APPENDIX F Strum Watercourse Table, Watercourse Photo Log, and Fish Photo Log

	s - Kmtnuk Wind Power Project														Project # 23-9127
Watercourse ID	Watercourse Type	Watercourse Measurments (m) Channel Width = 4.20	Bankful Depth (m)	Substrate (%) Bedrock = 0	Habitat Characteristic	Direction of Flow	Velocity (m/s)	Water Quality	In Stream Cover* Boulders = A	Undercut Measurements (m)	Bank Characteristics	Bank Notes	Fish Presence	Evidence of Alteration	Other Observations
WC2	Small permanent	Wetted Width = 4.20 Wetted Width = 1.85 Right Bank Depth = 0.12 Center Depth = 0.15 Left Bank Depth = 0.08 Thalweg = 0.21	0.8	Bedrock = 0 Boulder (>25 cm) = 30 Cobble (3-25 cm) = 35 Gravel (2 mm-3 cm) = 20 Sand (0.06-2 mm) = 15 Fines (<0.06 mm) = 0	Run	North	0.2	pH = 7.2 Temperature (°C) = 15.6 Dissolved Oxygen (mg/L) = 8.44 Dissolved Oxygen (%) = 84.7 Conductivity (mS/cm) = 0.03	Overhanging Vegetation = M Canopy Cover = M Instream Vegetation = T Large Woody Debris = M Small Woody Debris = M Deep Pools = N	Left Bank = 0 Right Bank = 0	High stability; No undercut	Boulders, cobbles, gravel, deadwood	None observed; Habitat Suitability is moderate	None observed.	Steady flow. Clear, clean water. Good canopy cover.
WC4	Small permanent	Channel Width = 0.90 Wetted Width = 0.67 Right Bank Depth = 0.11 Center Depth = 0.23 Left Bank Depth = 0.17 Thalweg = 0.23	0.35	Bedrock = 0 Boulder (>25 cm) = 20 Cobble (3-25 cm) = 30 Gravel (2 mm-3 cm) = 30 Sand (0.06-2 mm) = 10 Fines (<0.06 mm) = 10	Riffle	East	N/A	Not recorded	Boulders = M Overhanging Vegetation = M Canopy Cover = A Instream Vegetation = T Large Woody Debris = M Small Woody Debris = M Deep Pools = N	Left Bank = 0 Right Bank = 0	Moderate stability; Active erosion No undercut	h; Mixedwood forest, rocks, leaf litter	None observed; Habitat Suitability is low	None observed.	Braided stream fed by groundwater spring flowing downslope; intermittently subterranean; lacks clear channel in areas. Substrate covered in layer of fine muck near beginning and transitions to more sand and gravel as it courses downslope.
WC5	Small permanent	Channel Width = 0.52 Wetted Width = 0.30 Right Bank Depth = 0.03 Center Depth = 0.07 Left Bank Depth = 0.06 Thalweg = 0.07	0.29	Bedrock = 0 Boulder (>25 cm) = 10 Cobble (3-25 cm) = 20 Gravel (2 mm-3 cm) = 0 Sand (0.06-2 mm) = 20 Fines (<0.06 mm) = 50	Riffle	Southeast	N/A	Not recorded	Boulders = T Overhanging Vegetation = M Canopy Cover = M Instream Vegetation = M Large Woody Debris = M Small Woody Debris = M Deep Pools = N	Left Bank = 0 Right Bank = 0	Low stability; Active erosion; No undercut	Moss and tree roots, occasional boulders, herbaceous cover	None observed; Habitat Suitability is low	None observed.	Small groundwater-fed spring flowing out side of mountain; Intermittently subterranean, flowing through boulders and tree roots; Flow picks up and channel widens as it exits the downhill boundary; Mossy, vegetated covered and mucky substrate.
WC6	Small permanent	Channel Width = 0.86 Wetted Width = 0.82 Right Bank Depth = 0.04 Center Depth = 0.06 Left Bank Depth = 0.05 Thalweg = 0.07	0.07	Bedrock = 0 Boulder (>25 cm) = 40 Cobble (3-25 cm) = 20 Gravel (2 mm-3 cm) = 20 Sand (0.06-2 mm) = 10 Fines (<0.06 mm) = 10	Riffle, Other	East	N/A	Not recorded	Boulders = A Overhanging Vegetation = M Canopy Cover = M Instream Vegetation = M Large Woody Debris = A Small Woody Debris = A Deep Pools = N	Left Bank = 0 Right Bank = 0	Low stability; Active erosion; No undercut	Cobbles, boulders, leaf litter, sticks, logs	None observed; Habitat Suitability is low	None observed.	Watercourse appears from underground, is spring-fed, and cascading downward over rocky substrate; Intermittenby above over a substrate; Intermittenby above characteristics; Relatively uniform characteristics; Relatively uniform characteristics; Relatively uniform watercourse; Moss-covered cobble and boulders dominate substrate, some sediment deposited in low-velocity catches.
WC7	Small permanent	Channel Width = 1.24 Wetted Width = 0.88 Right Bank Depth = 0.01 Center Depth = 0.01 Left Bank Depth = 0.04 Thalweg = 0.04	0.5	Bedrock = 0 Boulder (>25 cm) = 30 Cobble (3-25 cm) = 30 Gravel (2 mm-3 cm) = 30 Sand (0.06-2 mm) = 5 Fines (<0.06 mm) = 5	Rifle, Pool, Other	Northeast	9.27	Not recorded	Boulders = M Overhanging Vegetation = M Canopy Cover = A Instream Vegetation = T Large Woody Debris = T Small Woody Debris = A Deep Pools = N	Left Bank = 0 Right Bank = 0	Moderate stability; Active erosion No undercut	r; Ferns, hardwood shrubs, leaf litter, rock	None observed; Habitat Suitability is moderate	Yes, culvert present.	Watercourse flows under dirt road, rough conditions suggest ATV trai; No fish observed, but gravel substrate and small pools suggest decent habitat for smaller fish; Water overtakes banks in areas during hlow; Substrate is quite rocky with lots of moss.
WC8	Large permanent	Channel Width = 4.50 Wetted Width = 3.70 Right Bank Depth = 0.21 Center Depth = 0.27 Left Bank Depth = 0.07 Thalweg = 0.30	0.5	Bedrock = 0 Boulder (>25 cm) = 5 Cobble (3-25 cm) = 30 Gravel (2 mm-3 cm) = 20 Sand (0.06-2 mm) = 40 Fines (<0.06 mm) = 10	Pool, Riffle, Run, Flat	North	1.75	Not recorded	Boulders = M Overhanging Vegetation = M Canopy Cover = M Instream Vegetation = T Large Woody Debris = T Small Woody Debris = M Deep Pools = N	Left Bank = N/A Right Bank = 0.32	Right bank moderately stable; Left bank unstable; Right bank undercut	Graminoids, tree roots, fems	None observed; Habitat Suitability is moderate	Yes, open-bottom bridge present.	Watercourse flows through ravine with plenty of blowdown; Hardwood dominant forest along edges, primarily sugar maple; Substrate has little muck and moss.
WC9	Small permanent	Channel Width = 0.95 Wetted Width = 0.95 Right Bank Depth = 0.09 Center Depth = 0.08 Left Bank Depth = 0.10 Thalweg = 0.12	0.05	Bedrock = 0 Boulder (>25 cm) = 0 Cobble (3-25 cm) = 30 Gravel (2 mm-3 cm) = 0 Sand (0.06-2 mm) = 60 Fines (<0.06 mm) = 10	Riffle, Run, Pool	Northwest	0.03	Not recorded	Boulders = N Overhanging Vegetation = M Canopy Cover = A Instream Vegetation = T Large Woody Debris = N Small Woody Debris = T Deep Pools = N	Left Bank = 0 Right Bank = 0	High stability; No undercut	Sphagnum and herb cover; Mature softwood and hardwood trees nearby	None observed; Habitat Suitability is low	None observed.	Sandy substrate with occasional cobble.
WC11	Intermittent	Channel Width = 0.54 Wetted Width = 0.54 Right Bank Depth = 0.06 Center Depth = 0.05 Left Bank Depth = 0.03 Thalweg = 0.08	0.02	Bedrock = 0 Boulder (>25 cm) = 5 Cobble (3-25 cm) = 30 Gravel (2 mm-3 cm) = 40 Sand (0.06-2 mm) = 10 Fines (<0.06 mm) = 15	Riffle, Run, Pool	Southeast	N/A	Not recorded	Boulders = N Overhanging Vegetation = A Canopy Cover = A Instream Vegetation = N Large Woody Debris = A Small Woody Debris = A Deep Pools = N	Left Bank = 0 Right Bank = 0	High stability; Active erosion; No undercut	Leaf litter, sphagnum, mixedwood regeneration	None observed; Habitat Suitability is low	None observed.	Watercourse originates in large bog outside of assessment area (visible from imagery): Starts as ephemeral channel and becomes more defined after -50 m; Watercourse continues to the southeast; Exposed sediment along left bank has the potential to enter the channel during high flow events; Abundance of moss-covered rocks, leal litter, and woody debris within channel.
WC18A	Large permanent	Channel Width = 6.00 Wetted Width = 6.00 Right Bank Depth = 0.53 Center Depth = 0.76 Left Bank Depth = 0.57 Thalweg = 0.78	0.92	Bedrock = 0 Boulder (>25 cm) = 30 Cobble (3-25 cm) = 50 Gravel (2 mm-3 cm) = 0 Sand (0.06-2 mm) = 0 Fines (<0.06 mm) = 20	Flat	West	0.08	Not recorded	Boulders = M Overhanging Vegetation = N Canopy Cover = N Instream Vegetation = N Large Woody Debris = N Small Woody Debris = T Deep Pools = A	Left Bank = 0 Right Bank = 0.42	High stability: Right bank undercut	Bridge cribbing, rocks, moss, herbaceous plants	None observed; Habitat Suitability is moderate	Yes, bridge present	Watercourse runs parallel to road for about 50 m, crossing under open bottom bridge, then follows along road for another 100 m; Substrate covered in thin layer of sediment.
WC18B	Intermittent	Channel Width = 1.56 Wetted Width = 1.5 Right Bank Depth = 0.12 Center Depth = 0.15 Left Bank Depth = 0.21 Thalweg = 0.24	0.28	Bedrock = 0 Boulder (>25 cm) = 0 Cobble (3-25 cm) = 0 Gravel (2 mm-3 cm) = 0 Sand (0.06-2 mm) = 0 Fines (<0.06 mm) = 100	Flat	West	0.05	Not recorded	Boulders = N Overhanging Vegetation = M Canopy Cover = M Instream Vegetation = T Large Woody Debris = N Small Woody Debris = T Deep Pools = N	Left Bank = 0.12 Right Bank = 0	High stability, no active erosion	Moss, herbaceous plants, shrubs	None observed; Habitat Suitability is moderate	Yes, culvert present.	Slow moving water has allowed for sediments to settle, muck is quite deep. This watercoruse eventually discharges into WC18A.
WC19	Small permanent	Channel Width = 3.40 Wetted Width = 3.18 Right Bank Depth = 0.04 Center Depth = 0.20 Left Bank Depth = 0.15 Thalweg = 0.24	0.22	Bedrock = 15 Boulder (>25 cm) = 15 Cobble (3-25 cm) = 55 Gravel (2 mm-3 cm) = 10 Sand (0.06-2 mm) = 5 Fines (<0.06 mm) = 0	Run	East	0.2336	pH = 6.21 Temperature (°C) = 19.9 Dissolved Oxygen (mg/L) = Not recorded Dissolved Oxygen (%) = Not recorded Conductivity (mS/cm) = 0.03	Boulders = T Overhanging Vegetation = T Canopy Cover = M Instream Vegetation = T Large Woody Debris = N Small Woody Debris = T Deep Pools = N	Left Bank = 0.13 Right Bank = 0	High stability; Left bank undercu	Altered slope from bridge building; Abundant sedge and grass cover; Asters and cinnamon fern growing up through cobble/boulder rip rap	None observed; Habitat Suitability is moderate	Yes, open-bottom bridge present.	Deep ravine, lots of blowdown; Hard to access for electrofishing; Polyline includes a secondary channel that became inaccessible due to unsafe levels of blowdown; Substrate may have been altered from bridge installation.
WC20	Small permanent	Channel Width = 3.02 Wetted Width = 2.62 Right Bank Depth = 0.09 Center Depth = 0.11 Left Bank Depth = 0.07 Thalweg = 0.29	0.53	Bedrock = 0 Boulder (>25 cm) = 0 Cobble (3-25 cm) = 20 Gravel (2 mm-3 cm) = 40 Sand (0.06-2 mm) = 20 Fines (<0.06 mm) = 20	Flat, Run	Northwest	0.031	Not recorded	Boulders = N Overhanging Vegetation = T Canopy Cover = M Instream Vegetation = N Large Woody Debris = M Small Woody Debris = A Deep Pools = N	Left Bank = 0.61 Right Bank = 0.10	High stability; Both banks undercut	Tree roots, shrubs, herbaceous plants, small trees, moss	None observed; Habitat Suitability is moderate	None observed.	Water is quite shallow, underlain by deep muck.
WC21	Small permanent	Channel Width = 3.15 Wetted Width = 2.85 Right Bank Depth = 0.08 Center Depth = 0.05 Left Bank Depth = 0.07 Thalweg = 0.17	0.37	Bedrock = 0 Boulder (>25 cm) = 10 Cobble (3-25 cm) = 30 Gravel (2 mm-3 cm) = 30 Sand (0.06-2 mm) = 20 Fines (<0.06 mm) = 0	Run, Riffe	West	0.17	Not recorded	Bouklers = T Overhanging Vegetation = M Canopy Cover = M Instream Vegetation = T Large Woody Debris = N Small Woody Debris = T Deep Pools = N	Left Bank = 0.23 Right Bank = 0	High stability; Left bank undercu	t Herbaceous plants, shrubs, moss, rocks	None observed; Habitat Suitability is moderate	Yes, culvert present.	Water flows under roadway at crossing via two metal culverts (860 mm diameter); One of the culverts has collapsed, but plenty of water still flowing through; Roadside drainage flowing parallel to road from both north and south and confluencing at the crossing; Channel becomes more defined with higher flow as it courses west, outside of the boundary; Clear, clean substrate.
WC22	Large permanent	Channel Width = 6.50 Wetted Width = 4.50 Right Bank Depth = Center Depth = Left Bank Depth = 0.22 Thalweg =	0.05	Bedrock = 5 Boulder (>25 cm) = 50 Cobble (3-25 cm) = 40 Gravel (2 mm-3 cm) = 5 Sand (0.06-2 mm) = 0 Fines (<0.06 mm) = 0	Pool, Riffle, Run	Southeast	0.34	$\label{eq:phi} \begin{array}{l} pH=6.74\\ Temperature~(^{\circ}C)=13.1\\ Dissolved Oxygen~(mg/L)=9.43\\ Dissolved Oxygen~(\%)=89.1\\ Conductivity~(mS/cm)=0.03 \end{array}$	Boulders = A Overhanging Vegetation = T Canopy Cover = T Instream Vegetation = T Large Woody Debris = T Small Woody Debris = A Deep Pools = N	Left Bank = 0 Right Bank = 0	High stability; No undercut	Cobble, gravel, fines, boulders	None observed; Habitat Suitability is high	None observed.	Very steep gorge into watercourse with rocky substrate; Regenerating softwoods and blowdown of large trees along banks.

