

APPENDIX D

Botanical Survey of Torbrook C & D Disposal and Recovery Site

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Introduction

This survey was carried out on April 11, 2012 by botanist, Ruth E. Newell, B.Sc. (Hons.), M.Sc.

Areas surveyed on the property (Fig.1) included the completed C & D cells (Figs. 2 & 3), the current C & D and asbestos cells (Figs. 4 & 5) and the future C & D and asbestos cells (Figs. 6, 7 & 8). A survey was also conducted in the vicinity of the settling/fire pond (Figs. 9 & 10).

Peripheral woodland on both sides of the disposal site was also surveyed (Figs. 11 & 12).

The survey technique employed involved a careful meander over the various cells whilst recording all vascular plant species observed. Suitability of each habitat for potential rare species was also considered. Photos of areas surveyed were taken.

It should be noted that this survey was conducted very early in the growing season and as a result, there are a number of plants that could not be identified to species due to lack of flowers and/or fruit. Other plant species had not yet begun to grow.

Prior to this survey, a list of potential species-at-risk based on existing records within a radius of 100 km from the survey location, was obtained from the Atlantic Canada Conservation Data Centre (ACCDC). TABLE 1 shows a list of potential federally and provincially listed vascular plant species and their presence/absence on site. TABLE 2 shows a list of potential non-listed, rare vascular plant species.

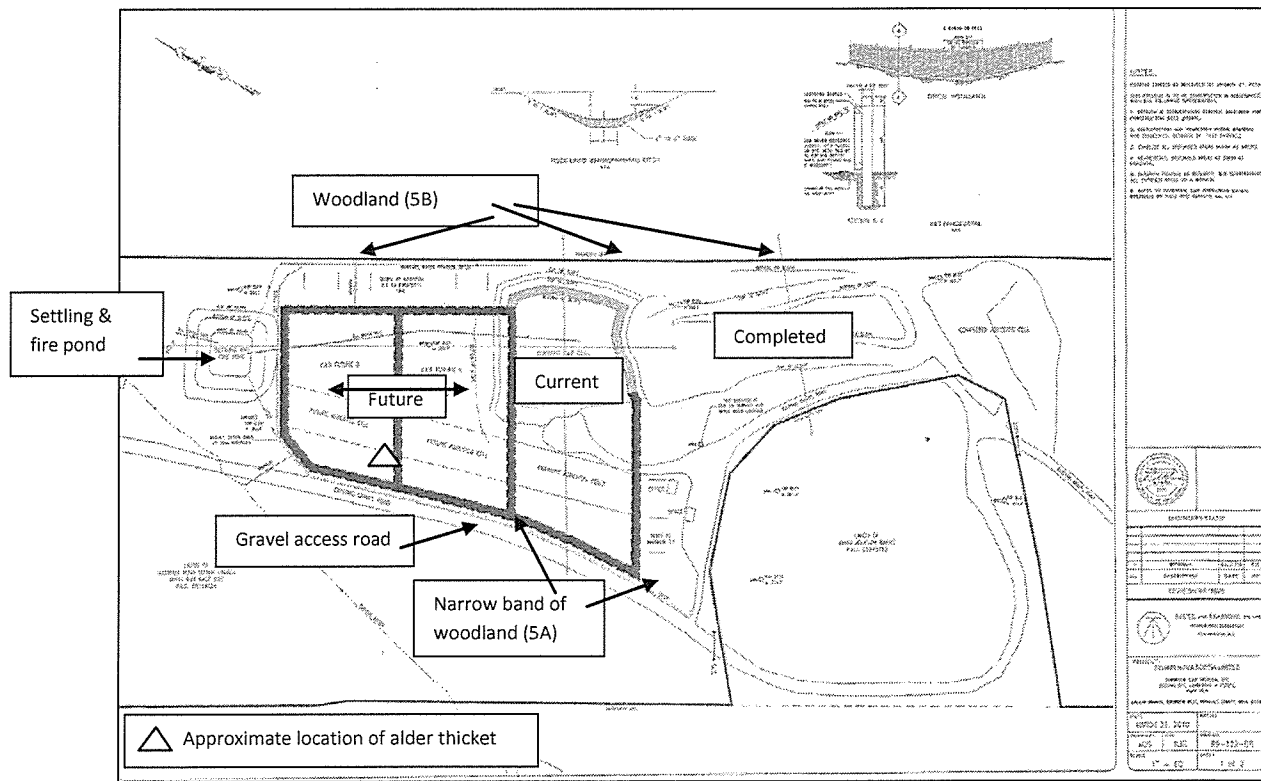


Figure 1. Diagram of Torbrook C & D Disposal and Recovery Site.

Results

Figure 1 shows the locations of the various areas surveyed. A description of the vegetation present on the past, present and future disposal areas is given below.

1. Completed C & D and Asbestos Cells

This disposal area (Figs. 2 & 3) had been covered over with soil and is in the process of being planted with young spruce (*Picea* sp.). In addition to the spruce plantings, a number of young black walnut trees (*Juglans nigra*) are scheduled to be planted this year. A variety of herbaceous plants are present on the mound. The majority of these consist of non-native, weedy species.

Herbaceous vascular plants observed on the completed C & D cell mound included a variety of grasses (grasses were not identified unless fruiting material from last year was present), evening primrose (*Oenothera* sp.), Common Speedwell (*Veronica officinalis*), English Plantain (*Plantago lanceolata*), Common Plantain (*Plantago major*), Tansy (*Tanacetum vulgare*), a number of clover species including Alfalfa (*Medicago sativa* ssp. *falcata*) and Red Clover (*Trifolium pratense*), Coltsfoot (*Tussilago farfara*), several species of dock (*Rumex* spp.), Wild Carrot (*Daucus carota*), Common St. John's-wort (*Hypericum perforatum*), Yellow Rocket (*Barbarea vulgaris*), Dandelion (*Taraxacum officinale*), Sheep Sorrel (*Rumex acetosella*), violets (*Viola* spp.), Mullein (*Verbascum thapsus*).

The periphery of the mound is being landscaped with a mix of garden and native species and large boulders.



Figure 2. Completed C & D cells, in the process of being planted with a variety of native and non-native trees, shrubs and herbaceous species.



Figure 3. A close-up of some of the vegetation on the completed C & D cells including a recently planted young spruce (*Picea* sp.).

2. Current C & D and Asbestos Cells

The current C & D disposal cell is an active disposal area and has no vegetation (Fig. 4)



Figure 4. The current C & D disposal cell.

The current asbestos cell had very little vegetation (Fig. 5). Some Coltsfoot (*Tussilago farfara*) was present on the sides of the mound.



