



Appendix D6

Rare Plants Baseline Study

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List of Acronyms and Abbreviations

Abbreviations	Definitions
AC CDC	Atlantic Canada Conservation Data Centre
CO ₂	Carbon Dioxide
COSEWIC	Committee on the Status of Endangered Wildlife in Canada
ELC	Ecological Land Classification
NL ESA	Newfoundland and Labrador Endangered Species Act
GPS	Global Positioning System
IUCN	International Union for Conservation of Nature
LP	Limites Partnership
NL	Newfoundland and Labrador
POA	Port of Argentia
SAR	Species at Risk
SARA	Species at Risk Act
SCC	Species of Conservation Concern
SSAC	Species Status Advisory Committee

1.0 Introduction

The Rare Plants Baseline Study has been developed by Argentia Renewables Wind LP (Argentia Renewables), an affiliate of Pattern Energy Group LP (Pattern Energy) for the Argentia Renewables Project (the Project), which entails the development, construction, operation and maintenance, and eventual decommissioning and rehabilitation of an onshore wind energy generation facility (Argentia Wind Facility) and a green hydrogen and ammonia production, storage, and export facility (Argentia Green Fuels Facility). The wind energy facility (i.e., wind turbine farm) will be mostly located on what is known as the Argentia Backlands, a largely uninhabited, forested area with scattered relic military sites and variable habitat types. The Argentia Green Fuels Facility will be located on the Argentia Peninsula, a brownfield industrial complex. The Port of Argentia (POA) owns both the Argentia Backlands property and the Argentia Peninsula. The two, along with a Project Interconnect Line, comprise the Argentia Renewables Project Area. This baseline study focuses on the presence/absence of rare plants in the Project Area and potential interactions resulting from Project development.

Rare plant observations were documented with a two-week dedicated survey throughout the Project Area, and incidental reports from all baseline field studies (e.g., avifauna, rare lichens, ELC). Hereafter, all species that are listed by the federal **Species at Risk Act** (SARA), the Newfoundland and Labrador **Endangered Species Act** (NL ESA), or that are ranked as S1 to S3 by the Atlantic Canada Conservation Data Centre (AC CDC) are collectively referred to as ‘rare plants’. Descriptions of relevant legislative and organizational classifications for rare species and species of conservation concern are provided as Appendix D6.2.

2.0 Methods

2.1 Desktop Review

The goal of the desktop exercise was to identify historical occurrences of plant species in or near the Project Area as listed under SARA and/or the NL ESA and to assess potential for rare plants based on literature and range maps. The study also targeted species currently ranked regionally as rare to uncommon (i.e., S1 to S3) by the AC CDC (see Appendix D6.2).

An information request was submitted to AC CDC to identify rare species listings for a 5 km radius around the Project Area. Additionally, the Ecological Land Classification (ELC) map was examined for habitat types with heightened potential to host rare plants, such as wetlands or elevated rocky outcrops. This screening was used to determine candidate search areas with an elevated likelihood of occurrence for

rare plants. Based on the ELC mapping and the data from AC CDC, a list of rare flora that had an elevated probability of occurrence in the Project Area was compiled.

2.2 Rare Plant Survey Methods

The dedicated rare plant survey was conducted in early September 2023, during the temporal window of maturity for many flowering vascular plants in the region. A targeted approach was taken to ensure coverage of the ecotypes with the most potential (from the desktop review including rocky outcrops and wetlands), and habitats with low potential were only minimally surveyed. Locations of rare plants were recorded using a handheld GPS and first sightings of each species were documented. The number of individuals of each rare species (S1 to S3 ranking) was estimated at each discrete site, including the extent of occurrence.

In cases where species identification remained in question, the plant was collected for identification in the laboratory using a hand lens, botanical keys, and online resources. The field biologists were experienced botanists familiar with local species. Transects were established through a large portion of the Project Area including the Argentia Backlands, the Argentia Peninsula, and the proposed Project Interconnect Line corridor.

In addition, incidental observations of rare plant species were sought during the other field surveys conducted in 2023 (e.g., rare lichens, avifauna). These opportunistic surveys covered most of the Project Area. All S-ranked species encountered were documented, including location, number of individuals, and photographs. Photographs taken throughout all the myriad surveys supplemented the overall flora list.

Additional studies will be conducted in 2024. Yellow birch stands will be delineated via ground-truthing efforts based on existing imagery of the Project Area. A survey for water pygmy-weed was conducted in July 2024. The 2023 rare plant survey will be extended into 2024 to cover the full extent of the Project Interconnect Line corridor, following the same methodology as in previous years, and in consultation with regulatory authorities. Further information will be provided after these studies are complete.

3.0 Results

3.1 Desktop Study

3.1.1 AC CDC Results

The AC CDC report produced four historically documented rare species within the 5 km search radius of the Project Area (Figure D6-3.1.1-1). These included water pygmy-weed (*Tillaea aquatica*), sago pondweed (*Stuckenia pectinata*), maritime sea-blite (*Suaeda maritima*), and southern running pine (*Diphysastrum digitatum*). Since these four species were known to have occurred in the Project Area, focus was placed on surveying their previously known locations (Figure D6-3.1.1-1).