Watercourse Characteristics Watercourse ID	- Kmtnuk Wind Power Project Watercourse Type	Watercourse Measurments (m)	Bankful Depth (m)	Substrate (%)	Habitat Characteristic	Direction of Flow	Velocity (m/s)	Water Quality	In Stream Cover*	Undercut Measurements (m)	Bank Characteristics	Bank Notes	Fish Presence	Evidence of Alteration	Project # 23-9127 Other Observations
WC23	Small permanent	Channel Width = 1.17 Wetted Width = 1.45 Right Bank Depth = 0.21 Center Depth = 0.19 Left Bank Depth = 0.16 Thalweg = 0.23	0.01	Bedrock = 0 Boulder (>25 cm) = 0 Cobble (3-25 cm) = 40 Gravel (2 mm-3 cm) = 40 Sand (0.06-2 mm) = 20 Fines (<0.06 mm) = 10	Pool, Riffle, Run	East	0.39	Not recorded	Boulders = N Overhanging Vegetation = M Canopy Cover = T Instream Vegetation = T Large Woody Debris = A Small Woody Debris = A Deep Pools = N	Left Bank = 0 Right Bank = 0	Right bank stable; Left bank moderately stable; Active erosion; No undercut	Sphagnum, herbaceous vegetation, young mixedwood trees, abundant blowdown	None observed; Habitat Suitability is moderate	Yes, culvert present.	Stream overtopping banks in many locations due to heavy rainfaill today/overnight and is transporting exposed sediment; Very high levels of blowdown throughout length of waterocurse making it difficult to access in some areas - tracked as closely as possible; Waterocurse starts as ephemeral drainage before turning to
WC24	Small permanent	Channel Width = 0.30 Wetted Width = 0.42 Right Bank Depth = 0.08 Center Depth = 0.14 Left Bank Depth = 0.13 Thalweg = 0.17	0	Bedrock = 0 Boulder (>25 cm) = 0 Cobble (3-25 cm) = 0 Gravel (2 mm-3 cm) = 0 Sand (0.06-2 mm) = 10 Fines (<0.06 mm) = 90	Riffle	North	0.08	Not recorded	Boulders = N Overhanging Vegetation = A Canopy Cover = T Instream Vegetation = A Large Woody Debris = T Small Woody Debris = N Deep Pools = N	Left Bank = 0 Right Bank = 0	High stability; No undercut	Sphagnum moss, sedges, bunchberry, sarsaparilla, ferns	None observed; Habitat Suitability is low	Yes, culvert present.	small permanent. Drainage from wetland that connects to another watercourse.
WC25	Intermittent	Channel Width = 1.94 Wetted Width = 1.64 Right Bank Depth = 0.14 Center Depth = 0.24 Left Bank Depth = 0.18 Thalweg = 0.28	0.23	Bedrock = 0 Boulder (>25 cm) = 0 Cobble (3-25 cm) = 30 Gravel (2 mm-3 cm) = 50 Sand (0.06-2 mm) = 10 Fines (<0.06 mm) = 10	Riffle, Flat	West	0.09	Not recorded	Boulders = N Overhanging Vegetation = A Canopy Cover = M Instream Vegetation = N Large Woody Debris = N Small Woody Debris = T Deep Pools = N	Left Bank = 0 Right Bank = 0	Right bank unstable; Left bank moderately stable; Active erosion	Alders, herbaceous plants muck	, None observed; Habitat Suitability is moderate	Yes, culvert present.	Roughly 500 mm diameter plastic culvert runs under roadway at crossing; Watercourse begins as subterranean flow upstream, channelizes, and then becomes subterranean again downstream, eventually dissipating into wetland. Flow has been artifically straightened to run parallel with the road; Inflow from roadside drainage entering watercourse at crossing.
WC26	Intermittent	Channel Width = 1.47 Wetted Width = 1.40 Right Bank Depth = 0.04 Center Depth = 0.13 Left Bank Depth = 0.10 Thalweg = 0.28	0.34	Bedrock = 0 Boulder (>25 cm) = 0 Cobble (3-25 cm) = 0 Gravel (2 mm-3 cm) = 15 Sand (0.06-2 mm) = 0 Fines (<0.06 mm) = 85	Riffle, Run, Pool	Northeast	N/A	pH = 4.55 Temperature (°C) = 15.7 Dissolved Oxygen (mg/L) = 5.16 Dissolved Oxygen (%) = 51.2 Conductivity (mS/cm) = 0.03	Boulders = N Overhanging Vegetation = A Canopy Cover = T Instream Vegetation = A Large Woody Debris = T Small Woody Debris = T Deep Pools = N	Left Bank = 0 Right Bank = 0	Right bank moderately stable; Left bank unstable; No undercut	Fines, muck	None observed; Habitat Suitability is low	None observed.	Stready flow, though intermittently subterranean. Plenty of shade and small woody debris.
WC28	Large permanent	Channel Width = 7.20 Wetted Width = 6.60 Right Bank Depth = 0.06 Center Depth = 0.28 Lett Bank Depth = 0.035 Thalweg = 0.36	0.25	Bedrock = 40 Boulder (>25 cm) = 13 Cobble (3-25 cm) = 25 Gravel (2 mm-3 cm) = 20 Sand (0.06-2 mm) = 2 Fines (<0.06 mm) = 0	Run, Riffle	South	0.362	Not recorded	Boulders = M Overhanging Vegetation = N Canopy Cover = T Instream Vegetation = N Large Woody Debris = N Small Woody Debris = N Deep Pools = M	Left Bank = 0 Right Bank = 0	High stability; Active erosion; No undercut	Silty sand with alders and graminoids growing, and interspersed boulders	None observed; Habitat Suitability is moderate	Yes, open-bottom bridge presen	Relatively straight with a slight meander; Wetland off right bank; Trace amounts of eroding shoreline; Substrate is comprised of lots of bedrock, boulders, cobble, finer gravel, and sand pockets near shoreline.
WC29	Intermittent	Channel Width = 2.00 Wetted Width = 1.10 Right Bank Depth = 0.07 Center Depth = 0.13 Left Bank Depth = 0.11 Thalweg = 0.19	0.23	Bedrock = 0 Boulder (>25 cm) = 10 Cobble (3-25 cm) = 5 Gravel (2 mm-3 cm) = 0 Sand (0.06-2 mm) = 0 Fines (<0.06 mm) = 85	Run, Flat	East	0.067	pH = 6.28 Temperature (°C) = 15.7 Dissolved Oxygen (mg/L) = 6.61 Dissolved Oxygen (%) = 70.3 Conductivity (mS/cm) = 0.03	Boulders = M Overhanging Vegetation = M Canopy Cover = M Instream Vegetation = M Large Woody Debris = M Small Woody Debris = A Deep Pools = N	Left Bank = 0 Right Bank = 0	Right bank unstable; Left bank moderately stable; No undercut	Muck, boulders, herbaceous roots, wood	None observed; Habitat Suitability is low	Yes, culvert present.	Some blowdown along watercourse; Rolling topography; Watercourse becomes intermitently subterranean near eastern extent of boundary. Passes through some conifer plantation with evidence of commercial thinning, otherwise habitat is mostly tolerant hardwood; Watercourse eventually discharged into WC32, and flows under roadway via open bottom bridge structure.
WC32	Small permanent	Channel Width = 1.30 Wetted Width = 1.05 Right Bank Depth = 0.05 Center Depth = 0.12 Left Bank Depth = 0.07 Thalweg = 0.15	0.48	Bedrock = 0 Boulder (>25 cm) = 10 Cobble (3-25 cm) = 40 Gravel (2 mm-3 cm) = 40 Sand (0.06-2 mm) = 10 Fines (<0.06 mm) = 0	Riffle, Run	South	0.11	$\begin{array}{c} pH=7.3\\ Temperature (^{\circ}C)=15.2\\ Dissolved Oxygen (mg/L)=7.65\\ Dissolved Oxygen (^{\circ}o)=72.5\\ Conductivity (mS/cm)=0.04 \end{array}$	Boulders = M Overhanging Vegetation = M Canopy Cover = N Instream Vegetation = M Large Woody Debris = T Small Woody Debris = T Deep Pools = N	Left Bank = 0.05 Right Bank = 0.05	High stability: Active erosion; Both banks undercut	Boulders, cobbles, gravel, herbaceous roots	Fish observed; Habitat Suitability is low	Yes, culvert present.	Higher than average flow, much of the stream is exposed beside the road; Multiple smaller drainage channels discharge into the watercourse between the road and the northern-most transect; Areas along roadside eroding due to recent flow increase.
WC35	Intermittent	Channel Width = 1.82 Wetted Width = 1.12 Right Bank Depth = 0.04 Center Depth = 0.15 Left Bank Depth = 0.17 Thalweg = 0.19	0.28	Bedrock = 0 Boulder (>25 cm) = 0 Cobble (3-25 cm) = 0 Gravel (2 mm-3 cm) = 10 Sand (0.06-2 mm) = 5 Fines (<0.06 mm) = 85	Flat	South	0.083	pH = 6.86 Temperature (°C) = 18.7 Dissolved Oxygen (mg/L) = 6.15 Dissolved Oxygen (%) = 59.2 Conductivity (mS/cm) = 0.06	Boulders = N Overhanging Vegetation = M Canopy Cover = T Instream Vegetation = M Large Woody Debris = M Small Woody Debris = M Deep Pools = N	Left Bank = 0.15 Right Bank = 0	Right bank unstable; Left bank moderately stable; Left bank undercut	Moss, muck, grass	None observed; Habitat Suitability is low	None observed.	Watercourse begins as drainage from wetland, eventually discharges into larger watercourse (WC38).
WC38	Large permanent	Channel Width = 3.70 Wetted Width = 2.10 Right Bank Depth = 0.16 Center Depth = 0.28 Left Bank Depth = 0.09 Thalweg = 0.23	0.36	Bedrock = 0 Boulder (>25 cm) = 25 Cobble (3-25 cm) = 40 Gravel (2 mm-3 cm) = 30 Sand (0.06-2 mm) = 5 Fines (<0.06 mm) = 0	Run, Flat	East	0.142	pH = 7.06 Temperature (°C) = 17.3 Dissolved Oxygen (mg/L) = 7.22 Dissolved Oxygen (%) = 74.3 Conductivity (mS/cm) = 0.04	Boulders = M Overhanging Vegetation = T Canopy Cover = M Instream Vegetation = T Large Woody Debris = M Small Woody Debris = M Deep Pools = N	Left Bank = 0 Right Bank = 0.21	High stability; Right bank undercut	Gravel, cobbles, moss	None observed; Habitat Suitability is moderate	None observed.	Majority of watercourse is covered by blowdown.
WC40	Small permanent	Channel Width = 2.10 Wetted Width = 1.68 Right Bank Depth = 0.18 Center Depth = 0.17 Lett Bank Depth = 0.10 Thalweg = 0.25	0.17	Bedrock = 0 Boulder (>25 cm) = 0 Cobble (3-25 cm) = 0 Gravel (2 mm-3 cm) = 0 Sand (0.06-2 mm) = 0 Fines (<0.06 mm) = 100	Pool, Flat	East	0.01	Not recorded	Boulders = T Overhanging Vegetation = A Canopy Cover = T Instream Vegetation = M Large Woody Debris = A Small Woody Debris = N Deep Pools = N	Left Bank = 0 Right Bank = 0	Low stability; No undercut	Graminoids	None observed; Habitat Suitability is low	Yes, culvert present.	Lots of blowdown in the area; Upstream not accessible due to extreme volume of blowdown.
WC41	Small permanent	Channel Width = 0.50 Wetted Width = 0.40 Right Bank Depth = 0.13 Center Depth = 0.15 Left Bank Depth = 0.12 Thalweg = 0.16	0.35	Bedrock = 0 Boulder (>25 cm) = 0 Cobble (3-25 cm) = 0 Gravel (2 mm-3 cm) = 0 Sand (0.06-2 mm) = 45 Fines (<0.06 mm) = 55	Riffle, Flat	South	0.1	Not recorded	Boulders = N Overhanging Vegetation = A Canopy Cover = A Instream Vegetation = A Large Woody Debris = A Small Woody Debris = A Deep Pools = N	Left Bank = 0.13 Right Bank = 0.10	Moderate stability; Both banks undercut	Herbaceous and graminoid species	None observed; Habitat Suitability is low	None observed.	Slow movement has allowed the buildup of fines and muck.
WC42	Small permanent	Channel Width = 1.73 Wetted Width = 1.70 Right Bank Depth = 0.14 Center Depth = 0.11 Lett Bank Depth = 0.05 Thalweg = 0.20	0.14	Bedrock = 0 Boulder (>25 cm) = 5 Cobble (3-25 cm) = 0 Gravel (2 mm-3 cm) = 5 Sand (0.06-2 mm) = 20 Fines (<0.06 mm) = 70	Pool	Southeast	0.05	Not recorded	Boulders = T Overhanging Vegetation = T Canopy Cover = N Instream Vegetation = N Large Woody Debris = N Small Woody Debris = T Deep Pools = N	Left Bank = 0 Right Bank = 0.05	Right bank moderately stable; Left bank highly stable; Active erosion; Right bank undercut	Soil, roots, wood, rock	None observed; Habitat Suitability is low	Yes, culvert present.	Right bank is undercut and built on old wood.
WC43	Intermittent	$\label{eq:channel Width = 0.72} \\ Wetted Width = 0.36 \\ Right Bank Depth = 0.01 \\ Center Depth = 0.02 \\ Left Bank Depth = 0.02 \\ Thalweg = 0.02 \\ \end{array}$	0.19	Bedrock = 0 Boulder (>25 cm) = 0 Cobble (3-25 cm) = 10 Gravel (2 mm-3 cm) = 0 Sand (0.06-2 mm) = 0 Fines (<0.06 mm) = 90	Run	Northeast	N/A	Not recorded	Boulders = T Overhanging Vegetation = T Canopy Cover = M Instream Vegetation = N Large Woody Debris = N Small Woody Debris = M Deep Pools = N	Left Bank = 0 Right Bank = 0	High stability; No undercut	Soil, roots, rock	None observed; Habitat Suitability is low	None observed.	Watercourse is intermittently subterranean.
WC44	Intermittent	$\label{eq:channel Width = 0.84} \\ Wetted Width = 0.62 \\ Right Bank Depth = 0.04 \\ Center Depth = 0.05 \\ Left Bank Depth = 0.02 \\ Thalweg = 0.06 \\ \end{array}$	0.25	Bedrock = 0 Boulder (>25 cm) = 0 Cobble (3-25 cm) = 60 Gravel (2 mm-3 cm) = 0 Sand (0.06-2 mm) = 0 Fines (<0.06 mm) = 40	Flat	Northwest	0.027	Not recorded	Boopt observed Boolders = N Overhanging Vegetation = T Canopy Cover = A Instream Vegetation = T Large Woody Debris = N Small Woody Debris = T Deep Pools = N	Left Bank = 0 Right Bank = 0	Moderately stable; No undercut	Moss, leaf litter, herbaceous plants	None observed; Habitat Suitability is low	None observed.	Contiguous with wetland; Substrate contains lush green moss on cobble.
WC45	Intermittent	Channel Width = 1.62 Wetted Width = 1.14 Right Bank Depth = 0.01 Center Depth = 0.03 Left Bank Depth = 0.02 Thalweg = 0.09	0.31	Bedrock = 0 Boulder (>25 cm) = 0 Cobble (3-25 cm) = 30 Gravel (2 mm-3 cm) = 0 Sand (0.06-2 mm) = 0 Fines (<0.06 mm) = 40	Flat, Run	West	0.027	Not recorded	Boulders = N Overhanging Vegetation = T Canopy Cover = A Instream Vegetation = N Large Woody Debris = N Small Woody Debris = T Deep Pools = N	Left Bank = 0 Right Bank = 0	Low stability; No undercut	Leaf litter, ferns	None observed; Habitat Suitability is low	None observed.	Slow flow, areas on muck buildup.



