf provides metadata for the data provided.

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

### Plants, Lichens, Ranking Methods, All other Inquiries

Sean Blaney, Senior Scientist, Executive Director

Tel: (506) 364-2658

[sblaney@mta.ca](mailto:sblaney@mta.ca)

### Animals (Fauna)

John Klymko, Zoologist

Tel: (506) 364-2660

[jklymko@mta.ca](mailto:jklymko@mta.ca)

### Plant Communities

Sarah Robinson, Community Ecologist

Tel: (506) 364-2664

[srobinson@mta.ca](mailto:srobinson@mta.ca)

### Data Management, GIS

James Churchill, Data Manager

Tel: (902) 679-6146

[jlchurchill@mta.ca](mailto:jlchurchill@mta.ca)

### Billing

Jean Breau

Tel: (506) 364-2657

[jrbreau@mta.ca](mailto:jrbreau@mta.ca)

Questions on the biology of Federal Species at Risk can be directed to ACCDC: (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 Stewart Lusk, Natural Resources: (506) 453-7110.

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 Sherman Boates, NSDNR: (902) 679-6146. To determine if location-sensitive species (section 4.3) occur near your study site please contact a NSDNR Regional Biologist:

**Western:** Duncan Bayne

(902) 648-3536

[baynedz@gov.ns.ca](mailto:baynedz@gov.ns.ca)

**Western:** Donald Sam

(902) 634-7525

[samdx@gov.ns.ca](mailto:samdx@gov.ns.ca)

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**Eastern:** Terry Power

(902) 563-3370

[powertd@gov.ns.ca](mailto:powertd@gov.ns.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

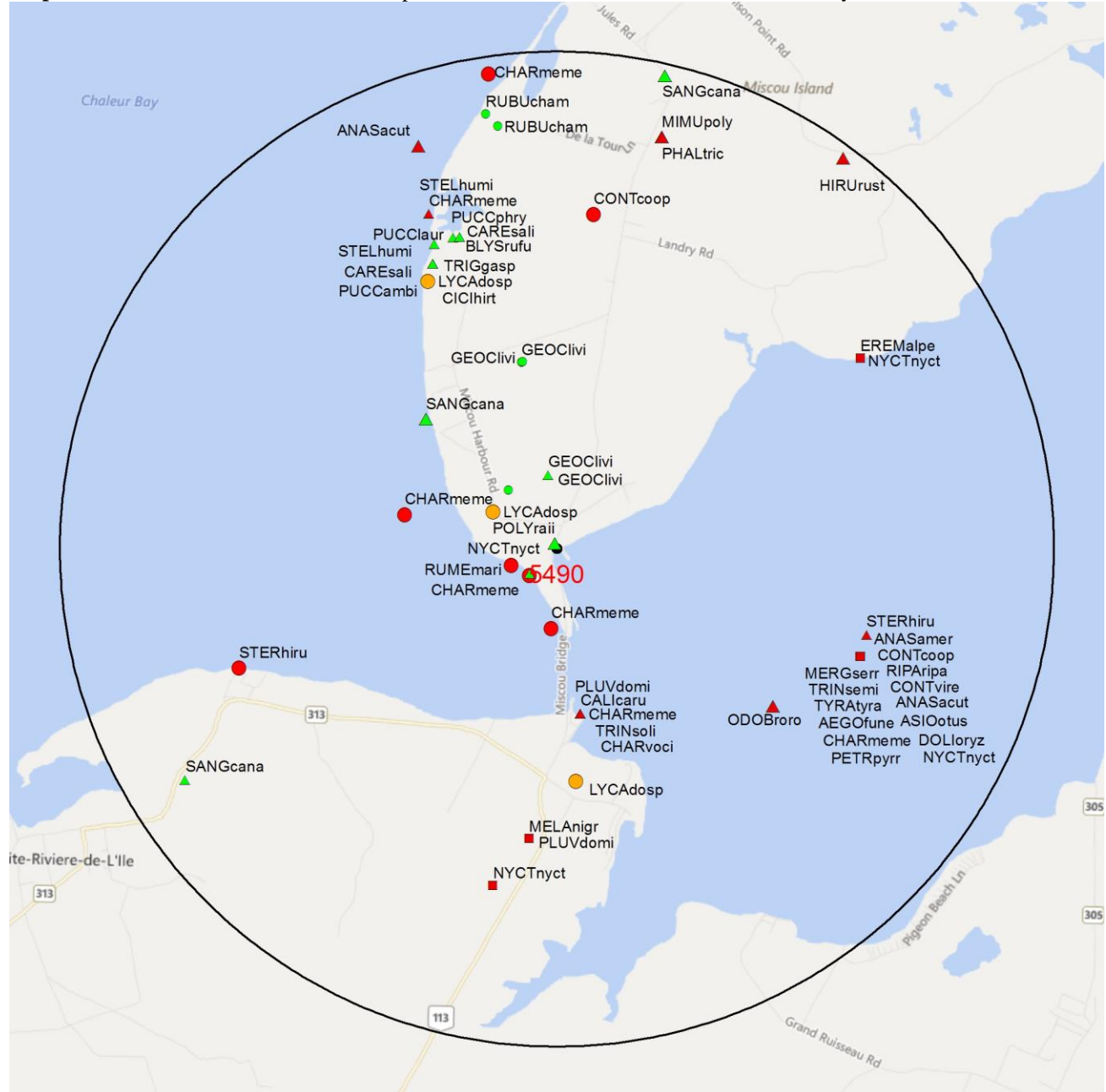
### 2.1 FLORA

A 5 km buffer around the study area contains 23 records of 12 vascular, no records of nonvascular flora (Map 2 and attached: \*ob.xls).

### 2.2 FAUNA

A 5 km buffer around the study area contains 68 records of 25 vertebrate, 4 records of 2 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 5 km of the study area.



#### RESOLUTION

- 4.7 within 50s of kilometers
- 4.0 within 10s of kilometers
- 3.7 within 5s of kilometers
- △ 3.0 within kilometers
- △ 2.7 within 500s of meters
- ◇ 2.0 within 100s of meters
- ◇ 1.7 within 10s of meters

#### HIGHER TAXON

- vertebrate fauna
- invertebrate fauna
- vascular flora
- nonvascular flora

### 3.0 SPECIAL AREAS

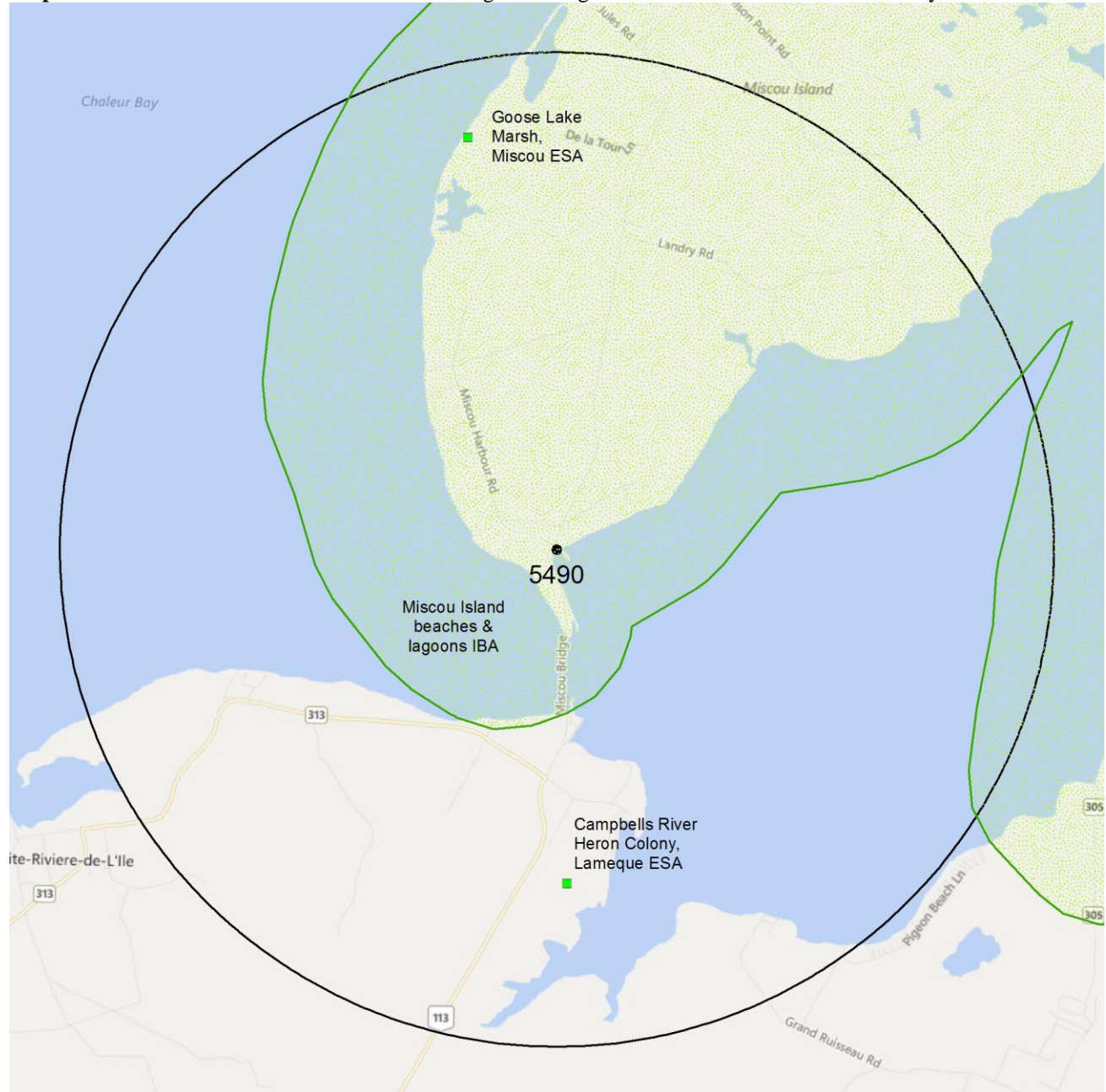
#### 3.1 MANAGED AREAS

The GIS scan identified no managed areas in the vicinity of the study area (Map 3)

#### 3.2 SIGNIFICANT AREAS

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

**Map 3:** Boundaries and/or locations of known Managed and Significant Areas within 5 km of the study area.



#### MANAGED AREAS SIGNIFIGANT AREAS

-  boundary
-  boundary
-  approximate
-  approximate
-  point location

#### NATIONAL DEFENSE FIRST NATIONS

-  boundary
-  boundary
-  approximate
-  approximate
-  point location

## 4.0 RARE SPECIES LISTS

Rare and/or endangered taxa (excluding “location-sensitive” species, section 4.3) within the 5 km-buffered 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 ( $\pm$  the precision, in km, of the record). [P] = vascular plant, [N] = nonvascular plant, [A] = vertebrate animal, [I] = invertebrate animal, [C] = community.