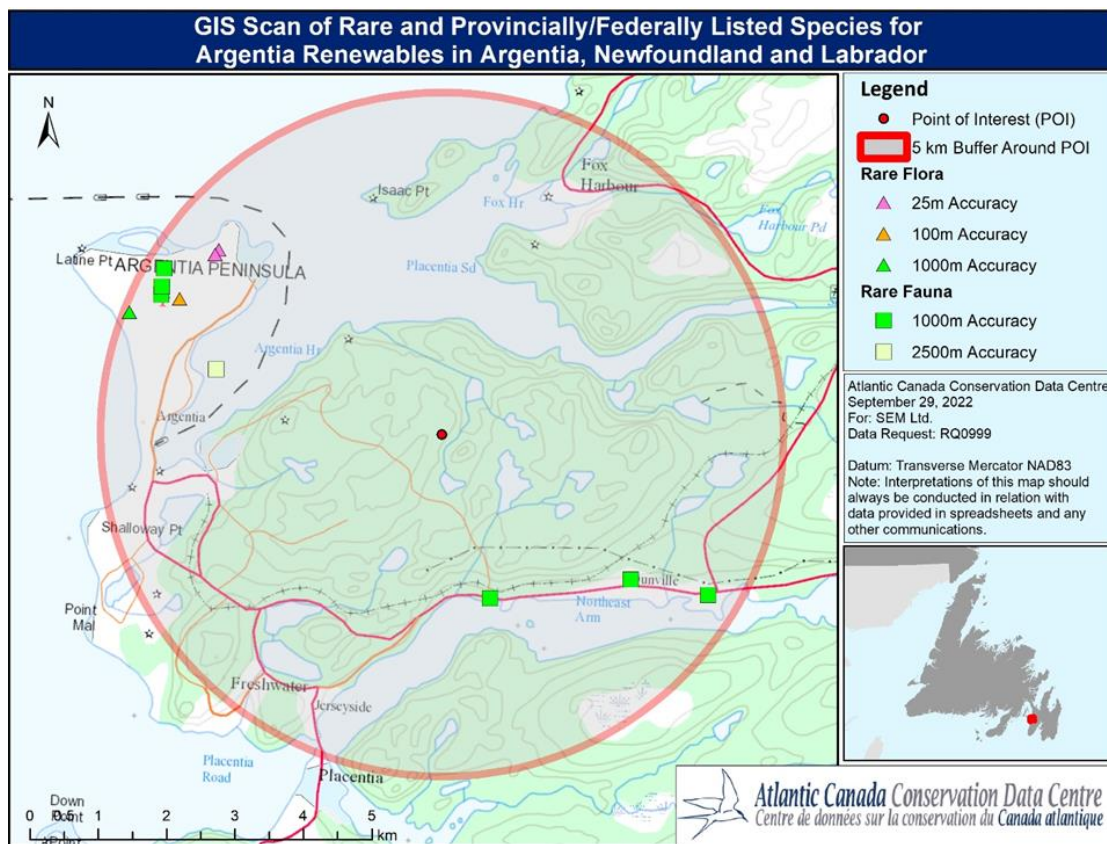


Figure D6-3.1.1-1 AC CDC Data Query Results for the 5 km Radius Around the Center of the Project Area.

3.1.1.1 Water Pygmy-weed

Water pygmy-weed is a coastal-loving succulent found on sandy, gravelly, or muddy shores alongside oceans and brackish waterways (NL Department of Fisheries, Forestry, and Agriculture, 2021). The

species is listed as Vulnerable by COSEWIC and was listed under the NL ESA in 2008 (SSAC, 2008). In Newfoundland, it is only known from the Avalon and Burin Peninsulas (NL Department of Fisheries, Forestry, and Agriculture, 2021).

In Newfoundland, this species occupies wet, anthropogenically disturbed habitats such as quarry pits, roadside shoulders and ditches, and trail ruts (NL Department of Fisheries, Forestry, and Agriculture, 2021). Water pygmy-weed was observed on the old runway on the Argientia Peninsula in 2020 (Figure D6-3.1.1-1).

3.1.1.2 Sago Pondweed

Sago pondweed, or fennel pondweed, is a submerged aquatic plant found in brackish ponds and tide pools (Kantrud, 1990). This rare plant was last recorded in the Project Area in 1924 on a sandy pond shore located on the barrier beach of the Argientia Peninsula. The species is not listed under COSEWIC, SARA, or the NL ESA.

3.1.1.3 Maritime Sea-blite

Maritime Sea-blite typically grows on salt marshes and seashores (Tessier *et al.*, 2000). This species was last documented in the Project Area in 1924 in a damp depression in the sand and gravel at the back of the barrier beach on the Argientia Peninsula. The species is not listed under COSEWIC, SARA, or the NL ESA.

3.1.1.4 Southern Running-pine

Southern running-pine is known to occur in coniferous and hardwood forests, second-growth forests, and shrubby or open fields (McKay & Marsh, 2001). This rare plant was last documented in the Project Area in 1988 in turfy gravel at the old U.S. naval airbase. The species is not listed under COSEWIC, SARA, or the NL ESA.

3.1.2 NL ESA Rare Plants

The literature review of the Project Area identified 30 plant species listed provincially under the NL ESA (excluding rare lichens), of which six plants are listed federally under SARA. Of the federally listed plant SAR, zero were known to occur in the Project Area based on AC CDC records. One provincially listed plant, the water pygmy-weed, was historically documented in the Project Area. Table D6-3.1.2-1 presents all NL ESA-listed species in addition to the four AC CDC-recorded species. For global context, the IUCN Red List ranking has also been included for each species.

