



GEMTEC

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Appendix G **VEC Wetlands and Vegetation**

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1.0 RATIONALE FOR THE VALUED ENVIRONMENTAL COMPONENT (VEC)

Wetlands offer biologically diverse ecosystems that support a wide variety of plant and animal species. Furthermore, wetlands provide positive hydrological functions, water quality processes and habitat functions. In New Brunswick, wetlands are regulated under the *Clean Water Act - Watercourse and Wetland Alteration Regulation* administered by the New Brunswick Department of Environment and Local Government (NBDELG). Vegetation is also included in this VEC and is primarily focused on Species at Risk (SAR) and Species of Conservation Concern (SOCC).

In order to assess any influence of the Project on wetlands and vegetation, three components have been identified for the VEC:

- *Wetlands* are lands where the water table is at, near, or above the land's surface, or which is saturated, for a long enough period to promote wetland or aquatic processes as indicated by hydric soils, hydrophytic vegetation, and various kinds of biological activities adapted to the wet environment (NBDELG, 2002);
- *Vegetation SAR* include species that have a protective status under Schedule 1 of the federal *Species at Risk Act (SARA)* or are protected under the provincial *New Brunswick Species At Risk Act (NBSAR)*; and
- *Vegetation SOCC* are species not protected by federal or provincial legislation but are:
 - Considered rare in New Brunswick with an Atlantic Canada Conservation Data Centre (ACCDC) rank of S1 to S3; and/or
 - Ranked At Risk, May Be At Risk or Sensitive by the NBDERD.

2.0 BOUNDARIES FOR THE ENVIRONMENTAL EFFECTS ASSESSMENT

2.1 Spatial Boundaries

The assessment of wetlands and vegetation has been completed for two spatial boundaries:

- The Project Area is defined as footprint of ground disturbance required for the Project activities (PIDs 40381345, 40381337, 40437121, 40445330, 40495780, 40164808, portion of 40163826, portion of 40143083, portion of 40336240, and portion of 40437139) as presented in Figure G-1; and
- The Assessment Area encompasses a 5 kilometre (km) radius of the Project Area where vegetation SAR and SOCC have been recorded.

2.2 Temporal Boundaries

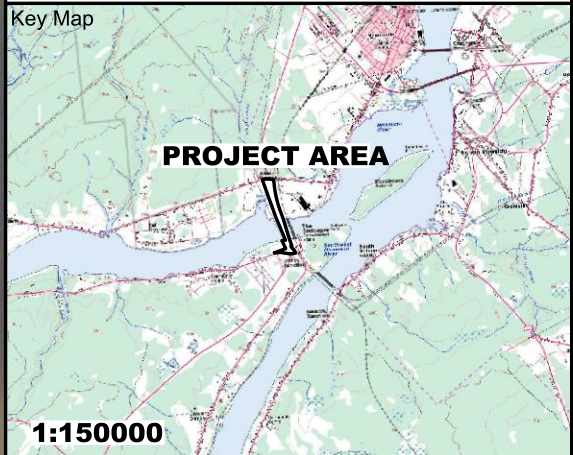
The assessment of wetlands and vegetation has been completed for the following temporal boundaries:

- The construction phase of the Project; and
- The operational and maintenance phase of the Project.



Legend

	ORIGINALLY ENVISIONED PROJECT AREA AND STUDY AREA
	REGULATED WETLAND
	DELINEATED WETLAND
	30m REGULATED BUFFER



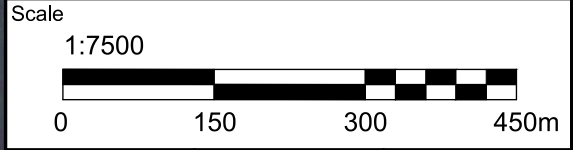
Note
 1. THIS DRAWING IS A SCHEMATIC REPRESENTATION. SIZES, LOCATIONS AND DIMENSIONS ARE APPROXIMATE.

Drawn By	CHG	Checked By	JH
Calculations By	---	Checked By	---

Date
 JUNE 2018

Project
 EIA - NORTHWEST MIRAMICHI RIVER NO.1 ANDERSON BRIDGE REPLACEMENT

Drawing
 WETLAND HABITAT SPATIAL BOUNDARIES AND WETLAND DELINEATION



File No. 69214403	Drawing FIGURE G-1	Revision No. 0
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3.0 METHODOLOGY

A two-pronged approach was used to determine the existing wetland and vegetation conditions and any potential interaction with the Project, including:

- A desktop study of all existing information for wetlands, vegetation SAR and vegetation SOCC; and
- Field investigations to delineate wetlands and survey vegetation within the Project Area.

With respect to the Environmental Impact Assessment (EIA) process, interactions or effects of the Project on wetlands and vegetation have been identified and are discussed. Where residual effects are anticipated, the proposed methods for mitigating the potential effects have been presented.

3.1 Wetlands

3.1.1 Desktop

In New Brunswick, regulated wetlands are identified using an online predictive mapping tool, (GeoNB), developed by the NBDELG and the NBDERD. The regulated features include the mapped wetland boundary and the 30-metre wetland buffer. Prior to completing any field investigations, the GeoNB mapping was reviewed for the presence of any regulated wetlands or provincially significant wetlands within the Project Area.

3.1.2 Field

GEMTEC personnel visited the site on September 27 to 30, 2017 for the purposes of assessing the environmental conditions within the Project Area. During the field investigation, GEMTEC biologists identified the location, boundaries and characteristics of any encountered wetlands. Delineations were recorded using handheld Global Positioning System (GPS) units and photos were taken.

The wetland delineations were completed by identifying the presence of hydrology indicators (*i.e.*, saturated soil, surface water, drainage patterns, *etc.*) and hydrophytic vegetation. The field information was recorded on the NBDELG Wetland Verification Data Sheets supplied by the New Brunswick Department of Transportation and Infrastructure (NBDTI).

Each delineated wetland was assessed for ecosystem function using the Wetland Ecosystem Services Protocol for Atlantic Canada (WESP-AC). WESP-AC is a rapid assessment tool for determining function and value of tidal or non-tidal wetlands throughout temperate North America. WESP-AC uses three multiple choice forms to generate scores from 0 to 10 and ratings of, Lower, Moderate or Higher, for each wetland function and benefit. The function describes the ecological process that a particular wetland conducts within the environment and the higher rated wetland functions are discussed in this report. The benefit score is not

discussed as it describes the context within which the function is being performed. It is important to note that not all “high-functioning” wetlands are healthy and/or intact and no single wetland can rate highly in all functions as many functions operate naturally in opposing directions.

3.2 Vegetation Survey

3.2.1 Desktop

A data request was submitted to the ACCDC for a 5 km radius of the Project Area (*i.e.*, the Assessment Area). The ACCDC report provides the location of vegetation SOCC, any location sensitive species and information on protected or managed natural areas. The ACCDC report was reviewed prior to completing any field investigations to determine the potential for any vegetation SAR and/or SOCC within the Project Area.

3.2.2 Field

Biologist Derrick Mitchell of Boreal Environmental conducted a vegetation survey in the Project Area on September 29 and September 30, 2017. The vegetation survey included traversing the entire Project Area with special attention given to habitats with an elevated potential for SAR and SOCC (*e.g.*, wetlands, watercourse banks). Any incidental sighting or evidence of vegetation and critical habitat for SAR was recorded during the site visit. For the purposes of this assessment, critical habitat is the habitat necessary for the survival or recovery of a listed endangered, threatened or extirpated species in Schedule 1 of *SARA* as identified in the recovery strategy or action plan for a given listed species. A follow-up rare vegetation survey will be conducted by the NBDTI during the 2018 growing season.

4.0 DESCRIPTION OF EXISTING ENVIRONMENT

4.1 Wetlands

Three wetlands were encountered within the Project Area during the field investigations (Figure G-1) including one mapped, regulated wetland (Wetland 2). A summary of the encountered wetlands is presented below:

- Wetland 1 is approximately 0.02 hectares (ha) and is located adjacent to the Route 8 off-ramp to Saint Agnes Street. Roadside ditching comprises a portion of the western wetland boundary and the ditching likely influences water inputs into the wetland. A recreational trail located along the eastern wetland boundary and a dry and damaged culvert is present to convey flow from the wetland under the trail. Dominant plant species include horsetail (*Equistum spp.*), Glossy Buckthorn (*Frangula alnus*) and Sensitive Fern (*Onoclea sensibilis*) (Photo 1, Attachment G-2). The wetland has a higher rated function for water-bird feeding habitat, according to the WESP-AC functional assessment.
- Wetland 2 is a mapped, regulated wetland on PID 40437139 and approximately 1.5 ha of the 4.35 ha wetland falls within the Project Area. The field delineation is consistent with the wetland boundaries presented on GeoNB mapping; however, Oxford Brook was excluded from the field wetland delineation. During low tide, emergent vegetation is visible on mudflats extending from the Route 8 road embankment to Oxford Brook (Photo 2, Attachment G-2). During high tide, the wetland is flooded and surface water extends from the western wetland boundary to the eastern wetland boundary. Wetland 2 is contained within the Jones Cove / Oxford Cove ecological significant area (ESA). This ESA is identified by ACCDC as being important for bird and plant species; a record of Long-lobed Arrowhead (*Sagittaria calyycina var. spongiosa*) is located at the outlet of Oxford Brook. Wetland 2 is dominated by Wild Rice (*Zizinia palustris*). The substrate is very fine, sandy muck. The wetland within the Project Area does not support any higher rated functions.
- The area of Wetland 3 contained within the Project Area is approximately 0.2 ha. The wetland extends west, outside the Project Area and the estimated total wetland size is approximately 0.5 ha. The wetland is dominated by Speckled Alder (*Alnus incana*), Glossy Buckthorn (*Frangula alnus*) and Cinnamon Fern (*Osmundastrum cinnamomea*) (Photo 3, Attachment G-2). The higher rated wetland functions include: surface water storage, sediment retention and stabilisation, phosphorus retention, nitrate removal and retention, water-bird feeding habitat, songbird, raptor and mammal habitat and pollinator habitat.

The NBDELG wetland datasheets and WESP-AC scores are presented in Attachment G-3. The entire WESP-AC electronic package is available upon request.

4.2 Flora

A total of 169 vegetation species were observed within the Project Area during the 2017 field investigation. A complete list of encountered vegetation is presented in Attachment G-4. It is important to note that this list may not be comprehensive because the survey was conducted late in the growing season after many of the plants within the Project Area had senesced or flowered. This makes complete and accurate identification challenging. A follow-up rare vegetation survey will be conducted by NBDTI in the 2018 growing season, prior to construction, and will target areas with higher potential for rare vegetation.

The ACCDC report identified 19 records of vegetation SOCC within the Assessment Area. The ACCDC report is presented in Attachment G-5 and a Species Habitat Comparison table (Table G-5-1) outlining the species and their habitat requirements is presented in Attachment G-5.

4.2.1 Vegetation Species at Risk + Critical Habitat

The ACCDC lists one record of vegetation SAR, Parker's Pipewort (*Eriocaulon parkeri*), located along the Southwest branch of the Miramichi River (ACCDC, 2017). This species is provincially protected under *NBSAR*. Parker's Pipewort (*Eriocaulon parkeri*) is considered Endangered under *NBSAR* but is identified as Not at Risk under *SARA*. This species was not detected during the field investigation; however, suitable habitat for this species may be present within the Project Area. NBDTI will conduct a follow-up survey in the growing season of 2018 to check potential habitat for the presence of this species.

No vegetation SAR nor critical habitat was identified within the Project Area during the 2017 field investigations.

4.2.2 Plant Species of Conservation Concern

The ACCDC lists 18 vegetation species considered to be SOCC. Three of the SOCC species were reported to occur in close proximity to the Project Area (ACCDC, 2017). These species include:

- Greene's Rush (*Juncus greenei*);
- Long-Lobed Arrowhead (*Sagittaria calycina var. spongiosa*); and
- Swamp Rose (*Rosa palustris*).

Green's Rush (*Juncus Greenei*) is ranked S1 (very rare) by the ACCDC and 'May be At Risk' by NBDERD, indicating that this species is declining in New Brunswick. Green's Rush (*Juncus Greenei*) occurs on dry sandy sites, sandy road shoulders, dry fields, rock outcrops, ridges and ledges (New England Wildflower Society, 2017). Only one location for this species is indicated in the ACCDC report near Derby Junction, on the south side of the Northwest Miramichi River.

Long-Lobed Arrowhead (*Sagittaria calycina var.spongiosa*) is ranked as S2 (rare) by the ACCDC and 'Secure' by NBDERD which means that the population of this species is stable in New Brunswick. Long-Lobed Arrowhead (*Sagittaria calycina var.spongiosa*) is found in tidal marshes or flats, and shores of rivers or lakes (Hinds, 2000). The nearest ACCDC record was near the mouth of the tidal marsh located at Jones Cove, which is located west of the Project Area.

Swamp Rose (*Rosa palustris*) is ranked as S3 (Uncommon) by ACCDC; however, NBDERD has ranked this species as Secure. Swamp Rose (*Rosa palustris*) occurs in marshes, meadows and fields, shores of rivers and lakes, and wetland margins (Hinds, 2000). This species was last recorded in 1967 in open field habitat near Derby Junction, on the south side of the Northwest Miramichi River. Most of the area in the vicinity of the recorded location of this species is presently forested and open field habitat is confined to roadside areas adjacent to Route 8. Preferred habitat is limited and has likely changed significantly since it was last recorded. For this reason, Swamp Rose (*Rosa palustris*) is not likely to occur on this site due to successional changes that have occurred in the last 50 years.

Thirteen (13) additional SOCC were recorded within the Assessment Area and have habitat requirements similar to those observed within the Project Area (*i.e.*, estuarine, sandy substrate) (Table G-5-1, Attachment G-5). These species include:

- Shining Flat Sedge (*Cyperus bipartitus*);
- Dotted Smartweed (*Polygonum punctatum var. confertiflorum*);
- Indian Wild Rice (*Zizania aquatica var. brevis*);
- Indian Wild Rice (*Zizania aquatica var. aquatica*);
- Saltmarsh Starwort (*Stellaria humifusa*);
- Vasey Rush (*Juncus vaseyi*);
- Estuarine Sedge (*Carex vacillans*);
- Estuary Beggarticks (*Bidens hyperborea*);
- Water Pygmyweed (*Crassula aquatic*);
- Canada Germander (*Teucrium canadense*);
- Seaside Brookweed (*Samolus valerandi ssp. Parviflorus*);
- Southern Mudwort (*Limosella australis*); and
- Horned Pondweed (*Zannichellia palustris*).

Habitat descriptions for all SOCC are presented in Table G-5-1 in Attachment G-5.

No vegetation SOCC were recorded during the field investigations. Suitable habitat may be present within the Project Area; however, this will be confirmed during the 2018 vegetation survey. Although no SAR nor SOCC were observed, Wetland 2 (Figure G-1) was identified as having elevated potential to support vegetation SOCC and SAR. Due to the seasonal timing of

the vegetation survey, an additional survey will be undertaken by NBDTI during the 2018 growing season.

A relatively large patch of northern Wild Rice (*Zizinia palustris*), approximately 1 ha in size, was recorded immediately adjacent to Route 8 at Jones Cove (Wetland 3, Figure G-1) during the survey. Northern Wild Rice (*Zizinia palustris*) is an important traditional resource for First Nations.

5.0 SUMMARY OF POTENTIAL EFFECTS

5.1 Construction Phase Potential Effects

Potential effects to the wetland habitat and vegetation components are detailed in the following sub-sections for the wetland and vegetation VEC during the construction phase of the Project.

5.1.1 Wetland Potential Effects

Potential effects to wetlands during the construction phase of the Project include the following:

- The construction activities may alter wetland habitat within the Project Area:
 - The delineated area of Wetland 1 (0.02 ha) may be altered during the highway re-alignment activities;
 - Construction work may encroach into the eastern boundary of Wetland 2 (a mapped, regulated wetland). Final engineering plans have not yet been developed; therefore, the actual footprint within the wetland is currently unknown; and
 - The delineated area of Wetland 3 (0.2 ha) will likely be in-filled for the northern bridge approach and highway re-alignment. The hydrology and function in the remaining wetland area, outside the Project Area, may be altered by the change in topography and loss of wetland area.
- Erosion and/or sedimentation could occur in disturbed areas and from stockpiles created during the construction phase. Vegetation clearing and ground disturbance may also increase the potential for erosion and sediment release into the wetland habitat, which may result in the degradation of existing wetland vegetation, a change in nutrient inputs and/or changes in wetland function;
- The potential for contaminants to be released into wetland habitat through spills of fuels and lubricants from construction equipment; and
- Introduction of invasive plant species via construction equipment, machinery and/or workers.

5.1.2 Vegetation Potential Effects

Potential effects to vegetation during the construction phase of the Project include the following:

- No vegetation SAR and SOCC were identified within the Project Area; therefore, adverse effects to populations are not expected. An additional vegetation survey will be completed during the 2018 growing season. Any effects to SAR and SOCC are not discussed further in this VEC assessment;
- The shoreline of the Northwest Miramichi River provides suitable habitat for Parker's Pipewort (*Eriocaulon parkeri*), a SAR. The Project Area contains approximately

300 metres (150 metres on each side of the river) of shoreline that may be altered during the construction activities. Suitable habitat for this species is not limited within the area and similar habitat conditions was observed on adjoining properties;

- The Project Area provides suitable habitat for 16 vegetation SOCC that have been identified within the Assessment Area. Construction activities, such as clearing, grubbing, excavation, and grading will alter the habitats within the Project Area. However, the habitat is not limited within the area and similar conditions were observed on adjoining properties; and
- Introduction of invasive plant species via construction equipment, machinery and/or workers.

5.2 Operational and Maintenance Phase Potential Effects

Potential effects to wetland and vegetation components are detailed in the following sub-sections for the wetland and vegetation VEC during the operational and maintenance phase of the Project.

5.2.1 Wetland Potential Effects

Potential effects to wetlands during the operational and maintenance phase of the Project include the following:

- Erosion and/or sedimentation could occur in disturbed areas during maintenance activities (e.g., vegetation clearing, ditch maintenance);
- The potential for contaminants to be released into wetland habitat through spills of fuels and lubricants from maintenance equipment;
- The reduction of water quality within wetland habitat due to the application of road salt and sanding. The roadside embankment will likely slope directly into Wetland 2 and Wetland 3, which will facilitate overland flow from the road into the wetland area and any overspray. These activities are currently occurring and observed on-site and similar conditions are expected during the operational and maintenance phases;
- Introduction of invasive plant species via maintenance equipment, machinery and/or workers.

5.2.2 Vegetation Potential Effects

Potential effects to vegetation as a result of the operational and maintenance phase of the Project include the following:

- Maintenance activities such as vegetation clearing and ditch maintenance could destroy or alter potential habitat for SAR and SOCC within the Project Area. These activities are currently occurring and observed on-site and similar conditions are expected during the operational and maintenance phase; and

- Introduction of invasive plant species via maintenance equipment, machinery and/or workers.

5.3 Accidents, Malfunctions and Unplanned Events

There is a potential for accidents to occur during all phases of the Project. Accidents that may impact wetlands and vegetation within the Project Area include:

- Fire;
- Failure of sedimentation and erosion controls structures; and
- Accidental release of chemicals or petroleum products.

6.0 PROPOSED MITIGATION MEASURES

The potential effects, standard NBDTI Environmental Management Manual (EMM) mitigation measures and any additional mitigation measures recommended by GEMTEC in order to minimize the potential effects to wetland habitat and vegetation during the construction and operational and maintenance phases of the Project are summarized in Table G-1.

Table G-1 Summary of Mitigation Measures for Wetlands and Vegetation

Project Component	Summary of Potential Interaction	Standard NBDTI EMM Mitigation Measures	Additional Recommended Mitigation Measures
Construction Phase			
Wetlands	The construction activities will destroy wetland habitat within the Project Area.	<ul style="list-style-type: none"> • 5.15.1 Structures Construction; and • 5.23 Working Near Environmentally Sensitive Areas. 	A Wetland Compensation Plan will be developed in consultation with NBDELG for any permanent loss of wetland area, pending the determination of the final Project footprint.
	Erosion and/or sedimentation in wetlands.	<ul style="list-style-type: none"> • 5.3 Clearing; • 5.6 Dust Control; • 5.7 Erosion and Sediment Management; • 5.8 Excavation, Blasting and Aggregate Production; • 5.11 Grubbing; • 5.15.1 Structures Construction; • 5.15.4 Construction of Embankments; • 5.18 Topsoil; • 5.22 Work Progression; and • 5.23 Working Near Environmentally Sensitive Areas. 	No additional mitigation measures are recommended by GEMTEC.
	Introduction of invasive plant species via construction equipment, machinery and / or workers.	<ul style="list-style-type: none"> • 5.23 Working Near Environmentally Sensitive Areas. 	Re-vegetation efforts will be completed using native vegetation species.