Watercourse Characteristics Watercourse ID	s - Kmtnuk Wind Power Project Watercourse Type	Watercourse Measurments (m)	Bankful Depth (m)	Substrate (%)	Habitat Characteristic	Direction of Flow	Velocity (m/s)	Water Quality	In Stream Cover*	Undercut Measurements (m)	Bank Characteristics	Bank Notes	Fish Presence	Evidence of Alteration	Project # 23-9127 Other Observations
WC46	Intermittent	Channel Width = 2.20 Wetted Width = 1.62 Right Bank Depth = 0.02 Center Depth = 0.07 Left Bank Depth = 0.02 Thalweg = 0.13	0.16	Bedrock = 0 Boulder (>25 cm) = 10 Cobble (3-25 cm) = 50 Gravel (2 mm-3 cm) = 30 Sand (0.06-2 mm) = 5 Fines (<0.06 mm) = 5	Riffle	South	N/A	pH = 5.4 Temperature (°C) = 19.6 Dissolved Oxygen (mg/L) = 8.12 Dissolved Oxygen (%) = 80.8 Conductivity (mS/cm) = 0.02	Boulders = T Overhanging Vegetation = N Canopy Cover = M Instream Vegetation = N Large Woody Debris = T Small Woody Debris = N Deep Pools = N	Left Bank = 0 Right Bank = 0	Right bank moderately stable; Left bank highly stable; No undercut	Fines, cobble, gravel, boulders, right bank disturbed from uprooted tree	None observed; Habitat Suitability is low	None observed.	Starts as ephemeral draining from wet area outside of AA; Steep sloping with riparian habitat consisting of mature hardwoods.
WC47	Intermittent	Channel Width = 1.39 Wetted Width = 1.06 Right Bank Depth = 0.02 Center Depth = 0.06 Left Bank Depth = 0.04 Thalweg = 0.16	0.21	Bedrock = 0 Boulder (>25 cm) = 0 Cobble (3-25 cm) = 0 Gravel (2 mm-3 cm) = 30 Sand (0.06-2 mm) = 10 Fines (<0.06 mm) = 60	Flat	South	0.018	Not recorded	Boulders = N Overhanging Vegetation = T Canopy Cover = A Instream Vegetation = N Large Woody Debris = N Small Woody Debris = A Deep Pools = N	Left Bank = 0 Right Bank = 0	Low stability; No undercut	Ferns, leaf litter, tree roots	None observed; Habitat Suitability is low	None observed.	Steady flow, lots of small woody debris.
WC48	Small permanent	Channel Width = 0.59 Wetted Width = 0.72 Right Bank Depth = 0.15 Center Depth = 0.13 Left Bank Depth = 0.10 Thalweg = 0.18	0.18	Bedrock = 0 Boulder (>25 cm) = 0 Cobble (3-25 cm) = 20 Gravel (2 mm-3 cm) = 55 Sand (0.06-2 mm) = 25 Fines (<0.06 mm) = 0	Flat, Pool	South	0.081	Not recorded	Boulders = T Overhanging Vegetation = M Canopy Cover = M Instream Vegetation = T Large Woody Debris = T Small Woody Debris = M Deep Pools = N	Left Bank = 0.10 Right Bank = 0.08	Moderate stability; No undercut	Moss, graminoids	None observed; Habitat Suitability is low	None observed.	Wetland drainage; we've had a large amount of rainfall in the last 24 hours, this watercourse could be intermittent and swollen from the rain.
WC49	Small permanent	Channel Width = 0.88 Wetted Width = 0.60 Right Bank Depth = 0.01 Center Depth = 0.05 Left Bank Depth = 0.03 Thalweg = 0.27	0.18	Bedrock = 0 Boulder (>25 cm) = 0 Cobble (3-25 cm) = 75 Gravel (2 mm-3 cm) = 10 Sand (0.06-2 mm) = 10 Fines (<0.06 mm) = 5	Pool, Riffle, Run	West	0.32	pH = 7.05 Temperature (°C) = 16.1 Dissolved Oxygen (mg/L) = 8.25 Dissolved Oxygen (%) = 83.5 Conductivity (mS/cm) = 0.03	Boulders = N Overhanging Vegetation = N Canopy Cover = A Instream Vegetation = N Large Woody Debris = N Small Woody Debris = M Deep Pools = N	Left Bank = 0.03 Right Bank = 0.10	Moderate stability; Both banks undercut	Fines	None observed; Habitat Suitability is moderate	No observable culvert at crossing - could be very old bridge or wood box culvert	Water is travelling very slowly on downstream side of crossing, pooling and creating many flow paths.
WC50	Small permanent	Channel Width = 1.75 Wetted Width = 1.35 Right Bank Depth = 0.07 Center Depth = 0.10 Left Bank Depth = 0.07 Thalweg = 0.11	0.15	Bedrock = 0 Boulder (>25 cm) = 5 Cobble (3-25 cm) = 35 Gravel (2 mm-3 cm) = 40 Sand (0.06-2 mm) = 10 Fines (<0.06 mm) = 10	Riffle, Run	Southwest	0.17	pH = 7.05 Temperature (°C) = 15.6 Dissolved Oxygen (mg/L) = 8.83 Dissolved Oxygen (%) = 84.1 Conductivity (mS/cm) = 0.06	Boulders = T Overhanging Vegetation = T Canopy Cover = A Instream Vegetation = N Large Woody Debris = T Small Woody Debris = T Deep Pools = N	Left Bank = 0.12 Right Bank = 0.02	Moderate stability; Both banks undercut	Gravel, sand, fines	None observed; Habitat Suitability is moderate	Yes, culvert present.	Active erosion observed. High flow is causing scoring of banks.
WC51	Small permanent	Channel Width = 7.38 Wetted Width = 5.48 Right Bank Depth = 0.05 Center Depth = 0.16 Left Bank Depth = 0.10 Thalweg = 0.20	0.69	Bedrock = 0 Boulder (>25 cm) = 10 Cobble (3-25 cm) = 75 Gravel (2 mm-3 cm) = 10 Sand (0.06-2 mm) = 5 Fines (<0.06 mm) = 0	Riffle, Run	East	0.83	pH = 6.70 Temperature (°C) = 18.5 Dissolved Oxygen (mg/L) = 8.3 Dissolved Oxygen (%) = 89.3 Conductivity (mS/cm) = 0.04	Boulders = M Overhanging Vegetation = A Canopy Cover = M Instream Vegetation = N Large Woody Debris = M Small Woody Debris = M Deep Pools = N	Left Bank = 0 Right Bank = 0	Moderate stability: Active erosion No undercut	Fines, sand, cobble	None observed; Habitat Suitability is moderate	None observed.	Beaver dam close to the upstream edge, high volumes of rain have likely altered the area causing parts of the dam to burst leading to newlysitt water channels; Lots of deadfall in and next to the stream and eroding banks; Main part of beaver dam is potential good habitat for fish spawning and turtles due to sandy banks, and potential habitat for bats due to large sings; Watercourse has some fringe wetland that could not be accessed, visible on imagery; Sediment deposits observed along banks as well as matted vegetation from water surging.
WC52	Intermittent	$\label{eq:channel Width = 2.77} \\ Wetted Width = 2.65 \\ Right Bank Depth = 0.16 \\ Center Depth = 0.13 \\ Left Bank Depth = 0.11 \\ Thalweg = 0.20 \\ \end{array}$	0.38	Bedrock = 0 Boulder (>25 cm) = 15 Cobble (3-25 cm) = 55 Gravel (2 mm-3 cm) = 15 Sand (0.06-2 mm) = 10 Fines (<0.06 mm) = 5	Riffle, Run	East	0.19	pH = 4.74 Temperature (°C) = 15.9 Dissolved Oxygen (mg/L) = 6.10 Dissolved Oxygen (%) = 60.9 Conductivity (mS/cm) = 0.03	Boulders = M Overhanging Vegetation = N Canopy Cover = N Instream Vegetation = M Large Woody Debris = M Small Woody Debris = A Deep Pools = N	Left Bank = 0.05 Right Bank = 0.16	Moderate stability; Both banks undercut	Fines	None observed; Habitat Suitability is low	None observed.	Significant deadfall; Upstream becomes mostly subterranean; Water is tea coloured throughout.
WC53	Small permanent	Channel Width = 3.22 Wetted Width = 3.13 Right Bank Depth = 0.23 Center Depth = 0.26 Left Bank Depth = 0.26 Thalweg = 0.39	0.42	Bedrock = 0 Boulder (>25 cm) = 0 Cobble (3-25 cm) = 0 Gravel (2 mm-3 cm) = 15 Sand (0.06-2 mm) = 80 Fines (<0.06 mm) = 5	Run, Pool, Riffle	North	0.2	pH = 5.06 Temperature (°C) = 13.6 Dissolved Oxygen (mg/L) = 7.18 Dissolved Oxygen (%) = 74.4 Conductivity (mS/cm) = 0.03	Boulders = N Overhanging Vegetation = A Canopy Cover = M Instream Vegetation = A Large Woody Debris = A Small Woody Debris = A Deep Pools = N	Left Bank = 0.09 Right Bank = 0.08	Moderate stability: Active erosion Both banks undercut	: Mosses, grasses, trees, root mats	Fish observed; Habitat Suitability is high	Yes, culvert present.	This is one of two smaller streams which merge into one, the two smaller streams move across road through culvert. The smaller streams are 50 m apart along the road; Alders abundant; Lots of blowdown, difficult to traverse; Fish of varying sizes observed; A third stream moves from delineated wetland to the north (which changes between channelized stream to wetland, back to stream) and enters watercourse.
WC54	Small permanent	Channel Width = 2.08 Wetted Width = 1.73 Right Bank Depth = 0.02 Center Depth = 0.03 Left Bank Depth = 0.05 Thalweg = 0.06	0.24	Bedrock = 0 Boulder (>25 cm) = 15 Cobble (3-25 cm) = 40 Gravel (2 mm-3 cm) = 5 Sand (0.06-2 mm) = 15 Fines (<0.06 mm) = 25	Riffle	Northeast	0.074	pH = 6.41 Temperature (°C) = 17.6 Dissolved Oxygen (mgL) = 6.53 Dissolved Oxygen (%) = 69.3 Conductivity (mS/cm) = 0.03	Boulders = A Overhanging Vegetation = A Canopy Cover = M Instream Vegetation = A Large Woody Debris = A Small Woody Debris = A Deep Pools = N	Left Bank = 0.05 Right Bank = 0	Right bank moderately stable; Left bank highly stable; Active erosion; Left bank undercut	Boulders, moss, sedges, cobble, muck, fines	None observed; Habitat Suitability is low	None observed.	Tons of deadfall across watercourse; Watercourse forks into two; Large uprooted tree on right side has exposed a lot of fines and rocks, stream seems to be widening into this area a lot and there is a higher percentage of fines here than upstream.
WC55	Small permanent	Channel Width = 4.11 Wetted Width = 3.59 Right Bank Depth = 0.19 Center Depth = 0.15 Left Bank Depth = 0.14 Thalweg = 0.19	0.68	Bedrock = 0 Boulder (>25 cm) = 5 Cobble (3-25 cm) = 45 Gravel (2 mm-3 cm) = 15 Sand (0.06-2 mm) = 15 Fines (<0.06 mm) = 20	Pool, Riffle, Run	East	0.069	pH = 6.80 Temperature (°C) = 16.7 Dissolved Oxygen (mg/L) = Not recorded Dissolved Oxygen (%) = Not recorded Conductivity (mS/cm) = 0.03	Boulders = T Overhanging Vegetation = T Canopy Cover = M Instream Vegetation = N Large Woody Debris = T Small Woody Debris = A Deep Pools = N	Left Bank = 0.07 Right Bank = 0	Unstable; Active erosion; Left bank undercut	Fines	None observed; Habitat Suitability is moderate	None observed.	Watercourse has some small, short-lived offshoots and banks/islands with matted grass showing overland flow patterns; Soil eroding from banks into stream, exposed roots.
WC56	Small permanent	Channel Width = 1.53 Wetted Width = 1.51 Right Bank Depth = 0.14 Center Depth = 0.02 Left Bank Depth = 0.09 Thalweg = 0.17	0.55	Bedrock = 0 Boulder (>25 cm) = 0 Cobble (3-25 cm) = 30 Gravel (2 mm-3 cm) = 25 Sand (0.06-2 mm) = 45 Fines (<0.06 mm) = 0	Pool	East	0.109	Not recorded	Boulders = T Overhanging Vegetation = M Canopy Cover = M Instream Vegetation = T Large Woody Debris = A Small Woody Debris = M Deep Pools = N	Left Bank = 0.17 Right Bank = 0.13	Moderate stability; Both banks undercut	Roots, sand	None observed; Habitat Suitability is low	None observed.	Watercourse converges with previously delineated watercourse (WC55).
WC57	Small permanent	Channel Width = 0.75 Wetted Width = 0.67 Right Bank Depth = 0.05 Center Depth = 0.07 Left Bank Depth = 0.03 Thalweg = 0.07	0.52	Bedrock = 0 Boulder (>25 cm) = 60 Cobble (3-25 cm) = 20 Gravel (2 mm-3 cm) = 10 Sand (0.06-2 mm) = 10 Fines (<0.06 mm) = 0	Run	North	N/A	Not recorded	Boulders = A Overhanging Vegetation = A Canopy Cover = A Instream Vegetation = N Large Woody Debris = M Small Woody Debris = M Deep Pools = N	Left Bank = 0.1 Right Bank = 0	High stability; Left bank undercut	Cobbles, boulders, tree roots	None observed; Habitat Suitability is low	None observed.	Substrate is clear water with abundant cobbles - good salmon habitat.
WC58	Small permanent	Channel Width = 1.45 Wetted Width = 1.08 Right Bank Depth = 0.01 Center Depth = 0.12 Left Bank Depth = 0.01 Thalweg = 0.12	0.85	Bedrock = 0 Boulder (>25 cm) = 10 Cobble (3-25 cm) = 70 Gravel (2 mm-3 cm) = 20 Sand (0.06-2 mm) = 0 Fines (<0.06 mm) = 0	Run	North	0.312	Not recorded	Boulders = M Overhanging Vegetation = T Canopy Cover = M Instream Vegetation = N Large Woody Debris = M Small Woody Debris = A Deep Pools = N	Left Bank = 0.1 Right Bank = 0	Right bank moderately stable; Left bank highly stable; Left bank undercut	Boulders, tree roots, gravel, sand	None observed; Habitat Suitability is low	None observed.	Heavy flow is causing downcutting in channel.
WC59	Intermittent	Channel Width = 0.88 Wetted Width = 0.36 Right Bank Depth = 0.01 Center Depth = 0.01 Left Bank Depth = 0.03 Thalweg = 0.04	0.28	Bedrock = 0 Boulder (>25 cm) = 0 Cobble (3-25 cm) = 30 Gravel (2 mm-3 cm) = 40 Sand (0.06-2 mm) = 30 Fines (<0.06 mm) = 0	Pool, Run	North	N/A	Not recorded	Boulders = N Overhanging Vegetation = M Canopy Cover = T Instream Vegetation = M Large Woody Debris = M Small Woody Debris = M Deep Pools = N	Left Bank = 0.04 Right Bank = 0	High stability; Left bank undercut	Sphagnum moss, small woody debris	None observed; Habitat Suitability is low	None observed.	Water is moving at a quick pace but too many obstructions to measure velocity.







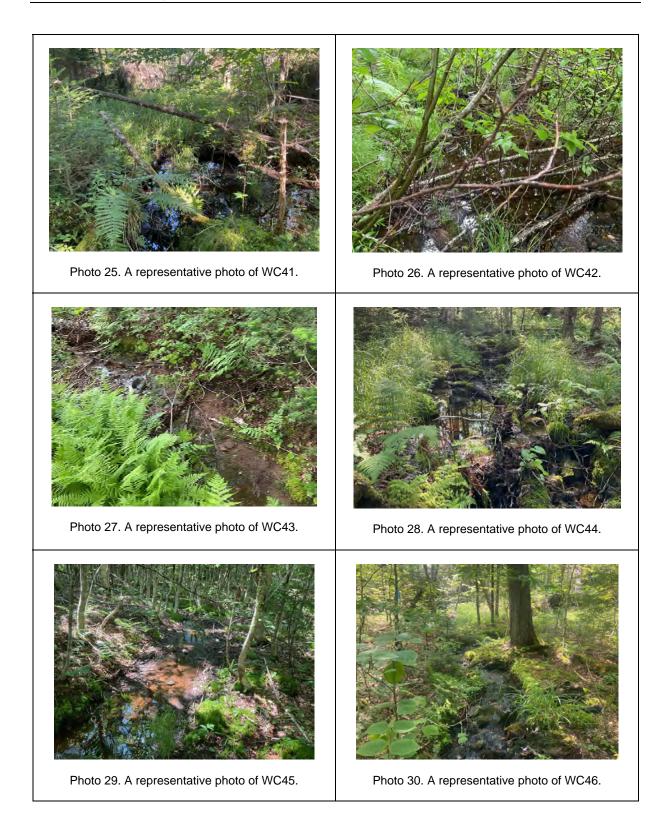




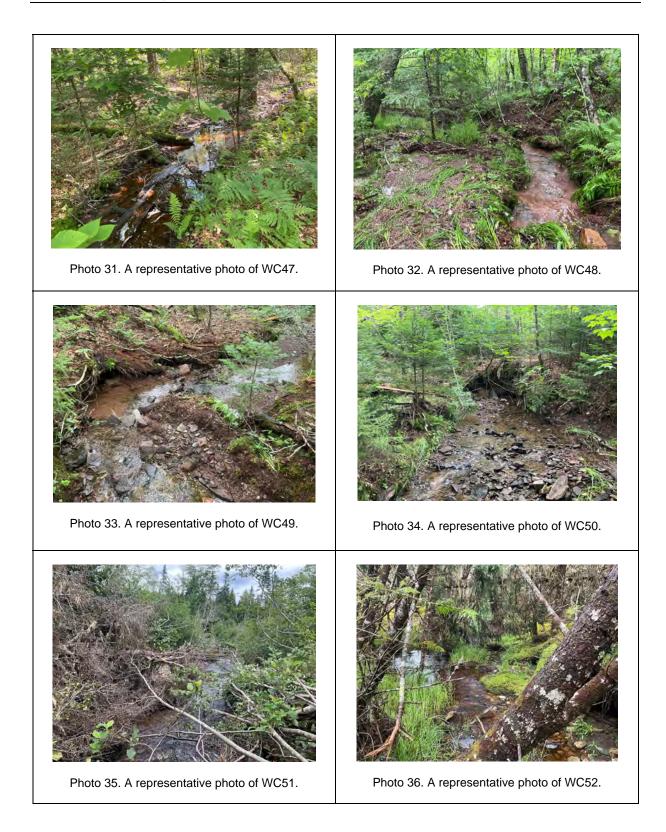




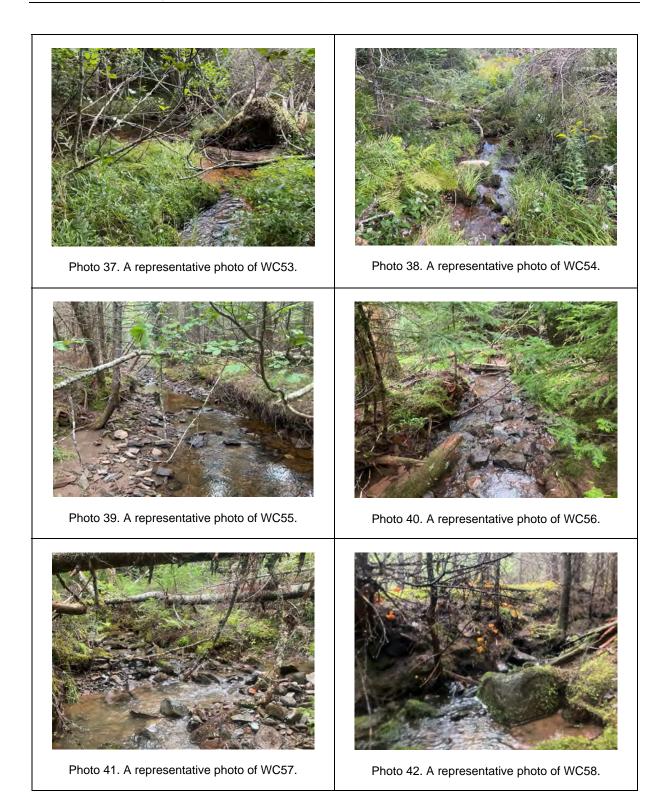




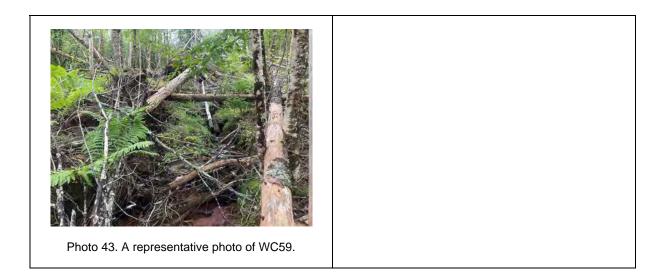














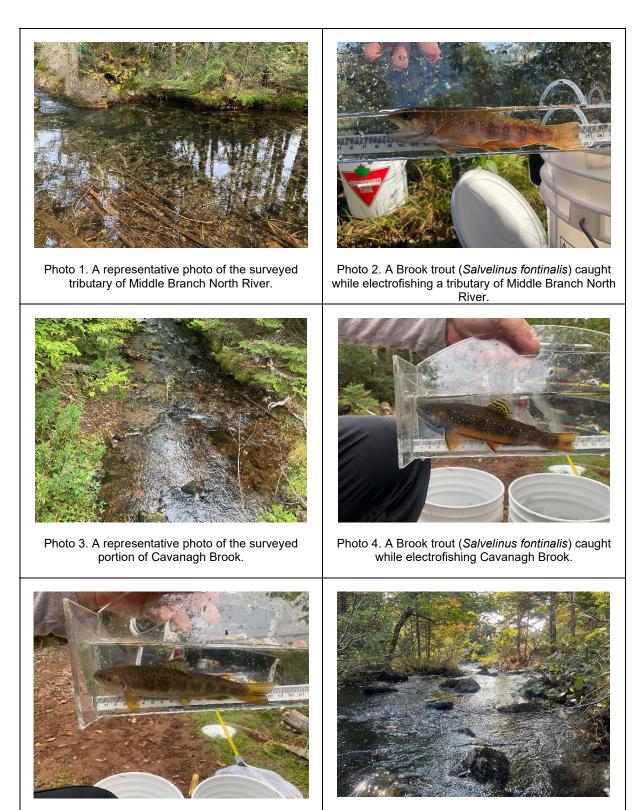


Photo 5. A Brown trout (*Salmo trutta*) caught while Photo electrofishing Cavanagh Brook.