Table D6-3.1.2-1 Desktop Survey Results for Rare Plants in Project Area

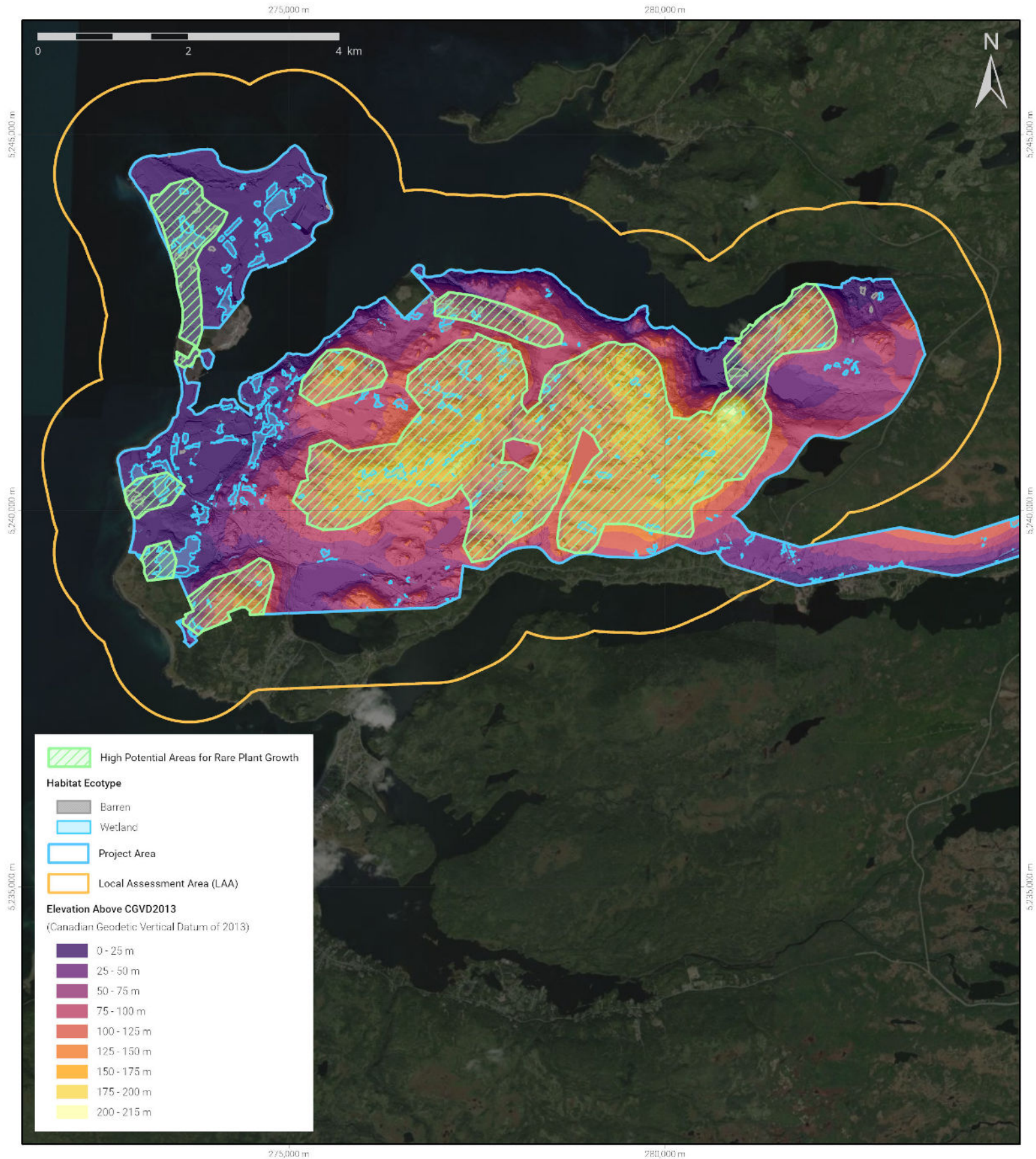
Common Name	Scientific Name	Provincial Status (NL ESA)	Provincial Status (S-Rank)	Federal Status (SARA)	IUCN Red List	Historically Observed in Project Area (AC CDC)	Suitable Habitat in Project Area, and Within Known Range?
Alaska Rein Orchid	<i>Platanthera unalascensis</i>	Endangered	S1	N/A	N/A	No	No
Barrens Willow	<i>Salix jejuna</i>	Endangered	S1	Endangered	N/A	No	No
Black Ash	<i>Fraxinus nigra</i>	Threatened	S2	N/A	Critically Endangered	No	No
Bodin's Milkvetch	<i>Astragalus bodinii</i>	Threatened	S1	N/A	N/A	No	No
Crowded wormseed mustard	<i>Erysimum inconspicuum</i> var. <i>coarctatum</i>	Endangered	S1	N/A	N/A	No	No
Cutleaf fleabane	<i>Erigeron compositus</i>	Endangered	S1	N/A	N/A	No	No
Dense draba	<i>Draba pycnosperma</i>	Vulnerable	SH	N/A	N/A	No	No
Feathery false Solomon's seal	<i>Maianthemum racemosum</i> subspecies <i>racemosum</i>	Endangered	S1	N/A	N/A	No	No
Fernald's braya	<i>Braya fernaldii</i>	Endangered	S1	Endangered	N/A	No	No
Fernald's milk-vetch	<i>Astragalus robbinsii</i> var. <i>fernaldii</i>	Vulnerable	S1	Special Concern	N/A	No	No
Gmelin's watercrowfoot	<i>Ranunculus gmelinii</i>	Endangered	S1	N/A	Least Concern	No	No
Griscom's arnica	<i>Arnica griscomii</i> subsp. <i>griscomii</i>	Endangered	S1	Threatened	N/A	No	No
Lindley's aster	<i>Symphotrichum ciliolatum</i>	Endangered	S1	N/A	N/A	No	No
Long's braya	<i>Braya longii</i>	Endangered	S1	Endangered	N/A	No	No
Low Northern rockcress	<i>Neotorularia humilis</i>	Endangered	S1	N/A	N/A	No	No
Mackenzie's sweetvetch	<i>Hedysarum boreale</i> subsp. <i>Mackenzii</i>	Threatened	S1	N/A	N/A	No	No
Maritime sea-blite	<i>Suaeda maritima</i>	N/A	S3	N/A	N/A	Yes	Yes
Mountain bladder fern	<i>Cystopteris montana</i>	Endangered	S1	N/A	N/A	No	No




Common Name	Scientific Name	Provincial Status (NL ESA)	Provincial Status (S-Rank)	Federal Status (SARA)	IUCN Red List	Historically Observed in Project Area (AC CDC)	Suitable Habitat in Project Area, and Within Known Range?
Mountain fern	<i>Thelypteris quelpaertensis</i>	Vulnerable	S1	N/A	N/A	No	No
Northern bog aster	<i>Symphyotrichum boreale</i>	Endangered	S1	N/A	Least Concern	No	No
Northern twayblade	<i>Listera borealis</i>	Endangered	S1	N/A	N/A	No	No
Oval-leaved creeping spearwort	<i>Ranunculus flammula</i> var. <i>ovalis</i>	Endangered	S1	N/A	Least Concern	No	No
Porsild's bryum	<i>Haplodontium macrocarpum</i>	Threatened	S2	Threatened	N/A	No	No
Rattlesnake root	<i>Prenanthes racemosa</i>	Endangered	S1	N/A	N/A	No	No
Red pine	<i>Pinus resinosa</i>	Threatened	S2	N/A	Least Concern	No	No
Rock dwelling sedge	<i>Carex petricosa</i> var. <i>misandroides</i>	Endangered	S1	N/A	N/A	No	No
Sago pondweed	<i>Stuckenia pectinata</i>	N/A	S2S3	N/A	Least Concern	Yes	Yes
Sharpleaf aster	<i>Oclemena acuminata</i>	Threatened	S2	N/A	N/A	No	No
Southern running-pine	<i>Diphysastrum digitatum</i>	N/A	S2	N/A	N/A	Yes	No
Tradescant's aster	<i>Symphyotrichum tradescantii</i>	Threatened	S2	N/A	N/A	No	No
Vreeland's striped coralroot	<i>Corallorhiza striata</i> var. <i>vreelandii</i>	Endangered	S1	N/A	N/A	No	No
Water pygmy-weed	<i>Tillaea aquatica</i>	Vulnerable	S1	N/A	N/A	Yes	Yes
Wooly arnica	<i>Arnica angustifolia</i> subsp. <i>tomentosa</i>	Endangered	S1	N/A	N/A	No	No

3.1.3 ELC for Rare Plants

Based on the AC CDC and NL ESA desktop results, the ELC was used to determine areas of elevated rare plant potential for field surveys. The review of ELC mapping resulted in the identification of high-potential areas, including wetlands, rock outcrops, talus slopes, and riparian zones. Elevated exposed

rock barrens are often the site of rare plant growth in NL, including alpine and semi-alpine, open conditions with low moisture, and minimal growing mediums. Areas of overlap between previously identified rare plant species in the Project Area and the ELC produced the following map (Figure D6-3.1-2).