Project Component	Summary of Potential Interaction	Standard NBDTI EMM Mitigation Measures	Additional Recommended Mitigation Measures
Vegetation	Potential habitat for vegetation SAR was identified within the Project Area could be altered or destroyed during the construction activities.	<ul style="list-style-type: none"> • 5.3 Clearing; • 5.11 Grubbing; • 5.8 Excavation, Blasting and Aggregate Production; • 5.10 Fire Prevention and Contingency; • 5.15.1 Structures Construction; • 5.15.4 Construction of Embankments; • 5.22 Work Progression; and • 5.23 Working Near Environmentally Sensitive Areas. 	Prior to construction a botanist will visit the Project Area during the established growing season to conduct a rare vegetation survey targeting rare species known to occur in the area.
	Introduction of invasive plant species via construction equipment, machinery and/or workers.	<ul style="list-style-type: none"> • 5.23 Working Near Environmentally Sensitive Areas. 	Re-vegetation efforts will be completed using native vegetation species.
Operational / Maintenance Phase			
Wetlands	Erosion and/or sedimentation could occur in disturbed areas during maintenance activities (e.g., vegetation clearing, ditch maintenance).	<ul style="list-style-type: none"> • 5.6 Dust Control; • 5.7 Erosion and Sediment Management; • 5.15.2 Structures Maintenance; • 5.16 Summer Highway Maintenance; • 5.21 Winter Highway Maintenance; • 5.22 Work Progression; and • 5.23 Working Near Environmentally Sensitive Areas. 	No additional mitigation measures are recommended by GEMTEC.

Project Component	Summary of Potential Interaction	Standard NBDTI EMM Mitigation Measures	Additional Recommended Mitigation Measures
Wetlands	The reduction of water quality within wetland habitat due to the application of road salt and sanding.	<ul style="list-style-type: none"> • 5.14 Storage and Handling of Other Hazard Materials; • 5.19 Vehicle and Equipment Management; • 5.21 Winter Highway Maintenance; and • 5.23 Working Near Environmentally Sensitive Areas 	No additional mitigation measures are recommended by GEMTEC.
	Introduction of invasive plant species via maintenance equipment, machinery and/or workers.	<ul style="list-style-type: none"> • 5.23 Working Near Environmentally Sensitive Areas. 	Re-vegetation efforts will be completed using native vegetation species.
Vegetation	Potential habitat for vegetation SAR and SOCC was identified within the Project Area could be altered or destroyed during the maintenance activities.	<ul style="list-style-type: none"> • 5.3 Clearing; • 5.11 Grubbing; • 5.8 Excavation, Blasting and Aggregate Production; • 5.10 Fire Prevention and Contingency; • 5.15.1 Structures Construction; • 5.15.4 Construction of Embankments; • 5.22 Work Progression; and • 5.23 Working Near Environmentally Sensitive Areas. 	No additional mitigation measures are recommended by GEMTEC.
	Introduction of invasive plant species via maintenance equipment, machinery and/or workers.	<ul style="list-style-type: none"> • 5.23 Working Near Environmentally Sensitive Areas. 	Re-vegetation efforts will be completed using native vegetation species.

Project Component	Summary of Potential Interaction	Standard NBDTI EMM Mitigation Measures	Additional Recommended Mitigation Measures
Accidents, Malfunctions and Unplanned Events			
Fire	Increased potential for destruction of wetland habitat from fire.	<ul style="list-style-type: none"> • 5.10 Fire Prevention and Contingency; • 5.12 Spill Management; • 5.13 Storage and Handling of Petroleum Products; • 5.14 Storage and Handling of Other Hazard Materials; and • 5.19 Vehicle and Equipment Management. 	No additional mitigation measures are recommended by GEMTEC.
Accidental Release of Contaminants	Increased potential for contaminants to be released into wetland habitat through the accidental release of fuels and lubricants from construction / maintenance equipment or vehicle collisions.	<ul style="list-style-type: none"> • 5.10 Fire Prevention and Contingency; • 5.12 Spill Management; • 5.13 Storage and Handling of Petroleum Products; • 5.14 Storage and Handling of Other Hazard Materials; and • 5.19 Vehicle and Equipment Management. 	

Project Component	Summary of Potential Interaction	Standard NBDTI EMM Mitigation Measures	Additional Recommended Mitigation Measures
Accidental Release of Contaminants	The potential for contaminants to be released into wetland habitat through spills of fuels and lubricants from construction equipment.	<ul style="list-style-type: none"> • 5.1 Asphalt Concrete; • 5.8 Excavation, Blasting and Aggregate Production; • 5.10 Fire Prevention and Contingency; • 5.12 Spill Management; • 5.13 Storage and Handling of Petroleum Products; • 5.14 Storage and Handling of Other Hazard Materials; • 5.17 Temporary Ancillary Facility Management; • 5.19 Vehicle and Equipment Management; • 5.20 Waste Management; and • 5.23 Working Near Environmentally Sensitive Areas. 	No additional mitigation measures are recommended by GEMTEC.
Failure of Erosion Control Structures	Potential for sediment loading in wetland habitats from ground disturbance.	<ul style="list-style-type: none"> • 5.3 Clearing; • 5.7 Erosion and Sediment Management; • 5.18 Topsoil; • 5.22 Work Progression; and • 5.23 Working Near Environmentally Sensitive Areas. 	

7.0 SUMMARY OF POTENTIAL SIGNIFICANT RESIDUAL EFFECTS

A significant residual effect to the wetland and vegetation VEC is considered as follows:

- Wetland Significant Effect: the permanent, uncompensated loss of a regulated wetland as a result of the Project activities; and
- Vegetation Significant Effect: any reduction in vegetation SAR populations or critical habitat for the identified vegetation SAR or any effect on SOCC that would threaten the long-term viability of the population in the region.

The construction phase of the Project will result in a loss of wetland habitat within the Project Area. Any loss of wetland will be compensated at a 2:1 ratio, and determined in consultation with NBDELG once the final Project footprint is determined. Therefore, this effect is not considered to be significant. The implementation of proposed mitigation measures will minimize any risk to remaining wetland habitats. Additionally, any impacts from salt or sand application during the operational and maintenance phase of the Project is not expected to exceed the conditions currently observed within the Project Area.

The construction phase of the Project will result in the loss of habitat that is suitable for SOCC or SAR; however, no vegetation SAR or SOCC were observed within the Project Area. The loss of habitat is not expected to impact any vegetation species at a population level. With the implementation of the proposed mitigation measures, the overall residual impact to vegetation SAR and SOCC during the construction, maintenance and operational phases of the Project is not considered a significant effect. It is important to note that an additional vegetation survey will be completed by NBDTI during the 2018 growing season, and the findings of that survey may require amended mitigation measures relative to construction and operational and maintenance phases.

8.0 REFERENCES

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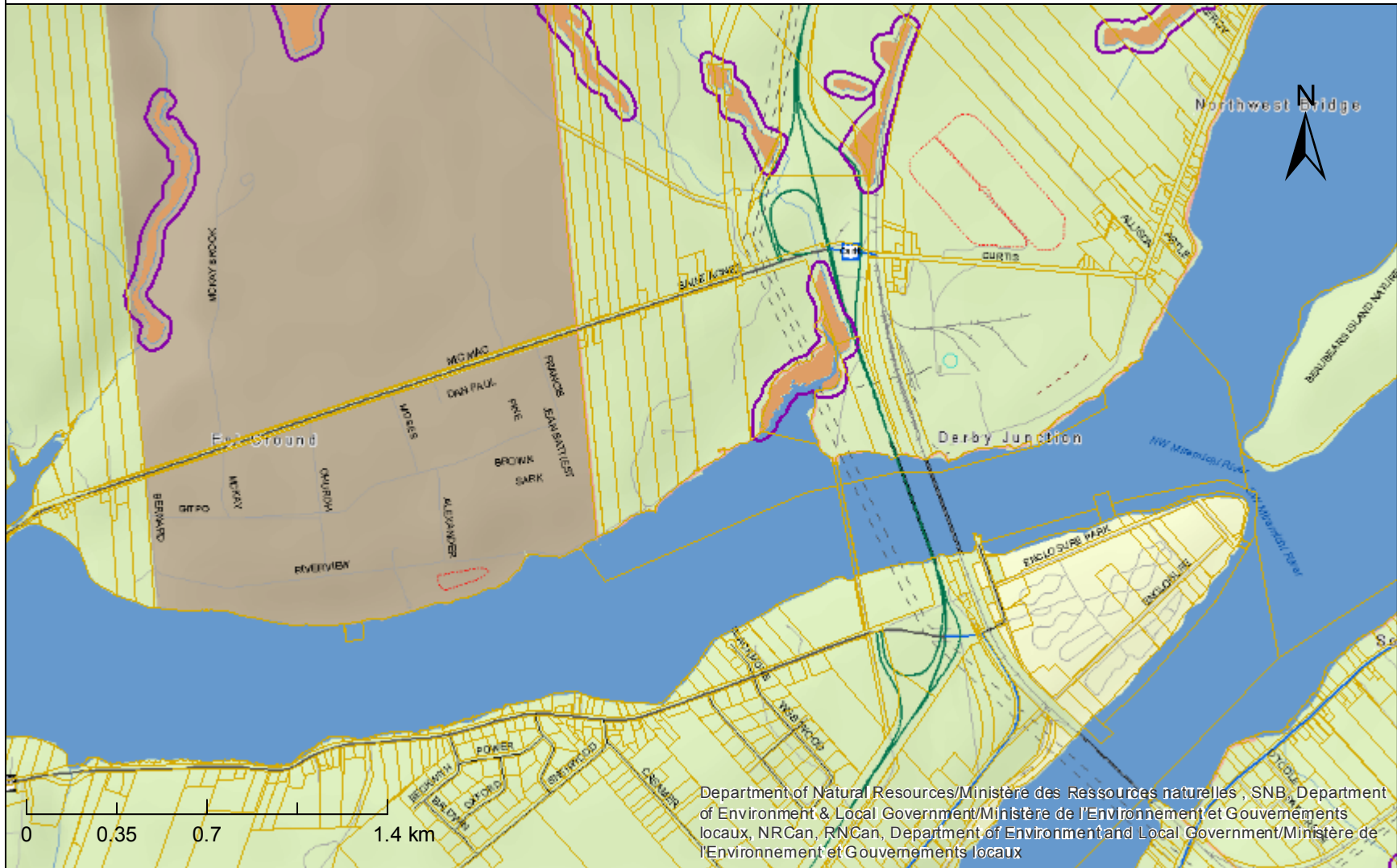
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ATTACHMENTS

G-1 - GeoNB Wetland Mapping

Wetland Mapping



Scale/Échelle: 1:23,704

Date: 11/1/2017

Printed by/Imprimé par:

While this map may not be free from error or omission, care has been taken to ensure the best possible quality. This map is a graphical representation of natural and man made features which approximates the size, configuration and location of the features. This map is not intended to be used for legal descriptions or to calculate exact dimensions or area. SNB makes no representations or warranties, either expressed or implied, as to the accuracy of the information and the client assumes the entire risk as to the use of any or all information.

Même si cette carte n'est peut-être pas libre de toute erreur ou omission, toutes les précautions ont été prises pour en assurer la meilleure qualité possible. Cette carte est une représentation graphique d'éléments naturels ou artificiels et donne seulement une approximation de la taille, de la configuration et de l'endroit de ces éléments. Elle n'a pas pour but d'être utilisée pour les descriptions juridiques ou le calcul des dimensions ou de la superficie exacte. SNB n'offre aucune garantie explicite ou implicite quant à l'exactitude de l'information présentée; les clients acceptent pleinement les risques liés à l'utilisation d'une partie ou de l'ensemble de cette information.



G-2 - Wetland Photos



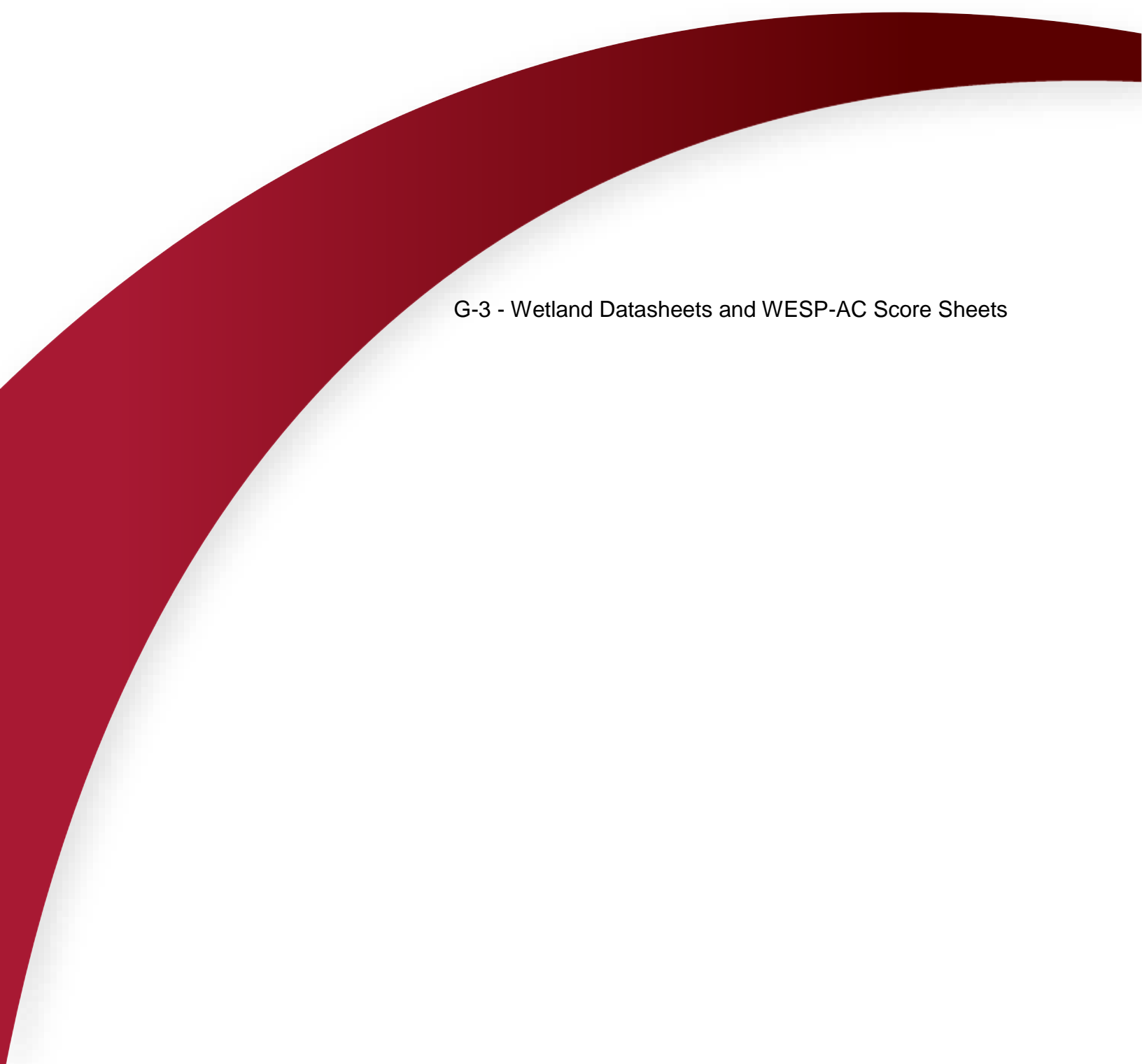
Photo 1: View of Wetland 1 on PID 40437139 (September 27, 2017).



Photo 2: View of Wetland 2 on PID 40437139, at low tide (September 28, 2017).



Photo 3: View of Wetland 3 on PID 40437121 (September 28, 2017).



G-3 - Wetland Datasheets and WESP-AC Score Sheets

DELG Wetland Verification Data Sheet *

Wetland Project Description: Northwest Miramichi No.1 (Anderson) Bridge Replacement EIA

Site Visit Date(s): September 27, 2017

Verifier's Name (WBV): Jennifer Hachey & Jenna McCoy

Wetland Location / Address: Wetland 1

PID(s): 40437139

Polygon or Line Delineation (circle or highlight)
See Figure G-1

Wetland Maps Used and Source: GeoNB

GPS Point File Name: N/A

Type / Class of Wetland (circle or highlight):

Shrub Forested Fresh Marsh Aquatic Bed Fen Bog Coastal Marsh Wetland Complex

Wetland Complex Information:

N / A

Dominant Wetland Vegetation (3 species minimum):

Horsetail (*Equisetum spp*)
Glossy Buckthorn (*Frangula alnus*)
Sensitive Fern (*Onoclea sensibilis*)

Dominant Upland Vegetation:

Colts Foot (*Tussilago farfara*)
Common Red Raspberry (*Rubus idaeus*)
Speckled Alder (*Alnus incana*)

Vascular Plants of Conservation Concern:

N/A

Open Water Information:

Some surface water may be present in adjoining roadside ditching during period of heavy precipitation or snow melt.

Wetland Hydrology and Connectivity:

Drainage Patterns
Saturated Soil
Concave / Inundated Surface
Water Stained Leaves

Wildlife Observations:

N/A

Description of Any Observed Impacts to Wetland:

Likely influenced by roadside ditching.

Additional Comments:

Total wetland area is approximately 0.02 hectares.

Cover Page: Basic Description of Assessment	WESP-AC version 1.2
Site Name:	Weland 1
Investigator Name:	Jennifer Hachey
Date of Field Assessment:	27-Sep-17
Nearest Town:	City of Miramichi
Latitude (decimal degrees):	46.9725
Longitude (decimal degrees):	-65.6010
Is a map based on a formal on-site wetland delineation available?	Yes
Approximate size of the Assessment Area (AA, in acres):	0.50
AA as percent of entire wetland (approx.). Attach sketch map if AA is smaller than the entire contiguous wetland.	100%
What percent (approx.) of the wetland were you able to visit?	100%
What percent (approx.) of the AA were you able to visit?	100%
Were you able to ask the site owner/manager about any of the questions?	No
Indicate here if you intentionally surveyed for rare plants, calciphile plants, or rare animals:	Yes
Have you attended a WESP-AC training session? If so, indicate approximate month & year.	Jul-16
How many wetlands have you assessed previously using WESP-AC? (approx.)	50+
Comments about the site or this WESP-AC assessment (attach extra page if desired):	-

Wetland ID:	Wetland 1
Date:	27-Sep-17
Observer:	Jennifer Hachey
Latitude & Longitude (decimal degrees):	46.9725, -65.6010

Scores will appear below after data are entered in worksheets OF, F, and S. See Manual for definitions and descriptions of how scores were computed. *Note: Benefits scores will be provided in the final calculator for WBF, WBN, SBM, and POL; their models are currently being revised.*

Results for this Assessment Area (AA):						
Wetland Functions or Other Attributes:	Function Score (normalized)	Function Rating	Benefits Score (normalized)	Benefits Rating	Function Score (raw)	Benefits Score (raw)
Surface Water Storage (WS)	1.98	Lower	8.93	Higher	3.08	6.04
Stream Flow Support (SFS)	3.02	Moderate	5.58	Moderate	1.61	4.20
Water Cooling (WC)	0.00	Lower	0.00	Lower	0.00	0.00
Sediment Retention & Stabilisation (SR)	0.34	Lower	3.01	Lower	3.18	1.83
Phosphorus Retention (PR)	2.84	Moderate	7.00	Higher	5.26	6.67
Nitrate Removal & Retention (NR)	0.00	Lower	7.29	Higher	3.81	8.19
Carbon Sequestration (CS)	1.97	Lower			5.28	
Organic Nutrient Export (OE)	5.22	Moderate			4.14	
Anadromous Fish Habitat (FA)	0.00	Lower	0.00	Lower	0.00	0.00
Resident Fish Habitat (FR)	0.00	Lower	0.00	Lower	0.00	0.00
Aquatic Invertebrate Habitat (INV)	4.77	Moderate	3.42	Moderate	5.19	3.18
Amphibian & Turtle Habitat (AM)	3.62	Moderate	10.00	Higher	5.42	6.92
Waterbird Feeding Habitat (WBF)	6.29	Higher			5.04	
Waterbird Nesting Habitat (WBN)	3.46	Moderate			2.89	
Songbird, Raptor, & Mammal Habitat (SBM)	6.92	Moderate			5.73	
Pollinator Habitat (POL)	7.48	Moderate			6.02	
Native Plant Habitat (PH)	0.00	Lower	0.00	Lower	0.00	0.00
Public Use & Recognition (PU)			2.97	Moderate		2.18
Wetland Sensitivity (Sens)			6.81	Higher		4.39
Wetland Ecological Condition (EC)			4.60	Moderate		6.74
Wetland Stressors (STR) (higher score means more)			10.00	Higher		5.76
Summary Ratings for Grouped Functions:						
HYDROLOGIC Group (WS)	1.98	Lower	8.93	Higher	3.08	6.04
WATER QUALITY SUPPORT Group (max+avg/2 of SR, PR, NR, CS)	0.00	0.00	7.94	Higher	4.83	6.88
AQUATIC SUPPORT Group (max+avg/2 of SFS, INV, OE, WC)	3.37	0.00	4.07	Moderate	3.96	3.33
AQUATIC HABITAT Group (max+avg/2 of FA, FR, AM, WBF, WBN)	3.45	0.00	7.61	Higher	4.05	4.62
TRANSITION HABITAT Group (max+avg/2 of SBM, PH, POL)	2.13	0.00	0.00	Lower	4.97	0.00
WETLAND CONDITION (EC)			4.60	Moderate		6.74
WETLAND RISK (average of Sensitivity & Stressors)			10.00	Higher		5.08

NOTE: A score of 0 does not mean the function or benefit is absent from the wetland. It means only that this wetland has a capacity that is equal or less than the lowest-scoring one, for that function or benefit, from among the 98 NB calibration wetlands that were assessed previously.