Photo 6. A representative photo of the surveyed portion of West Branch North River.





Photo 7. A Brook trout (*Salvelinus fontinalis*) caught while electrofishing West Branch North River.



Photo 8. An American eel (*Anguilla rostrata*) caught while electrofishing West Branch North River.

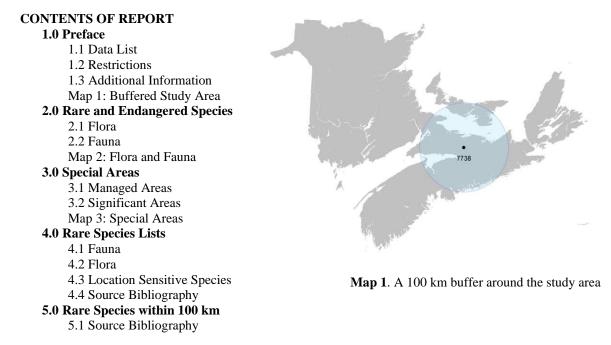


APPENDIX G ACCDC REPORT



DATA REPORT 7738: Nuttby, NS

Prepared 27 June 2023 by J. Churchill, Data Manager



1.0 PREFACE

The Atlantic Canada Conservation Data Centre (AC CDC; <u>www.accdc.com</u>) is part of a network of NatureServe data centres and heritage programs serving 50 states in the U.S.A, 10 provinces and 1 territory in Canada, plus several Central and South American countries. The NatureServe network is more than 30 years old and shares a common conservation data methodology. The AC CDC was founded in 1997, and maintains data for the jurisdictions of New Brunswick, Nova Scotia, Prince Edward Island, and Newfoundland and Labrador. Although a non-governmental agency, the AC CDC is supported by 6 federal agencies and 4 provincial governments, as well as through outside grants and data processing fees.

Upon request and for a fee, the AC CDC queries its database and produces customized reports of the rare and endangered flora and fauna known to occur in or near a specified study area. As a supplement to that data, the AC CDC includes locations of managed areas with some level of protection, and known sites of ecological interest or sensitivity.

1.1 DATA LIST

Included datasets:	
<u>Filename</u>	<u>Contents</u>
NuttbyNS_7738ob.xls	Rare or legally-protected Flora and Fauna in your study area
NuttbyNS_7738ob100km.xls	A list of Rare and legally protected Flora and Fauna within 100 km of your study area
NuttbyNS_7738msa.xls	Managed and Biologically Significant Areas in your study area
NuttbyNS_7738ff_py.xls	Rare Freshwater Fish in your study area (DFO database)

1.2 RESTRICTIONS

The AC CDC makes a strong effort to verify the accuracy of all the data that it manages, but it shall not be held responsible for any inaccuracies in data that it provides. By accepting AC CDC data, recipients assent to the following limits of use:

- a) Data is restricted to use by trained personnel who are sensitive to landowner interests and to potential threats to rare and/or endangered flora and fauna posed by the information provided.
- b) Data is restricted to use by the specified Data User; any third party requiring data must make its own data request.
- c) The AC CDC requires Data Users to cease using and delete data 12 months after receipt, and to make a new request for updated data if necessary at that time.
- d) AC CDC data responses are restricted to the data in our Data System at the time of the data request.
- e) Each record has an estimate of locational uncertainty, which must be referenced in order to understand the record's relevance to a particular location. Please see attached Data Dictionary for details.
- f) AC CDC data responses are not to be construed as exhaustive inventories of taxa in an area.
- g) The absence of a taxon cannot be inferred by its absence in an AC CDC data response.

1.3 ADDITIONAL INFORMATION

The accompanying Data Dictionary provides metadata for the data provided.

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

Plants, Lichens, Ranking Methods, All other Inquiries	Animals (Fauna)
Sean Blaney	John Klymko
Senior Scientist / Executive Director	Zoologist
(506) 364-2658	(506) 364-2660
sean.blaney@accdc.ca	<u>john.klymko@accdc.ca</u>
Data Management, GIS	Billing
James Churchill	Jean Breau
Conservation Data Analyst / Field Biologist	Financial Manager / Executive Assistant
(902) 679-6146	(506) 364-2657
james.churchill@accdc.ca	jean.breau@accdc.ca

Questions on the biology of Federal Species at Risk can be directed to AC CDC: (506) 364-2658, with questions on Species at Risk regulations to: Samara Eaton, Canadian Wildlife Service (NB and PE): (506) 364-5060 or Julie McKnight, Canadian Wildlife Service (NS): (902) 426-4196.

For provincial information about rare taxa and protected areas, or information about game animals, deer yards, old growth forests, archeological sites, fish habitat etc., in New Brunswick, please contact Hubert Askanas, Energy and Resource Development: (506) 453-5873.

For provincial information about rare taxa and protected areas, or information about game animals, deer yards, old growth forests, archeological sites, fish habitat etc., in Nova Scotia, please contact Donna Hurlburt, NS DLF: (902) 679-6886. To determine if location-sensitive species (section 4.3) occur near your study site please contact a NS DLF Regional Biologist:

Western: Emma Vost	Western: Sarah Spencer	Central: Shavonne Meyer	Central: Kimberly George
(902) 670-8187	(902) 541-0081	(902) 893-0816	(902) 890-1046
Emma.Vost@novascotia.ca	Sarah.Spencer@novascotia.ca	<u>Shavonne.Meyer@novascotia.ca</u>	Kimberly.George@novascotia.ca
Eastern: Harrison Moore	Eastern: Maureen Cameron-MacMillan	Eastern: Elizabeth Walsh	
(902) 497-4119	(902) 295-2554	(902) 563-3370	
<u>Harrison.Moore@novascotia.ca</u>	<u>Maureen.Cameron-MacMillan@novascotia.ca</u>	<u>Elizabeth.Walsh@novascotia.ca</u>	

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

2.0 RARE AND ENDANGERED SPECIES

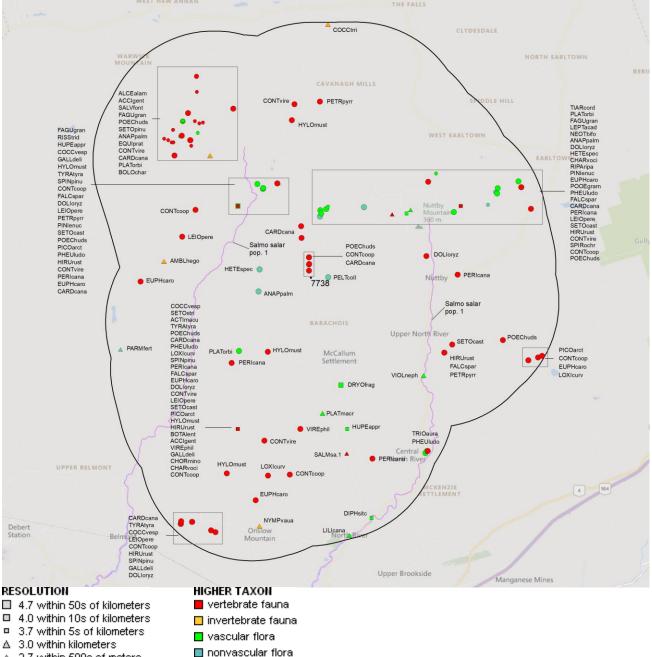
2.1 FLORA

The study area contains 36 records of 13 vascular and 9 records of 5 nonvascular flora (Map 2 and attached: *ob.xls), excluding 'location-sensitive' species.

2.2 FAUNA

The study area contains 267 records of 35 vertebrate and 4 records of 4 invertebrate fauna (Map 2 and attached data files - see 1.1 Data List), excluding 'location-sensitive species'. Please see section 4.3 to determine if 'location-sensitive' species occur near your study site.

Map 2: Known observations of rare and/or protected flora and fauna within the study area.



- Δ 2.7 within 500s of meters
- ٥ 2.0 within 100s of meters
- 1.7 within 10s of meters

3.0 SPECIAL AREAS

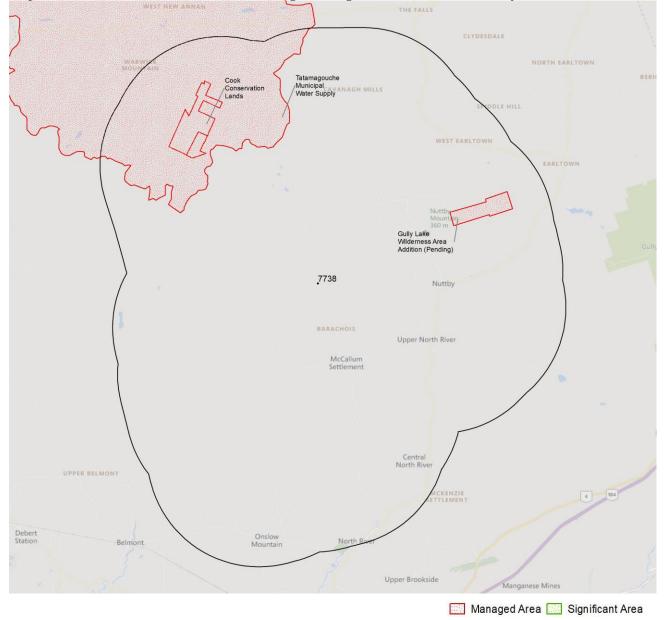
3.1 MANAGED AREAS

The GIS scan identified 4 managed areas in the vicinity of the study area (Map 3 and attached file: *msa.xls).

3.2 SIGNIFICANT AREAS

The GIS scan identified no biologically significant sites in the vicinity of the study area (Map 3).

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



4.0 RARE SPECIES LISTS

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

4.1 FLORA

	Scientific Name	Common Name	COSEWIC	SARA	Prov Legal Prot	Prov Rarity Rank	# recs	Distance (km)
Ν	Parmelia fertilis	Fertile Shield Lichen				S2S3	1	9.1 ± 0.0
N	Peltigera collina	Tree Pelt Lichen				S3	1	0.8 ± 0.0
N	Leptogium acadiense	Acadian Jellyskin Lichen				S3S4	2	8.6 ± 0.0
N	Heterodermia speciosa	Powdered Fringe Lichen				S3S4	2	2.3 ± 0.0
N	Anaptychia palmulata	Shaggy Fringed Lichen				S3S4	3	2.4 ± 0.0
Р	Lilium canadense	Canada Lily				S2	1	11.7 ± 1.0
Р	Platanthera macrophylla	Large Round-Leaved Orchid				S2	1	6.1 ± 1.0
Р	Tiarella cordifolia	Heart-leaved Foamflower				S2S3	7	9.2 ± 0.0
Р	Triosteum aurantiacum	Orange-fruited Tinker's Weed				S3	2	9.3 ± 0.0
Р	Viola nephrophylla	Northern Bog Violet				S3	1	6.7 ± 1.0
Р	Neottia bifolia	Southern Twayblade				S3	2	3.2 ± 0.0
Р	Dryopteris fragrans	Fragrant Wood Fern				S3	2	5.0 ± 4.0
Р	Spiranthes ochroleuca	Yellow Ladies'-tresses				S3?	1	5.2 ± 0.0
Р	Fagus grandifolia	American Beech				S3S4	10	10.3 ± 0.0
Р	Platanthera orbiculata	Small Round-leaved Orchid				S3S4	5	4.6 ± 0.0
Р	Equisetum pratense	Meadow Horsetail				S3S4	1	8.6 ± 0.0
Р	Diphasiastrum sitchense	Sitka Ground-cedar				S3S4	1	11.1 ± 5.0
Р	Huperzia appressa	Mountain Firmoss				S3S4	2	4.6 ± 7.0

4.2 FAUNA

	Scientific Name	Common Name	COSEWIC	SARA	Prov Legal Prot	Prov Rarity Rank	# recs	Distance (km)
А	Salmo salar pop. 1	Atlantic Salmon - Inner Bay of Fundy population	Endangered	Endangered		S1	1	8.1 ± 0.0
Α	Riparia riparia	Bank Swallow	Threatened	Threatened	Endangered	S2B	1	7.5 ± 7.0
Α	Hylocichla mustelina	Wood Thrush	Threatened	Threatened		SUB	7	3.8 ± 0.0
Α	Euphagus carolinus	Rusty Blackbird	Special Concern	Special Concern	Endangered	S2B	8	10.3 ± 0.0
Α	Hirundo rustica	Barn Swallow	Special Concern	Threatened	Endangered	S3B	32	12.2 ± 0.0
Α	Cardellina canadensis	Canada Warbler	Special Concern	Threatened	Endangered	S3B	19	0.3 ± 0.0
Α	Chordeiles minor	Common Nighthawk	Special Concern	Special Concern	Threatened	S3B	1	7.5 ± 7.0
Α	Contopus cooperi	Olive-sided Flycatcher	Special Concern	Special Concern	Threatened	S3B	29	0.6 ± 0.0
Α	Dolichonyx oryzivorus	Bobolink	Special Concern	Threatened	Vulnerable	S3B	34	12.2 ± 0.0
Α	Coccothraustes vespertinus	Evening Grosbeak	Special Concern	Special Concern	Vulnerable	S3B,S3N,S3M	4	12.2 ± 0.0
Α	Contopus virens	Eastern Wood-Pewee	Special Concern	Special Concern	Vulnerable	S3S4B	14	4.6 ± 7.0
Α	Accipiter gentilis	Northern Goshawk	Not At Risk			S3S4	2	7.5 ± 7.0
Α	Alces alces americana	Moose			Endangered	S1	2	10.4 ± 0.0
Α	Pooecetes gramineus	Vesper Sparrow				S1S2B,SUM	1	7.5 ± 7.0
Α	Vireo philadelphicus	Philadelphia Vireo				S2?B,SUM	2	6.8 ± 0.0
Α	Rissa tridactyla	Black-legged Kittiwake				S2S3B	1	4.5 ± 0.0
Α	Petrochelidon pyrrhonota	Cliff Swallow				S2S3B	3	4.6 ± 7.0
Α	Setophaga pinus	Pine Warbler				S2S3B,S4S5M	3	8.2 ± 0.0
Α	Perisoreus canadensis	Canada Jay				S3	15	4.6 ± 7.0
Α	Poecile hudsonicus	Boreal Chickadee				S3	17	0.9 ± 0.0
Α	Spinus pinus	Pine Siskin				S3	7	12.2 ± 0.0
Α	Salvelinus fontinalis	Brook Trout				S3	2	8.7 ± 0.0
А	Charadrius vociferus	Killdeer				S3B	3	10.3 ± 0.0

	Scientific Name	Common Name	COSEWIC	SARA	Prov Legal Prot	Prov Rarity Rank	# recs	Distance (km)
А	Tyrannus tyrannus	Eastern Kingbird				S3B	3	12.2 ± 0.0
А	Pheucticus Iudovicianus	Rose-breasted Grosbeak				S3B	6	4.6 ± 7.0
А	Falco sparverius	American Kestrel				S3B,S4S5M	8	4.6 ± 7.0
А	Gallinago delicata	Wilson's Snipe				S3B,S5M	8	12.2 ± 0.0
Α	Setophaga striata	Blackpoll Warbler				S3B,S5M	1	7.5 ± 7.0
Α	Pinicola enucleator	Pine Grosbeak				S3B,S5N,S5M	2	4.6 ± 7.0
Α	Picoides arcticus	Black-backed Woodpecker				S3S4	4	10.9 ± 0.0
Α	Loxia curvirostra	Red Crossbill				S3S4	4	10.4 ± 0.0
Α	Botaurus lentiginosus	American Bittern				S3S4B,S4S5M	2	7.5 ± 7.0
Α	Setophaga castanea	Bay-breasted Warbler				S3S4B,S4S5M	9	4.6 ± 7.0
Α	Actitis macularius	Spotted Sandpiper				S3S4B,S5M	3	7.5 ± 7.0
Α	Leiothlypis peregrina	Tennessee Warbler				S3S4B,S5M	9	12.5 ± 0.0
1	Coccinella transversoguttata richardsoni	Transverse Lady Beetle	Special Concern		Endangered	SH	1	11.4 ± 2.0
I	Boloria chariclea	Arctic Fritillary				S1S2	1	7.1 ± 2.0
I	Nymphalis I-album	Compton Tortoiseshell				S2S3	1	11.4 ± 2.0
Ι	Amblyscirtes hegon	Pepper and Salt Skipper				S3S4	1	6.6 ± 1.0

4.3 LOCATION SENSITIVE SPECIES

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

Nova Scotia				
Scientific Name	Common Name	SARA	Prov Legal Prot	Known within the Study Site?
Fraxinus nigra	Black Ash		Threatened	YES
Emydoidea blandingii	Blanding's Turtle - Nova Scotia pop.	Endangered	Endangered	No
Glyptemys insculpta	Wood Turtle	Threatened	Threatened	No
Falco peregrinus pop. 1	Peregrine Falcon - anatum/tundrius pop.		Vulnerable	No
Bat hibernaculum or bat s	species occurrence	[Endangered] ¹	[Endangered]1	No

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

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

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5.0 RARE SPECIES WITHIN 100 KM

A 100 km buffer around the study area contains 58351 records of 155 vertebrate and 1841 records of 77 invertebrate fauna; 10189 records of 276 vascular and 3068 records of 169 nonvascular flora (attached: *ob100km.xls).