 Argentia Renewables	FIGURE NUMBER: D6 - 3.1.3 - 1	COORDINATE SYSTEM: NAD 1983 CSRS UTM Zone 22N	PREPARED BY: C. Burke	DATE: 24/07/26
	FIGURE TITLE: High Potential Sites for Rare Plant Growth in the Project Area	NOTES: Elevation data source: Government of Canada - High Resolution Digital Elevation Model (HRDEM) - CanElevation Series	REVIEWED BY: 	
	PROJECT TITLE: Argentia Renewables		APPROVED BY: 	

3.2 Field Surveys

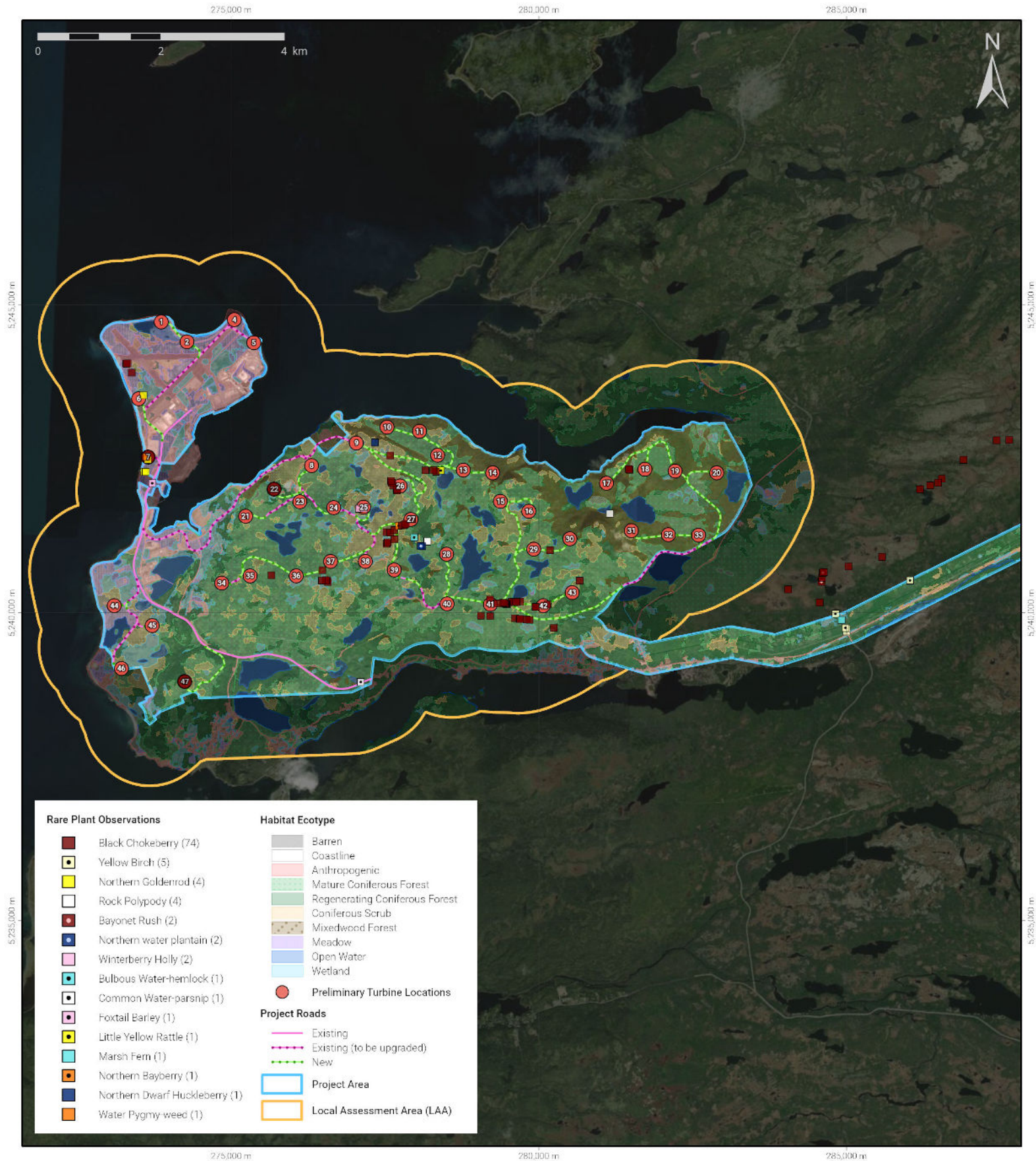
The dedicated rare plant survey was conducted throughout the Project Area from September 1 to 13, 2023. Data from the dedicated survey was supplemented by the opportunistic observations compiled during other surveys.


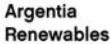



The survey effort was stratified according to high-potential ecotypes and to the preliminary proposed Project infrastructure (Figure D6-3.2-1). In total, there were 132 species documented, with 13 rare (S2-S3) species (Appendix D6.1). There were no S1 or critically imperilled species observed in the Project Area. The resulting list of identified rare plant species is provided in Table D6-3.2-1, inclusive of all S2-S3 (Imperiled-Vulnerable) observed species in the Project Area.

Table D6-3.2-1 List of Rare Plants Observed in the Project Area.

Common Name	Scientific Name	Provincial Status (NL ESA)	Provincial Status (S-Rank)	IUCN Red List
Northern water plantain	<i>Alisma triviale</i>	No	S2	Least Concern
Foxtail barley	<i>Hordeum jubatum</i>	No	S2	Least Concern
Northern bayberry	<i>Myrica pensylvanica</i>	No	S2	N/A
Rock polypody	<i>Polypodium virginianum</i>	No	S2	N/A
Bayonet rush	<i>Juncus militaris</i>	No	S3	Least Concern
Black chokeberry	<i>Aronia melanocarpa</i>	No	S3	N/A
Bulbous water-hemlock	<i>Cicuta bulbifera</i>	No	S3	Least Concern
Canada yew	<i>Taxus canadensis</i>	No	S3	Least Concern
Common water-parsnip	<i>Sium suave</i>	No	S3	Least Concern
Little yellow rattle	<i>Rhinanthus minor</i>	No	S3	N/A
Marsh fern	<i>Thelypteris palustris</i>	No	S3	Least Concern
Northern dwarf huckleberry	<i>Gaylussacia bigeloviana</i>	No	S3	Least Concern
Northern goldenrod	<i>Solidago multiradiata</i>	No	S3	N/A
Yellow birch	<i>Betula alleghaniensis</i>	No	S3	Least Concern
Water Pygmy-weed	<i>Tillaea aquatic</i> syn. <i>Crassula aquatica</i>	Yes	S1	Not Listed

Below is a description of the 13 rare plants and one SARA listed plant, their preferred habitat, locations, and numbers of individuals. A map of their locations in comparison to proposed Project infrastructure is presented as Figure D6-3.2-1.