Figure 5. The side of the current asbestos cell showing scant vegetation. The only species present at the time of the survey was Coltsfoot (*Tussilago farfara*) (arrow).

3. Future C & D and Asbestos Cells

Adjacent to and north northwest of the current C & D and asbestos cells are future cells A and B (Fig. 6). These areas have been cleared of all trees and shrubs and now harbour mostly weedy non-native herbaceous plant species.

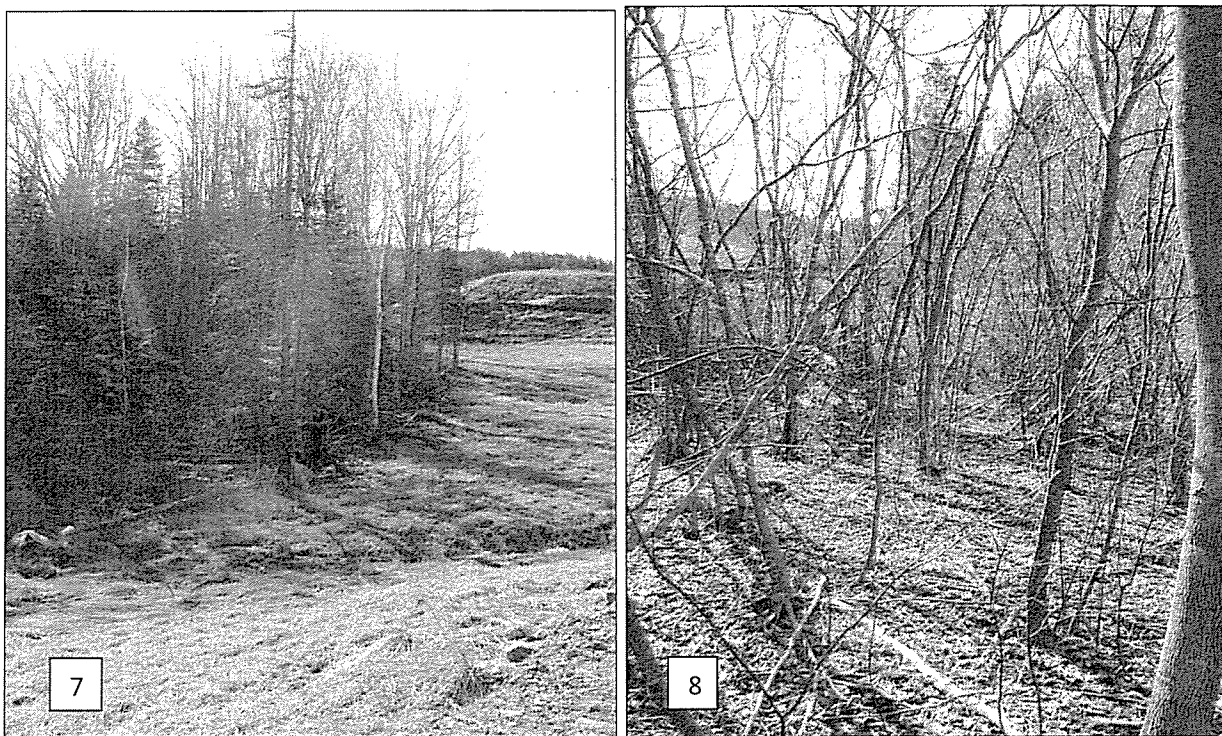
Species observed in this area are similar to those documented for the completed C & D cell with a few exceptions. The following plants were observed to be present: a variety of grass species, sedges (*Carex* spp.), Coltsfoot (*Tussilago farfara*), Bull Thistle (*Cirsium vulgare*), several species of goldenrod (*Solidago* spp.), Soft Rush (*Juncus effusus*), Path Rush (*Juncus tenuis*), Wild Carrot (*Daucus carota*), clovers (Fabaceae family), St. John's-wort (*Hypericum perforatum*), English Plantain (*Plantago lanceolata*), Common Plantain (*Plantago major*), Thyme-leaved Speedwell (*Veronica serpyllifolia*), Evening Primrose (*Oenothera* sp.), Ox-eye Daisy (*Chrysanthemum leucanthemum*), Common Speedwell (*Veronica officinalis*), Horseweed (*Conyza canadensis*) and Broad-leaved Cattail (*Typha latifolia*).

The presence of Broad-leaved Cattail and Soft Rush suggest this site is wetter than the completed cell area.

On the west side of the future cell area is a small alder thicket (Figs. 7 & 8). The size of this habitat is approximately .25 hectares. Species evident at the time of the survey were: Speckled Alder (*Alnus incana*), willow (*Salix* sp.), wild cherry (*Prunus* sp.), blackberry (*Rubus* sp.), Wire Birch (*Betula populifolia*), White Ash (*Fraxinus americana*), White Spruce (*Picea glauca*), Creeping Buttercup (*Ranunculus repens*), Wild Strawberry (*Fragaria virginiana*), goldenrod (*Solidago* sp.) and Sensitive Fern (*Onoclea sensibilis*). There was a small drainage ditch running through this habitat.



Figure 6. Future C & D and asbestos cells A and B with both the completed and the current cells in the background.



Figures 7 & 8. A small alder thicket on the west side of future cells A and B.

4. Settling and Fire Pond

Beyond the northwest end of the future disposal cells is the settling and fire pond (Fig. 9). This is a highly disturbed area with mostly weedy non-native herbaceous plant species and bare soil areas. Recent plantings of young spruce (*Picea* sp.) are present.



Figure 9. The settling and fire pond.

Plant species observed in the vicinity of the pond include several grass species including Timothy (*Phleum pratense*), an evening primrose (*Oenothera* sp.), English Plantain (*Plantago lanceolata*), Wild Carrot (*Daucus carota*), dock (*Rumex* sp.), Sheep Sorrel (*Rumex acetosella*), several clovers (Fabaceae family), Knapweed (*Centaurea nigra*). Thyme-leaved Speedwell (*Veronica serpyllifolia*), a blackberry (*Rubus* sp.), Path Rush (*Juncus tenuis*) and Broad-leaved Cattail (*Typha latifolia*).

Above the pond on its northwest side is a small thicket of raspberries (*Rubus strigosus*), blackberries (*Rubus* sp.), Alder (*Alnus* sp.), cherry (*Prunus* sp.), goldenrod (*Solidago* sp.), wild rose (*Rosa* sp.), Wire Birch (*Betula populifolia*), White Spruce (*Picea glauca*) and several apple trees (*Malus pumila*) (Fig. 10).