### 4.1 FLORA

	Scientific Name	Common Name	COSEWIC	SARA	Prov Legal Prot	Prov Rarity Rank	Prov GS Rank	# recs	Distance (km)
P	<i>Puccinellia ambigua</i>	Dwarf Alkali Grass				S1	5 Undetermined	1	3.1 $\pm$ 0.0
P	<i>Sanguisorba canadensis</i>	Canada Burnet				S2	4 Secure	4	1.9 $\pm$ 1.0
P	<i>Carex salina</i>	Saltmarsh Sedge				S2	3 Sensitive	3	3.1 $\pm$ 0.0
P	<i>Blysmus rufus</i>	Red Bulrush				S2	3 Sensitive	1	3.1 $\pm$ 0.0
P	<i>Puccinellia laurentiana</i>	Nootka Alkali Grass				S2	3 Sensitive	1	3.3 $\pm$ 0.0
P	<i>Puccinellia phryganodes</i>	Creeping Alkali Grass				S2	3 Sensitive	2	3.3 $\pm$ 0.0
P	<i>Stellaria humifusa</i>	Saltmarsh Starwort				S3	4 Secure	2	3.1 $\pm$ 0.0
P	<i>Rubus chamaemorus</i>	Cloudberry				S3	4 Secure	2	4.3 $\pm$ 0.0
P	<i>Geocaulon lividum</i>	Northern Comandra				S3	4 Secure	4	0.7 $\pm$ 0.0
P	<i>Triglochin gaspensis</i>	Gasp  – Arrowgrass				S3	4 Secure	1	3.1 $\pm$ 0.0
P	<i>Rumex maritimus</i>	Sea-Side Dock				S3S4	4 Secure	1	0.4 $\pm$ 0.0
P	<i>Polygonum raii</i>	Sharp-fruited Knotweed				SH	0.1 Extirpated	1	0.1 $\pm$ 1.0

### 4.2 FAUNA

	Scientific Name	Common Name	COSEWIC	SARA	Prov Legal Prot	Prov Rarity Rank	Prov GS Rank	# recs	Distance (km)
A	<i>Charadrius melodus melodus</i>	Piping Plover melodus ssp	Endangered	Endangered	Endangered	S2B	1 At Risk	24	0.4 $\pm$ 0.0
A	<i>Calidris canutus rufa</i>	Red Knot rufa ssp	Endangered		Endangered	S3M	1 At Risk	2	1.7 $\pm$ 0.0
A	<i>Hirundo rustica</i>	Barn Swallow	Threatened		Threatened	S3B	3 Sensitive	1	4.9 $\pm$ 2.0
A	<i>Riparia riparia</i>	Bank Swallow	Threatened			S3B	3 Sensitive	3	3.2 $\pm$ 7.0
A	<i>Contopus cooperi</i>	Olive-sided Flycatcher	Threatened	Threatened	Threatened	S3S4B	1 At Risk	3	3.2 $\pm$ 7.0
A	<i>Dolichonyx oryzivorus</i>	Bobolink	Threatened		Threatened	S3S4B	3 Sensitive	1	3.2 $\pm$ 7.0
A	<i>Contopus virens</i>	Eastern Wood-Pewee			Special Concern	S4B	4 Secure	1	3.2 $\pm$ 7.0
A	<i>Odobenus rosmarus rosmarus</i>	Atlantic Walrus			Special Concern	SX	Extirpated	1	2.7 $\pm$ 1.0
A	<i>Aegolius funereus</i>	Boreal Owl	Not At Risk			S1S2B	2 May Be At Risk	1	3.2 $\pm$ 7.0
A	<i>Sterna hirundo</i>	Common Tern	Not At Risk			S3B	3 Sensitive	5	3.2 $\pm$ 0.0
A	<i>Phalaropus tricolor</i>	Wilson's Phalarope				S1B	3 Sensitive	1	4.3 $\pm$ 1.0
A	<i>Nycticorax nycticorax</i>	Black-crowned Night-heron				S1S2B	3 Sensitive	5	0.5 $\pm$ 0.0
A	<i>Eremophila alpestris</i>	Horned Lark				S2B	2 May Be At Risk	1	3.6 $\pm$ 7.0
A	<i>Tringa solitaria</i>	Solitary Sandpiper				S2B,S5M	4 Secure	1	1.7 $\pm$ 0.0
A	<i>Asio otus</i>	Long-eared Owl				S2S3	5 Undetermined	1	3.2 $\pm$ 7.0
A	<i>Tringa semipalmata</i>	Willet				S2S3B	3 Sensitive	2	3.2 $\pm$ 7.0
A	<i>Anas acuta</i>	Northern Pintail				S3B	3 Sensitive	3	3.2 $\pm$ 7.0
A	<i>Anas americana</i>	American Wigeon				S3B	4 Secure	1	3.2 $\pm$ 7.0
A	<i>Charadrius vociferus</i>	Killdeer				S3B	3 Sensitive	1	1.7 $\pm$ 0.0
A	<i>Mimus polyglottos</i>	Northern Mockingbird				S3B	3 Sensitive	1	4.3 $\pm$ 1.0
A	<i>Mergus serrator</i>	Red-breasted Merganser				S3B,S4S5N	4 Secure	4	3.2 $\pm$ 7.0
A	<i>Pluvialis dominica</i>	American Golden-Plover				S3M	3 Sensitive	2	1.7 $\pm$ 0.0
A	<i>Melanitta nigra</i>	Black Scoter				S3M,S2S3N	3 Sensitive	1	2.9 $\pm$ 5.0
A	<i>Tyrannus tyrannus</i>	Eastern Kingbird				S3S4B	3 Sensitive	1	3.2 $\pm$ 7.0
A	<i>Petrochelidon pyrrhonota</i>	Cliff Swallow				S3S4B	3 Sensitive	1	3.2 $\pm$ 7.0
I	<i>Cicindela hirticollis</i>	Hairy-necked Tiger Beetle				S2S3	4 Secure	1	3.0 $\pm$ 1.0
I	<i>Lycaena dospassosi</i>	Salt Marsh Copper				S3	4 Secure	3	0.7 $\pm$ 0.0



### 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 a 5 km buffer of your study area are indicated below with “YES”.

#### New Brunswick

Scientific Name	Common Name	SARA	Prov Legal Prot	Known within 5 km of Study Site?
<i>Chrysemys picta picta</i>	Eastern Painted Turtle			No
<i>Chelydra serpentina</i>	Snapping Turtle	Special Concern	Special Concern	No
<i>Glyptemys insculpta</i>	Wood Turtle	Threatened	Threatened	No
<i>Haliaeetus leucocephalus</i>	Bald Eagle		Endangered	No
<b>Falco peregrinus pop. 1</b>	<b>Peregrine Falcon - anatum/tundrius pop.</b>	<b>Special Concern</b>	<b>Endangered</b>	<b>YES</b>
<i>Cicindela marginipennis</i>	Cobblestone Tiger Beetle	Endangered	Endangered	No
<i>Coenonympha nipisiquit</i>	Maritime Ringlet	Endangered	Endangered	No
<i>Bat Hibernaculum</i>		[Endangered] <sup>1</sup>	[Endangered] <sup>1</sup>	No

<sup>1</sup> *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 NB Species at Risk Act.

### 4.4 SOURCE BIBLIOGRAPHY

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

# recs	CITATION
22	Lepage, D. 2014. Maritime Breeding Bird Atlas Database. Bird Studies Canada, Sackville NB, 407,838 recs.
12	Amirault, D.L. & Stewart, J. 2007. Piping Plover Database 1894-2006. Canadian Wildlife Service, Sackville, 3344 recs, 1228 new.
10	Erskine, A.J. 1992. Maritime Breeding Bird Atlas Database. NS Museum & Nimbus Publ., Halifax, 82,125 recs.
6	Benedict, B. Connell Herbarium Specimens. University New Brunswick, Fredericton. 2003.
6	Morrison, Guy. 2011. Maritime Shorebird Survey (MSS) database. Canadian Wildlife Service, Ottawa, 15939 surveys. 86171 recs.
5	Blaney, C.S.; Mazerolle, D.M. 2012. Fieldwork 2012. Atlantic Canada Conservation Data Centre, 13,278 recs.
5	Goltz, J.P. 2012. Field Notes, 1989-2005. , 1091 recs.
4	Amirault, D.L. 2000. Piping Plover Surveys, 1983-2000. Canadian Wildlife Service, Sackville, unpublished data. 70 recs.
4	eBird. 2014. eBird Basic Dataset. Version: EBD_relNov-2014. Ithaca, New York. Nov 2014. Cornell Lab of Ornithology, 25036 recs.
3	Amirault, D.L. & McKnight, J. 2003. Piping Plover Database 1991-2003. Canadian Wildlife Service, Sackville, unpublished data. 7 recs.
3	Webster, R.P. & Edsall, J. 2007. 2005 New Brunswick Rare Butterfly Survey. Environmental Trust Fund, unpublished report, 232 recs.
2	Tims, J. & Craig, N. 1995. Environmentally Significant Areas in New Brunswick (NBESA). NB Dept of Environment & Nature Trust of New Brunswick Inc, 6042 recs.
2	Tims, J. & Craig, N. 1995. Environmentally Significant Areas in New Brunswick (NBESA). NB Dept of Environment & Nature Trust of New Brunswick Inc.
2	Wilhelm, S.I. et al. 2011. Colonial Waterbird Database.
2	Wilhelm, S.I. et al. 2011. Colonial Waterbird Database. Canadian Wildlife Service, Sackville, 2698 sites, 9718 recs (8192 obs).
1	Benedict, B. Connell Herbarium Specimen Database Download 2004. Connell Memorial Herbarium, University of New Brunswick. 2004.
1	Benedict, B. Connell Herbarium Specimens, Digital photos. University New Brunswick, Fredericton. 2005.
1	Bird Studies Canada & Nature Canada. 2004-10. Important Bird Areas of Canada Database. Bird Studies Canada, Port Rowan ON, 62 objects.
1	Canadian Wildlife Service, Dartmouth. 2010. Piping Plover censuses 2007-09, 304 recs.
1	Clayden, S.R. 1998. NBM Science Collections databases: vascular plants. New Brunswick Museum, Saint John NB, 19759 recs.
1	Clayden, S.R. 2007. NBM Science Collections databases: vascular plants. New Brunswick Museum, Saint John NB, download Mar. 2007, 6914 recs.
1	David, M. 2000. CNPA website. Club de naturalistes de la Peninsule acadienne (CNPA), www.francoophone.net/cnpa/rares. 16 recs.
1	Erskine, A.J. 1999. Maritime Nest Records Scheme (MNRS) 1937-1999. Canadian Wildlife Service, Sackville, 313 recs.
1	Gautreau-Daigle, H. 2007. Rare plant records from peatland surveys. Coastal Zones Research Institute, Shippagan NB. Pers. comm. to D.M. Mazerolle, 39 recs.
1	Hinds, H.R. 1986. Notes on New Brunswick plant collections. Connell Memorial Herbarium, unpubl, 739 recs.
1	Sollows, M.C., 2008. NBM Science Collections databases: mammals. New Brunswick Museum, Saint John NB, download Jan. 2008, 4983 recs.
1	Webster, R.P. 2006. Survey for Suitable Salt Marshes for the Maritime Ringlet, New Populations of the Cobblestone Tiger Beetle, & New Localities of Three Rare Butterfly Species. New Brunswick WTF Report, 28 recs.