Taxa within 100 km of the study site that are rare and/or endangered in the province in which the study site occurs (including "location-sensitive" species). All ranks correspond to the province in which the study site falls, even for out-of-province records. Taxa are listed in order of concern, beginning with legally listed taxa, with the number of observations per taxon and the distance in kilometers from study area centroid to the closest observation (± the precision, in km, of the record).

Taxonomic									
Group	Scientific Name	Common Name	COSEWIC	SARA	Prov Legal Prot	Prov Rarity Rank	# recs	Distance (km)	Prov
A	Myotis lucifugus	Little Brown Myotis	Endangered	Endangered	Endangered	S1	121	23.2 ± 0.0	NS
A	Myotis septentrionalis	Northern Myotis	Endangered	Endangered	Endangered	S1	85	29.9 ± 0.0	NS
A	Perimyotis subflavus	Tricolored Bat	Endangered	Endangered	Endangered	S1	8	35.3 ± 5.0	NS
А	Salmo salar pop. 1	Atlantic Salmon - Inner Bay of Fundy population	Endangered	Endangered		S1	34	8.1 ± 0.0	NS
А	Salmo salar pop. 6	Atlantic Salmon - Nova Scotia Southern Upland population	Endangered			S1	28	54.7 ± 0.0	NS
А	Charadrius melodus melodus	Piping Plover melodus subspecies	Endangered	Endangered	Endangered	S1B	1048	27.2 ± 0.0	NS
A	Sterna dougallii	Roseate Tern	Endangered	Endangered	Endangered	S1B	7	95.0 ± 0.0	NS
А	Dermochelys coriacea pop. 2	Leatherback Sea Turtle - Atlantic population	Endangered	Endangered		S1S2N	1	83.8 ± 1.0	NB
А	Morone saxatilis pop. 2	Striped Bass - Bay of Fundy population	Endangered			S2S3B,S2S3N	2	59.8 ± 0.0	NS
A	Lasiurus cinereus	Hoary Bat	Endangered			SUB, S1M	7	79.0 ± 1.0	PE
A	Lasionycteris noctivagans	Silver-haired Bat	Endangered			SUB,S1M	1	98.6 ± 0.0	NS
A	Lasiurus borealis	Eastern Red Bat	Endangered			SUB,S1M	1	99.0 ± 0.0	NB
A	Catharus bicknelli	Bicknell's Thrush	Threatened	Threatened	Endangered	S1B	1	61.2 ± 7.0	NS
A	Asio flammeus	Short-eared Owl	Threatened	Special Concern		S1B	69	35.8 ± 7.0	NS
A	Glyptemys insculpta	Wood Turtle	Threatened	Threatened	Threatened	S2	8085	12.9 ± 1.0	NS
A	Riparia riparia	Bank Swallow	Threatened	Threatened	Endangered	S2B	2551	7.5 ± 7.0	NS
A	Chaetura pelagica	Chimney Swift	Threatened	Threatened	Endangered	S2S3B,S1M	1372	13.7 ± 7.0	NS
A	Limosa haemastica	Hudsonian Godwit	Threatened			S2S3M	169	26.5 ± 0.0	NS
A	Acipenser oxyrinchus	Atlantic Sturgeon	Threatened			S2S3N	12	45.6 ± 0.0	NS
A	Hydrobates leucorhous	Leach's Storm-Petrel	Threatened			S3B	5	95.1 ± 0.0	NS
A	Tringa flavipes	Lesser Yellowlegs	Threatened			S3M	1415	20.6 ± 0.0	NS
A	Anguilla rostrata	American Eel	Threatened	T I / I		S3N	112	13.6 ± 0.0	NS
A	Sturnella magna	Eastern Meadowlark	Threatened	Threatened		SHB	4	86.9 ± 7.0	NS

Taxonomic Group	Scientific Name	Common Name	COSEWIC	SARA	Prov Legal Prot	Prov Rarity Rank	# recs	Distance (km)	Prov
	Ixobrychus exilis	Least Bittern	Threatened	Threatened		SUB	9	79.3 ± 0.0	NS
١	Hylocichla mustelina	Wood Thrush	Threatened	Threatened		SUB	50	3.8 ± 0.0	NS
Ą	Salmo salar pop. 12	Atlantic Salmon - Gaspe - Southern Gulf of St.	Special Concern			S1	41	12.8 ± 50.0	NS
`	Saimo Salar pop. 12	Lawrence population	Special Concern			51	41	12.0 ± 30.0	
4	Antrostomus vociferus	Eastern Whip-Poor-Will	Special Concern	Threatened	Threatened	S1?B	11	49.1 ± 7.0	NS
Ą	Passerculus sandwichensis	Ipswich Sparrow	Special Concern	Special Concern		S1B	5	90.5 ± 0.0	NS
	princeps		•	•		-			
A.	Bucephala islandica	Barrow's Goldeneye	Special Concern	Special Concern		S1N,SUM	50	39.9 ± 0.0	NS
А А	Euphagus carolinus	Rusty Blackbird	Special Concern	Special Concern	Endangered	S2B	255	4.6 ± 7.0	NS
4	Phalaropus lobatus Histrionicus histrionicus pop.	Red-necked Phalarope Harleguin Duck - Eastern	Special Concern	Special Concern		S2S3M	12	26.5 ± 0.0	NS NS
Ą	1	population	Special Concern	Special Concern	Endangered	S2S3N,SUM	14	51.6 ± 0.0	NO
Ą	Chelydra serpentina	Snapping Turtle	Special Concern	Special Concern	Vulnerable	S3	227	14.3 ± 0.0	NS
A Contraction of the second se	Hirundo rustica	Barn Swallow	Special Concern	Threatened	Endangered	S3B	2200	4.6 ± 7.0	NS
4	Cardellina canadensis	Canada Warbler	Special Concern	Threatened	Endangered	S3B	1224	0.3 ± 0.0	NS
λ	Chordeiles minor	Common Nighthawk	Special Concern	Special Concern	Threatened	S3B	470	7.5 ± 7.0	NS
۱	Contopus cooperi	Olive-sided Flycatcher	Special Concern	Special Concern	Threatened	S3B	1171	0.6 ± 0.0	NS
4	Dolichonyx oryzivorus	Bobolink	Special Concern	Threatened	Vulnerable	S3B	2892	4.6 ± 7.0	NS
4	Coccothraustes vespertinus	Evening Grosbeak	Special Concern	Special Concern	Vulnerable	S3B,S3N,S3M	892	4.6 ± 7.0	NS
4	Podiceps auritus	Horned Grebe	Special Concern	Special Concern		S3N,SUM	17	14.3 ± 0.0	NS
A	Contopus virens	Eastern Wood-Pewee	Special Concern	Special Concern	Vulnerable	S3S4B	1359	4.6 ± 7.0	NS
A	Phocoena phocoena	Harbour Porpoise Harbour Porpoise -	Special Concern			S4	8	47.8 ± 0.0	NS NS
Ą	Phocoena phocoena pop. 1	Northwest Atlantic	Special Concern			S4	1	55.0 ± 1.0	112
7	Thocoena phocoena pop. T	Population	Opecial Concern			04	1	55.0 ± 1.0	
4	Chrysemys picta	Painted Turtle	Special Concern	Special Concern		S4	29	41.6 ± 0.0	NS
Ą	Chrysemys picta picta	Eastern Painted Turtle	Special Concern	Special Concern		S4	202	16.5 ± 0.0	NS
Ą	Accipiter cooperii	Cooper's Hawk	Not At Risk			S1?B,SUN,SUM	24	14.0 ± 0.0	NS
Ą	Fulica americana	American Coot	Not At Risk			S1B	81	14.6 ± 3.0	NS
4	Chlidonias niger	Black Tern	Not At Risk			S1B	180	79.1 ± 0.0	NS
A	Falco peregrinus pop. 1	Peregrine Falcon -	Not At Risk		Vulnerable	S1B.SUM	149	32.8 ± 0.0	NS
		anatum/tundrius			, aniorable	- ,			NO
A	Sorex dispar	Long-tailed Shrew	Not At Risk			S2	2	35.4 ± 0.0	NS
A A	Aegolius funereus	Boreal Owl	Not At Risk Not At Risk			S2?B,SUM S2S3	9 3	14.1 ± 0.0 62.7 ± 100.0	NS NS
4	Globicephala melas Hemidactylium scutatum	Long-finned Pilot Whale Four-toed Salamander	Not At Risk			S3	26	20.8 ± 0.0	NS
ч А	Megaptera novaeangliae	Humpback Whale	Not At Risk			S3	1	20.8 ± 0.0 86.0 ± 0.0	NS
, A	Sterna hirundo	Common Tern	Not At Risk			S3B	508	19.0 ± 0.0	NS
Á.	Sialia sialis	Eastern Bluebird	Not At Risk			S3B	97	14.9 ± 7.0	NS
Ą	Buteo lagopus	Rough-legged Hawk	Not At Risk			S3N	25	31.8 ± 0.0	NS
٩	Accipiter gentilis	Northern Goshawk	Not At Risk			S3S4	178	7.5 ± 7.0	NS
Ą	Glaucomys volans	Southern Flying Squirrel	Not At Risk			S3S4	2	48.6 ± 0.0	NS
Ą	Lagenorhynchus acutus	Atlantic White-sided Dolphin	Not At Risk			S3S4	2	46.2 ± 0.0	NS
4	Ammospiza nelsoni	Nelson's Sparrow	Not At Risk			S3S4B	838	17.1 ± 7.0	NS
4	Calidris canutus rufa	Red Knot rufa subspecies	E,SC	Endangered	Endangered	S2M	275	20.6 ± 0.0	NS
4	Calidris canutus	Red Knot	E,SC	E,T		S2M	12	25.8 ± 0.0	NS
4	Morone saxatilis	Striped Bass	E,SC			S2S3B,S2S3N	33	21.2 ± 0.0	NS
4	Gadus morhua	Atlantic Cod	E,SC,DD			SNR	3	62.3 ± 0.0	NS
A	Salmo salar	Atlantic Salmon	E,T,SC			S1B,S1N	11	18.7 ± 0.0	NS
A A	Alces alces americana	Moose			Endangered	S1	219	8.2 ± 0.0	NS
A	Alces alces	Moose				S1	14	17.8 ± 0.0	NS NS
A	Picoides dorsalis	American Three-toed Woodpecker				S1?	5	54.3 ± 0.0	СИ
A	Uria aalge	Common Murre				S1?B	4	92.5 ± 0.0	NS
ч 4	Passerina cyanea	Indigo Bunting				S1?B.SUM	26	92.5 ± 0.0 15.5 ± 0.0	NS
A	Nycticorax nycticorax	Black-crowned Night-heron				S1B	1	90.9 ± 1.0	NB
							•		

A A A A A A	Gallinula galeata Myiarchus crinitus Cistothorus palustris Mimus polyglottos	Common Gallinule Great Crested Flycatcher			S1B	48	20.3 ± 7.0	NS
A A A	Cistothorus palustris	Great Crested Flycatcher						
A A A					S1B	25	14.8 ± 7.0	NS
A A	Mimus polyalottos	Marsh Wren			S1B	54	74.9 ± 3.0	NB
A	Millius polygiottos	Northern Mockingbird			S1B	96	17.5 ± 0.0	NS
	Toxostoma rufum	Brown Thrasher			S1B	12	17.1 ± 7.0	NS
Ą	Charadrius semipalmatus	Semipalmated Plover			S1B,S4M	1497	20.3 ± 7.0	NS
	Calidris minutilla	Least Sandpiper			S1B,S4M	875	20.6 ± 0.0	NS
A	Anas acuta	Northern Pintail			S1B,SUM	147	19.2 ± 0.0	NS
A	Vireo gilvus	Warbling Vireo			S1B,SUM	35	13.6 ± 7.0	NS
A	Vespertilionidae sp.	bat species			S1S2	115	13.4 ± 0.0	NS
A	Pooecetes gramineus	Vesper Sparrow			S1S2B,SUM	72	7.5 ± 7.0	NS
A	Vireo philadelphicus	Philadelphia Vireo			S2?B.SUM	114	6.8 ± 0.0	NS
A	Alca torda	Razorbill			S2B	3	73.5 ± 2.0	NS
л А	Fratercula arctica	Atlantic Puffin			S2B	1	76.5 ± 0.0	NB
A	Empidonax traillii	Willow Flycatcher			S2B	51	14.8 ± 7.0	NS
	,	,						
A	Molothrus ater	Brown-headed Cowbird			S2B	248	14.9 ± 7.0	NS
A	Spatula clypeata	Northern Shoveler			S2B,SUM	273	17.9 ± 0.0	NS
A	Mareca strepera	Gadwall			S2B,SUM	442	22.6 ± 0.0	NS
A	Piranga olivacea	Scarlet Tanager			S2B,SUM	25	21.8 ± 0.0	NS
A	Calidris alba	Sanderling			S2N,S3M	815	17.9 ± 0.0	NS
A	Martes americana	American Marten		Endangered	S2S3	1	96.2 ± 0.0	NS
A	Asio otus	Long-eared Owl			S2S3	31	18.1 ± 0.0	NS
A	Rallus limicola	Virginia Rail			S2S3B	269	23.5 ± 7.0	NS
A	Rissa tridactyla	Black-legged Kittiwake			S2S3B	4	4.5 ± 0.0	NS
A	Petrochelidon pyrrhonota	Cliff Swallow			S2S3B	458	4.6 ± 7.0	NS
A	Phalacrocorax carbo	Great Cormorant			S2S3B,S2S3N	125	17.9 ± 0.0	NS
A	Cathartes aura	Turkey Vulture			S2S3B,S4S5M	108	23.1 ± 0.0	NS
A	Setophaga pinus	Pine Warbler			S2S3B,S4S5M	79	8.2 ± 0.0	NS
A	Bucephala clangula	Common Goldeneye			S2S3B,S5N,S5M	288	24.9 ± 9.0	NS
A	Icterus galbula	Baltimore Oriole			S2S3B.SUM	94	18.6 ± 0.0	NS
A	Pluvialis dominica	American Golden-Plover			S2S3M	134	30.9 ± 0.0	NS
A	Numenius phaeopus	Whimbrel			S2S3M	10	47.6 ± 0.0	NS
	Numenius phaeopus							NS
A	hudsonicus	Whimbrel			S2S3M	148	26.8 ± 0.0	110
A	Phalaropus fulicarius	Red Phalarope			S2S3M	2	97.7 ± 0.0	NS
A	Perisoreus canadensis	Canada Jay			S3	676	4.6 ± 7.0	NS
A	Poecile hudsonicus	Boreal Chickadee			S3	872	4.0 ± 7.0 0.9 ± 0.0	NS
A	Spinus pinus	Pine Siskin			S3	636	4.6 ± 7.0	NS
	Salvelinus fontinalis	Brook Trout			S3		4.0 ± 7.0 8.7 ± 0.0	NS
A		Lake Trout			S3	112 2		NS
A	Salvelinus namaycush						60.2 ± 0.0	
A	Sorex maritimensis	Maritime Shrew			S3	107	90.4 ± 1.0	NB
A	Synaptomys cooperi	Southern Bog Lemming			S3	1	93.0 ± 0.0	NS
A	Pekania pennanti	Fisher			S3	12	18.9 ± 0.0	NS
A	Calcarius lapponicus	Lapland Longspur			S3?N,SUM	46	53.5 ± 0.0	NS
A	Spatula discors	Blue-winged Teal			S3B	580	14.8 ± 7.0	NS
A	Charadrius vociferus	Killdeer			S3B	1011	7.5 ± 7.0	NS
A	Tringa semipalmata	Willet			S3B	1631	19.2 ± 0.0	NS
A	Sterna paradisaea	Arctic Tern			S3B	21	79.5 ± 0.0	NB
A	Coccyzus erythropthalmus	Black-billed Cuckoo			S3B	144	14.8 ± 7.0	NS
A	Tyrannus tyrannus	Eastern Kingbird			S3B	507	4.6 ± 7.0	NS
A	Pheucticus Iudovicianus	Rose-breasted Grosbeak			S3B	921	4.6 ± 7.0	NS
A	Alosa pseudoharengus	Alewife			S3B	38	20.0 ± 0.0	NS
A	Somateria mollissima	Common Eider			S3B,S3M,S3N	365	24.9 ± 9.0	NS
A	Tringa melanoleuca	Greater Yellowlegs			S3B,S4M	2257	17.8 ± 0.0	NS
A	Falco sparverius	American Kestrel			S3B,S4S5M	651	4.6 ± 7.0	NS
A	Gallinago delicata	Wilson's Snipe			S3B,S5M	1417	4.6 ± 7.0 4.6 ± 7.0	NS
A		Blackpoll Warbler			S3B,S5M	1417	4.6 ± 7.0 7.5 ± 7.0	NS
A A	Setophaga striata Cardellina pusilla	Wilson's Warbler			S3B,S5M	124	7.5 ± 7.0 14.9 ± 7.0	NS NS

