



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

Documenting Priorities for Conservation in the Meduxnekeag Region, Carleton County, New Brunswick



Canada Violet (*Viola canadensis*) at Moody Hill



Showy Orchis (*Galearis spectabilis*) at Moody Hill

A report to the New Brunswick Environmental Trust Fund

April 2015

David Mazerolle, Sean Blaney and Alain Belliveau

Atlantic Canada Conservation Data Centre, Sackville, NB



BACKGROUND AND PROJECT RATIONALE

Due to underlying calcareous sedimentary bedrock (Fyffe and Richard 2007) and rich soils, the Meduxnekeag River and Little Presque Isle Stream watersheds in Carleton County NB contain an exceptionally high diversity of provincially rare vascular plants (MacDougall 1997; MacDougall and Loo 1998; Hinds 2000, AC CDC 2015) including many Appalachian hardwood forest plants that reach their northern and eastern range limits in western New Brunswick, as well as many wetland species associated with high-pH Eastern White Cedar swamps, fens and other wetland types. The Meduxnekeag River watershed in particular supports many of the best remaining examples of undisturbed Appalachian hardwood forest in the Maritimes.

Because rich calcareous soils tend to be especially suitable for agriculture, a high proportion of rich Appalachian hardwood forest communities in New Brunswick have been lost to human uses. Most extant occurrences in the province consist of small remnants situated within highly fragmented agricultural landscapes. Land ownership in western Carleton County is predominantly private, with very little Crown land that can contribute to the provincial protected area network, and forest harvesting and forest conversion for agriculture represent significant ongoing threats. Non-governmental efforts are thus crucial to the conservation of remaining examples of the rare species-rich and provincially significant plant communities in this region.

Over the past 15 years, the Meduxnekeag River Association (MRA) and Nature Conservancy of Canada (NCC) have worked together to develop an outstanding Nature Preserve network along the Meduxnekeag River, with efforts recently expanding to other parts of the Meduxnekeag watershed. These organizations rely on available rare species and ecological community data to guide future land acquisitions. Data on ecological values at the scale of individual properties is however often limited, making the prioritization of conservation action more difficult. With this in mind, the AC CDC has formed a close partnership with the MRA and NCC to conduct field surveys in the region that precisely document rare species occurrences and identify high-priority sites for conservation.

With primary funding from the New Brunswick Wildlife Trust Fund, the AC CDC expanded on previous fieldwork carried out in 2013, conducting biological inventories in the Meduxnekeag Region over 16 calendar days in June, July and August 2014.

METHODS

We identified relatively intact sites potentially containing rich hardwood forest, calcareous Eastern White Cedar swamp and calcareous fen prior to fieldwork (see Figure 1), using aerial photography in combination with AC CDC rare species data and consultation with MRA and Jim Goltz (expert amateur botanist with an interest in the region) to ensure that sites had not previously been extensively covered. Between late June and early September 2015, David Mazerolle (AC CDC Botanist), Sean Blaney (AC CDC Executive Director/Senior Scientist) and Alain Belliveau (AC CDC Assistant Botanist) conducted surveys focused on documenting provincially rare plants and ecological communities. Figure 1 shows survey site locations. Coverage at three of the 19 survey sites presented in this report was funded through a New Brunswick Environmental Trust Fund (NB ETF) AC CDC project aiming to assist the provincial government in the development of a long-term wetlands management strategy and identification of provincially significant wetlands: site #2 (Marvin Lake), site #3 (Brookville) and site #13 (Rosedale). AC CDC botanists devoted 26 person days to fieldwork in the Meduxnekeag Region, 24 days of which were funded by NB WTF.

We focused field effort on areas with some potential to contain rich upland hardwood forests and calcareous wetlands, but generally made efforts to sample all habitat types within a surveyed area. Each botanist recorded a GPS track log throughout survey coverage and these are mapped in Figures 2 to 20 under “Results - Site Summaries”. We compiled full vascular plant species for each site, with the exception of site #2 (Marvin Lake) that was only briefly visited. We assigned general descriptions of species’ abundance within a surveyed area as follows: *rare* – present in small numbers at very few locations; *uncommon* – present at roughly four or five locations in small numbers or one or two locations in large numbers; *locally common* – present at several locations in larger numbers but not widespread; *fairly common* – widespread at the site but generally not in very large numbers; *common* – widespread at the site and present in large numbers. For any provincially rare species encountered during surveys (those species with provincial status ranks [S-ranks], of S1 to S3S4 and/or provincial General Status Ranks of At Risk, May Be At Risk or Sensitive; see appendices 1 and 2 for rank definitions), we recorded precise locations by GPS (accurate to 10 m or less), along with information on population size and extent, habitat and associated species. Individuals or patches separated from others by 10 m or more were generally considered distinct locations and recorded separately. Most rare species occurrences were documented by voucher specimens that will be deposited at the New Brunswick Museum in Saint John, with duplicates to the Connell Memorial Herbarium at the University of New Brunswick in Fredericton and the Agriculture and Agri-Food Canada Collection of Vascular Plants in Ottawa.

In addition to vascular plant data, incidental observations for rare or COSEWIC (Committee on the Status of Endangered Wildlife in Canada)-listed animals were recorded whenever these species were detected. Observations of non-rare birds were also recorded by Sean Blaney, with breeding evidence recorded using the methods of the Maritimes Breeding Bird Atlas (<http://www.mba-aom.ca>).

All species occurrence data has been permanently documented in the Atlantic Canada Conservation Data Centre database.

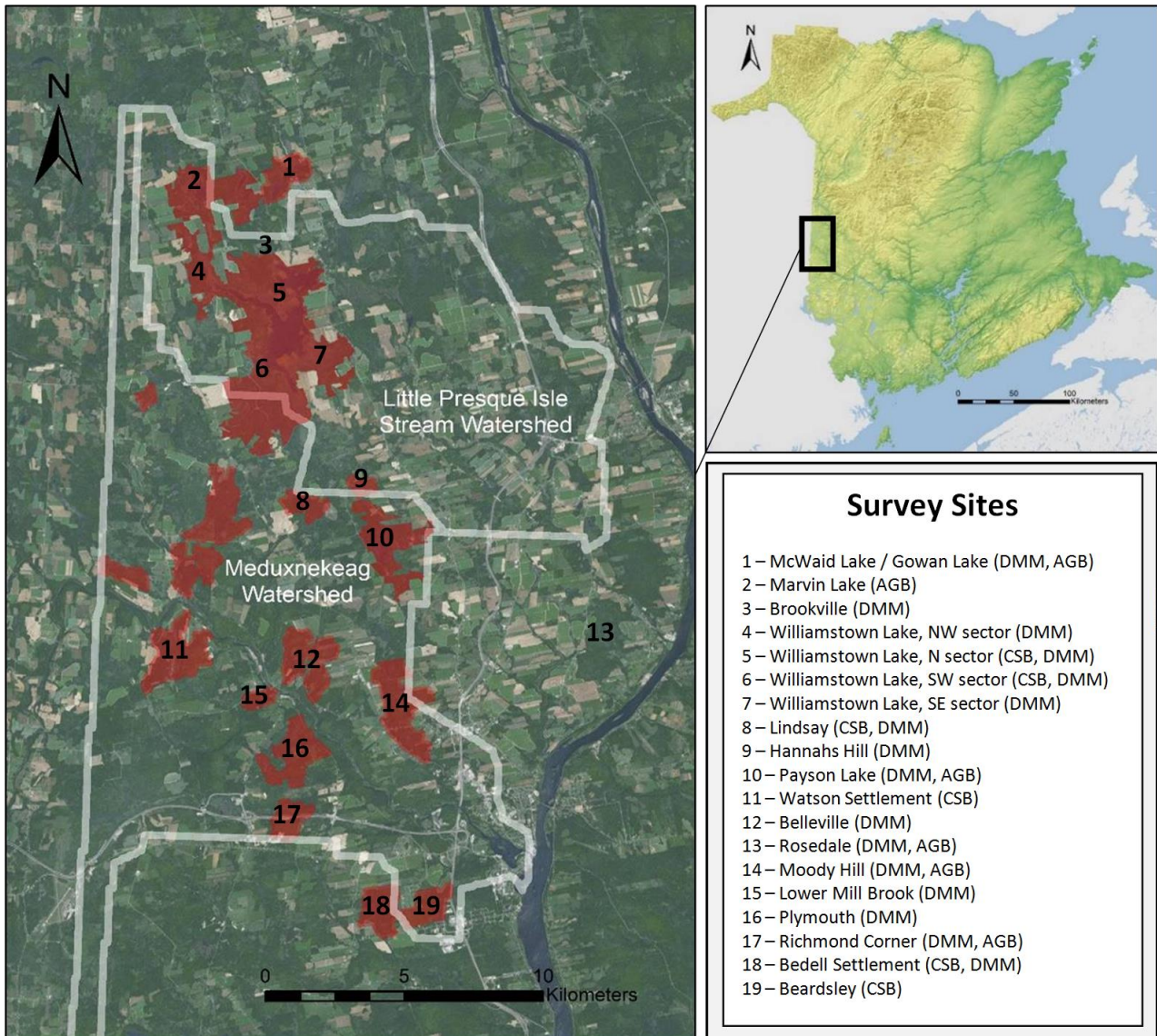


Figure 1. Areas identified as having a high potential to support rare species and plant communities (highlighted in red) and location of sites surveyed through this project. Initials in parentheses indicate observer(s): CSB = C. Sean Blaney, DMM = David M. Mazerolle, AGB = Alain G. Belliveau.

RESULTS AND DISCUSSION

Vascular Plant Species Richness

Across all surveyed sites, we documented 7,430 vascular plant records of approximately 744 different taxa, 592 of which are native to New Brunswick and 152 of which are exotic. Statistics summarizing plant diversity at each site are compiled in the “Site Summaries” section below.

Native species richness averaged 241 across all sites and ranged from 125 species at Hannahs Hill (site #9) to 328 at Lindsay (site #8). Native species counts of 250 or more taxa were recorded at eight additional sites; the southwest section of Williamstown Lake (site #6 – 316 native species), Payson Lake (site #10 – 305 native species), Bedell Settlement (site #18 – 291 native species), Watson Settlement (site #11 – 289 native species), the north section of Williamstown Lake (site #5 – 279 native species), McWaid Lake / Gowan Lake (site #1 – 269 native species), Richmond Corner (site #17 – 266 native species) and Moody Hill (site #14 – 250 native species). Exotic species richness was lowest at Rosedale (site #13), with 13 species and highest at Watson Settlement (site #11), with 66 species. The proportion of exotic species by site was relatively consistent, varying from 9% to 19% and averaging roughly 15%.

Although it provides a general indication of a site’s habitat diversity and richness, native species counts are not a robust indicator of site condition or relative conservation value. Likewise, exotic species counts do not always provide an accurate measure of the level of disturbance and ecological integrity of a site. Both metrics are influenced by factors such as duration and area of search effort and the extent to which anthropogenic habitats were traversed. Highest native and total species richness was generally documented at sites covered by two botanists, where both search effort and survey area coverage were greater, while lowest richness values were recorded at sites only covered by a single botanist for less than a full day.

Rare Vascular Plant Species

We discovered populations of 72 provincially rare vascular plant species, including 12 critically imperiled species (S1 and S1S2), 22 imperiled species (S2 and S2S3) and 38 vulnerable species (S3 and S3S4). The most important finds made through this project were the discovery of three species not previously known to be present in New Brunswick: Loose-Flowered Sedge (*Carex laxiflora*), found at Belleville (site #12), Appalachian Sedge (*Carex appalachica*), found at Plymouth (site #16) and Needle-Tipped Blue-Eyed-Grass (*Sisyrinchium montanum*), found at Watson Settlement (site #11). Loose-Flowered Sedge and Appalachian Sedge, both discovered in the understories of rich hardwood stands, are woodland species of southeastern North America mainly found in the Appalachian and Great Lakes regions which are at or near their northeastern range limits in New Brunswick. Needle-Tipped Blue-Eyed-Grass is a small perennial grass-like plant of the Iris family found along the east coast of North America from Louisiana to Maine and inland to Manitoba and North Dakota. This species, which is rare in northern Maine and apparently absent from Quebec, is believed to have been collected on the St. Francis River through WTF-funded AC CDC fieldwork in 2013, but the identification of this occurrence has not

yet been confirmed. The specimens collected on a calcareous rocky shore along the Meduxnekeag River at Watson Settlement key very well to Needle-Tipped Blue-Eyed-Grass and represent the first confirmed provincial records for the species. Another noteworthy record was the hybrid White Avens x Water Avens (*Geum canadense* x *rivale*) found at Beardsley, which appears to represent a hybrid combination never before described scientifically.

We documented 1,028 rare plant locations, with 138 locations of critically imperiled species, 307 locations of imperiled species and 583 locations of vulnerable species. These occurrences represent 194 species by survey site combinations. Numbers presented here only reflect occurrences for which we were able to provide a confident identification; specimens from an additional 47 locations were identified as probable or potential rare species occurrences. Expert review of some difficult specimens will likely result in the documentation of additional rare species occurrences at our survey sites and may slightly increase the total number of rare species discovered through this project. The rare species documented through this project, with provincial status ranks and on-site abundance, are compiled in Tables 1 and 2 and in the “Site Summaries” section below.

Rare species richness was highest in the southwestern section of Williamstown Lake (site #6; 23+ species), the northern section of Williamstown Lake (site #5; 19+ species), Moody Hill (site #14; 17+ species) and Watson Settlement (site #11; 16 species). Average rare plant species richness across all 19 survey sites was roughly 10. The highest diversity of critically imperiled and imperiled species (S1 to S2S3) was recorded at the following sites: the southwestern section of Williamstown Lake (site #6; 13+ species), Moody Hill (site #14; 9+ species), Belleville (site #12; 7 species), Plymouth (site #16; 7 species), the northern section Williamstown Lake (site #5; 6+ species) and the northwestern section of Williamstown Lake (site #4; 6 species).

Parcels of High Conservation Value

Our fieldwork identified 31 parcels of land supporting five or more provincially rare vascular plant species, representing properties of especially high conservation value. These properties are compiled below in Table 3.

Table 3. Properties identified as being of high conservation value based on the number of provincially rare plant species they support (>5). Highlighted PID numbers identify parcels which contain ten or more rare species and represent especially high conservation priorities.

Survey Site	Property ID Number	Number of Rare Plant Species
McWaid Lake / Gowan Lake (Site #1)	PID 10066314	5 species
Williamstown lake, NW sector (Site #4)	PID 10068815	9 species
	PID 10070225	8 species
Williamstown lake, N sector (Site #5)	PID 10066298	7 species
	PID 10133312	5 species
	PID 10133320	7 species
	PID 10133338	9 species
Williamstown lake, SW sector (Site #6)	PID 10067692	13 species

Survey Site	Property ID Number	Number of Rare Plant Species
	PID 10068658	13 species
	PID 10069706	10+ species
	PID 10070027	9 species
	PID 10070118	6 species
	PID 10267383	7 species
Williamstown lake, SE sector (Site #7)	PID 10070357	8+ species
	PID 10269785	5 species
Lindsay (Site #8)	PID 10198653	9 species
Payson Lake (Site #10)	PID 10048577	5 species
Watson Settlement (Site #11)	PID 10036135	7 species
	PID 10036887	6 species
Belleville (Site #12)	PID 10050532	6 species
	PID 10240356	5 species
	PID 10240380	10 species
Moody Hill (Site #14)	PID 10051522	16+ species
	PID 10052280	7+ species
	PID 10237501	6 species
Plymouth (Site #16)	PID 10036002	6+ species
	PID 10038065	5 species
	PID 10268563	5+ species
Richmond Corner (Site #17)	PID 10211480	7+ species
Beardsley (Site #19)	PID 10162642	5+ species
	PID 10223683	7+ species

Animals

We (primarily Sean Blaney) documented 309 incidental observations of 81 bird species. These observations included 34 location records for 10 provincially rare breeding birds, and 21 site occurrences for the COSEWIC-listed Olive-Sided Flycatcher (*Contopus cooperi*, Threatened), Wood Thrush (*Hylocichla mustelina*, Threatened), Bank Swallow (*Riparia riparia*, Threatened), Canada Warbler (*Wilsonia canadensis*, Threatened) and Eastern Wood-Pee-wee (*Contopus virens*, Special Concern). Rare animal observations are included in Tables 1 and 2 as well as in the “Site Summaries” section below.

PROJECT CONTRIBUTIONS

The project was highly successful in identifying properties that should be priorities for conservation action by organizations like the Meduxnekeag River Association and the Nature Conservancy of Canada and by the provincial government. We documented rare species on more than 120 properties, and found 31 properties with more than five rare species and four properties with more than ten rare species. This project along with similar Nature Conservancy of Canada-funded fieldwork in 2013, has significantly improved understanding of the present status and distribution of intact Appalachian hardwood forest and rich calcareous wetlands, both of which

represent ecological communities of conservation concern. Rare species occurrence data collected in surveyed swamps and fens will also be available to assist the provincial government in the development of a long-term wetlands management strategy and the identification of provincially significant wetlands.

On a provincial scale, the increased understanding of rare species' status generated by this project will help inform land use decisions related to those species' habitats throughout New Brunswick, allowing scarce conservation resources to be focused where they are most needed. All data collected has been permanently documented via incorporation into the AC CDC's GIS-linked database, where it will be maintained and will be provided in response to any area- or species-specific data request.

REFERENCES

- Atlantic Canada Conservation Data Centre (AC CDC). 2015. Digital database of rare species locations for New Brunswick. Atlantic Canada Conservation Data Centre, Sackville, NB.
- Fyffe, L.R. and D.M. Richard. 2007. Lithological map of New Brunswick. New Brunswick Department of Natural Resources: Minerals, Policy and Planning Division: Plate 2007-18.
- Hinds, H.R. 2000. Flora of New Brunswick, 2nd Edition. Department of Biology, University of New Brunswick, Fredericton.
- MacDougall, A. and J. Loo. 1998. Natural history of the Saint John River Valley Hardwood Forest of western New Brunswick and northeastern Maine. Information report M-X-2904E. Canadian Forest Service, Atlantic Forestry Centre, Fredericton, NB. 62 pp.
- MacDougall, A.S. 1997. Appalachian hardwood forest conservation stewardship project: phase I summary report. Nature Trust of New Brunswick, Fredericton, New Brunswick (limited distribution).

Table 1. Provincially rare vascular plant and animal species documented during surveys, with provincial status ranks (S-rank and General Status Rank [GS Rank], see appendices 1 and 2 for definitions) and numbers of locations (defined as individuals or groups of individuals separated from others by >10m) documented on each property.

SURVEY AREA	COMMON NAME	SCIENTIFIC NAME	NB S-Rank	NB GS Rank	PID #	# Loc.
McWaid Lake / Gowan Lake (Site #1)	Bearded Sedge	<i>Carex comosa</i>	S1	May Be At Risk	10066314	1
	Swamp Fly Honeysuckle	<i>Lonicera oblongifolia</i>	S2	Sensitive	10065761	1
	Labrador Bedstraw	<i>Galium labradoricum</i>	S2S3	Sensitive	10066314	1
					10070415	4
					10071074	2
	White-stemmed Pondweed	<i>Potamogeton praelongus</i>	S2S3	Secure	10066314	1
					10071074	2
	Showy Lady's-Slipper	<i>Cypripedium reginae</i>	S3	Sensitive	10065761	1
					10071074	2
Loesel's Twayblade	<i>Liparis loeselii</i>	S3	Secure	10066314	1	
				10070415	1	
Siberian Water Milfoil	<i>Myriophyllum sibiricum</i>	S3	Secure	10066314	1	
Gmelin's Water Buttercup	<i>Ranunculus gmelinii</i>	S3	Secure	10070415	7	
Boreal Aster	<i>Symphyotrichum boreale</i>	S3	Sensitive	10070415	12	
Marvin Lake (Site #2)	Northern Bog Sedge	<i>Carex gynocrates</i>	S2	Sensitive	ROW, at edge of 10069839	1
					10069805	4
Brookville (Site #3)	Swamp Fly Honeysuckle	<i>Lonicera oblongifolia</i>	S2	Sensitive	10066538	1
	Hooked Agrimony	<i>Agrimonia gryposepala</i>	S3	Secure	10069763	1
	Gmelin's Water Buttercup	<i>Ranunculus gmelinii</i>	S3	Secure	10262368	1
Williamstown lake, NW sector (Site #4)	Narrow-leaved Beaked Sedge	<i>Carex rostrata</i>	S1S2	Sensitive	10068815	1
	Northern Bog Sedge	<i>Carex gynocrates</i>	S2	Sensitive	10070225	1
					10068815	7
					ROW, at edge of 10070225	1
	Swamp Fly Honeysuckle	<i>Lonicera oblongifolia</i>	S2	Sensitive	10068815	9
					10070225	1
	Labrador Bedstraw	<i>Galium labradoricum</i>	S2S3	Sensitive	10068815	6
					10070225	4
	Swamp Valerian	<i>Valeriana uliginosa</i>	S2S3	Sensitive	10070225	4
	Bog Birch	<i>Betula pumila</i>	S3	Secure	10068815	7
					10070225	1
	Showy Lady's-Slipper	<i>Cypripedium reginae</i>	S3	Sensitive	10068815	1
					10070225	5
Downy Willowherb	<i>Epilobium strictum</i>	S3	Secure	10068815	1	
				10070225	6	
Small Yellow Pond-lily	<i>Nuphar lutea ssp. pumila</i>	S3	Secure	10068815	1	
Blunt-Leaved Pondweed	<i>Potamogeton obtusifolius</i>	S3	Secure	10070225	1	
				10237204	1	
Bog Willow	<i>Salix pedicellaris</i>	S3	Secure	10068815	1	
Williamstown lake, N sector (Site #5)	Butternut	<i>Juglans cinerea</i>	S1	At Risk	10072130	1
	Bearded Sedge	<i>Carex comosa</i>	S1	May Be At Risk	10066298	1
	Narrow-leaved Beaked Sedge	<i>Carex rostrata</i>	S1S2	Sensitive	2, near edge of 10133338	1
					10263556	1
	Prairie Sedge	<i>Carex prairea</i>	S2	Sensitive	10133338	2
					10133320	1
					10066215	1
Slender Cottongrass	<i>Eriophorum gracile</i>	S2	May Be At Risk	10133338	3	
				10133320	1	

SURVEY AREA	COMMON NAME	SCIENTIFIC NAME	NB S-Rank	NB GS Rank	PID #	# Loc.
					2, near edge of 10071249	1
	Swamp Fly Honeysuckle	<i>Lonicera oblongifolia</i>	S2	Sensitive	10133312	3
					10133320	2
					10066298	1
	Sage Willow	<i>Salix candida</i>	S2	Sensitive	10066215	4
	Labrador Bedstraw	<i>Galium labradoricum</i>	S2S3	Sensitive	10133312	4
					10133320	2
					10068583	1
					10066298	1
	White-stemmed Pondweed	<i>Potamogeton praelongus</i>	S2S3	Secure	2, near edge of 10072130	2
	Creeping Sedge	<i>Carex chordorrhiza</i>	S3	Secure	10133338	15
					10133312	1
					10066298	1
					10066215	3
					ROW, partially in 10066215	1
					10133320	1
	Coastal Sedge	<i>Carex exilis</i>	S3	Secure	10133338	2
	Showy Lady's-Slipper	<i>Cypripedium reginae</i>	S3	Sensitive	10133312	1
					10066298	1
	Downy Willowherb	<i>Epilobium strictum</i>	S3	Secure	10133338	1
	Whorled Water Milfoil	<i>Myriophyllum verticillatum</i>	S3	Secure	10133338	1
	Blunt-Leaved Pondweed	<i>Potamogeton obtusifolius</i>	S3	Secure	2, near edge of 10072130	2
					2	2
					2, near edge of 10133338	2
					2 (open water) 10133320	1
	Brown Beakrush	<i>Rhynchospora fusca</i>	S3	Secure	10133338	2
	Bog Willow	<i>Salix pedicellaris</i>	S3	Secure	10133338	1
	Boreal Aster	<i>Symphyotrichum boreale</i>	S3	Sensitive	10133312	4
					10133320	9
					10066215	1
					10068583	4
					10066298	1
	Bald Eagle	<i>Haliaeetus leucocephalus</i>	S3B	At Risk	2, near edge of 10266724	1
	Smooth Twig Rush	<i>Cladium mariscoides</i>	S3S4	Secure	10133338	10
					10066298	2
					10133320	4
	Eastern Kingbird	<i>Tyrannus tyrannus</i>	S3S4B	Sensitive	10072130	1
					10066215	1
					2, near edge of 10065043	1
					10133338	1
	-	<i>Carex diandra / prairea</i>	-	-	10133338	1
	-	<i>Myriophyllum cf. sibiricum</i>	-	-	2, near edge of 10133338	1
	Bearded Sedge	<i>Carex comosa</i>	S1	May Be At Risk	10069706	1

SURVEY AREA	COMMON NAME	SCIENTIFIC NAME	NB S-Rank	NB GS Rank	PID #	# Loc.
Williamstown lake, SW sector (Site #6)					10067692	1
	White Adder's-Mouth	<i>Malaxis brachypoda</i>	S1	May Be At Risk	10068658	1
	Narrow-leaved Beaked Sedge	<i>Carex rostrata</i>	S1S2	Sensitive	10267383	1
					10067692	1
	Northern Bog Sedge	<i>Carex gynocrates</i>	S2	Sensitive	10068658	3
					10070027	2
	Livid Sedge	<i>Carex livida var. radicaulis</i>	S2	Sensitive	10069706	1
					10070118	1
	Prairie Sedge	<i>Carex prairea</i>	S2	Sensitive	10069706	1
					10267383	6
					10068658	2
	Sparse-Flowered Sedge	<i>Carex tenuiflora</i>	S2	May Be At Risk	10069706	1
					10067692	2
					10068658	4
	Slender Cottongrass	<i>Eriophorum gracile</i>	S2	May Be At Risk	10070118	2
					10067692	1
					10070027	1
					10070357	2
					10070118	2
	Swamp Fly Honeysuckle	<i>Lonicera oblongifolia</i>	S2	Sensitive	10069706	8
					10267383	9
					10067692	8
					10068658	6
					10065076	1
					10070027	4
	Sage Willow	<i>Salix candida</i>	S2	Sensitive	10267383	2
					10067692	1
					10069706	4
	Labrador Bedstraw	<i>Galium labradoricum</i>	S2S3	Sensitive	10067692	5
					10068658	8
					10070027	2
	Swamp Valerian	<i>Valeriana uliginosa</i>	S2S3	Sensitive	10067692	1
					10068658	4
					10070027	3
	Bog Birch	<i>Betula pumila</i>	S3	Secure	10069706	2
					10067692	1
	Least Moonwort	<i>Botrychium simplex</i>	S3	Secure	10068658	1
					2, near edge of 10069706 and 10070357	2
	Creeping Sedge	<i>Carex chordorrhiza</i>	S3	Secure	10070118	3
					10069706	2
					10267383	1
				10067692	2	
				10070027	1	
				10065076	1	
Coastal Sedge	<i>Carex exilis</i>	S3	Secure	10068658	1	
Showy Lady's-Slipper	<i>Cypripedium reginae</i>	S3	Sensitive	10067692	7	
				10068658	6	
				10068658	1	
Downy Willowherb	<i>Epilobium strictum</i>	S3	Secure	10065076	1	
				10067692	1	
				10070027	4	
White Fringed Orchid	<i>Platanthera blephariglottis</i>	S3	Secure	10070357	1	
Boreal Aster	<i>Symphotrichum boreale</i>	S3	Sensitive	10069706	5	