 	FIGURE NUMBER: D6 - 3.2 - 1	COORDINATE SYSTEM: NAD 1983 CSRS UTM Zone 22N	PREPARED BY: C. Burke	DATE: 24/07/26
	FIGURE TITLE: Rare Plant Observations in the Project Area	NOTES: The location of proposed project infrastructure is considered preliminary and is subject to change.	REVIEWED BY: 	
	PROJECT TITLE: Argentia Renewables		APPROVED BY: 	
				

Northern water plantain (*Alisma triviale*) is an emergent-aquatic plant that grows to be 1 m tall, with small white flowers that have a yellow dot at the base of each petal (Boland, 2017). The plant grows naturally in bogs and shallow water along shorelines (Boland, 2017). Two individual observations were made in the central Mature Coniferous Forest ecotype.

Foxtail barley (*Hordeum jubatum*) is a perennial grass with a 0.3 to 0.6 m tall hollow purple stem and rough, greenish grey leaves with dense flowers 5 to 12 cm long (Best *et al.*, 1978). This plant reproduces via wind dispersion of seeds, prefers dry warm environments, and is resilient to high salinity (Best *et al.*, 1978). This plant was observed once at the POA.

Northern bayberry (*Myrica pensylvanica*) is a broadleaf deciduous shrub that grows to about 1.5 m tall with alternating oblanceolate-shaped green leaves (Boland, 2013). This shrub is naturally found in costal barrens, fens, and sand dunes (Boland, 2013). This plant was identified once in the coniferous Scrub ecotype.

Rock polypody (*Polypodium virginianum*) is a small evergreen fern that grows less than 30 cm in height, characterized by erect leathery green leaves (Boland, 2017). This plant grows in shaded conditions and is naturally found in rocky forests and along cliff edges (Boland, 2017). This plant was identified four times in the Project Area, in the Mixedwood Forest and Regenerating Coniferous Forest of the Argentia Backlands.

Bayonet rush (*Juncus militaris*) is distinct from other *Juncus spp.* as its lowest stem leaf overtops the flower array stem (Hogeland & Killingbeck, 1985). This species inhabits the edges of freshwater environments including lakes and slow-moving rivers (Hogeland & Killingbeck, 1985). This plant was identified two times, but just outside of the Project Area.

Black chokeberry (*Aronia melanocarpa*) is a 2-3 m tall deciduous shrub with edible fruit, naturally found in wet wooded areas such as along shorelines and within forest understory (Kulling & Rawel, 2008). During spring the shrub displays clusters of white flowers that turn into dark purple berries by the fall (Kulling & Rawel, 2008). This plant was identified 74 times throughout the Project Area, predominantly in the Coniferous Scrub of the Argentia Backlands.

Bulbous water-hemlock (*Cicuta bulbifera*) is a 45-100 cm tall plant with its upper stems ending in umbels of approximately 16 small white flowers (Boland, 2017). This species naturally occurs in wetland marshes, streams, and ponds (Boland, 2017). This plant was identified once in Regenerating Coniferous Forest in the center of the Project Area.

Common water-parsnip (*Sium suave*) is a perennial plant that has small dull-white flowers and strongly ridged stems (Legasy, 1995). It is found in wet meadows, open thickets, and along shorelines (Legasy, 1995). This plant was identified once in the Project Area within the Barrows Ponds system adjacent to Route 100.

Little yellow rattle (*Rhinanthus minor*) is an erect widely spaced plant with symmetrical flowers in spikes at the top (Westbury, 2004). This plant is naturally found in grasslands and wetlands (Westbury, 2004). This plant was identified once in the Mature Coniferous Forest in the Project Area.

Marsh fern (*Thelypteris palustris*) is an erect perennial fern that grows to be 30-100 cm tall and is characterized by compound leaves that are pinnate-pinnatifid in structure with paired leaflets (Fawcett & Smith, 2021). Natural habitats include marshes, fens, and thickets (Boland, 2017). This plant was identified in one location in the Project Area, within the Project Green Fuels Gen Tie buffer that runs along Route 100.

Northern dwarf huckleberry (*Gaylussacia bigeloviana*) is a deciduous shrub that has thin bark, simple leaf blades, and delicate bell like flowers tinged in pink, which mature into black fruits (Boland, 2013). This shrub occurs in wetlands, specifically in peatlands in Newfoundland (Boland, 2013). This plant was identified in one location in the Project Area, heading into Broad Cove Canyon.

Northern goldenrod (*Solidago multiradiata*) is a leafy, flowering perennial that grows no taller than 30 cm with dense yellow flowers (Boland, 2017). This plant naturally occurs in dry open areas, cliffs, or heaths (Boland, 2017). This plant was identified four times on the Argentia Peninsula.

Yellow birch (*Betula alleghaniensis*) is a native deciduous tree that can reach 25 m in height and is naturally found in moist woodlands (Boland, 2013). Its leaves are 6-12 cm long, dark green with pale undersides, oval-shaped, and with serrated edges (Boland, 2013). The bark can range in color from yellow/brown to reddish, and is thin and flaky (Boland, 2013). This tree species was identified five times in the Project Area during initial field studies, predominantly along the Project Interconnect Line corridor. However, during rare lichens surveys (Appendix D5), several stands were discovered outside of the original high-potential areas identified for this survey.

Water pygmy-weed (*Tillaea aquatic* syn. *Crassula aquatica*) is a coastal loving succulent found on sandy, gravelly, or muddy shores alongside oceans and brackish waterways (Wildlife Division, 2021). This species can range from green to red in colour depending on conditions and season (Wildlife Division, 2021). Water pygmy-weed is adapted to transition between aquatic and immersed forms, suiting its coastal lifestyle (Wildlife Division, 2021). As an annual, this plant is reliant on yearly seed production for survival (Wildlife Division, 2021). Water pygmy-weed has been observed on the airstrip of the Argentia

Peninsula in 2020. Water pygmy-weed is listed as “vulnerable” under the NL ESA and is listed as “endangered” under COSEWIC and SARA Schedule 1. An additional survey for water pygmy-weed was also conducted on July 16, 2024, throughout the accessible portions of the Argentia Peninsula, with four individuals recorded. The locations of water pygmy-weed were recorded, and mitigations will be considered in consultation with NL Wildlife Division.