DELG Wetland Verification Data Sheet *

Wetland Project Description: Northwest Miramichi No.1 (Anderson) Bridge Replacement EIA

Site Visit Date(s): September 27, 2017

Verifier's Name (WBV): Jennifer Hachey & Jenna McCoy

Wetland Location / Address: Wetland 2

PID(s): 40437139

Polygon or Line Delineation (circle or highlight)
See Figure G-1

Wetland Maps Used and Source: GeoNB

GPS Point File Name: N/A

Type / Class of Wetland (circle or highlight):

Shrub Forested Fresh Marsh Aquatic Bed Fen Bog **Coastal Marsh** Wetland Complex

Wetland Complex Information:

N / A

Dominant Wetland Vegetation (3 species minimum):

Wild Rice (*Zizinia palustris*)
Glossy Buckthorn (*Frangula alnus*)
Sensitive Fern (*Onoclea sensibilis*)

Dominant Upland Vegetation:

Virginia Creeper (*Pathenocissus quinquefolia*)
Huckleberry (*Gaylussacia baccata*)
Trembling Aspen (*Populus tremuloides*)

Vascular Plants of Conservation Concern:

N/A

Open Water Information:

Within the Project Area, Oxford Brook flows north to south through the wetland in a defined channel at low tide. At high tide, the entire wetland area is flooded. Just south of the Project Area, Oxford Brook flows into Jones Cove, a floodplain of the Northwest Miramichi River.

Wetland Hydrology and Connectivity:

Drainage Patterns
Saturated Soil
Aquatic Fauna
Saturation Visible on Aerial Imagery

Wildlife Observations:

Fish & Waterfowl

Description of Any Observed Impacts to Wetland:

Route 8 road embankment facilitates overland flow from Route 8 directly into wetland.

Additional Comments:

Total wetland area within the Project Site is approximately 1.5 hectares. The wetland extends west, to follow Oxford Brook into Jones Cove. The total GeoNB Mapped wetland area is approximately 4.35 hectares.

The wetland is within the Jones Cove / Oxford Cove Environmentally Significant Area (ESA).

CoverPage: Basic Description of Assessment		
Site Name:	Wetland 2	
Investigator Name:	Jennifer Hachey & Jenna McCoy	
Date and Time of Field Assessment:	28-Sep-17	
Time and Height (m) of High Tide on this date near this location	12:58pm	0.7
Time and Height (m) of Low Tide on this date near this location	7:55am	0.25
Latitude (decimal degrees):	46.972195	
Longitude (decimal degrees):	-65.602584	
Is a map based on a formal on-site wetland delineation available?	Yes	
What percentage (approx.) of the entire wetland polygon, as shown on the Province's map, could you see well enough to answer most of the Form T questions? i.e., the Assessment Area.	100	
Indicate here if you intentionally surveyed for rare plants or rare animals:	Yes	
Were you able to ask the site owner/manager about any of the questions?	No	
Have you attended a WESP-AC training session? If so, indicate approximate month & year.	Jul-16	
How many tidal wetlands have you assessed previously using WESP-AC? (approx.)	1	
Attach an aerial or map showing the approximate boundary of the AA, if smaller than the entire tidal wetland polygon mapped by the province.		
Comments about the site or this WESP-AC assessment (attach extra page if desired):		

Wetland 2

September 28, 2017

Jenna McCoy

WESP-AC version T1.1 for Tidal Wetlands of Atlantic Canada

Functions or Attributes	New Brunswick	
	Normalised Score	Rating
Storm Surge Interception (SS)	0.48	Lower
Water Purification (WP)	0.49	Lower
Organic Nutrient Export (OX)	0.48	Lower
Fish Habitat (FH)	0.86	Lower
Waterbird Habitat (WH)	0.30	Lower
Songbird & Raptor Habitat (SRH)	0.28	Lower
Biodiversity Maintenance (BM)	0.85	Lower
Wetland Stability (WS)	0.55	Lower
Public Use & Recognition (PUR)	0.23	Lower

DELG Wetland Verification Data Sheet *	
Wetland Project Description: Northwest Miramichi No.1 (Anderson) Bridge Replacement EIA	
Site Visit Date(s): September 28, 2017	
Verifier's Name (WBV): Jennifer Hachey & Jenna McCoy	
Wetland Location / Address: Wetland 3	
PID(s): 40437121	Polygon or Line Delineation (circle or highlight) See Figure G-1
Wetland Maps Used and Source: GeoNB	
GPS Point File Name: N/A	
Type / Class of Wetland (circle or highlight):	
<input checked="" type="checkbox"/> Shrub <input type="checkbox"/> Forested <input type="checkbox"/> Fresh Marsh <input type="checkbox"/> Aquatic Bed <input type="checkbox"/> Fen <input type="checkbox"/> Bog <input type="checkbox"/> Coastal Marsh <input type="checkbox"/> Wetland Complex	
Wetland Complex Information: N / A	
Dominant Wetland Vegetation (3 species minimum):	
Cinnamon Fern (<i>Osmundastrum cinnamomeum</i>) Speckled Alder (<i>Alnus incana</i>) Glossy Buckthorn (<i>Frangula alnus</i>) Sensitive Fern (<i>Onoclea sensibilis</i>)	
Dominant Upland Vegetation:	
Bracken Fern (<i>Pteridium aquilinum</i>) Balsam Fir (<i>Abies balsamea</i>) Red Maple (<i>Acer rubrum</i>)	
Vascular Plants of Conservation Concern:	
N/A	
Open Water Information:	
N/A	

Wetland Hydrology and Connectivity:

Saturated Soil
Water Stained Leaves
Saturation Visible on Aerial Imagery
Indentation

Wildlife Observations:

Unknown snake species

Description of Any Observed Impacts to Wetland:

A managed transmission line is present through the centre of the wetland, along the western Project boundary. Wetland soil and vegetation in this area is likely regularly disturbed.

Additional Comments:

Total wetland area within the Project Site is approximately 0.2 hectares. The wetland extends west and the estimated total size of the wetland is 0.5 hectares, based on aerial imagery.

Cover Page: Basic Description of Assessment	WESP-AC version 1.2
Site Name:	Wetland 3
Investigator Name:	Jennifer Hachey
Date of Field Assessment:	28-Sep-17
Nearest Town:	City of Miramichi
Latitude (decimal degrees):	46.9684
Longitude (decimal degrees):	-65.6006
Is a map based on a formal on-site wetland delineation available?	Yes
Approximate size of the Assessment Area (AA, in acres):	0.50
AA as percent of entire wetland (approx.). Attach sketch map if AA is smaller than the entire contiguous wetland.	70%
What percent (approx.) of the wetland were you able to visit?	70%
What percent (approx.) of the AA were you able to visit?	100%
Were you able to ask the site owner/manager about any of the questions?	No
Indicate here if you intentionally surveyed for rare plants, calciphile plants, or rare animals:	Yes
Have you attended a WESP-AC training session? If so, indicate approximate month & year.	Jul-16
How many wetlands have you assessed previously using WESP-AC? (approx.)	50+
Comments about the site or this WESP-AC assessment (attach extra page if desired):	-


Wetland ID:	Wetland 3
Date:	28-Sep-17
Observer:	Jennifer Hachey
Latitude & Longitude (decimal degrees):	46.9684, -65.6006

Scores will appear below after data are entered in worksheets OF, F, and S. See Manual for definitions and descriptions of how scores were computed. *Note: Benefits scores will be provided in the final calculator for WBF, WBN, SBM, and POL; their models are currently being revised.*

Results for this Assessment Area (AA):

Wetland Functions or Other Attributes:	Function Score (normalized)	Function Rating	Benefits Score (normalized)	Benefits Rating	Function Score (raw)	Benefits Score (raw)
Surface Water Storage (WS)	6.65	Higher	1.43	Lower	6.81	1.67
Stream Flow Support (SFS)	0.00	Lower	0.00	Lower	0.00	0.00
Water Cooling (WC)	4.80	Moderate	0.00	Lower	3.20	0.00
Sediment Retention & Stabilisation (SR)	10.00	Higher	1.63	Lower	10.00	0.99
Phosphorus Retention (PR)	10.00	Higher	1.09	Lower	10.00	1.32
Nitrate Removal & Retention (NR)	10.00	Higher	3.96	Moderate	10.00	5.97
Carbon Sequestration (CS)	4.53	Moderate			6.43	
Organic Nutrient Export (OE)	0.00	Lower			0.00	
Anadromous Fish Habitat (FA)	0.00	Lower	0.00	Lower	0.00	0.00
Resident Fish Habitat (FR)	0.00	Lower	0.00	Lower	0.00	0.00
Aquatic Invertebrate Habitat (INV)	5.74	Moderate	4.28	Moderate	5.60	3.63
Amphibian & Turtle Habitat (AM)	5.02	Moderate	10.00	Higher	6.14	6.20
Waterbird Feeding Habitat (WBF)	7.37	Higher			5.91	
Waterbird Nesting Habitat (WBN)	4.45	Moderate			3.71	
Songbird, Raptor, & Mammal Habitat (SBM)	7.29	Higher			6.03	
Pollinator Habitat (POL)	8.13	Higher			6.55	
Native Plant Habitat (PH)	3.90	Moderate	10.00	Higher	5.02	6.41
Public Use & Recognition (PU)			2.45	Moderate		1.82
Wetland Sensitivity (Sens)			8.90	Higher		5.08
Wetland Ecological Condition (EC)			6.90	Higher		8.13
Wetland Stressors (STR) (higher score means more)			9.50	Higher		4.68
Summary Ratings for Grouped Functions:						
HYDROLOGIC Group (WS)	6.65	Higher	1.43	Lower	6.81	1.67
WATER QUALITY SUPPORT Group (max+avg/2 of SR, PR, NR, CS)	9.76	0.00	4.72	Moderate	9.55	4.37
AQUATIC SUPPORT Group (max+avg/2 of SFS, INV, OE, WC)	3.22	0.00	2.49	Lower	3.90	2.42
AQUATIC HABITAT Group (max+avg/2 of FA, FR, AM, WBF, WBN)	4.64	0.00	6.66	Higher	4.64	4.13
TRANSITION HABITAT Group (max+avg/2 of SBM, PH, POL)	5.07	0.00	10.00	Higher	6.21	6.41
WETLAND CONDITION (EC)			6.90	Higher		8.13
WETLAND RISK (average of Sensitivity & Stressors)			10.00	Higher		4.88

NOTE: A score of 0 does not mean the function or benefit is absent from the wetland. It means only that this wetland has a capacity that is equal or less than the lowest-scoring one, for that function or benefit, from among the 98 NB calibration wetlands that were assessed previously.



G-4 - Vegetation Inventory

Scientific Name	Common Name	S-Rank	NBDERD General Staus
<i>Abies balsamea</i>	Balsam Fir	S5	Secure
<i>Acer pensylvanicum</i>	Striped Maple	S5	Secure
<i>Acer platanoides</i>	Norway Maple	SNA	Exotic
<i>Acer rubrum</i>	Red Maple	S5	Secure
<i>Acer saccharinum</i>	Silver Maple	S4	Secure
<i>Agrostis gigantea</i>	Redtop	SNA	Exotic
<i>Alnus incana</i>	Speckled Alder	S5	Secure
<i>Ambrosia artemisiifolia</i>	Common Ragweed	S5	Secure
<i>Amelanchier spp</i>	NA	NA	NA
<i>Ammophila breviligulata</i>	American Beach Grass	S5	Secure
<i>Anaphalis margaritacea</i>	Pearly Everlasting	S5	Secure
<i>Aralia nudicaulis</i>	Wild Sarsaparilla	S5	Secure
<i>Arctium lappa</i>	Great Burdock	SNA	Exotic
<i>Arctium vulgare</i>	European Burdock	SNA	Exotic
<i>Argentina anserina</i>	Common Silverweed	S5	Secure
<i>Arisaema triphyllum</i>	Jack-in-the-pulpit	S5	Secure
<i>Asclepias syriaca</i>	Common Milkweed	S4S5	Secure
<i>Athyrium filix-femina</i>	Common Lady Fern	S5	Secure
<i>Atriplex acadensis</i>	Maritime Saltbush	S4?	Secure
<i>Betula alleghaniensis</i>	Yellow Birch	S5	Secure
<i>Betula papyrifera</i>	Paper Birch	S5	Secure
<i>Betula populifolia</i>	Gray Birch	S5	Secure
<i>Bidens frondosa</i>	Devil's Beggarticks	S5	Secure
<i>Calamagrostis canadensis</i>	Bluejoint Reed Grass	S5	Secure
<i>Calystegia sepium</i>	Hedge False Bindweed	S5	Secure
<i>Carex arctata</i>	Black Sedge	S5	Secure
<i>Carex crawfordii</i>	Crawford's Sedge	S5	Secure
<i>Carex deweyana</i>	Dewey's Sedge	S5	Secure
<i>Carex gynandra</i>	Nodding Sedge	S5	Secure
<i>Carex intumescens</i>	Bladder Sedge	S5	Secure
<i>Carex projecta</i>	Necklace Sedge	S5	Secure
<i>Carex pseudocyperus</i>	Cyperuslike Sedge	S5	Secure
<i>Carex scoparia</i>	Broom Sedge	S5	Secure
<i>Carex trisperma</i>	Three-seeded Sedge	S5	Secure
<i>Chimaphila umbellata</i>	Common Pipsissewa	S5	Secure
<i>Clematis virginiana</i>	Virginia Clematis	S5	Secure
<i>Clintonia borealis</i>	Yellow Bluebead Lily	S5	Secure
<i>Comptonia peregrina</i>	Sweet-fern	S5	Secure
<i>Cornus canadensis</i>	Bunchberry	S5	Secure
<i>Cornus sericea</i>	Red Osier Dogwood	S5	Secure
<i>Corylus cornuta</i>	Beaked Hazel	S5	Secure
<i>Crataegus spp</i>	NA	NA	NA
<i>Danthonia spicata</i>	Poverty Oat Grass	S5	Secure
<i>Diervilla lonicera</i>	Northern Bush Honeysuckle	S5	Secure
<i>Doellingeria umbellata</i>	Hairy Flat-top White Aster	S5	Secure
<i>Dryopteris carthusiana</i>	Spinulose Wood Fern	S5	Secure

Scientific Name	Common Name	S-Rank	NBDERD General Staus
<i>Dryopteris cristata</i>	Crested Wood Fern	S5	Secure
<i>Dryopteris intermedia</i>	Evergreen Wood Fern	S5	Secure
<i>Echinochloa crus-galli</i>	Large Barnyard Grass	SNA	Exotic
<i>Eleocharis acicularis</i>	Needle Spikerush	S5	Secure
<i>Epilobium leptophyllum</i>	Bog Willowherb	S5	Secure
<i>Equisetum arvense</i>	Field Horsetail	S5	Secure
<i>Equisetum fluviatile</i>	Water Horsetail	S5	Secure
<i>Eupatorium maculatum</i>	Spotted Joe-pye-weed	S5	Secure
<i>Euphrasia nemorosa</i>	Common Eyebright	SNA	Exotic
<i>Eurybia macrophylla</i>	Large-leaved Aster	S5	Secure
<i>Fragaria virginiana</i>	Wild Strawberry	S5	Secure
<i>Frangula alnus</i>	Glossy Buckthorn	SNA	Exotic
<i>Fraxinus americana</i>	White Ash	S4S5	Secure
<i>Galium mollugo</i>	Smooth Bedstraw	SNA	Exotic
<i>Gaultheria procumbens</i>	Eastern Teaberry	S5	Secure
<i>Gaylussacia baccata</i>	Black Huckleberry	S5	Secure
<i>Glyceria melicaria</i>	Slender Manna Grass	S5	Secure
<i>Glyceria striata</i>	Fowl Manna Grass	S5	Secure
<i>Gymnocarpium dryopteris</i>	Common Oak Fern	S5	Secure
<i>Hieracium caespitosum</i>	Field Hawkweed	SNA	Exotic
<i>Hieracium murorum</i>	Wall Hawkweed	SNA	Exotic
<i>Hypericum boreale</i>	Northern St John's-Wort	S5	Secure
<i>Hypericum perforatum</i>	Common St. John's-wort	SNA	Exotic
<i>Juncus brevicaudatus</i>	Narrow-Panicled Rush	S5	Secure
<i>Juncus effusus</i>	Soft Rush	S5	Secure
<i>Juncus gerardii</i>	Black-Grass Rush	S5	Secure
<i>Juncus tenuis</i>	Slender Rush	S5	Secure
<i>Kalmia angustifolia</i>	Sheep Laurel	S5	Secure
<i>Larix laricina</i>	Tamarack	S5	Secure
<i>Leontodon autumnalis</i>	Fall Dandelion	SNA	Exotic
<i>Linnaea borealis</i>	Twinflower	S5	Secure
<i>Lonicera canadensis</i>	Canada Fly Honeysuckle	S5	Secure
<i>Lupinus polyphyllus</i>	Large-Leaved Lupine	SNA	Exotic
<i>Lycopodium annotinum</i>	Stiff Clubmoss	S5	Secure
<i>Lycopodium dendroideum</i>	Round-branched Tree-clubmo	S5	Secure
<i>Lysimachia terrestris</i>	Swamp Yellow Loosestrife	S5	Secure
<i>Lythrum salicaria</i>	Purple Loosestrife	SNA	Exotic
<i>Maianthemum canadense</i>	Wild Lily-of-The-Valley	S5	Secure
<i>Matricaria discoidea</i>	Pineapple Weed	SNA	Exotic
<i>Matricaria discoidea</i>	Pineapple Weed	SNA	Exotic
<i>Mentha arvensis</i>	Wild Mint	S5	Secure
<i>Mitchella repens</i>	Partridgeberry	S5	Secure
<i>Monotropa hypopithys</i>	Pinesap	S4	Secure
<i>Monotropa uniflora</i>	Indian Pipe	S5	Secure
<i>Myrica gale</i>	Sweet Gale	S5	Secure
<i>Nemopanthus mucronatus</i>	Mountain Holly	S5	Secure