SURVEY AREA	COMMON NAME	SCIENTIFIC NAME	NB S-Rank	NB GS Rank	PID #	# Loc.
					10267383	7
					10067692	3
					10065076	2
					10068658	10
					10070118	3
					2, near edge of 10067692	1
					10070027	1
	Great Crested Flycatcher	<i>Myiarchus crinitus</i>	S3B	Sensitive	10068658	2
	Smooth Twig Rush	<i>Cladium mariscoides</i>	S3S4	Secure	2, near edge of 10070357 and 10070118	1
					10070118	2
					10069706	2
					10267383	2
					10068658	1
					10070027	1
Olive-sided Flycatcher	<i>Contopus cooperi</i>	S3S4B	At Risk	10070027	1	
Canada Warbler	<i>Wilsonia canadensis</i>	S3S4B	At Risk	10068658	3	
				10070027	2	
Evening Grosbeak	<i>Coccothraustes vespertinus</i>	S3S4B,S4S5N	Sensitive	10068658	3	
Williamstown lake, SE sector (Site #7)	Sparse-Flowered Sedge	<i>Carex tenuiflora</i>	S2	May Be At Risk	10070357	3
					10269785	3
	Eastern Leatherwood	<i>Dirca palustris</i>	S2	May Be At Risk	10065902	1
					10211258	1
	Swamp Fly Honeysuckle	<i>Lonicera oblongifolia</i>	S2	Sensitive	10210136	1
					10067239	1
					10070357	3
					10269785	6
	Labrador Bedstraw	<i>Galium labradoricum</i>	S2S3	Sensitive	10070357	7
					10269785	3
	Northern Maidenhair Fern	<i>Adiantum pedatum</i>	S3	Secure	10211258	1
	Hooked Agrimony	<i>Agrimonia gryposepala</i>	S3	Secure	10211266	1
	Creeping Sedge	<i>Carex chordorrhiza</i>	S3	Secure	10070357	7
					2, near edge of 10070357 and 10269785	1
					10269785	3
	Showy Lady's-Slipper	<i>Cypripedium reginae</i>	S3	Sensitive	10067239	2
					10070357	1
	Dwarf Clearweed	<i>Pilea pumila</i>	S3	Secure	10211266	3
	Boreal Aster	<i>Symphotrichum boreale</i>	S3	Sensitive	10070357	2
2, near edge of 10070357 and 10269785					1	
10269785					7	
Smooth Twig Rush	<i>Cladium mariscoides</i>	S3S4	Secure	10070357	4	
				2, near edge of 10070357 and 10269785	2	

SURVEY AREA	COMMON NAME	SCIENTIFIC NAME	NB S-Rank	NB GS Rank	PID #	# Loc.
Lindsay (Site #8)	Prairie Sedge	<i>Carex prairea</i>	S2	Sensitive	10198653	5
	Eastern Leatherwood	<i>Dirca palustris</i>	S2	May Be At Risk	10152940	1
	Swamp Fly Honeysuckle	<i>Lonicera oblongifolia</i>	S2	Sensitive	10152940	2
					10198653	5
	Labrador Bedstraw	<i>Galium labradoricum</i>	S2S3	Sensitive	10152940	2
					10198653	4
	Swamp Valerian	<i>Valeriana uliginosa</i>	S2S3	Sensitive	10198653	9
	Hooked Agrimony	<i>Agrimonia gryposepala</i>	S3	Secure	10046902	1
					10223576	1
	Coastal Sedge	<i>Carex exilis</i>	S3	Secure	10198653	1
	Tuckerman's Sedge	<i>Carex tuckermanii</i>	S3	Secure	10050276	1
	Showy Lady's-Slipper	<i>Cypripedium reginae</i>	S3	Sensitive	10198653	7
	Downy Willowherb	<i>Epilobium strictum</i>	S3	Secure	10050276	2
	Loesel's Twayblade	<i>Liparis loeselii</i>	S3	Secure	10198653	2
	Boreal Aster	<i>Symphotrichum boreale</i>	S3	Sensitive	10046902	1
					10198653	3
	Northern Meadow-rue	<i>Thalictrum venulosum</i>	S3	Secure	10223576	1
Great Crested Flycatcher	<i>Myiarchus crinitus</i>	S3B	Sensitive	10152940	1	
Smooth Twig Rush	<i>Cladium mariscoides</i>	S3S4	Secure	10198653	1	
-	<i>Scirpus atrovirens (s.l.)</i>	-	-	10050276	1	
				10152940	1	
Hannahs Hill (Site #9)	Northern Maidenhair Fern	<i>Adiantum pedatum</i>	S3	Secure	10048049	1
	Hooked Agrimony	<i>Agrimonia gryposepala</i>	S3	Secure	10151371	1
					10048049	1
	Large Toothwort	<i>Cardamine maxima</i>	S3	Secure	10048049	2
Goldie's Wood Fern	<i>Dryopteris goldiana</i>	S3	Sensitive	10048049	3	
Payson Lake (Site #10)	Butternut	<i>Juglans cinerea</i>	S1	At Risk	10051019	3
					10049435	1
					ROW, at edge of 10049435	1
					ROW, at edge of 10211613	1
					10048635	1
					10048577	1
					10049583	1
					10055903	1
					10195774	2
					10204550	1
	10211613	1				
	10223006	1				
	Narrow-leaved Beaked Sedge	<i>Carex rostrata</i>	S1S2	Sensitive	10273266	2
	Northern Bog Sedge	<i>Carex gynocrates</i>	S2	Sensitive	10048577	2
	Eastern Leatherwood	<i>Dirca palustris</i>	S2	May Be At Risk	10051472	1
	Swamp Valerian	<i>Valeriana uliginosa</i>	S2S3	Sensitive	10048577	2
	Hooked Agrimony	<i>Agrimonia gryposepala</i>	S3	Secure	10048064	1
					10048577	1
					10049583	1
10055903					1	
Showy Lady's-Slipper	<i>Cypripedium reginae</i>	S3	Sensitive	10195774	1	
				10048577	1	
				10051001	1	
Matted Spikerush	<i>Eleocharis intermedia</i>	S3	Secure	10048635	1	
Small Yellow Pond-lily	<i>Nuphar lutea ssp. pumila</i>	S3	Secure	10273266	1	
Dwarf Clearweed	<i>Pilea pumila</i>	S3	Secure	10048064	2	

SURVEY AREA	COMMON NAME	SCIENTIFIC NAME	NB S-Rank	NB GS Rank	PID #	# Loc.
	Boreal Aster	<i>Symphotrichum boreale</i>	S3	Sensitive	10051472	3
					10055903	1
					10195774	1
					2, near edge of 10273266	1
					10055911	1
Watson Settlement (Site #11)	Needle-Tipped Blue-Eyed-Grass	<i>Sisyrinchium mucronatum</i>	S1?	Undetermined	10036887	2
	Butternut	<i>Juglans cinerea</i>	S1	At Risk	10036879	4
					10175644	2
					10035434	2
					10237766	1
					10036093	1
					10175677	1
	Eastern Leatherwood	<i>Dirca palustris</i>	S2	May Be At Risk	10036093	2
	One-Flowered Broomrape	<i>Orobanche uniflora</i>	S2	Sensitive	10036887	1
	Seneca Snakeroot	<i>Polygala senega</i>	S2	Sensitive	10036135	2
					10036887	1
	Northern Maidenhair Fern	<i>Adiantum pedatum</i>	S3	Secure	10036796	1
	Hooked Agrimony	<i>Agrimonia gryposepala</i>	S3	Secure	10175644	1
					10175636	3
					10237766	1
	Hairlike Sedge	<i>Carex capillaris</i>	S3	Secure	10036135	3
	Bristle-Leaved Sedge	<i>Carex eburnea</i>	S3	Secure	10036135	2
					10036887	2
	Rosy Sedge	<i>Carex rosea</i>	S3	Secure	10237766	1
					10175669	1
	Goldie's Wood Fern	<i>Dryopteris goldiana</i>	S3	Sensitive	10237766	1
					10175685	3
	Downy Willowherb	<i>Epilobium strictum</i>	S3	Secure	10175685	5
	Hyssop-Leaved Fleabane	<i>Erigeron hyssopifolius</i>	S3	Secure	10036135	1
					10036887	1
	Apline Sweet-Vetch	<i>Hedysarum alpinum</i>	S3	Secure	10036135	2
10036887					1	
Soft-Leaf Muhly	<i>Muhlenbergia richardsonis</i>	S3	Secure	10036135	1	
Northern Bog Violet	<i>Viola nephrophylla</i>	S3	Secure	10036135	1	
Great Crested Flycatcher	<i>Myiarchus crinitus</i>	S3B	Sensitive	10036093	1	
Scarlet Tanager	<i>Piranga olivacea</i>	S3S4B	Secure	10036879	1	
Canada Warbler	<i>Wilsonia canadensis</i>	S3S4B	At Risk	10035434	1	
				10175685	1	
				10227239	1	
Belleville (Site #12)	Butternut	<i>Juglans cinerea</i>	S1	At Risk	10048817	1
					10240356	1
					10139202	1
	Loose-Flowered Sedge	<i>Carex laxiflora</i>	S1?	Undetermined	10240380	1
	Spreading Wild Rye	<i>Elymus hystrix var. bigeloviana</i>	S1	May Be At Risk	10240380	3
	Eastern Leatherwood	<i>Dirca palustris</i>	S2	May Be At Risk	10240380	3
	Seneca Snakeroot	<i>Polygala senega</i>	S2	Sensitive	10139202	1
					10240356	2
	Orange-fruited Tinker's Weed	<i>Triosteum aurantiacum</i>	S2	Sensitive	10050755	2
					10240356	1
	Plantain-Leaved Sedge	<i>Carex plantaginea</i>	S2S3	Sensitive	10050532	2
					10240380	9
10240356					1	
Northern Maidenhair Fern	<i>Adiantum pedatum</i>	S3	Secure	10050532	6	

SURVEY AREA	COMMON NAME	SCIENTIFIC NAME	NB S-Rank	NB GS Rank	PID #	# Loc.
	Hooked Agrimony	<i>Agrimonia gryposepala</i>	S3	Secure	10240380	28
					10240356	2
					10048924	1
					10050532	1
					10240398	1
					10244994	1
	Large Toothwort	<i>Cardamine maxima</i>	S3	Secure	10050532	1
					10240380	1
	Rosy Sedge	<i>Carex rosea</i>	S3	Secure	10048924	3
					10050532	3
					10240398	1
					10048627	1
					10244994	1
					10048817	1
					10139202	1
	Goldie's Wood Fern	<i>Dryopteris goldiana</i>	S3	Sensitive	10050532	1
					10240380	24
	Black Raspberry	<i>Rubus occidentalis</i>	S3	Secure	10240380	5
	Canada Warbler	<i>Wilsonia canadensis</i>	S3S4B	At Risk	10048874	1
	-	<i>Epilobium ciliatum / coloratum</i>	-	-	10048924	1
-	<i>Carex cf. rosea</i>	-	-	10139202	1	
-	<i>Agrimonia cf. gryposepala</i>	-	-	10240356	1	
				10050532	1	
				10048817	1	
				10240380	2	
				10048874	2	
Rosedale (Site #13)	Gmelin's Water Buttercup	<i>Ranunculus gmelinii</i>	S3	Secure	10047173	1
Moody Hill (Site #14)	Wild Comfrey	<i>Cynoglossum virginianum var. boreale</i>	S1	May Be At Risk	10051522	1
	Spreading Wild Rye	<i>Elymus hystrix var. bigeloviana</i>	S1	May Be At Risk	10051522	1
	Butternut	<i>Juglans cinerea</i>	S1	At Risk	ROW, at edge of 10052280	1
					10237501	5
					10131811	1
					10051522	19
	Large-Fruited Sanicle	<i>Sanicula trifoliata</i>	S1	May Be At Risk	10051522	1
	Canada Violet	<i>Viola canadensis</i>	S1S2	May Be At Risk	10051522	34
	Pubescent Sedge	<i>Carex hirtifolia</i>	S2	Sensitive	10052280	1
					10051522	13
	Showy Orchis	<i>Galearis spectabilis</i>	S2	May Be At Risk	10052926	2
					10052280	2
	American Lopseed	<i>Phryma leptostachya</i>	S2	Sensitive	10051522	5
	Clustered Sanicle	<i>Sanicula odorata</i>	S2	May Be At Risk	10051522	1
	Northern Maidenhair Fern	<i>Adiantum pedatum</i>	S3	Secure	10052280	8
10051522					10	
10237501					2	
Hooked Agrimony	<i>Agrimonia gryposepala</i>	S3	Secure	10052280	1	
				10131779	2	
				10051522	12	
				10131761	2	
Cut-Leaved Moonwort	<i>Botrychium dissectum</i>	S3	Secure	10237501	2	
				10051522	1	

SURVEY AREA	COMMON NAME	SCIENTIFIC NAME	NB S-Rank	NB GS Rank	PID #	# Loc.
	Necklace Spike Sedge	<i>Carex ormostachya</i>	S3	Secure	10052280	1
					10051522	1
	Rosy Sedge	<i>Carex rosea</i>	S3	Secure	10052280	2
					10131811	2
					10051522	5
					10052926	2
					10237501	6
					10240372	2
	Goldie's Wood Fern	<i>Dryopteris goldiana</i>	S3	Sensitive	10052926	6
					10052280	12
					10237501	4
					10047587	1
					10051522	1
Dwarf Clearweed	<i>Pilea pumila</i>	S3	Secure	10051522	2	
				10048692	1	
Black Raspberry	<i>Rubus occidentalis</i>	S3	Secure	10237501	5	
				10051522	7	
-	<i>Cypripedium parviflorum</i> cf. <i>var. makasin</i>	-	-	10051522	5	
-	<i>Cypripedium reginae</i> / <i>parviflorum</i>	-	-	10052280	1	
				10131761	1	
Lower Mill Brook (Site #15)	Long-beaked Sedge	<i>Carex sprengelii</i>	S2	Sensitive	10038362	1
	Orange-fruited Tinker's Weed	<i>Triosteum aurantiacum</i>	S2	Sensitive	10035772	1
	Appalachian Polypody	<i>Polypodium appalachianum</i>	S3	Secure	10036127	1
Plymouth (Site #16)	Butternut	<i>Juglans cinerea</i>	S1	At Risk	10036002	3
					10268563	5
	Appalachian Sedge	<i>Carex appalachica</i>	S1?	Undetermined	10264455	1
	Pubescent Sedge	<i>Carex hirtifolia</i>	S2	Sensitive	10036002	1
	American Lopseed	<i>Phryma leptostachya</i>	S2	Sensitive	10268563	2
	Hare Figwort	<i>Scrophularia lanceolata</i>	S2	Sensitive	10036002	1
					10038065	1
	Orange-fruited Tinker's Weed	<i>Triosteum aurantiacum</i>	S2	Sensitive	10036002	1
					10038065	1
	Plantain-Leaved Sedge	<i>Carex plantaginea</i>	S2S3	Sensitive	10038065	3
					10264455	2
	Northern Maidenhair Fern	<i>Adiantum pedatum</i>	S3	Secure	ROW, at edge of 10264455	1
					10268563	1
					10038065	1
					10264455	1
	Hooked Agrimony	<i>Agrimonia gryposepala</i>	S3	Secure	10264455	3
					10036002	1
					10268563	4
					10175446	1
					10175453	1
	Large Toothwort	<i>Cardamine maxima</i>	S3	Secure	10038065	3
	Rosy Sedge	<i>Carex rosea</i>	S3	Secure	10036002	3
					10268563	7
10038065					3	
Downy Willowherb	<i>Epilobium strictum</i>	S3	Secure	10035111	3	
				10035798	1	
				10175453	3	
Black Raspberry	<i>Rubus occidentalis</i>	S3	Secure	ROW, at edge of 10038065	1	
-	<i>Galium trifidum</i> / <i>labradoricum</i>	-	-	10035111	1	

SURVEY AREA	COMMON NAME	SCIENTIFIC NAME	NB S-Rank	NB GS Rank	PID #	# Loc.
	-	<i>Carex cf. rosea</i>	-	-	10268563	2
	-	<i>Carex cf. tenera</i>	-	-	10268563	2
Richmond Corner (Site #17)	Butternut	<i>Juglans cinerea</i>	S1	At Risk	10251486	2
	Pale Jewelweed	<i>Impatiens pallida</i>	S2	May Be At Risk	10211480	1
	American Lopseed	<i>Phryma leptostachya</i>	S2	Sensitive	10211480	8
	Hooked Agrimony	<i>Agrimonia gryposepala</i>	S3	Secure	10035293	2
					10211480	1
	Necklace Spike Sedge	<i>Carex ormostachya</i>	S3	Secure	10211480	1
	Goldie's Wood Fern	<i>Dryopteris goldiana</i>	S3	Sensitive	10035293	2
					10211480	1
	Matted Spikerush	<i>Eleocharis intermedia</i>	S3	Secure	10251486	1
Dwarf Clearweed	<i>Pilea pumila</i>	S3	Secure	10211480	2	
Black Raspberry	<i>Rubus occidentalis</i>	S3	Secure	10211480	1	
Bedell Settlement (Site #18)	Butternut	<i>Juglans cinerea</i>	S1	At Risk	10074458	3
					10239911	5
					ROW, at edge of 10075836	1
					10073427	1
					10075836	1
	Wood Thrush	<i>Hylocichla mustelina</i>	S1S2B	May Be At Risk	10181949	1
	Northern Maidenhair Fern	<i>Adiantum pedatum</i>	S3	Secure	10162626	1
					10196145	2
	Hooked Agrimony	<i>Agrimonia gryposepala</i>	S3	Secure	10169134	2
	Showy Lady's-Slipper	<i>Cypripedium reginae</i>	S3	Sensitive	10196145	2
	Downy Willowherb	<i>Epilobium strictum</i>	S3	Secure	10075836	1
	Tall Cinquefoil	<i>Potentilla arguta</i>	S3S4	Secure	10169134	1
	Great Crested Flycatcher	<i>Myiarchus crinitus</i>	S3B	Sensitive	10075836	1
	Canada Warbler	<i>Wilsonia canadensis</i>	S3S4B	At Risk	10073633	1
-	<i>Scirpus atrovirens (s.l.)</i>	-	-	10075836	1	
				10073427	1	
				ROW, at edge of 10075836	1	
-	<i>Agrimonia striata / gryposepala</i>	-	-	10210201	1	
Beardsley (Site #19)	Thin-leaved Sedge	<i>Carex cephaloidea</i>	S1	May Be At Risk	10162642	2
					10223683	1
	Butternut	<i>Juglans cinerea</i>	S1	At Risk	10223683	3
	Northern Maidenhair Fern	<i>Adiantum pedatum</i>	S3	Secure	10223683	1
	Hooked Agrimony	<i>Agrimonia gryposepala</i>	S3	Secure	10162642	2
					10223683	1
	Large Toothwort	<i>Cardamine maxima</i>	S3	Secure	10223683	4
	Rosy Sedge	<i>Carex rosea</i>	S3	Secure	10162642	1
					10223683	4
	Showy Lady's-Slipper	<i>Cypripedium reginae</i>	S3	Sensitive	10223683	2
	Downy Willowherb	<i>Epilobium strictum</i>	S3	Secure	10162642	1
	Great Crested Flycatcher	<i>Myiarchus crinitus</i>	S3B	Sensitive	10072387	1
	Tall Cinquefoil	<i>Potentilla arguta</i>	S3S4	Secure	10162642	1
	Canada Warbler	<i>Wilsonia canadensis</i>	S3S4B	At Risk	10072387	1
10162642					1	
10223683					1	
-	<i>Galium cf. brevipes</i>	-	-	10162642	1	
				10223683	1	

Table 2. Properties supporting rare species and significant communities, listed by site and property identification number (PID#), with number of records of each species or community by property. Note that records for bird species were generally recorded at the location at which the species was heard or seen rather than the precise location where the bird occurred.

Survey Area	Parcel ID #	Common Name	Scientific Name	NB S-Rank	NB GS-Rank	# of loc
McWaid Lake / Gowan Lake (Site #1)	10065761	Swamp Fly Honeysuckle	<i>Lonicera oblongifolia</i>	S2	Sensitive	1
		Showy Lady's-Slipper	<i>Cypripedium reginae</i>	S3	Sensitive	1
McWaid Lake / Gowan Lake (Site #1)	10066314	Bearded Sedge	<i>Carex comosa</i>	S1	May Be At Risk	1
		Labrador Bedstraw	<i>Galium labradoricum</i>	S2S3	Sensitive	1
		White-stemmed Pondweed	<i>Potamogeton praelongus</i>	S2S3	Secure	1
		Loesel's Twayblade	<i>Liparis loeselii</i>	S3	Secure	1
		Siberian Water Milfoil	<i>Myriophyllum sibiricum</i>	S3	Secure	1
McWaid Lake / Gowan Lake (Site #1)	10070415	Labrador Bedstraw	<i>Galium labradoricum</i>	S2S3	Sensitive	4
		Loesel's Twayblade	<i>Liparis loeselii</i>	S3	Secure	1
		Gmelin's Water Buttercup	<i>Ranunculus gmelinii</i>	S3	Secure	7
		Boreal Aster	<i>Symphyotrichum boreale</i>	S3	Sensitive	12
McWaid Lake / Gowan Lake (Site #1)	10071074	Labrador Bedstraw	<i>Galium labradoricum</i>	S2S3	Sensitive	2
		White-stemmed Pondweed	<i>Potamogeton praelongus</i>	S2S3	Secure	2
		Showy Lady's-Slipper	<i>Cypripedium reginae</i>	S3	Sensitive	2
Marvin Lake (Site #2)	10069805	Northern Bog Sedge	<i>Carex gynocrates</i>	S2	Sensitive	4
		Showy Lady's-Slipper	<i>Cypripedium reginae</i>	S3	Sensitive	1
Marvin Lake (Site #2)	ROW, at edge of 10069839	Northern Bog Sedge	<i>Carex gynocrates</i>	S2	Sensitive	1
Brookville (Site #3)	10066538	Swamp Fly Honeysuckle	<i>Lonicera oblongifolia</i>	S2	Sensitive	1
Brookville (Site #3)	10069763	Hooked Agrimony	<i>Agrimonia gryposepala</i>	S3	Secure	1
Brookville (Site #3)	10262368	Gmelin's Water Buttercup	<i>Ranunculus gmelinii</i>	S3	Secure	1
Williamstown lake, NW sector (Site #4)	10068815	Narrow-leaved Beaked Sedge	<i>Carex rostrata</i>	S1S2	Sensitive	1
		Prairie Sedge	<i>Carex prairea</i>	S2	Sensitive	7
		Swamp Fly Honeysuckle	<i>Lonicera oblongifolia</i>	S2	Sensitive	9
		Labrador Bedstraw	<i>Galium labradoricum</i>	S2S3	Sensitive	6
		Bog Birch	<i>Betula pumila</i>	S3	Secure	7
		Showy Lady's-Slipper	<i>Cypripedium reginae</i>	S3	Sensitive	1
		Downy Willowherb	<i>Epilobium strictum</i>	S3	Secure	1
		Small Yellow Pond-lily	<i>Nuphar lutea ssp. pumila</i>	S3	Secure	1
Williamstown lake, NW sector (Site #4)	10070225	Bog Willow	<i>Salix pedicellaris</i>	S3	Secure	1
		Northern Bog Sedge	<i>Carex gynocrates</i>	S2	Sensitive	1
		Swamp Fly Honeysuckle	<i>Lonicera oblongifolia</i>	S2	Sensitive	1
		Labrador Bedstraw	<i>Galium labradoricum</i>	S2S3	Sensitive	4
		Swamp Valerian	<i>Valeriana uliginosa</i>	S2S3	Sensitive	4

Survey Area	Parcel ID #	Common Name	Scientific Name	NB S-Rank	NB GS-Rank	# of loc
		Bog Birch	<i>Betula pumila</i>	S3	Secure	1
		Showy Lady's-Slipper	<i>Cypripedium reginae</i>	S3	Sensitive	5
		Downy Willowherb	<i>Epilobium strictum</i>	S3	Secure	6
		Blunt-Leaved Pondweed	<i>Potamogeton obtusifolius</i>	S3	Secure	1
Williamstown lake, NW sector (Site #4)	ROW, at edge of 10070225	Prairie Sedge	<i>Carex prairea</i>	S2	Sensitive	1
Williamstown lake, NW sector (Site #4)	10237204	Small Yellow Pond-lily	<i>Nuphar lutea ssp. pumila</i>	S3	Secure	1
Williamstown lake, N sector (Site #5)	10066215	Prairie Sedge	<i>Carex prairea</i>	S2	Sensitive	1
		Sage Willow	<i>Salix candida</i>	S2	Sensitive	4
		Creeping Sedge	<i>Carex chordorrhiza</i>	S3	Secure	3
		Boreal Aster	<i>Symphotrichum boreale</i>	S3	Sensitive	1
		Eastern Kingbird	<i>Tyrannus tyrannus</i>	S3S4B	Sensitive	1
Williamstown lake, N sector (Site #5)	ROW, partially in 10066215	Creeping Sedge	<i>Carex chordorrhiza</i>	S3	Secure	1
Williamstown lake, N sector (Site #5)	10066298	Bearded Sedge	<i>Carex comosa</i>	S1	May Be At Risk	1
		Swamp Fly Honeysuckle	<i>Lonicera oblongifolia</i>	S2	Sensitive	1
		Labrador Bedstraw	<i>Galium labradoricum</i>	S2S3	Sensitive	1
		Creeping Sedge	<i>Carex chordorrhiza</i>	S3	Secure	1
		Showy Lady's-Slipper	<i>Cypripedium reginae</i>	S3	Sensitive	1
		Boreal Aster	<i>Symphotrichum boreale</i>	S3	Sensitive	1
		Smooth Twig Rush	<i>Cladium mariscoides</i>	S3S4	Secure	2
Williamstown lake, N sector (Site #5)	10068583	Labrador Bedstraw	<i>Galium labradoricum</i>	S2S3	Sensitive	1
		Boreal Aster	<i>Symphotrichum boreale</i>	S3	Sensitive	4
Williamstown lake, N sector (Site #5)	10072130	Butternut	<i>Juglans cinerea</i>	S1	At Risk	1
		Eastern Kingbird	<i>Tyrannus tyrannus</i>	S3S4B	Sensitive	1
Williamstown lake, N sector (Site #5)	2, near edge of 10072130	White-stemmed Pondweed	<i>Potamogeton praelongus</i>	S2S3	Secure	2
Williamstown lake, N sector (Site #5)	2, near edge of 10072130	Blunt-Leaved Pondweed	<i>Potamogeton obtusifolius</i>	S3	Secure	2
Williamstown lake, N sector (Site #5)	10133312	Swamp Fly Honeysuckle	<i>Lonicera oblongifolia</i>	S2	Sensitive	3
		Labrador Bedstraw	<i>Galium labradoricum</i>	S2S3	Sensitive	4
		Creeping Sedge	<i>Carex chordorrhiza</i>	S3	Secure	1
		Showy Lady's-Slipper	<i>Cypripedium reginae</i>	S3	Sensitive	1
		Boreal Aster	<i>Symphotrichum boreale</i>	S3	Sensitive	4
Williamstown lake, N sector (Site #5)	10133320	Prairie Sedge	<i>Carex prairea</i>	S2	Sensitive	1
		Slender Cottongrass	<i>Eriophorum gracile</i>	S2	May Be At Risk	1
		Swamp Fly Honeysuckle	<i>Lonicera oblongifolia</i>	S2	Sensitive	2
		Labrador Bedstraw	<i>Galium labradoricum</i>	S2S3	Sensitive	2