## 5.0 RARE SPECIES WITHIN 100 KM

A 100 km buffer around the study area contains 7177 records of 93 vertebrate and 301 records of 28 invertebrate fauna; 1562 records of 156 vascular, 12 records of 12 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. 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 ( $\pm$  the precision, in km, of the record).

Taxonomic Group	Scientific Name	Common Name	COSEWIC	SARA	Prov Legal Prot	Prov Rarity Rank	Prov GS Rank	# recs	Distance (km)	Prov
A	<i>Dermodochelys coriacea</i> (Atlantic pop.)	Leatherback Sea Turtle - Atlantic pop.	Endangered	Endangered	Endangered	S1S2N	1 At Risk	1	81.7 $\pm$ 1.0	NB
A	<i>Morone saxatilis</i>	Striped Bass	Endangered			S2	2 May Be At Risk	5	31.1 $\pm$ 10.0	NB
A	<i>Charadrius melodus melodus</i>	Piping Plover melodus ssp	Endangered	Endangered	Endangered	S2B	1 At Risk	1601	0.4 $\pm$ 0.0	NB
A	<i>Calidris canutus rufa</i>	Red Knot rufa ssp	Endangered		Endangered	S3M	1 At Risk	353	1.7 $\pm$ 0.0	NB
A	<i>Delphinapterus leucas</i>	Beluga Whale - St Lawrence Estuary pop.	Endangered	Threatened		SNA		2	10.3 $\pm$ 1.0	NB
A	<i>Rangifer tarandus pop. 2</i>	Woodland Caribou (Atlantic-Gasp)-rsie pop.)	Endangered	Endangered	Extirpated	SX	0.1 Extirpated	1	69.5 $\pm$ 1.0	NB
A	<i>Hylocichla mustelina</i>	Wood Thrush	Threatened		Threatened	S1S2B	2 May Be At Risk	20	10.7 $\pm$ 1.0	NB
A	<i>Sturnella magna</i>	Eastern Meadowlark	Threatened		Threatened	S1S2B	2 May Be At Risk	1	47.0 $\pm$ 0.0	NB
A	<i>Caprimulgus vociferus</i>	Whip-Poor-Will	Threatened	Threatened	Threatened	S2B	1 At Risk	4	34.8 $\pm$ 0.0	NB
A	<i>Glyptemys insculpta</i>	Wood Turtle	Threatened	Threatened	Threatened	S2S3	1 At Risk	10	79.2 $\pm$ 1.0	NB
A	<i>Chaetura pelagica</i>	Chimney Swift	Threatened	Threatened	Threatened	S2S3B	1 At Risk	51	29.1 $\pm$ 7.0	NB
A	<i>Catharus bicknelli</i>	Bicknell's Thrush	Threatened	Special Concern	Threatened	S2S3B	1 At Risk	1	92.6 $\pm$ 7.0	NB
A	<i>Chordeiles minor</i>	Common Nighthawk	Threatened	Threatened	Threatened	S3B	1 At Risk	59	31.2 $\pm$ 24.0	NB
A	<i>Hirundo rustica</i>	Barn Swallow	Threatened		Threatened	S3B	3 Sensitive	166	4.9 $\pm$ 2.0	NB
A	<i>Riparia riparia</i>	Bank Swallow	Threatened		Threatened	S3B	3 Sensitive	251	3.2 $\pm$ 7.0	NB
A	<i>Contopus cooperi</i>	Olive-sided Flycatcher	Threatened	Threatened	Threatened	S3S4B	1 At Risk	63	3.2 $\pm$ 7.0	NB
A	<i>Wilsonia canadensis</i>	Canada Warbler	Threatened	Threatened	Threatened	S3S4B	1 At Risk	121	9.4 $\pm$ 7.0	NB
A	<i>Dolichonyx oryzivorus</i>	Bobolink	Threatened		Threatened	S3S4B	3 Sensitive	273	3.2 $\pm$ 7.0	NB
A	<i>Vermivora chrysoptera</i>	Golden-winged Warbler	Threatened	Threatened		SNA	8 Accidental	1	48.7 $\pm$ 1.0	NB
A	<i>Falco peregrinus pop. 1</i>	Peregrine Falcon - anatum/tundrius	Special Concern	Special Concern	Endangered	S1B	1 At Risk	4	2.9 $\pm$ 5.0	NB
A	<i>Histrionicus histrionicus pop. 1</i>	Harlequin Duck - Eastern pop.	Special Concern	Special Concern	Endangered	S1B,S1N	1 At Risk	3	10.0 $\pm$ 0.0	NB
A	<i>Bucephala islandica</i> (Eastern pop.)	Barrow's Goldeneye - Eastern pop.	Special Concern	Special Concern	Special Concern	S2N	3 Sensitive	28	30.5 $\pm$ 0.0	NB
A	<i>Asio flammeus</i>	Short-eared Owl	Special Concern	Special Concern	Special Concern	S3B	3 Sensitive	17	7.0 $\pm$ 7.0	NB
A	<i>Euphagus carolinus</i>	Rusty Blackbird	Special Concern	Special Concern	Special Concern	S3B	2 May Be At Risk	19	9.4 $\pm$ 7.0	NB
A	<i>Phalaropus lobatus</i>	Red-necked Phalarope	Special Concern			S3M	3 Sensitive	6	10.2 $\pm$ 0.0	NB
A	<i>Phocoena phocoena</i> (NW Atlantic pop.)	Harbour Porpoise - Northwest Atlantic pop.	Special Concern	Threatened		S4		2	6.9 $\pm$ 1.0	NB
A	<i>Contopus virens</i>	Eastern Wood-Pewee	Special Concern		Special Concern	S4B	4 Secure	109	3.2 $\pm$ 7.0	NB
A	<i>Podiceps auritus</i>	Horned Grebe	Special Concern		Special Concern	S4M,S4N	4 Secure	2	28.2 $\pm$ 1.0	NB
A	<i>Tryngites subruficollis</i>	Buff-breasted Sandpiper	Special Concern			SNA	8 Accidental	21	10.1 $\pm$ 0.0	NB
A	<i>Odobenus rosmarus rosmarus</i>	Atlantic Walrus	Special Concern		Extirpated	SX		6	2.7 $\pm$ 1.0	NB
A	<i>Falco rusticolus</i>	Gyr Falcon	Not At Risk			S1N	5 Undetermined	2	20.3 $\pm$ 1.0	NB
A	<i>Aegolius funereus</i>	Boreal Owl	Not At Risk			S1S2B	2 May Be At Risk	6	3.2 $\pm$ 7.0	NB
A	<i>Buteo lineatus</i>	Red-shouldered Hawk	Not At Risk	Special Concern		S2B	2 May Be At Risk	4	30.6 $\pm$ 0.0	NB
A	<i>Fulica americana</i>	American Coot	Not At Risk			S2B	3 Sensitive	4	22.2 $\pm$ 7.0	NB
A	<i>Globicephala melas</i>	Long-finned Pilot Whale	Not At Risk			S2S3		1	88.6 $\pm$ 1.0	NB
A	<i>Lynx canadensis</i>	Canadian Lynx	Not At Risk		Endangered	S3	1 At Risk	7	69.2 $\pm$ 1.0	NB
A	<i>Haliaeetus leucocephalus</i>	Bald Eagle	Not At Risk		Endangered	S3B	1 At Risk	143	7.5 $\pm$ 7.0	NB
A	<i>Sterna hirundo</i>	Common Tern	Not At Risk			S3B	3 Sensitive	412	3.2 $\pm$ 0.0	NB
A	<i>Podiceps grisegena</i>	Red-necked Grebe	Not At Risk			S3M,S2N	3 Sensitive	3	49.1 $\pm$ 1.0	NB
A	<i>Puma concolor pop. 1</i>	Cougar - Eastern pop.	Data Deficient		Endangered	SU	5 Undetermined	9	75.2 $\pm$ 1.0	NB
A	<i>Bartramia longicauda</i>	Upland Sandpiper				S1B	3 Sensitive	4	48.1 $\pm$ 1.0	NB
A	<i>Phalaropus tricolor</i>	Wilson's Phalarope				S1B	3 Sensitive	19	4.3 $\pm$ 1.0	NB