4.0 Discussion

The interactions between rare plant species and wind energy projects must be assumed to be as varied as the rare plant species themselves. Some species benefit from anthropogenic disturbance while others are impacted by fragmentation and alteration of habitats. Most, if not all, potential direct interactions would occur during the Construction Phase.

Research has shown a reduced biodiversity of plant species close to wind farms and the displacement of rare plants by invasive species (Urziceanu *et al.*, 2021). This may be associated with the increased opportunity for invasive species to occupy recently disturbed habitats. There is also potential for wind turbines to create air turbulence and vertical mixing, which in turn can affect the local climate (i.e., temperature, moisture, and CO₂ levels) and vegetation growth patterns (Kaffine, 2019; Urziceanu *et al.*, 2021).

No SARA-listed or NL ESA species were identified during the September 2023 survey. However, 13 rare plants were identified across the Project Area, based on surveys of high potential areas for rare plant species presence. During the additional terrestrial field studies, including ELC (Appendix D3) and rare lichens (Appendix D5), common plant species and rare lichen species were recorded. In addition, larger yellow birch stands were documented. Additional studies in 2024 will delineate the full extent of yellow birch stands. Surveys for water pygmy-weed were conducted on the Argentia Peninsula in July 2024 with four individuals observed. The rare plant study will continue in 2024 to cover the full extent of the Project Interconnect Line corridor. Survey area coverage will reflect any adjustments to Project design. Photos and coordinates of the identified rare plants will be provided upon completion of the 2024 field season.

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Appendix D6.1
List of All Plants Observed During the Rare
Flora Survey

List of All Plants Observed During the Rare Flora Survey in 2023.

Common Name	Scientific Name	Provincial Status (S-Rank)
Northern water plantain	<i>Alisma triviale</i>	S2
American green alder	<i>Alnus alnobetula</i> ssp. <i>crispa</i>	S5
American mountain ash	<i>Sorbus americana</i>	S4
Arrow-leaved smartweed	<i>Persicaria sagittata</i>	SNA
Balsam fir	<i>Abies balsamea</i>	S5
Bayonet rush	<i>Juncus militaris</i>	S3
Bifid hemp-nettle	<i>Galeopsis bifida</i>	SNA
Black chokeberry	<i>Aronia melanocarpa</i>	S3
Black crowberry	<i>Empetrum nigrum</i>	S5
Black knapweed	<i>Centaurea nigra</i>	SNA
Black spruce	<i>Picea mariana</i>	S5
Black-girdled bulrush	<i>Scirpus atrocinctus</i>	S5
Blue ground-cedar	<i>Diphasiastrum tristachyum</i>	S5
Bluebead lily	<i>Clintonia borealis</i>	S5
Bluejoint reedgrass	<i>Calamagrostis canadensis</i>	S5
Bog aster	<i>Oclemena nemoralis</i>	S5
Bog bilberry	<i>Vaccinium uliginosum</i>	S5
Bog birch	<i>Betula pumila</i>	SNR
Bog cranberry	<i>Vaccinium oxycoccos</i>	S5
Bog goldenrod	<i>Solidago uliginosa</i>	S5
Bog rosemary	<i>Andromeda polifolia</i>	S5
Boreal bog sedge	<i>Carex magellanica</i>	S5
Bulbous water-hemlock	<i>Cicuta bulbifera</i>	S3
Bunchberry	<i>Cornus canadensis</i>	S5
Butter-and-eggs	<i>Linaria vulgaris</i>	SNA
Canada blackberry	<i>Rubus canadensis</i>	SNR
Canada burnett	<i>Sanguisorba canadensis</i>	SNR
Canada mayflower	<i>Maianthemum canadense</i>	S5
Canada yew	<i>Taxus canadensis</i>	S3
Choke cherry	<i>Prunus virginiana</i>	S4
Cinnamon fern	<i>Osmundastrum cinnamomeum</i>	S5
Cloudberry	<i>Rubus chamaemorus</i>	S5
Club-spur orchid	<i>Platanthera clavellata</i>	S5
Colonial bentgrass	<i>Agrostis capillaris</i>	SNA
Coltsfoot	<i>Tussilago farfara</i>	SNA
Common blue violet	<i>Viola sororia</i>	SNR
Common dandelion	<i>Taraxacum officinale</i>	SNA
Common eyebright	<i>Euphrasia nemorosa</i>	S4

Common juniper	<i>Juniperus communis</i>	S5
Labrador tea	<i>Rhododendron groenlandicum</i>	S5
Common plantain	<i>Plantago major</i>	SNA
Common St. John's-wort	<i>Hypericum perforatum</i>	SNA
Common water-parsnip	<i>Sium suave</i>	S3
Common yarrow	<i>Achillea millefolium</i>	SNA
Compact rush	<i>Juncus compressus</i>	SNA
Creeping buttercup	<i>Ranunculus repens</i>	SNA
Creeping snowberry	<i>Gaultheria hispida</i>	S5
Curled dock	<i>Rumex crispus</i>	SNA
Deeprout clubmoss	<i>Diphasiastrum tristachyum</i>	S5
Dragon's mouth orchid	<i>Arethusa bulbosa</i>	S4
Dwarf raspberry	<i>Rubus pubescens</i>	S5
Eastern larch	<i>Larix laricina</i>	S5
Evergreen wood-fern	<i>Dryopteris intermedia</i>	S5
Fireweed	<i>Chamaenerion angustifolium</i>	S5
Flat-topped white aster	<i>Doellingeria umbellata</i>	S5
Floating pondweed	<i>Potamogeton natans</i>	S4
Foxtail barley	<i>Hordeum jubatum</i>	S2
Fraser's marsh St. John's wort	<i>Triadenum fraseri</i>	S5
Giesecke's harebell	<i>Campanula giesekiana</i>	SNR
Goldthread	<i>Coptis trifolia</i>	S5
Haircap moss	<i>Polytrichum commune</i>	S4
Harlequin blue flag	<i>Iris versicolor</i>	S5
Heal all	<i>Prunella vulgaris</i>	S4
Hooded ladies'-tresses	<i>Spiranthes romanzoffiana</i>	S4
Horned bladderwort	<i>Utricularia cornuta</i>	S5
Indian-pipe	<i>Monotropa uniflora</i>	S5
Japanese knotweed	<i>Reynoutria japonica</i>	SNR
Knight's plume moss	<i>Ptilium crista-castrensis</i>	S5
Large cranberry	<i>Vaccinium macrocarpon</i>	S4
Large-leaved avens	<i>Geum macrophyllum</i>	S4
Late Lowbush blueberry	<i>Vaccinium angustifolium</i>	S5
Leatherleaf	<i>Chamaedaphne calyculata</i>	S5
Lingonberry	<i>Vaccinium vitis-idaea</i>	S5
Little yellow rattle	<i>Rhinanthus minor</i>	S3
Low hop clover	<i>Trifolium campestre</i>	SNA
Marsh blue violet	<i>Viola cucullata</i>	S4
Marsh fern	<i>Thelypteris palustris</i>	S3
Tall meadow rue	<i>Thalictrum pubescens</i>	S5
Michaux's sedge	<i>Carex michauxiana</i>	S4