Figure 10. Small thicket above the settling/fire pond (arrow).

5. Wooded areas

- A. There is a narrow band of trees separating the gravel access road from the disposal area (Fig. 11). Trees present include White Pine (*Pinus strobus*), Scotch Pine (*Pinus sylvestris*), White Birch (*Betula papyrifera*), White Spruce (*Picea glauca*), Red Spruce (*Picea rubens*), Balsam Fir (*Abies balsamea*), White Ash (*Fraxinus americana*), Red Maple (*Acer rubrum*), Beech (*Fagus grandifolia*), Black Cherry (*Prunus serotina*) and a few apple trees (*Pyrus malus*). Shrubs present include Speckled Alder (*Alnus incana*), a rose (*Rosa* sp.), blackberry (*Rubus* sp.) and Raspberry (*Rubus strigosus*). Herbaceous species evident include Christmas Fern (*Polystichum acrostichoides*), Sensitive Fern (*Onoclea sensibilis*), Evergreen Woodfern (*Dryopteris intermedia*), Large-leaved Avens (*Geum macrophyllum*), Common Speedwell (*Veronica officinalis*), Heal-all (*Prunella vulgaris*), Coltsfoot (*Tussilago farfara*), buttercups (*Ranunculus* spp.), grasses (Poaceae), sedges (*Carex* spp.).

- B. Woodland (Fig. 12) on the northeast side of the disposal area (along the property line), consisted of White Spruce (*Picea glauca*), Trembling Aspen (*Populus tremuloides*), Balsam Fir (*Abies balsamea*), Wire Birch (*Betula populifolia*), Red Maple (*Acer rubrum*), Red Oak (*Quercus rubra*), White Ash (*Fraxinus americana*). Other species present included Hazelnut (*Corylus cornuta*) and Christmas Fern (*Polystichum acrostichoides*).

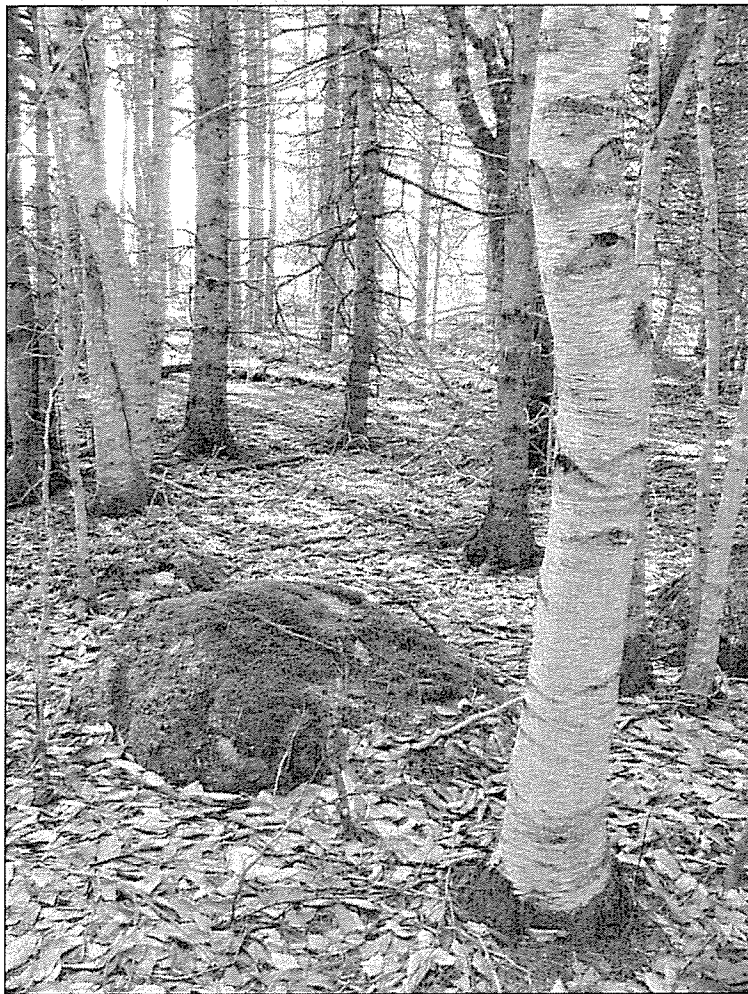


Figure 11. Narrow band of woodland separating disposal area from gravel access road. Trees in photo include Wire Birch (*Betula populifolia*) and Beech (*Fagus grandifolia*). A clump of Christmas Fern (*Polystichum acrostichoides*) can be seen behind the moss-covered rock.



Figure 12. Mixed woodland along the northeast property line as seen from the top of the completed C & D cells.

Discussion

The Torbrook C & D Disposal Site was found to be for the most part a highly disturbed area. The property has been nearly completely cleared of trees and shrubs - with the exception of several small treed areas and where replanting with spruce has begun on the completed cells. The vegetation that is present on the cell areas is primarily made up of non-native species. No species-at-risk were observed during this survey and it is considered highly unlikely that there are any species-at-risk present on site.

Rockrose (*Helianthemum canadense*) (TABLE 1) is a provincially listed species-at-risk which occurs in the nearby communities of Kingston and Greenwood on the Kingston sand plain/barren. In spite of the proximity of Torbrook to these communities, the probability of Rockrose occurring on the disposal site is considered to be unlikely. The soil on the Torbrook C & D Disposal site is primarily gravel underlain by clay. Rockrose typically occurs on sandy substrate.

Eastern White Cedar (*Thuja occidentalis*) (TABLE 1) is another provincially-listed species-at-risk that occurs in a nearby community (Nictaux). No Eastern White Cedar was observed on site during this survey.

All other protected species listed in TABLE 1 are considered to be not present due to the absence of suitable habitat (species 2-12 occur in wetlands and species 13 is typically found in calcareous soils).

TABLE 2 lists all remaining potential rare species found within a one hundred kilometer radius of the Torbrook disposal site. Again, it is highly unlikely that any of these species occur on site due to the significant level of disturbance present on the Torbrook property.

TABLES

Table 1. List of potential federally and provincially listed vascular plant species for the Torbrook site.