Taxonomic Group	Scientific Name	Common Name	COSEWIC	SARA	Prov Legal Prot	Prov Rarity Rank	Prov GS Rank	# recs	Distance (km)	Prov
A	<i>Sterna paradisaea</i>	Arctic Tern				S1B	2 May Be At Risk	21	29.1 ± 7.0	NB
A	<i>Troglodytes aedon</i>	House Wren				S1B	5 Undetermined	2	52.6 ± 0.0	NB
A	<i>Aythya marila</i>	Greater Scaup				S1B,S2N	4 Secure	20	5.6 ± 39.0	NB
A	<i>Uria aalge</i>	Common Murre				S1B,S3N	4 Secure	6	14.2 ± 1.0	NB
A	<i>Alca torda</i>	Razorbill				S1B,S3N	4 Secure	7	48.2 ± 7.0	NB
A	<i>Oxyura jamaicensis</i>	Ruddy Duck				S1B,S4N	4 Secure	11	20.3 ± 1.0	NB
A	<i>Rissa tridactyla</i>	Black-legged Kittiwake				S1B,S4N	4 Secure	24	14.2 ± 1.0	NB
A	<i>Butorides virescens</i>	Green Heron				S1S2B	3 Sensitive	2	47.7 ± 0.0	NB
A	<i>Nycticorax nycticorax</i>	Black-crowned Night-heron				S1S2B	3 Sensitive	243	0.5 ± 0.0	NB
A	<i>Empidonax traillii</i>	Willow Flycatcher				S1S2B	3 Sensitive	9	7.0 ± 0.0	NB
A	<i>Stelgidopteryx serripennis</i>	Northern Rough-winged Swallow				S1S2B	2 May Be At Risk	2	47.0 ± 0.0	NB
A	<i>Salmo salar</i>	Atlantic Salmon				S2	2 May Be At Risk	113	30.5 ± 1.0	NB
A	<i>Lasiurus cinereus</i>	Hoary Bat				S2?	5 Undetermined	2	63.3 ± 1.0	NB
A	<i>Oceanodroma leucorhoa</i>	Leach's Storm-Petrel				S2B	3 Sensitive	1	18.0 ± 0.0	NB
A	<i>Anas clypeata</i>	Northern Shoveler				S2B	4 Secure	56	11.5 ± 0.0	NB
A	<i>Anas strepera</i>	Gadwall				S2B	4 Secure	48	7.5 ± 7.0	NB
A	<i>Eremophila alpestris</i>	Horned Lark				S2B	2 May Be At Risk	103	3.6 ± 7.0	NB
A	<i>Toxostoma rufum</i>	Brown Thrasher				S2B	3 Sensitive	14	23.8 ± 7.0	NB
A	<i>Poocetes gramineus</i>	Vesper Sparrow				S2B	2 May Be At Risk	36	6.9 ± 0.0	NB
A	<i>Tringa solitaria</i>	Solitary Sandpiper				S2B,S5M	4 Secure	23	1.7 ± 0.0	NB
A	<i>Chroicocephalus ridibundus</i>	Black-headed Gull				S2M,S1N	3 Sensitive	6	11.5 ± 1.0	NB
A	<i>Somateria spectabilis</i>	King Eider				S2N	4 Secure	2	49.1 ± 1.0	NB
A	<i>Asio otus</i>	Long-eared Owl				S2S3	5 Undetermined	7	3.2 ± 7.0	NB
A	<i>Tringa semipalmata</i>	Willet				S2S3B	3 Sensitive	343	3.2 ± 7.0	NB
A	<i>Pinicola enucleator</i>	Pine Grosbeak				S2S3B,S4S5N	3 Sensitive	7	49.4 ± 7.0	NB
A	<i>Branta bernicla</i>	Brant				S2S3M,S2S3N	4 Secure	60	9.4 ± 10.0	NB
A	<i>Cephus grylle</i>	Black Guillemot				S3	4 Secure	40	14.2 ± 1.0	NB
A	<i>Loxia curvirostra</i>	Red Crossbill				S3	4 Secure	15	8.7 ± 1.0	NB
A	<i>Sorex maritimensis</i>	Maritime Shrew				S3	4 Secure	1	94.3 ± 0.0	NB
A	<i>Picoides dorsalis</i>	American Three-toed Woodpecker				S3?	3 Sensitive	7	31.4 ± 1.0	NB
A	<i>Anas acuta</i>	Northern Pintail				S3B	3 Sensitive	182	3.2 ± 7.0	NB
A	<i>Anas americana</i>	American Wigeon				S3B	4 Secure	195	3.2 ± 7.0	NB
A	<i>Cathartes aura</i>	Turkey Vulture				S3B	4 Secure	1	51.9 ± 0.0	NB
A	<i>Rallus limicola</i>	Virginia Rail				S3B	3 Sensitive	9	5.2 ± 0.0	NB
A	<i>Charadrius vociferus</i>	Killdeer				S3B	3 Sensitive	443	1.7 ± 0.0	NB
A	<i>Larus delawarensis</i>	Ring-billed Gull				S3B	4 Secure	302	6.0 ± 0.0	NB
A	<i>Myiarchus crinitus</i>	Great Crested Flycatcher				S3B	3 Sensitive	3	89.5 ± 7.0	NB
A	<i>Mimus polyglottos</i>	Northern Mockingbird				S3B	3 Sensitive	36	4.3 ± 1.0	NB
A	<i>Passerina cyanea</i>	Indigo Bunting				S3B	4 Secure	3	10.7 ± 1.0	NB
A	<i>Molothrus ater</i>	Brown-headed Cowbird				S3B	2 May Be At Risk	82	7.0 ± 7.0	NB
A	<i>Mergus serrator</i>	Red-breasted Merganser				S3B,S4S5N	4 Secure	156	3.2 ± 7.0	NB
A	<i>Pluvialis dominica</i>	American Golden-Plover				S3M	3 Sensitive	84	1.7 ± 0.0	NB
A	<i>Phalaropus fulicarius</i>	Red Phalarope				S3M	3 Sensitive	1	67.6 ± 0.0	NB
A	<i>Melanitta nigra</i>	Black Scoter				S3M,S2S3N	3 Sensitive	117	2.9 ± 5.0	NB
A	<i>Calidris maritima</i>	Purple Sandpiper				S3M,S3N	4 Secure	19	8.1 ± 0.0	NB
A	<i>Bucephala albeola</i>	Bufflehead				S3N	3 Sensitive	15	28.2 ± 1.0	NB
A	<i>Tyrannus tyrannus</i>	Eastern Kingbird				S3S4B	3 Sensitive	81	3.2 ± 7.0	NB
A	<i>Petrochelidon pyrrhonota</i>	Cliff Swallow				S3S4B	3 Sensitive	144	3.2 ± 7.0	NB
A	<i>Piranga olivacea</i>	Scarlet Tanager				S3S4B	4 Secure	12	48.3 ± 7.0	NB
A	<i>Coccothraustes vespertinus</i>	Evening Grosbeak				S3S4B,S4S5N	3 Sensitive	84	9.4 ± 7.0	NB
A	<i>Morus bassanus</i>	Northern Gannet				SHB,S5M,S5N	4 Secure	162	5.6 ± 39.0	NB
I	<i>Coenonympha nipisiquit</i>	Maritime Ringlet	Endangered	Endangered	Endangered	S1	1 At Risk	60	76.5 ± 20.0	NB
I	<i>Danaus plexippus</i>	Monarch	Special Concern	Special Concern	Special Concern	S3B	3 Sensitive	2	93.1 ± 0.0	NB
I	<i>Leucorrhinia patricia</i>	Canada Whiteface				S1	2 May Be At Risk	1	56.9 ± 1.0	NB
I	<i>Coccinella transversoguttata richardsoni</i>	Transverse Lady Beetle				S1S2	2 May Be At Risk	6	19.6 ± 1.0	NB
I	<i>Plebejus saepiolus</i>	Greenish Blue				S1S2	4 Secure	12	30.5 ± 1.0	NB

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I	<i>Strymon melinus</i>	Grey Hairstreak				S2	4 Secure	7	26.2 ± 0.0	NB
I	<i>Coenagrion interrogatum</i>	Subarctic Bluet				S2	3 Sensitive	1	94.5 ± 1.0	NB
I	<i>Cicindela hirticollis</i>	Hairy-necked Tiger Beetle				S2S3	4 Secure	4	3.0 ± 1.0	NB
I	<i>Callophrys henrici</i>	Henry's Elfin				S2S3	4 Secure	3	89.2 ± 1.0	NB
I	<i>Euphyes bimacula</i>	Two-spotted Skipper				S3	4 Secure	2	85.0 ± 10.0	NB
I	<i>Papilio brevicauda</i>	Short-tailed Swallowtail				S3	4 Secure	34	18.9 ± 0.0	NB
I	<i>Papilio brevicauda bretonensis</i>	Short-tailed Swallowtail				S3	4 Secure	12	50.6 ± 0.0	NB
I	<i>Lycaena dospassosi</i>	Salt Marsh Copper				S3	4 Secure	90	0.7 ± 0.0	NB
I	<i>Satyrium acadica</i>	Acadian Hairstreak				S3	4 Secure	2	83.2 ± 0.0	NB
I	<i>Callophrys polios</i>	Hoary Elfin				S3	4 Secure	2	26.8 ± 0.0	NB
I	<i>Callophrys eryphon</i>	Western Pine Elfin				S3	4 Secure	3	89.2 ± 1.0	NB
I	<i>Plebejus idas</i>	Northern Blue				S3	4 Secure	22	11.9 ± 0.0	NB
I	<i>Plebejus idas empetri</i>	Crowberry Blue				S3	4 Secure	8	20.0 ± 10.0	NB
I	<i>Speyeria aphrodite</i>	Aphrodite Fritillary				S3	4 Secure	2	45.3 ± 1.0	NB
I	<i>Boloria eunomia</i>	Bog Fritillary				S3	5 Undetermined	5	87.4 ± 0.0	NB
I	<i>Boloria chariclea</i>	Arctic Fritillary				S3	4 Secure	3	83.0 ± 1.0	NB
I	<i>Boloria chariclea grandis</i>	Purple Lesser Fritillary				S3	4 Secure	4	86.0 ± 10.0	NB
I	<i>Polygonia gracilis</i>	Hoary Comma				S3	4 Secure	5	86.8 ± 1.0	NB
I	<i>Somatochlora cingulata</i>	Lake Emerald				S3	4 Secure	2	86.5 ± 1.0	NB
I	<i>Somatochlora forcipata</i>	Forcipate Emerald				S3	4 Secure	2	71.2 ± 1.0	NB
I	<i>Lestes eurinus</i>	Amber-Winged Spreadwing				S3	4 Secure	1	86.5 ± 1.0	NB
I	<i>Satyrium liparops</i>	Striped Hairstreak				S3S4	4 Secure	4	32.0 ± 0.0	NB
I	<i>Satyrium liparops strigosum</i>	Striped Hairstreak				S3S4	4 Secure	2	82.2 ± 0.0	NB
N	<i>Cinclidium stygium</i>	Sooty Cupola Moss				S1	2 May Be At Risk	1	88.5 ± 0.0	NB
N	<i>Dicranum bonjeanii</i>	Bonjean's Broom Moss				S1	2 May Be At Risk	1	93.4 ± 1.0	NB
N	<i>Meesia triquetra</i>	Three-ranked Cold Moss				S1	2 May Be At Risk	1	62.8 ± 10.0	NB
N	<i>Paludella squarrosa</i>	Tufted Fen Moss				S1	2 May Be At Risk	1	88.5 ± 0.0	NB
N	<i>Pohlia filum</i>	a Moss				S1?	5 Undetermined	1	57.3 ± 7.0	NB
N	<i>Calyptogeia neesiana</i>	Nees' Pouchwort				S1S3	6 Not Assessed	1	57.3 ± 1.0	NB
N	<i>Cephalozia connivens</i>	Forcipate Pincerwort				S1S3	6 Not Assessed	1	8.0 ± 10.0	NB
N	<i>Scorpidium scorpioides</i>	Hooked Scorpion Moss				S2	3 Sensitive	1	88.5 ± 0.0	NB
N	<i>Sphagnum lindbergii</i>	Lindberg's Peat Moss				S2	3 Sensitive	1	87.6 ± 0.0	NB
N	<i>Dicranella rufescens</i>	Red Forklet Moss				S3?	5 Undetermined	1	57.3 ± 7.0	NB
N	<i>Dicranum leioneuron</i>	a Dicranum Moss				S3S4	4 Secure	1	95.1 ± 10.0	NB
N	<i>Stereocaulon paschale</i>	Easter Foam Lichen				S3S4	5 Undetermined	1	99.0 ± 1.0	NB
P	<i>Symphotrichum laurentianum</i>	Gulf of St Lawrence Aster	Threatened	Threatened	Endangered	S1	1 At Risk	18	9.9 ± 0.0	NB
P	<i>Symphotrichum subulatum</i> (Bathurst pop)	Bathurst Aster - Bathurst pop.	Special Concern	Special Concern	Endangered	S2	1 At Risk	52	69.3 ± 0.0	NB
P	<i>Lechea maritima</i> var. <i>subcylindrica</i>	Beach Pinweed	Special Concern			S2	3 Sensitive	19	86.7 ± 0.0	NB
P	<i>Draba glabella</i>	Rock Whitlow-Grass				S1	2 May Be At Risk	7	93.7 ± 0.0	NB
P	<i>Draba incana</i>	Twisted Whitlow-grass				S1	2 May Be At Risk	5	11.8 ± 1.0	NB
P	<i>Stellaria longipes</i>	Long-stalked Starwort				S1	2 May Be At Risk	17	9.1 ± 0.0	NB
P	<i>Vaccinium boreale</i>	Northern Blueberry				S1	2 May Be At Risk	1	16.0 ± 1.0	NB
P	<i>Vaccinium uliginosum</i>	Alpine Bilberry				S1	2 May Be At Risk	4	11.5 ± 2.0	NB
P	<i>Chamaesyce polygonifolia</i>	Seaside Spurge				S1	2 May Be At Risk	3	37.0 ± 1.0	NB
P	<i>Bartonia virginica</i>	Yellow Bartonia				S1	2 May Be At Risk	3	93.2 ± 1.0	NB
P	<i>Ranunculus lapponicus</i>	Lapland Buttercup				S1	2 May Be At Risk	1	91.6 ± 0.0	NB
P	<i>Ranunculus sceleratus</i>	Cursed Buttercup				S1	2 May Be At Risk	2	9.8 ± 2.0	NB
P	<i>Rosa acicularis</i> ssp. <i>sayi</i>	Prickly Rose				S1	2 May Be At Risk	41	89.0 ± 0.0	NB
P	<i>Salix serissima</i>	Autumn Willow				S1	2 May Be At Risk	4	86.9 ± 0.0	NB
P	<i>Carex glareosa</i> var. <i>amphigena</i>	Gravel Sedge				S1	2 May Be At Risk	3	8.3 ± 1.0	NB
P	<i>Carex rariflora</i>	Loose-flowered Alpine Sedge				S1	2 May Be At Risk	9	6.8 ± 0.0	NB
P	<i>Carex viridula</i> var. <i>elatior</i>	Greenish Sedge				S1	2 May Be At Risk	11	86.9 ± 0.0	NB
P	<i>Zigadenus elegans</i> ssp. <i>glaucus</i>	Mountain Death Camas				S1	2 May Be At Risk	7	93.7 ± 0.0	NB