Scientific Name	Common Name	S-Rank	NBDERD General Staus
<i>Onoclea sensibilis</i>	Sensitive Fern	S5	Secure
<i>Osmunda cinnamomea</i>	Cinnamon Fern	S5	Secure
<i>Osmunda claytoniana</i>	Interrupted Fern	S5	Secure
<i>Osmunda regalis</i>	Royal Fern	S5	Secure
<i>Oxalis montana</i>	Common Wood Sorrel	S5	Secure
<i>Parthenocissus quinquefolia</i>	Virginia Creeper	SNA	Exotic
<i>Phalaris arundinacea</i>	Reed Canary Grass	S5	Secure
<i>Phegopteris connectilis</i>	Northern Beech Fern	S5	Secure
<i>Picea glauca</i>	White Spruce	S5	Secure
<i>Picea rubens</i>	Red Spruce	S5	Secure
<i>Pinus strobus</i>	Eastern White Pine	S5	Secure
<i>Plantago lanceolata</i>	English Plantain	SNA	Exotic
<i>Plantago major</i>	Common Plantain	SNA	Exotic
<i>Plantago maritima</i>	Seaside Plantain	S5	Secure
<i>Poa compressa</i>	Canada Blue Grass	SNA	Exotic
<i>Poa pratensis</i>	Kentucky Blue Grass	S5	Secure
<i>Populus balsamifera</i>	Balsam Poplar	S5	Secure
<i>Populus grandidentata</i>	Large-toothed Aspen	S5	Secure
<i>Populus tremuloides</i>	Trembling Aspen	S5	Secure
<i>Potamogeton spp</i>	Pondweed	NA	NA
<i>Potentilla simplex</i>	Old Field Cinquefoil	S5	Secure
<i>Prunella vulgaris</i>	Common Self-heal	S5	Secure
<i>Prunus serotina</i>	Black Cherry	S5	Secure
<i>Prunus virginiana</i>	Chokecherry	S5	Secure
<i>Pteridium aquilinum</i>	Bracken Fern	S5	Secure
<i>Pyrola elliptica</i>	Shinleaf	S5	Secure
<i>Ranunculus repens</i>	Creeping Buttercup	SNA	Exotic
<i>Ribes hirtellum</i>	Smooth Gooseberry	S5	Secure
<i>Rosa virginiana</i>	Virginia Rose	S5	Secure
<i>Rubus allegheniensis</i>	Alleghaney Blackberry	S5	Secure
<i>Rubus idaeus</i>	Red Raspberry	S5	Secure
<i>Rubus pubescens</i>	Dwarf Red Raspberry	S5	Secure
<i>Rumex crispus</i>	Curled Dock	SNA	Exotic
<i>Salix bebbiana</i>	Bebb's Hybrid Willow	SNA	Not Assessed
<i>Salix discolor</i>	Pussy Willow	S5	Secure
<i>Schoenoplectus tabernaemontana</i>	Softstem Bulrush	S5	Secure
<i>Scirpus cyperinus</i>	Common Woolly Bulrush	S5	Secure
<i>Scirpus hattorianus</i>	Mosquito Bulrush	S5	Secure
<i>Senecio vulgaris</i>	Common Ragwort	SNA	Exotic
<i>Silene vulgaris</i>	Bladder Campion	SNA	Exotic
<i>Solanum dulcamara</i>	Bittersweet Nightshade	SNA	Exotic
<i>Solidago bicolor</i>	White Goldenrod	S5	Secure
<i>Solidago canadensis</i>	Canada Goldenrod	S5	Secure
<i>Solidago rugosa</i>	Rough-stemmed Goldenrod	S5	Secure
<i>Solidago sempervirens</i>	Seaside Goldenrod	S5	Secure
<i>Sonchus arvensis</i>	Field Sow Thistle	SNA	Exotic

Scientific Name	Common Name	S-Rank	NBDERD General Staus
<i>Sparganium eurycarpum</i>	Broad-fruited Burreed	S4S5	Secure
<i>Spartina pectinata</i>	Prairie Cord Grass	S5	Secure
<i>Spiraea alba</i>	White Meadowsweet	S5	Secure
<i>Symphotrichum lateriflorum</i> var.	Calico Aster	SNR	Undetermined
<i>Symphotrichum novi-belgii</i>	New York Aster	S5	Secure
<i>Tanacetum vulgare</i>	Common Tansy	SNA	Exotic
<i>Taraxacum officinale</i>	Common Dandelion	SNA	Exotic
<i>Taxus canadensis</i>	Canada Yew	S5	Secure
<i>Thalictrum pubescens</i>	Tall Meadow-Rue	S5	Secure
<i>Thelypteris noveboracensis</i>	New York Fern	S5	Secure
<i>Thuja occidentalis</i>	Eastern White Cedar	S5	Secure
<i>Triadenum fraseri</i>	Fraser's Marsh St John's-wort	S5	Secure
<i>Trientalis borealis</i>	Northern Starflower	S5	Secure
<i>Trifolium arvense</i>	Rabbit's-foot Clover	SNA	Exotic
<i>Trifolium hybridum</i>	Alsike Clover	SNA	Exotic
<i>Trifolium pratense</i>	Red Clover	SNA	Exotic
<i>Trifolium repens</i>	White Clover	SNA	Exotic
<i>Tsuga canadensis</i>	Eastern Hemlock	S5	Secure
<i>Tussilago farfara</i>	Coltsfoot	SNA	Exotic
<i>Typha latifolia</i>	Broad-leaved Cattail	S5	Secure
<i>Ulmus americana</i>	White Elm	S4	Secure
<i>Vaccinium myrtilloides</i>	Velvet-leaved Blueberry	S5	Secure
<i>Vaccinium vitis-idaea</i>	Mountain Cranberry	S4S5	Secure
<i>Verbascum thapsus</i>	Common Mullein	SNA	Exotic
<i>Veronica officinalis</i>	Common Speedwell	S5	Exotic
<i>Viburnum lantanoides</i>	Hobblebush	S5	Secure
<i>Viburnum nudum</i>	Northern Wild Raisin	S5	Secure
<i>Viburnum opulus</i>	Highbush Cranberry	S4	Secure
<i>Vicia cracca</i>	Tufted Vetch	SNA	Exotic
<i>Viola cucullata</i>	Marsh Blue Violet	S5	Secure
<i>Zizania palustris</i>	Northern Wild Rice	S4	Secure



G-5 - ACCDC Report and Species Habitat Comparison Table G-5-1

DATA REPORT 5928: Northwest Miramichi, NB

Prepared 19 September 2017
by J. Churchill, Data Manager

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3.0 Special Areas

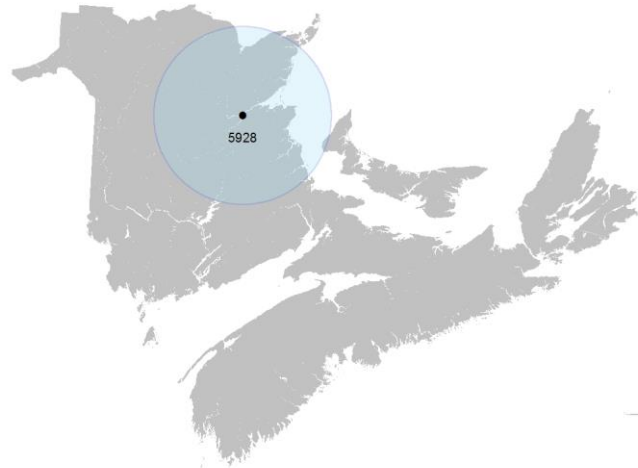
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- 5.1 Source Bibliography



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.

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
NorthwestMirNB_5928ob.xls	All Rare and legally protected <i>Flora and Fauna</i> in your study area
NorthwestMirNB_5928ob100km.xls	A list of Rare and legally protected <i>Flora and Fauna</i> within 100 km of your study area
NorthwestMirNB_5928ma.xls	All <i>Managed Areas</i> in your study area
NorthwestMirNB_5928sa.xls	All <i>Significant Natural Areas</i> in your study area
NorthwestMirNB_5928ff.xls	Rare and common <i>Freshwater Fish</i> in your study area (DFO database)

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

Animals (Fauna)

John Klymko, Zoologist

Tel: (506) 364-2660

jklymko@mta.ca

Plant Communities

Sarah Robinson, Community Ecologist

Tel: (506) 364-2664

srobinson@mta.ca

Data Management, GIS

James Churchill, Data Manager

Tel: (902) 679-6146

jlchurchill@mta.ca

Billing

Jean Breau

Tel: (506) 364-2657

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

Duncan.Bayne@novascotia.ca

Western: Donald Sam

(902) 634-7525

Donald.Sam@novascotia.ca

Central: Shavonne Meyer

(902) 893-6353

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Central: Kimberly George

(902) 893-5630

Kimberly.George@novascotia.ca

Eastern: Mark Pulsifer

(902) 863-7523

Mark.Pulsifer@novascotia.ca

Eastern: Donald Anderson

(902) 295-3949

Donald.Anderson@novascotia.ca

Eastern: Terry Power

(902) 563-3370

Terrance.Power@novascotia.ca

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

2.0 RARE AND ENDANGERED SPECIES

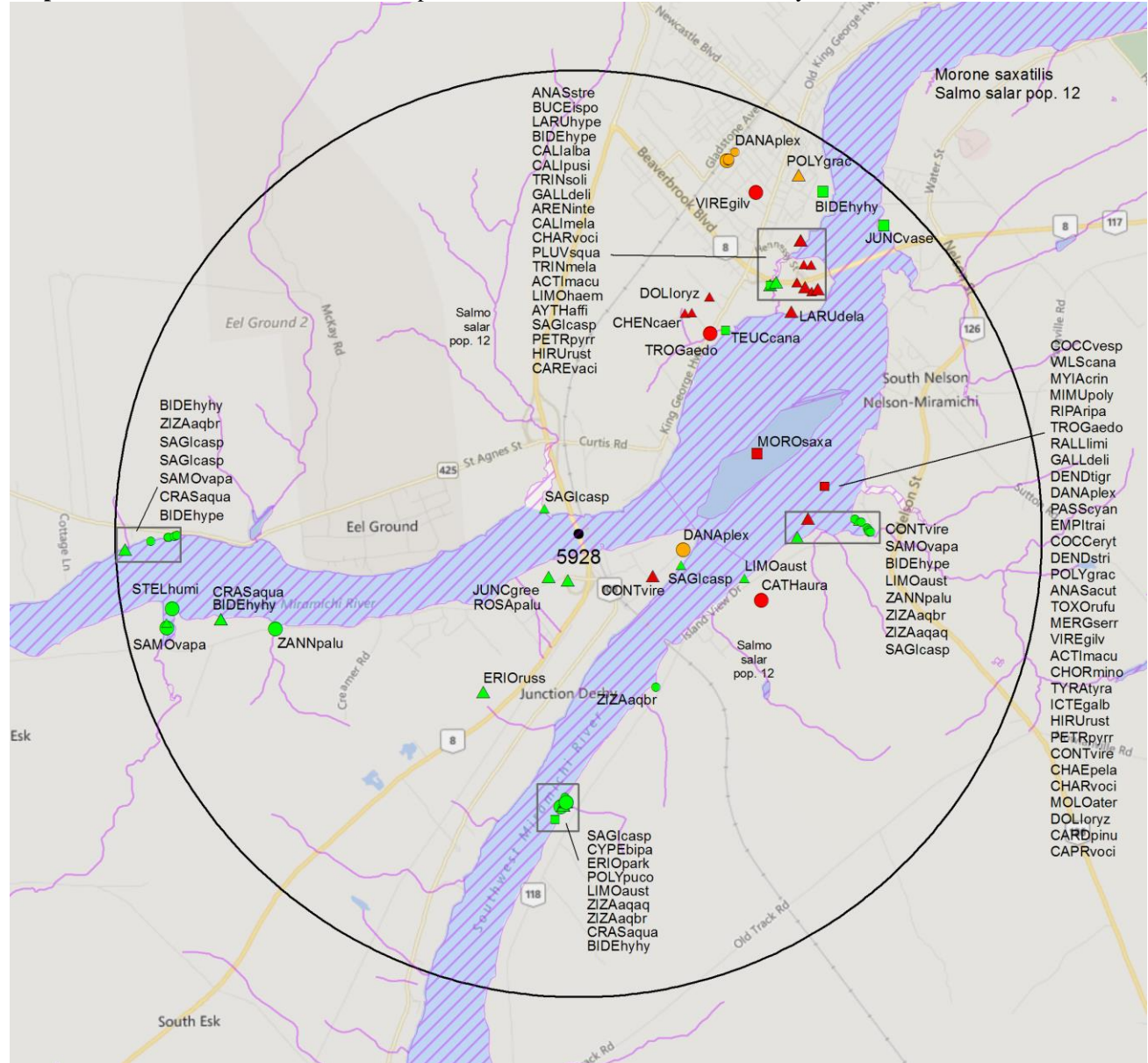
2.1 FLORA

The study area contains 59 records of 19 vascular, no records of nonvascular flora (Map 2 and attached: *ob.xls).

2.2 FAUNA

The study area contains 516 records of 46 vertebrate, 10 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 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 4 managed areas in the vicinity of the study area (Map 3 and attached file: *ma*.xls).

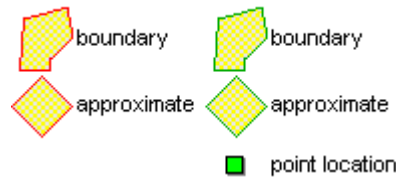
3.2 SIGNIFICANT AREAS

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 the study area.



MANAGED AREAS SIGNIFICANT AREAS



4.0 RARE SPECIES LISTS

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

4.1 FLORA

	Scientific Name	Common Name	COSEWIC	SARA	Prov Legal Prot	Prov Rarity Rank	Prov GS Rank	# recs	Distance (km)
P	<i>Eriocaulon parkeri</i>	Parker's Pipewort	Not At Risk		Endangered	S2	1 At Risk	1	2.9 \pm 1.0
P	<i>Cyperus bipartitus</i>	Shining Flatsedge				S1	2 May Be At Risk	1	2.9 \pm 0.0
P	<i>Juncus greenii</i>	Greene's Rush				S1	2 May Be At Risk	1	0.6 \pm 1.0
P	<i>Zizania aquatica</i> var. <i>brevis</i>	Indian Wild Rice				S1	2 May Be At Risk	4	1.9 \pm 0.0
P	<i>Sagittaria calycina</i> var. <i>spongiosa</i>	Long-lobed Arrowhead				S2	4 Secure	15	0.5 \pm 0.0
P	<i>Juncus vaseyi</i>	Vasey Rush				S2	3 Sensitive	2	4.7 \pm 10.0
P	<i>Zizania aquatica</i> var. <i>aquatica</i>	Indian Wild Rice				S2	5 Undetermined	2	2.4 \pm 1.0
P	<i>Carex vacillans</i>	Estuarine Sedge				S2?	3 Sensitive	2	3.4 \pm 1.0
P	<i>Bidens hyperborea</i>	Estuary Beggarticks				S3	4 Secure	3	3.1 \pm 0.0
P	<i>Bidens hyperborea</i> var. <i>hyperborea</i>	Estuary Beggarticks				S3	4 Secure	6	3.1 \pm 5.0
P	<i>Stellaria humifusa</i>	Saltmarsh Starwort				S3	4 Secure	1	4.5 \pm 0.0
P	<i>Crassula aquatica</i>	Water Pygmyweed				S3	4 Secure	3	2.9 \pm 1.0
P	<i>Teucrium canadense</i>	Canada Germander				S3	3 Sensitive	1	2.7 \pm 5.0
P	<i>Polygonum punctatum</i> var. <i>confertiflorum</i>	Dotted Smartweed				S3	4 Secure	1	2.9 \pm 1.0
P	<i>Samolus valerandi</i> ssp. <i>parviflorus</i>	Seaside Brookweed				S3	4 Secure	9	3.0 \pm 0.0
P	<i>Rosa palustris</i>	Swamp Rose				S3	4 Secure	1	0.5 \pm 1.0
P	<i>Limosella australis</i>	Southern Mudwort				S3	4 Secure	3	1.9 \pm 0.0
P	<i>Zannichellia palustris</i>	Horned Pondweed				S3	4 Secure	2	3.1 \pm 0.0
P	<i>Eriophorum russeolum</i>	Russet Cottongrass				S3S4	4 Secure	1	2.0 \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>Caprimulgus vociferus</i>	Whip-Poor-Will	Threatened	Threatened	Threatened	S2B,S2M	1 At Risk	2	2.7 \pm 7.0
A	<i>Hirundo rustica</i>	Barn Swallow	Threatened		Threatened	S2B,S2M	3 Sensitive	6	2.7 \pm 7.0
A	<i>Chaetura pelagica</i>	Chimney Swift	Threatened	Threatened	Threatened	S2S3B,S2M	1 At Risk	4	2.7 \pm 7.0
A	<i>Riparia riparia</i>	Bank Swallow	Threatened			S2S3B,S2S3M	3 Sensitive	2	2.7 \pm 7.0
A	<i>Wilsonia canadensis</i>	Canada Warbler	Threatened	Threatened	Threatened	S3B,S3M	1 At Risk	1	2.7 \pm 7.0
A	<i>Dolichonyx oryzivorus</i>	Bobolink	Threatened		Threatened	S3B,S3M	3 Sensitive	7	2.7 \pm 7.0
A	<i>Chordeiles minor</i>	Common Nighthawk	Threatened	Threatened	Threatened	S3B,S4M	1 At Risk	4	2.7 \pm 7.0
A	<i>Bucephala islandica</i> (Eastern pop.)	Barrow's Goldeneye - Eastern pop.	Special Concern	Special Concern	Special Concern	S2M,S2N	3 Sensitive	3	3.8 \pm 0.0
A	<i>Coccythraustes vespertinus</i>	Evening Grosbeak	Special Concern			S3B,S3S4N,SUM	3 Sensitive	1	2.7 \pm 7.0
A	<i>Contopus virens</i>	Eastern Wood-Pewee	Special Concern		Special Concern	S4B,S4M	4 Secure	6	0.9 \pm 1.0
A	<i>Morone saxatilis</i>	Striped Bass	E,E,SC			S3	2 May Be At Risk	1	2.1 \pm 10.0
A	<i>Tringa melanoleuca</i>	Greater Yellowlegs				S1?B,S5M	4 Secure	85	3.6 \pm 0.0
A	<i>Aythya affinis</i>	Lesser Scaup				S1B,S4M	4 Secure	2	3.6 \pm 1.0
A	<i>Empidonax traillii</i>	Willow Flycatcher				S1S2B,S1S2M	3 Sensitive	2	2.7 \pm 7.0
A	<i>Troglodytes aedon</i>	House Wren				S1S2B,S1S2M	5 Undetermined	2	2.6 \pm 0.0
A	<i>Mimus polyglottos</i>	Northern Mockingbird				S2B,S2M	3 Sensitive	1	2.7 \pm 7.0
A	<i>Toxostoma rufum</i>	Brown Thrasher				S2B,S2M	3 Sensitive	1	2.7 \pm 7.0
A	<i>Anas strepera</i>	Gadwall				S2B,S3M	4 Secure	1	3.8 \pm 0.0
A	<i>Tringa solitaria</i>	Solitary Sandpiper				S2B,S5M	4 Secure	9	3.6 \pm 0.0
A	<i>Chen caerulescens</i>	Snow Goose				S2M	4 Secure	2	2.6 \pm 0.0
A	<i>Larus hyperboreus</i>	Glaucous Gull				S2N,S2M	4 Secure	1	3.8 \pm 0.0
A	<i>Myiarchus crinitus</i>	Great Crested Flycatcher				S2S3B,S2S3M	3 Sensitive	2	2.7 \pm 7.0