Mountain holly	<i>Ilex mucronata</i>	S5
Mountain wood fern	<i>Dryopteris Campyloptera</i>	S5
New York aster	<i>Symphyotrichum novi-belgii</i>	S5
Northern bayberry	<i>Myrica pensylvanica</i>	S2
Northern dwarf huckleberry	<i>Gaylussacia bigeloviana</i>	S3
Northern goldenrod	<i>Solidago multiradiata</i>	S3
Northern pitcher plant	<i>Sarracenia purpurea</i>	S5
Northern starflower	<i>Lysimachia borealis</i>	S5
Northern wild raisin	<i>Viburnum cassinoides</i>	SNR
Pale bog laurel	<i>Kalmia polifolia</i>	S5
Pearly everlasting	<i>Anaphalis margaritacea</i>	S5
Pincherry	<i>Prunus pensylvanica</i>	S4
Pink lady's-slipper	<i>Cypripedium acaule</i>	S4
Purple-stemmed aster	<i>Symphyotrichum puniceum</i>	S5
Purple avens	<i>Geum rivale</i>	S4
Pussy willow	<i>Salix discolor</i>	S5
Rabbit's-foot clover	<i>Trifolium arvense</i>	SNA
Red clover	<i>Trifolium pratense</i>	SNA
Rhodora	<i>Rhododendron canadense</i>	S5
Rock polypody	<i>Polypodium virginianum</i>	S2
Rough-stemmed goldenrod	<i>Solidago rugosa</i>	S5
Round-leaved sundew	<i>Drosera rotundifolia</i>	S5
Schreber's moss	<i>Pleurozium schreberi</i>	S5
Scotch lovage	<i>Ligusticum scoticum</i>	S5
Seaside plantain	<i>Plantago maritima</i>	S5
Shaggy moss	<i>Rhytidiadelphus triquetrus</i>	S4
Sheep laurel	<i>Kalmia angustifolia</i>	S5
Sidebells wintergreen	<i>Orthilia Secunda</i>	S5
Skunk currant	<i>Ribes glandulosum</i>	S5
Small white violet	<i>Viola macloskeyi</i>	S5
Smooth black sedge	<i>Carex nigra</i>	S5
Soft rush	<i>Juncus effusus</i>	S5
Spinulose wood fern	<i>Dryopteris carthusiana</i>	S4
Spoon-leaved sundew	<i>Drosera intermedia</i>	S4
Stair-step moss	<i>Hylocomium splendens</i>	S5
Stiff clubmoss	<i>Lycopodium annotinum</i>	S5
Sub-Arctic lady-fern	<i>Athyrium filix-femina</i>	S5
Sweet gale	<i>Myrica gale</i>	S5
Tansy ragwort	<i>Jacobaea vulgaris</i>	SNA
Tawny cottongrass	<i>Eriophorum virginicum</i>	S4
Three-leaved rattlesnake root	<i>Nabalus trifoliolatus</i>	S5

Three-leaved liverwort	<i>Bazzania trilobata</i>	S4S5
Tufted bulrush	<i>Trichisporum cespitosum</i>	S5
Twinflower	<i>Linnaea borealis</i>	S5
Upright sedge	<i>Carex Stricta</i>	SNR
Water lobelia	<i>Lobelia dortmanna</i>	S5
White birch	<i>Betula papyrifera</i>	S5
White clover	<i>Trifolium repens</i>	SNA
White fringed orchid	<i>Platanthera blephariglottis</i>	S4
Wild carrot	<i>Daucus carota</i>	SNA
Wild strawberry	<i>Fragaria virginiana</i>	S5
Woodland strawberry	<i>Fragaria vesca</i>	SNR
Yellow birch	<i>Betula alleghaniensis</i>	S3

Appendix D6.2
Legislative and Organizational Species at Risk
Classifications

The NL ESA provides special protection for plant and animal species considered to be Endangered, Threatened, or Vulnerable. This legislation applies to species, sub-species and populations that are native to Newfoundland and Labrador but does not include marine fish, bacteria, and viruses. Designation under the Act follows recommendations from the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) and/or the Species Status Advisory Committee (SSAC) on the appropriate assessment of a species. Classifications of the NL ESA are outlined below.

NL ESA Classifications

Classification	Description
Extinct	No longer exists.
Extirpated	No longer exists in the wild, but exists elsewhere (e.g., exists in another province, a zoo, or a botanical garden).
Endangered	Faces imminent extirpation or extinction. For example, taxon in this category can have a declining total population size, a very small population (<250 mature individuals), an area of occupancy of less than 500 km ² , and/or occur at five or less locations. Without intervention, this taxon is likely to become Extirpated from the province.
Threatened	Is likely to become endangered if nothing is done to reverse the factors limiting its survival. For example, taxon in this category can have a declining total population size, a very small population (<1000 mature individuals), an area of occupancy of less than 2000 km ² , and/or occur at 10 or less locations.
Vulnerable	Has characteristics which make it particularly sensitive to human activities or natural events such as susceptibility to catastrophic events (e.g., oil spill) or restricted habitat or food requirements that are themselves under threat. This category may also be used to identify a wildlife species that has recovered from Threatened or Endangered status but which is not yet secure. Species in this category are likely to become threatened or endangered if not managed effectively.
Data Deficient	All sources of available information have been investigated but the information in the status report is insufficient to determine risk of extinction based on distribution and/or population status. Listing in this category indicates that more information is required and future research may show another classification is appropriate.
Not At Risk	Generally applied to widespread and abundant taxa unlikely to fit the criteria for Vulnerable, Threatened or Endangered in the near future.

The **Species at Risk Act** (SARA) was proclaimed in June 2003, to prevent wildlife species from being extirpated or becoming extinct, to provide for the recovery of wildlife species that are Extirpated, Endangered or Threatened because of human activity, and to manage species of Special Concern to prevent them from becoming endangered or threatened. In addition, it complements existing laws and agreements to provide for the legal protection of wildlife species and the conservation of biological diversity. The Act aims to prevent wildlife species from becoming extinct and to secure the necessary actions for their recovery. It applies to all federal lands in Canada, all wildlife species listed as being at risk, and their critical habitat. Descriptions of SARA classifications can be found below.