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P	<i>Malaxis brachypoda</i>	White Adder's-Mouth				S1	2 May Be At Risk	2	86.9 ± 0.0	NB
P	<i>Catabrosa aquatica</i> var. <i>laurentiana</i>	Water Whorl Grass				S1	2 May Be At Risk	2	14.0 ± 0.0	NB
P	<i>Dichanthelium xanthophysum</i>	Slender Panic Grass				S1	2 May Be At Risk	3	92.8 ± 0.0	NB
P	<i>Puccinellia ambigua</i>	Dwarf Alkali Grass				S1	5 Undetermined	2	3.1 ± 0.0	NB
P	<i>Cystopteris laurentiana</i>	Laurentian Bladder Fern				S1	2 May Be At Risk	1	98.4 ± 0.0	NB
P	<i>Bidens heterodoxa</i>	Connecticut Beggar-Ticks				S1?	2 May Be At Risk	1	15.7 ± 1.0	NB
P	<i>Cuscuta cephalanthi</i>	Buttonbush Dodder				S1?	2 May Be At Risk	19	83.1 ± 1.0	NB
P	<i>Carex crawei</i>	Crawe's Sedge				S1S2	2 May Be At Risk	1	61.1 ± 0.0	NB
P	<i>Osmorhiza depauperata</i>	Blunt Sweet Cicely				S2	3 Sensitive	1	87.8 ± 1.0	NB
P	<i>Ionactis linariifolius</i>	Stiff Aster				S2	3 Sensitive	36	89.0 ± 0.0	NB
P	<i>Arabis drummondii</i>	Drummond's Rockcress				S2	3 Sensitive	2	93.0 ± 1.0	NB
P	<i>Sagina nodosa</i>	Knotted Pearlwort				S2	3 Sensitive	6	13.9 ± 1.0	NB
P	<i>Atriplex franktonii</i>	Frankton's Saltbush				S2	4 Secure	4	12.1 ± 0.0	NB
P	<i>Chenopodium rubrum</i>	Red Pigweed				S2	3 Sensitive	4	86.5 ± 0.0	NB
P	<i>Callitriche hermaphroditica</i>	Northern Water-starwort				S2	4 Secure	4	37.3 ± 2.0	NB
P	<i>Lonicera oblongifolia</i>	Swamp Fly Honeysuckle				S2	3 Sensitive	1	11.5 ± 2.0	NB
P	<i>Oxytropis campestris</i> var. <i>johannensis</i>	Field Locoweed				S2	3 Sensitive	1	97.2 ± 10.0	NB
P	<i>Crataegus scabrada</i>	Rough Hawthorn				S2	3 Sensitive	2	93.0 ± 1.0	NB
P	<i>Sanguisorba canadensis</i>	Canada Burnet				S2	4 Secure	71	1.9 ± 1.0	NB
P	<i>Salix candida</i>	Sage Willow				S2	3 Sensitive	54	7.6 ± 0.0	NB
P	<i>Carex gynocrates</i>	Northern Bog Sedge				S2	3 Sensitive	11	86.9 ± 0.0	NB
P	<i>Carex livida</i> var. <i>radicalis</i>	Livid Sedge				S2	3 Sensitive	5	9.8 ± 0.0	NB
P	<i>Carex salina</i>	Saltmarsh Sedge				S2	3 Sensitive	11	3.1 ± 0.0	NB
P	<i>Carex spengelii</i>	Longbeak Sedge				S2	3 Sensitive	1	98.1 ± 0.0	NB
P	<i>Carex tenuiflora</i>	Sparse-Flowered Sedge				S2	2 May Be At Risk	2	39.9 ± 10.0	NB
P	<i>Carex albicans</i> var. <i>emmonsii</i>	White-tinged Sedge				S2	3 Sensitive	6	86.7 ± 0.0	NB
P	<i>Eriophorum gracile</i>	Slender Cottongrass				S2	2 May Be At Risk	8	7.6 ± 0.0	NB
P	<i>Blysmus rufus</i>	Red Bulrush				S2	3 Sensitive	28	3.1 ± 0.0	NB
P	<i>Juncus vaseyi</i>	Vasey Rush				S2	3 Sensitive	27	11.2 ± 0.0	NB
P	<i>Lemna trisulca</i>	Star Duckweed				S2	4 Secure	1	37.3 ± 2.0	NB
P	<i>Amerorchis rotundifolia</i>	Small Round-leaved Orchis				S2	2 May Be At Risk	12	30.9 ± 3.0	NB
P	<i>Calypso bulbosa</i> var. <i>americana</i>	Calypso				S2	2 May Be At Risk	1	29.1 ± 0.0	NB
P	<i>Cypripedium parviflorum</i> var. <i>makasin</i>	Small Yellow Lady's-Slipper				S2	2 May Be At Risk	1	94.2 ± 2.0	NB
P	<i>Goodyera oblongifolia</i>	Menzies' Rattlesnake-plantain				S2	3 Sensitive	12	47.3 ± 5.0	NB
P	<i>Agrostis mertensii</i>	Northern Bent Grass				S2	2 May Be At Risk	14	89.1 ± 1.0	NB
P	<i>Piptatherum canadense</i>	Canada Rice Grass				S2	3 Sensitive	1	93.2 ± 0.0	NB
P	<i>Puccinellia laurentiana</i>	Nootka Alkali Grass				S2	3 Sensitive	11	3.3 ± 0.0	NB
P	<i>Puccinellia phryganodes</i>	Creeping Alkali Grass				S2	3 Sensitive	2	3.3 ± 0.0	NB
P	<i>Piptatherum pungens</i>	Slender Rice Grass				S2	2 May Be At Risk	6	82.6 ± 0.0	NB
P	<i>Stuckenia filiformis</i>	Thread-leaved Pondweed				S2	3 Sensitive	2	11.8 ± 0.0	NB
P	<i>Stuckenia filiformis</i> ssp. <i>alpina</i>	Thread-leaved Pondweed				S2	3 Sensitive	2	11.4 ± 1.0	NB
P	<i>Potamogeton richardsonii</i>	Richardson's Pondweed				S2	3 Sensitive	2	34.9 ± 1.0	NB
P	<i>Woodwardia virginica</i>	Virginia Chain Fern				S2	3 Sensitive	2	93.5 ± 0.0	NB
P	<i>Selaginella selaginoides</i>	Low Spikemoss				S2	3 Sensitive	14	86.9 ± 0.0	NB
P	<i>Symphyotrichum novi-belgii</i> var. <i>crenifolium</i>	New York Aster				S2?	5 Undetermined	1	14.4 ± 0.0	NB
P	<i>Crataegus macrocarpa</i>	Big-Fruit Hawthorn				S2?	5 Undetermined	1	93.0 ± 0.0	NB
P	<i>Rubus pensilvanicus</i>	Pennsylvania Blackberry				S2?	4 Secure	2	47.1 ± 2.0	NB
P	<i>Galium obtusum</i>	Blunt-leaved Bedstraw				S2?	4 Secure	3	28.7 ± 0.0	NB
P	<i>Salix myricoides</i>	Bayberry Willow				S2?	3 Sensitive	3	49.3 ± 5.0	NB
P	<i>Platanthera huronensis</i>	Fragrant Green Orchid				S2?	5 Undetermined	1	95.0 ± 0.0	NB
P	<i>Elatine americana</i>	American Waterwort				S2S3	3 Sensitive	5	75.9 ± 0.0	NB
P	<i>Rumex maritimus</i> var.	Peach-leaved Dock				S2S3	5 Undetermined	2	7.3 ± 4.0	NB