	Scientific Name	Common Name	COSEWIC	SARA	Prov Legal Prot	Prov Rarity Rank	Prov GS Rank	# recs	Distance (km)
A	<i>Petrochelidon pyrrhonota</i>	Cliff Swallow				S2S3B,S2S3M	3 Sensitive	5	2.7 ± 7.0
A	<i>Carduelis pinus</i>	Pine Siskin				S3	4 Secure	3	2.7 ± 7.0
A	<i>Cathartes aura</i>	Turkey Vulture				S3B,S3M	4 Secure	1	2.1 ± 0.0
A	<i>Rallus limicola</i>	Virginia Rail				S3B,S3M	3 Sensitive	2	2.7 ± 7.0
A	<i>Charadrius vociferus</i>	Killdeer				S3B,S3M	3 Sensitive	74	2.7 ± 7.0
A	<i>Coccyzus erythrophthalmus</i>	Black-billed Cuckoo				S3B,S3M	4 Secure	1	2.7 ± 7.0
A	<i>Vireo gilvus</i>	Warbling Vireo				S3B,S3M	4 Secure	6	2.7 ± 7.0
A	<i>Passerina cyanea</i>	Indigo Bunting				S3B,S3M	4 Secure	1	2.7 ± 7.0
A	<i>Molothrus ater</i>	Brown-headed Cowbird				S3B,S3M	2 May Be At Risk	2	2.7 ± 7.0
A	<i>Icterus galbula</i>	Baltimore Oriole				S3B,S3M	4 Secure	6	2.7 ± 7.0
A	<i>Dendroica tigrina</i>	Cape May Warbler				S3B,S4S5M	4 Secure	1	2.7 ± 7.0
A	<i>Anas acuta</i>	Northern Pintail				S3B,S5M	3 Sensitive	1	2.7 ± 7.0
A	<i>Mergus serrator</i>	Red-breasted Merganser				S3B,S5M,S4S5N	4 Secure	2	2.7 ± 7.0
A	<i>Arenaria interpres</i>	Ruddy Turnstone				S3M	4 Secure	4	3.6 ± 0.0
A	<i>Tyrannus tyrannus</i>	Eastern Kingbird				S3S4B,S3S4M	3 Sensitive	4	2.7 ± 7.0
A	<i>Actitis macularia</i>	Spotted Sandpiper				S3S4B,S5M	4 Secure	123	2.7 ± 7.0
A	<i>Gallinago delicata</i>	Wilson's Snipe				S3S4B,S5M	4 Secure	27	2.7 ± 7.0
A	<i>Larus delawarensis</i>	Ring-billed Gull				S3S4B,S5M	4 Secure	4	2.9 ± 0.0
A	<i>Dendroica striata</i>	Blackpoll Warbler				S3S4B,S5M	4 Secure	2	2.7 ± 7.0
A	<i>Pluvialis squatarola</i>	Black-bellied Plover				S3S4M	4 Secure	11	3.6 ± 0.0
A	<i>Limosa haemastica</i>	Hudsonian Godwit				S3S4M	4 Secure	1	3.6 ± 0.0
A	<i>Calidris pusilla</i>	Semipalmated Sandpiper				S3S4M	4 Secure	51	3.6 ± 0.0
A	<i>Calidris melanotos</i>	Pectoral Sandpiper				S3S4M	4 Secure	33	3.6 ± 0.0
A	<i>Calidris alba</i>	Sanderling				S3S4M,S1N	3 Sensitive	6	3.6 ± 0.0
I	<i>Danaus plexippus</i>	Monarch	Endangered	Special Concern	Special Concern	S3B,S3M	3 Sensitive	8	1.1 ± 0.0
I	<i>Polygona gracilis</i>	Hoary Comma				S3	4 Secure	2	2.7 ± 7.0

4.3 LOCATION SENSITIVE SPECIES

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

New Brunswick

Scientific Name	Common Name	SARA	Prov Legal Prot	Known within the 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	YES
<i>Falco peregrinus pop. 1</i>	Peregrine Falcon - anatum/tundrius pop.	Special Concern	Endangered	No
<i>Cicindela marginipennis</i>	Cobblestone Tiger Beetle	Endangered	Endangered	No
<i>Coenonympha nipsisquit</i>	Maritime Ringlet	Endangered	Endangered	No
<i>Bat Hibernaculum</i>		[Endangered] ¹	[Endangered] ¹	No

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

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5.0 RARE SPECIES WITHIN 100 KM

A 100 km buffer around the study area contains 20110 records of 126 vertebrate and 633 records of 63 invertebrate fauna; 4997 records of 261 vascular, 103 records of 56 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>Myotis lucifugus</i>	Little Brown Myotis	Endangered	Endangered	Endangered	S1	1 At Risk	1	52.7 \pm 1.0	NB
A	<i>Charadrius melodus melodus</i>	Piping Plover melodus ssp	Endangered	Endangered	Endangered	S1B,S1M	1 At Risk	1932	25.0 \pm 0.0	NB
A	<i>Dermochelys coriacea</i> (Atlantic pop.)	Leatherback Sea Turtle - Atlantic pop.	Endangered	Endangered	Endangered	S1S2N	1 At Risk	4	50.1 \pm 1.0	NB
A	<i>Salmo salar</i> pop. 1	Atlantic Salmon - Inner Bay of Fundy pop.	Endangered	Endangered	Endangered	S2	2 May Be At Risk	425	84.5 \pm 0.0	NB
A	<i>Calidris canutus rufa</i>	Red Knot rufa ssp	Endangered	Endangered	Endangered	S2M	1 At Risk	197	32.2 \pm 0.0	NB
A	<i>Rangifer tarandus</i> pop. 2	Woodland Caribou (Atlantic-Gasp [r-sie pop.)	Endangered	Endangered	Extirpated	SX	0.1 Extirpated	6	17.1 \pm 5.0	NB
A	<i>Sturnella magna</i>	Eastern Meadowlark	Threatened	Threatened	Threatened	S1B,S1M	2 May Be At Risk	6	5.1 \pm 7.0	NB
A	<i>Hylocichla mustelina</i>	Wood Thrush	Threatened	Threatened	Threatened	S1S2B,S1S2M	2 May Be At Risk	57	10.3 \pm 7.0	NB
A	<i>Caprimulgus vociferus</i>	Whip-Poor-Will	Threatened	Threatened	Threatened	S2B,S2M	1 At Risk	49	2.7 \pm 7.0	NB

Taxonomic Group	Scientific Name	Common Name	COSEWIC	SARA	Prov Legal Prot	Prov Rarity Rank	Prov GS Rank	# recs	Distance (km)	Prov
A	<i>Hirundo rustica</i>	Barn Swallow	Threatened		Threatened	S2B,S2M	3 Sensitive	641	2.7 ± 7.0	NB
A	<i>Catharus bicknelli</i>	Bicknell's Thrush	Threatened	Special Concern	Threatened	S2B,S2M	1 At Risk	435	40.3 ± 7.0	NB
A	<i>Glyptemys insculpta</i>	Wood Turtle	Threatened	Threatened	Threatened	S2S3	1 At Risk	541	11.2 ± 0.0	NB
A	<i>Chaetura pelagica</i>	Chimney Swift	Threatened	Threatened	Threatened	S2S3B,S2M	1 At Risk	232	2.7 ± 7.0	NB
A	<i>Riparia riparia</i>	Bank Swallow	Threatened			S2S3B,S2S3M	3 Sensitive	372	2.7 ± 7.0	NB
A	<i>Contopus cooperi</i>	Olive-sided Flycatcher	Threatened	Threatened	Threatened	S3B,S3M	1 At Risk	534	7.3 ± 7.0	NB
A	<i>Wilsonia canadensis</i>	Canada Warbler	Threatened	Threatened	Threatened	S3B,S3M	1 At Risk	418	2.7 ± 7.0	NB
A	<i>Dolichonyx oryzivorus</i>	Bobolink	Threatened		Threatened	S3B,S3M	3 Sensitive	524	2.7 ± 7.0	NB
A	<i>Chordeiles minor</i>	Common Nighthawk	Threatened	Threatened	Threatened	S3B,S4M	1 At Risk	360	2.7 ± 7.0	NB
A	<i>Anguilla rostrata</i>	American Eel	Threatened		Threatened	S4	4 Secure	13	19.9 ± 1.0	NB
A	<i>Histrionicus histrionicus pop. 1</i>	Harlequin Duck - Eastern pop.	Special Concern	Special Concern	Endangered	S1B,S1S2N,S2M	1 At Risk	4	64.5 ± 0.0	NB
A	<i>Falco peregrinus pop. 1</i>	Peregrine Falcon - anatum/tundrius	Special Concern	Special Concern	Endangered	S1B,S3M	1 At Risk	11	7.0 ± 20.0	NB
A	<i>Asio flammeus</i>	Short-eared Owl	Special Concern	Special Concern	Special Concern	S2B,S2M	3 Sensitive	9	47.9 ± 0.0	NB
A	<i>Bucephala islandica (Eastern pop.)</i>	Barrow's Goldeneye - Eastern pop.	Special Concern	Special Concern	Special Concern	S2M,S2N	3 Sensitive	49	3.8 ± 0.0	NB
A	<i>Euphagus carolinus</i>	Rusty Blackbird	Special Concern	Special Concern	Special Concern	S3B,S3M	2 May Be At Risk	188	7.3 ± 7.0	NB
A	<i>Coccothraustes vespertinus</i>	Evening Grosbeak	Special Concern			S3B,S3S4N,SUM	3 Sensitive	384	2.7 ± 7.0	NB
A	<i>Phalaropus lobatus</i>	Red-necked Phalarope	Special Concern			S3M	3 Sensitive	3	80.9 ± 1.0	NB
A	<i>Contopus virens</i>	Eastern Wood-Pewee	Special Concern		Special Concern	S4B,S4M	4 Secure	380	0.9 ± 1.0	NB
A	<i>Podiceps auritus</i>	Horned Grebe	Special Concern		Special Concern	S4N,S4M	4 Secure	1	73.3 ± 3.0	NB
A	<i>Odobenus rosmarus rosmarus</i>	Atlantic Walrus	Special Concern		Extirpated	SX		3	48.2 ± 1.0	NB
A	<i>Bubo scandiacus</i>	Snowy Owl	Not At Risk			S1N,S2S3M	4 Secure	12	61.9 ± 29.0	NB
A	<i>Accipiter cooperii</i>	Cooper's Hawk	Not At Risk			S1S2B,S1S2M	2 May Be At Risk	1	80.9 ± 1.0	NB
A	<i>Fulica americana</i>	American Coot	Not At Risk			S1S2B,S1S2M	3 Sensitive	3	12.7 ± 1.0	NB
A	<i>Aegolius funereus</i>	Boreal Owl	Not At Risk			S1S2B,SUM	2 May Be At Risk	13	19.7 ± 0.0	NB
A	<i>Sorex dispar</i>	Long-tailed Shrew	Not At Risk	Special Concern		S2	3 Sensitive	16	70.6 ± 1.0	NB
A	<i>Buteo lineatus</i>	Red-shouldered Hawk	Not At Risk	Special Concern		S2B,S2M	2 May Be At Risk	10	10.7 ± 0.0	NB
A	<i>Chlidonias niger</i>	Black Tern	Not At Risk			S2B,S2M	3 Sensitive	6	49.8 ± 7.0	NB
A	<i>Globicephala melas</i>	Long-finned Pilot Whale	Not At Risk			S2S3		1	42.9 ± 1.0	NB
A	<i>Lynx canadensis</i>	Canadian Lynx	Not At Risk		Endangered	S3	1 At Risk	41	23.0 ± 0.0	NB
A	<i>Sterna hirundo</i>	Common Tern	Not At Risk			S3B,SUM	3 Sensitive	549	30.5 ± 1.0	NB
A	<i>Podiceps grisegena</i>	Red-necked Grebe	Not At Risk			S3M,S2N	3 Sensitive	7	12.1 ± 0.0	NB
A	<i>Haliaeetus leucocephalus</i>	Bald Eagle	Not At Risk		Endangered	S4	1 At Risk	350	0.6 ± 0.0	NB
A	<i>Canis lupus</i>	Gray Wolf	Not At Risk		Extirpated	SX	0.1 Extirpated	1	44.2 ± 100.0	NB
A	<i>Puma concolor pop. 1</i>	Eastern Cougar	Data Deficient		Endangered	SU	5 Undetermined	48	5.1 ± 1.0	NB
A	<i>Morone saxatilis</i>	Striped Bass	E,E,SC			S3	2 May Be At Risk	14	2.1 ± 10.0	NB
A	<i>Salvelinus alpinus</i>	Arctic Char				S1	3 Sensitive	10	69.0 ± 1.0	NB
A	<i>Synaptomys borealis</i>	Northern Bog Lemming				S1	5 Undetermined	3	51.7 ± 1.0	NB
A	<i>Tringa melanoleuca</i>	Greater Yellowlegs				S1?B,S5M	4 Secure	583	3.6 ± 0.0	NB
A	<i>Aythya americana</i>	Redhead				S1B,S1M	8 Accidental	1	80.9 ± 1.0	NB
A	<i>Grus canadensis</i>	Sandhill Crane				S1B,S1M	8 Accidental	6	24.8 ± 1.0	NB
A	<i>Bartramia longicauda</i>	Upland Sandpiper				S1B,S1M	3 Sensitive	14	58.7 ± 7.0	NB
A	<i>Phalaropus tricolor</i>	Wilson's Phalarope				S1B,S1M	3 Sensitive	10	80.1 ± 7.0	NB
A	<i>Leucophaeus atricilla</i>	Laughing Gull				S1B,S1M	3 Sensitive	1	52.7 ± 0.0	NB
A	<i>Progne subis</i>	Purple Martin				S1B,S1M	2 May Be At Risk	18	22.6 ± 7.0	NB
A	<i>Thryothorus ludovicianus</i>	Carolina Wren				S1B,S1M	8 Accidental	1	9.7 ± 0.0	NB
A	<i>Oxyura jamaicensis</i>	Ruddy Duck				S1B,S2S3M	4 Secure	11	49.2 ± 0.0	NB
A	<i>Uria aalge</i>	Common Murre				S1B,S3N,S3M	4 Secure	3	95.4 ± 0.0	NB
A	<i>Aythya affinis</i>	Lesser Scaup				S1B,S4M	4 Secure	63	3.6 ± 1.0	NB
A	<i>Aythya marila</i>	Greater Scaup				S1B,S4M,S2N	4 Secure	11	49.2 ± 1.0	NB
A	<i>Eremophila alpestris</i>	Horned Lark				S1B,S4N,S5M	2 May Be At Risk	106	10.3 ± 7.0	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,SUM	2 May Be At Risk	33	30.5 ± 0.0	NB
A	<i>Branta bernicla</i>	Brant				S1N, S2S3M	4 Secure	54	48.4 ± 10.0	NB
A	<i>Chroicocephalus ridibundus</i>	Black-headed Gull				S1N,S2M	3 Sensitive	6	80.7 ± 0.0	NB
A	<i>Butorides virescens</i>	Green Heron				S1S2B,S1S2M	3 Sensitive	2	80.1 ± 7.0	NB
A	<i>Nycticorax nycticorax</i>	Black-crowned Night-heron				S1S2B,S1S2M	3 Sensitive	79	20.3 ± 1.0	NB
A	<i>Empidonax traillii</i>	Willow Flycatcher				S1S2B,S1S2M	3 Sensitive	19	2.7 ± 7.0	NB
A	<i>Stelgidopteryx serripennis</i>	Northern Rough-winged Swallow				S1S2B,S1S2M	2 May Be At Risk	5	53.5 ± 1.0	NB
A	<i>Troglodytes aedon</i>	House Wren				S1S2B,S1S2M	5 Undetermined	4	2.6 ± 0.0	NB
A	<i>Rissa tridactyla</i>	Black-legged Kittiwake				S1S2B,S4N,S5M	4 Secure	20	89.6 ± 0.0	NB
A	<i>Calidris bairdii</i>	Baird's Sandpiper				S1S2M	3 Sensitive	10	48.8 ± 0.0	NB
A	<i>Microtus chrotorrhinus</i>	Rock Vole				S2?	5 Undetermined	29	85.6 ± 1.0	NB
A	<i>Mimus polyglottos</i>	Northern Mockingbird				S2B,S2M	3 Sensitive	50	2.7 ± 7.0	NB
A	<i>Toxostoma rufum</i>	Brown Thrasher				S2B,S2M	3 Sensitive	37	2.7 ± 7.0	NB
A	<i>Poocetes gramineus</i>	Vesper Sparrow				S2B,S2M	2 May Be At Risk	74	16.4 ± 7.0	NB
A	<i>Anas strepera</i>	Gadwall				S2B,S3M	4 Secure	47	3.8 ± 0.0	NB
A	<i>Alca torda</i>	Razorbill				S2B,S3N,S3M	4 Secure	7	94.6 ± 14.0	NB
A	<i>Pinicola enucleator</i>	Pine Grosbeak				S2B,S4S5N,S4S5M	3 Sensitive	72	22.6 ± 7.0	NB
A	<i>Tringa solitaria</i>	Solitary Sandpiper				S2B,S5M	4 Secure	90	3.6 ± 0.0	NB
A	<i>Chen caerulescens</i>	Snow Goose				S2M	4 Secure	19	2.6 ± 0.0	NB
A	<i>Phalacrocorax carbo</i>	Great Cormorant				S2N,S2M	4 Secure	9	53.8 ± 1.0	NB
A	<i>Somateria spectabilis</i>	King Eider				S2N,S2M	4 Secure	2	73.3 ± 1.0	NB
A	<i>Larus hyperboreus</i>	Glaucous Gull				S2N,S2M	4 Secure	17	3.8 ± 0.0	NB
A	<i>Asio otus</i>	Long-eared Owl				S2S3	5 Undetermined	9	20.1 ± 1.0	NB
A	<i>Picoides dorsalis</i>	American Three-toed Woodpecker				S2S3	3 Sensitive	69	24.5 ± 0.0	NB
A	<i>Salmo salar</i>	Atlantic Salmon				S2S3	2 May Be At Risk	2106	19.9 ± 1.0	NB
A	<i>Anas clypeata</i>	Northern Shoveler				S2S3B,S2S3M	4 Secure	55	5.9 ± 0.0	NB
A	<i>Myiarchus crinitus</i>	Great Crested Flycatcher				S2S3B,S2S3M	3 Sensitive	28	2.7 ± 7.0	NB
A	<i>Petrochelidon pyrrhonota</i>	Cliff Swallow				S2S3B,S2S3M	3 Sensitive	299	2.7 ± 7.0	NB
A	<i>Pluvialis dominica</i>	American Golden-Plover				S2S3M	3 Sensitive	45	20.8 ± 2.0	NB
A	<i>Calcarius lapponicus</i>	Lapland Longspur				S2S3N,SUM	3 Sensitive	9	11.3 ± 0.0	NB
A	<i>Cephus grylle</i>	Black Guillemot				S3	4 Secure	34	71.8 ± 3.0	NB
A	<i>Loxia curvirostra</i>	Red Crossbill				S3	4 Secure	102	5.4 ± 0.0	NB
A	<i>Carduelis pinus</i>	Pine Siskin				S3	4 Secure	288	2.7 ± 7.0	NB
A	<i>Prosopium cylindraceum</i>	Round Whitefish				S3	4 Secure	2	98.2 ± 0.0	NB
A	<i>Salvelinus namaycush</i>	Lake Trout				S3	3 Sensitive	4	83.6 ± 0.0	NB
A	<i>Sorex maritimensis</i>	Maritime Shrew				S3	4 Secure	39	32.6 ± 0.0	NB
A	<i>Cathartes aura</i>	Turkey Vulture				S3B,S3M	4 Secure	14	2.1 ± 0.0	NB
A	<i>Rallus limicola</i>	Virginia Rail				S3B,S3M	3 Sensitive	10	2.7 ± 7.0	NB
A	<i>Charadrius vociferus</i>	Killdeer				S3B,S3M	3 Sensitive	574	2.7 ± 7.0	NB
A	<i>Tringa semipalmata</i>	Willet				S3B,S3M	3 Sensitive	215	23.8 ± 0.0	NB
A	<i>Coccyzus erythrophthalmus</i>	Black-billed Cuckoo				S3B,S3M	4 Secure	70	2.7 ± 7.0	NB
A	<i>Vireo gilvus</i>	Warbling Vireo				S3B,S3M	4 Secure	54	2.7 ± 7.0	NB
A	<i>Piranga olivacea</i>	Scarlet Tanager				S3B,S3M	4 Secure	89	12.7 ± 7.0	NB
A	<i>Passerina cyanea</i>	Indigo Bunting				S3B,S3M	4 Secure	22	2.7 ± 7.0	NB
A	<i>Molothrus ater</i>	Brown-headed Cowbird				S3B,S3M	2 May Be At Risk	161	2.7 ± 7.0	NB
A	<i>Icterus galbula</i>	Baltimore Oriole				S3B,S3M	4 Secure	63	2.7 ± 7.0	NB
A	<i>Somateria mollissima</i>	Common Eider				S3B,S4M,S3N	4 Secure	107	47.5 ± 14.0	NB
A	<i>Dendroica tigrina</i>	Cape May Warbler				S3B,S4S5M	4 Secure	215	2.7 ± 7.0	NB
A	<i>Anas acuta</i>	Northern Pintail				S3B,S5M	3 Sensitive	124	2.7 ± 7.0	NB
A	<i>Mergus serrator</i>	Red-breasted Merganser				S3B,S5M,S4S5N	4 Secure	250	2.7 ± 7.0	NB
A	<i>Arenaria interpres</i>	Ruddy Turnstone				S3M	4 Secure	535	3.6 ± 0.0	NB