Survey Area	Parcel ID #	Common Name	Scientific Name	NB S-Rank	NB GS-Rank	# of loc
		Creeping Sedge	<i>Carex chordorrhiza</i>	S3	Secure	1
		Boreal Aster	<i>Symphotrichum boreale</i>	S3	Sensitive	9
		Smooth Twig Rush	<i>Cladium mariscoides</i>	S3S4	Secure	4
Williamstown lake, N sector (Site #5)	2, near edge of 10133320	Blunt-Leaved Pondweed	<i>Potamogeton obtusifolius</i>	S3	Secure	1
		Prairie Sedge	<i>Carex prairea</i>	S2	Sensitive	2
		Slender Cottongrass	<i>Eriophorum gracile</i>	S2	May Be At Risk	3
		Creeping Sedge	<i>Carex chordorrhiza</i>	S3	Secure	15
		Coastal Sedge	<i>Carex exilis</i>	S3	Secure	2
		Downy Willowherb	<i>Epilobium strictum</i>	S3	Secure	1
Williamstown lake, N sector (Site #5)	10133338	Whorled Water Milfoil	<i>Myriophyllum verticillatum</i>	S3	Secure	1
		Brown Beakrush	<i>Rhynchospora fusca</i>	S3	Secure	2
		Bog Willow	<i>Salix pedicellaris</i>	S3	Secure	1
		Smooth Twig Rush	<i>Cladium mariscoides</i>	S3S4	Secure	10
		Eastern Kingbird	<i>Tyrannus tyrannus</i>	S3S4B	Sensitive	1
		-	<i>Carex diandra / prairea</i>	-	-	1
		Narrow-leaved Beaked Sedge	<i>Carex rostrata</i>	S1S2	Sensitive	1
Williamstown lake, N sector (Site #5)	2, near edge of 10133338	Blunt-Leaved Pondweed	<i>Potamogeton obtusifolius</i>	S3	Secure	2
		-	<i>Myriophyllum cf. sibiricum</i>	-	-	1
Williamstown lake, N sector (Site #5)	10263556	Narrow-leaved Beaked Sedge	<i>Carex rostrata</i>	S1S2	Sensitive	1
Williamstown lake, N sector (Site #5)	2, near edge of 10071249 and 10269744	Slender Cottongrass	<i>Eriophorum gracile</i>	S2	May Be At Risk	1
Williamstown lake, N sector (Site #5)	2 (open water)	Blunt-Leaved Pondweed	<i>Potamogeton obtusifolius</i>	S3	Secure	2
Williamstown lake, N sector (Site #5)	2, near edge of 10065043	Eastern Kingbird	<i>Tyrannus tyrannus</i>	S3S4B	Sensitive	1
Williamstown lake, N sector (Site #5)	2, near edge of 10266724	Bald Eagle	<i>Haliaeetus leucocephalus</i>	S3B	At Risk	1
		Swamp Fly Honeysuckle	<i>Lonicera oblongifolia</i>	S2	Sensitive	1
Williamstown lake, SW sector (Site #6)	10065076	Creeping Sedge	<i>Carex chordorrhiza</i>	S3	Secure	1
		Downy Willowherb	<i>Epilobium strictum</i>	S3	Secure	1
		Boreal Aster	<i>Symphotrichum boreale</i>	S3	Sensitive	2
		Bearded Sedge	<i>Carex comosa</i>	S1	May Be At Risk	1
		Northern Bog Sedge	<i>Carex gynocrates</i>	S2	Sensitive	1
Williamstown lake, SW sector (Site #6)	10067692	Sparse-Flowered Sedge	<i>Carex tenuiflora</i>	S2	May Be At Risk	2
		Slender Cottongrass	<i>Eriophorum gracile</i>	S2	May Be At Risk	1
		Swamp Fly Honeysuckle	<i>Lonicera oblongifolia</i>	S2	Sensitive	8

Survey Area	Parcel ID #	Common Name	Scientific Name	NB S-Rank	NB GS-Rank	# of loc
		Sage Willow	<i>Salix candida</i>	S2	Sensitive	1
		Labrador Bedstraw	<i>Galium labradoricum</i>	S2S3	Sensitive	5
		Swamp Valerian	<i>Valeriana uliginosa</i>	S2S3	Sensitive	1
		Bog Birch	<i>Betula pumila</i>	S3	Secure	1
		Creeping Sedge	<i>Carex chordorrhiza</i>	S3	Secure	2
		Showy Lady's-Slipper	<i>Cypripedium reginae</i>	S3	Sensitive	7
		Downy Willowherb	<i>Epilobium strictum</i>	S3	Secure	1
		Boreal Aster	<i>Symphotrichum boreale</i>	S3	Sensitive	3
Williamstown lake, SW sector (Site #6)	10068658	White Adder's-Mouth	<i>Malaxis brachypoda</i>	S1	May Be At Risk	1
		Northern Bog Sedge	<i>Carex gynocrates</i>	S2	Sensitive	3
		Prairie Sedge	<i>Carex prairea</i>	S2	Sensitive	2
		Sparse-Flowered Sedge	<i>Carex tenuiflora</i>	S2	May Be At Risk	4
		Swamp Fly Honeysuckle	<i>Lonicera oblongifolia</i>	S2	Sensitive	6
		Labrador Bedstraw	<i>Galium labradoricum</i>	S2S3	Sensitive	8
		Swamp Valerian	<i>Valeriana uliginosa</i>	S2S3	Sensitive	4
		Least Moonwort	<i>Botrychium simplex</i>	S3	Secure	1
		Coastal Sedge	<i>Carex exilis</i>	S3	Secure	1
		Showy Lady's-Slipper	<i>Cypripedium reginae</i>	S3	Sensitive	6
		Downy Willowherb	<i>Epilobium strictum</i>	S3	Secure	1
		Boreal Aster	<i>Symphotrichum boreale</i>	S3	Sensitive	10
		Great Crested Flycatcher	<i>Myiarchus crinitus</i>	S3B	Sensitive	2
		Smooth Twig Rush	<i>Cladium mariscoides</i>	S3S4	Secure	1
		Olive-sided Flycatcher	<i>Contopus cooperi</i>	S3S4B	At Risk	3
Canada Warbler	<i>Wilsonia canadensis</i>	S3S4B	At Risk	3		
Williamstown lake, SW sector (Site #6)	10069706	Bearded Sedge	<i>Carex comosa</i>	S1	May Be At Risk	1
		Livid Sedge	<i>Carex livida var. radicaulis</i>	S2	Sensitive	1
		Prairie Sedge	<i>Carex prairea</i>	S2	Sensitive	1
		Sparse-Flowered Sedge	<i>Carex tenuiflora</i>	S2	May Be At Risk	1
		Swamp Fly Honeysuckle	<i>Lonicera oblongifolia</i>	S2	Sensitive	8
		Labrador Bedstraw	<i>Galium labradoricum</i>	S2S3	Sensitive	4
		Bog Birch	<i>Betula pumila</i>	S3	Secure	2
		Creeping Sedge	<i>Carex chordorrhiza</i>	S3	Secure	2
		Boreal Aster	<i>Symphotrichum boreale</i>	S3	Sensitive	5
		Smooth Twig Rush	<i>Cladium mariscoides</i>	S3S4	Secure	2
Williamstown lake, SW sector (Site #6)	10070027	Northern Bog Sedge	<i>Carex gynocrates</i>	S2	Sensitive	2
		Slender Cottongrass	<i>Eriophorum gracile</i>	S2	May Be At Risk	1

Survey Area	Parcel ID #	Common Name	Scientific Name	NB S-Rank	NB GS-Rank	# of loc
		Swamp Fly Honeysuckle	<i>Lonicera oblongifolia</i>	S2	Sensitive	4
		Labrador Bedstraw	<i>Galium labradoricum</i>	S2S3	Sensitive	2
		Swamp Valerian	<i>Valeriana uliginosa</i>	S2S3	Sensitive	3
		Creeping Sedge	<i>Carex chordorrhiza</i>	S3	Secure	1
		Downy Willowherb	<i>Epilobium strictum</i>	S3	Secure	4
		Boreal Aster	<i>Symphyotrichum boreale</i>	S3	Sensitive	1
		Smooth Twig Rush	<i>Cladium mariscoides</i>	S3S4	Secure	1
		Olive-sided Flycatcher	<i>Contopus cooperi</i>	S3S4B	At Risk	1
		Canada Warbler	<i>Wilsonia canadensis</i>	S3S4B	At Risk	2
		Evening Grosbeak	<i>Coccothraustes vespertinus</i>	S3S4B,S4 S5N	Sensitive	1
Williamstown lake, SW sector (Site #6)	10070118	Prairie Sedge	<i>Carex prairea</i>	S2	Sensitive	1
		Slender Cottongrass	<i>Eriophorum gracile</i>	S2	May Be At Risk	2
		Swamp Fly Honeysuckle	<i>Lonicera oblongifolia</i>	S2	Sensitive	2
		Creeping Sedge	<i>Carex chordorrhiza</i>	S3	Secure	3
		Boreal Aster	<i>Symphyotrichum boreale</i>	S3	Sensitive	3
		Smooth Twig Rush	<i>Cladium mariscoides</i>	S3S4	Secure	2
Williamstown lake, SW sector (Site #6)	10267383	Narrow-leaved Beaked Sedge	<i>Carex rostrata</i>	S1S2	Sensitive	1
		Prairie Sedge	<i>Carex prairea</i>	S2	Sensitive	6
		Swamp Fly Honeysuckle	<i>Lonicera oblongifolia</i>	S2	Sensitive	9
		Sage Willow	<i>Salix candida</i>	S2	Sensitive	2
		Creeping Sedge	<i>Carex chordorrhiza</i>	S3	Secure	1
		Boreal Aster	<i>Symphyotrichum boreale</i>	S3	Sensitive	7
		Smooth Twig Rush	<i>Cladium mariscoides</i>	S3S4	Secure	2
Williamstown lake, SW sector (Site #6)	2, near edge of 10067692	Boreal Aster	<i>Symphyotrichum boreale</i>	S3	Sensitive	1
Williamstown lake, SW sector (Site #6)	2, near edge of 10069706 and 10070357	Creeping Sedge	<i>Carex chordorrhiza</i>	S3	Secure	2
Williamstown lake, SW sector (Site #6)	2, near edge of 10070357 and 10070118	Smooth Twig Rush	<i>Cladium mariscoides</i>	S3S4	Secure	1
Williamstown lake, SE sector (Site #7)	10065902	Eastern Leatherwood	<i>Dirca palustris</i>	S2	May Be At Risk	1
Williamstown lake, SE sector (Site #7)	10067239	Swamp Fly Honeysuckle	<i>Lonicera oblongifolia</i>	S2	Sensitive	1
		Showy Lady's-Slipper	<i>Cypripedium reginae</i>	S3	Sensitive	2
Williamstown lake, SE sector (Site #7)	10070357	Sparse-Flowered Sedge	<i>Carex tenuiflora</i>	S2	May Be At Risk	3
		Swamp Fly Honeysuckle	<i>Lonicera oblongifolia</i>	S2	Sensitive	5
		Labrador Bedstraw	<i>Galium labradoricum</i>	S2S3	Sensitive	7
		Creeping Sedge	<i>Carex chordorrhiza</i>	S3	Secure	7
		Showy Lady's-Slipper	<i>Cypripedium reginae</i>	S3	Sensitive	1

Survey Area	Parcel ID #	Common Name	Scientific Name	NB S-Rank	NB GS-Rank	# of loc
		White Fringed Orchid	<i>Platanthera blephariglottis</i>	S3	Secure	1
		Boreal Aster	<i>Symphotrichum boreale</i>	S3	Sensitive	2
		Smooth Twig Rush	<i>Cladium mariscoides</i>	S3S4	Secure	4
		-	<i>Rhynchospora alba / capillacea</i>	-	-	1
Williamstown lake, SE sector (Site #7)	10210136	Swamp Fly Honeysuckle	<i>Lonicera oblongifolia</i>	S2	Sensitive	1
Williamstown lake, SE sector (Site #7)	10211258	Eastern Leatherwood	<i>Dirca palustris</i>	S2	May Be At Risk	1
Williamstown lake, SE sector (Site #7)	10211258	Northern Maidenhair Fern	<i>Adiantum pedatum</i>	S3	Secure	1
Williamstown lake, SE sector (Site #7)	10211266	Hooked Agrimony	<i>Agrimonia gryposepala</i>	S3	Secure	1
Williamstown lake, SE sector (Site #7)	10211266	Dwarf Clearweed	<i>Pilea pumila</i>	S3	Secure	3
Williamstown lake, SE sector (Site #7)	10269785	Sparse-Flowered Sedge	<i>Carex tenuiflora</i>	S2	May Be At Risk	3
Williamstown lake, SE sector (Site #7)	10269785	Swamp Fly Honeysuckle	<i>Lonicera oblongifolia</i>	S2	Sensitive	6
Williamstown lake, SE sector (Site #7)	10269785	Labrador Bedstraw	<i>Galium labradoricum</i>	S2S3	Sensitive	3
Williamstown lake, SE sector (Site #7)	10269785	Creeping Sedge	<i>Carex chordorrhiza</i>	S3	Secure	3
Williamstown lake, SE sector (Site #7)	10269785	Boreal Aster	<i>Symphotrichum boreale</i>	S3	Sensitive	7
Williamstown lake, SE sector (Site #7)	2, near edge of 10070357 and 10269785	Creeping Sedge	<i>Carex chordorrhiza</i>	S3	Secure	1
Williamstown lake, SE sector (Site #7)	2, near edge of 10070357 and 10269785	Boreal Aster	<i>Symphotrichum boreale</i>	S3	Sensitive	1
Williamstown lake, SE sector (Site #7)	2, near edge of 10070357 and 10269785	Smooth Twig Rush	<i>Cladium mariscoides</i>	S3S4	Secure	2
Lindsay (Site #8)	10046902	Hooked Agrimony	<i>Agrimonia gryposepala</i>	S3	Secure	1
Lindsay (Site #8)	10046902	Boreal Aster	<i>Symphotrichum boreale</i>	S3	Sensitive	1
Lindsay (Site #8)	10050276	Tuckerman's Sedge	<i>Carex tuckermanii</i>	S3	Secure	1
Lindsay (Site #8)	10050276	Downy Willowherb	<i>Epilobium strictum</i>	S3	Secure	2
Lindsay (Site #8)	10050276	-	<i>Scirpus atrovirens (s.l.)</i>	-	-	1
Lindsay (Site #8)	10050276	-	-	-	-	1
Lindsay (Site #8)	10152940	Eastern Leatherwood	<i>Dirca palustris</i>	S2	May Be At Risk	1
Lindsay (Site #8)	10152940	Swamp Fly Honeysuckle	<i>Lonicera oblongifolia</i>	S2	Sensitive	2
Lindsay (Site #8)	10152940	Labrador Bedstraw	<i>Galium labradoricum</i>	S2S3	Sensitive	2
Lindsay (Site #8)	10152940	Great Crested Flycatcher	<i>Myiarchus crinitus</i>	S3B	Sensitive	1
Lindsay (Site #8)	10152940	-	<i>Scirpus atrovirens (s.l.)</i>	-	-	1
Lindsay (Site #8)	10198653	Prairie Sedge	<i>Carex prairea</i>	S2	Sensitive	5
Lindsay (Site #8)	10198653	Swamp Fly Honeysuckle	<i>Lonicera oblongifolia</i>	S2	Sensitive	5
Lindsay (Site #8)	10198653	Labrador Bedstraw	<i>Galium labradoricum</i>	S2S3	Sensitive	4
Lindsay (Site #8)	10198653	Swamp Valerian	<i>Valeriana uliginosa</i>	S2S3	Sensitive	9
Lindsay (Site #8)	10198653	Coastal Sedge	<i>Carex exilis</i>	S3	Secure	1
Lindsay (Site #8)	10198653	Showy Lady's-Slipper	<i>Cypripedium reginae</i>	S3	Sensitive	7
Lindsay (Site #8)	10198653	Loesel's Twayblade	<i>Liparis loeselii</i>	S3	Secure	2
Lindsay (Site #8)	10198653	Boreal Aster	<i>Symphotrichum boreale</i>	S3	Sensitive	3

Survey Area	Parcel ID #	Common Name	Scientific Name	NB S-Rank	NB GS-Rank	# of loc
		Smooth Twig Rush	<i>Cladium mariscoides</i>	S3S4	Secure	1
Lindsay (Site #8)	10223576	Hooked Agrimony	<i>Agrimonia gryposepala</i>	S3	Secure	1
		Northern Meadow-rue	<i>Thalictrum venulosum</i>	S3	Secure	1
Hannahs Hill (Site #9)	10048049	Northern Maidenhair Fern	<i>Adiantum pedatum</i>	S3	Secure	1
		Hooked Agrimony	<i>Agrimonia gryposepala</i>	S3	Secure	1
		Large Toothwort	<i>Cardamine maxima</i>	S3	Secure	2
		Goldie's Wood Fern	<i>Dryopteris goldiana</i>	S3	Sensitive	3
Hannahs Hill (Site #9)	10151371	Hooked Agrimony	<i>Agrimonia gryposepala</i>	S3	Secure	1
Payson Lake (Site #10)	10048064	Hooked Agrimony	<i>Agrimonia gryposepala</i>	S3	Secure	1
		Dwarf Clearweed	<i>Pilea pumila</i>	S3	Secure	2
Payson Lake (Site #10)	10048577	Butternut	<i>Juglans cinerea</i>	S1	At Risk	1
		Northern Bog Sedge	<i>Carex gynocrates</i>	S2	Sensitive	2
		Swamp Valerian	<i>Valeriana uliginosa</i>	S2S3	Sensitive	2
		Hooked Agrimony	<i>Agrimonia gryposepala</i>	S3	Secure	1
		Showy Lady's-Slipper	<i>Cypripedium reginae</i>	S3	Sensitive	1
Payson Lake (Site #10)	10048635	Butternut	<i>Juglans cinerea</i>	S1	At Risk	1
		Matted Spikerush	<i>Eleocharis intermedia</i>	S3	Secure	1
Payson Lake (Site #10)	10049435	Butternut	<i>Juglans cinerea</i>	S1	At Risk	1
Payson Lake (Site #10)	10049583	Butternut	<i>Juglans cinerea</i>	S1	At Risk	1
		Hooked Agrimony	<i>Agrimonia gryposepala</i>	S3	Secure	1
		-				1
Payson Lake (Site #10)	10051001	Showy Lady's-Slipper	<i>Cypripedium reginae</i>	S3	Sensitive	1
Payson Lake (Site #10)	10051019	Butternut	<i>Juglans cinerea</i>	S1	At Risk	3
Payson Lake (Site #10)	10051472	Eastern Leatherwood	<i>Dirca palustris</i>	S2	May Be At Risk	1
		Dwarf Clearweed	<i>Pilea pumila</i>	S3	Secure	3
Payson Lake (Site #10)	10055903	Butternut	<i>Juglans cinerea</i>	S1	At Risk	1
		Hooked Agrimony	<i>Agrimonia gryposepala</i>	S3	Secure	1
		Dwarf Clearweed	<i>Pilea pumila</i>	S3	Secure	1
		-	<i>Scirpus atrovirens (s.l.)</i>	-	-	2
Payson Lake (Site #10)	10055911	Boreal Aster	<i>Symphyotrichum boreale</i>	S3	Sensitive	1
Payson Lake (Site #10)	10195774	Butternut	<i>Juglans cinerea</i>	S1	At Risk	2
		Hooked Agrimony	<i>Agrimonia gryposepala</i>	S3	Secure	1
		Showy Lady's-Slipper	<i>Cypripedium reginae</i>	S3	Sensitive	1
		Dwarf Clearweed	<i>Pilea pumila</i>	S3	Secure	1
Payson Lake (Site #10)	10204550	Butternut	<i>Juglans cinerea</i>	S1	At Risk	1
Payson Lake (Site #10)	10211613	Butternut	<i>Juglans cinerea</i>	S1	At Risk	1
Payson Lake (Site #10)	10223006	Butternut	<i>Juglans cinerea</i>	S1	At Risk	1

Survey Area	Parcel ID #	Common Name	Scientific Name	NB S-Rank	NB GS-Rank	# of loc
Payson Lake (Site #10)	10273266	Narrow-leaved Beaked Sedge	<i>Carex rostrata</i>	S1S2	Sensitive	2
		Small Yellow Pond-lily	<i>Nuphar lutea ssp. pumila</i>	S3	Secure	1
Payson Lake (Site #10)	2, near edge of 10273266	Boreal Aster	<i>Symphyotrichum boreale</i>	S3	Sensitive	1
Payson Lake (Site #10)	ROW, at edge of 10049435	Butternut	<i>Juglans cinerea</i>	S1	At Risk	1
Payson Lake (Site #10)	ROW, at edge of 10211613	Butternut	<i>Juglans cinerea</i>	S1	At Risk	1
Watson Settlement (Site #11)	10035434	Butternut	<i>Juglans cinerea</i>	S1	At Risk	2
		Canada Warbler	<i>Wilsonia canadensis</i>	S3S4B	At Risk	1
Watson Settlement (Site #11)	10036093	Butternut	<i>Juglans cinerea</i>	S1	At Risk	1
		Eastern Leatherwood	<i>Dirca palustris</i>	S2	May Be At Risk	2
		Great Crested Flycatcher	<i>Myiarchus crinitus</i>	S3B	Sensitive	1
Watson Settlement (Site #11)	10036135	Seneca Snakeroot	<i>Polygala senega</i>	S2	Sensitive	2
		Hairlike Sedge	<i>Carex capillaris</i>	S3	Secure	3
		Bristle-Leaved Sedge	<i>Carex eburnea</i>	S3	Secure	2
		Hyssop-Leaved Fleabane	<i>Erigeron hyssopifolius</i>	S3	Secure	1
		Apline Sweet-Vetch	<i>Hedysarum alpinum</i>	S3	Secure	2
		Soft-Leaf Muhly	<i>Muhlenbergia richardsonis</i>	S3	Secure	1
		Northern Bog Violet	<i>Viola nephrophylla</i>	S3	Secure	1
Watson Settlement (Site #11)	10036796	Northern Maidenhair Fern	<i>Adiantum pedatum</i>	S3	Secure	1
Watson Settlement (Site #11)	10036879	Butternut	<i>Juglans cinerea</i>	S1	At Risk	4
		Scarlet Tanager	<i>Piranga olivacea</i>	S3S4B	Secure	1
Watson Settlement (Site #11)	10036887	Needle-Tipped Blue-Eyed-Grass	<i>Sisyrinchium mucronatum</i>	S1?	Undetermined	2
		One-Flowered Broomrape	<i>Orobanche uniflora</i>	S2	Sensitive	1
		Seneca Snakeroot	<i>Polygala senega</i>	S2	Sensitive	1
		Bristle-Leaved Sedge	<i>Carex eburnea</i>	S3	Secure	2
		Hyssop-Leaved Fleabane	<i>Erigeron hyssopifolius</i>	S3	Secure	1
Watson Settlement (Site #11)	10175636	Apline Sweet-Vetch	<i>Hedysarum alpinum</i>	S3	Secure	1
Watson Settlement (Site #11)	10175636	Hooked Agrimony	<i>Agrimonia gryposepala</i>	S3	Secure	3
Watson Settlement (Site #11)	10175644	Butternut	<i>Juglans cinerea</i>	S1	At Risk	2
		Hooked Agrimony	<i>Agrimonia gryposepala</i>	S3	Secure	1
Watson Settlement (Site #11)	10175669	Rosy Sedge	<i>Carex rosea</i>	S3	Secure	1
Watson Settlement (Site #11)	10175677	Butternut	<i>Juglans cinerea</i>	S1	At Risk	1
Watson Settlement (Site #11)	10175685	Goldie's Wood Fern	<i>Dryopteris goldiana</i>	S3	Sensitive	3
		Downy Willowherb	<i>Epilobium strictum</i>	S3	Secure	5
		Canada Warbler	<i>Wilsonia canadensis</i>	S3S4B	At Risk	1

Survey Area	Parcel ID #	Common Name	Scientific Name	NB S-Rank	NB GS-Rank	# of loc
Watson Settlement (Site #11)	10227239	Canada Warbler	<i>Wilsonia canadensis</i>	S3S4B	At Risk	1
Watson Settlement (Site #11)	10237766	Butternut	<i>Juglans cinerea</i>	S1	At Risk	1
		Hooked Agrimony	<i>Agrimonia gryposepala</i>	S3	Secure	1
		Rosy Sedge	<i>Carex rosea</i>	S3	Secure	1
		Goldie's Wood Fern	<i>Dryopteris goldiana</i>	S3	Sensitive	1
Belleville (Site #12)	10048627	Rosy Sedge	<i>Carex rosea</i>	S3	Secure	1
Belleville (Site #12)	10048817	Butternut	<i>Juglans cinerea</i>	S1	At Risk	1
		Rosy Sedge	<i>Carex rosea</i>	S3	Secure	1
Belleville (Site #12)	10048874	-	<i>Agrimonia striata / gryposepala</i>	-	-	1
		Canada Warbler	<i>Wilsonia canadensis</i>	S3S4B	At Risk	1
Belleville (Site #12)	10048924	-	<i>Agrimonia striata / gryposepala</i>	-	-	2
		Hooked Agrimony	<i>Agrimonia gryposepala</i>	S3	Secure	1
Belleville (Site #12)	10050532	Rosy Sedge	<i>Carex rosea</i>	S3	Secure	3
		Plantain-Leaved Sedge	<i>Carex plantaginea</i>	S2S3	Sensitive	2
		Northern Maidenhair Fern	<i>Adiantum pedatum</i>	S3	Secure	6
		Hooked Agrimony	<i>Agrimonia gryposepala</i>	S3	Secure	1
		Large Toothwort	<i>Cardamine maxima</i>	S3	Secure	1
		Goldie's Wood Fern	<i>Dryopteris goldiana</i>	S3	Sensitive	1
		-	<i>Agrimonia cf. gryposepala</i>	-	-	1
Belleville (Site #12)	10050755	Orange-fruited Tinker's Weed	<i>Triosteum aurantiacum</i>	S2	Sensitive	2
Belleville (Site #12)	10139202	Butternut	<i>Juglans cinerea</i>	S1	At Risk	1
		Seneca Snakeroot	<i>Polygala senega</i>	S2	Sensitive	1
		Rosy Sedge	<i>Carex rosea</i>	S3	Secure	1
		-	<i>Carex cf. rosea</i>	-	-	1
Belleville (Site #12)	10240356	Butternut	<i>Juglans cinerea</i>	S1	At Risk	1
		Orange-fruited Tinker's Weed	<i>Triosteum aurantiacum</i>	S2	Sensitive	2
		Plantain-Leaved Sedge	<i>Carex plantaginea</i>	S2S3	Sensitive	1
		Northern Maidenhair Fern	<i>Adiantum pedatum</i>	S3	Secure	1
		Hooked Agrimony	<i>Agrimonia gryposepala</i>	S3	Secure	2
		-	<i>Agrimonia cf. gryposepala</i>	-	-	1
Belleville (Site #12)	10240380	Loose-Flowered Sedge	<i>Carex laxiflora</i>	S1?	Undetermined	1
		Spreading Wild Rye	<i>Elymus hystrix var. bigeloviana</i>	S1	May Be At Risk	3

Survey Area	Parcel ID #	Common Name	Scientific Name	NB S-Rank	NB GS-Rank	# of loc
		Eastern Leatherwood	<i>Dirca palustris</i>	S2	May Be At Risk	3
		Plantain-Leaved Sedge	<i>Carex plantaginea</i>	S2S3	Sensitive	9
		Northern Maidenhair Fern	<i>Adiantum pedatum</i>	S3	Secure	28
		Hooked Agrimony	<i>Agrimonia gryposepala</i>	S3	Secure	3
		Large Toothwort	<i>Cardamine maxima</i>	S3	Secure	1
		Rosy Sedge	<i>Carex rosea</i>	S3	Secure	28
		Goldie's Wood Fern	<i>Dryopteris goldiana</i>	S3	Sensitive	24
		Black Raspberry	<i>Rubus occidentalis</i>	S3	Secure	5
		-	<i>Agrimonia striata / gryposepala</i>	-	-	2
Belleville (Site #12)	10240398	Hooked Agrimony	<i>Agrimonia gryposepala</i>	S3	Secure	1
		Rosy Sedge	<i>Carex rosea</i>	S3	Secure	1
Belleville (Site #12)	10244994	Hooked Agrimony	<i>Agrimonia gryposepala</i>	S3	Secure	1
		Rosy Sedge	<i>Carex rosea</i>	S3	Secure	1
Rosedale (Site #13)	10047173	Gmelin's Water Buttercup	<i>Ranunculus gmelinii</i>	S3	Secure	1
Moody Hill (Site #14)	10047587	Goldie's Wood Fern	<i>Dryopteris goldiana</i>	S3	Sensitive	1
Moody Hill (Site #14)	10048692	Dwarf Clearweed	<i>Pilea pumila</i>	S3	Secure	1
		Wild Comfrey	<i>Cynoglossum virginianum var. boreale</i>	S1	May Be At Risk	1
		Spreading Wild Rye	<i>Elymus hystrix var. bigeloviana</i>	S1	May Be At Risk	1
		Butternut	<i>Juglans cinerea</i>	S1	At Risk	19
		Large-Fruited Sanicle	<i>Sanicula trifoliata</i>	S1	May Be At Risk	1
		Canada Violet	<i>Viola canadensis</i>	S1S2	May Be At Risk	34
		Pubescent Sedge	<i>Carex hirtifolia</i>	S2	Sensitive	13
		American Lopseed	<i>Phryma leptostachya</i>	S2	Sensitive	5
		Clustered Sanicle	<i>Sanicula odorata</i>	S2	May Be At Risk	1
Moody Hill (Site #14)	10051522	Northern Maidenhair Fern	<i>Adiantum pedatum</i>	S3	Secure	10
		Hooked Agrimony	<i>Agrimonia gryposepala</i>	S3	Secure	12
		Cut-Leaved Moonwort	<i>Botrychium dissectum</i>	S3	Secure	1
		Necklace Spike Sedge	<i>Carex ormostachya</i>	S3	Secure	1
		Rosy Sedge	<i>Carex rosea</i>	S3	Secure	5
		Goldie's Wood Fern	<i>Dryopteris goldiana</i>	S3	Sensitive	1
		Dwarf Clearweed	<i>Pilea pumila</i>	S3	Secure	2
		Black Raspberry	<i>Rubus occidentalis</i>	S3	Secure	7
		-	<i>Cypripedium parviflorum cf. var. makasin</i>	-	-	5