Group	Scientific Name	Common Name	COSEWIC	SARA	Prov Legal Prot	Prov Rarity Rank	# recs	Distance (km)	Prov
A	Pinicola enucleator	Pine Grosbeak				S3B,S5N,S5M	148	4.6 ± 7.0	NS
A	Setophaga tigrina	Cape May Warbler				S3B,SUM	378	13.2 ± 0.0	NS
A	Branta bernicla	Brant				S3M	16	57.8 ± 0.0	NS
A	Pluvialis squatarola	Black-bellied Plover				S3M	1456	18.0 ± 0.0	NS
A	Arenaria interpres	Ruddy Turnstone				S3M	540	23.0 ± 0.0	NS
A	Calidris pusilla	Semipalmated Sandpiper				S3M	1729	20.6 ± 0.0	NS
Ą	Calidris melanotos	Pectoral Sandpiper				S3M	345	23.0 ± 0.0	NS
A	Limnodromus griseus	Short-billed Dowitcher				S3M	1096	20.6 ± 0.0	NS
A	Chroicocephalus ridibundus	Black-headed Gull				S3N	34	47.7 ± 0.0	NS
A	Picoides arcticus	Black-backed Woodpecker				S3S4	194	4.6 ± 7.0	NS
A	Loxia curvirostra	Red Crossbill				S3S4	198	7.5 ± 7.0	NS
A	Sorex albibarbis	Eastern Water Shrew				S3S4	5	75.0 ± 0.0	PE
A	Botaurus lentiginosus	American Bittern				S3S4B,S4S5M	1081	7.5 ± 7.0	NS
A	Setophaga castanea	Bay-breasted Warbler				S3S4B,S4S5M	734	4.6 ± 7.0	NS
A	Actitis macularius	Spotted Sandpiper				S3S4B,S5M	1027	7.5 ± 7.0	NS
A	Leiothlypis peregrina	Tennessee Warbler				S3S4B,S5M	709	4.6 ± 7.0	NS
A	Passerella iliaca	Fox Sparrow				S3S4B,S5M	56	37.3 ± 7.0	NS
A	Mergus serrator	Red-breasted Merganser				S3S4B,S5M,S5N	297	17.9 ± 0.0	NS
A	Calidris maritima	Purple Sandpiper				S3S4N	61	49.3 ± 0.0	NS
A	Lanius borealis	Northern Shrike				S3S4N	10	49.3 ± 0.0 74.7 ± 0.0	NS
A	Morus bassanus	Northern Gannet				SHB	96	74.7 ± 0.0 32.1 ± 4.0	NS
A ^	Aythya americana	Redhead				SHB	17	45.3 ± 0.0	NS
A	Leucophaeus atricilla	Laughing Gull				SHB	11	77.6 ± 0.0	NB
4	Progne subis	Purple Martin				SHB	24	49.1 ± 7.0	NS
4	Eremophila alpestris	Horned Lark				SHB,S4S5N,S5M	49	15.8 ± 0.0	NS
	Bombus bohemicus	Ashton Cuckoo Bumble Bee	Endangered	Endangered	Endangered	S1	32	17.3 ± 5.0	NS
	Danaus plexippus	Monarch	Endangered	Special Concern	Endangered	S2?B,S3M	460	13.7 ± 0.0	NS
	Danaus plexippus plexippus	Monarch	Endangered	Special Concern		S2?B,S3M	1	85.4 ± 0.0	NS
	Barnea truncata	Atlantic Mud-piddock	Threatened	Threatened		S1	10	42.0 ± 1.0	NS
	Bombus suckleyi	Suckley's Cuckoo Bumble Bee	Threatened			SH	4	18.2 ± 5.0	NS
	Alasmidonta varicosa	Brook Floater	Special Concern	Special Concern	Threatened	S3	16	23.7 ± 0.0	NS
i.	Bombus terricola	Yellow-banded Bumble Bee	Special Concern	Special Concern	Vulnerable	S3	175	12.8 ± 0.0	NS
	Coccinella transversoguttata	Transverse Lady Beetle	Special Concern		Endangered	SH	9	11.4 ± 2.0	NS
	richardsoni	Skillet Clubteil	Createl Concern	Endongorod	-	SH	2	69.3 ± 0.0	NC
	Gomphurus ventricosus	Skillet Clubtail	Special Concern	Endangered					NS
	Erora laeta	Early Hairstreak				S1	1	75.9 ± 0.0	PE
	Pachydiplax longipennis	Blue Dasher				S1	11	94.3 ± 0.0	NS
	Atlanticoncha ochracea	Tidewater Mucket				S1	29	69.5 ± 0.0	NS
	Polygonia comma	Eastern Comma				S1?	3	97.4 ± 0.0	NS
	Polygonia satyrus	Satyr Comma				S1?	24	17.1 ± 5.0	NS
	Euphyes bimacula	Two-spotted Skipper				S1S2	3	61.3 ± 0.0	NS
	Boloria chariclea	Arctic Fritillary				S1S2	8	7.1 ± 2.0	NS
	Somatochlora brevicincta	Quebec Emerald				S1S2	2	82.7 ± 1.0	NS
	Tharsalea dospassosi	Maritime Copper				S2	105	22.5 ± 0.0	NS
	Satyrium acadica	Acadian Hairstreak				S2	17	13.5 ± 0.0	NS
	Neurocordulia michaeli	Broad-tailed Shadowdragon				S2	21	60.6 ± 0.0	NS
	Coenagrion resolutum	Taiga Bluet				S2	55	26.9 ± 0.0	NS
	Margaritifera margaritifera	Eastern Pearlshell				S2	160	13.7 ± 0.0	NS
	Pantala hymenaea	Spot-Winged Glider				S2?B	2	82.7 ± 1.0	NS
	Nymphalis I-album	Compton Tortoiseshell				S2S3	13	11.4 ± 2.0	NS
	Aglais milberti	Milbert's Tortoiseshell				S2S3	20	14.3 ± 2.0	NS
	Aglais milberti milberti	Milbert's Tortoise Shell				S2S3	4	36.3 ± 0.0	NS
	Lanthus vernalis	Southern Pygmy Clubtail				S2S3	7	75.2 ± 0.0	NS
1	Somatochlora kennedyi	Kennedy's Emerald				S2S3	5	75.2 ± 0.0 78.4 ± 0.0	NS
í.									
	Somatochlora williamsoni	Williamson's Emerald				S2S3	13	79.7 ± 0.0	NB
1	Williamsonia fletcheri	Ebony Boghaunter				S2S3	11	29.7 ± 0.0	NS
,	Stylurus scudderi	Zebra Clubtail				S2S3	4	64.5 ± 1.0	NS

Taxonomic Group	Scientific Name	Common Name	COSEWIC	SARA	Prov Legal Prot	Prov Rarity Rank	# recs	Distance (km)	Prov
	Alasmidonta undulata	Triangle Floater				S2S3	34	33.2 ± 0.0	NS
I	Astyleiopus variegatus	Variegated Long-horned Beetle				S3	1	76.1 ± 0.0	NS
I	Strophiona nitens	Chestnut Bark Long-horned Beetle				S3	1	99.3 ± 0.0	NS
I	Psephenus herricki	Herrick's Water Penny Beetle				S3	1	37.0 ± 0.0	NS
	Carabus serratus	Serrated Ground Beetle				S3	1	21.4 ± 0.0	NS
	Hippodamia parenthesis	Parenthesis Lady Beetle				S3	2	96.0 ± 0.0	NB
	Chrysochus auratus	Dogbane Leaf Beetle				S3	3	48.6 ± 3.0	NS
	Naemia seriata	Seaside Lady Beetle				S3	35	87.4 ± 0.0	NB
	Chilocorus stigma	Twice-stabbed Lady Beetle				S3	6	13.8 ± 0.0	NS
	Myzia pullata	Streaked Lady Beetle				S3	6	89.5 ± 0.0	NB
	Iphthiminus opacus	Cloudy Darkling Beetle				S3	1	78.3 ± 0.0	PE
	Monochamus marmorator	Balsam Fir Sawyer				S3	2	67.4 ± 0.0	NS
	Trachysida aspera	Rough Flower Longhorn Beetle				S3	1	93.9 ± 0.0	NS
	Dicerca tuberculata	Swollen Jewel Beetle Six-speckled Long-horned				S3	1	97.0 ± 9.0	NS NS
	Astylopsis sexguttata	Beetle				S3	2	84.8 ± 0.0	
	Satyrium calanus	Banded Hairstreak				S3	12	18.2 ± 2.0	NS
	Callophrys lanoraieensis	Bog Elfin				S3	18	40.2 ± 0.0	NS
	Strymon melinus	Gray Hairstreak				S3	1	72.2 ± 2.0	NS
	Phanogomphus descriptus	Harpoon Clubtail				S3	4	33.7 ± 1.0	NS
	Ophiogomphus aspersus	Brook Snaketail				S3	5	50.4 ± 0.0	NS
	Ophiogomphus mainensis	Maine Snaketail				S3	16	56.4 ± 0.0	NS
	Ophiogomphus rupinsulensis	Rusty Snaketail				S3	41	65.2 ± 0.0	NS
	Epitheca princeps	Prince Baskettail				S3	18	29.7 ± 0.0	NS
	Somatochlora forcipata	Forcipate Emerald				S3	2	88.8 ± 1.0	PE
	Enallagma vernale	Vernal Bluet				S3	6	33.7 ± 1.0	NS
	Strophitus undulatus	Creeper				S3	6	52.5 ± 1.0	NS
	Polygonia interrogationis	Question Mark				S3B	113	16.8 ± 0.0	NS
	Cecropterus pylades	Northern Cloudywing				S3S4	24	13.5 ± 0.0	NS
	Amblyscirtes hegon	Pepper and Salt Skipper				S3S4	25	6.6 ± 1.0	NS
	Cupido comyntas	Eastern Tailed Blue				S3S4	13	13.5 ± 0.0	NS
	Argynnis aphrodite	Aphrodite Fritillary				S3S4	33	13.5 ± 0.0	NS
	Polygonia faunus	Green Comma				S3S4	20	17.7 ± 0.0	NS
	Oeneis jutta	Jutta Arctic				S3S4	26	58.7 ± 0.0	NS
	Aeshna clepsydra	Mottled Darner				S3S4	8	66.6 ± 1.0	NS
	Aeshna constricta	Lance-Tipped Darner				S3S4	44	17.8 ± 1.0	NS
	Boyeria grafiana	Ocellated Darner				S3S4	9	27.4 ± 0.0	NS
	Gomphaeschna furcillata	Harlequin Darner				S3S4	15	46.8 ± 0.0	NS
	Somatochlora franklini	Delicate Emerald				S3S4	9	35.3 ± 1.0	NS
	Erythrodiplax berenice	Seaside Dragonlet				S3S4	6	71.5 ± 0.0	NS
	Nannothemis bella	Elfin Skimmer				S3S4	28	36.2 ± 0.0	NS
	Sympetrum danae	Black Meadowhawk				S3S4	5	78.7 ± 1.0	PE
	Enallagma vesperum	Vesper Bluet				S3S4	1	73.4 ± 0.0	NS
	Amphiagrion saucium	Eastern Red Damsel				S3S4	3	17.8 ± 1.0	NS
	Sphaerophoria pyrrhina	Violaceous Globetail				SH	1	19.9 ± 5.0	NS
	Icaricia saepiolus	Greenish Blue				SH	3	20.0 ± 5.0	NS
	Polygonia gracilis	Hoary Comma				SH	2	18.1 ± 2.0	NS
l	Erioderma mollissimum	Graceful Felt Lichen	Endangered	Endangered	Endangered	S1	26	69.6 ± 0.0	NS
	Erioderma pedicellatum	Boreal Felt Lichen - Atlantic	-	Ū.	Ū.				NS
1	(Atlantic pop.)	pop.	Endangered	Endangered	Endangered	S1	449	65.8 ± 0.0	NO
1	Peltigera hydrothyria	Eastern Waterfan	Threatened	Threatened	Threatened	S1	145	14.4 ± 0.0	NS
1	Pannaria lurida	Wrinkled Shingle Lichen	Threatened	Threatened	Threatened	S2S3	31	53.0 ± 0.0	NS
1	Anzia colpodes	Black-foam Lichen	Threatened	Threatened	Threatened	S3	37	49.7 ± 0.0	NS
N	Fuscopannaria leucosticta	White-rimmed Shingle	Threatened			S3	8	64.7 ± 0.0	NS

Group	Scientific Name	Common Name	COSEWIC	SARA	Prov Legal Prot	Prov Rarity Rank	# recs	Distance (km)	Pro
١	Heterodermia squamulosa	Lichen Scaly Fringe Lichen	Threatened			S3	78	74.9 ± 0.0	NS
1	Pectenia plumbea	Blue Felt Lichen	Special Concern	Special Concern	Vulnerable	S3	163	11.0 ± 0.0	NS
	Sclerophora peronella	Frosted Glass-whiskers	•	·	vuillerable				NS
1	(Atlantic pop.)	(Atlantic population)	Special Concern	Special Concern		S3S4	21	63.8 ± 0.0	
I	Pseudevernia cladonia	Ghost Antler Lichen	Not At Risk			S2S3	17	69.7 ± 0.0	NS
1	Fissidens exilis	Pygmy Pocket Moss	Not At Risk			S3	16	30.6 ± 0.0	NS
١	Chaenotheca servitii	Flexuous Golden Stubble	Data Deficient			S1	1	65.8 ± 1.0	NS
N	Aloina brevirostris	Short-Beaked Rigid Screw Moss				S1	2	59.9 ± 0.0	NS
١	Orthotrichum gymnostomum	Aspen Bristle Moss				S1	1	34.3 ± 0.0	NS
١	Sematophyllum demissum	a Moss				S1	1	83.2 ± 2.0	NS
N	Tetrodontium brownianum	Little Georgia				S1	1	73.2 ± 0.0	NS
N	Cyrto-hypnum minutulum	Tiny Cedar Moss				S1	1	66.1 ± 0.0	NS
1	Blennothallia crispa	Crinkled Jelly Lichen				S1	1	69.7 ± 0.0	NS
N	Usnea perplexans	Powdered Beard Lichen				S1	1	81.3 ± 0.0	NS
1	Lathagrium cristatum	Fingered Jelly Lichen				S1	3	84.2 ± 0.0	NS
١	Fuscopannaria praetermissa	Moss Shingles Lichen				S1	1	89.6 ± 0.0	NS
١	Scytinium schraderi	Wrinkled Jellyskin Lichen				S1	1	37.3 ± 0.0	NS
N	Lichina confinis	Marine Seaweed Lichen				S1	2	95.6 ± 2.0	NS
N	Polychidium muscicola	Eyed Mossthorns Woollybear Lichen				S1	1	51.4 ± 0.0	NS
١	Peltigera lepidophora	Scaly Pelt Lichen				S1	7	61.5 ± 4.0	NS
1	Hypogymnia hultenii	Powdered Honeycomb Lichen				S1	11	94.7 ± 0.0	NS
l	Calypogeia neogaea	Common Pouchwort				S1?	1	61.2 ± 0.0	NS
1	Jubula pennsylvanica	a liverwort				S1?	1	86.9 ± 0.0	NS
1	Aloina rigida	Aloe-Like Rigid Screw Moss				S1?	5	24.2 ± 0.0	NS
4	Brachythecium erythrorrhizon	Taiga Ragged Moss				S1?	2	99.0 ± 0.0	PE
٧	Campylostelium saxicola	a Moss				S1?	2	75.6 ± 0.0	PE
N	Tortula obtusifolia	a Moss				S1?	3	17.7 ± 1.0	NS
N	Didymodon tophaceus	Olive Beard Moss				S1?	2	69.7 ± 4.0	NS
N	Homomallium adnatum	Adnate Hairy-gray Moss				S1?	1	97.2 ± 0.0	NS
N	Paludella squarrosa	Tufted Fen Moss				S1?	3	78.9 ± 0.0	NS
N	Physcomitrium immersum	a Moss				S1?	1	98.1 ± 0.0	NS
٨	Schistostega pennata	Luminous Moss				S1?	2	72.4 ± 0.0	NS
1	Enchylium limosum	Lime-loving Tarpaper Lichen				S1?	3	69.7 ± 4.0	NS
N	Scytinium intermedium	Forty-five Jellyskin Lichen				S1?	1	69.7 ± 4.0	NS
	Arrhenopterum								NS
N	heterostichum	One-sided Groove Moss				S1S2	2	61.6 ± 1.0	
N	Mnium thomsonii	Thomson's Leafy Moss				S1S2	1	87.8 ± 2.0	NS
N	Plagiothecium latebricola	Alder Silk Moss				S1S2	1	65.0 ± 3.0	NS
١	Platydictya confervoides	a Moss				S1S2	1	88.8 ± 0.0	NS
J	Seligeria donniana	Donian Beardless Moss				S1S2	1	73.9 ± 3.0	NS
N	Sematophyllum marylandicum	a Moss				S1S2	2	72.0 ± 6.0	NS
١	Timmia megapolitana	Metropolitan Timmia Moss				S1S2	3	21.3 ± 0.0	NS
i i	Tortula mucronifolia	Mucronate Screw Moss				S1S2	1	86.6 ± 3.0	NS
	Pseudotaxiphyllum						-		NS
1	distichaceum	a Moss				S1S2	2	67.0 ± 0.0	
I	Haplocladium microphyllum	Tiny-leaved Haplocladium Moss				S1S2	1	29.1 ± 5.0	NS
I	Enchylium bachmanianum	Bachman's Jelly Lichen				S1S2	2	84.7 ± 0.0	NS
١	Placidium squamulosum	Limy Soil Stipplescale Lichen				S1S2	1	50.8 ± 6.0	NS
١	Peltigera ponojensis	Pale-bellied Pelt Lichen				S1S2	1	40.2 ± 0.0	NS
Ň	Pilophorus cereolus	Powdered Matchstick Lichen				S1S2	1	51.1 ± 3.0	NS