	Scientific Name	Common Name	Provincial Rarity	Provincial Status	COSEWIC Status	Presence/absence on Site
1	<i>Juglans cinerea</i>	Butternut	S3		Endangered	Absent (not reported for NS)
2	<i>Sabatia kennedyana</i>	Plymouth Gentian	S1	Endangered	Threatened	Absent*
3	<i>Hydrocotyle umbellata</i>	Water Pennywort	S1	Endangered	Threatened	Absent
4	<i>Lophiola aurea</i>	Goldencrest	S2	Threatened	Threatened	Absent
5	<i>Lachnanthes caroliniana</i>	Redroot	S2	Threatened	Special Concern	Absent
6	<i>Eleocharis tuberculosa</i>	Tubercled Spikerush	S2	Threatened	Special Concern	Absent
7	<i>Clethra alnifolia</i>	Sweet Pepperbush	S1	Vulnerable	Special Concern	Absent
8	<i>Isoetes prototypus</i>	Prototype Quillwort	S2	Vulnerable	Special Concern	Absent
9	<i>Lilaeopsis chinensis</i>	Eastern Lilaeopsis	S2	Vulnerable	Special Concern	Absent
10	<i>Scirpus longii</i>	Longs Bulrush	S2S3	Vulnerable	Special Concern	Absent
11	<i>Floerkea proserpinacoides</i>	False Mermaidweed	S2		Not at Risk	Absent
12	<i>Smilax rotundifolia</i>	Catbrier	S3		Not at risk	Absent
13	<i>Cypripedium arietinum</i>	Ram's-head Lady's-slipper	S1	Endangered		Absent
14	<i>Helianthemum canadense</i>	Rockrose	S1	Endangered		Low potential for presence**
15	<i>Thuja occidentalis</i>	Eastern White Cedar	S1S2	Vulnerable		Absent (no cedar were observed during the survey)

* Species 2-12 are reported as absent on site based on the absence of suitable wetland habitat. Species 13 is reported as absent due to the lack of calcareous soil.

** The potential for this species to be on the Torbrook site is considered to be low due to the presence of inappropriate substrate (gravel/clay instead of sand) and to the high level of disturbance present.

TABLE 2. Potential non-listed rare species.

Scientific Name	Common Name	Nova Scotia RarityStatus*	Distance in km from survey site of existing records
<i>Selaginella rupestris</i>	Rock Spikemoss	S1	75 ±0
<i>Schizaea pusilla</i>	Little Curlygrass Fern	S1	51 ±0
<i>Equisetum palustre</i>	Marsh Horsetail	S1	40 ±5
<i>Cystopteris laurentiana</i>	Laurentian Bladder Fern	S1	89 ±1
<i>Adiantum pedatum</i>	Northern Maidenhair Fern	S1	53 ±0.1
<i>Torreyochloa pallida</i> var. <i>pallida</i>	Pale False Manna Grass	S1	16 ±10
<i>Puccinellia fasciculata</i>	Saltmarsh Alkali Grass	S1	40 ±10
<i>Festuca subverticillata</i>	Nodding Fescue	S1	49 ±1
<i>Elymus hystrix</i> var. <i>bigeloviana</i>	Spreading Wild Rye	S1	79 ±0.5
<i>Elymus hystrix</i>	Spreading Wild Rye	S1	79 ±0.1
<i>Dichanthelium xanthophyllum</i>	Slender Panic Grass	S1	58 ±0
<i>Spiranthes casei</i> var. <i>casei</i>	Case's Ladies'-Tresses	S1	44 ±0.1
<i>Malaxis brachypoda</i>	White Adder's-Mouth	S1	39 ±0.5
<i>Trillium grandiflorum</i>	White Trillium	S1	44 ±1
<i>Allium tricoccum</i>	Wild Leek	S1	9 ±10
<i>Juncus secundus</i>	One-sided Rush	S1	33 ±0.1
<i>Sisyrinchium fuscum</i>	Coastal Plain Blue-eyed- grass	S1	44 ±1
<i>Sisyrinchium angustifolium</i>	Narrow-leaved Blue-eyed- grass	S1	54 ±0
<i>Iris prismatica</i>	Slender Blue Flag	S1	18 ±1
<i>Schoenoplectus torreyi</i>	Torrey's Bulrush	S1	48 ±0
<i>Scirpus pedicellatus</i>	Stalked Bulrush	S1	99 ±5
<i>Rhynchospora macrostachya</i>	Tall Beakrush	S1	69 ±0
<i>Carex grisea</i>	Inflated Narrow-leaved Sedge	S1	99 ±5
<i>Carex tuckermanii</i>	Tuckerman's Sedge	S1	72 ±5
<i>Carex saxatilis</i>	Russet Sedge	S1	96 ±10
<i>Carex prairea</i>	Prairie Sedge	S1	44 ±1
<i>Carex ormostachya</i>	Necklace Spike Sedge	S1	37 ±0
<i>Carex livida</i> var. <i>radicaulis</i>	Livid Sedge	S1	67 ±10
<i>Carex laxiflora</i> var. <i>laxiflora</i>	Loose-Flowered Sedge	S1	31 ±10
<i>Carex laxiflora</i>	Loose-Flowered Sedge	S1	59 ±10
<i>Carex haydenii</i>	Hayden's Sedge	S1	50 ±1
<i>Carex granularis</i>	Limestone Meadow Sedge	S1	19 ±1
<i>Carex digitalis</i>	Slender Wood Sedge	S1	59 ±0.5
<i>Viola canadensis</i>	Canada Violet	S1	72 ±10
<i>Boehmeria cylindrica</i>	Small-spike False-nettle	S1	9 ±0
<i>Dirca palustris</i>	Eastern Leatherwood	S1	72 ±0.1
<i>Galium aparine</i>	Catchweed Bedstraw	S1	67 ±0.1
<i>Amelanchier nantucketensis</i>	Nantucket Serviceberry	S1	79 ±1
<i>Ranunculus scleratus</i>	Cursed Buttercup	S1	97 ±0.5
<i>Anagallis minima</i>	Chaffweed	S1	58 ±0
<i>Montia fontana</i>	Water Blinks	S1	51 ±0.5
<i>Podostemum ceratophyllum</i>	Horn-leaved Riverweed	S1	33 ±0.1
<i>Polygonum achoreum</i>	Leathery Knotweed	S1	24 ±10
<i>Polygala polygama</i>	Racemed Milkwort	S1	55 ±1
<i>Fraxinus pennsylvanica</i>	Red Ash	S1	45 ±0
<i>Proserpinaca intermedia</i>	Intermediate Mermaidweed	S1	83 ±1
<i>Ribes americanum</i>	Wild Black Currant	S1	67 ±1