Survey Area	Parcel ID #	Common Name	Scientific Name	NB S-Rank	NB GS-Rank	# of loc
Moody Hill (Site #14)	10052280	Pubescent Sedge	<i>Carex hirtifolia</i>	S2	Sensitive	1
		Showy Orchis	<i>Galearis spectabilis</i>	S2	May Be At Risk	2
		Northern Maidenhair Fern	<i>Adiantum pedatum</i>	S3	Secure	8
		Hooked Agrimony	<i>Agrimonia gryposepala</i>	S3	Secure	1
		Necklace Spike Sedge	<i>Carex ormostachya</i>	S3	Secure	1
		Rosy Sedge	<i>Carex rosea</i>	S3	Secure	2
		Goldie's Wood Fern	<i>Dryopteris goldiana</i>	S3	Sensitive	12
		-	<i>Cypripedium parviflorum cf. var. makasin</i>	-	-	1
Moody Hill (Site #14)	ROW, at edge of 10052280	Butternut	<i>Juglans cinerea</i>	S1	At Risk	1
Moody Hill (Site #14)	10052926	Showy Orchis	<i>Galearis spectabilis</i>	S2	May Be At Risk	2
		Rosy Sedge	<i>Carex rosea</i>	S3	Secure	2
Moody Hill (Site #14)	10131761	Goldie's Wood Fern	<i>Dryopteris goldiana</i>	S3	Sensitive	6
		Hooked Agrimony	<i>Agrimonia gryposepala</i>	S3	Secure	2
		-	<i>Cypripedium reginae / parviflorum</i>	-	-	1
Moody Hill (Site #14)	10131779	Hooked Agrimony	<i>Agrimonia gryposepala</i>	S3	Secure	2
Moody Hill (Site #14)	10131811	Butternut	<i>Juglans cinerea</i>	S1	At Risk	1
		Rosy Sedge	<i>Carex rosea</i>	S3	Secure	2
Moody Hill (Site #14)	10237501	Butternut	<i>Juglans cinerea</i>	S1	At Risk	5
		Northern Maidenhair Fern	<i>Adiantum pedatum</i>	S3	Secure	2
		Hooked Agrimony	<i>Agrimonia gryposepala</i>	S3	Secure	2
		Rosy Sedge	<i>Carex rosea</i>	S3	Secure	6
		Goldie's Wood Fern	<i>Dryopteris goldiana</i>	S3	Sensitive	4
		Black Raspberry	<i>Rubus occidentalis</i>	S3	Secure	5
Moody Hill (Site #14)	10240372	Rosy Sedge	<i>Carex rosea</i>	S3	Secure	2
Lower Mill Brook (Site #15)	10035772	Orange-fruited Tinker's Weed	<i>Triosteum aurantiacum</i>	S2	Sensitive	1
Lower Mill Brook (Site #15)	10036127	Appalachian Polypody	<i>Polypodium appalachianum</i>	S3	Secure	1
Lower Mill Brook (Site #15)	10038362	Long-beaked Sedge	<i>Carex sprengelii</i>	S2	Sensitive	1
Plymouth (Site #16)	10035111	Downy Willowherb	<i>Epilobium strictum</i>	S3	Secure	3
		-	<i>Galium trifidum / labradoricum</i>	-	-	1
Plymouth (Site #16)	10035798	Downy Willowherb	<i>Epilobium strictum</i>	S3	Secure	1
Plymouth (Site #16)	10036002	Butternut	<i>Juglans cinerea</i>	S1	At Risk	3
		Pubescent Sedge	<i>Carex hirtifolia</i>	S2	Sensitive	1
		Hare Figwort	<i>Scrophularia lanceolata</i>	S2	Sensitive	1
		Orange-fruited Tinker's Weed	<i>Triosteum aurantiacum</i>	S2	Sensitive	1
		Hooked Agrimony	<i>Agrimonia gryposepala</i>	S3	Secure	1

Survey Area	Parcel ID #	Common Name	Scientific Name	NB S-Rank	NB GS-Rank	# of loc
		Rosy Sedge	<i>Carex rosea</i>	S3	Secure	3
		Orange-fruited Tinker's Weed	<i>Triosteum aurantiacum</i>	S2	Sensitive	1
		Plantain-Leaved Sedge	<i>Carex plantaginea</i>	S2S3	Sensitive	3
Plymouth (Site #16)	10038065	Northern Maidenhair Fern	<i>Adiantum pedatum</i>	S3	Secure	1
		Large Toothwort	<i>Cardamine maxima</i>	S3	Secure	3
		Rosy Sedge	<i>Carex rosea</i>	S3	Secure	3
Plymouth (Site #16)	ROW, at edge of 10038065	Black Raspberry	<i>Rubus occidentalis</i>	S3	Secure	1
Plymouth (Site #16)	10175446	Hooked Agrimony	<i>Agrimonia gryposepala</i>	S3	Secure	1
		Hooked Agrimony	<i>Agrimonia gryposepala</i>	S3	Secure	1
Plymouth (Site #16)	10175453	Downy Willowherb	<i>Epilobium strictum</i>	S3	Secure	3
		Appalachian Sedge	<i>Carex appalachica</i>	S1?	Undetermined	1
		Plantain-Leaved Sedge	<i>Carex plantaginea</i>	S2S3	Sensitive	2
Plymouth (Site #16)	10264455	Northern Maidenhair Fern	<i>Adiantum pedatum</i>	S3	Secure	1
		Hooked Agrimony	<i>Agrimonia gryposepala</i>	S3	Secure	3
Plymouth (Site #16)	ROW, at edge of 10264455	Northern Maidenhair Fern	<i>Adiantum pedatum</i>	S3	Secure	1
		Butternut	<i>Juglans cinerea</i>	S1	At Risk	5
		American Lopseed	<i>Phryma leptostachya</i>	S2	Sensitive	2
		Northern Maidenhair Fern	<i>Adiantum pedatum</i>	S3	Secure	1
Plymouth (Site #16)	10268563	Hooked Agrimony	<i>Agrimonia gryposepala</i>	S3	Secure	4
		Rosy Sedge	<i>Carex rosea</i>	S3	Secure	7
		-	<i>Carex cf. rosea</i>	-	-	2
		-	<i>Carex cf. tenera</i>	-	-	2
Richmond Corner (Site #17)	10035293	Hooked Agrimony	<i>Agrimonia gryposepala</i>	S3	Secure	2
		Goldie's Wood Fern	<i>Dryopteris goldiana</i>	S3	Sensitive	2
		Pale Jewelweed	<i>Impatiens pallida</i>	S2	May Be At Risk	1
		American Lopseed	<i>Phryma leptostachya</i>	S2	Sensitive	8
		Hooked Agrimony	<i>Agrimonia gryposepala</i>	S3	Secure	1
Richmond Corner (Site #17)	10211480	Necklace Spike Sedge	<i>Carex ormostachya</i>	S3	Secure	1
		Goldie's Wood Fern	<i>Dryopteris goldiana</i>	S3	Sensitive	1
		Dwarf Clearweed	<i>Pilea pumila</i>	S3	Secure	2
		Black Raspberry	<i>Rubus occidentalis</i>	S3	Secure	1
Richmond Corner (Site #17)	10251486	Butternut	<i>Juglans cinerea</i>	S1	At Risk	2
		Matted Spikerush	<i>Eleocharis intermedia</i>	S3	Secure	1
Bedell Settlement (Site #18)	10073427	Butternut	<i>Juglans cinerea</i>	S1	At Risk	1
		-	<i>Scirpus atrovirens (s.l.)</i>	-	-	1
Bedell Settlement (Site #18)	10073633	Canada Warbler	<i>Wilsonia canadensis</i>	S3S4B	At Risk	1
Bedell Settlement (Site #18)	10074458	Butternut	<i>Juglans cinerea</i>	S1	At Risk	3

Survey Area	Parcel ID #	Common Name	Scientific Name	NB S-Rank	NB GS-Rank	# of loc
Bedell Settlement (Site #18)	10075836	Butternut	<i>Juglans cinerea</i>	S1	At Risk	1
		Downy Willowherb	<i>Epilobium strictum</i>	S3	Secure	1
		Great Crested Flycatcher	<i>Myiarchus crinitus</i>	S3B	Sensitive	1
		-	<i>Scirpus atrovirens (s.l.)</i>	-	-	1
Bedell Settlement (Site #18)	ROW, at edge of 10075836	Butternut	<i>Juglans cinerea</i>	S1	At Risk	1
Bedell Settlement (Site #18)	ROW, at edge of 10075836	-	<i>Scirpus atrovirens (s.l.)</i>	-	-	1
Bedell Settlement (Site #18)	10162626	Wood Thrush	<i>Hylocichla mustelina</i>	S1S2B	May Be At Risk	1
Bedell Settlement (Site #18)	10169134	Hooked Agrimony	<i>Agrimonia gryposepala</i>	S3	Secure	2
		Tall Cinquefoil	<i>Potentilla arguta</i>	S3S4	Secure	1
Bedell Settlement (Site #18)	10181949	Wood Thrush	<i>Hylocichla mustelina</i>	S1S2B	May Be At Risk	1
Bedell Settlement (Site #18)	10196145	Northern Maidenhair Fern	<i>Adiantum pedatum</i>	S3	Secure	2
		Showy Lady's-Slipper	<i>Cypripedium reginae</i>	S3	Sensitive	2
Bedell Settlement (Site #18)	10210201	-	<i>Agrimonia striata / gryposepala</i>	-	-	1
Bedell Settlement (Site #18)	10239911	Butternut	<i>Juglans cinerea</i>	S1	At Risk	5
Beardsley (Site #19)	10072387	Great Crested Flycatcher	<i>Myiarchus crinitus</i>	S3B	Sensitive	1
		Canada Warbler	<i>Wilsonia canadensis</i>	S3S4B	At Risk	1
Beardsley (Site #19)	10162642	Thin-leaved Sedge	<i>Carex cephaloidea</i>	S1	May Be At Risk	2
		Hooked Agrimony	<i>Agrimonia gryposepala</i>	S3	Secure	2
		Rosy Sedge	<i>Carex rosea</i>	S3	Secure	1
		Downy Willowherb	<i>Epilobium strictum</i>	S3	Secure	1
		Tall Cinquefoil	<i>Potentilla arguta</i>	S3S4	Secure	1
		Canada Warbler	<i>Wilsonia canadensis</i>	S3S4B	At Risk	1
-	<i>Galium cf. brevipes</i>	-	-	1		
Beardsley (Site #19)	10223683	Thin-leaved Sedge	<i>Carex cephaloidea</i>	S1	May Be At Risk	1
		Butternut	<i>Juglans cinerea</i>	S1	At Risk	3
		Northern Maidenhair Fern	<i>Adiantum pedatum</i>	S3	Secure	1
		Hooked Agrimony	<i>Agrimonia gryposepala</i>	S3	Secure	1
		Large Toothwort	<i>Cardamine maxima</i>	S3	Secure	4
		Rosy Sedge	<i>Carex rosea</i>	S3	Secure	4
		Showy Lady's-Slipper	<i>Cypripedium reginae</i>	S3	Sensitive	2
		Canada Warbler	<i>Wilsonia canadensis</i>	S3S4B	At Risk	1
-	<i>Galium cf. brevipes</i>	-	-	1		

SITE SUMMARIES

SITE #1: MCWAID LAKE / GOWAN LAKE

D. Mazerolle & A. Belliveau, Aug. 8, 2015

Plant Diversity

Total Spp. Richness	Native Spp. Richness	Exotic Spp. Richness	% Native	% Exotic	# of Rare Spp.
332	269	63	81	19	9

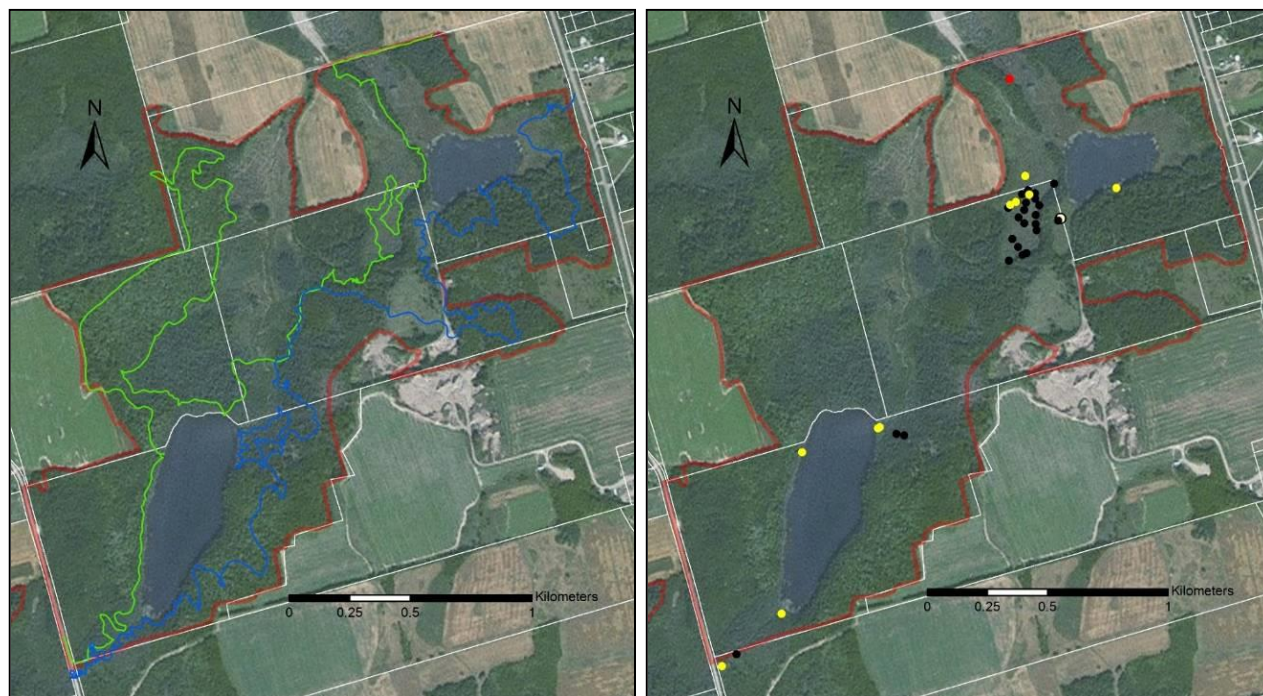


Figure 2. Survey coverage and rare plant locations detected at McWaid Lake and Gowan Lake (Site #1). Blue line represents track file logged by D.M. Mazerolle's GPS unit; green line represents track file logged by A.G. Belliveau's GPS unit. [Red dots = critically imperiled species (S1-S1S2), yellow dots = imperiled species (S2-S2S3), black dots = vulnerable species (S3-S3S4) and white dots = occurrences tentatively identified as species of conservation concern]. Aerial imagery from ESRI World Imagery basemap (accessed in April 2015).

Rare Species Documented

COMMON NAME	SCIENTIFIC NAME	NB S-Rank	NB GS Rank	PID #	# Loc.
Bearded Sedge	<i>Carex comosa</i>	S1	May Be At Risk	10066314	1
Swamp Fly Honeysuckle	<i>Lonicera oblongifolia</i>	S2	Sensitive	10065761	1
Labrador Bedstraw	<i>Galium labradoricum</i>	S2S3	Sensitive	10066314	1
				10070415	4
				10071074	2
White-stemmed Pondweed	<i>Potamogeton praelongus</i>	S2S3	Secure	10066314	1
				10071074	2
Showy Lady's-Slipper	<i>Cypripedium reginae</i>	S3	Sensitive	10065761	1
				10071074	2
Loesel's Twayblade	<i>Liparis loeselii</i>	S3	Secure	10066314	1
				10070415	1
Siberian Water Milfoil	<i>Myriophyllum sibiricum</i>	S3	Secure	10066314	1
Gmelin's Water Buttercup	<i>Ranunculus gmelinii</i>	S3	Secure	10070415	7
Boreal Aster	<i>Symphyotrichum boreale</i>	S3	Sensitive	10070415	12

Notable Features

- Mature calcareous Eastern White Cedar (*Thuja occidentalis*) and Balsam Fir (*Abies balsamea*) seepage swamp (PIDs 10065761, 10071074)
- Mature Eastern White Cedar forest with understories of Swamp Red Currant (*Ribes triste*), Naked Bishop's-Cap (*Mitella nuda*), Common Lady Fern (*Athyrium filix-femina*) and Sphagnum moss (provincially rare – S3) (PIDs 10070530, 10071074)
- Mature Sugar Maple (*Acer saccharum*) and Yellow Birch (*Betula alleghaniensis*) forest with secondary canopies of American Beech (*Fagus grandifolia*) and Balsam Fir (PID 10071074)
- Old Sugar Maple and White Ash (*Fraxinus americana*) forest with understory of Common Oak Fern (*Gymnocarpium dryopteris*) and Silvery Glade Fern (*Deparia acrostichoides*) (provincially rare – S3; PID 10066314)
- Extensive partially flooded Tamarack (*Larix laricina*), Eastern White Cedar, Red Maple (*Acer rubrum*) and Black Ash (*Fraxinus nigra*) swamp (PID 10070415)
- Various locally rich circumneutral and calcareous swamp and fen communities, mainly shrub-dominated (PID 10071074, 10070415, 10066314)
- Heavily disturbed young to mature intolerant hardwood forest south of Gowan Lake (PID 10070415)
- Large area of marsh and fen dominated by the invasive Reed Canary Grass (*Phalaris arundinacea*) at the eastern end of Gowan Lake (PID 10066314).



Calcareous graminoid and shrub fen west of Gowan Lake on PID 10070415 (left). Opening in fairly rich calcareous Eastern White Cedar swamp at southwest end of McWaid Lake on PID 10071074 (right).



Mature Sugar Maple and White Ash forest north of McWaid Lake on PID 10066314 (left). Mature Eastern White Cedar swamp southwest of McWaid Lake (top right). Labrador Bedstraw (*Galium labradoricum*, S2S3, Sensitive) in calcareous fen east of Gowan Lake on PID 10070415 (bottom right).

Plant Diversity

Total Spp. Richness	Native Spp. Richness	Exotic Spp. Richness	% Native	% Exotic	# of Rare Spp.
n/a	n/a	n/a	n/a	n/a	2



Figure 3. Survey coverage and rare plant locations detected at Marvin Lake (Site #2). Blue line represents track file logged by A.G. Belliveau’s GPS unit. [Red dots = critically imperiled species (S1-S1S2), yellow dots = imperiled species (S2-S2S3), black dots = vulnerable species (S3-S3S4) and white dots = occurrences tentatively identified as species of conservation concern]. Aerial imagery from ESRI World Imagery basemap (accessed in April 2015).

Rare Species Documented

COMMON NAME	SCIENTIFIC NAME	NB S-Rank	NB GS Rank	PID #	# Loc.
Northern Bog Sedge	<i>Carex gynocrates</i>	S2	Sensitive	ROW, at edge of 10069839	1
				10069805	4
Showy Lady's-Slipper	<i>Cypripedium reginae</i>	S3	Sensitive	10069805	1

Notable Features

- Rich mature calcareous Eastern White Cedar (*Thuja occidentalis*) swamp and fen (including band of >40cm diameter trees) with understory community composed of Bristly-stalked Sedge (*Carex leptalea*), Northern Bog Sedge (*Carex gynocrates*, S2, Sensitive), Showy Lady's-Slipper (*Cypripedium reginae*, S3, Sensitive) and Alder-leaved Buckthorn (*Rhamnus alnifolia*) (PID 10069805)
- Mature seepy hardwood forest (PID 10065217)



Rich mature calcareous Eastern White Cedar swamp, in area supporting Northern Bog Sedge (*Carex gynocrates*, S2, Sensitive) and Showy Lady's-Slipper (*Cypripedium reginae*, S3, Sensitive) on PID 10069805 (left). Broad-Leaved Twayblade (*Listera convallarioides*), Bristly-stalked Sedge (*Carex leptalea*) and Northern Bog Sedge understory community in rich calcareous Eastern White Cedar swamp on PID 10069805 (right).

SITE #3: BROOKVILLE

D. Mazerolle & A. Belliveau, Sept. 24, 2015

Plant Diversity

Total Spp. Richness	Native Spp. Richness	Exotic Spp. Richness	% Native	% Exotic	# of Rare Spp.
264	227	37	86	14	3

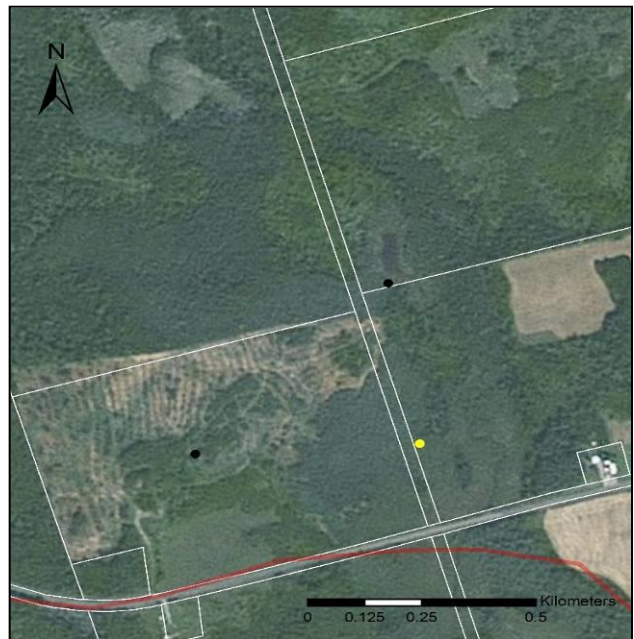
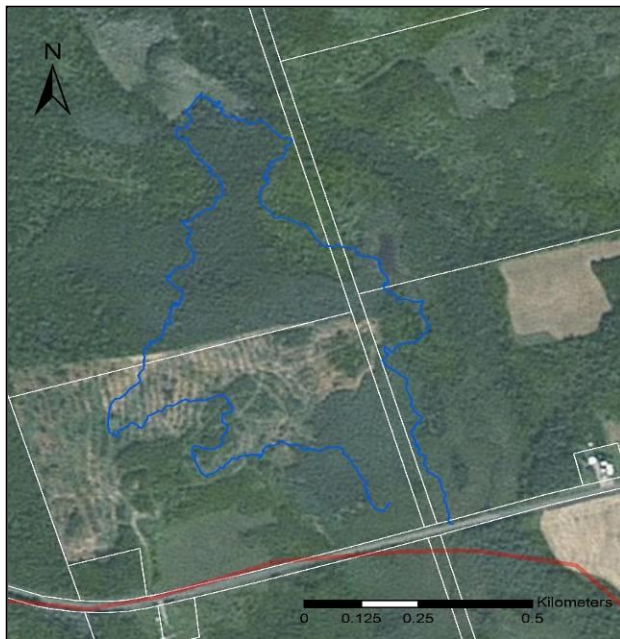


Figure 4. Survey coverage and rare plant locations detected at Brookville (Site #3). Blue line represents track file logged by D.M. Mazerolle's GPS unit. [Red dots = critically imperiled species (S1-S1S2), yellow dots = imperiled species (S2-S2S3), black dots = vulnerable species (S3-S3S4) and white dots = occurrences tentatively identified as species of conservation concern]. Aerial imagery from ESRI World Imagery basemap (accessed in April 2015).

Rare Species Documented

COMMON NAME	SCIENTIFIC NAME	NB S-Rank	NB GS Rank	PID #	# Loc.
Swamp Fly Honeysuckle	<i>Lonicera oblongifolia</i>	S2	Sensitive	10066538	1
Hooked Agrimony	<i>Agrimonia gryposepala</i>	S3	Secure	10069763	1
Gmelin's Water Buttercup	<i>Ranunculus gmelinii</i>	S3	Secure	10262368	1

Notable Features

- Various circumneutral graminoid and shrub fens, mainly dominated by Speckled Alder (*Alnus incana* ssp. *rugosa*), Leatherleaf (*Chamaedaphne calyculata*), Bluejoint Reed Grass (*Calamagrostis canadensis*), Common Winterberry (*Ilex verticillata*), Slender Sedge (*Carex lasiocarpa* var. *americana*), Broad-Leaved Cattail (*Typha latifolia*) and Sweet Gale (*Myrica gale*) (PIDs 10069763, 10262368, 10066538)
- Calcareous Speckled Alder, Eastern White Cedar (*Thuja occidentalis*) shrub swamp with Alderleaf Buckthorn (*Rhamnus alnifolia*) and Interior Sedge (*Carex interior*) understory (PID 10066538)
- Slightly calcareous Eastern White Cedar, Balsam Fir (*Abies balsamea*), Red Maple (*Acer rubrum*) and Black Ash (*Fraxinus nigra*) swamp (PIDs 10065084, 10069763, 10066538)
- Extensive recent clearcutting (PIDs 10069763, 10065084)



Circumneutral Eastern White Cedar, Balsam Fir and Red Maple swamp on PID 10069763 (left). Fairly rich calcareous Eastern White Cedar and Speckled Alder shrub swamp and fen on PID 10066538 (right).

SITE #4 WILLIAMSTOWN LAKE, NW SECTOR

D. Mazerolle, July 3, 2015

Plant Diversity

Total Spp. Richness	Native Spp. Richness	Exotic Spp. Richness	% Native	% Exotic	# of Rare Spp.
224	188	36	84	16	12

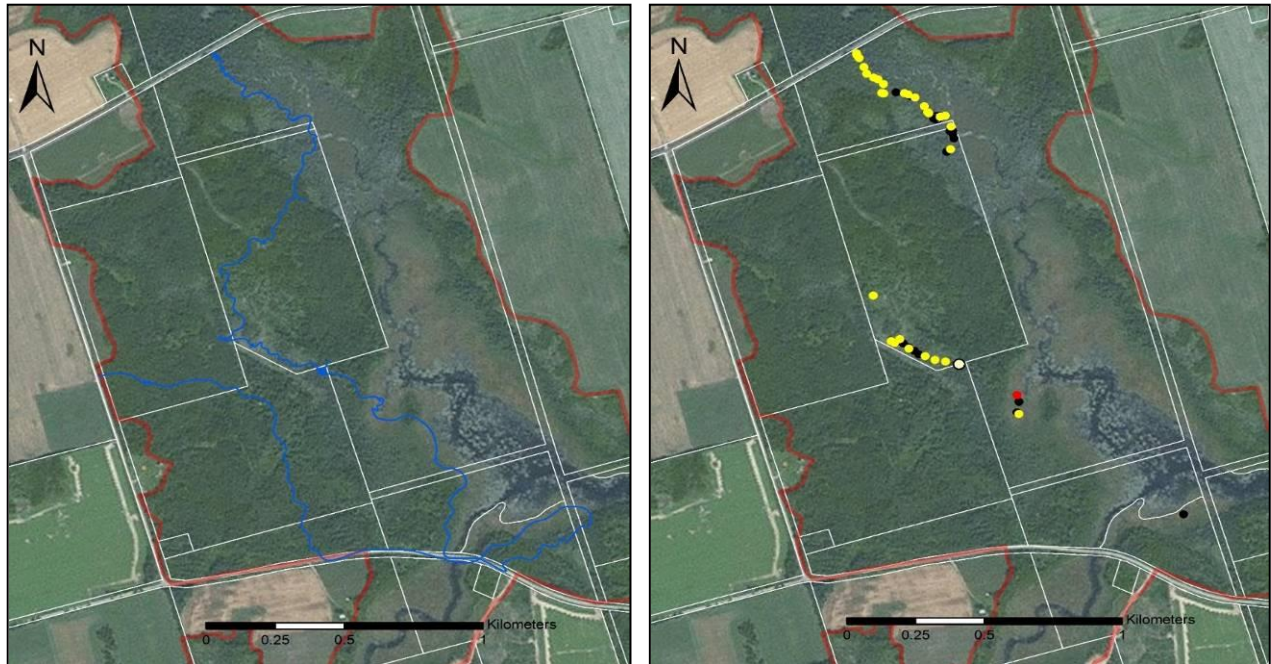


Figure 5. Survey coverage and rare plant locations detected at the northwestern end of Williamstown Lake (Site #4). Blue line represents track file logged by D.M. Mazerolle's GPS unit. [Red dots = critically imperiled species (S1-S1S2), yellow dots = imperiled species (S2-S2S3), black dots = vulnerable species (S3-S3S4) and white dots = occurrences tentatively identified as species of conservation concern]. Aerial imagery from ESRI World Imagery basemap (accessed in April 2015).