Taxonomic Group	Scientific Name	Common Name	COSEWIC	SARA	Prov Legal Prot	Prov Rarity Rank	Prov GS Rank	# recs	Distance (km)	Prov
A	<i>Phalaropus fulicarius</i>	Red Phalarope				S3M	3 Sensitive	5	32.2 ± 0.0	NB
A	<i>Melanitta nigra</i>	Black Scoter				S3M,S1S2N	3 Sensitive	124	30.5 ± 0.0	NB
A	<i>Bucephala albeola</i>	Bufflehead				S3M,S2N	3 Sensitive	40	5.8 ± 0.0	NB
A	<i>Calidris maritima</i>	Purple Sandpiper				S3M,S3N	4 Secure	3	76.6 ± 0.0	NB
A	<i>Synaptomys cooperi</i>	Southern Bog Lemming				S3S4	4 Secure	12	32.6 ± 0.0	NB
A	<i>Tyrannus tyrannus</i>	Eastern Kingbird				S3S4B,S3S4M	3 Sensitive	234	2.7 ± 7.0	NB
A	<i>Actitis macularius</i>	Spotted Sandpiper				S3S4B,S5M	4 Secure	975	2.7 ± 7.0	NB
A	<i>Gallinago delicata</i>	Wilson's Snipe				S3S4B,S5M	4 Secure	365	2.7 ± 7.0	NB
A	<i>Larus delawarensis</i>	Ring-billed Gull				S3S4B,S5M	4 Secure	341	2.9 ± 0.0	NB
A	<i>Dendroica striata</i>	Blackpoll Warbler				S3S4B,S5M	4 Secure	164	2.7 ± 7.0	NB
A	<i>Pluvialis squatarola</i>	Black-bellied Plover				S3S4M	4 Secure	382	3.6 ± 0.0	NB
A	<i>Limosa haemastica</i>	Hudsonian Godwit				S3S4M	4 Secure	147	3.6 ± 0.0	NB
A	<i>Calidris pusilla</i>	Semipalmated Sandpiper				S3S4M	4 Secure	711	3.6 ± 0.0	NB
A	<i>Calidris melanotos</i>	Pectoral Sandpiper				S3S4M	4 Secure	93	3.6 ± 0.0	NB
A	<i>Calidris alba</i>	Sanderling				S3S4M,S1N	3 Sensitive	372	3.6 ± 0.0	NB
A	<i>Morus bassanus</i>	Northern Gannet				SHB,S5M	4 Secure	173	6.9 ± 0.0	NB
I	<i>Coenonympha nipisiquit</i>	Maritime Ringlet	Endangered	Endangered	Endangered	S1	1 At Risk	38	70.4 ± 7.0	NB
I	<i>Gomphus ventricosus</i>	Skillet Clubtail	Endangered		Endangered	S1S2	2 May Be At Risk	1	84.0 ± 0.0	NB
I	<i>Danaus plexippus</i>	Monarch	Endangered	Special Concern	Special Concern	S3B,S3M	3 Sensitive	19	1.1 ± 0.0	NB
I	<i>Ophiogomphus howei</i>	Pygmy Snaketail	Special Concern	Special Concern	Special Concern	S2	2 May Be At Risk	26	30.2 ± 0.0	NB
I	<i>Alasmidonta varicosa</i>	Brook Floater	Special Concern		Special Concern	S2	3 Sensitive	16	41.1 ± 0.0	NB
I	<i>Lampsilis cariosa</i>	Yellow Lampmussel	Special Concern	Special Concern	Special Concern	S2	3 Sensitive	4	83.9 ± 0.0	NB
I	<i>Bombus terricola</i>	Yellow-banded Bumblebee	Special Concern			S3?	3 Sensitive	11	45.2 ± 0.0	NB
I	<i>Appalachina sayana</i>	Spike-lip Crater	Not At Risk			S3?		1	91.5 ± 1.0	NB
I	<i>Erora laeta</i>	Early Hairstreak				S1	2 May Be At Risk	2	76.3 ± 7.0	NB
I	<i>Somatochlora septentrionalis</i>	Muskeg Emerald				S1	2 May Be At Risk	3	80.0 ± 0.0	NB
I	<i>Leucorrhinia patricia</i>	Canada Whiteface				S1	2 May Be At Risk	8	52.7 ± 1.0	NB
I	<i>Plebejus saepiolus</i>	Greenish Blue				S1S2	4 Secure	17	24.0 ± 7.0	NB
I	<i>Cicindela ancociscenensis</i>	Appalachian Tiger Beetle				S2	5 Undetermined	1	50.3 ± 0.0	NB
I	<i>Satyrrium calanus</i>	Banded Hairstreak				S2	3 Sensitive	1	48.1 ± 7.0	NB
I	<i>Strymon melinus</i>	Grey Hairstreak				S2	4 Secure	8	37.0 ± 1.0	NB
I	<i>Aeshna juncea</i>	Rush Darner				S2	3 Sensitive	1	80.0 ± 0.0	NB
I	<i>Somatochlora brevicincta</i>	Quebec Emerald				S2	5 Undetermined	7	80.4 ± 0.0	NB
I	<i>Somatochlora tenebrosa</i>	Clamp-Tipped Emerald				S2	5 Undetermined	5	30.6 ± 0.0	NB
I	<i>Ladona exusta</i>	White Corporal				S2	5 Undetermined	1	63.6 ± 0.0	NB
I	<i>Coenagrion interrogatum</i>	Subarctic Bluet				S2	3 Sensitive	12	20.1 ± 0.0	NB
I	<i>Callophrys henrici</i>	Henry's Elfin				S2S3	4 Secure	11	21.5 ± 0.0	NB
I	<i>Desmocerus palliatus</i>	Elderberry Borer				S3		2	38.7 ± 0.0	NB
I	<i>Hippodamia parenthesis</i>	Parenthesis Lady Beetle				S3	4 Secure	1	53.8 ± 1.0	NB
I	<i>Xylotrechus quadrimaculatus</i>	a Longhorned Beetle				S3		1	80.4 ± 1.0	NB
I	<i>Xylotrechus undulatus</i>	a Longhorned Beetle				S3		1	88.2 ± 1.0	NB
I	<i>Calathus gregarius</i>	a Ground Beetle				S3	4 Secure	1	83.3 ± 1.0	NB
I	<i>Hyperaspis disconotata</i>	a Ladybird Beetle				S3	5 Undetermined	1	99.6 ± 5.0	NB
I	<i>Hesperia sassacus</i>	Indian Skipper				S3	4 Secure	4	31.4 ± 1.0	NB
I	<i>Euphyes bimacula</i>	Two-spotted Skipper				S3	4 Secure	9	42.0 ± 0.0	NB
I	<i>Papilio brevicauda</i>	Short-tailed Swallowtail				S3	4 Secure	45	47.8 ± 0.0	NB
I	<i>Papilio brevicauda bretonensis</i>	Short-tailed Swallowtail				S3	4 Secure	16	48.1 ± 0.0	NB

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I	<i>Lycaena hyllus</i>	Bronze Copper				S3	3 Sensitive	5	12.8 ± 0.0	NB
I	<i>Lycaena dospassosi</i>	Salt Marsh Copper				S3	4 Secure	96	23.2 ± 0.0	NB
I	<i>Satyrrium acadica</i>	Acadian Hairstreak				S3	4 Secure	3	70.4 ± 7.0	NB
I	<i>Callophrys polios</i>	Hoary Elfin				S3	4 Secure	13	17.1 ± 0.0	NB
I	<i>Callophrys eryphon</i>	Western Pine Elfin				S3	4 Secure	10	40.8 ± 10.0	NB
I	<i>Plebejus idas</i>	Northern Blue				S3	4 Secure	21	52.2 ± 0.0	NB
I	<i>Plebejus idas empetri</i>	Crowberry Blue				S3	4 Secure	3	59.6 ± 0.0	NB
I	<i>Speyeria aphrodite</i>	Aphrodite Fritillary				S3	4 Secure	5	22.6 ± 1.0	NB
I	<i>Boloria eunomia</i>	Bog Fritillary				S3	5 Undetermined	5	51.4 ± 0.0	NB
I	<i>Boloria bellona</i>	Meadow Fritillary				S3	4 Secure	1	82.2 ± 7.0	NB
I	<i>Boloria chariclea</i>	Arctic Fritillary				S3	4 Secure	17	24.0 ± 7.0	NB
I	<i>Boloria chariclea grandis</i>	Purple Lesser Fritillary				S3	4 Secure	4	40.8 ± 10.0	NB
I	<i>Polygonia satyrus</i>	Satyr Comma				S3	4 Secure	17	25.8 ± 1.0	NB
I	<i>Polygonia gracilis</i>	Hoary Comma				S3	4 Secure	30	2.7 ± 7.0	NB
I	<i>Nymphalis l-album</i>	Compton Tortoiseshell				S3	4 Secure	5	18.1 ± 10.0	NB
I	<i>Gomphus abbreviatus</i>	Spine-crowned Clubtail				S3	4 Secure	14	17.6 ± 0.0	NB
I	<i>Dorocordulia lepida</i>	Petite Emerald				S3	4 Secure	3	83.7 ± 0.0	NB
I	<i>Somatochlora albicincta</i>	Ringed Emerald				S3	4 Secure	8	56.8 ± 1.0	NB
I	<i>Somatochlora cingulata</i>	Lake Emerald				S3	4 Secure	13	47.5 ± 0.0	NB
I	<i>Somatochlora forcipata</i>	Forcipate Emerald				S3	4 Secure	12	20.1 ± 0.0	NB
I	<i>Williamsonia fletcheri</i>	Ebony Boghaunter				S3	4 Secure	8	21.4 ± 0.0	NB
I	<i>Lestes eurinus</i>	Amber-Winged Spreadwing				S3	4 Secure	17	38.4 ± 1.0	NB
I	<i>Enallagma geminatum</i>	Skimming Bluet				S3	5 Undetermined	4	88.4 ± 0.0	NB
I	<i>Enallagma signatum</i>	Orange Bluet				S3	4 Secure	1	88.4 ± 0.0	NB
I	<i>Stylurus scudleri</i>	Zebra Clubtail				S3	4 Secure	3	31.4 ± 0.0	NB
I	<i>Alasmidonta undulata</i>	Triangle Floater				S3	3 Sensitive	3	45.9 ± 1.0	NB
I	<i>Leptodea ochracea</i>	Tidewater Mucket				S3	4 Secure	1	90.3 ± 0.0	NB
I	<i>Pantala hymenaea</i>	Spot-Winged Glider				S3B,S3M	4 Secure	1	99.2 ± 0.0	NB
I	<i>Satyrrium liparops</i>	Striped Hairstreak				S3S4	4 Secure	18	20.1 ± 0.0	NB
I	<i>Satyrrium liparops strigosum</i>	Striped Hairstreak				S3S4	4 Secure	8	41.7 ± 1.0	NB
I	<i>Cupido comyntas</i>	Eastern Tailed Blue				S3S4	4 Secure	1	45.9 ± 1.0	NB
I	<i>Coccinella transversoguttata richardsoni</i>	Transverse Lady Beetle				SH	2 May Be At Risk	9	53.8 ± 1.0	NB
N	<i>Aulacomnium heterostichum</i>	One-sided Groove Moss				S1	2 May Be At Risk	1	49.0 ± 0.0	NB
N	<i>Campylostelium saxicola</i>	a Moss				S1	2 May Be At Risk	1	48.2 ± 0.0	NB
N	<i>Zygodon viridissimus</i> var. <i>viridissimus</i>	a Moss				S1	2 May Be At Risk	1	47.0 ± 0.0	NB
N	<i>Cinclidium stygium</i>	Sooty Cupola Moss				S1?	2 May Be At Risk	1	91.6 ± 0.0	NB
N	<i>Dicranum bonjeanii</i>	Bonjean's Broom Moss				S1?	2 May Be At Risk	1	61.2 ± 1.0	NB
N	<i>Homomallium adnatum</i>	Adnate Hairy-gray Moss				S1?	2 May Be At Risk	1	47.1 ± 0.0	NB
N	<i>Paludella squarrosa</i>	Tufted Fen Moss				S1?	2 May Be At Risk	1	91.6 ± 0.0	NB
N	<i>Seligeria recurvata</i>	a Moss				S1?	2 May Be At Risk	1	96.8 ± 15.0	NB
N	<i>Rhizomnium pseudopunctatum</i>	Felted Leafy Moss				S1?	2 May Be At Risk	1	52.1 ± 0.0	NB
N	<i>Cephaloziella spinigera</i>	Spiny Threadwort				S1S2	6 Not Assessed	2	80.0 ± 0.0	NB
N	<i>Odontoschisma sphagni</i>	Bog-Moss Flapwort				S1S2	6 Not Assessed	1	52.1 ± 0.0	NB
N	<i>Pallavicinia lyellii</i>	Lyell's Ribbonwort				S1S2	6 Not Assessed	1	43.8 ± 1.0	NB
N	<i>Drummondia prorepens</i>	a Moss				S1S2	2 May Be At Risk	1	48.7 ± 0.0	NB

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N	<i>Seligeria brevifolia</i>	a Moss				S1S2	3 Sensitive	4	47.1 ± 0.0	NB
N	<i>Calypogeia neesiana</i>	Nees' Pouchwort				S1S3	6 Not Assessed	1	71.9 ± 1.0	NB
N	<i>Meesia triquetra</i>	Three-ranked Cold Moss				S2	2 May Be At Risk	1	86.9 ± 10.0	NB
N	<i>Platydictya jungermannioides</i>	False Willow Moss				S2	3 Sensitive	1	96.8 ± 15.0	NB
N	<i>Pohlia elongata</i>	Long-necked Nodding Moss				S2	3 Sensitive	4	48.1 ± 0.0	NB
N	<i>Pohlia sphagnicola</i>	a moss				S2	3 Sensitive	1	52.3 ± 0.0	NB
N	<i>Sphagnum lindbergii</i>	Lindberg's Peat Moss				S2	3 Sensitive	1	52.1 ± 0.0	NB
N	<i>Sphagnum flexuosum</i>	Flexuous Peatmoss				S2	3 Sensitive	2	43.8 ± 0.0	NB
N	<i>Tetradontium brownianum</i>	Little Georgia				S2	3 Sensitive	5	48.1 ± 0.0	NB
N	<i>Nephroma laevigatum</i>	Mustard Kidney Lichen				S2	2 May Be At Risk	1	55.0 ± 0.0	NB
N	<i>Barbilophozia lycopodioides</i>	Greater Pawwort				S2?	6 Not Assessed	1	77.5 ± 1.0	NB
N	<i>Anacamptodon splachnoides</i>	a Moss				S2?	3 Sensitive	1	61.8 ± 1.0	NB
N	<i>Bryum pallescens</i>	Pale Bryum Moss				S2?	5 Undetermined	1	47.0 ± 100.0	NB
N	<i>Sphagnum angermanicum</i>	a Peatmoss				S2?	3 Sensitive	2	50.0 ± 0.0	NB
N	<i>Trichodon cylindricus</i>	Cylindric Hairy-teeth Moss				S2?	3 Sensitive	1	96.8 ± 15.0	NB
N	<i>Collema leptaleum</i>	Crumpled Bat's Wing Lichen				S2?	5 Undetermined	1	48.6 ± 0.0	NB
N	<i>Orthotrichum speciosum</i>	Showy Bristle Moss				S2S3	5 Undetermined	4	47.1 ± 0.0	NB
N	<i>Pohlia prolifera</i>	Cottony Nodding Moss				S2S3	3 Sensitive	9	48.1 ± 0.0	NB
N	<i>Scorpidium scorpioides</i>	Hooked Scorpion Moss				S2S3	3 Sensitive	2	70.0 ± 1.0	NB
N	<i>Sphagnum subfulvum</i>	a Peatmoss				S2S3	2 May Be At Risk	2	52.3 ± 0.0	NB
N	<i>Zygodon viridissimus</i>	a Moss				S2S3	2 May Be At Risk	1	47.1 ± 0.0	NB
N	<i>Dendriscoaulon umhausense</i>	a lichen				S2S3	3 Sensitive	1	48.1 ± 0.0	NB
N	<i>Schistidium maritimum</i>	a Moss				S3	4 Secure	1	52.1 ± 0.0	NB
N	<i>Collema nigrescens</i>	Blistered Tarpaper Lichen				S3	3 Sensitive	1	48.1 ± 0.0	NB
N	<i>Ahtiana aurescens</i>	Eastern Candlewax Lichen				S3	5 Undetermined	1	51.2 ± 0.0	NB
N	<i>Aulacomnium androgynum</i>	Little Groove Moss				S3?	4 Secure	5	49.1 ± 0.0	NB
N	<i>Dicranella rufescens</i>	Red Forklet Moss				S3?	5 Undetermined	1	72.2 ± 7.0	NB
N	<i>Barbula convoluta</i>	Lesser Bird's-claw Beard Moss				S3S4	4 Secure	1	71.2 ± 15.0	NB
N	<i>Dicranum majus</i>	Greater Broom Moss				S3S4	4 Secure	4	49.3 ± 0.0	NB
N	<i>Dicranum leioneuron</i>	a Dicranum Moss				S3S4	4 Secure	1	57.1 ± 10.0	NB
N	<i>Fissidens bryoides</i>	Lesser Pocket Moss				S3S4	4 Secure	1	58.1 ± 5.0	NB
N	<i>Heterocladium dimorphum</i>	Dimorphous Tangle Moss				S3S4	4 Secure	2	47.1 ± 0.0	NB
N	<i>Pogonatum dentatum</i>	Mountain Hair Moss				S3S4	4 Secure	1	48.7 ± 0.0	NB
N	<i>Sphagnum compactum</i>	Compact Peat Moss				S3S4	4 Secure	1	48.2 ± 1.0	NB
N	<i>Sphagnum torreyanum</i>	a Peatmoss				S3S4	4 Secure	1	72.3 ± 0.0	NB
N	<i>Sphagnum contortum</i>	Twisted Peat Moss				S3S4	4 Secure	1	72.3 ± 0.0	NB
N	<i>Tetraphis geniculata</i>	Geniculate Four-tooth Moss				S3S4	4 Secure	3	55.5 ± 0.0	NB
N	<i>Tetraplodon angustatus</i>	Toothed-leaved Nitrogen Moss				S3S4	4 Secure	1	49.1 ± 0.0	NB
N	<i>Rauvella scita</i>	Smaller Fern Moss				S3S4	3 Sensitive	1	49.2 ± 0.0	NB
N	<i>Pseudocyphellaria perpetua</i>	Gilded Specklebelly Lichen				S3S4	3 Sensitive	4	48.6 ± 0.0	NB
N	<i>Stereocaulon paschale</i>	Easter Foam Lichen				S3S4	5 Undetermined	1	74.5 ± 1.0	NB
N	<i>Leucodon brachypus</i>	a Moss				SH	2 May Be At Risk	9	47.0 ± 0.0	NB
N	<i>Splachnum luteum</i>	Yellow Collar Moss				SH	5 Undetermined	1	47.0 ± 100.0	NB
P	<i>Juglans cinerea</i>	Butternut	Endangered	Endangered	Endangered	S1	1 At Risk	23	41.8 ± 0.0	NB
P	<i>Symphyotrichum laurentianum</i>	Gulf of St Lawrence Aster	Threatened	Threatened	Endangered	S1	1 At Risk	27	53.7 ± 0.0	NB