Taxonomic Group	Scientific Name	Common Name	COSEWIC	SARA	Prov Legal Prot	Prov Rarity Rank	Prov GS Rank	# recs	Distance (km)	Prov
P	<i>persicarioides</i>									
P	<i>Rumex pallidus</i>	Seabeach Dock				S2S3	3 Sensitive	5	28.6 ± 0.0	NB
P	<i>Galium labradoricum</i>	Labrador Bedstraw				S2S3	3 Sensitive	23	8.4 ± 0.0	NB
P	<i>Valeriana uliginosa</i>	Swamp Valerian				S2S3	3 Sensitive	7	86.9 ± 0.0	NB
P	<i>Carex adusta</i>	Lesser Brown Sedge				S2S3	4 Secure	3	71.1 ± 3.0	NB
P	<i>Juncus brachycephalus</i>	Small-Head Rush				S2S3	3 Sensitive	2	86.9 ± 0.0	NB
P	<i>Corallorhiza maculata</i> var. <i>maculata</i>	Spotted Coralroot				S2S3	3 Sensitive	1	96.4 ± 10.0	NB
P	<i>Listera auriculata</i>	Auricled Twayblade				S2S3	3 Sensitive	11	61.7 ± 0.0	NB
P	<i>Potamogeton praelongus</i>	White-stemmed Pondweed				S2S3	4 Secure	1	43.8 ± 0.0	NB
P	<i>Ophioglossum pusillum</i>	Northern Adder's-tongue				S2S3	3 Sensitive	4	11.4 ± 1.0	NB
P	<i>Panax trifolius</i>	Dwarf Ginseng				S3	3 Sensitive	1	12.4 ± 3.0	NB
P	<i>Arnica lanceolata</i>	Lance-leaved Arnica				S3	4 Secure	3	92.9 ± 50.0	NB
P	<i>Artemisia campestris</i> ssp. <i>caudata</i>	Field Wormwood				S3	4 Secure	5	70.3 ± 5.0	NB
P	<i>Bidens hyperborea</i>	Estuary Beggarticks				S3	4 Secure	10	42.3 ± 0.0	NB
P	<i>Erigeron hyssopifolius</i>	Hyssop-leaved Fleabane				S3	4 Secure	4	89.6 ± 0.0	NB
P	<i>Symphotrichum boreale</i>	Boreal Aster				S3	3 Sensitive	4	60.2 ± 1.0	NB
P	<i>Betula pumila</i>	Bog Birch				S3	4 Secure	99	5.4 ± 0.0	NB
P	<i>Arabis glabra</i>	Tower Mustard				S3	5 Undetermined	1	98.7 ± 0.0	NB
P	<i>Stellaria humifusa</i>	Saltmarsh Starwort				S3	4 Secure	10	3.1 ± 0.0	NB
P	<i>Hudsonia tomentosa</i>	Woolly Beach-heath				S3	4 Secure	85	9.8 ± 5.0	NB
P	<i>Crassula aquatica</i>	Water Pygmyweed				S3	4 Secure	6	76.0 ± 0.0	NB
P	<i>Hedysarum alpinum</i>	Alpine Sweet-vetch				S3	4 Secure	5	97.1 ± 0.0	NB
P	<i>Gentianella amarella</i> ssp. <i>acuta</i>	Northern Gentian				S3	4 Secure	6	12.2 ± 1.0	NB
P	<i>Geranium bicknellii</i>	Bicknell's Crane's-bill				S3	4 Secure	3	62.2 ± 5.0	NB
P	<i>Myriophyllum verticillatum</i>	Whorled Water Milfoil				S3	4 Secure	5	5.1 ± 0.0	NB
P	<i>Myriophyllum sibiricum</i>	Siberian Water Milfoil				S3	4 Secure	7	33.0 ± 6.0	NB
P	<i>Teucrium canadense</i>	Canada Germander				S3	3 Sensitive	11	79.1 ± 0.0	NB
P	<i>Nuphar lutea</i> ssp. <i>pumila</i>	Small Yellow Pond-lily				S3	4 Secure	1	42.4 ± 0.0	NB
P	<i>Epilobium strictum</i>	Downy Willowherb				S3	4 Secure	3	12.9 ± 0.0	NB
P	<i>Polygonum arifolium</i>	Halberd-leaved Tearthumb				S3	4 Secure	5	94.0 ± 0.0	NB
P	<i>Polygonum punctatum</i> var. <i>confertiflorum</i>	Dotted Smartweed				S3	4 Secure	1	76.8 ± 0.0	NB
P	<i>Polygonum scandens</i>	Climbing False Buckwheat				S3	4 Secure	3	92.3 ± 0.0	NB
P	<i>Samolus valerandi</i> ssp. <i>parviflorus</i>	Seaside Brookweed				S3	4 Secure	7	72.7 ± 9.0	NB
P	<i>Pyrola minor</i>	Lesser Pyrola				S3	4 Secure	4	60.2 ± 0.0	NB
P	<i>Ranunculus gmelinii</i>	Gmelin's Water Buttercup				S3	4 Secure	15	11.2 ± 2.0	NB
P	<i>Rosa palustris</i>	Swamp Rose				S3	4 Secure	1	93.1 ± 1.0	NB
P	<i>Rubus chamaemorus</i>	Cloudberry				S3	4 Secure	67	4.3 ± 0.0	NB
P	<i>Salix pedicellaris</i>	Bog Willow				S3	4 Secure	8	11.6 ± 1.0	NB
P	<i>Comandra umbellata</i>	Bastard's Toadflax				S3	4 Secure	51	9.2 ± 0.0	NB
P	<i>Comandra umbellata</i> ssp. <i>umbellata</i>	Bastard's Toadflax				S3	4 Secure	6	29.1 ± 0.0	NB
P	<i>Geocaulon lividum</i>	Northern Comandra				S3	4 Secure	47	0.7 ± 0.0	NB
P	<i>Parnassia glauca</i>	Fen Grass-of-Parnassus				S3	4 Secure	11	86.9 ± 0.0	NB
P	<i>Limosella australis</i>	Southern Mudwort				S3	4 Secure	10	54.4 ± 1.0	NB
P	<i>Veronica serpyllifolia</i> ssp. <i>humifusa</i>	Thyme-Leaved Speedwell				S3	4 Secure	3	12.4 ± 3.0	NB
P	<i>Viola adunca</i>	Hooked Violet				S3	4 Secure	3	11.5 ± 2.0	NB
P	<i>Viola nephrophylla</i>	Northern Bog Violet				S3	4 Secure	5	86.9 ± 0.0	NB
P	<i>Carex capillaris</i>	Hairlike Sedge				S3	4 Secure	1	88.9 ± 0.0	NB
P	<i>Carex chordorrhiza</i>	Creeping Sedge				S3	4 Secure	5	5.4 ± 0.0	NB
P	<i>Carex conoidea</i>	Field Sedge				S3	4 Secure	1	79.2 ± 10.0	NB
P	<i>Carex garberi</i>	Garber's Sedge				S3	3 Sensitive	6	93.0 ± 0.0	NB

Taxonomic Group	Scientific Name	Common Name	COSEWIC	SARA	Prov Legal Prot	Prov Rarity Rank	Prov GS Rank	# recs	Distance (km)	Prov
P	<i>Carex haydenii</i>	Hayden's Sedge				S3	4 Secure	1	76.1 ± 0.0	NB
P	<i>Carex ormostachya</i>	Necklace Spike Sedge				S3	4 Secure	2	55.1 ± 0.0	NB
P	<i>Carex tenera</i>	Tender Sedge				S3	4 Secure	1	89.8 ± 0.0	NB
P	<i>Carex tuckermanii</i>	Tuckerman's Sedge				S3	4 Secure	3	65.3 ± 10.0	NB
P	<i>Carex vaginata</i>	Sheathed Sedge				S3	3 Sensitive	8	86.9 ± 0.0	NB
P	<i>Carex wiegandii</i>	Wiegand's Sedge				S3	4 Secure	2	91.7 ± 1.0	NB
P	<i>Carex recta</i>	Estuary Sedge				S3	4 Secure	7	13.5 ± 0.0	NB
P	<i>Eleocharis intermedia</i>	Matted Spikerush				S3	4 Secure	2	55.7 ± 2.0	NB
P	<i>Eriophorum russeolum</i>	Russet Cottongrass				S3	4 Secure	56	5.2 ± 0.0	NB
P	<i>Rhynchospora capitellata</i>	Small-headed Beakrush				S3	4 Secure	17	89.7 ± 0.0	NB
P	<i>Trichophorum clintonii</i>	Clinton's Clubrush				S3	4 Secure	8	89.1 ± 0.0	NB
P	<i>Triglochin gaspensis</i>	Gasp Arrowgrass				S3	4 Secure	33	3.1 ± 0.0	NB
P	<i>Cypripedium reginae</i>	Showy Lady's-Slipper				S3	3 Sensitive	10	32.1 ± 2.0	NB
P	<i>Liparis loeselii</i>	Loesel's Twayblade				S3	4 Secure	5	11.4 ± 1.0	NB
P	<i>Platanthera blephariglottis</i>	White Fringed Orchid				S3	4 Secure	23	16.9 ± 2.0	NB
P	<i>Platanthera grandiflora</i>	Large Purple Fringed Orchid				S3	3 Sensitive	2	30.4 ± 5.0	NB
P	<i>Dichanthelium depauperatum</i>	Starved Panic Grass				S3	4 Secure	16	86.7 ± 0.0	NB
P	<i>Poa glauca</i>	Glaucous Blue Grass				S3	4 Secure	3	98.4 ± 0.0	NB
P	<i>Potamogeton obtusifolius</i>	Blunt-leaved Pondweed				S3	4 Secure	6	42.4 ± 0.0	NB
P	<i>Xyris montana</i>	Northern Yellow-Eyed-Grass				S3	4 Secure	28	7.6 ± 2.0	NB
P	<i>Zannichellia palustris</i>	Horned Pondweed				S3	4 Secure	10	33.3 ± 1.0	NB
P	<i>Cryptogramma stelleri</i>	Steller's Rockbrake				S3	4 Secure	1	98.5 ± 0.0	NB
P	<i>Asplenium trichomanes-ramosum</i>	Green Spleenwort				S3	4 Secure	1	98.5 ± 0.0	NB
P	<i>Lycopodium sabinifolium</i>	Ground-Fir				S3	4 Secure	4	11.2 ± 0.0	NB
P	<i>Huperzia appalachiana</i>	Appalachian Fir-Clubmoss				S3	3 Sensitive	1	89.5 ± 1.0	NB
P	<i>Botrychium lanceolatum</i> var. <i>angustisegmentum</i>	Lance-Leaf Grape-Fern				S3	3 Sensitive	1	99.1 ± 0.0	NB
P	<i>Botrychium simplex</i>	Least Moonwort				S3	4 Secure	3	8.5 ± 1.0	NB
P	<i>Lobelia kalmii</i>	Brook Lobelia				S3S4	4 Secure	2	89.6 ± 1.0	NB
P	<i>Suaeda calceoliformis</i>	Horned Sea-blite				S3S4	4 Secure	28	12.1 ± 0.0	NB
P	<i>Utricularia gibba</i>	Humped Bladderwort				S3S4	4 Secure	1	99.9 ± 1.0	NB
P	<i>Rumex maritimus</i>	Sea-Side Dock				S3S4	4 Secure	19	0.4 ± 0.0	NB
P	<i>Rumex maritimus</i> var. <i>fuiginus</i>	Tierra del Fuego Dock				S3S4	4 Secure	2	8.4 ± 0.0	NB
P	<i>Corallorhiza maculata</i>	Spotted Coralroot				S3S4	3 Sensitive	5	32.1 ± 2.0	NB
P	<i>Distichlis spicata</i>	Salt Grass				S3S4	4 Secure	26	8.7 ± 3.0	NB
P	<i>Stuckenia pectinata</i>	Sago Pondweed				S3S4	4 Secure	5	13.7 ± 0.0	NB
P	<i>Polygonum raii</i>	Sharp-fruited Knotweed				SH	0.1 Extirpated	9	0.1 ± 1.0	NB
P	<i>Botrychium campestre</i>	Prairie Moonwort				SH	2 May Be At Risk	1	93.6 ± 0.0	NB

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## Appendix C: Approval to Operate



## APPROVAL TO OPERATE

**I-9161**

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Pursuant to paragraph 8(1) of the *Water Quality Regulation - Clean Environment Act*, this Approval to Operate is hereby issued to:

**MISCOU FISH PRODUCTS INC.**  
for the operation of the  
**Miscou Fish and Shellfish Processing Plant**

Description of Source: **Fish Plant**

Source Classification: **Fees for Industrial Approvals  
Regulation - Clean Water Act** **Class 3**

Parcel Identifier: **20594883**

Mailing Address: **65 Clayton Park Dr  
Halifax, NS B3M 1M1**

Conditions of Approval: **See attached Schedule "A" of this Approval**

Supersedes Approval: **New**

Valid From: **August 21, 2015**

Valid To: **August 20, 2020**

Recommended by: \_\_\_\_\_

Environment Division

Issued by: \_\_\_\_\_

for the Minister of Environment and Local Government

August 21, 2015

Date

## SCHEDULE "A"

### A. GENERAL INFORMATION

#### DEFINITIONS

**"Approval Holder"** means the person or entity to which this Approval is issued, as named on the certificate page of this Approval.