Scientific Name	Common Name	Nova Scotia RarityStatus*	Distance in km from survey site of existing records
<i>Oxytropis campestris</i> var. <i>johannensis</i>	Field Locoweed	S1	47 ±0.5
<i>Desmodium glutinosum</i>	Large Tick-Trefoil	S1	37 ±10
<i>Desmodium canadense</i>	Canada Tick-trefoil	S1	43 ±10
<i>Astragalus robbinsii</i> var. <i>minor</i>	Robbins' Milkvetch	S1	47 ±0.1
<i>Cuscuta pentagona</i>	Five-angled Dodder	S1	53 ±1
<i>Cuscuta cephalanthi</i>	Buttonbush Dodder	S1	81 ±0.1
<i>Hypericum majus</i>	Large St John's-wort	S1	76 ±1
<i>Silene antirrhina</i>	Sleepy Catchfly	S1	11 ±10
<i>Lobelia spicata</i>	Pale-Spiked Lobelia	S1	66 ±10
<i>Draba glabella</i>	Rock Whitlow-Grass	S1	39 ±1
<i>Draba arabisans</i>	Rock Whitlow-Grass	S1	39 ±1
<i>Cardamine maxima</i>	Large Toothwort	S1	38 ±1
<i>Cardamine pratensis</i>	Cuckoo Flower	S1	91 ±0.1
<i>Arabis glabra</i>	Tower Mustard	S1	12 ±1
<i>Cynoglossum virginianum</i> var. <i>boreale</i>	Wild Comfrey	S1	41 ±0.1
<i>Ageratina altissima</i>	White Snakeroot	S1	49 ±0.1
<i>Hieracium robinsonii</i>	Robinson's Hawkweed	S1	78 ±0.5
<i>Pseudognaphalium obtusifolium</i>	Eastern Cudweed	S1	79 ±1
<i>Antennaria parlinii</i>	Parlin's Pussytoes	S1	56 ±0.1
<i>Antennaria rosea</i> ssp. <i>arida</i>	Rosy Pussytoes	S1	47 ±0.5
<i>Zizia aurea</i>	Golden Alexanders	S1	96 ±10
<i>Sanicula odorata</i>	Clustered Sanicle	S1	34 ±1
<i>Osmorhiza depauperata</i>	Blunt Sweet Cicely	S1	51 ±5
<i>Toxicodendron vernix</i>	Poison Sumac	S1	67 ±0
<i>Panicum dichotomiflorum</i> var. <i>puritanorum</i>	Fall Panic Grass	S1?	55 ±10
<i>Dichanthelium acuminatum</i> var. <i>lindheimeri</i>	Woolly Panic Grass	S1?	49 ±0.5
<i>Schoenoplectus robustus</i>	Sturdy Bulrush	S1?	41 ±5
<i>Carex longii</i>	Long's Sedge	S1?	75 ±10
<i>Rubus flagellaris</i>	Northern Dewberry	S1?	10 ±0.5
<i>Crataegus submollis</i>	Quebec Hawthorn	S1?	75 ±1
<i>Proserpinaca palustris</i> var. <i>palustris</i>	Marsh Mermaidweed	S1?	69 ±0
<i>Suaeda rolandii</i>	Roland's Sea-Blite	S1?	71 ±10
<i>Solidago hispida</i>	Hairy Goldenrod	S1?	100 ±1
<i>Potamogeton pulcher</i>	Spotted Pondweed	S1S2	48 ±10
<i>Platanthera flava</i> var. <i>herbiola</i>	Tuberclad Orchid	S1S2	1 ±0
<i>Najas gracillima</i>	Thread-Like Naiad	S1S2	58 ±0
<i>Carex tenera</i>	Tender Sedge	S1S2	6 ±0
<i>Carex rostrata</i>	Narrow-leaved Beaked Sedge	S1S2	85 ±0
<i>Carex pensylvanica</i>	Pennsylvania Sedge	S1S2	73 ±10
<i>Carex bebbii</i>	Bebb's Sedge	S1S2	72 ±5
<i>Galium obtusum</i>	Blunt-leaved Bedstraw	S1S2	6 ±0
<i>Hepatica nobilis</i> var. <i>obtusata</i>	Round-lobed Hepatica	S1S2	9 ±10
<i>Hepatica nobilis</i>	Round-Lobe Hepatica	S1S2	25 ±0
<i>Conopholis americana</i>	American Cancer-root	S1S2	8 ±0
<i>Utricularia resupinata</i>	Inverted Bladderwort	S1S2	52 ±0
<i>Ceratophyllum echinatum</i>	Prickly Hornwort	S1S2	70 ±0.1
<i>Huperzia selago</i>	Northern Firmoss	S1S3	38 ±0.5
<i>Selaginella selaginoides</i>	Low Spikemoss	S2	72 ±0.5

Scientific Name	Common Name	Nova Scotia RarityStatus*	Distance in km from survey site of existing records
<i>Equisetum pratense</i>	Meadow Horsetail	S2	46 ±1
<i>Woodsia alpina</i>	Alpine Cliff Fern	S2	70 ±0.5
<i>Asplenium trichomanes</i>	Maidenhair Spleenwort	S2	24 ±0
<i>Potamogeton friesii</i>	Fries' Pondweed	S2	40 ±10
<i>Stuckenia filiformis</i> ssp. <i>alpina</i>	Thread-leaved Pondweed	S2	41 ±10
<i>Piptatherum pungens</i>	Slender Rice Grass	S2	68 ±1
<i>Piptatherum canadense</i>	Canada Rice Grass	S2	87 ±0
<i>Spiranthes lucida</i>	Shining Ladies'-Tresses	S2	12 ±0.1
<i>Spiranthes casei</i> var. <i>novaescotiae</i>	Case's Ladies'-Tresses	S2	6 ±0.5
<i>Spiranthes casei</i>	Case's Ladies'-Tresses	S2	59 ±10
<i>Platanthera macrophylla</i>	Large Round-Leaved Orchid	S2	61 ±1
<i>Platanthera flava</i> var. <i>flava</i>	Tubercled Orchid	S2	58 ±0
<i>Platanthera flava</i>	Tubercled Orchid	S2	56 ±0
<i>Listera australis</i>	Southern Twayblade	S2	21 ±0
<i>Goodyera pubescens</i>	Downy Rattlesnake-Plantain	S2	12 ±10
<i>Cypripedium parviflorum</i> var. <i>makasin</i>	Yellow Lady's-slipper	S2	25 ±0.1
<i>Cypripedium parviflorum</i> var. <i>pubescens</i>	Yellow Lady's-slipper	S2	41 ±5
<i>Coeloglossum viride</i> var. <i>virescens</i>	Long-bracted Frog Orchid	S2	48 ±1
<i>Allium schoenoprasum</i> var. <i>sibiricum</i>	Wild Chives	S2	44 ±10
<i>Allium schoenoprasum</i>	Wild Chives	S2	53 ±1
<i>Juncus vaseyi</i>	Vasey's Rush	S2	85 ±0
<i>Eriophorum gracile</i>	Slender Cottongrass	S2	19 ±10
<i>Carex hystericina</i>	Porcupine Sedge	S2	7 ±1
<i>Carex garberi</i>	Garber's Sedge	S2	93 ±0.5
<i>Carex comosa</i>	Bearded Sedge	S2	23 ±10
<i>Carex castanea</i>	Chestnut Sedge	S2	87 ±0
<i>Carex atratiformis</i>	Scabrous Black Sedge	S2	83 ±1
<i>Carex atlantica</i> ssp. <i>capillacea</i>	Atlantic Sedge	S2	4 ±0
<i>Symplocarpus foetidus</i>	Eastern Skunk Cabbage	S2	75 ±0
<i>Scrophularia lanceolata</i>	Lance-leaved Figwort	S2	11 ±1
<i>Tiarella cordifolia</i>	Heart-leaved Foamflower	S2	42 ±0.1
<i>Saxifraga paniculata</i> ssp. <i>neogaea</i>	White Mountain Saxifrage	S2	47 ±0.5
<i>Salix sericea</i>	Silky Willow	S2	49 ±0.1
<i>Salix pedicellaris</i>	Bog Willow	S2	24 ±10
<i>Galium boreale</i>	Northern Bedstraw	S2	48 ±0.1
<i>Ranunculus flammula</i> var. <i>flammula</i>	Lesser Spearwort	S2	46 ±10
<i>Anemone virginiana</i> var. <i>virginiana</i>	Virginia Anemone	S2	88 ±10
<i>Anemone virginiana</i>	Virginia Anemone	S2	72 ±0.1
<i>Anemone quinquefolia</i>	Wood Anemone	S2	5 ±0.1
<i>Anemone canadensis</i>	Canada Anemone	S2	56 ±10
<i>Samolus valerandi</i> ssp. <i>parviflorus</i>	Seaside Brookweed	S2	69 ±0
<i>Samolus valerandi</i>	Seaside Brookweed	S2	89 ±0
<i>Plantago rugelii</i>	Rugel's Plantain	S2	18 ±1
<i>Rumex salicifolius</i> var. <i>mexicanus</i>	Triangular-valve Dock	S2	43 ±1