Rare Species Documented

COMMON NAME	SCIENTIFIC NAME	NB S-Rank	NB GS Rank	PID #	# Loc.
Narrow-leaved Beaked Sedge	<i>Carex rostrata</i>	S1S2	Sensitive	10068815	1
Northern Bog Sedge	<i>Carex gynocrates</i>	S2	Sensitive	10070225	1
Prairie Sedge	<i>Carex prairea</i>	S2	Sensitive	10068815	7
				ROW, at edge of 10070225	1
Swamp Fly Honeysuckle	<i>Lonicera oblongifolia</i>	S2	Sensitive	10068815	9
				10070225	1
Labrador Bedstraw	<i>Galium labradoricum</i>	S2S3	Sensitive	10068815	6
				10070225	4
Swamp Valerian	<i>Valeriana uliginosa</i>	S2S3	Sensitive	10070225	4
Bog Birch	<i>Betula pumila</i>	S3	Secure	10068815	7
				10070225	1
Showy Lady's-Slipper	<i>Cypripedium reginae</i>	S3	Sensitive	10068815	1
				10070225	5
Downy Willowherb	<i>Epilobium strictum</i>	S3	Secure	10068815	1
				10070225	6
Small Yellow Pond-lily	<i>Nuphar lutea ssp. pumila</i>	S3	Secure	10068815	1
				10237204	1
Blunt-Leaved Pondweed	<i>Potamogeton obtusifolius</i>	S3	Secure	10070225	1
Bog Willow	<i>Salix pedicellaris</i>	S3	Secure	10068815	1

Notable Features

- Extensive rich calcareous sparsely treed Eastern White Cedar (*Thuja occidentalis*) and Tamarack (*Larix laricina*) fen / swamp, with strong graminoid, shrub and forb components (PID 10068815)
- Rich calcareous sparsely treed *Alnus incana* (*Alnus incana* ssp. *rugosa*), Eastern White Cedar and Tamarack swamp (PID 10070225)
- Red Maple (*Acer rubrum*) and Speckled Alder seepage swamp (PID 10070225)
- Fairly rich slightly calcareous Balsam Poplar (*Populus balsamifera*) and Black Ash (*Fraxinus nigra*) seepage slope swamp (PID 10070225)
- Rich calcareous Eastern White Cedar and Black Ash seepage swamp (PID 10070225)
- Very rich calcareous shrub / graminoid / forb fen within Eastern White Cedar / Black Ash seepage swamp (PID 10070225)
- Extensive shoreline fen dominated by Slender Sedge (*Carex lasiocarpa* var. *americana*), Lesser Panicked Sedge (*Carex diandra*) and Narrow-Leaved Beaked Sedge (*Carex rostrata*, S1S2, Sensitive) (PID 10068815)
- Fairly mature Yellow Birch (*Betula alleghaniensis*), Black Ash and Black Cherry (*Prunus serotina*) forest (PID 10065696)
- Intermediate-aged to mature partially disturbed Eastern White Cedar, Red Maple and Black Ash swamp (PID 10237204)



Rich shrubby calcareous Eastern White Cedar and Tamarack swamp on PID 10068815 (left). Rich calcareous graminoid and forb fen opening in Tamarack swamp on PID 10068815 (right).



(Clockwise from top left) Very rich fen opening in calcareous Eastern White Cedar and Tamarack seepage swamp (PID 10070225). Northern Bog Sedge (*Carex gynocrates*, S2, Sensitive) in rich calcareous seepage swamp (PID 10070225). Narrow-Leaved Beaked Sedge (*Carex rostrata*, S1S2, Sensitive) in extensive shoreline fen (PID 10068815). Prairie Sedge (*Carex prairea*, S2, Sensitive) in rich calcareous fen (PID 10068815).

Plant Diversity

Total Spp. Richness	Native Spp. Richness	Exotic Spp. Richness	% Native	% Exotic	# of Rare Spp.
317	279	38	88	12	19+

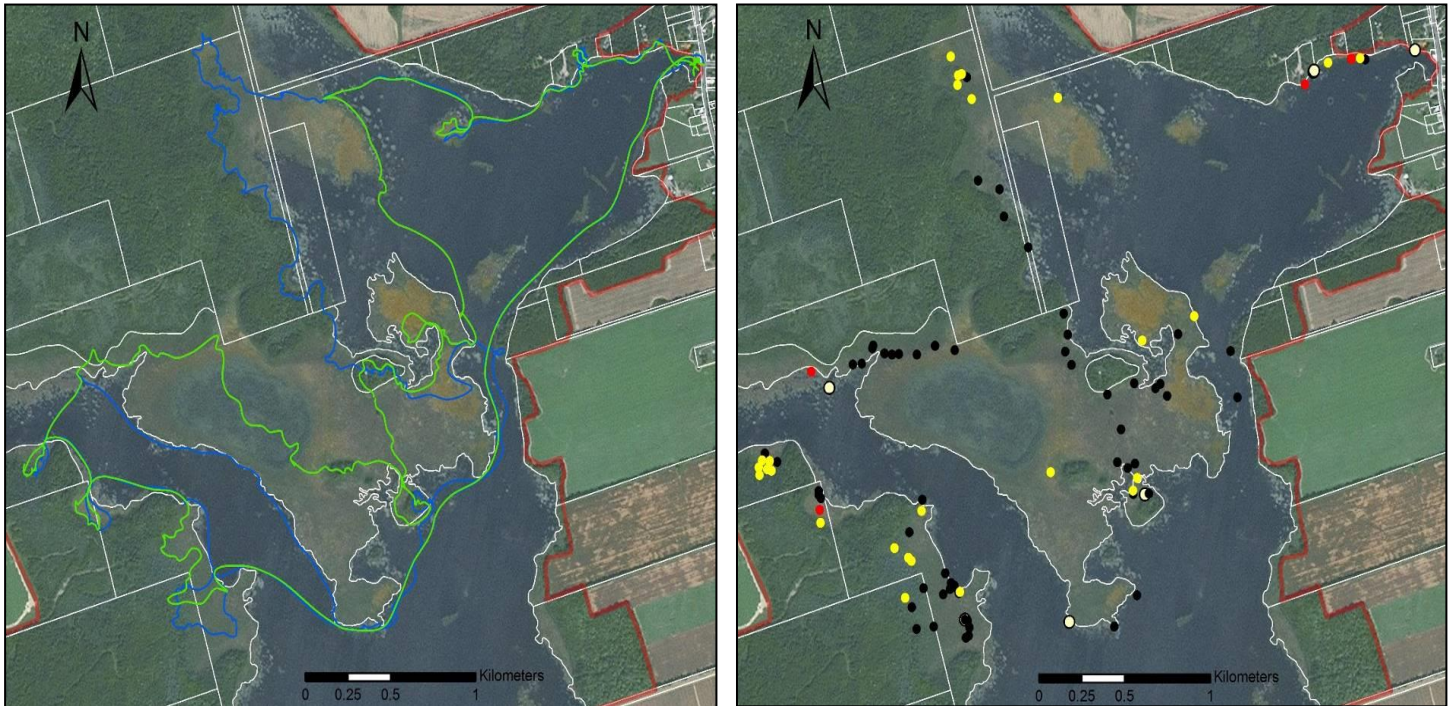


Figure 6. Survey coverage and rare plant locations detected in the northern section of Williamstown Lake (Site #5). Blue line represents track file logged by C.S. Blaney's GPS unit; green line represents track file logged by D.M. Mazerolle's GPS unit. [Red dots = critically imperiled species (S1-S1S2), yellow dots = imperiled species (S2-S2S3), black dots = vulnerable species (S3-S3S4) and white dots = occurrences tentatively identified as species of conservation concern]. Aerial imagery from ESRI World Imagery basemap (accessed in April 2015).

Rare Species Documented

COMMON NAME	SCIENTIFIC NAME	NB S-Rank	NB GS Rank	PID #	# Loc.
Butternut	<i>Juglans cinerea</i>	S1	At Risk	10072130	1
Bearded Sedge	<i>Carex comosa</i>	S1	May Be At Risk	10066298	1
Narrow-leaved Beaked Sedge	<i>Carex rostrata</i>	S1S2	Sensitive	2, near edge of 10133338	1
				10263556	1
Prairie Sedge	<i>Carex prairea</i>	S2	Sensitive	10133338	2
				10133320	1
				10066215	1
Slender Cottongrass	<i>Eriophorum gracile</i>	S2	May Be At Risk	10133338	3
				10133320	1
Swamp Fly Honeysuckle	<i>Lonicera oblongifolia</i>	S2	Sensitive	2, near edge of 10071249	1
				10133312	3
				10133320	2
Sage Willow	<i>Salix candida</i>	S2	Sensitive	10066298	1
Labrador Bedstraw	<i>Galium labradoricum</i>	S2S3	Sensitive	10066215	4
				10133312	4

COMMON NAME	SCIENTIFIC NAME	NB S-Rank	NB GS Rank	PID #	# Loc.
				10133320	2
				10068583	1
				10066298	1
White-stemmed Pondweed	<i>Potamogeton praelongus</i>	S2S3	Secure	2, near edge of 10072130	2
Creeping Sedge	<i>Carex chordorrhiza</i>	S3	Secure	10133338	15
				10133312	1
				10066298	1
				10066215	3
				ROW, partially in 10066215	1
				10133320	1
Coastal Sedge	<i>Carex exilis</i>	S3	Secure	10133338	2
Showy Lady's-Slipper	<i>Cypripedium reginae</i>	S3	Sensitive	10133312	1
				10066298	1
Downy Willowherb	<i>Epilobium strictum</i>	S3	Secure	10133338	1
Whorled Water Milfoil	<i>Myriophyllum verticillatum</i>	S3	Secure	10133338	1
Blunt-Leaved Pondweed	<i>Potamogeton obtusifolius</i>	S3	Secure	2, near edge of 10072130	2
				2	2
				2, near edge of 10133338	2
				2 (open water) 10133320	1
Brown Beakrush	<i>Rhynchospora fusca</i>	S3	Secure	10133338	2
Bog Willow	<i>Salix pedicellaris</i>	S3	Secure	10133338	1
Boreal Aster	<i>Symphotrichum boreale</i>	S3	Sensitive	10133312	4
				10133320	9
				10066215	1
				10068583	4
				10066298	1
Bald Eagle	<i>Haliaeetus leucocephalus</i>	S3B	At Risk	2, near edge of 10266724	1
Smooth Twig Rush	<i>Cladium mariscoides</i>	S3S4	Secure	10133338	10
				10066298	2
				10133320	4
Eastern Kingbird	<i>Tyrannus tyrannus</i>	S3S4B	Sensitive	10072130	1
				10066215	1
				2, near edge of 10065043	1
				10133338	1
-	<i>Carex diandra / prairea</i>	-	-	10133338	1
-	<i>Myriophyllum cf. sibiricum</i>	-	-	2, near edge of 10133338	1

Notable Features

- Extensive open calcareous graminoid / forb fen, with interspersed areas of standing water and emergent vegetation and floating sections along shore; mainly dominated by Slender Sedge (*Carex lasiocarpa* var. *americana*), Mud Sedge (*Carex limosa*), Smooth Twigrush (*Cladium mariscoides*, S3S4, Secure), Bog Buckbean (*Menyanthes trifoliata*), Pod Grass (*Scheuchzeria palustris* var. *americana*), Threeway Sedge (*Dulichium arundinaceum*), Sweet Gale (*Myrica gale*), Leatherleaf (*Chamaedaphne calyculata*), Marsh Cinquefoil (*Comarum palustre*) and Alpine Clubrush (*Trichophorum alpinum*) (PID 10133338)
- Calcareous fen of Lake Sedge (*Carex lacustris*), Eastern White Cedar (*Thuja occidentalis*), Alderleaf Buckthorn (*Rhamnus alnifolia*), Three-leaved False Solomon's Seal (*Maianthemum trifolium*), Alpine Clubrush, Cinnamon Fern (*Osmunda regalis*) and Sweet Gale (PID 10068583)
- Rich calcareous Eastern White Cedar, Tamarack (*Larix laricina*), Black Spruce (*Picea mariana*) and Black Ash swamp and open graminoid fen (PID 10133320)
- Rich shrubby calcareous fen and sparsely-treed Eastern White Cedar fen / swamp (PID 10133312)

- Rich shrubby calcareous fen (PID 10066215)
- Calcareous Eastern White Cedar swamp / fen (PID 10068583)
- Extensive clearcut (PID 10066215)



(Clockwise from top left) Open circumneutral bog / fen community (PID 10133338). Calcareous Slender Sedge, Sweet Gale and Leatherleaf-dominated wet fen (PID 10133338). Extensive open calcareous fen, with large population of Rose Pogonia (*Pogonia ophioglossoides*) (PID 10133338). Slender Cottongrass (*Eriophorum gracile*, S2, May Be At Risk) in calcareous fen (PID 10133338).



(Clockwise from top left) a) Calcareous Eastern White Cedar – Alder swamp at margin of open fen; b) Calcareous graminoid fen with sparse Eastern White Cedar near Williamstown Lake shore. The dominant white-headed sedge is Alpine Clubrush (*Trichophorum alpinum*); c) Calcareous open fen community with American Reed (*Phragmites australis* ssp. *americana*) as a co-dominant. Although not provincially rare, American Reed is very uncommon inland in New Brunswick and was not seen at any study sites away from Williamstown Lake.

Plant Diversity

Total Spp. Richness	Native Spp. Richness	Exotic Spp. Richness	% Native	% Exotic	# of Rare Spp.
369	316	53	86	14	21+

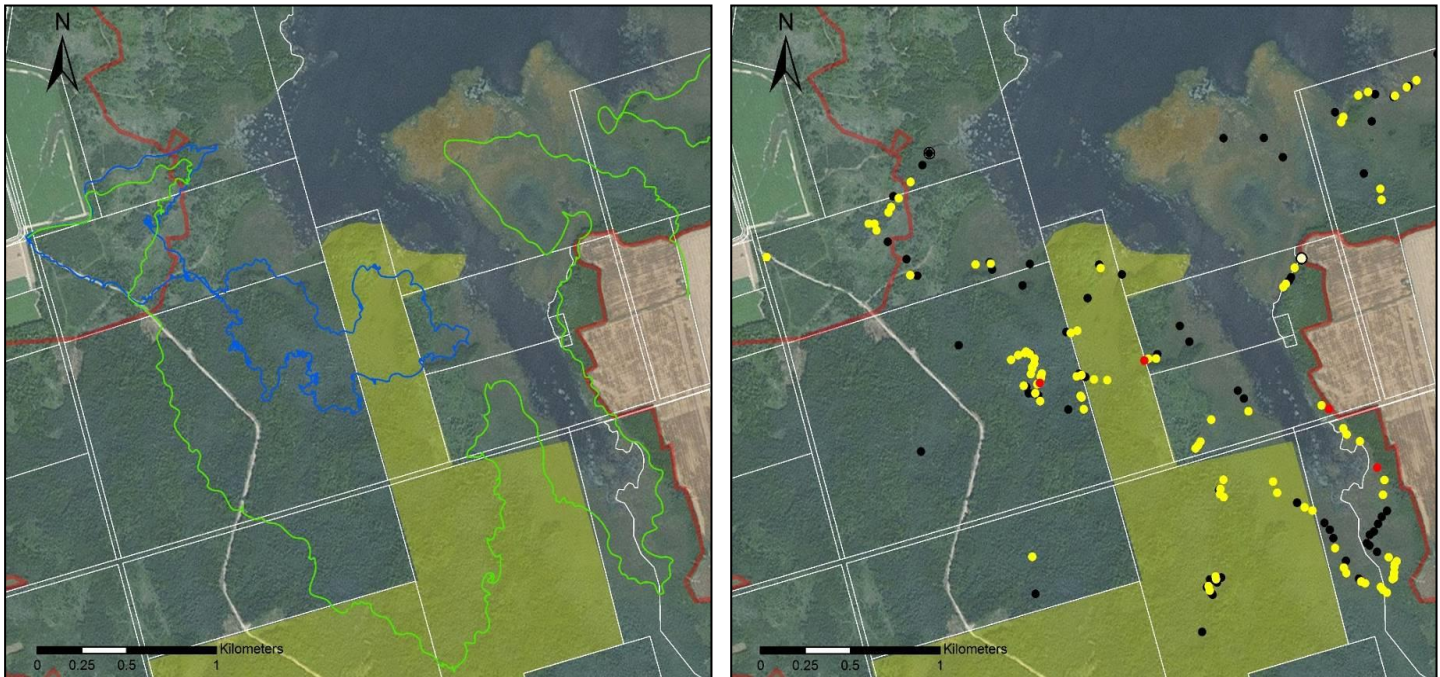


Figure 7. Survey coverage and rare plant locations detected in the southwestern section of Williamstown Lake (Site #6). Blue line represents track file logged by C.S. Blaney's GPS unit; green line represents track file logged by D.M. Mazerolle's GPS unit. [Red dots = critically imperiled species (S1-S1S2), yellow dots = imperiled species (S2-S2S3), black dots = vulnerable species (S3-S3S4) and white dots = occurrences tentatively identified as species of conservation concern]. Yellow-shaded parcels are part of the Williamstown Lake Protected Natural Area. Aerial imagery from ESRI World Imagery basemap (accessed in April 2015).

Rare Species Documented

COMMON NAME	SCIENTIFIC NAME	NB S-Rank	NB GS Rank	PID #	# Loc.
Bearded Sedge	<i>Carex comosa</i>	S1	May Be At Risk	10069706	1
				10067692	1
White Adder's-Mouth	<i>Malaxis brachypoda</i>	S1	May Be At Risk	10068658	1
Narrow-leaved Beaked Sedge	<i>Carex rostrata</i>	S1S2	Sensitive	10267383	1
				10067692	1
Northern Bog Sedge	<i>Carex gynocrates</i>	S2	Sensitive	10068658	3
				10070027	2
				10069706	1
Livid Sedge	<i>Carex livida var. radicaulis</i>	S2	Sensitive	10070118	1
Prairie Sedge	<i>Carex prairea</i>	S2	Sensitive	10069706	1
				10267383	6
				10068658	2
				10069706	1
Sparse-Flowered Sedge	<i>Carex tenuiflora</i>	S2	May Be At Risk	10067692	2
				10068658	4
				10070118	2
Slender Cottongrass	<i>Eriophorum gracile</i>	S2	May Be At Risk	10070118	2

COMMON NAME	SCIENTIFIC NAME	NB S-Rank	NB GS Rank	PID #	# Loc.
				10067692	1
				10070027	1
Swamp Fly Honeysuckle	<i>Lonicera oblongifolia</i>	S2	Sensitive	10070357	2
				10070118	2
				10069706	8
				10267383	9
				10067692	8
				10068658	6
				10065076	1
				10070027	4
Sage Willow	<i>Salix candida</i>	S2	Sensitive	10267383	2
				10067692	1
Labrador Bedstraw	<i>Galium labradoricum</i>	S2S3	Sensitive	10069706	4
				10067692	5
				10068658	8
				10070027	2
Swamp Valerian	<i>Valeriana uliginosa</i>	S2S3	Sensitive	10067692	1
				10068658	4
				10070027	3
Bog Birch	<i>Betula pumila</i>	S3	Secure	10069706	2
				10067692	1
Least Moonwort	<i>Botrychium simplex</i>	S3	Secure	10068658	1
Creeping Sedge	<i>Carex chordorrhiza</i>	S3	Secure	2, near edge of 10069706 and 10070357	2
				10070118	3
				10069706	2
				10267383	1
				10067692	2
				10070027	1
				10065076	1
Coastal Sedge	<i>Carex exilis</i>	S3	Secure	10068658	1
Showy Lady's-Slipper	<i>Cypripedium reginae</i>	S3	Sensitive	10067692	7
				10068658	6
Downy Willowherb	<i>Epilobium strictum</i>	S3	Secure	10068658	1
				10065076	1
				10067692	1
				10070027	4
White Fringed Orchid	<i>Platanthera blephariglottis</i>	S3	Secure	10070357	1
Boreal Aster	<i>Symphotrichum boreale</i>	S3	Sensitive	10069706	5
				10267383	7
				10067692	3
				10065076	2
				10068658	10
				10070118	3
				2, near edge of 10067692	1
				10070027	1
Great Crested Flycatcher	<i>Myiarchus crinitus</i>	S3B	Sensitive	10068658	2
Smooth Twig Rush	<i>Cladium mariscoides</i>	S3S4	Secure	2, near edge of 10070357 and 10070118	1
				10070118	2
				10069706	2
				10267383	2
				10068658	1
				10070027	1
Olive-sided Flycatcher	<i>Contopus cooperi</i>	S3S4B	At Risk	10070027	1
				10068658	3

COMMON NAME	SCIENTIFIC NAME	NB S-Rank	NB GS Rank	PID #	# Loc.
Canada Warbler	<i>Wilsonia canadensis</i>	S3S4B	At Risk	10070027	2
				10068658	3
Evening Grosbeak	<i>Coccothraustes vespertinus</i>	S3S4B,S4S5N	Sensitive	10070027	1

Notable Features

- Various rich calcareous graminoid / shrub fen communities, supporting numerous provincially rare species (PIDs 10070118, 10069706, 10267383, 10068658, 10067692, 2)
- Rich mature calcareous Eastern White Cedar (*Thuja occidentalis*)-dominated swamp, occasionally mixed with Black Spruce (*Picea mariana*) and Tamarack (*Larix laricina*), containing a variety of rich understory communities and supporting numerous provincially rare species (PIDs 10070027, 10065076, 10068658, 10067692)
- Rich open calcareous Eastern White Cedar and Black Spruce fen forest (PID 10068658)
- Rich mature calcareous Eastern White Cedar and Black Ash (*Fraxinus nigra*) swamp (PID 10070027, 10067692)
- Fairly rich Balsam Poplar (*Populus balsamifera*) swamp / fen (PID 10065076)
- Mesotrophic locally calcareous Eastern White Cedar, Tamarack and Black Ash swamp (PID 10070357)
- Heavily cut-over area (PID 10070027)



Very rich calcareous forb and graminoid fen along shore of Williamstown Lake on PID 10069706 (left). Very rich opening in calcareous Eastern White Cedar swamp on PID 10067692, in area supporting Showy Lady's-Slipper (*Cypripedium reginae*, S3, Sensitive) and Northern Bog Sedge (*Carex gynocrates*, S2, Sensitive) (right).



(Clockwise from top left) Sage Willow (*Salix candida*, S2, Sensitive), in rich calcareous lakeshore fen (PID 10267383). Bearded Sedge (*Carex comosa*, S1, May Be At Risk) in rich calcareous lakeshore fen (PID 10069706). Extensive open graminoid and low shrub fen, containing localized occurrences of Creeping Sedge (*Carex chordorrhiza*, S3, Secure) (PID 2). Small occurrence of Livid Sedge (*Carex livida* var. *radicalis*) in very rich forb and shrub-dominated fen community (PID 10069706).



Above: White Adder's-Mouth orchid (*Malaxis brachypoda*, S1 – May Be At Risk), and (below) the habitat in which it was found, an exceptionally rich calcareous fen opening in Tamarack – Eastern White Cedar – Black Spruce fen forest (PID 10068658).

Plant Diversity

Total Spp. Richness	Native Spp. Richness	Exotic Spp. Richness	% Native	% Exotic	# of Rare Spp.
267	233	34	87	13	12+

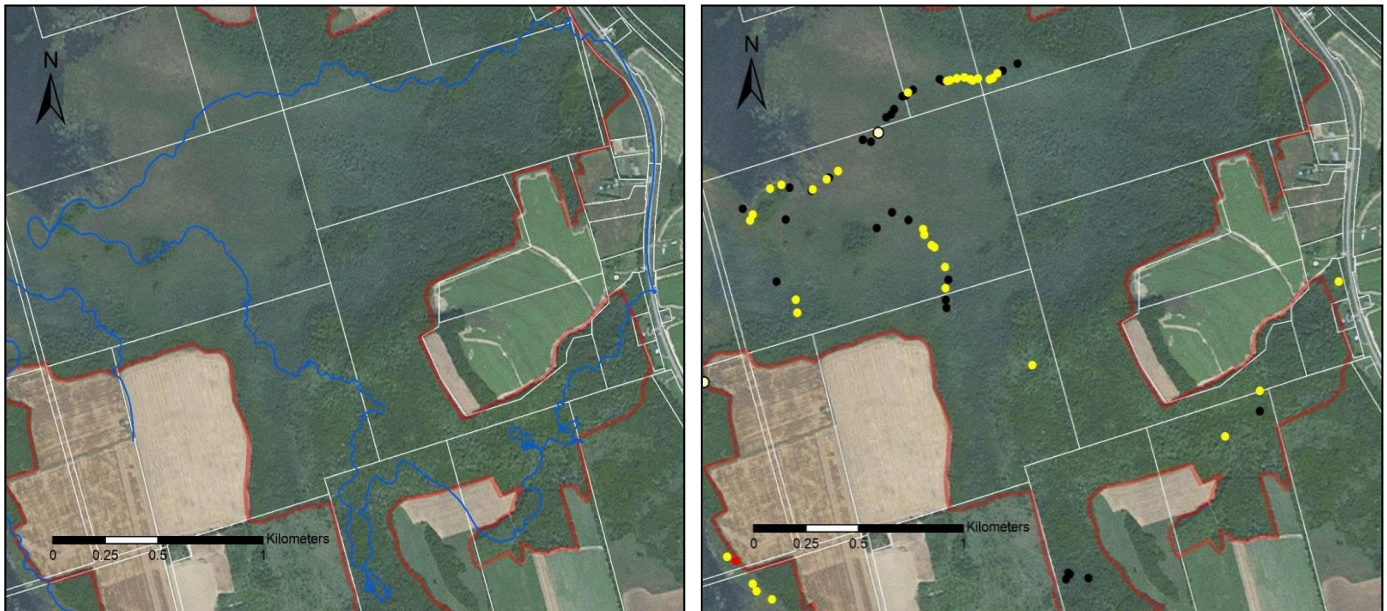


Figure 8. Survey coverage and rare plant locations detected in the southeastern section of Williamstown Lake (Site #7). Blue line represents track file logged by C.S. Blaney's GPS unit; green line represents track file logged by D.M. Mazerolle's GPS unit. [Red dots = critically imperiled species (S1-S1S2), yellow dots = imperiled species (S2-S2S3), black dots = vulnerable species (S3-S3S4) and white dots = occurrences tentatively identified as species of conservation concern]. Aerial imagery from ESRI World Imagery basemap (accessed in April 2015).

Rare Species Documented

COMMON NAME	SCIENTIFIC NAME	NB S-Rank	NB GS Rank	PID #	# Loc.
Sparse-Flowered Sedge	<i>Carex tenuiflora</i>	S2	May Be At Risk	10070357	3
				10269785	3
Eastern Leatherwood	<i>Dirca palustris</i>	S2	May Be At Risk	10065902	1
				10211258	1
				10210136	1
Swamp Fly Honeysuckle	<i>Lonicera oblongifolia</i>	S2	Sensitive	10067239	1
				10070357	3
				10269785	6
				10070357	7
Labrador Bedstraw	<i>Galium labradoricum</i>	S2S3	Sensitive	10269785	3
				10070357	7
Northern Maidenhair Fern	<i>Adiantum pedatum</i>	S3	Secure	10211258	1
Hooked Agrimony	<i>Agrimonia gryposepala</i>	S3	Secure	10211266	1
Creeping Sedge	<i>Carex chordorrhiza</i>	S3	Secure	10070357	7
				2, near edge of 10070357 and 10269785	1
Creeping Sedge	<i>Carex chordorrhiza</i>	S3	Secure	10269785	3
Showy Lady's-Slipper	<i>Cypripedium reginae</i>	S3	Sensitive	10067239	2
				10070357	1
Dwarf Clearweed	<i>Pilea pumila</i>	S3	Secure	10211266	3

COMMON NAME	SCIENTIFIC NAME	NB S-Rank	NB GS Rank	PID #	# Loc.
Boreal Aster	<i>Symphyotrichum boreale</i>	S3	Sensitive	10070357	2
				2, near edge of 10070357 and 10269785	1
				10269785	7
Smooth Twig Rush	<i>Cladium mariscoides</i>	S3S4	Secure	10070357	4
				2, near edge of 10070357 and 10269785	2
-	<i>Rhynchospora alba / capillacea</i>	-	-	10070357	1

Notable Features

- Various rich open calcareous graminoid / shrub fen communities, mainly characterized by Slender Sedge (*Carex lasiocarpa* var. *americana*), Bog Buckbean (*Menyanthes trifoliata*) Broad-Leaved Cattail (*Typha latifolia*), Sweet Gale (*Myrica gale*), Leatherleaf (*Chamaedaphne calyculata*) and Alpine Clubrush (*Trichophorum alpinum*) (PID 10070357, 10269785, 2)
- Mature stands of fairly intact shade-tolerant hardwood forest composed of Sugar Maple (*Acer saccharum*), Yellow Birch (*Betula alleghaniensis*), American Beech (*Fagus grandifolia*), White Ash (*Fraxinus americana*), Ironwood (*Ostrya virginiana*) and Eastern Hemlock (*Tsuga Canadensis*) (PIDs 10067239, 10065902, 10269793, 10211266)
- Locally very rich mature calcareous Eastern White Cedar (*Thuja occidentalis*) and Black Ash (*Fraxinus nigra*) seepage swamp (PIDs 10269785, 10071025, 10067239, 10210136, 10070357)
- Mature Eastern White Cedar swamp (PIDs 10211258, 10269785)
- Mature Tamarack (*Larix laricina*) and Eastern White Cedar swamp (PID 10067239)
- Calcareous and locally very rich shrubby Black Ash, Speckled Alder (*Alnus incana* ssp. *rugosa*), Eastern White Cedar, Red Maple (*Acer rubrum*) and Common Winterberry (*Ilex verticillata*) swamp (PID 10269785)



Rich calcareous forb, shrub and graminoid fen on PID 10269785 (left). Calcareous Eastern White Cedar, Black Ash and Red Maple swamp on PID 10269785 (right).