**"Department"** means the New Brunswick Department of Environment and Local Government.

**"Facility"** means the property, buildings and equipment located on the property identified by the Parcel Identifier(s) on the certificate page of this Approval, and all contiguous property in the title and/or control of the Approval Holder at that location.

**"process water"** means all water used by the Facility that has been in contact with the raw fish/shellfish, processed fish/shellfish, or fish/shellfish waste, and includes water utilized for the off-loading of fish/shellfish from fishing vessels and other means of transportation for use in the processing operation.

**"outfall"** means the final outlet or release point of the pipe used to discharge the process water.

**"statutory holiday"** means New Years Day, Good Friday, Easter Monday, the day fixed by proclamation of the Governor-in-council for the celebration of the birthday of the Sovereign (Victoria Day), Canada Day, New Brunswick Day, Labour Day, the day fixed by proclamation of the Governor-in-council as a general day of Thanksgiving, Remembrance Day, Christmas Day and Boxing Day. If the Statutory Holiday falls on a Sunday, the following day shall be considered as the Statutory Holiday.

**"normal business hours"** means the hours when the Department's offices are open. These include the period between 8:15 a.m. and 4:30 p.m. from Monday to Friday excluding statutory holidays.

**"after hours"** means the hours when the Department's offices are closed. These include statutory holidays, weekends, and the hours before 8:15 a.m. and after 4:30 p.m. from Monday to Friday.

**"environmental emergency"** means a situation where there has been or will be a release, discharge, or deposit of a contaminant or contaminants to the atmosphere, soil, surface water, and/or groundwater environments of such a magnitude or duration that it could cause significant harm to the environment or put the health of the public at risk.

**TERMS AND CONDITIONS**

The Approval Holder shall operate the Facility in accordance with the following:

**EMERGENCY REPORTING**

- 1a. Immediately following the discovery of an environmental emergency, the Approval Holder shall notify the Department in the following manner.

During normal business hours, telephone the Department's applicable Regional Office **until personal contact is made** (i.e. no voice mail messages will be accepted) and provide as much information that is known about the environmental emergency. The telephone numbers for the Department's six Regional Offices are provided in the table below.

After hours, and during normal business hours when personal contact is not possible, telephone the Canadian Coast Guard **until personal contact is made** and provide as much information that is known about the environmental emergency. The telephone number for the **Canadian Coast Guard** is **1-800-565-1633**.

- 1b. Within 24-hours of the time of initial notification, a **Preliminary Emergency Report** shall be faxed by the Approval Holder to the Department's applicable Regional Office using the fax numbers provided below. The Preliminary Emergency Report shall clearly communicate as much information that is available at the time about the environmental emergency.

Within five (5) days of the time of initial notification, a **Detailed Emergency Report** shall be faxed by the Approval Holder to the Department's applicable Regional Office using the fax numbers provided below. The Detailed Emergency Report shall include, as minimum, the following: i) a description of the problem that occurred; ii) a description of the impact that occurred; iii) a description of what was done to minimize the impact; and iv) a description of what was done to prevent recurrence of the problem.

<b>Office location</b>	<b>Phone</b>	<b>Fax</b>
Bathurst Regional Office	(506) 547-2092	(506) 547-7655
Fredericton Regional Office	(506) 444-5149	(506) 453-2893
Grand Falls Regional Office	(506) 473-7744	(506) 475-2510
Miramichi Regional Office	(506) 778-6032	(506) 778-6796
Moncton Regional Office	(506) 856-2374	(506) 856-2370
Saint John Regional Office	(506) 658-2558	(506) 658-3046

**LIMITS**

2. The Approval Holder shall collect and treat all process water in a treatment system that removes all particles larger than 3 mm (1/8 inch) before the process water is discharged.
3. If the Facility's groundwater pumping capacity is or will be greater than 50 m<sup>3</sup>/day, the Approval Holder shall ensure that all projects that will increase water consumption or pumping capacity is registered with the Environmental Assessment Section of the Department.
4. The Approval Holder shall ensure that odour, dust, noise, or site run-off being released or discharged from the Facility does not cause adverse impacts to any off-site receptor. In the event impacts are suspected by the Department to be adversely impacting any off-site receptor, the Approval Holder may be required to investigate the degree of impact and/or develop, submit, and implement a Prevention and Control Plan in accordance with a timetable established by the Department. The plan shall be submitted in writing to the Department for review and approval prior to implementation.

**FACILITY MANAGEMENT**

5. Unless written permission from the Department is obtained to do otherwise, the treated process water shall be discharged by means of a pipeline having an outfall located below the low water mark. The pipeline and associated outfall may only be removed in the case of extreme weather conditions, such as storms and/or ice buildup. The pipeline must be reinstalled or repaired as soon as weather conditions permit. The Approval Holder shall notify and report all such occurrences to the Department's applicable Regional Office following the Emergency Reporting Section of this Approval.
6. Unless it is unsafe or the Facility uses a common outfall, the Approval Holder shall inspect the shore around the outfall at noontime and at the end of each day when process water is discharged. The Approval Holder shall collect any solids on the shore which have been deposited from the outfall.
7. The Approval Holder shall ensure that good housekeeping measures are practiced at the Facility to ensure the proper storage of fish/shellfish waste. As a minimum, all containers used to store fish/shellfish waste shall be sealed to reduce odour impacts and seagull nuisance.
8. The Approval Holder shall dispose of all solid fish/shellfish waste at a fishmeal processing plant and/or composting facility approved by the Department, or in another manner approved by the Department.

9. The Approval Holder shall ensure that all chemicals stored at the Facility are located in a dedicated Chemical Storage System. The system shall be set up to ensure that all chemicals are:
  - a) secured in sealed and chemically resistant containers;
  - b) away from high traffic areas and protected from vehicle impacts;
  - c) away from electrical panels;
  - d) in a containment area that has secondary containment adequate to contain 110 % of the nominal volume of the largest container in the containment area;
  - e) in a containment area that is designed to prevent contact between incompatible chemicals; and
  - f) in a containment area designed to prevent the release or discharge of chemicals to the environment as a result of a spill.
  
10. **Prior to the beginning of operation of the Facility**, the Approval Holder shall ensure that a cumulative flow meter is installed and in working order on every groundwater well used by the Facility.

#### **TESTING AND MONITORING**

11. The Approval Holder shall conduct any testing and monitoring at such times and in such manner as the Department may in writing require.
  
12. The Approval Holder shall ensure that the amount of water pumped and the time of the reading at each groundwater well are recorded daily. These records shall be kept at the Facility for a minimum of two (2) years and made available to the Department upon request.

#### **REPORTING**

13. In the event of a small spill or leak of liquid materials, the Approval Holder shall act first to contain, and then to clean up the spilled or leaked material and mitigate any resulting impacts as soon as the spill or leak is detected. If the spill or leak results in an "environmental emergency" as defined in this Approval, the Approval Holder shall report the event in accordance with the Emergency Reporting section of this Approval. If the spill or leak is not an "environmental emergency", the Approval Holder shall report this event to the Department's applicable Regional Office by fax, within one business day, identifying the material spilled, the approximate amount of liquid spilled, the location of the spill and the method(s) used to clean up the liquid.

14. **By February 15 of each year**, the Approval Holder shall submit to the Department an Annual Environmental Report containing the following information for the previous calendar year:
- a) the number of processing days per season/specie (including average hours/day);
  - b) the volumetric flow rate of the process water in cubic metres per day (m<sup>3</sup>/day);
  - c) a description of the method used to determine the volumetric flow rate of the process water;
  - d) once the well flow meters are installed, a summary of the water pumped from each well;
  - e) the solid fish/shellfish waste disposal locations; and
  - f) a summary report of all small spill and/or leak events at the Facility, including the date, location, approximate volume, and method of clean-up for each spill and/or leak.

Prepared by: Gaétan Landry  
Gaétan Landry, P.Eng.  
Regional Engineer, Region 1, Bathurst





Appendix D: CEAA 2012 Project Checklist

## Appendix B: Project Classification Checklist (Step 2a)

**Instructions:** Complete the following checklist in order to classify a project as either basic or non-basic. Certain sections include *explanation and guidance* sections to assist Authorities in properly completing the checklist. See Step 2a of the attached guide for additional help.

**Project Name:** Miscou Fish Products Inc. Facility Expansion and Water Supply Assessment

### Section A: Are the expected potential impacts of this project limited to the interior of a building?

**YES**      **Basic project.** Complete sections E and F and continue to complete an MMF (Step 3a)

**NO**      Continue to Section B

#### **Explanation and Guidance**

*Instances where any potential effects of a project are limited to the interior of a building are automatically deemed as unlikely to cause adverse environmental effects.*

Biophysical Effects 5(1)a&b

### Section B: Does the project have the potential to negatively affect the environment?

**YES**      Continue to Section B-1

**NO**      Continue to Section C

**UNKNOWN**      **Non-Basic project.** Complete sections E and F and continue to complete an EEE (Step 3b)

#### **Explanation and Guidance**

*Consider the below questions in answering Section B. Answers of 'yes' to any of these guidance questions will likely translate to an answer of 'yes' to Section B. Consult section 5 of CEAA 2012 for more clarity on what constitutes an environmental effect under CEAA 2012. Further project information or research may be required to answer these questions.*

- Does the project have the potential to harmfully alter, disturb or destroy vulnerable natural features (e.g. habitat for endangered species, water source for a town, wetlands.)?
- **Does the project have the potential to release a polluting substance into the land, water, or air?**
- Does the project have the potential to cause land use changes (e.g. resource extraction, deforestation, clearing of vegetation,.)?
- Does the project have the potential to affect birds and wildlife (flora and fauna), including species at risk and its critical habitat?
- Does the project have the potential to result in alteration of water level, quality, flow or management regime in a water body, or result in other important changes to surface or groundwater resources (including well-water)?
- Does the project have the potential to cause sensory disturbances such as noise and/or vibrations?

### B-1: Can all of these effects be managed by "established and effective" mitigation measures?

**YES**      Continue to Section C.

**NO**      **Non-Basic project.** Complete Sections E and F and continue to complete an EEE (Step 3b)

Socio-Economic Effects (aboriginal peoples) 5(1)c

### Section C: Is the project likely to have an effect on aboriginal peoples resulting from a change to the environment?

**YES**      Continue to C-1.

**NO**      Continue to Section D

**UNKNOWN**      **Non-Basic project.** Complete Sections E and F and continue to complete an EEE (Step 3b)

#### **Explanation and Guidance**

Consider the below bullets in answering Section C. Remember that only effects to aboriginal peoples which are caused by changes to the environment are considered. Consult section 5 of CEAA 2012 for more clarity on what constitutes an environmental effect under CEAA 2012.