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<i>Polygonum arifolium</i>	Halberd-leaved Tearthumb S2	S2	38 ±10
<i>Oenothera fruticosa</i> ssp. <i>glauca</i>	Narrow-leaved Evening Primrose	S2	54 ±0.1
<i>Oenothera fruticosa</i>	Narrow-leaved Evening Primrose	S2	80 ±0
<i>Vaccinium boreale</i>	Northern Blueberry	S2	62 ±10
<i>Shepherdia Canadensis</i>	Soapberry	S2	71 ±0.1
<i>Crassula aquatic</i>	Water Pygmyweed	S2	96 ±0.1
<i>Triosteum aurantiacum</i>	Orange-fruited Tinker's Weed	S2	80 ±0.5
<i>Callitriche hermaphrodita</i>	Northern Water-starwort	S2	79 ±0
<i>Hudsonia ericoides</i>	Pinebarren Golden Heather	S2	6 ±0
<i>Chenopodium rubrum</i>	Red Pigweed	S2	94 ±1
<i>Atriplex franktonii</i>	Frankton's Saltbush	S2	66 ±1
<i>Stellaria longifolia</i>	Long-leaved Starwort	S2	96 ±10
<i>Minuartia groenlandica</i>	Greenland Stitchwort	S2	44 ±10
<i>Cardamine parviflora</i> var. <i>arenicola</i>	Small-flowered Bittercress	S2	23 ±10
<i>Arabis drummondii</i>	Drummond's Rockcress	S2	39 ±0.5
<i>Betula michauxii</i>	Newfoundland Dwarf Birch	S2	54 ±0
<i>Caulophyllum thalictroides</i>	Blue Cohosh	S2	9 ±10
<i>Impatiens pallid</i>	Pale Jewelweed	S2	39 ±0.5
<i>Symphytotrichum undulatum</i>	Wavy-leaved Aster	S2	51 ±0
<i>Rudbeckia laciniata</i> var. <i>gaspereauensis</i>	Cut-Leaved Coneflower	S2	18 ±10
<i>Lactuca hirsuta</i> var. <i>sanguine</i>	Hairy Lettuce	S2	53 ±1
<i>Iva frutescens</i> ssp. <i>oraria</i>	Big-leaved Marsh-elder	S2	54 ±1
<i>Iva frutescens</i>	Big-leaved Marsh-elder	S2	56 ±0
<i>Eupatorium dubium</i>	Coastal Plain Joe-pye-weed	S2	70 ±10
<i>Erigeron philadelphicus</i>	Philadelphia Fleabane	S2	41 ±10
<i>Osmorhiza longistylis</i>	Smooth Sweet Cicely	S2	32 ±1
<i>Conioselinum chinense</i>	Chinese Hemlock-parsley	S2	47 ±10
<i>Dichanthelium linearifolium</i>	Narrow-leaved Panic Grass	S2?	4 ±0
<i>Juncus dudleyi</i>	Dudley's Rush	S2?	7 ±5
<i>Eleocharis ovata</i>	Ovate Spikerush	S2?	61 ±0.5
<i>Carex houghtoniana</i>	Houghton's Sedge	S2?	54 ±0.5
<i>Amelanchier fernaldii</i>	Fernald's Serviceberry	S2?	57 ±10
<i>Epilobium coloratum</i>	Purple-veined Willowherb	S2?	51 ±1
<i>Hieracium kalmii</i> var. <i>kalmia</i>	Kalm's Hawkweed	S2?	17 ±1
<i>Hieracium kalmia</i>	Kalm's Hawkweed	S2?	35 ±0.5
<i>Ophioglossum pusillum</i>	Northern Adder's-tongue	S2S3	34 ±10
<i>Botrychium simplex</i>	Least Moonwort	S2S3	48 ±1
<i>Botrychium lanceolatum</i> var. <i>angustisegmentum</i>	Triangle Moonwort	S2S3	39 ±1
<i>Woodwardia areolata</i>	Netted Chain Fern	S2S3	64 ±10
<i>Potamogeton zosteriformis</i>	Flat-stemmed Pondweed	S2S3	40 ±10
<i>Potamogeton richardsonii</i>	Richardson's Pondweed	S2S3	33 ±1
<i>Poa glauca</i>	Glaucous Blue Grass	S2S3	39 ±0.5
<i>Panicum tuckermanii</i>	Tuckerman's Panic Grass	S2S3	9 ±0
<i>Alopecurus aequalis</i>	Short-awned Foxtail	S2S3	16 ±10
<i>Spiranthes ochroleuca</i>	Yellow Ladies'-tresses	S2S3	6 ±0.5
<i>Cypripedium parviflorum</i>	Yellow Lady's-slipper	S2S3	43 ±1
<i>Lilium canadense</i>	Canada Lily	S2S3	34 ±1
<i>Eleocharis olivacea</i>	Yellow Spikerush	S2S3	29 ±0.1