Extensive rich calcareous graminoid fen along the eastern shore of Williamstown Lake, near PID 10269785 and PID 10070357 (top). Showy Lady's-Slipper (*Cypripedium reginae*, S3, Sensitive) in understory of calcareous Eastern White Cedar swamp on PID 10067239 (bottom left). Sparse-Flowered Sedge (*Carex tenuiflora*, S2, May Be At Risk) in rich calcareous fen on PID 10269785 (bottom right).

Plant Diversity

Total Spp. Richness	Native Spp. Richness	Exotic Spp. Richness	% Native	% Exotic	# of Rare Spp.
374	328	46	88	12	14+

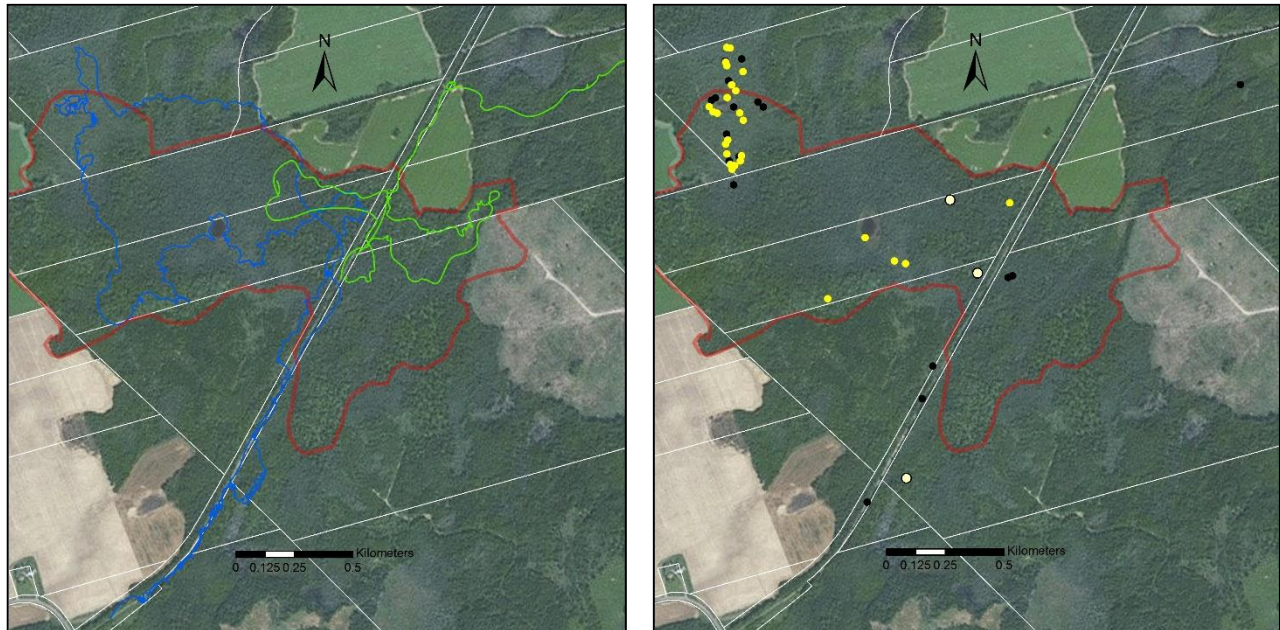


Figure 9. Survey coverage and rare plant locations detected at Lindsay (Site #8). Blue line represents track file logged by C.S. Blaney’s GPS unit; green line represents track file logged by D.M. Mazerolle’s GPS unit. [Red dots = critically imperiled species (S1-S1S2), yellow dots = imperiled species (S2-S2S3), black dots = vulnerable species (S3-S3S4) and white dots = occurrences tentatively identified as species of conservation concern]. Aerial imagery from ESRI World Imagery basemap (accessed in April 2015).

Rare Species Documented

COMMON NAME	SCIENTIFIC NAME	NB S-Rank	NB GS Rank	PID #	# Loc.
Prairie Sedge	<i>Carex prairea</i>	S2	Sensitive	10198653	5
Eastern Leatherwood	<i>Dirca palustris</i>	S2	May Be At Risk	10152940	1
Swamp Fly Honeysuckle	<i>Lonicera oblongifolia</i>	S2	Sensitive	10152940	2
				10198653	5
Labrador Bedstraw	<i>Galium labradoricum</i>	S2S3	Sensitive	10152940	2
				10198653	4
Swamp Valerian	<i>Valeriana uliginosa</i>	S2S3	Sensitive	10198653	9
Hooked Agrimony	<i>Agrimonia gryposepala</i>	S3	Secure	10046902	1
				10223576	1
Coastal Sedge	<i>Carex exilis</i>	S3	Secure	10198653	1
Tuckerman’s Sedge	<i>Carex tuckermanii</i>	S3	Secure	10050276	1
Showy Lady’s-Slipper	<i>Cypripedium reginae</i>	S3	Sensitive	10198653	7
Downy Willowherb	<i>Epilobium strictum</i>	S3	Secure	10050276	2
Loesel’s Twayblade	<i>Liparis loeselii</i>	S3	Secure	10198653	2
Boreal Aster	<i>Symphyotrichum boreale</i>	S3	Sensitive	10046902	1
				10198653	3
Northern Meadow-rue	<i>Thalictrum venulosum</i>	S3	Secure	10223576	1
Great Crested Flycatcher	<i>Myiarchus crinitus</i>	S3B	Sensitive	10152940	1
Smooth Twig Rush	<i>Cladium mariscoides</i>	S3S4	Secure	10198653	1

COMMON NAME	SCIENTIFIC NAME	NB S-Rank	NB GS Rank	PID #	# Loc.
-	<i>Scirpus atrovirens</i> (s.l.)	-	-	10050276	1
				10152940	1

Notable Features

- Mature Eastern White Cedar (*Thuja occidentalis*) seepage swamp (PIDs 10046902, 10152940, 10050276)
- Open Black Ash (*Fraxinus nigra*) and American Elm (*Ulmus americana*) swamp (PID 10050276)
- Sweet Gale (*Myrica gale*), Bog Rosemary (*Andromeda polifolia* var. *glaucophylla*) and Eastern White Cedar shrub fen (PID 10198653)
- Mature Eastern White Cedar and Black Spruce (*Picea mariana*) swamp (PID 10152940)
- Eastern White Cedar swamp, recently flooded by beavers (PID 10152940)
- Rich open fen (PID 10198653)
- Mature Sugar Maple (*Acer saccharum*), Eastern White Cedar, Black Ash (*Fraxinus nigra*) and Yellow Birch (*Betula alleghaniensis*) forest (PID 10152940)
- Mature Eastern Hemlock (*Tsuga canadensis*) and Eastern White Cedar upland forest (PID 10152940)
- Intermediate to mature Sugar Maple, Balsam Fir (*Abies balsamea*) and Ironwood (*Ostrya virginiana*) upland forest (PID 10152940)
- Cut-over mature Eastern White Cedar swamp at edge of extensive clear cut (PID 10050276)



Fairly rich calcareous Eastern White Cedar swamp with scattered Black Ash, in area affected by beaver activity on PID 10152940 (left). Downy Willowherb (*Epilobium strictum*, S3, Secure) at edge of clear cut Eastern White Cedar swamp on PID 10050276 (right).



(Clockwise from top left): a) & b) Small pond at northwest end of site with very calcareous floating fen mat, deeper peat graminoid fen and highly calcareous Eastern White Cedar – Tamarack – Black Spruce fen forest around its margins; c) Mature upland Eastern White Cedar – Hemlock forest in west-central part of site; d) Small pond in west-central part of site, with water levels recently raised by beavers (note extensive dead and dying trees around margins). Pond margins are a calcareous graminoid fen dominated by Slender Sedge (*Carex lasiocarpa* var. *americana*).

Plant Diversity

Total Spp. Richness	Native Spp. Richness	Exotic Spp. Richness	% Native	% Exotic	# of Rare Spp.
151	125	26	83	17	4

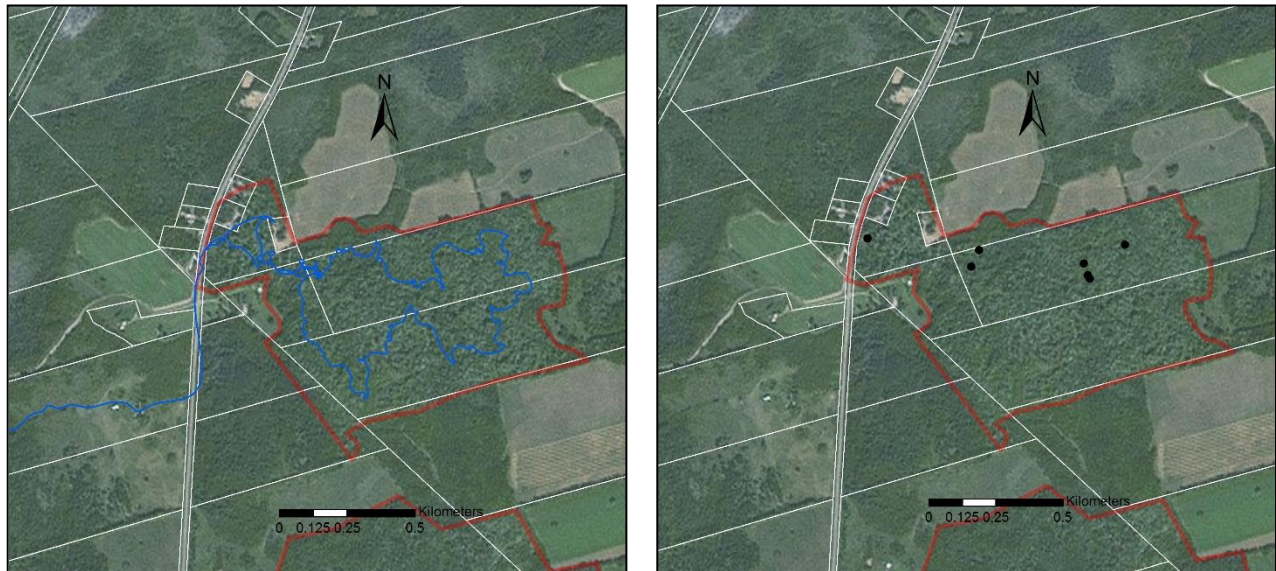


Figure 10. Survey coverage and rare plant locations detected at Hannahs Hill (Site #9). Blue line represents track file logged by D.M. Mazerolle’s GPS unit. [Red dots = critically imperiled species (S1-S1S2), yellow dots = imperiled species (S2-S2S3), black dots = vulnerable species (S3-S3S4) and white dots = occurrences tentatively identified as species of conservation concern]. Aerial imagery from ESRI World Imagery basemap (accessed in April 2015).

Rare Species Documented

COMMON NAME	SCIENTIFIC NAME	NB S-Rank	NB GS Rank	PID #	# Loc.
Northern Maidenhair Fern	<i>Adiantum pedatum</i>	S3	Secure	10048049	1
Hooked Agrimony	<i>Agrimonia gryposepala</i>	S3	Secure	10151371	1
				10048049	1
Large Toothwort	<i>Cardamine maxima</i>	S3	Secure	10048049	2
Goldie’s Wood Fern	<i>Dryopteris goldiana</i>	S3	Sensitive	10048049	3

Notable Features

- Rich mature Sugar Maple (*Acer saccharum*), Ironwood (*Ostrya virginiana*), White Ash (*Fraxinus americana*), Yellow Birch (*Betula alleghaniensis*) and American Beech (*Fagus grandifolia*) forest (PIDs 10051993, 10048049, 10046811)
- Mature seepy Sugar Maple, American Basswood (*Tilia americana*), White Ash and Balsam Fir (*Abies balsamea*) forest (PID 10048049)
- Mountain Maple (*Acer spicatum*), Balsam Fir, Eastern White Cedar (*Thuja occidentalis*) and White Ash forest (PID 10048049)
- Eastern Hemlock (*Tsuga canadensis*), American Beech, Sugar Maple, Ironwood and Balsam Fir forest (PIDs 10151371, 10046811)
- Black Ash (*Fraxinus nigra*) seepage swamp (PIDs 10046811, 10051993)
- Mature Eastern White Cedar swamp (PID 10048049)



Mature Sugar Maple, White Ash, Yellow Birch, Ironwood and American Beech forest on PID 10051993 (left). Goldie's Wood Fern (*Dryopteris goldiana*, S3, Sensitive) occurrence in rich mature Sugar Maple and American Beech forest on PID 10048049 (right).

SITE #10 PAYSON LAKE

D. Mazerolle & A. Belliveau, Aug. 6, 2015

Plant Diversity

Total Spp. Richness	Native Spp. Richness	Exotic Spp. Richness	% Native	% Exotic	# of Rare Spp.
358	305	53	85	15	11+

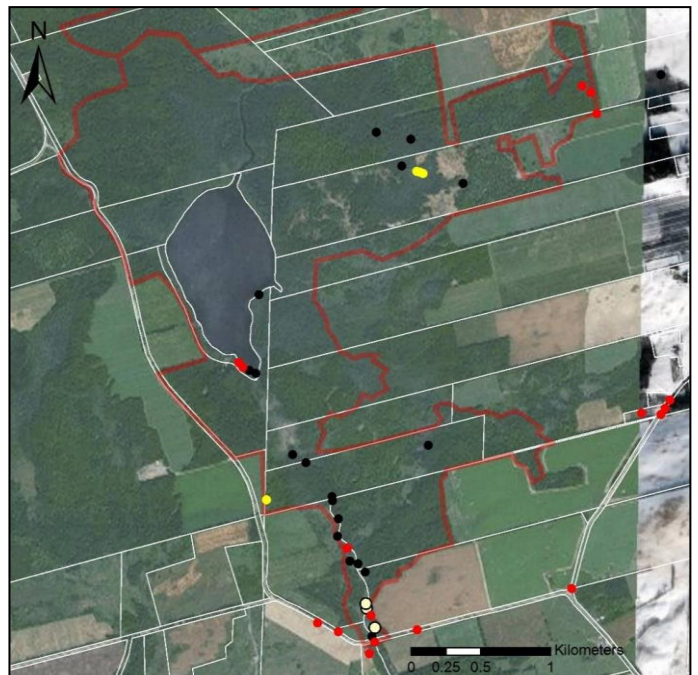
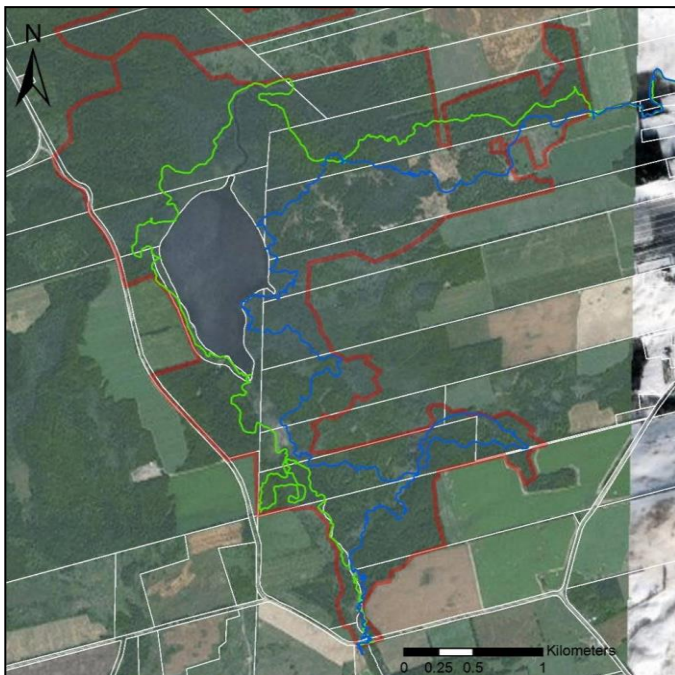


Figure 11. Survey coverage and rare plant locations detected at Payson Lake (Site #10). Blue line represents track file logged by D.M. Mazerolle's GPS unit; green line represents track file logged by A.G. Belliveau's GPS unit. [Red dots = critically imperiled species (S1-S1S2), yellow dots = imperiled species (S2-S2S3), black dots = vulnerable species (S3-S3S4) and white dots = occurrences tentatively identified as species of conservation concern]. Aerial imagery from ESRI World Imagery basemap (accessed in April 2015).

Rare Species Documented

COMMON NAME	SCIENTIFIC NAME	NB S-Rank	NB GS Rank	PID #	# Loc.
Butternut	<i>Juglans cinerea</i>	S1	At Risk	10051019	3
				10049435	1
				ROW, at edge of 10049435	1
				ROW, at edge of 10211613	1
				10048635	1
				10048577	1
				10049583	1
				10055903	1
				10195774	2
				10204550	1
Narrow-leaved Beaked Sedge	<i>Carex rostrata</i>	S1S2	Sensitive	10273266	2
				10048577	2
Northern Bog Sedge	<i>Carex gynocrates</i>	S2	Sensitive	10048577	2
Eastern Leatherwood	<i>Dirca palustris</i>	S2	May Be At Risk	10051472	1
Swamp Valerian	<i>Valeriana uliginosa</i>	S2S3	Sensitive	10048577	2
Hooked Agrimony	<i>Agrimonia gryposepala</i>	S3	Secure	10048064	1
				10048577	1
				10049583	1
				10055903	1
Showy Lady's-Slipper	<i>Cypripedium reginae</i>	S3	Sensitive	10195774	1
				10048577	1
				10051001	1
Matted Spikerush	<i>Eleocharis intermedia</i>	S3	Secure	10048635	1
Small Yellow Pond-lily	<i>Nuphar lutea ssp. pumila</i>	S3	Secure	10273266	1
Dwarf Clearweed	<i>Pilea pumila</i>	S3	Secure	10048064	2
				10051472	3
				10055903	1
				10195774	1
Boreal Aster	<i>Symphotrichum boreale</i>	S3	Sensitive	2, near edge of 10273266	1
				10055911	1

Notable Features

- Eastern White Cedar (*Thuja occidentalis*) and White Spruce (*Picea glauca*) forest with understory of Naked Bishop's-Cap (*Mitella nuda*), Common Lady Fern (*Athyrium filix-femina*) and calcareous moss (*Mnium spp.*) (provincially rare – S3) (PID 10195774)
- Rich calcareous Eastern White Cedar swamp with small shrubby fen openings (PIDs 10048577, 10055911, 10051001)
- Mature Eastern White Cedar, Black Ash (*Fraxinus nigra*) and Black Spruce (*Picea mariana*) swamp (PIDs 10195774, 10048577)
- Mature Black Ash, Yellow Birch (*Betula alleghaniensis*) and Eastern White Cedar swamp (PID 10051019)
- Mature to old Eastern White Cedar swamp (PIDs 10049070, 10195774, 10051472, 10048700, 10048577)
- Mature Black Ash, Yellow Birch and Eastern White Cedar swamp (PID 10051019)
- Mature Red Maple (*Acer rubrum*), Yellow Birch and Red Spruce (*Picea rubens*) forest (PID 10195774)
- Mature Red Maple, White Ash (*Fraxinus americana*) and Balsam Fir (*Abies balsamea*) forest (PID 10051472)
- Mature Sugar Maple (*Acer saccharum*), Balsam Fir (*Abies balsamea*) and Ironwood (*Ostrya virginiana*) forest (PID 10048577)

- Rich tolerant hardwood forest (PID 10051472)
- Mature slightly seepy White Ash, Yellow Birch and Eastern White Cedar forest (PID 10195774)



(Clockwise from top left) Rich opening in calcareous Eastern White Cedar swamp, in area supporting Northern Bog Sedge (*Carex gynocrates*, S2, Sensitive) and Swamp Valerian (*Valeriana uliginosa*, S2, Sensitive) and Showy Lady's-Slipper (*Cypripedium reginae*, S3, Sensitive) (PID 10048577). Mature Eastern White Cedar swamp along the eastern shore of Payson Lake (PID 10049070). Seepy Yellow Birch, Eastern White Cedar and White Ash swamp, in area formerly flooded by beaver activity (PID 10195774). Marsh Valerian in rich calcareous Eastern White Cedar swamp (PID 10048577).

Plant Diversity

Total Spp. Richness	Native Spp. Richness	Exotic Spp. Richness	% Native	% Exotic	# of Rare Spp.
355	289	66	81	19	16

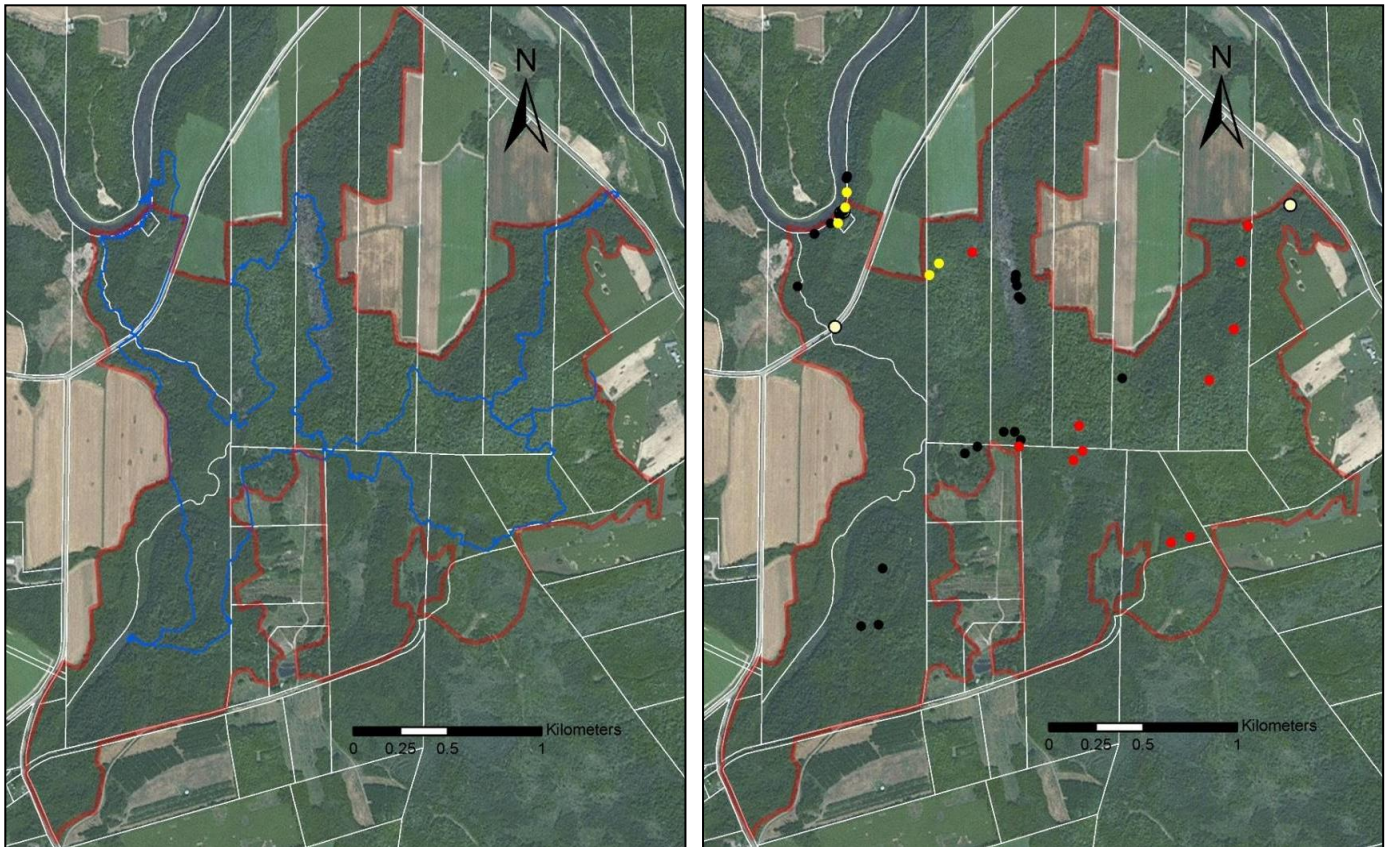


Figure 12. Survey coverage and rare plant locations detected at Watson Settlement (Site #11). Blue line represents track file logged by C.S. Blaney’s GPS unit. [Red dots = critically imperiled species (S1-S1S2), yellow dots = imperiled species (S2-S2S3), black dots = vulnerable species (S3-S3S4) and white dots = occurrences tentatively identified as species of conservation concern]. Aerial imagery from ESRI World Imagery basemap (accessed in April 2015).