SARA Classifications

Classification	Description
Extinct	A wildlife species that no longer exists
Extirpated	A wildlife species that no longer exists in the wild in Canada, but exists elsewhere in the wild
Endangered	A wildlife species that is facing imminent Extirpation or Extinction
Threatened	A wildlife species that is likely to become Endangered if nothing is done to reverse the factors leading to its Extirpation or Extinction
Special Concern	A wildlife species that may become a Threatened or an Endangered species because of a combination of biological characteristics and identified threats

COSEWIC is an independent advisory panel to the Minister of Environment and Climate Change Canada that assesses the status of wildlife Species at Risk. Members are wildlife biology experts from academia, government, non-governmental organizations, and the private sector. COSEWIC designations are regarded as recommendations to the Federal Government, where the government makes the final decision on whether species will be listed under the SARA. Descriptions of COSEWIC classifications can be found below (COSEWIC, 2021).

COSEWIC Classifications

Classification	Description
Extinct (X)	A wildlife species that no longer exists
Extirpated (XT)	A wildlife species that no longer exists in the wild in Canada, but exists elsewhere in the wild
Endangered (E)	A wildlife species that is facing imminent extirpation or extinction
Threatened (T)	A wildlife species likely to become endangered if limiting factors are not reversed
Special Concern	A wildlife species that may become a threatened or an endangered species because of a combination of biological characteristics and identified threats
Data Deficient (DD)	A category that applies when the available information is insufficient (a) to resolve a wildlife species' eligibility for assessment or (b) to permit an assessment of the wildlife species' risk of extinction.
Not At Risk (NAR)	A wildlife species that has been evaluated and found to be not at risk of extinction given the current circumstances.

The Atlantic Canada Conservation Data Centre (AC CDC) provides provincial lists of flora and fauna and assigns a conservation status rank (S-rank) for each species in the province. The AC CDC maintains S-ranks for all terrestrial vertebrates, vascular plants, bryophytes, macrolichens and many invertebrate groups. It should be noted that S-ranks do not have any legislative protections, and for this reason are often referred to as Species of Conservation Concern (SCC), for species with S-ranks of S1 to S3. However, the AC CDC also provides the corresponding SAR information for those species that are both a SCC and SAR. AC CDC S-rank definitions are provided below.

AC CDC S-Rank Definitions

S-rank	Definition
SX	Presumed Extirpated - Species or community is believed to be extirpated from the province. Not located despite intensive searches of historical sites and other appropriate habitat, and virtually no likelihood that it will be rediscovered.
S1	Critically Imperiled - Critically imperiled in the province because of extreme rarity (often 5 or fewer occurrences) or because of some factor(s) such as very steep declines making it especially vulnerable to extirpation from the province.
S2	Imperiled - Imperiled in the province because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the province.
S3	Vulnerable - Vulnerable in the province due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation.
S4	Apparently Secure - Uncommon but not rare; some cause for long-term concern due to declines or other factors.
S5	Secure - Common, widespread, and abundant in the province.
SNR	Unranked - Provincial conservation status not yet assessed.
SU	Unrankable - Currently unrankable due to lack of information or due to substantially conflicting information about status or trends.
SNA	Not Applicable - A conservation status rank is not applicable because the species is not a suitable target for conservation activities.
S#S#	Range Rank - A numeric range rank (e.g., S2S3) is used to indicate any range of uncertainty about the status of the species or community. Ranges cannot skip more than one rank (e.g., SU is used rather than S1S4).
SH	Possibly Extirpated (Historical)—Species or community occurred historically in the province, and there is some possibility that it may be rediscovered. Its presence may not have been verified in the past 20-40 years. A species or community could become SH without such a 20-40 year delay if the only known occurrences in a province were destroyed or if it had been extensively and unsuccessfully looked for. The SH rank is reserved for species or communities for which some effort has been made to relocate occurrences, rather than simply using this status for all elements not known from verified extant occurrences.
Not Provided	Species is not known to occur in the province.

The International Union for Conservation of Nature (IUCN) Red List of Threatened Species maintains a categorized list of global species of conservation concern. This database provides species' conservation status alongside robust and reliable information. The IUCN Red List is used by a wide variety of organizations, including government bodies. IUCN Red List categories are defined below (IUCN Species Survival Commission, 2012).

IUCN Red List Categories

Category	Description
Extinct (X)	A taxon is Extinct when there is no reasonable doubt that the last individual has died. A taxon is presumed Extinct when exhaustive surveys in known and/or expected habitat, at appropriate times (diurnal, seasonal, annual), throughout its historic range have failed to record an individual.
Extinct in the Wild (EW)	A taxon is Extinct in the Wild when it is known only to survive in cultivation, in captivity or as a naturalized population (or populations) well outside the past range. A taxon is presumed Extinct in the Wild when exhaustive surveys in known and/or expected habitat, at appropriate times (diurnal, seasonal, annual), throughout its historic range have failed to record an individual.
Critically Endangered (CR)	A taxon is Critically Endangered when the best available evidence indicates that it meets any of the criteria A to E for Critically Endangered (see Section V), and it is therefore considered to be facing an extremely high risk of extinction in the wild.
Endangered (EN)	A taxon is Endangered when the best available evidence indicates that it meets any of the criteria A to E for Endangered (see Section V), and it is therefore considered to be facing a very high risk of extinction in the wild.
Vulnerable (VU)	A taxon is Vulnerable when the best available evidence indicates that it meets any of the criteria A to E for Vulnerable (see Section V), and it is therefore considered to be facing a high risk of extinction in the wild.
Near Threatened (NT)	A taxon is Near Threatened when it has been evaluated against the criteria but does not qualify for Critically Endangered, Endangered or Vulnerable now, but is close to qualifying for or is likely to qualify for a threatened category in the near future.
Least Concern (LC)	A taxon is Least Concern when it has been evaluated against the criteria and does not qualify for Critically Endangered, Endangered, Vulnerable or Near Threatened. Widespread and abundant taxa are included in this category.
Data Deficient (DD)	A taxon is Data Deficient when there is inadequate information to make a direct, or indirect, assessment of its risk of extinction based on its distribution and/or population status. A taxon in this category may be well studied, and its biology well known, but appropriate data on abundance and/or distribution are lacking. Data Deficient is therefore not a category of threat.
Not Evaluated (NE)	A taxon is Not Evaluated when it has not yet been evaluated against the criteria.