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P	<i>Symphytotrichum subulatum</i> (Bathurst pop)	Bathurst Aster - Bathurst pop.	Special Concern	Special Concern	Endangered	S2	1 At Risk	201	17.8 ± 0.0	NB
P	<i>Isoetes prototypus</i>	Prototype Quillwort	Special Concern	Special Concern	Endangered	S2	1 At Risk	1	87.5 ± 0.0	NB
P	<i>Lechea maritima</i> var. <i>subcylindrica</i>	Beach Pinweed	Special Concern			S2	3 Sensitive	443	47.2 ± 0.0	NB
P	<i>Eriocaulon parkeri</i>	Parker's Pipewort	Not At Risk		Endangered	S2	1 At Risk	82	2.9 ± 1.0	NB
P	<i>Pterospora andromedea</i>	Woodland Pinedrops			Endangered	S1	1 At Risk	1	98.9 ± 0.0	NB
P	<i>Cryptotaenia canadensis</i>	Canada Honewort				S1	2 May Be At Risk	1	50.2 ± 1.0	NB
P	<i>Bidens eatonii</i>	Eaton's Beggarticks				S1	2 May Be At Risk	7	7.1 ± 0.0	NB
P	<i>Pseudognaphalium obtusifolium</i>	Eastern Cudweed				S1	2 May Be At Risk	4	47.2 ± 0.0	NB
P	<i>Betula glandulosa</i>	Glandular Birch				S1	2 May Be At Risk	8	67.6 ± 0.0	NB
P	<i>Betula michauxii</i>	Michaux's Dwarf Birch				S1	2 May Be At Risk	3	51.1 ± 0.0	NB
P	<i>Cynoglossum virginianum</i> var. <i>boreale</i>	Wild Comfrey				S1	2 May Be At Risk	3	58.1 ± 0.0	NB
P	<i>Cardamine parviflora</i> var. <i>arenicola</i>	Small-flowered Bittercress				S1	2 May Be At Risk	1	48.0 ± 0.0	NB
P	<i>Stellaria crassifolia</i>	Fleshy Stitchwort				S1	2 May Be At Risk	1	31.9 ± 10.0	NB
P	<i>Stellaria longipes</i>	Long-stalked Starwort				S1	2 May Be At Risk	1	97.2 ± 1.0	NB
P	<i>Triadenum virginicum</i>	Virginia St John's-wort				S1	2 May Be At Risk	1	16.3 ± 0.0	NB
P	<i>Vaccinium boreale</i>	Northern Blueberry				S1	2 May Be At Risk	12	67.6 ± 0.0	NB
P	<i>Vaccinium uliginosum</i>	Alpine Bilberry				S1	2 May Be At Risk	4	71.6 ± 0.0	NB
P	<i>Chamaesyce polygonifolia</i>	Seaside Spurge				S1	2 May Be At Risk	5	55.5 ± 5.0	NB
P	<i>Desmodium glutinosum</i>	Large Tick-Trefoil				S1	2 May Be At Risk	1	85.5 ± 0.0	NB
P	<i>Bartonia virginica</i>	Yellow Bartonia				S1	2 May Be At Risk	3	62.1 ± 0.0	NB
P	<i>Ranunculus lapponicus</i>	Lapland Buttercup				S1	2 May Be At Risk	1	96.0 ± 0.0	NB
P	<i>Ranunculus sceleratus</i>	Cursed Buttercup				S1	2 May Be At Risk	1	83.7 ± 100.0	NB
P	<i>Crataegus jonesiae</i>	Jones' Hawthorn				S1	2 May Be At Risk	1	74.1 ± 1.0	NB
P	<i>Potentilla canadensis</i>	Canada Cinquefoil				S1	5 Undetermined	1	91.4 ± 0.0	NB
P	<i>Salix serissima</i>	Autumn Willow				S1	2 May Be At Risk	4	90.9 ± 0.0	NB
P	<i>Agalinis paupercula</i> var. <i>borealis</i>	Small-flowered Agalinis				S1	2 May Be At Risk	9	18.4 ± 0.0	NB
P	<i>Carex bigelowii</i>	Bigelow's Sedge				S1	2 May Be At Risk	1	67.7 ± 0.0	NB
P	<i>Carex glareosa</i> var. <i>amphigena</i>	Gravel Sedge				S1	2 May Be At Risk	2	95.5 ± 1.0	NB
P	<i>Carex saxatilis</i>	Russet Sedge				S1	2 May Be At Risk	6	89.2 ± 0.0	NB
P	<i>Carex viridula</i> var. <i>elatior</i>	Greenish Sedge				S1	2 May Be At Risk	11	90.8 ± 0.0	NB
P	<i>Cyperus diandrus</i>	Low Flatsedge				S1	2 May Be At Risk	2	9.6 ± 0.0	NB
P	<i>Cyperus bipartitus</i>	Shining Flatsedge				S1	2 May Be At Risk	13	2.9 ± 0.0	NB
P	<i>Scirpus pendulus</i>	Hanging Bulrush				S1	2 May Be At Risk	1	99.4 ± 0.0	PE
P	<i>Schoenoplectus smithii</i>	Smith's Bulrush				S1	2 May Be At Risk	18	7.0 ± 0.0	NB
P	<i>Juncus greenei</i>	Greene's Rush				S1	2 May Be At Risk	2	0.6 ± 1.0	NB
P	<i>Juncus stygius</i>	Moor Rush				S1	2 May Be At Risk	1	33.6 ± 0.0	NB
P	<i>Juncus stygius</i> ssp. <i>americanus</i>	Moor Rush				S1	2 May Be At Risk	3	59.5 ± 10.0	NB
P	<i>Juncus subtilis</i>	Creeping Rush				S1	2 May Be At Risk	3	57.3 ± 0.0	NB
P	<i>Juncus trifidus</i>	Highland Rush				S1	2 May Be At Risk	5	67.6 ± 0.0	NB
P	<i>Allium canadense</i>	Canada Garlic				S1	2 May Be At Risk	1	20.3 ± 1.0	NB
P	<i>Malaxis brachypoda</i>	White Adder's-Mouth				S1	2 May Be At Risk	2	90.8 ± 0.0	NB

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P	<i>Calamagrostis stricta</i> <i>ssp. inexpansa</i>	Slim-stemmed Reed Grass				S1	2 May Be At Risk	1	54.6 ± 0.0	NB
P	<i>Dichanthelium</i> <i>xanthophysum</i>	Slender Panic Grass				S1	2 May Be At Risk	9	60.7 ± 0.0	NB
P	<i>Zizania aquatica</i> var. <i>brevis</i>	Indian Wild Rice				S1	2 May Be At Risk	16	1.9 ± 0.0	NB
P	<i>Potamogeton nodosus</i>	Long-leaved Pondweed				S1	2 May Be At Risk	2	18.5 ± 0.0	NB
P	<i>Cystopteris laurentiana</i>	Laurentian Bladder Fern				S1	2 May Be At Risk	1	74.5 ± 0.0	NB
P	<i>Huperzia selago</i>	Northern Firmoss				S1	2 May Be At Risk	3	67.7 ± 0.0	NB
P	<i>Bidens heterodoxa</i>	Connecticut Beggar-Ticks				S1?	2 May Be At Risk	2	53.8 ± 0.0	NB
P	<i>Cuscuta campestris</i>	Field Dodder				S1?	2 May Be At Risk	3	20.8 ± 0.0	NB
P	<i>Carex laxiflora</i>	Loose-Flowered Sedge				S1?	5 Undetermined	1	82.7 ± 2.0	NB
P	<i>Rumex aquaticus</i> var. <i>fenestratus</i>	Western Dock				S1S2	2 May Be At Risk	2	58.4 ± 0.0	NB
P	<i>Carex crawei</i>	Crawe's Sedge				S1S2	2 May Be At Risk	1	67.9 ± 0.0	NB
P	<i>Thelypteris simulata</i>	Bog Fern				S1S2	2 May Be At Risk	1	14.2 ± 1.0	NB
P	<i>Cuscuta cephalanthi</i>	Buttonbush Dodder				S1S3	2 May Be At Risk	22	20.7 ± 0.0	NB
P	<i>Listera australis</i>	Southern Twayblade			Endangered	S2	1 At Risk	23	33.0 ± 0.0	NB
P	<i>Osmorhiza</i> <i>depauperata</i>	Blunt Sweet Cicely				S2	3 Sensitive	3	26.6 ± 1.0	NB
P	<i>Osmorhiza longistylis</i>	Smooth Sweet Cicely				S2	3 Sensitive	4	33.6 ± 0.0	NB
P	<i>Pseudognaphalium</i> <i>macounii</i>	Macoun's Cudweed				S2	3 Sensitive	30	49.8 ± 5.0	NB
P	<i>Ionactis linariifolius</i>	Stiff Aster				S2	3 Sensitive	67	8.0 ± 1.0	NB
P	<i>Symphotrichum</i> <i>subulatum</i>	Annual Saltmarsh Aster				S2	1 At Risk	152	18.1 ± 0.0	NB
P	<i>Betula minor</i>	Dwarf White Birch				S2	3 Sensitive	5	67.6 ± 0.0	NB
P	<i>Arabis drummondii</i>	Drummond's Rockcress				S2	3 Sensitive	5	7.3 ± 1.0	NB
P	<i>Sagina nodosa</i>	Knotted Pearlwort				S2	3 Sensitive	1	78.0 ± 1.0	NB
P	<i>Stellaria longifolia</i>	Long-leaved Starwort				S2	3 Sensitive	3	50.3 ± 0.0	NB
P	<i>Atriplex franktonii</i>	Frankton's Saltbush				S2	4 Secure	2	48.4 ± 5.0	NB
P	<i>Chenopodium rubrum</i>	Red Pigweed				S2	3 Sensitive	12	47.4 ± 0.0	NB
P	<i>Hypericum</i> <i>dissimulatum</i>	Disguised St John's-wort				S2	3 Sensitive	1	70.5 ± 1.0	NB
P	<i>Astragalus eucosmus</i>	Elegant Milk-vetch				S2	2 May Be At Risk	1	18.5 ± 0.0	NB
P	<i>Oxytropis campestris</i> var. <i>johannensis</i>	Field Locoweed				S2	3 Sensitive	1	54.8 ± 10.0	NB
P	<i>Gentiana linearis</i>	Narrow-Leaved Gentian				S2	3 Sensitive	20	48.4 ± 5.0	NB
P	<i>Myriophyllum humile</i>	Low Water Milfoil				S2	3 Sensitive	1	57.3 ± 1.0	NB
P	<i>Nuphar lutea</i> ssp. <i>rubrodisca</i>	Red-disked Yellow Pond-lily				S2	3 Sensitive	5	51.1 ± 0.0	NB
P	<i>Orobanche uniflora</i>	One-Flowered Broomrape				S2	3 Sensitive	3	31.1 ± 10.0	NB
P	<i>Polygonum amphibium</i> var. <i>emersum</i>	Water Smartweed				S2	3 Sensitive	1	18.5 ± 0.0	NB
P	<i>Podostemum</i> <i>ceratophyllum</i>	Horn-leaved Riverweed				S2	3 Sensitive	8	20.1 ± 1.0	NB
P	<i>Hepatica nobilis</i> var. <i>obtusa</i>	Round-lobed Hepatica				S2	3 Sensitive	3	24.8 ± 0.0	NB
P	<i>Ranunculus</i> <i>longirostris</i>	Eastern White Water-Crowfoot				S2	5 Undetermined	1	88.3 ± 1.0	NB
P	<i>Crataegus scabrada</i>	Rough Hawthorn				S2	3 Sensitive	3	60.7 ± 1.0	NB
P	<i>Rosa acicularis</i> ssp. <i>sayi</i>	Prickly Rose				S2	2 May Be At Risk	133	47.5 ± 0.0	NB
P	<i>Galium kamtschaticum</i>	Northern Wild Licorice				S2	3 Sensitive	6	86.8 ± 5.0	NB
P	<i>Salix candida</i>	Sage Willow				S2	3 Sensitive	21	76.1 ± 0.0	NB
P	<i>Castilleja</i> <i>septentrionalis</i>	Northeastern Paintbrush				S2	3 Sensitive	2	89.6 ± 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>Viola novae-angliae</i>	New England Violet				S2	3 Sensitive	2	85.0 ± 1.0	NB
P	<i>Sagittaria calycina</i> var. <i>spongiosa</i>	Long-lobed Arrowhead				S2	4 Secure	144	0.5 ± 0.0	NB
P	<i>Carex granularis</i>	Limestone Meadow Sedge				S2	3 Sensitive	7	57.2 ± 5.0	NB
P	<i>Carex gynocrates</i>	Northern Bog Sedge				S2	3 Sensitive	9	90.8 ± 0.0	NB
P	<i>Carex hirtifolia</i>	Pubescent Sedge				S2	3 Sensitive	16	18.1 ± 0.0	NB
P	<i>Carex rostrata</i>	Narrow-leaved Beaked Sedge				S2	3 Sensitive	6	61.8 ± 5.0	NB
P	<i>Carex salina</i>	Saltmarsh Sedge				S2	3 Sensitive	7	62.8 ± 0.0	NB
P	<i>Carex sprengelii</i>	Longbeak Sedge				S2	3 Sensitive	1	54.1 ± 0.0	NB
P	<i>Carex tenuiflora</i>	Sparse-Flowered Sedge				S2	2 May Be At Risk	2	52.8 ± 0.0	NB
P	<i>Carex albicans</i> var. <i>emmonsii</i>	White-tinged Sedge				S2	3 Sensitive	9	42.5 ± 0.0	NB
P	<i>Eriophorum gracile</i>	Slender Cottongrass				S2	2 May Be At Risk	2	59.1 ± 10.0	NB
P	<i>Blysmus rufus</i>	Red Bulrush				S2	3 Sensitive	55	56.3 ± 0.0	NB
P	<i>Juncus vaseyi</i>	Vasey Rush				S2	3 Sensitive	37	4.7 ± 10.0	NB
P	<i>Amerorchis rotundifolia</i>	Small Round-leaved Orchis				S2	2 May Be At Risk	8	85.1 ± 1.0	NB
P	<i>Calypso bulbosa</i> var. <i>americana</i>	Calypso				S2	2 May Be At Risk	7	24.8 ± 0.0	NB
P	<i>Coeloglossum viride</i> var. <i>virescens</i>	Long-bracted Frog Orchid				S2	2 May Be At Risk	4	93.0 ± 5.0	NB
P	<i>Cypripedium parviflorum</i> var. <i>makasin</i>	Small Yellow Lady's-Slipper				S2	2 May Be At Risk	1	14.1 ± 5.0	NB
P	<i>Goodyera oblongifolia</i>	Menzies' Rattlesnake-plantain				S2	3 Sensitive	22	27.4 ± 1.0	NB
P	<i>Spiranthes lucida</i>	Shining Ladies'-Tresses				S2	3 Sensitive	8	20.2 ± 1.0	NB
P	<i>Agrostis mertensii</i>	Northern Bent Grass				S2	2 May Be At Risk	57	47.7 ± 0.0	NB
P	<i>Dichanthelium linearifolium</i>	Narrow-leaved Panic Grass				S2	3 Sensitive	5	21.3 ± 0.0	NB
P	<i>Piptatherum canadense</i>	Canada Rice Grass				S2	3 Sensitive	5	60.5 ± 0.0	NB
P	<i>Poa glauca</i>	Glaucous Blue Grass				S2	4 Secure	3	74.5 ± 0.0	NB
P	<i>Puccinellia laurentiana</i>	Nootka Alkali Grass				S2	3 Sensitive	2	46.5 ± 0.0	NB
P	<i>Zizania aquatica</i> var. <i>aquatica</i>	Indian Wild Rice				S2	5 Undetermined	7	2.4 ± 1.0	NB
P	<i>Piptatherum pungens</i>	Slender Rice Grass				S2	2 May Be At Risk	12	60.4 ± 1.0	NB
P	<i>Woodwardia virginica</i>	Virginia Chain Fern				S2	3 Sensitive	11	49.9 ± 0.0	NB
P	<i>Woodsia alpina</i>	Alpine Cliff Fern				S2	3 Sensitive	1	55.6 ± 0.0	NB
P	<i>Lycopodium sitchense</i>	Sitka Clubmoss				S2	3 Sensitive	2	67.5 ± 0.0	NB
P	<i>Selaginella selaginoides</i>	Low Spikemoss				S2	3 Sensitive	14	90.8 ± 0.0	NB
P	<i>Toxicodendron radicans</i>	Poison Ivy				S2?	3 Sensitive	4	42.0 ± 0.0	NB
P	<i>Symphotrichum novibelgii</i> var. <i>crenifolium</i>	New York Aster				S2?	5 Undetermined	1	56.4 ± 0.0	NB
P	<i>Humulus lupulus</i> var. <i>lupuloides</i>	Common Hop				S2?	3 Sensitive	3	18.0 ± 0.0	NB
P	<i>Crataegus macrosperma</i>	Big-Fruit Hawthorn				S2?	5 Undetermined	1	60.7 ± 0.0	NB
P	<i>Galium obtusum</i>	Blunt-leaved Bedstraw				S2?	4 Secure	9	36.1 ± 1.0	NB
P	<i>Salix myricoides</i>	Bayberry Willow				S2?	3 Sensitive	4	33.5 ± 5.0	NB
P	<i>Carex vacillans</i>	Estuarine Sedge				S2?	3 Sensitive	3	3.4 ± 1.0	NB
P	<i>Platanthera huronensis</i>	Fragrant Green Orchid				S2?	5 Undetermined	1	56.6 ± 0.0	NB
P	<i>Barbarea orthoceras</i>	American Yellow Rocket				S2S3	3 Sensitive	1	42.5 ± 0.0	NB
P	<i>Ceratophyllum echinatum</i>	Prickly Hornwort				S2S3	3 Sensitive	1	7.7 ± 0.0	NB
P	<i>Callitriche hermaphroditica</i>	Northern Water-starwort				S2S3	4 Secure	4	41.5 ± 0.0	NB