Rare Species Documented

COMMON NAME	SCIENTIFIC NAME	NB S-Rank	NB GS Rank	PID #	# Loc.
Butternut	<i>Juglans cinerea</i>	S1	At Risk	10036879	4
				10175644	2
				10035434	2
				10237766	1
				10036093	1
				10175677	1
Needle-Tipped Blue-eyed-grass	<i>Sisyrinchium mucronatum</i>	S1?	Undetermined	10036887	2
Eastern Leatherwood	<i>Dirca palustris</i>	S2	May Be At Risk	10036093	2
One-Flowered Broomrape	<i>Orobanche uniflora</i>	S2	Sensitive	10036887	1
Seneca Snakeroot	<i>Polygala senega</i>	S2	Sensitive	10036135	2
				10036887	1
Northern Maidenhair Fern	<i>Adiantum pedatum</i>	S3	Secure	10036796	1

COMMON NAME	SCIENTIFIC NAME	NB S-Rank	NB GS Rank	PID #	# Loc.
Hooked Agrimony	<i>Agrimonia gryposepala</i>	S3	Secure	10175644	1
				10175636	3
				10237766	1
Hairlike Sedge	<i>Carex capillaris</i>	S3	Secure	10036135	3
Bristle-Leaved Sedge	<i>Carex eburnea</i>	S3	Secure	10036135	2
				10036887	2
Rosy Sedge	<i>Carex rosea</i>	S3	Secure	10237766	1
				10175669	1
Goldie's Wood Fern	<i>Dryopteris goldiana</i>	S3	Sensitive	10237766	1
				10175685	3
Downy Willowherb	<i>Epilobium strictum</i>	S3	Secure	10175685	5
Hyssop-Leaved Fleabane	<i>Erigeron hyssopifolius</i>	S3	Secure	10036135	1
				10036887	1
Apline Sweet-Vetch	<i>Hedysarum alpinum</i>	S3	Secure	10036135	2
				10036887	1
Soft-Leaf Muhly	<i>Muhlenbergia richardsonis</i>	S3	Secure	10036135	1
Northern Bog Violet	<i>Viola nephrophylla</i>	S3	Secure	10036135	1
Great Crested Flycatcher	<i>Myiarchus crinitus</i>	S3B	Sensitive	10036093	1
Scarlet Tanager	<i>Piranga olivacea</i>	S3S4B	Secure	10036879	1
				10035434	1
				10175685	1
Canada Warbler	<i>Wilsonia canadensis</i>	S3S4B	At Risk	10227239	1

Notable Features

- First confirmed occurrence of Needle-Tipped Blue-Eyed Grass (*Sisyrinchium mucronatum*) in New Brunswick (PID 10036887)
- Mature mesotrophic Sugar Maple (*Acer saccharum*), White Ash (*Fraxinus americana*) and Ironwood (*Ostrya virginiana*) upland forest (PID 10036093)
- Small rich pocket of Sugar Maple and White Ash cove forest (PID 10175677)
- Very rich mature Sugar Maple, White Ash, Yellow Birch (*Betula alleghaniensis*), Eastern White Cedar (*Thuja occidentalis*) floodplain forest (PID 10175685)
- Rich American Beech (*Fagus grandifolia*), Ironwood, Sugar Maple and White Ash upland forest (PID 10036879)
- White Ash, Black Ash (*Fraxinus nigra*), Sugar Maple and American Basswood (*Tilia americana*) seepage swamp (PID 10036093)
- Fairly young White Ash, Black Ash (*Fraxinus nigra*), Balsam Poplar (*Populus balsamifera*), Eastern White Cedar and Sugar Maple seepage swamp (PID 10036093)
- Tamarack (*Larix laricina*), Eastern White Cedar, Red Maple (*Acer rubrum*), Sugar Maple and Balsam Fir (*Abies balsamea*) forest (PID 10175685)
- Mature and old growth Eastern White Cedar, Balsam Poplar, Yellow Birch and Black Ash bottomland floodplain forest (PID 10036093)
- Eastern White Cedar swamp (PID 10175685)
- Mature Eastern Hemlock (*Tsuga canadensis*), Sugar Maple, Balsam Fir and Yellow Birch forest in ravine (PID 10175636)
- Small grove of old growth Eastern Hemlock upland forest (PID 10175669)
- Selectively cut old Eastern White Cedar forest (PID 10036093)
- Seepy Black Ash, Eastern White Cedar and Sugar Maple forest (PID 10035434)
- Steep limestone slope and river shore very rich in rare species (PIDs 10036135, 10036887, 10036135)



(Clockwise from top left): a) & b) Very rich and mature (old growth or near old growth) Sugar Maple – White Ash – Yellow Birch – Eastern White Cedar floodplain forest, supporting a large population of Goldie’s Fern (*Dryopteris goldiana*); c) Meduxnekeag River valley slope with mature White Pine – Eastern White Cedar forest and exposed limestone ledges at base where a high diversity of rare species is present; d) Mature, somewhat rich American Beech – Sugar Maple – Ironwood upland forest; e) One-flowered Cancer-root (*Orobanchae uniflora*, S3 – Sensitive) from the Meduxnekeag River shoreline slope in Photo c). f) Old growth floodplain Eastern White Cedar swamp.

Plant Diversity

Total Spp. Richness	Native Spp. Richness	Exotic Spp. Richness	% Native	% Exotic	# of Rare Spp.
282	236	46	84	16	13

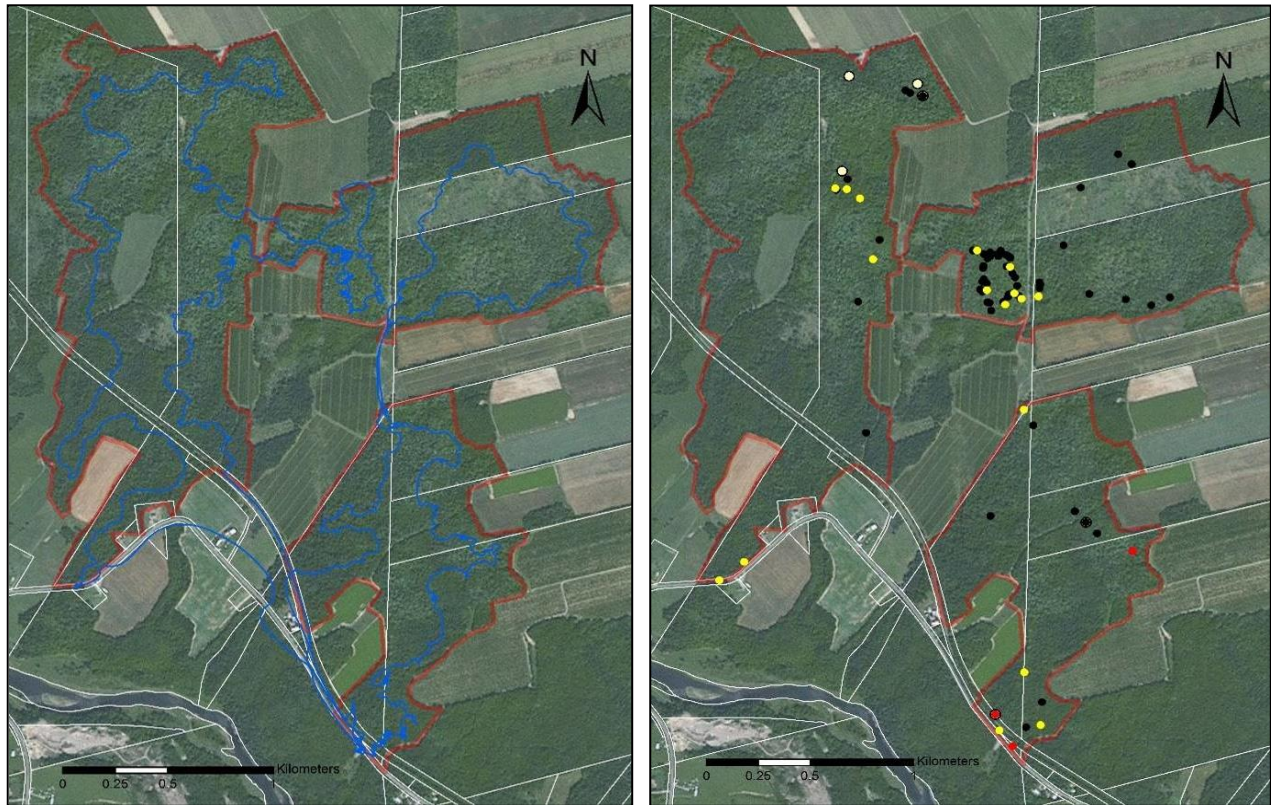


Figure 13. Survey coverage and rare plant locations detected at Belleville (Site #12). Blue line represents track file logged by D.M. Mazerolle’s GPS unit. [Red dots = critically imperiled species (S1-S1S2), yellow dots = imperiled species (S2-S2S3), black dots = vulnerable species (S3-S3S4) and white dots = occurrences tentatively identified as species of conservation concern]. Aerial imagery from ESRI World Imagery basemap (accessed in April 2015).

Rare Species Documented

COMMON NAME	SCIENTIFIC NAME	NB S-Rank	NB GS Rank	PID #	# Loc.
Butternut	<i>Juglans cinerea</i>	S1	At Risk	10048817	1
				10240356	1
				10139202	1
Loose-flowered Sedge	<i>Carex laxiflora</i>	S1?	Undetermined	10240380	1
Spreading Wild Rye	<i>Elymus hystrix</i> var. <i>bigeloviana</i>	S1	May Be At Risk	10240380	3
Eastern Leatherwood	<i>Dirca palustris</i>	S2	May Be At Risk	10240380	3
Seneca Snakeroot	<i>Polygala senega</i>	S2	Sensitive	10139202	1
Orange-fruited Tinker’s Weed	<i>Triosteum aurantiacum</i>	S2	Sensitive	10240356	2
				10050755	2
Plantain-Leaved Sedge	<i>Carex plantaginea</i>	S2S3	Sensitive	10240356	1
				10050532	2
				10240380	9
Northern Maidenhair Fern	<i>Adiantum pedatum</i>	S3	Secure	10240356	1

COMMON NAME	SCIENTIFIC NAME	NB S-Rank	NB GS Rank	PID #	# Loc.
				10050532	6
				10240380	28
Hooked Agrimony	<i>Agrimonia gryposepala</i>	S3	Secure	10240356	2
				10048924	1
				10050532	1
				10240398	1
				10244994	1
				10240380	3
Large Toothwort	<i>Cardamine maxima</i>	S3	Secure	10050532	1
				10240380	1
Rosy Sedge	<i>Carex rosea</i>	S3	Secure	10048924	3
				10050532	3
				10240398	1
				10048627	1
				10244994	1
				10048817	1
				10139202	1
10240380	28				
Goldie's Wood Fern	<i>Dryopteris goldiana</i>	S3	Sensitive	10050532	1
				10240380	24
Black Raspberry	<i>Rubus occidentalis</i>	S3	Secure	10240380	5
Canada Warbler	<i>Wilsonia canadensis</i>	S3S4B	At Risk	10048874	1
-	<i>Carex cf. rosea</i>	-	-	10139202	1
-	<i>Agrimonia cf. gryposepala</i>	-	-	10240356	1
				10050532	1
				10048817	1
				10240380	2
				10048874	2

Notable Features

- First documented occurrence of Loose-Flowered Sedge (*Carex laxiflora*) in New Brunswick (PID 10240380)
- Mature rich Sugar Maple (*Acer saccharum*), Yellow Birch (*Betula alleghaniensis*), Black Ash (*Fraxinus nigra*) and Balsam Fir (*Abies balsamea*) forest (PIDs 10050532, 10050755)
- Mature Sugar Maple, Yellow Birch, White Ash (*Fraxinus americana*) and American Beech (*Fagus grandifolia*) forest (PIDs 10240380, 10050532)
- Rich Sugar Maple, Yellow Birch, White Ash, Black Ash and Red Maple (*Acer rubrum*) forest (mosaic of upland and seepage swamp conditions) (PID 10240380)
- Rich locally seepy mature Sugar Maple, White Ash, Ironwood (*Ostrya virginiana*), Yellow Birch and Eastern Hemlock (*Tsuga canadensis*) forest (PIDs 10240380, 10244994, 10048874)
- Rich and locally seepy Yellow Birch, Eastern White Cedar (*Thuja occidentalis*), Black Ash and White Ash forest (PIDs 10244994, 10194793, 10048874)
- Mature Yellow Birch, Black Ash and Eastern White Cedar seepage swamp (PID 10048924)
- Mature White Ash, Black Ash and American Basswood (*Tilia americana*) forest (PIDs 10240356, 10240398)
- Eastern White Cedar, Yellow Birch, White Ash, Sugar Maple and American Elm (*Ulmus americana*) forest (PID 10244994)
- Locally quite rich Black Ash and Eastern White Cedar seepage swamp (PIDs 10240356, 10240380, 10048924, 10050532, 10048874)
- Fairly mature mesic to wet Black Ash, Eastern White Cedar and American Basswood forest (PID 10048817)
- Very rich mature seepy Yellow Birch, White Ash, Sugar Maple and American Beech forest in gentle seepage slope ravine (PID 10240380)

- Very rich Sugar Maple, White Ash, Ironwood forest with Plantain-Leaved Sedge (*Carex plantaginea*, S2S3, Sensitive) and Northern Maidenhair Fern (*Adiantum pedatum*, S3, Secure) understory (provincially rare – S2) (PID 10240380)
- Recent selective cutting or clear cutting (PID 10240380, 10050532, 10240398, 10050532)
- Extensive recent cut-over area of rich Yellow Birch, White Ash, Sugar Maple and American Basswood forest (PID 10050532)



Very rich mature seepy Yellow Birch, White Ash, Sugar Maple, Ironwood and American Beech forest, in an area supporting large populations of Plantain-Leaved Sedge (*Carex plantaginea*, S2S3, Sensitive), Northern Maidenhair Fern (*Adiantum pedatum*, S3, Secure) and Goldie's Wood Fern (*Dryopteris goldiana*, S3, Sensitive) (PID 10240380).



(Clockwise from top left) Black Ash, American Elm, Sugar Maple, American Basswood, White Ash and Yellow Birch seepage swamp (PID 10048924). Large multi-trunked American Basswood in rich mature hardwood forest (PID 10244994). Seneca Snakeroot (*Polygala senega*, S2, Sensitive) on old railroad embankment at edge of rich hardwood forest (PID 10048817). Eastern Leatherwood (*Dirca palustris*, S2, May Be At Risk) in well-drained Sugar Maple and White Ash forest (PID 10240380).

Plant Diversity

Total Spp. Richness	Native Spp. Richness	Exotic Spp. Richness	% Native	% Exotic	# of Rare Spp.
149	136	13	91	9	1

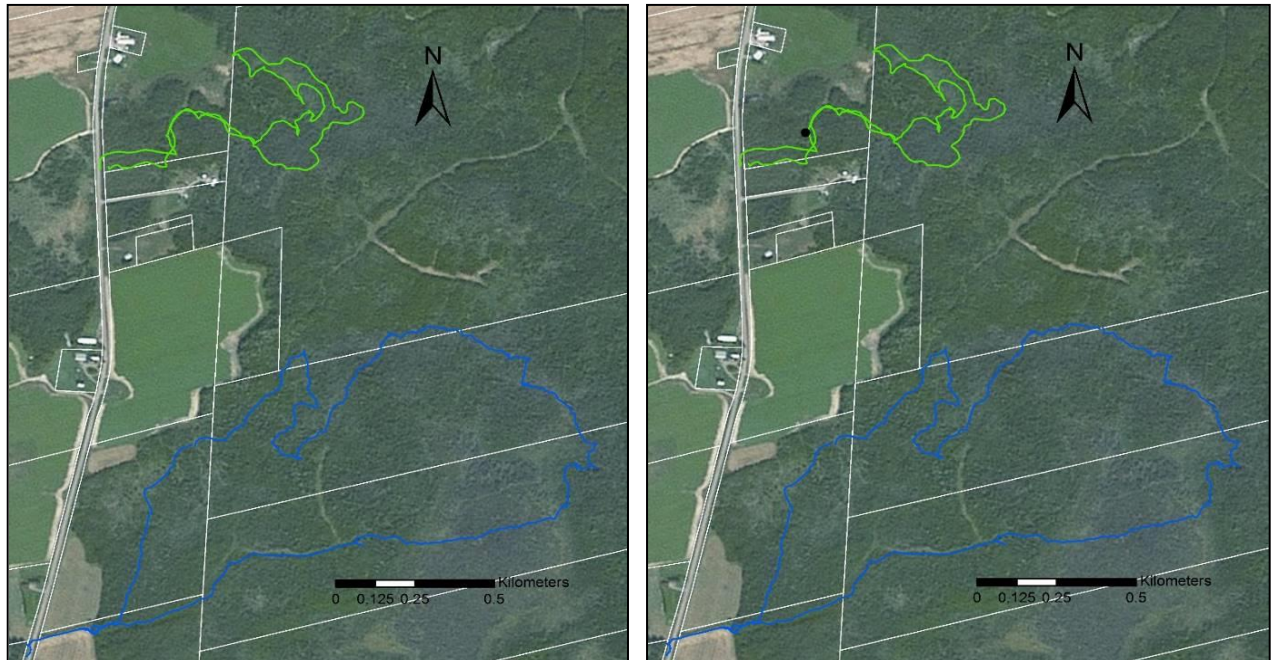


Figure 14. Survey coverage and rare plant locations detected at Rosedale (Site #13). Blue line represents track file logged by D.M. Mazerolle’s GPS unit; green line represents track file logged by A.G. Belliveau’s GPS unit. [Red dots = critically imperiled species (S1-S1S2), yellow dots = imperiled species (S2-S2S3), black dots = vulnerable species (S3-S3S4) and white dots = occurrences tentatively identified as species of conservation concern]. Aerial imagery from ESRI World Imagery basemap (accessed in April 2015).

Rare Species Documented

COMMON NAME	SCIENTIFIC NAME	NB S-Rank	NB GS Rank	PID #	# Loc.
Gmelin’s Water Buttercup	<i>Ranunculus gmelinii</i>	S3	Secure	10047173	1

Notable Features

- Fairly rich calcareous Eastern White Cedar (*Thuja occidentalis*) swamp and fen, including pockets of larger (>40cm) cedar trees (PID 10051167)
- Black Spruce (*Picea mariana*) and Tamarack (*Larix laricina*) swamp / treed bog (PID 10047033)
- Fairly mature Eastern White Cedar, Black Ash (*Fraxinus nigra*), Red Maple (*Acer rubrum*), Balsam Fir (*Abies balsamea*) swamp (PID 10051894)
- Fairly mature moderately rich Eastern White Cedar, Tamarack, Black Spruce and Red Maple (*Acer rubrum*) swamp (PID 10047033)
- Intermediate-aged to mature mesotrophic Eastern White Cedar swamp (PIDs 10051894, 10051167)



Sparsely treed Black Spruce and Tamarack swamp / bog, with ericaceous shrub understory on PID 10047033 (left). Fairly mature Eastern White Cedar, Balsam Fir and Red Maple swamp on PID 10051167 (right).

SITE #14 MOODY HILL

D. Mazerolle & A. Belliveau, Aug. 7, 2015

Plant Diversity

Total Spp. Richness	Native Spp. Richness	Exotic Spp. Richness	% Native	% Exotic	# of Rare Spp.
301	249	51	83	17	17+

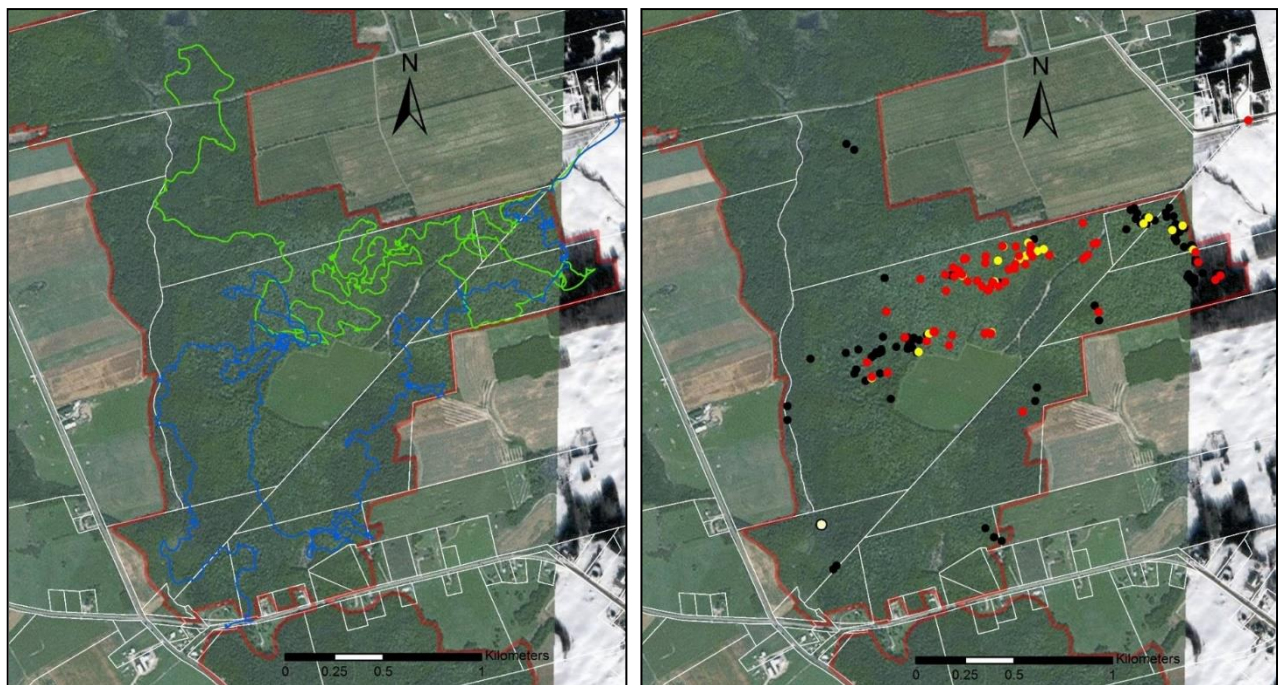


Figure 15. Survey coverage and rare plant locations detected at Moody Hill (Site #14). Blue line represents track file logged by D.M. Mazerolle’s GPS unit; green line represents track file logged by A.G. Belliveau’s GPS unit. [Red dots = critically imperiled species (S1-S1S2), yellow dots = imperiled species (S2-S2S3), black dots = vulnerable species (S3-S3S4) and white dots = occurrences tentatively identified as species of conservation concern]. Aerial imagery from ESRI World Imagery basemap (accessed in April 2015).

Rare Species Documented

COMMON NAME	SCIENTIFIC NAME	NB S-Rank	NB GS Rank	PID #	# Loc.
Wild Comfrey	<i>Cynoglossum virginianum</i> <i>var. boreale</i>	S1	May Be At Risk	10051522	1
Spreading Wild Rye	<i>Elymus hystrix</i> <i>var. bigeloviana</i>	S1	May Be At Risk	10051522	1
Butternut	<i>Juglans cinerea</i>	S1	At Risk	ROW, at edge of 10052280	1
				10237501	5
				10131811	1
				10051522	19
Large-Fruited Sanicle	<i>Sanicula trifoliata</i>	S1	May Be At Risk	10051522	1
Canada Violet	<i>Viola canadensis</i>	S1S2	May Be At Risk	10051522	34
Pubescent Sedge	<i>Carex hirtifolia</i>	S2	Sensitive	10052280	1
				10051522	13
Showy Orchis	<i>Galearis spectabilis</i>	S2	May Be At Risk	10052926	2
				10052280	2
American Lopseed	<i>Phryma leptostachya</i>	S2	Sensitive	10051522	5
Clustered Sanicle	<i>Sanicula odorata</i>	S2	May Be At Risk	10051522	1
				10052280	8
Northern Maidenhair Fern	<i>Adiantum pedatum</i>	S3	Secure	10051522	10
				10237501	2
				10052280	1
Hooked Agrimony	<i>Agrimonia gryposepala</i>	S3	Secure	10131779	2
				10051522	12
				10131761	2
				10237501	2
Cut-Leaved Moonwort	<i>Botrychium dissectum</i>	S3	Secure	10051522	1
Necklace Spike Sedge	<i>Carex ormostachya</i>	S3	Secure	10052280	1
				10051522	1
Rosy Sedge	<i>Carex rosea</i>	S3	Secure	10052280	2
				10131811	2
				10051522	5
				10052926	2
				10237501	6
Goldie's Wood Fern	<i>Dryopteris goldiana</i>	S3	Sensitive	10240372	2
				10052926	6
				10052280	12
				10237501	4
				10047587	1
Dwarf Clearweed	<i>Pilea pumila</i>	S3	Secure	10051522	2
				10048692	1
Black Raspberry	<i>Rubus occidentalis</i>	S3	Secure	10237501	5
				10051522	7
-	<i>Cypripedium parviflorum</i> <i>cf. var. makasin</i>	-	-	10051522	5
-	<i>Cypripedium reginae</i> / <i>parviflorum</i>	-	-	10052280	1
-		-	-	10131761	1

Notable Features

- Very rich mature Sugar Maple (*Acer saccharum*), White Ash (*Fraxinus americana*) and American Basswood (*Tilia americana*) forest (PID 10052280)
- Very rich mature Sugar Maple and White Ash forest (PID 10051522)
- Very rich mature Sugar Maple and Ironwood (*Ostrya virginiana*) forest (PID 10051522)

- Very rich mature White Ash, American Basswood and Sugar Maple forest (PIDs 10051522, 10131779, 10131811, 10052926, 10237501)
- Rich mature Sugar Maple, Yellow Birch (*Betula alleghaniensis*) and American Beech (*Fagus grandifolia*) forest (PID 10052280)
- Rich mature Sugar Maple and American Beech forest (PID 10052926)
- Small area of remnant mature Sugar Maple, American Basswood, Yellow Birch and White Ash forest (PID 10131779)
- Rich mature White Ash, Eastern Hemlock (*Tsuga canadensis*) and Yellow Birch forest (PID 10051522)
- Mature Eastern White Cedar (*Thuja occidentalis*), Black Ash (*Fraxinus nigra*) and Balsam Fir (*Abies balsamea*) seepage swamp (PID 10051522)
- American Basswood, Sugar Maple and Eastern Hemlock forest (PID 10051522)
- Seepy rich American Basswood and Eastern White Cedar swamp (PID 10051522)
- Old mining site with large piles of mining spoils, surrounded by area of young to intermediate mixedwood and hardwood forest (PID 10131779)



(Clockwise from top left) Very rich mature White Ash, Sugar Maple, Yellow Birch and American Basswood forest (PID 10052280). Very rich Sugar Maple, White Ash, American Basswood and American Beech forest (PID 10051522). Spreading Wild Rye (*Elymus hystrix* var. *bigeloviana*, S1, May Be At Risk) in very rich mature hardwood forest (PID 10051522). Wild Comfrey (*Cynoglossum virginianum* var. *boreale*, S1, May Be At Risk) in very rich mature hardwood forest (PID 10051522).

Plant Diversity

Total Spp. Richness	Native Spp. Richness	Exotic Spp. Richness	% Native	% Exotic	# of Rare Spp.
179	154	25	86	14	3

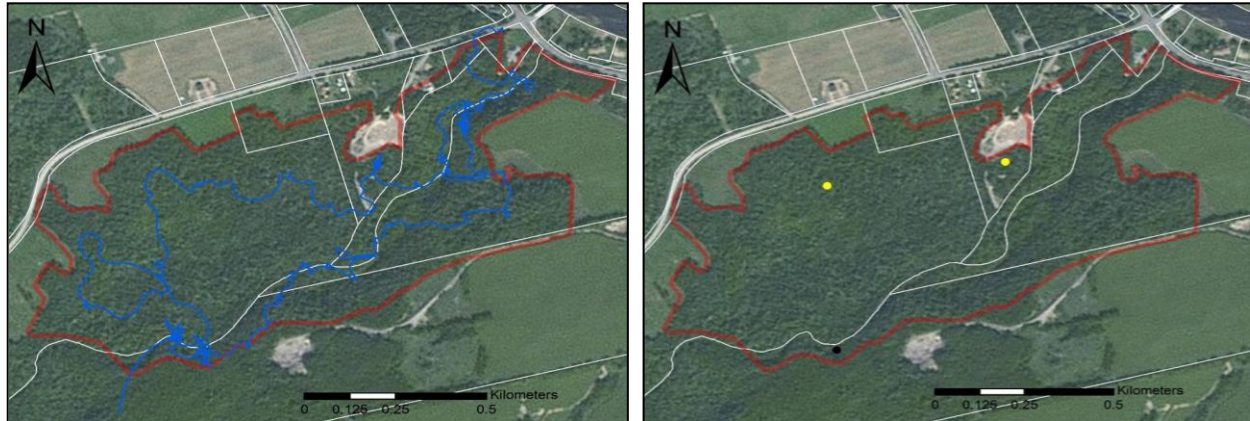


Figure 16. Survey coverage and rare plant locations detected along lower Mill Brook (Site #15). Blue line represents track file logged by D.M. Mazerolle’s GPS unit. [Red dots = critically imperiled species (S1-S1S2), yellow dots = imperiled species (S2-S2S3), black dots = vulnerable species (S3-S3S4) and white dots = occurrences tentatively identified as species of conservation concern]. Aerial imagery from ESRI World Imagery basemap (accessed in April 2015).

Rare Species Documented

COMMON NAME	SCIENTIFIC NAME	NB S-Rank	NB GS Rank	PID #	# Loc.
Long-beaked Sedge	<i>Carex sprengei</i>	S2	Sensitive	10038362	1
Orange-fruited Tinker’s Weed	<i>Triosteum aurantiacum</i>	S2	Sensitive	10035772	1
Appalachian Polypody	<i>Polypodium appalachianum</i>	S3	Secure	10036127	1

Notable Features

- Intermediate-aged to mature Sugar Maple (*Acer saccharum*), Balsam Fir (*Abies balsamea*), Yellow Birch (*Betula alleghaniensis*) and Large-Toothed Aspen (*Populus grandidentata*) forest (PID 10035772)
- Intermediate-aged to mature Sugar Maple and Yellow Birch forest (PID 10035269)
- Mature moderately rich Sugar Maple, Eastern Hemlock (*Tsuga canadensis*), Yellow Birch and Eastern White Cedar (*Thuja occidentalis*) floodplain terrace forest (PID 10035269)
- Mature Yellow Birch and White Ash (*Fraxinus Americana*) upland forest (PID 10035772)
- Intermediate-aged to mature Black Ash (*Fraxinus nigra*), White Ash, Large-Toothed Aspen and Balsam Fir forest (PID 10035269)
- Mature and locally quite old Eastern White Pine (*Pinus strobus*) and Eastern Hemlock forest, with small components of Yellow Birch and Eastern White Cedar (PID 10175529)
- Eastern Hemlock, Eastern White Cedar, Balsam Fir and Yellow Birch forest (PID 10036127)
- Mature and (locally) old growth pure Eastern Hemlock forest (PIDs 10175529, 10036127)
- Area of young and intermediate-aged early-seral mixedwood forest (PID 10035772)



(Clockwise from top left) Old Eastern Hemlock, Eastern White Cedar and Easter White Pine forest on valley slope above Mill Brook (PID 10175529). Orange-Fruited Tinker's Weed (*Triosteum aurantiacum*, S2, Sensitive) in understory of intermediate-aged White Ash and Large-Toothed Aspen forest (PID 10035772). Yellow Birch, Eastern White Cedar and Balsam Fir forest in narrow floodplain and on lower valley slope floodplain (PID 10035269). Long-Beaked Sedge (*Carex sprengelii*, S2, Sensitive) at margin of intermediate-aged moderately rich mixedwood forest (PID 10038362).