The effects to aboriginal peoples include:

- Health and Socio-economic conditions (e.g. **impact to an aboriginal fishery resulting from an change in fish population**)
- Physical and cultural heritage
- The current use of lands and resources for traditional purposes (e.g. hunting and gathering)
- Any structure site or thing that is of historical, archaeological, paleontological or architectural significance.

**C-1: Can all of these effects be managed by “established and effective” mitigation measures?**

**YES** Continue to Section D

**NO** **Non-Basic project.** Complete Sections E and F and continue to complete an EEE (Step 3b)

Socio-Economic Effects 5(2)b

**Section D: Does the project have the potential to cause a change in the environment resulting from a related federal decision (power, duty or function) that may result in socio-economic impacts?**

**YES** Continue to Section D-1

**NO** **Basic project.** Complete Sections E and F and continue to complete an MMF (Step 3a)

**UNKNOWN** **Non-Basic project.** Complete Sections E and F and continue to complete an EEE (Step 3b)

**Explanation and Guidance**

Consider the below bullets in answering Section D. Consult section 5 of CEAA 2012 for more clarity on what constitutes an environmental effect.

Socio-economic effects include:

- Health and Socio-economic conditions (e.g. **impact to a commercial fishery resulting from an change in fish population**)
- Physical and cultural heritage
- Any structure site or thing that is of historical, archaeological, paleontological or architectural significance.

**D-1: Can all of these effects be managed by “established and effective” mitigation measures?**

**YES** **Basic project.** Complete Sections E and F and continue to complete an MMF (Step 3a)

**NO** **Non-Basic project.** Complete Sections E and F and continue to complete an EEE (Step 3b)

**Section E: Project Classification Conclusion**

**Basic Project requiring the completion of a Mitigation Measures Form (MMF)**

**Non-basic project requiring the completion of an Environmental Effects Evaluation (EEE)**

**Section F: Sign Off (if applicable)**

**Comments:** *Enter any additional comments you consider warranted here.*

<b>Completed by:</b> Name	Jonathan Burt, EP (Roy Consultants)	1/27/2016
	Signature	Date

# Appendix C: MMF: Basic Project Mitigation Measures Form (Step 3a)

This template is meant to be used by Authorities in determining the significance of potential adverse environmental effects of a proposed basic project, as well as outlining the associated mitigation measures.

## Section A: Project Identification

<b>Project Title</b>	<b>Miscou Fish Products Inc. Facility Expansion and Water Supply Assessment</b>
<b>Project Location</b>	<b>PID 20594883 , 24 allée du quai de Miscou, Miscou Island, NB</b>
<b>Lead Authority</b>	<b>Dept. of Fisheries and Oceans – Small Craft Harbours (DFO –SCH)</b>
<b>Contact Name:</b>	<b>Alain Noel</b>
<b>Title:</b>	<b>Manager, SCH Gulf New Brunswick</b>
<b>Telephone No.</b>	<b>1-506-395-7709</b>
<b>Email address:</b>	<b>Alain.noel@dfo-mpo.gc.ca</b>
<b>Other Authority(ies)</b>	Name of Organization(s)
<b>Contact Information (if required)</b>	<b>3267 rue Principale, Tracadie, NB E1X 1G5</b>

## Section B: Project Description and Description of the Environment

<b>Project Description:</b>	<p>The proposed project consists of the expansion of the existing Miscou Fish Products Inc. herring roe fish processing plant, and the development and assessment of their fresh water supply.</p> <p>The expansion consists of the construction of a 1300m2 building expansion, which will house the lobster/snow crab processing line (receiving/chilling room, sorting and butchering area, cooking area, chilling area, brine tank room, desalting room, glazing room, boxing/packaging room, freezer and shipping area) as well as an office, full-service kitchen, staff washrooms, change rooms and eating/break areas. The expansion is being constructed to meet the food health and safety requirements of the Canadian Food Inspection Agency (CFIA) and the BRC Global Standards system.</p> <p>The facility requires fresh water for both the herring roe season (August – October) and the snow crab/lobster season (April-June). At present, the facility has 3 potable water wells on-site. Well #1 is for non-processing uses (staff washrooms, kitchens, etc). Well #2 will be the main supply for fish processing, and well #3 will be an auxiliary supply in the event of an interruption to the Well #2 supply.</p> <p>The water supply development consists of evaluating the water wells via a step test and 48-hour pump test, as per the NB Water Supply Source Assessment (WSSA) Guidelines, to determine a sustainable yield and safe pumping rate for the supply, which will ensure the pumping rate does not impact neighbouring water supplies or</p>
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the quality of the water in the aquifer.

**Description of the Environment (if applicable):**

The proposed project is located on a Federal Crown Land parcel adjacent to the Miscou Wharf. The parcel already contains the existing Miscou Fish Products fish processing plant, and is zoned Mixed 1 (for commercial/industrial uses). The site itself is a developed site, relatively flat but sloping from the north (where the 3 wells are located) to the south and the wharf. No trees are present on site, and vegetation is limited to a lawn area. The lot also contains gravel and paved (asphalt) parking areas.

No watercourses or wetlands are located within 30m of the wells or proposed facility expansion. The wells are approximately 120m from the Miscou Harbour, and the facility expansion will be approximately 60m from the harbour.

Surface water runoff is generally to the south, where it enters a manhole and is discharged to the harbour.

**Section C: Resources**

**Resources consulted**

- Canadian Environmental Assessment Act (CEAA)
- Government of Canada. 2012. Regulations Designating Physical Activities. Canadian Environmental Assessment Act, 2012.
- Interim Guidance - Projects on Federal Lands Making a determination under section 67 of the Canadian Environmental Assessment Act 2012.
- Aboriginal Consultation and Accommodation. Updated Guidelines for Federal Officials to Fulfill the Duty to Consult. Minister of the Department of Aboriginal Affairs and Northern Development Canada, March 2011.
- Environmental Impact Assessment Registration Document. Miscou Fish Products Inc. Facility Expansion and Water Supply Assessment. February, 2016. Roy Consultants.

**Section D: Mitigation Measures Requirement**

Check the following box if no mitigation measures are required. If mitigation measure are required, proceed to section E.

<input type="checkbox"/>	<b>No mitigation measures are required as one or more of the following conditions apply.</b>	
	<input type="checkbox"/>	<b>Potential impacts are limited to the interior of a building</b>
	<input type="checkbox"/>	<b>There are no potential adverse biophysical and/or socio economic effects</b>
<i>Continue to Section F. Do not complete Section E.</i>		

## Section E: Identify Environmental Effects & Mitigation Measures

Summarize the potential adverse environmental effects as well as any corresponding effective and established mitigation measures which will be implemented should the project proceed. Establish if the environmental effect is biophysical (B.P.) and/or socio-economic (S.E.) by checking the corresponding box for each completed row. Consult Step 3a of the Guide for help determining what constitutes biophysical and socio-economic effects. Add rows as needed.

Environmental Effect	B.P.	S.E.	Effective and Established Mitigation Measure
<p><b>Groundwater quality:</b> Groundwater quality may be impacted by unplanned spill events during construction of the pipeline ROW.</p>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<p>-Miscou Fish Products Inc. undertook a comprehensive water supply assessment, including a 48-hour pump test (hydrogeological investigation) to determine the combined safe pumping rates of the water supplies on site, to mitigate potential impacts to water quality (saltwater intrusion) and quantity impacts to neighbouring wells from over-pumping;</p> <p>-the NB DELG will issue Conditions of the EIA Determination to ensure the water supply is operated properly.</p>
<p><b>Marine Aquatic Habitat:</b> Operation of the fish processing plant will require that fish process water be discharged to Miscou Harbour. Fish process water can impact the area in the vicinity of the discharge pipe through nutrient loading and temperature change.</p>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<p>-The facility will maintain its waste filtration system in good working order;</p> <p>- The facility will adhere to all conditions outlined in their NB Approval to Operate;</p> <p>-MFP will minimize, to the extent practical, the amount of water used in the facility;</p> <p>-The facility's discharge pipe extends approximately 110m into the Miscou Channel to maximize flushing;</p> <p>-Facility staff will undertake annual, visual inspection of the floor of the channel at the discharge location (when placing the pipe) for signs of organic buildup, such as sediment colour changes or changes to the vegetation at this location, and consult with regulators as needed.</p>
<p><b>Waste Management:</b> Waste generated by the construction of the project will generate typical construction waste. The proponent will implement the following waste management mitigation.</p>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<p>-the proponent will contract a licensed contractor for the construction of the building expansion;</p> <p>-Construction waste will be disposed of on site in waste containers (industrial garbage bins) and removed on a regular basis by a licensed carrier;</p> <p>-All waste materials will be disposed of at an approved waste disposal site in accordance</p>

Solid waste will be generated from the fish processing operation.			with all Federal/Provincial legislation and Guidelines.  -Solid fish waste will be removed from the solids separator and disposed of at an approved composting facility (Christian Laroque Services Ltée, Lamèque-see attached confirmation letter).
<b>Labour and Employment:</b> Positive economic impacts from the project construction and operation are anticipated.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	- None required. The proposed project is anticipated to create approximately 40 – 50 permanent, seasonal fish plant positions, during spring and fall fishing seasons, and will employ approximately 10 – 15 positions during the building construction.
<b>Cumulative Effects:</b> The facility currently discharges fish waste effluent into Miscou Bay, which may create cumulative water quality impacts over time.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	-In addition to the mitigation noted in the water quality section above, no other fish processing plants are operating in Miscou Bay at this time;

**Section F: Determination**

Taking into account implementation of mitigation measures outlined in the analysis, this project:

<input checked="" type="checkbox"/>	Is not likely to cause significant adverse environmental effects
<input type="checkbox"/>	Requires further analysis. Complete an Environmental Effects Evaluation (Step 3b)

**Section G: Sign-off and Approval**

Completed by:

**Comments:** *Enter any additional comments you consider warranted here.*

<b>Name</b>	Jonathan Burt, EP. Roy Consultants.	1/27/2016
<b>Organization</b>	Signature	Date

Copy and paste the below table for each Authority, as required, which approves the information and decisions described in this form.

Sign-off and Approval:

**Comments:** *Enter any additional comments you consider warranted here.*

<b>Name</b>		enter date
<b>Organization</b>	Signature	Date

**Le 5 janvier 2016**

**Miscou Fish Product Inc**

**Sujet : Site de compostage**

**Ceci est pour vous informer que nous sommes disposés à vous rendre disponible notre site de compostage pour vos déchets de crabe et de homard pour la saison 2016. Ce dernier porte l'agrément d'exploitation I-9149 et est situé sur le terrain portant le NID 20127965.**

**Espérant le tout à votre entière satisfaction**



**Westley Wilson  
Directeur Général**



## Appendix E: Comprehensive Hydrogeological Report