Group N N N N N N N N N N N N N N N N N N N	Scientific Name Parmotrema reticulatum Solorina spongiosa Parmeliella parvula Heterodernia galactophylla Stereocaulon grande Stereocaulon grande Stereocaulon splachnoides Sphagnum platyphyllum Sphagnum subnitens Cystocoleus ebeneus Hypotrachyna catawbiensis Scytinium imbricatum Placynthium flabellosum Moerckia flotoviana Riccardia multifuda Anomodon viticulosus Weissia muhlenbergiana Atrichum angustatum Ptychostomum pendulum Drepanocladus polygamus Ditrichum rhynchostegium Kiaeria starkei	Common Name Netted Ruffle Lichen Blinking Owl Lichen Poor-man's Shingles Lichen Grand Foam Lichen Pacific Brain Foam Lichen a Moss Flat-leaved Peat Moss Lustrous Peat Moss Rockgossamer Lichen Powder-tipped Antler Lichen Scaly Jellyskin Lichen a lichen Scaly Ink Lichen Flotow's Ruffwort Delicate Germanderwort a Moss Lesser Smoothcap Moss Drooping Bryum	COSEWIC	SARA	Prov Legal Prot	Prov Rarity Rank S1S2 S1S2 S1S2 S1S3 S1S3 S1S3 S2 S2	# recs 5 7 10 2 1 2 1 2 1 2 1 2 6 1 2 6 1 2 1 1 2 1 1	$\begin{array}{c} \textbf{Distance (km)} \\ 92.2 \pm 0.0 \\ 95.1 \pm 0.0 \\ 71.5 \pm 0.0 \\ 40.1 \pm 0.0 \\ 21.2 \pm 0.0 \\ 95.3 \pm 2.0 \\ 65.0 \pm 3.0 \\ 91.5 \pm 2.0 \\ 91.5 \pm 2.0 \\ 98.8 \pm 0.0 \\ 79.3 \pm 3.0 \\ 91.5 \pm 2.0 \\ 98.8 \pm 0.0 \\ 79.1 \pm 0.0 \\ 56.9 \pm 4.0 \\ 83.3 \pm 1.0 \\ 67.1 \pm 17.0 \\ 69.2 \pm 0.0 \end{array}$	Prov NS NS NS NS NS NS NS NS NS NS NS NS NS
~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~	Parmeliella parvula Heterodermia galactophylla Stereocaulon grande Stereocaulon intermedium Anacamptodon splachnoides Sphagnum platyphyllum Sphagnum subnitens Cystocoleus ebeneus Hypotrachyna catawbiensis Scytinium imbricatum Nephroma resupinatum Placynthium flabellosum Moerckia flotoviana Riccardia multifida Anomodon viticulosus Weissia muhlenbergiana Atrichum angustatum Ptychostomum pendulum Drepanocladus polygamus Ditrichum rhynchostegium	Poor-man's Shingles Lichen Branching Fringe Lichen Grand Foam Lichen Pacific Brain Foam Lichen a Moss Flat-leaved Peat Moss Lustrous Peat Moss Rockgossamer Lichen Powder-tipped Antler Lichen Scaly Jellyskin Lichen a lichen Scaly Ink Lichen Flotow's Ruffwort Delicate Germanderwort a Moss Lesser Smoothcap Moss				S1S2 S1S3 S1S3 S1S3 S2 S2 S2 S2 S2 S2 S2 S2 S2 S2 S2 S2 S2	7 10 2 1 2 1 2 1 2 6 1 2 1 1	71.5 ± 0.0 40.1 ± 0.0 21.2 ± 0.0 95.3 ± 2.0 65.0 ± 3.0 79.3 ± 3.0 91.5 ± 2.0 98.8 ± 0.0 79.1 ± 0.0 56.9 ± 4.0 83.3 ± 1.0 67.1 ± 17.0	NS NS NS NS NS NS NS NS NS NS NS NS
N N N N N N N N N N N N N N N N N N N	Heterodermia galactophylla Stereocaulon grande Stereocaulon intermedium Anacamptodon splachnoides Sphagnum platyphyllum Sphagnum subnitens Cystocoleus ebeneus Hypotrachyna catawbiensis Scytinium imbricatum Nephroma resupinatum Placynthium flabellosum Moerckia flotoviana Riccardia multifida Anomodon viticulosus Weissia muhlenbergiana Atrichum angustatum Ptychostomum pendulum Drepanocladus polygamus Ditrichum thynchostegium	Branching Fringe Lichen Grand Foam Lichen Pacific Brain Foam Lichen a Moss Flat-leaved Peat Moss Lustrous Peat Moss Rockgossamer Lichen Powder-tipped Antler Lichen Scaly Jellyskin Lichen a lichen Scaly Ink Lichen Flotow's Ruffwort Delicate Germanderwort a Moss Lesser Smoothcap Moss				S1S3 S1S3 S1S3 S2 S2 S2 S2 S2 S2 S2 S2 S2 S2 S2 S2 S2	2 1 2 1 2 1 2 6 1 2 1 1	$\begin{array}{c} 40.1 \pm 0.0 \\ 21.2 \pm 0.0 \\ 95.3 \pm 2.0 \\ 65.0 \pm 3.0 \\ 79.3 \pm 3.0 \\ 91.5 \pm 2.0 \\ 98.8 \pm 0.0 \\ 79.1 \pm 0.0 \\ 56.9 \pm 4.0 \\ 83.3 \pm 1.0 \\ 67.1 \pm 17.0 \end{array}$	NS NS NS NS NS NS NS NS NS NS
	Stereocaulon grande Stereocaulon intermedium Anacamptodon splachnoides Sphagnum platyphyllum Sphagnum subnitens Cystocoleus ebeneus Hypotrachyna catawbiensis Scytinium imbricatum Nephroma resupinatum Placynthium flabellosum Moerckia flotoviana Riccardia multifida Anomodon viticulosus Weissia muhlenbergiana Atrichum angustatum Ptychostomum pendulum Drepanocladus polygamus Ditrichum rhynchostegium	Grand Foam Lichen Pacific Brain Foam Lichen a Moss Flat-leaved Peat Moss Lustrous Peat Moss Rockgossamer Lichen Powder-tipped Antler Lichen Scaly Jellyskin Lichen a lichen Scaly Ink Lichen Flotow's Ruffwort Delicate Germanderwort a Moss Lesser Smoothcap Moss				S1S3 S1S3 S2 S2 S2 S2 S2 S2 S2 S2 S2 S2 S2 S2 S2	1 2 1 2 6 1 2 1 1	21.2 ± 0.0 95.3 ± 2.0 65.0 ± 3.0 79.3 ± 3.0 91.5 ± 2.0 98.8 ± 0.0 79.1 ± 0.0 56.9 ± 4.0 83.3 ± 1.0 67.1 ± 17.0	NS NS NS NS NS NS NS NS NS
	Stereocaulon grande Stereocaulon intermedium Anacamptodon splachnoides Sphagnum platyphyllum Sphagnum subnitens Cystocoleus ebeneus Hypotrachyna catawbiensis Scytinium imbricatum Nephroma resupinatum Placynthium flabellosum Moerckia flotoviana Riccardia multifida Anomodon viticulosus Weissia muhlenbergiana Atrichum angustatum Ptychostomum pendulum Drepanocladus polygamus Ditrichum rhynchostegium	Grand Foam Lichen Pacific Brain Foam Lichen a Moss Flat-leaved Peat Moss Lustrous Peat Moss Rockgossamer Lichen Powder-tipped Antler Lichen Scaly Jellyskin Lichen a lichen Scaly Ink Lichen Flotow's Ruffwort Delicate Germanderwort a Moss Lesser Smoothcap Moss				S1S3 S2 S2 S2 S2 S2 S2 S2 S2 S2 S2 S2 S2 S2	1 2 1 2 6 1 2 1 1	95.3 ± 2.0 65.0 ± 3.0 79.3 ± 3.0 91.5 ± 2.0 98.8 ± 0.0 79.1 ± 0.0 56.9 ± 4.0 83.3 ± 1.0 67.1 ± 17.0	NS NS NS NS NS NS NS NS
4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	Stereocaulon İntermedium Anacamptodon splachnoides Sphagnum platyphyllum Sphagnum subnitens Cystocoleus ebeneus Hypotrachyna catawbiensis Scytinium imbricatum Nephroma resupinatum Placynthium flabellosum Moerckia flotoviana Riccardia multifida Anomodon viticulosus Weissia muhlenbergiana Atrichum angustatum Ptychostomum pendulum Drepanocladus polygamus Ditrichum rhynchostegium	a Moss Flat-leaved Peat Moss Lustrous Peat Moss Rockgossamer Lichen Powder-tipped Antler Lichen Scaly Jellyskin Lichen a lichen Scaly Jellyskin Lichen Flotow's Ruffwort Delicate Germanderwort a Moss a Moss Lesser Smoothcap Moss				S2 S2 S2 S2 S2 S2 S2 S2 S2 S2 S2 S2 S2?	1 2 6 1 2 1 1	$65.0 \pm 3.0 79.3 \pm 3.0 91.5 \pm 2.0 98.8 \pm 0.0 79.1 \pm 0.0 56.9 \pm 4.0 83.3 \pm 1.0 67.1 \pm 17.0 $	NS NS NS NS NS NS NS
	Sphagnum platyphyllum Sphagnum subnitens Cystocoleus ebeneus Hypotrachyna catawbiensis Scytinium imbricatum Nephroma resupinatum Placynthium flabellosum Moerckia flotoviana Riccardia multifida Anomodon viticulosus Weissia muhlenbergiana Atrichum angustatum Ptychostomum pendulum Drepanocladus polygamus Ditrichum rhynchostegium	Flat-leaved Peat Moss Lustrous Peat Moss Rockgossamer Lichen Powder-tipped Antler Lichen Scaly Jellyskin Lichen a lichen Scaly Ink Lichen Flotow's Ruffwort Delicate Germanderwort a Moss Lesser Smoothcap Moss				S2 S2 S2 S2 S2 S2 S2 S2 S2 S2 S2?	2 1 2 6 1 2 1 1	79.3 ± 3.0 91.5 ± 2.0 98.8 ± 0.0 79.1 ± 0.0 56.9 ± 4.0 83.3 ± 1.0 67.1 ± 17.0	NS NS NS NS NS NS
V V V V V V V V V V V V V V V V V V V	Sphagnum platyphyllum Sphagnum subnitens Cystocoleus ebeneus Hypotrachyna catawbiensis Scytinium imbricatum Nephroma resupinatum Placynthium flabellosum Moerckia flotoviana Riccardia multifida Anomodon viticulosus Weissia muhlenbergiana Atrichum angustatum Ptychostomum pendulum Drepanocladus polygamus Ditrichum rhynchostegium	Flat-leaved Peat Moss Lustrous Peat Moss Rockgossamer Lichen Powder-tipped Antler Lichen Scaly Jellyskin Lichen a lichen Scaly Ink Lichen Flotow's Ruffwort Delicate Germanderwort a Moss Lesser Smoothcap Moss				S2 S2 S2 S2 S2 S2 S2 S2 S2 S2 S2?	2 1 2 6 1 2 1 1	79.3 ± 3.0 91.5 ± 2.0 98.8 ± 0.0 79.1 ± 0.0 56.9 ± 4.0 83.3 ± 1.0 67.1 ± 17.0	NS NS NS NS NS NS
v v v v v v v v v v v v v v v v v v v	Sphagnum subnitens Cystocoleus ebeneus Hypotrachyna catawbiensis Scytinium imbricatum Nephroma resupinatum Placynthium flabellosum Moerckia flotoviana Riccardia multifida Anomodon viticulosus Weissia muhlenbergiana Atrichum angustatum Ptychostomum pendulum Drepanocladus polygamus Ditrichum rhynchostegium	Lustrous Peat Moss Rockgossamer Lichen Powder-tipped Antler Lichen Scaly Jellyskin Lichen a lichen Scaly Ink Lichen Flotow's Ruffwort Delicate Germanderwort a Moss a Moss Lesser Smoothcap Moss				S2 S2 S2 S2 S2 S2 S2 S2 S2?	1 2 6 1 2 1 1	$91.5 \pm 2.0 98.8 \pm 0.0 79.1 \pm 0.0 56.9 \pm 4.0 83.3 \pm 1.0 67.1 \pm 17.0$	NS NS NS NS NS
N N N N N N N N N N N N N N N N N N N	Ċystocoleus ebeneus Hypotrachyna catawbiensis Scytinium imbricatum Nephroma resupinatum Placynthium flabellosum Moerckia flotoviana Riccardia multifida Anomodon viticulosus Weissia muhlenbergiana Atrichum angustatum Ptychostomum pendulum Drepanocladus polygamus Ditrichum rhynchostegium	Rockgossamer Lichen Powder-tipped Antler Lichen Scaly Jellyskin Lichen a lichen Scaly Ink Lichen Flotow's Ruffwort Delicate Germanderwort a Moss Lesser Smoothcap Moss				S2 S2 S2 S2 S2 S2 S2?	2 6 1 2 1	$98.8 \pm 0.0 79.1 \pm 0.0 56.9 \pm 4.0 83.3 \pm 1.0 67.1 \pm 17.0$	NS NS NS NS
N N N N N N N N N N N N N N N N N N N	Hypotrachyna catawbiensis Scytinium imbricatum Nephroma resupinatum Placynthium flabellosum Moerckia flotoviana Riccardia multifida Anomodon viticulosus Weissia muhlenbergiana Atrichum angustatum Ptychostomum pendulum Drepanocladus polygamus Ditrichum rhynchostegium	Powder-tipped Antler Lichen Scaly Jellyskin Lichen a lichen Scaly Ink Lichen Flotow's Ruffwort Delicate Germanderwort a Moss a Moss Lesser Smoothcap Moss				S2 S2 S2 S2 S2 S2?	6 1 2 1 1	79.1 ± 0.0 56.9 ± 4.0 83.3 ± 1.0 67.1 ± 17.0	NS NS NS NS
N N N N N N N N N N N N N N N N N N N	Scytinium imbricatum Nephroma resupinatum Placynthium flabellosum Moerckia flotoviana Riccardia multifida Anomodon viticulosus Weissia muhlenbergiana Atrichum angustatum Ptychostomum pendulum Drepanocladus polygamus Ditrichum rhynchostegium	Scaly Jellyskin Lichen a lichen Scaly Ink Lichen Flotow's Ruffwort Delicate Germanderwort a Moss a Moss Lesser Smoothcap Moss				S2 S2 S2 S2?	1 2 1 1	56.9 ± 4.0 83.3 ± 1.0 67.1 ± 17.0	NS NS NS
N N N N N N N N N N N N N N N N N N N	Nephroma resupinatum Placynthium flabellosum Moerckia flotoviana Riccardia multifida Anomodon viticulosus Weissia muhlenbergiana Atrichum angustatum Ptychostomum pendulum Drepanocladus polygamus Ditrichum rhynchostegium	a lichen Scaly Ink Lichen Flotow's Ruffwort Delicate Germanderwort a Moss a Moss Lesser Smoothcap Moss				S2 S2 S2?	2 1 1	83.3 ± 1.0 67.1 ± 17.0	NS NS
V V V V V V V V V V V V	Placynthium flabellosum Moerckia flotoviana Riccardia multifida Anomodon viticulosus Weissia muhlenbergiana Atrichum angustatum Ptychostomum pendulum Drepanocladus polygamus Ditrichum rhynchostegium	Scaly Ink Lichen Flotow's Ruffwort Delicate Germanderwort a Moss a Moss Lesser Smoothcap Moss				S2 S2?	1 1	67.1 ± 17.0	NS
V V V V V V V V V V	Moerckia flotoviana Riccardia multifida Anomodon viticulosus Weissia muhlenbergiana Atrichum angustatum Ptychostomum pendulum Drepanocladus polygamus Ditrichum rhynchostegium	Flotow's Ruffwort Delicate Germanderwort a Moss a Moss Lesser Smoothcap Moss				S2?	1		
V V V V V V V V	Riccardia multifida Anomodon viticulosus Weissia muhlenbergiana Atrichum angustatum Ptychostomum pendulum Drepanocladus polygamus Ditrichum rhynchostegium	Delicate Germanderwort a Moss a Moss Lesser Smoothcap Moss							
V V V V V V V V	Anomodon viticulosus Weissia muhlenbergiana Atrichum angustatum Ptychostomum pendulum Drepanocladus polygamus Ditrichum rhynchostegium	a Moss a Moss Lesser Smoothcap Moss						67.2 ± 0.0	NS
U U U U U U	Weissia muhlenbergiana Atrichum angustatum Ptychostomum pendulum Drepanocladus polygamus Ditrichum rhynchostegium	a Moss Lesser Smoothcap Moss				S2?	2		
1 1 1 1 1	Atrichum angustatum Ptychostomum pendulum Drepanocladus polygamus Ditrichum rhynchostegium	Lesser Smoothcap Moss				S2?	1	26.0 ± 5.0	NS
4 4 4 4 4	Ptychostomum pendulum Drepanocladus polygamus Ditrichum rhynchostegium					S2?	4	87.8 ± 1.0	NS
N N N	Drepanocladus polygamus Ditrichum rhynchostegium	Drooping Bryum				S2?	2	13.8 ± 2.0	NS
N N N	Ditrichum rhynchostegium					S2?	1	86.5 ± 2.0	NS
N N		Polygamous Hook Moss				S2?	4	69.7 ± 4.0	NS
N	Kiaaria starkoi	a Moss				S2?	2	63.7 ± 0.0	PE
		Starke's Fork Moss				S2?	1	85.1 ± 10.0	NS
	Orthotrichum anomalum	Anomalous Bristle Moss				S2?	1	93.9 ± 2.0	NS
N	Philonotis marchica	a Moss				S2?	2	17.0 ± 0.0	NS
I	Platydictya jungermannioides	False Willow Moss				S2?	1	54.5 ± 0.0	NS
1	Saelania glaucescens	Blue Dew Moss				S2?	1	12.1 ± 0.0	NS
N	Cyrtomnium hymenophylloides	Short-pointed Lantern Moss				S2?	2	12.1 ± 0.0	NS
N	Platylomella lescurii	a Moss				S2?	2	18.3 ± 0.0	NS
N	Oxyrrhynchium hians	Light Beaked Moss				S2S3	4	57.8 ± 25.0	NS
N	Platydictya subtilis	Bark Willow Moss				S2S3	2	65.0 ± 3.0	NS
N	Scorpidium revolvens	Limprichtia Moss				S2S3	2	63.4 ± 0.0	NS
N	Moelleropsis nebulosa	Blue-gray Moss Shingle				S2S3	53	39.1 ± 3.0	NS
	Moelleropsis nebulosa ssp.	Lichen Blue-gray Moss Shingle				S2S3	3	00.4 . 0.0	NS
Ν	frullaniae	Lichen				5253	3	68.1 ± 0.0	
N	Ramalina thrausta	Angelhair Ramalina Lichen				S2S3	15	39.1 ± 0.0	NS
٨	Collema leptaleum	Crumpled Bat's Wing Lichen				S2S3	85	29.9 ± 0.0	NS
N	Usnea ceratina	Warty Beard Lichen				S2S3	1	61.3 ± 0.0	NS
N	Usnea rubicunda	Red Beard Lichen				S2S3	4	19.5 ± 0.0	NS
N	Ahtiana aurescens	Eastern Candlewax Lichen				S2S3	7	60.1 ± 0.0	NS
N	Usnocetraria oakesiana	Yellow Band Lichen				S2S3	3	80.9 ± 0.0	NS
N	Cladonia incrassata	Powder-foot British Soldiers Lichen				S2S3	1	90.8 ± 0.0	NS
N	Cladonia parasitica	Fence-rail Lichen				S2S3	4	34.2 ± 1.0	NS
N	Scytinium tenuissimum	Birdnest Jellyskin Lichen				S2S3	15	19.6 ± 0.0	NS
N	Melanohalea septentrionalis	Northern Camouflage Lichen				S2S3	2	80.7 ± 0.0	NS
N	Myelochroa aurulenta	Powdery Axil-bristle Lichen				S2S3	2	95.9 ± 0.0	NS
N	Parmelia fertilis	Fertile Shield Lichen				S2S3	10	9.1 ± 0.0	NS
N	Hypotrachyna minarum	Hairless-spined Shield				S2S3	2	80.3 ± 0.0	NS
1	Parmeliopsis ambigua	Lichen Green Starburst Lichen				S2S3	1	46.6 ± 1.0	NS
4	Racodium rupestre	Rockhair Lichen				S2S3	1	40.0 ± 1.0 90.7 ± 1.0	NS
-	Usnea cavernosa					S2S3 S2S3	2	90.7 ± 1.0 81.3 ± 0.0	NS
N		Pitted Beard Lichen							NS NS
N N	Usnea mutabilis Fuscopannaria sorediata	Bloody Beard Lichen a Lichen				S2S3 S2S3	1 5	81.4 ± 0.0 76.1 ± 0.0	NS