Plant Diversity

Total Spp. Richness	Native Spp. Richness	Exotic Spp. Richness	% Native	% Exotic	# of Rare Spp.
269	229	40	85	15	13+



Figure 17. Survey coverage and rare plant locations detected at Plymouth (Site #16). Blue line represents track file logged by D.M. Mazerolle’s GPS unit; green line represents track file logged by A.G. Belliveau’s GPS unit. [Red dots = critically imperiled species (S1-S1S2), yellow dots = imperiled species (S2-S2S3), black dots = vulnerable species (S3-S3S4) and white dots = occurrences tentatively identified as species of conservation concern]. Aerial imagery from ESRI World Imagery basemap (accessed in April 2015).

Rare Species Documented

COMMON NAME	SCIENTIFIC NAME	NB S-Rank	NB GS Rank	PID #	# Loc.
Butternut	<i>Juglans cinerea</i>	S1	At Risk	10036002	3
				10268563	5
Appalachian Sedge	<i>Carex appalachica</i>	S1?	Undetermined	10264455	1
Pubescent Sedge	<i>Carex hirtifolia</i>	S2	Sensitive	10036002	1
American Lopseed	<i>Phryma leptostachya</i>	S2	Sensitive	10268563	2
Hare Figwort	<i>Scrophularia lanceolata</i>	S2	Sensitive	10036002	1
Orange-fruited Tinker’s Weed	<i>Triosteum aurantiacum</i>	S2	Sensitive	10036002	1
				10038065	1
Plantain-Leaved Sedge	<i>Carex plantaginea</i>	S2S3	Sensitive	10038065	3
				10264455	2
Northern Maidenhair Fern	<i>Adiantum pedatum</i>	S3	Secure	ROW, at edge of 10264455	1
				10268563	1
				10038065	1
				10264455	1
Hooked Agrimony	<i>Agrimonia gryposepala</i>	S3	Secure	10264455	3
				10036002	1

COMMON NAME	SCIENTIFIC NAME	NB S-Rank	NB GS Rank	PID #	# Loc.
				10268563	4
				10175446	1
				10175453	1
Large Toothwort	<i>Cardamine maxima</i>	S3	Secure	10038065	3
Rosy Sedge	<i>Carex rosea</i>	S3	Secure	10036002	3
				10268563	7
				10038065	3
Downy Willowherb	<i>Epilobium strictum</i>	S3	Secure	10035111	3
				10035798	1
				10175453	3
Black Raspberry	<i>Rubus occidentalis</i>	S3	Secure	ROW, at edge of 10038065	1
-	<i>Galium trifidum / labradoricum</i>	-	-	10035111	1
-	<i>Carex cf. rosea</i>	-	-	10268563	2
-	<i>Carex cf. tenera</i>	-	-	10268563	2

Notable Features

- First documented occurrence of Appalachian Sedge (*Carex appalachica*) in New Brunswick (PID 10264455)
- Rich mature Sugar Maple (*Acer saccharum*), White Ash (*Fraxinus americana*), Yellow Birch (*Betula alleghaniensis*) forest with minor components of Ironwood (*Ostrya virginiana*) and American Beech (*Fagus grandifolia*) (PIDs 10264455, 10036002, 10268563, 10007607)
- Rich seepy mature Sugar Maple, White Ash and Black Ash (*Fraxinus nigra*) forest (PID 10038065)
- Rich Black Ash, White Ash, Eastern White Cedar (*Thuja occidentalis*) and Yellow Birch seepage swamp (PID 10007607)
- Rich mature Yellow Birch and White Ash forest (PID 10268563)
- Mature Yellow Birch, Eastern White Cedar, Sugar Maple and Balsam Fir (*Abies balsamea*) forest (PID 10175453)
- Eastern White Cedar, Balsam Fir and Black Ash swamp (PID 10264455)
- Mature moderately rich Eastern Hemlock (*Tsuga Canadensis*) and Yellow Birch-dominated forest with minor components of Sugar Maple, Eastern White Cedar and American Beech (PID 10264455)
- Mature Ironwood, Sugar Maple and American Beech forest (PID 10007573)
- Calcareous Black Ash, Eastern White Cedar, Red Maple and Yellow Birch seepage swamp (PID 10035095)
- Pocket of mature Sugar Maple, Red Maple (*Acer rubrum*), Yellow Birch, American Basswood (*Tilia americana*) forest (10035707)
- Various shrubby calcareous fen and graminoid / forb marsh communities, mostly affected by successive beaver dams (PID 10035111)
- Mature pure Eastern Hemlock forest (PID 10264455)
- Mesotrophic to slightly rich calcareous Eastern White Cedar swamp (PID 10264455)
- Mesotrophic calcareous Black Spruce (*Picea mariana*), Eastern White Cedar, Balsam Fir and Black Ash swamp (PID 10264455)
- Fairly extensive areas of recent clear-cutting, selective cutting and early-seral regeneration (PIDs 10264455, 10036002, 10007573, 10007607, 10175453, 10035095)



(Clockwise from top left) Rich mature Yellow Birch, White Ash and Sugar Maple upland forest (PID 10264455). Mature Eastern Hemlock forest (PID 10264455). Rich fern-dominated seepage gully at head of small brook in Sugar Maple-dominated forest (PID 10264455). Fairly large unhealthy Butternut (*Juglans cinerea*, S1, At Risk, COSEWIC Endangered) in mature second growth mixedwood upland forest (PID 10036002). Circumneutral and locally calcareous Eastern White Cedar swamp (PID 10035954). Pubescent Sedge (*Carex hirtifolia*, S2, Sensitive) in rich understory of White Ash and Sugar Maple forest (PID 10036002).

Plant Diversity

Total Spp. Richness	Native Spp. Richness	Exotic Spp. Richness	% Native	% Exotic	# of Rare Spp.
319	266	53	83	17	9

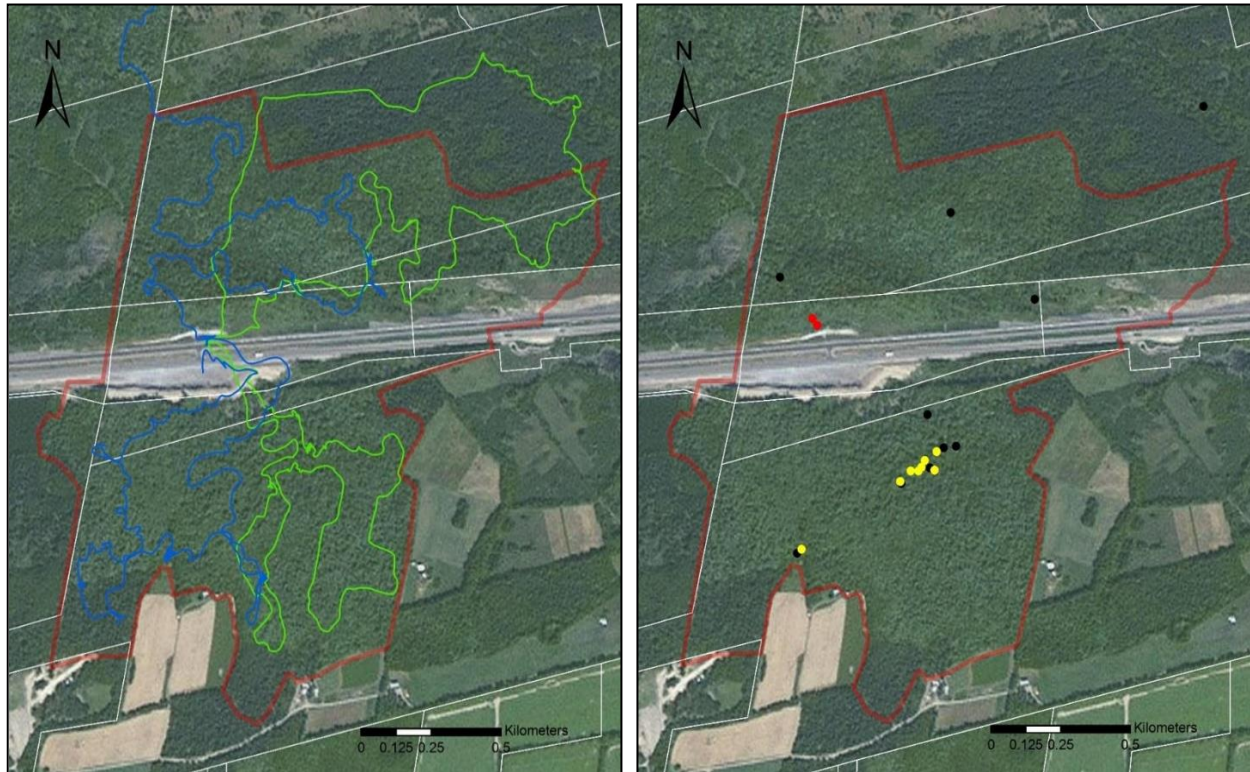


Figure 18. Survey coverage and rare plant locations detected at Richmond Corner (Site #17). Blue line represents track file logged by D.M. Mazerolle’s GPS unit; green line represents track file logged by A.G. Belliveau’s GPS unit. [Red dots = critically imperiled species (S1-S1S2), yellow dots = imperiled species (S2-S2S3), black dots = vulnerable species (S3-S3S4) and white dots = occurrences tentatively identified as species of conservation concern]. Aerial imagery from ESRI World Imagery basemap (accessed in April 2015).

Rare Species Documented

COMMON NAME	SCIENTIFIC NAME	NB S-Rank	NB GS Rank	PID #	# Loc.
Butternut	<i>Juglans cinerea</i>	S1	At Risk	10251486	2
Pale Jewelweed	<i>Impatiens pallida</i>	S2	May Be At Risk	10211480	1
American Lopseed	<i>Phryma leptostachya</i>	S2	Sensitive	10211480	8
Hooked Agrimony	<i>Agrimonia gryposepala</i>	S3	Secure	10035293	2
				10211480	1
Necklace Spike Sedge	<i>Carex ormostachya</i>	S3	Secure	10211480	1
Goldie’s Wood Fern	<i>Dryopteris goldiana</i>	S3	Sensitive	10035293	2
				10211480	1
Matted Spikerush	<i>Eleocharis intermedia</i>	S3	Secure	10251486	1
Dwarf Clearweed	<i>Pilea pumila</i>	S3	Secure	10211480	2
Black Raspberry	<i>Rubus occidentalis</i>	S3	Secure	10211480	1

Notable Features

- Rich mature Yellow Birch (*Betula alleghaniensis*), Ironwood (*Ostrya virginiana*) and American Beech (*Fagus grandifolia*) forest (PID 10211480, 10035293)
- Small remnant mature stands of very rich and locally seepy Sugar Maple and American Basswood (*Tilia americana*) forest (PID 10211480, 10035293)
- Mature Eastern Hemlock (*Tsuga canadensis*), Sugar Maple (*Acer saccharum*), Yellow Birch forest with minor components of American Beech, Ironwood and Red Spruce (*Picea rubens*) (PID 10035293)
- Mature Sugar Maple, Yellow Birch and American Beech forest with Canada Yew (*Taxus canadensis*) understory (PID 10250793)
- Mature locally seepy Eastern White Cedar (*Thuja occidentalis*), Eastern Hemlock and Yellow Birch forest (PID 10035293)
- Calcareous Black Ash (*Fraxinus nigra*), Eastern White Cedar, Red Maple (*Acer rubrum*) and Yellow Birch seepage swamp (PID 10035095)
- Moderately calcareous mature Eastern White Cedar swamp (PID 10035095)
- Mature mesotrophic Eastern Hemlock, Red Spruce and American Beech forest (PID 10211480)
- Network of several ATV trails (PID 10211480)
- Fairly extensive areas of selective cutting (PIDs 10035293, 10035095)
- Significant disturbance from highway construction (ca2006) in areas adjacent to highway corridor



Mature Sugar Maple, Yellow Birch and American Beech forest with Canada Yew (*Taxus canadensis*) understory on PID 10250793 (left). Rich seepage gully in remnant Sugar Maple and American Basswood forest, in area supporting Goldie's Wood Fern (*Dryopteris goldiana*, S3, Sensitive) on PID 10035293 (right).



Rich seepage area in remnant mature Sugar Maple and American Basswood forest, in area supporting American Lopseed (*Phryma leptostachya*, S2, Sensitive) and possible Pale Jewelweed (*Impatiens pallida*, S2, May Be At Risk) on PID 10211480 (left). American Lopseed on PID 10211480 (right).

SITE #18 BEDELL SETTLEMENT

S. Blaney & D. Mazerolle, July 11, 2015

Plant Diversity

Total Spp. Richness	Native Spp. Richness	Exotic Spp. Richness	% Native	% Exotic	# of Rare Spp.
343	292	51	85	15	6+

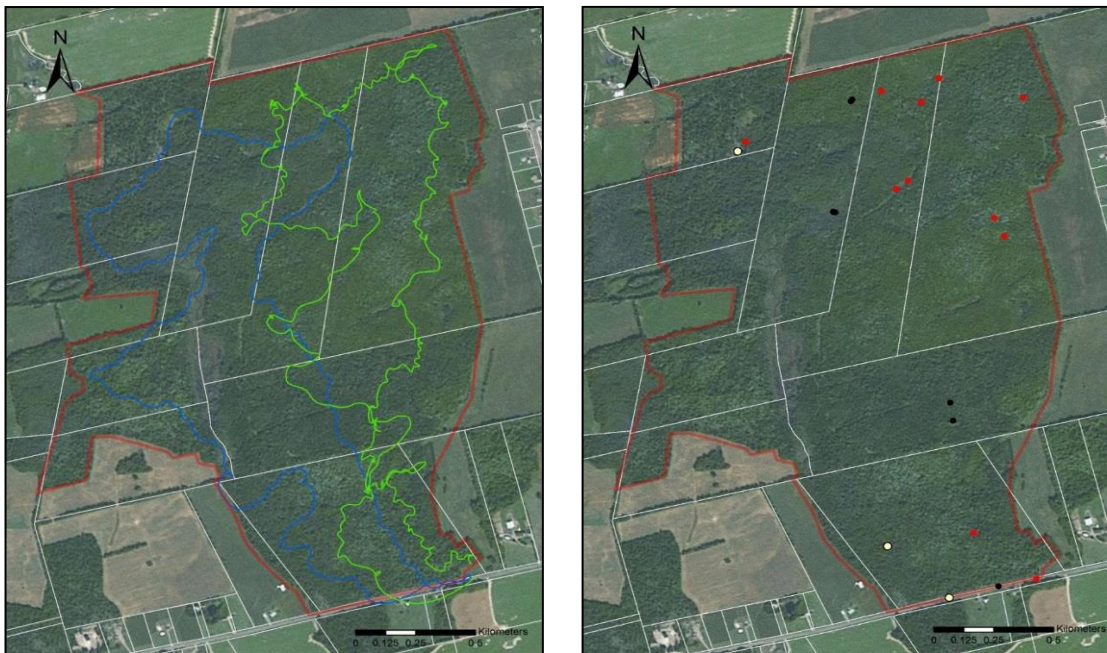


Figure 19. Survey coverage and rare plant locations detected at Bedell Settlement (Site #18). Blue line represents track file logged by C.S. Blaney's GPS unit; green line represents track file logged by D.M. Mazerolle's GPS unit. [Red dots = critically imperiled species (S1-S1S2), yellow dots = imperiled species (S2-S2S3), black dots = vulnerable species (S3-S3S4) and white dots = occurrences tentatively identified as species of conservation concern]. Aerial imagery from ESRI World Imagery basemap (accessed in April 2015).

Rare Species Documented

COMMON NAME	SCIENTIFIC NAME	NB S-Rank	NB GS Rank	PID #	# Loc.
Butternut	<i>Juglans cinerea</i>	S1	At Risk	10074458	3
				10239911	5
				ROW, at edge of 10075836	1
				10073427	1
				10075836	1
Wood Thrush	<i>Hylocichla mustelina</i>	S1S2B	May Be At Risk	10181949	1
				10162626	1
Northern Maidenhair Fern	<i>Adiantum pedatum</i>	S3	Secure	10196145	2
Hooked Agrimony	<i>Agrimonia gryposepala</i>	S3	Secure	10169134	2
Showy Lady's-Slipper	<i>Cypripedium reginae</i>	S3	Sensitive	10196145	2
Downy Willowherb	<i>Epilobium strictum</i>	S3	Secure	10075836	1
Tall Cinquefoil	<i>Potentilla arguta</i>	S3S4	Secure	10169134	1
Great Crested Flycatcher	<i>Myiarchus crinitus</i>	S3B	Sensitive	10075836	1
Canada Warbler	<i>Wilsonia canadensis</i>	S3S4B	At Risk	10073633	1
-	<i>Scirpus atrovirens (s.l.)</i>	-	-	10075836	1
				10073427	1
				ROW, at edge of 10075836	1
-	<i>Agrimonia striata / gryposepala</i>	-	-	10210201	1

Notable Features

- Mature Eastern White Cedar (*Thuja occidentalis*) swamp (PID 10079200)
- Old Eastern Hemlock (*Tsuga canadensis*) upland forest (PID 10073633)
- Mature to old Eastern Hemlock upland forest (PIDs 10075836, 10074458, 10169134)
- Fairly mature mesic Balsam Fir (*Abies balsamea*), Eastern White Cedar and White Ash (*Fraxinus americana*) forest (PID 10075836)
- Eastern White Cedar seepage swamp (PID 10196145, 10075836, 10074458)
- Calcareous Eastern White Cedar, Tamarack (*Larix laricina*), Red Maple (*Acer rubrum*) and Speckled Alder (*Alnus incana ssp. rugosa*) fen and swamp (PIDs 10196145, 10239911)
- Mature mixedwood upland forest dominated by Eastern Hemlock, Yellow Birch (*Betula alleghaniensis*), Sugar Maple (*Acer saccharum*), Eastern White Cedar and Red Spruce (*Picea rubens*) (PIDs 10075836, 10074458, 10075836)
- Rich intermediate-aged White Ash and Black Ash (*Fraxinus nigra*) seepage slope (PID 10196145)
- Very mature stand of Eastern Hemlock, Eastern White Cedar, Yellow Birch and Ironwood (*Ostrya virginiana*) forest (PID 10075836)
- Extensive areas of intermediate-aged moderately rich hardwoods of Sugar Maple, White Ash, American Basswood (*Tilia americana*), Yellow Birch and American Beech (*Fagus grandifolia*) (PIDs 10074458, 10239911, 10196145, 10075836)
- Rich seepage / spring areas (PIDs 10074458, 10075836)
- Floodplain dominated by the invasive Reed Canary Grass (*Phalaris arundinacea*) (PID 10073427)



(Clockwise from top left) Rich understory of intermediate-aged White Ash and Black Ash seepage slope forest, in area supporting Maidenhair Fern (*Adiantum pedatum*, S3, Secure) (PID 10196145). Mature Eastern Hemlock and Yellow Birch uplant forest (PID 10074458). Fairly rich opening in calcareous Eastern White Cedar and Speckled Alder swamp (PID 10196145). Mature Eastern White Cedar swamp (PID 10196145).

Plant Diversity

Total Spp. Richness	Native Spp. Richness	Exotic Spp. Richness	% Native	% Exotic	# of Rare Spp.
258	219	39	85	15	9+

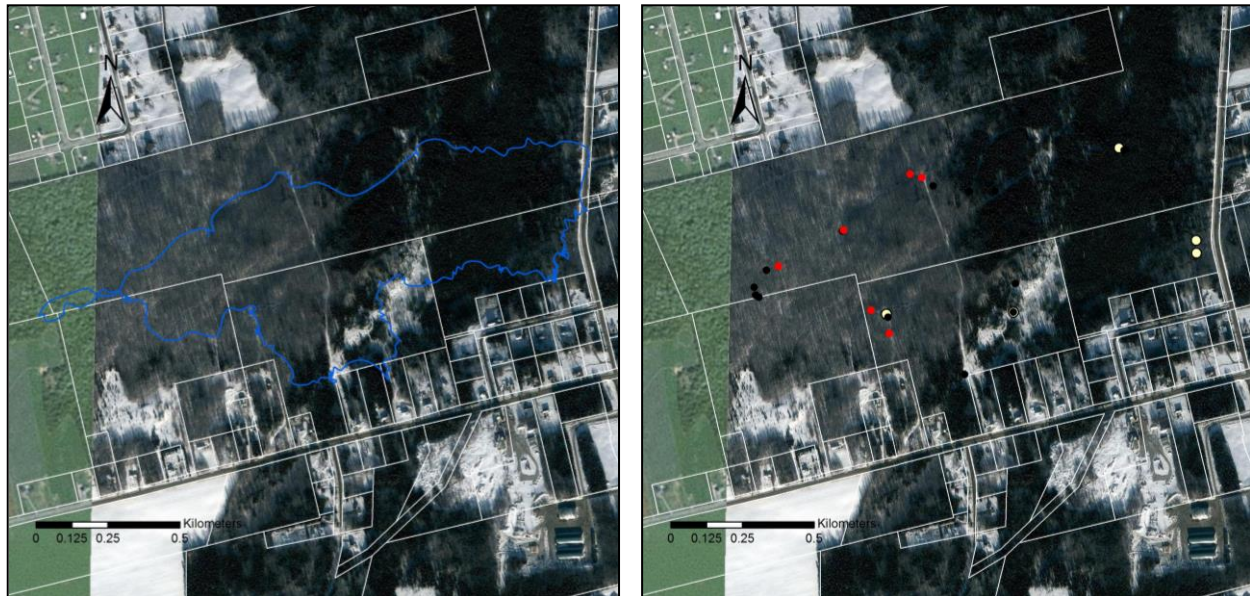


Figure 20. Survey coverage and rare plant locations detected at Beardsley (Site #19). Blue line represents track file logged by C.S. Blaney’s GPS unit. [Red dots = critically imperiled species (S1-S1S2), yellow dots = imperiled species (S2-S2S3), black dots = vulnerable species (S3-S3S4) and white dots = occurrences tentatively identified as species of conservation concern]. Aerial imagery from ESRI World Imagery basemap (accessed in April 2015).

Rare Species Documented

COMMON NAME	SCIENTIFIC NAME	NB S-Rank	NB GS Rank	PID #	# Loc.
Thin-leaved Sedge	<i>Carex cephaloidea</i>	S1	May Be At Risk	10162642	2
				10223683	1
Butternut	<i>Juglans cinerea</i>	S1	At Risk	10223683	3
Northern Maidenhair Fern	<i>Adiantum pedatum</i>	S3	Secure	10223683	1
Hooked Agrimony	<i>Agrimonia gryposepala</i>	S3	Secure	10162642	2
				10223683	1
Large Toothwort	<i>Cardamine maxima</i>	S3	Secure	10223683	4
Rosy Sedge	<i>Carex rosea</i>	S3	Secure	10162642	1
				10223683	4
Showy Lady's-Slipper	<i>Cypripedium reginae</i>	S3	Sensitive	10223683	2
Downy Willowherb	<i>Epilobium strictum</i>	S3	Secure	10162642	1
Great Crested Flycatcher	<i>Myiarchus crinitus</i>	S3B	Sensitive	10072387	1
Tall Cinquefoil	<i>Potentilla arguta</i>	S3S4	Secure	10162642	1
Canada Warbler	<i>Wilsonia canadensis</i>	S3S4B	At Risk	10072387	1
				10162642	1
				10223683	1
-	<i>Galium cf. brevipes</i>	-	-	10162642	1
				10223683	1

Notable Features

- Fairly mature Sugar Maple (*Acer saccharum*), American Beech (*Fagus grandifolia*), White Ash (*Fraxinus americana*) and Ironwood (*Ostrya virginiana*) forest (PID 10162642)
- Eastern White Cedar (*Thuja occidentalis*) swamp (PID 10072387)
- Hybrid White Avens (*Geum canadense*) x Water Avens (*Geum rivale*) that appears to be new to science (PID 10072387)
- Rich moist Black Ash (*Fraxinus nigra*), American Basswood (*Tilia americana*), Balsam Fir (*Abies balsamea*) and White Ash forest (PID 10072387)
- Eastern White Cedar and Black Ash (*Fraxinus nigra*) swamp (PID 10162642)
- Sugar Maple and American Beech forest (PID 10223683)
- White Ash, American Beech, Sugar Maple and American Basswood forest (PID 10223683)
- Young Balsam Poplar (*Populus balsamifera*) and Eastern White Cedar forest (PID 10162642)



Top – Calcareous seepage swamp in selectively cut area. The yellow flowers in the foreground are Golden Ragwort (*Packera aurea*, S4 – Secure). Bottom left – Hybrid White Avens (*Geum canadense*) x Water Avens (*Geum rivale*) in rich, seepy, young hardwood forest. This hybrid has never been seen in New Brunswick previously and appears to have never been described before. Bottom right – Mature Eastern White Cedar – Black Ash swamp.

APPENDIX 1. NatureServe Status Rank Definitions

Source: <http://www.natureserve.org/conservation-tools/conservation-status-assessment>

Global Rank	National Rank	Provincial Rank	DEFINITION
GX	NX	SX	Presumed Extinct (G-rank) / Extirpated (N- and S-ranks) — Species or ecosystem not located despite intensive searches and virtually no likelihood of rediscovery.
GH	NH	SH	Possibly Extinct (G-rank) / Extirpated (N- and S-ranks) — Known from only historical occurrences but still some hope of rediscovery. There is evidence that the species may be extinct or the ecosystem may be eliminated throughout its range, but not enough to state this with certainty.
G1	N1	S1	Critically Imperiled — At very high risk of extinction (G-rank) / extirpation (N- and S-ranks) due to extreme rarity (often 5 or fewer populations), very steep declines, or other factors.
G2	N2	S2	Imperiled — At high risk of extinction (G-rank) / extirpation (N- and S-ranks) due to very restricted range, very few populations, steep declines, or other factors.
G3	N3	S3	Vulnerable — At moderate risk of extinction (G-rank) / extirpation (N- and S-ranks) due to a restricted range, relatively few populations, recent and widespread declines, or other factors.
G4	N4	S4	Apparently Secure — Uncommon but not rare; some cause for long-term concern due to declines or other factors.
G5	N5	S5	Secure — Common; widespread and abundant.

APPENDIX 2. General Status Ranks Definitions

Source: <http://www.wildspecies.ca>

RANK	DEFINITION
Extinct	Species that are extirpated worldwide (<i>i.e.</i> , they no longer exist anywhere).
Extirpated	Species that are no longer present in a given geographic area, but occur in other areas.
At Risk	Species which have been determined to be at risk of extinction (<i>i.e.</i> Endangered or Threatened) by a formal, detailed risk assessment (COSEWIC status assessment or provincial or territorial equivalent).
May Be At Risk	Species that may be at risk of extirpation or extinction and are therefore candidates for a detailed risk assessment by COSEWIC, or provincial or territorial equivalents.
Sensitive	Species that are not believed to be at risk of immediate extirpation or extinction but may require special attention or protection to prevent them from becoming at risk.
Secure	Species that are not believed to belong in the categories Extinct, Extirpated, At Risk, May Be At Risk, Sensitive, Accidental or Exotic. This category includes some species that show a trend of decline in numbers in Canada but remain relatively widespread or abundant.
Undetermined	Species for which insufficient data, information, or knowledge is available with which to reliably evaluate their general status.
Not Assessed	Species that are known or believed to be present regularly in the geographic area in Canada to which the rank applies, but have not yet been assessed by the general status program.
Exotic	Species that have been moved beyond their natural range as a result of human activity. In this report, Exotic species have been purposefully excluded from all other categories.
Accidental	Species occurring infrequently and unpredictably, outside their usual range.