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<i>Carex swanii</i>	Swan's Sedge	S2S3	6 ±0
<i>Carex hirtifolia</i>	Pubescent Sedge	S2S3	78 ±0.1
<i>Carex adusta</i>	Lesser Brown Sedge	S2S3	68 ±10
<i>Polygonum raii</i>	Sharp-fruited Knotweed	S2S3	74 ±1
<i>Polygonum buxiforme</i>	Small's Knotweed	S2S3	24 ±10
<i>Polygala sanguine</i>	Blood Milkwort	S2S3	9 ±0.1
<i>Fraxinus nigra</i>	Black Ash	S2S3	9 ±10
<i>Hedeoma pulegioides</i>	American False Pennyroyal	S2S3	27 ±5
<i>Elatine americana</i>	American waterwort	S2S3	98 ±0.1
<i>Hypericum dissimulatum</i>	Disguised St John's-wort	S2S3	57 ±0.1
<i>Sagina nodosa</i> ssp. <i>borealis</i>	Knotted Pearlwort	S2S3	81 ±5
<i>Betula pumila</i> var. <i>pumila</i>	Bog Birch	S2S3	96 ±10
<i>Symphotrichum ciliolatum</i>	Fringed Blue Aster	S2S3	38 ±1
<i>Asclepias incarnata</i> ssp. <i>pulchra</i>	Swamp Milkweed	S2S3	6 ±1
<i>Botrychium dissectum</i>	Cut-leaved Moonwort	S3	10 ±1
<i>Huperzia appalachiana</i>	Mountain Firmoss	S3	69 ±1
<i>Isoetes acadensis</i>	Acadian Quillwort	S3	38 ±0.5
<i>Woodsia glabella</i>	Smooth Cliff Fern	S3	72 ±0.1
<i>Dryopteris fragrans</i> var. <i>remotiuscula</i>	Fragrant Wood Fern	S3	70 ±0.5
<i>Asplenium trichomanes-ramosum</i>	Green Spleenwort	S3	78 ±0.1
<i>Cryptogramma stelleri</i>	Steller's Rockbrake	S3	67 ±0.1
<i>Sparganium natans</i>	Small Burreed	S3	54 ±5
<i>Potamogeton obtusifolius</i>	Blunt-leaved Pondweed	S3	85 ±0
<i>Trisetum melicoides</i>	Purple False Oats	S3	89 ±5
<i>Panicum rigidulum</i> var. <i>pubescens</i>	Redtop Panic Grass	S3	52 ±10
<i>Dichanthelium clandestinum</i>	Deer-tongue Panic Grass	S3	10 6 ±0
<i>Platanthera orbiculata</i>	Small Round-leaved Orchid	S3	62 ±10
<i>Platanthera hookeri</i>	Hooker's Orchid	S3	19 ±1
<i>Platanthera grandiflora</i>	Large Purple Fringed Orchid	S3	32 ±1
<i>Liparis loeselii</i>	Loesel's Twayblade	S3	39 ±1
<i>Goodyera repens</i>	Lesser Rattlesnake-plantain	S3	7 ±0
<i>Cypripedium reginae</i>	Showy Lady's-Slipper	S3	68 ±1
<i>Corallorhiza trifida</i>	Early Coralroot	S3	14 3 ±0
<i>Triantha glutinosa</i>	Sticky False Asphodel	S3	93 ±0.5
<i>Juncus subcaudatus</i>	Woodland Rush	S3	14 ±10
<i>Juncus marginatus</i>	Grass-leaved Rush	S3	17 ±10
<i>Triglochin gaspensis</i>	Gaspé Arrowgrass	S3	68 ±0.1
<i>Eriophorum chamissonis</i>	Russet Cotton-Grass	S3	73 ±0
<i>Eleocharis quinqueflora</i>	Few-flowered Spikerush	S3	95 ±0.5
<i>Eleocharis nitida</i>	Quill Spikerush	S3	7 ±10
<i>Cyperus dentatus</i>	Toothed Flatsedge	S3	52 ±0.1
<i>Carex wiegandii</i>	Wiegand's Sedge	S3	69 ±1
<i>Carex rosea</i>	Rosy Sedge	S3	13 ±0.1
<i>Carex lupulina</i>	Hop Sedge	S3	61 ±0.5
<i>Carex eburnea</i>	Bristle-leaved Sedge	S3	78 ±0.1
<i>Carex chordorrhiza</i>	Creeping Sedge	S3	88 ±0
<i>Carex capillaries</i>	Hairlike Sedge	S3	47 ±0.5
<i>Viola nephrophylla</i>	Northern Bog Violet	S3	53 ±1
<i>Verbena hastata</i>	Blue Vervain	S3	24 ±1
<i>Pilea pumila</i>	Dwarf Clearweed	S3	83 ±0
<i>Laportea Canadensis</i>	Canada Wood Nettle	S3	9 ±0