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P	<i>Elatine americana</i>	American Waterwort				S2S3	3 Sensitive	19	7.2 ± 0.0	NB
P	<i>Bartonia paniculata</i> <i>ssp. iodandra</i>	Branched Bartonia				S2S3	3 Sensitive	2	51.4 ± 0.0	NB
P	<i>Geranium robertianum</i>	Herb Robert				S2S3	4 Secure	45	96.2 ± 0.0	PE
P	<i>Epilobium coloratum</i>	Purple-veined Willowherb				S2S3	3 Sensitive	3	46.0 ± 10.0	NB
P	<i>Rumex maritimus</i> var. <i>persicarioides</i>	Peach-leaved Dock				S2S3	5 Undetermined	2	56.8 ± 0.0	NB
P	<i>Rumex pallidus</i>	Seabeach Dock				S2S3	3 Sensitive	6	54.5 ± 0.0	NB
P	<i>Rubus pensilvanicus</i>	Pennsylvania Blackberry				S2S3	4 Secure	2	83.7 ± 100.0	NB
P	<i>Galium labradoricum</i>	Labrador Bedstraw				S2S3	3 Sensitive	15	85.2 ± 0.0	NB
P	<i>Valeriana uliginosa</i>	Swamp Valerian				S2S3	3 Sensitive	8	90.8 ± 0.0	NB
P	<i>Carex adusta</i>	Lesser Brown Sedge				S2S3	4 Secure	9	50.5 ± 0.0	NB
P	<i>Juncus brachycephalus</i>	Small-Head Rush				S2S3	3 Sensitive	2	90.8 ± 0.0	NB
P	<i>Corallorhiza maculata</i> var. <i>occidentalis</i>	Spotted Coralroot				S2S3	3 Sensitive	2	33.7 ± 1.0	NB
P	<i>Listera auriculata</i>	Auricled Twayblade				S2S3	3 Sensitive	17	53.6 ± 0.0	NB
P	<i>Spiranthes cernua</i>	Nodding Ladies'-Tresses				S2S3	3 Sensitive	1	61.7 ± 0.0	NB
P	<i>Stuckenia filiformis</i>	Thread-leaved Pondweed				S2S3	3 Sensitive	1	95.1 ± 1.0	NB
P	<i>Stuckenia pectinata</i>	Sago Pondweed				S2S3	3 Sensitive	18	27.1 ± 1.0	NB
P	<i>Potamogeton praelongus</i>	White-stemmed Pondweed				S2S3	4 Secure	1	87.5 ± 0.0	NB
P	<i>Isoetes acadensis</i>	Acadian Quillwort				S2S3	3 Sensitive	1	53.8 ± 0.0	NB
P	<i>Panax trifolius</i>	Dwarf Ginseng				S3	3 Sensitive	19	8.5 ± 5.0	NB
P	<i>Arnica lanceolata</i>	Lance-leaved Arnica				S3	4 Secure	41	23.7 ± 0.0	NB
P	<i>Artemisia campestris</i> <i>ssp. caudata</i>	Field Wormwood				S3	4 Secure	4	49.4 ± 0.0	NB
P	<i>Bidens hyperborea</i>	Estuary Beggarticks				S3	4 Secure	106	3.1 ± 0.0	NB
P	<i>Bidens hyperborea</i> var. <i>hyperborea</i>	Estuary Beggarticks				S3	4 Secure	13	3.1 ± 5.0	NB
P	<i>Erigeron hyssopifolius</i>	Hyssop-leaved Fleabane				S3	4 Secure	5	43.0 ± 0.0	NB
P	<i>Symphotrichum boreale</i>	Boreal Aster				S3	3 Sensitive	5	61.9 ± 5.0	NB
P	<i>Betula pumila</i>	Bog Birch				S3	4 Secure	121	48.2 ± 0.0	NB
P	<i>Arabis glabra</i>	Tower Mustard				S3	5 Undetermined	13	43.5 ± 0.0	NB
P	<i>Cardamine maxima</i>	Large Toothwort				S3	4 Secure	3	59.4 ± 0.0	NB
P	<i>Subularia aquatica</i> var. <i>americana</i>	Water Awlwort				S3	4 Secure	1	70.3 ± 1.0	NB
P	<i>Stellaria humifusa</i>	Saltmarsh Starwort				S3	4 Secure	8	4.5 ± 0.0	NB
P	<i>Hudsonia tomentosa</i>	Woolly Beach-heath				S3	4 Secure	186	36.2 ± 5.0	NB
P	<i>Crassula aquatica</i>	Water Pygmyweed				S3	4 Secure	49	2.9 ± 1.0	NB
P	<i>Elatine minima</i>	Small Waterwort				S3	4 Secure	6	7.0 ± 0.0	NB
P	<i>Hedysarum alpinum</i>	Alpine Sweet-vetch				S3	4 Secure	5	52.5 ± 0.0	NB
P	<i>Geranium bicknellii</i>	Bicknell's Crane's-bill				S3	4 Secure	9	23.4 ± 0.0	NB
P	<i>Myriophyllum farwellii</i>	Farwell's Water Milfoil				S3	4 Secure	6	19.1 ± 0.0	NB
P	<i>Myriophyllum verticillatum</i>	Whorled Water Milfoil				S3	4 Secure	5	5.7 ± 1.0	NB
P	<i>Teucrium canadense</i>	Canada Germander				S3	3 Sensitive	59	2.7 ± 5.0	NB
P	<i>Nuphar lutea</i> ssp. <i>pumila</i>	Small Yellow Pond-lily				S3	4 Secure	7	24.1 ± 0.0	NB
P	<i>Epilobium hornemannii</i>	Hornemann's Willowherb				S3	4 Secure	23	21.1 ± 10.0	NB
P	<i>Epilobium strictum</i>	Downy Willowherb				S3	4 Secure	2	68.3 ± 0.0	NB
P	<i>Polygala sanguinea</i>	Blood Milkwort				S3	3 Sensitive	21	32.0 ± 0.0	NB
P	<i>Polygonum arifolium</i>	Halberd-leaved Tearthumb				S3	4 Secure	28	43.8 ± 5.0	NB
P	<i>Polygonum punctatum</i>	Dotted Smartweed				S3	4 Secure	1	54.8 ± 2.0	NB
P	<i>Polygonum punctatum</i> var. <i>confertiflorum</i>	Dotted Smartweed				S3	4 Secure	37	2.9 ± 1.0	NB

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P	<i>Polygonum scandens</i>	Climbing False Buckwheat				S3	4 Secure	47	18.8 ± 0.0	NB
P	<i>Littorella uniflora</i>	American Shoreweed				S3	4 Secure	2	89.2 ± 1.0	NB
P	<i>Primula mistassinica</i>	Mistassini Primrose				S3	4 Secure	2	84.9 ± 0.0	NB
P	<i>Samolus valerandi</i> ssp. <i>parviflorus</i>	Seaside Brookweed				S3	4 Secure	194	3.0 ± 0.0	NB
P	<i>Pyrola minor</i>	Lesser Pyrola				S3	4 Secure	14	41.2 ± 0.0	NB
P	<i>Clematis occidentalis</i>	Purple Clematis				S3	4 Secure	2	58.1 ± 1.0	NB
P	<i>Ranunculus gmelinii</i>	Gmelin's Water Buttercup				S3	4 Secure	12	58.6 ± 5.0	NB
P	<i>Thalictrum venulosum</i>	Northern Meadow-rue				S3	4 Secure	1	42.5 ± 0.0	NB
P	<i>Amelanchier canadensis</i>	Canada Serviceberry				S3	4 Secure	5	56.7 ± 0.0	NB
P	<i>Rosa palustris</i>	Swamp Rose				S3	4 Secure	4	0.5 ± 1.0	NB
P	<i>Sanguisorba canadensis</i>	Canada Burnet				S3	4 Secure	46	72.8 ± 5.0	NB
P	<i>Galium boreale</i>	Northern Bedstraw				S3	4 Secure	2	65.2 ± 1.0	NB
P	<i>Salix interior</i>	Sandbar Willow				S3	4 Secure	1	65.2 ± 1.0	NB
P	<i>Salix pedicellaris</i>	Bog Willow				S3	4 Secure	28	16.2 ± 0.0	NB
P	<i>Comandra umbellata</i>	Bastard's Toadflax				S3	4 Secure	65	40.3 ± 1.0	NB
P	<i>Parnassia glauca</i>	Fen Grass-of-Parnassus				S3	4 Secure	18	19.2 ± 0.0	NB
P	<i>Limosella australis</i>	Southern Mudwort				S3	4 Secure	123	1.9 ± 0.0	NB
P	<i>Veronica serpyllifolia</i> ssp. <i>humifusa</i>	Thyme-Leaved Speedwell				S3	4 Secure	11	36.1 ± 1.0	NB
P	<i>Boehmeria cylindrica</i>	Small-spike False-nettle				S3	3 Sensitive	7	15.8 ± 0.0	NB
P	<i>Pilea pumila</i>	Dwarf Clearweed				S3	4 Secure	9	7.7 ± 0.0	NB
P	<i>Viola adunca</i>	Hooked Violet				S3	4 Secure	11	50.3 ± 0.0	NB
P	<i>Viola nephrophylla</i>	Northern Bog Violet				S3	4 Secure	6	86.7 ± 1.0	NB
P	<i>Carex aquatilis</i>	Water Sedge				S3	4 Secure	10	37.4 ± 1.0	NB
P	<i>Carex arcta</i>	Northern Clustered Sedge				S3	4 Secure	3	54.8 ± 0.0	NB
P	<i>Carex atratiformis</i>	Scabrous Black Sedge				S3	4 Secure	6	43.5 ± 0.0	NB
P	<i>Carex capillaris</i>	Hairlike Sedge				S3	4 Secure	3	50.3 ± 0.0	NB
P	<i>Carex chordorrhiza</i>	Creeping Sedge				S3	4 Secure	1	48.1 ± 0.0	NB
P	<i>Carex conoidea</i>	Field Sedge				S3	4 Secure	2	63.8 ± 10.0	NB
P	<i>Carex garberi</i>	Garber's Sedge				S3	3 Sensitive	24	20.7 ± 0.0	NB
P	<i>Carex haydenii</i>	Hayden's Sedge				S3	4 Secure	6	52.9 ± 0.0	NB
P	<i>Carex lupulina</i>	Hop Sedge				S3	4 Secure	1	68.2 ± 1.0	NB
P	<i>Carex michauxiana</i>	Michaux's Sedge				S3	4 Secure	10	27.8 ± 0.0	NB
P	<i>Carex ormostachya</i>	Necklace Spike Sedge				S3	4 Secure	8	7.3 ± 1.0	NB
P	<i>Carex tenera</i>	Tender Sedge				S3	4 Secure	3	20.2 ± 1.0	NB
P	<i>Carex tuckermanii</i>	Tuckerman's Sedge				S3	4 Secure	10	17.5 ± 0.0	NB
P	<i>Carex vaginata</i>	Sheathed Sedge				S3	3 Sensitive	6	90.8 ± 0.0	NB
P	<i>Carex wiegandii</i>	Wiegand's Sedge				S3	4 Secure	29	31.7 ± 1.0	NB
P	<i>Carex recta</i>	Estuary Sedge				S3	4 Secure	15	37.8 ± 0.0	NB
P	<i>Cyperus dentatus</i>	Toothed Flatsedge				S3	4 Secure	2	33.0 ± 10.0	NB
P	<i>Cyperus esculentus</i>	Perennial Yellow Nutsedge				S3	4 Secure	3	21.5 ± 0.0	NB
P	<i>Eleocharis intermedia</i>	Matted Spikerush				S3	4 Secure	2	52.3 ± 0.0	NB
P	<i>Rhynchospora capitellata</i>	Small-headed Beakrush				S3	4 Secure	85	20.1 ± 0.0	NB
P	<i>Rhynchospora fusca</i>	Brown Beakrush				S3	4 Secure	7	39.6 ± 0.0	NB
P	<i>Trichophorum clintonii</i>	Clinton's Clubrush				S3	4 Secure	98	37.0 ± 0.0	NB
P	<i>Schoenoplectus torreyi</i>	Torrey's Bulrush				S3	4 Secure	9	16.0 ± 0.0	NB
P	<i>Lemna trisulca</i>	Star Duckweed				S3	4 Secure	1	92.7 ± 2.0	NB
P	<i>Triantha glutinosa</i>	Sticky False-Asphodel				S3	4 Secure	47	23.5 ± 0.0	NB
P	<i>Cypripedium reginae</i>	Showy Lady's-Slipper				S3	3 Sensitive	15	7.3 ± 1.0	NB
P	<i>Liparis loeselii</i>	Loesel's Twayblade				S3	4 Secure	3	51.0 ± 0.0	NB
P	<i>Platanthera blephariglottis</i>	White Fringed Orchid				S3	4 Secure	109	14.8 ± 0.0	NB
P	<i>Platanthera grandiflora</i>	Large Purple Fringed Orchid				S3	3 Sensitive	17	28.3 ± 100.0	NB

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P	<i>Bromus latiglumis</i>	Broad-Glumed Brome				S3	3 Sensitive	6	42.5 ± 0.0	NB
P	<i>Calamagrostis pickeringii</i>	Pickering's Reed Grass				S3	4 Secure	5	60.7 ± 0.0	NB
P	<i>Dichanthelium depauperatum</i>	Starved Panic Grass				S3	4 Secure	29	18.9 ± 0.0	NB
P	<i>Potamogeton obtusifolius</i>	Blunt-leaved Pondweed				S3	4 Secure	11	41.4 ± 1.0	NB
P	<i>Potamogeton richardsonii</i>	Richardson's Pondweed				S3	3 Sensitive	5	45.4 ± 0.0	NB
P	<i>Xyris montana</i>	Northern Yellow-Eyed-Grass				S3	4 Secure	89	12.4 ± 5.0	NB
P	<i>Zannichellia palustris</i>	Horned Pondweed				S3	4 Secure	84	3.1 ± 0.0	NB
P	<i>Adiantum pedatum</i>	Northern Maidenhair Fern				S3	4 Secure	2	33.6 ± 0.0	NB
P	<i>Cryptogramma stelleri</i>	Steller's Rockbrake				S3	4 Secure	2	55.5 ± 0.0	NB
P	<i>Asplenium trichomanes-ramosum</i>	Green Spleenwort				S3	4 Secure	2	56.5 ± 0.0	NB
P	<i>Dryopteris fragrans var. remotiuscula</i>	Fragrant Wood Fern				S3	4 Secure	34	32.3 ± 0.0	NB
P	<i>Dryopteris goldiana</i>	Goldie's Woodfern				S3	3 Sensitive	4	85.9 ± 0.0	NB
P	<i>Isoetes tuckermanii</i>	Tuckerman's Quillwort				S3	4 Secure	5	7.1 ± 0.0	NB
P	<i>Lycopodium sabinifolium</i>	Ground-Fir				S3	4 Secure	14	48.1 ± 1.0	NB
P	<i>Huperzia appalachiana</i>	Appalachian Fir-Clubmoss				S3	3 Sensitive	8	7.3 ± 1.0	NB
P	<i>Botrychium lanceolatum var. angustisegmentum</i>	Lance-Leaf Grape-Fern				S3	3 Sensitive	4	55.5 ± 0.0	NB
P	<i>Botrychium simplex</i>	Least Moonwort				S3	4 Secure	8	50.9 ± 0.0	NB
P	<i>Polypodium appalachianum</i>	Appalachian Polypody				S3	4 Secure	1	86.1 ± 0.0	NB
P	<i>Lobelia kalmii</i>	Brook Lobelia				S3S4	4 Secure	11	23.5 ± 0.0	NB
P	<i>Suaeda calceoliformis</i>	Horned Sea-blite				S3S4	4 Secure	32	40.5 ± 1.0	NB
P	<i>Myriophyllum sibiricum</i>	Siberian Water Milfoil				S3S4	4 Secure	8	52.9 ± 0.0	NB
P	<i>Stachys pilosa</i>	Hairy Hedge-Nettle				S3S4	5 Undetermined	3	42.7 ± 0.0	NB
P	<i>Utricularia gibba</i>	Humped Bladderwort				S3S4	4 Secure	1	51.6 ± 1.0	NB
P	<i>Rumex maritimus</i>	Sea-Side Dock				S3S4	4 Secure	31	39.4 ± 0.0	NB
P	<i>Rumex maritimus var. fueginus</i>	Tierra del Fuego Dock				S3S4	4 Secure	15	53.7 ± 0.0	NB
P	<i>Potentilla arguta</i>	Tall Cinquefoil				S3S4	4 Secure	3	33.6 ± 50.0	NB
P	<i>Rubus chamaemorus</i>	Cloudberry				S3S4	4 Secure	146	39.6 ± 0.0	NB
P	<i>Geocaulon lividum</i>	Northern Comandra				S3S4	4 Secure	76	12.4 ± 10.0	NB
P	<i>Juniperus horizontalis</i>	Creeping Juniper				S3S4	4 Secure	2	70.7 ± 1.0	NB
P	<i>Cladium mariscoides</i>	Smooth Twigrush				S3S4	4 Secure	7	52.8 ± 0.0	NB
P	<i>Eriophorum russeolum</i>	Russet Cottongrass				S3S4	4 Secure	71	2.0 ± 1.0	NB
P	<i>Triglochin gaspensis</i>	Gasp [- Arrowgrass				S3S4	4 Secure	86	19.0 ± 0.0	NB
P	<i>Corallorhiza maculata</i>	Spotted Coralroot				S3S4	3 Sensitive	11	42.5 ± 0.0	NB
P	<i>Calamagrostis stricta</i>	Slim-stemmed Reed Grass				S3S4	4 Secure	11	48.3 ± 0.0	NB
P	<i>Calamagrostis stricta var. stricta</i>	Slim-stemmed Reed Grass				S3S4	4 Secure	5	72.0 ± 0.0	NB
P	<i>Distichlis spicata</i>	Salt Grass				S3S4	4 Secure	75	6.9 ± 0.0	NB
P	<i>Potamogeton oakesianus</i>	Oakes' Pondweed				S3S4	4 Secure	2	75.9 ± 10.0	NB
P	<i>Polygonum raii</i>	Sharp-fruited Knotweed				SH	0.1 Extirpated	3	73.2 ± 1.0	NB
P	<i>Montia fontana</i>	Water Blinks				SH	2 May Be At Risk	1	20.0 ± 1.0	NB
P	<i>Agalinis maritima</i>	Saltmarsh Agalinis				SX	0.1 Extirpated	2	59.6 ± 50.0	NB

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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.

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TABLE G-5-1: SPECIES HABITAT COMPARISON

Common Name	Scientific Name	Preferred Habitat	Habitat Present
Flora			
Canada Germander	<i>Teucrium canadense</i>	Brackish or salt marshes and flats, coastal beaches (sea beaches), floodplain (river or stream floodplains), marshes, shores of rivers or lakes, wetland margins (edges of wetlands) (GoBotony, 2017)	Yes
Dotted Smartweed	<i>Polygonum punctatum var. confertiflorum</i>	Brackish or salt marshes and flats, fresh tidal marshes or flats, lacustrine (in lakes or ponds), marshes, shores of rivers or lakes, swamps, wetland margins (edges of wetlands) (GoBotony, 2017).	Yes
Estuarrine Sedge	<i>Carex vacillans</i>	Brackish or salt marshes and flats, intertidal, subtidal or open ocean, shores of rivers or lakes (GoBotony, 2017).	Yes
Estuary Beggarticks	<i>Bidens hyperborea</i>	Brackish or salt marshes and flats, fresh tidal marshes or flats (GoBotony, 2017).	Yes
Estuary Beggarticks	<i>Bidens hyperborea var. hyperborea</i>	Brackish or salt marshes and flats, fresh tidal marshes or flats (GoBotony, 2017).	Yes
Greene's Rush	<i>Juncus greenei</i>	Anthropogenic (man-made or disturbed habitats), cliffs, balds, or ledges, grassland, meadows and fields, ridges or ledges (GoBotony, 2017).	Yes
Horned Pondweed	<i>Zannichellia palustris</i>	Fresh, brackish, or alkaline waters and stream edges. Horned Pondweed grows on the mud at the lowest level of the intertidal zone where it is exposed only at full low tide and is subjected to higher salinities than most other estuarine species (Maine Department of Agriculture, Conservation and Forestry, 2013).	Yes
Indian Wild Rice	<i>Zizania aquatica var. brevis</i>	Brackish or salt marshes and flats, fresh tidal marshes or flats, lacustrine (in lakes or ponds), riverine (in rivers or streams), shores of rivers or lakes (GoBotony, 2017).	Yes
Indian Wild Rice	<i>Zizania aquatica var. aquatica</i>	Brackish or salt marshes and flats, fresh tidal marshes or flats, lacustrine (in lakes or ponds), riverine (in rivers or streams), shores of rivers or lakes (GoBotony, 2017).	Yes
Long-Lobed Arrowhead	<i>Sagittaria calycina var. spongiosa</i>	Tidewater marshes and streams. Usually grows in the mid to lower intertidal zone and can be found under a sparse canopy of <i>Spartina alterniflora</i> , <i>Scirpus acutus</i> , or <i>Zizania aquatica</i> or on open mud. Its occurrence is patchy; varying with microtopography, proximity of freshwater springs, and the salinity of the tidal water (Maine Department of Agriculture, Conservation and Forestry, 2013).	Yes
Parker's Pipewort	<i>Eriocaulon parkeri</i>	Occurs along the tidal portions of rivers where freshwater from the river or nearby streams meets the saltwater from the tides. Generally found in the area of shoreline between the average high and low tide marks (GNB, 2017).	Yes
Russet Cottongrass	<i>Eriophorum russeolum</i>	Very wet bog and fen mats, often on the upslope side of an embankment (Natural Resources Foundation of Wisconsin, 2016).	No
Saltmarsh Starwort	<i>Stellaria humifusa</i>	Brackish or salt marshes and flats, intertidal, subtidal or open ocean (GoBotony, 2017)	Yes
Seaside Brookweed	<i>Samolus valerandi ssp. Parviflorus</i>	Brackish or salt marshes and flats, fresh tidal marshes or flats, riverine (in rivers or streams), swamps (GoBotony, 2017).	Yes
Shining Flatsedge	<i>Cyperus bipartitus</i>	Shores of rivers or lakes, wetland margins (edges of wetlands) (GoBotony, 2017).	Yes
Southern Mudwort	<i>Limosella australis</i>	Brackish or salt marshes and flats, fresh tidal marshes or flats (GoBotony, 2017).	Yes
Swamp Rose	<i>Rosa palustris</i>	Marshes, meadows and fields, shores of rivers or lakes, swamps, wetland margins (edges of wetlands) (GoBotony, 2017).	Yes
Vasey Rush	<i>Juncus vaseyi</i>	Man-made or disturbed habitats, floodplain (river or stream floodplains), meadows and fields, shores of rivers or lakes (GoBotony, 2017).	Yes
Water Pygmyweed	<i>Crassula aquatica</i>	Brackish or salt marshes and flats, lacustrine (in lakes or ponds), riverine (in rivers or streams), shores of rivers or lakes (GoBotony, 2017).	Yes