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<i>Veronica serpyllifolia</i> ssp. <i>humifusa</i>	Thyme-Leaved Speedwell	S3	79 ±1
<i>Limosella australis</i>	Southern Mudwort	S3	75 ±10
<i>Agalinis neoscotica</i>	Nova Scotia Agalinis	S3	64 ±0
<i>Geocaulon lividum</i>	Northern Comandra	S3	16 ±0.1
<i>Salix petiolaris</i>	Meadow Willow	S3	52 ±0.5
<i>Cephalanthus occidentalis</i>	Common Buttonbush	S3	47 ±0
<i>Rosa palustris</i>	Swamp Rose	S3	36 ±0
<i>Agrimonia gryposepala</i>	Hooked Agrimony	S3	6 ±0
<i>Rhamnus alnifolia</i>	Alder-leaved Buckthorn	S3	75 ±1
<i>Thalictrum venulosum</i>	Northern Meadow-rue	S3	93 ±0.5
<i>Ranunculus gmelinii</i>	Gmelin's Water Buttercup	S3	88 ±0
<i>Clematis occidentalis</i>	Purple Clematis	S3	78 ±0.5
<i>Pyrola minor</i>	Lesser Pyrola	S3	45 ±10
<i>Pyrola asarifolia</i>	Pink Pyrola	S3	63 ±10
<i>Primula laurentiana</i>	Laurentian Primrose	S3	18 ±0.1
<i>Primula mistassinica</i>	Mistassini Primrose	S3	92 ±0.1
<i>Polygonum scandens</i>	Climbing False Buckwheat	S3	9 ±0
<i>Polygonum pensylvanicum</i>	Pennsylvania Smartweed	S3	15 ±0.1
<i>Epilobium strictum</i>	Downy Willowherb	S3	58 ±1
<i>Epilobium hornemannii</i> ssp. <i>hornemannii</i>	Hornemann's Willowherb	S3	77 ±0.1
<i>Epilobium hornemannii</i>	Hornemann's Willowherb	S3	77 ±1
<i>Rhexia virginica</i>	Virginia Meadow Beauty	S3	31 ±0
<i>Decodon verticillatus</i>	Swamp Loosestrife	S3	44 ±10
<i>Utricularia subulata</i>	Zigzag Bladderwort	S3	31 ±0
<i>Utricularia radiata</i>	Little Floating Bladderwort	S3	31 ±0
<i>Teucrium canadense</i>	Canada Germander	S3	41 ±5
<i>Proserpinaca pectinata</i>	Comb-leaved Mermaidweed	S3	43 ±10
<i>Proserpinaca palustris</i> var. <i>crebra</i>	Marsh Mermaidweed	S3	78 ±0.1
<i>Myriophyllum sibiricum</i>	Siberian Water Milfoil	S3	91 ±0.5
<i>Myriophyllum verticillatum</i>	Whorled Water Milfoil	S3	82 ±0.5
<i>Myriophyllum farwellii</i>	Farwell's Water Milfoil	S3	48 ±1
<i>Geranium bicknellii</i>	Bicknell's Crane's-bill	S3	62 ±0.1
<i>Gentianella amarella</i> ssp. <i>acuta</i>	Northern Gentian	S3	94 ±0.5
<i>Bartonia virginica</i>	Yellow Bartonia	S3	28 ±0.5
<i>Vaccinium corymbosum</i>	Highbush Blueberry	S3	63 ±0
<i>Vaccinium caespitosum</i>	Dwarf Bilberry	S3	43 ±10
<i>Empetrum eamesii</i>	Pink Crowberry	S3	96 ±0.1
<i>Stellaria humifusa</i>	Saltmarsh Starwort	S3	48 ±1
<i>Campanula aparinoides</i>	Marsh Bellflower	S3	17 ±1
<i>Arabis hirsuta</i> var. <i>pyncocarpa</i>	Western Hairy Rockcress	S3	50 ±0.1
<i>Alnus serrulata</i>	Smooth Alder	S3	51 ±0
<i>Symphyotrichum boreale</i>	Boreal Aster	S3	59 ±10
<i>Solidago latissimifolia</i>	Elliott's Goldenrod	S3	59 ±10
<i>Packera paupercula</i>	Balsam Groundsel	S3	71 ±0
<i>Prenanthes racemosa</i>	Glaucous Rattlesnakeroot	S3	97 ±1
<i>Hieracium paniculatum</i>	Panicled Hawkweed	S3	26 ±0
<i>Erigeron hyssopifolius</i>	Hyssop-leaved Fleabane	S3	74 ±0
<i>Asclepias incarnata</i>	Swamp Milkweed	S3	23 ±10
<i>Polypodium appalachianum</i>	Appalachian Polypody	S3?	7 ±0
<i>Lycopodium sitchense</i>	Sitka Clubmoss	S3?	53 ±1
<i>Lycopodium sabinifolium</i>	Ground-Fir	S3?	70 ±0

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<i>Potamogeton praelongus</i>	White-stemmed Pondweed	S3?	44 ±1
<i>Carex tribuloides</i>	Blunt Broom Sedge	S3?	62 ±0.1
<i>Carex cryptolepis</i>	Hidden-scaled Sedge	S3?	50 ±0
<i>Carex foenea</i>	Fernald's Hay Sedge	S3?	59 ±0.5
<i>Amelanchier stolonifera</i>	Running Serviceberry	S3?	7 ±0
<i>Lycopodiella appressa</i>	Southern Bog Clubmoss	S3S4	21 ±5
<i>Lycopodium complanatum</i>	Northern Clubmoss	S3S4	3 ±0
<i>Equisetum scirpoides</i>	Dwarf Scouring-Rush	S3S4	23 ±1
<i>Equisetum hyemale</i> var. <i>affine</i>	Common Scouring-rush	S3S4	45 ±10
<i>Equisetum hyemale</i>	Common Scouring-rush	S3S4	79 ±0.1
<i>Cystopteris bulbifera</i>	Bulblet Bladder Fern	S3S4	41 ±0.1
<i>Trisetum spicatum</i>	Narrow False Oats	S3S4	47 ±0.5
<i>Dichanthelium spretum</i>	Eaton's Witchgrass	S3S4	28 ±0.5
<i>Luzula parviflora</i>	Small-flowered Woodrush	S3S4	27 ±10
<i>Juncus acuminatus</i>	Sharp-fruited Rush	S3S4	6 ±1
<i>Sisyrinchium atlanticum</i>	Eastern Blue-Eyed-Grass	S3S4	51 ±0
<i>Carex argyrantha</i>	Silvery-flowered Sedge	S3S4	42 ±0.1
<i>Viola sagittata</i> var. <i>ovate</i>	Arrow-Leaved Violet	S3S4	6 ±0
<i>Viola sagittata</i>	Arrow-Leaved Violet	S3S4	3 80 ±0
<i>Lindernia dubia</i>	Yellow-seeded False Pimpernel	S3S4	33 ±0.1
<i>Polygonum robustius</i>	Stout Smartweed	S3S4	7 ±1
<i>Sanguinaria canadensis</i>	Bloodroot	S3S4	79 ±0.1
<i>Utricularia gibba</i>	Humped Bladderwort	S3S4	51 ±0
<i>Suaeda calceoliformis</i>	Horned Sea-blite	S3S4	63 ±0
<i>Lobelia kalmia</i>	Brook Lobelia	S3S4	93 ±1
<i>Megalodonta beckii</i>	Water Beggarticks	S3S4	60 ±0.5
<i>Dichanthelium meridionale</i>	Matting Witchgrass	SH	59 ±10
<i>Eleocharis erythropoda</i>	Red-stemmed Spikerush	SH	97 ±1
<i>Bidens discoidea</i>	Swamp Beggarticks	SH	58 ± 0.5

*ACCDC status ranks are explained at <http://www.accdc.com/Data/ranks.html>