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N	Stereocaulon condensatum	Granular Soil Foam Lichen				S2S3	11	31.5 ± 0.0	NS
1	Physcia subtilis	Slender Rosette Lichen				S2S3	1	70.1 ± 0.0	NS
	Cladonia coccifera	Eastern Boreal Pixie-cup				S2S3	2	62.0 ± 4.0	NS
	Cladonia deformis	Lichen				S2S3	3	78.5 ± 0.0	PE
		Lesser Sulphur-cup Lichen Felt Lichen				S2S3	3 1	78.5 ± 0.0 99.0 ± 0.0	NB
	Cladonia phyllophora								
	Ephemerum serratum	a Moss				S3	4	30.6 ± 0.0	NS
	Fissidens taxifolius	Yew-leaved Pocket Moss				S3	15	30.6 ± 0.0	NS
	Anomodon tristis	a Moss				S3	11	87.4 ± 15.0	NS
	Sphagnum contortum	Twisted Peat Moss				S3	4	61.5 ± 4.0	NS
I	Tetraplodon angustatus	Toothed-leaved Nitrogen Moss				S3	4	75.9 ± 0.0	NS
	Rostania occultata	Crusted Tarpaper Lichen				S3	4	71.2 ± 0.0	NS
I	Collema nigrescens	Blistered Tarpaper Lichen				S3	22	50.6 ± 2.0	NS
	Solorina saccata	Woodland Owl Lichen				S3	14	55.7 ± 2.0	NS
1	Fuscopannaria ahlneri	Corrugated Shingles Lichen				S3	80	13.8 ± 0.0	NS
	Scytinium lichenoides	Tattered Jellyskin Lichen				S3	31	31.5 ± 0.0	NS
	Leptogium milligranum	Stretched Jellyskin Lichen				S3	11	24.4 ± 0.0	NS
	Nephroma bellum	Naked Kidney Lichen				S3	16	33.5 ± 0.0	NS
	Placynthium nigrum	Common Ink Lichen				S3	4	51.6 ± 0.0	NS
1						S3	1	95.5 ± 0.0	NS
4	Platismatia norvegica	Oldgrowth Rag Lichen				33	1	95.5 ± 0.0	NS
I	Punctelia appalachensis	Appalachian Speckleback Lichen				S3	109	37.9 ± 0.0	NS
1	Viridothelium virens	a lichen				S3	4	78.3 ± 0.0	NS
1	Ephebe lanata	Waterside Rockshag Lichen				S3	2	51.4 ± 0.0	NS
1	Phaeophyscia adiastola	Powder-tipped Shadow				S3	4	74.9 ± 0.0	PE
		Lichen							
1	Phaeophyscia pusilloides	Pompom-tipped Shadow Lichen				S3	14	31.3 ± 0.0	NS
1	Peltigera collina	Tree Pelt Lichen				S3	13	0.8 ± 0.0	NS
I	Barbula convoluta	Lesser Bird's-claw Beard Moss				S3?	4	67.0 ± 0.0	PE
I	Calliergon giganteum	Giant Spear Moss				S3?	2	83.2 ± 3.0	NS
i	Drummondia prorepens	a Moss				S3?	1	97.8 ± 5.0	NS
1	Elodium blandowii	Blandow's Bog Moss				S3?	5	25.5 ± 3.0	NS
1	Mnium stellare	Star Leafy Moss				S3?	3	61.6 ± 1.0	NS
4						S3?			NS
1	Sphagnum lindbergii	Lindberg's Peat Moss					1	95.1 ± 0.0	
I	Sphagnum riparium	Streamside Peat Moss				S3?	2	76.9 ± 0.0	NS
I	Cladonia stygia	Black-footed Reindeer Lichen				S3?	18	76.4 ± 0.0	NS
1	Anomodon rugelii	Rugel's Anomodon Moss				S3S4	1	89.5 ± 0.0	NS
i	Dichelyma capillaceum	Hairlike Dichelyma Moss				S3S4	1	87.1 ± 3.0	NS
	Encalypta ciliata	Fringed Extinguisher Moss				S3S4	2	86.6 ± 3.0	NS
i	Encalypta procera	Slender Extinguisher Moss				S3S4	1	73.9 ± 3.0	NS
	Myurella julacea	Small Mouse-tail Moss				S3S4	1	12.1 ± 0.0	NS
1	Splachnum ampullaceum	Cruet Dung Moss				S3S4 S3S4	4	72.1 ± 0.0 78.0 ± 0.0	NS
						S3S4 S3S4	4 9		NS
	Thamnobryum alleghaniense	a Moss						47.5 ± 0.0	
	Tomentypnum nitens	Golden Fuzzy Fen Moss				S3S4	4	63.4 ± 0.0	NS
	Schistidium agassizii	Elf Bloom Moss				S3S4	1	81.3 ± 0.0	NS
	Hylocomiastrum pyrenaicum	a Feather Moss				S3S4	1	73.9 ± 3.0	NS
l	Bryoria pseudofuscescens	Mountain Horsehair Lichen				S3S4	16	52.6 ± 4.0	NS
1	Enchylium tenax	Soil Tarpaper Lichen				S3S4	12	31.6 ± 0.0	NS
	Sticta fuliginosa	Peppered Moon Lichen				S3S4	50	30.2 ± 0.0	NS
1	Arctoparmelia incurva	Finger Ring Lichen				S3S4	6	92.2 ± 0.0	NS
	Scytinium teretiusculum	Curly Jellyskin Lichen				S3S4	12	51.4 ± 0.0	NS
	Leptoqium acadiense	Acadian Jellyskin Lichen				S3S4	50	8.6 ± 0.0	NS
	Scytinium subtile	Appressed Jellyskin Lichen				S3S4	34	36.2 ± 0.0	NS
						000-		JU.2 ± U.U	110

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1	Vahliella leucophaea	Shelter Shingle Lichen				S3S4	17	38.3 ± 0.0	NS
1	Heterodermia speciosa	Powdered Fringe Lichen				S3S4	44	2.3 ± 0.0	NS
	Leptogium corticola	Blistered Jellyskin Lichen				S3S4	50	47.7 ± 0.0	NS
l	Melanohalea olivacea	Spotted Camouflage Lichen				S3S4	6	45.6 ± 3.0	NS
1	Parmeliopsis hyperopta	Gray Starburst Lichen				S3S4	4	28.5 ± 1.0	NS
1	Parmotrema perlatum	Powdered Ruffle Lichen				S3S4	10	92.1 ± 0.0	NS
1	Peltigera hymenina	Cloudy Pelt Lichen				S3S4	1	89.5 ± 1.0	NS
N	Sphaerophorus fragilis	Fragile Coral Lichen				S3S4	3	92.3 ± 0.0	NS
١	Coccocarpia palmicola	Salted Shell Lichen				S3S4	667	45.1 ± 0.0	NS
١	Physcia tenella	Fringed Rosette Lichen				S3S4	4	63.6 ± 0.0	PE
١	Anaptychia palmulata	Shaggy Fringed Lichen				S3S4	108	2.4 ± 0.0	NS
٨	Evernia prunastri	Valley Oakmoss Lichen				S3S4	91	21.8 ± 0.0	NS
٨	Heterodermia neglecta	Fringe Lichen				S3S4	68	22.4 ± 0.0	NS
2	Clethra alnifolia	Coast Pepper-Bush	Endangered	Threatened	Vulnerable	S2	1	98.5 ± 0.0	PE
5	Fraxinus nigra	Black Ash	Threatened		Threatened	S1S2	1347	1.4 ± 0.0	NS
2	Lilaeopsis chinensis	Eastern Lilaeopsis	Special Concern	Special Concern	Vulnerable	S3	20	48.0 ± 0.0	NS
b	Isoetes prototypus	Prototype Quillwort	Special Concern	Special Concern	Vulnerable	S3	13	31.1 ± 0.0	NS
b	Floerkea proserpinacoides	False Mermaidweed	Not At Risk	opoolar oonoonn	Valitorabio	S2S3	1	18.1 ± 7.0	NS
b	Acer saccharinum	Silver Maple				S1	5	78.6 ± 0.0	PE
0	Osmorhiza depauperata	Blunt Sweet Cicely				S1	1	98.4 ± 5.0	NS
5	Andersonglossum boreale	Northern Wild Comfrey				S1	3	84.9 ± 1.0	NS
- D	Lobelia spicata	Pale-Spiked Lobelia				S1	13	28.7 ± 7.0	NS
5	Hudsonia tomentosa	Woolly Beach-heath				S1	18	58.2 ± 7.0	NS
5	Callitriche hermaphroditica	Northern Water-starwort				S1	4	95.1 ± 0.0	PE
5						S1	4		NS
5	Elatine americana	American Waterwort						57.2 ± 0.0	
	Ribes americanum	Wild Black Currant				S1	4	17.7 ± 5.0	NS
)	Utricularia ochroleuca	Yellowish-white Bladderwort				S1	38	80.5 ± 0.0	NS
2	Fraxinus pennsylvanica	Red Ash				S1	12	39.6 ± 0.0	NS
5	Polygonum achoreum	Leathery Knotweed				S1	1	93.0 ± 0.0	NB
0	Persicaria careyi	Carey's Smartweed				S1	1	39.3 ± 3.0	NS
0	Phytolacca americana	Common Pokeweed				S1	2	95.2 ± 0.0	NS
0	Clematis occidentalis	Purple Clematis				S1	3	80.7 ± 0.0	NS
0	Ranunculus pensylvanicus	Pennsylvania Buttercup				S1	31	28.4 ± 0.0	NS
b	Amelanchier nantucketensis	Nantucket Serviceberry				S1	1	81.0 ± 1.0	NS
5	Salix myrtillifolia	Blueberry Willow				S1	1	59.0 ± 0.0	NS
0	Salix serissima	Autumn Willow				S1	2	59.0 ± 0.0	NS
0	Carex garberi	Garber's Sedge				S1	4	17.7 ± 0.0	NS
>	Carex granularis	Limestone Meadow Sedge				S1	2	81.2 ± 0.0	NS
>	Carex laxiflora	Loose-Flowered Sedge				S1	1	92.5 ± 1.0	NS
0	Carex ormostachya	Necklace Spike Sedge				S1	1	81.4 ± 1.0	NB
0	Carex plantaginea	Plantain-Leaved Sedge				S1	4	14.9 ± 0.0	NS
b	Carex prairea	Prairie Sedge				S1	1	90.0 ± 0.0	PE
2	Carex tenuiflora	Sparse-Flowered Sedge				S1	2	80.7 ± 0.0	NS
2	Carex tincta	Tinged Sedge				S1	4	89.3 ± 0.0	PE
b	Carex viridula var. saxilittoralis	Greenish Sedge				S1	4	96.2 ± 2.0	NS
0	Cyperus lupulinus ssp. macilentus	Hop Flatsedge				S1	4	51.0 ± 0.0	NS
5	Scirpus atrovirens	Dark-green Bulrush				S1	4	42.4 ± 0.0	NS
5	Blysmopsis rufa	Red Bulrush				S1	4	42.4 ± 0.0 98.5 ± 1.0	PE
,)									PE
	Elodea nuttallii	Nuttall's Waterweed				S1	2	97.6 ± 1.0	
))	Iris prismatica	Slender Blue Flag				S1	1	98.6 ± 1.0	NS
	Juncus vaseyi	Vasey Rush				S1	4	19.5 ± 0.0	NS
)	Trillium grandiflorum	White Trillium				S1	1	85.5 ± 1.0	PE
)	Malaxis monophyllos var. brachypoda	North American White Adder's-mouth				S1	6	60.6 ± 1.0	NS
0	Calamagrostis stricta ssp. inexpansa	Slim-stemmed Reed Grass				S1	1	89.5 ± 1.0	NB

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P	Elymus hystrix	Spreading Wild Rye				S1	12	36.5 ± 1.0	NS
0	Adiantum pedatum	Northern Maidenhair Fern				S1	24	17.2 ± 1.0	NS
2	Botrychium lunaria	Common Moonwort				S1	10	98.5 ± 0.0	NS
Ρ	Selaginella rupestris	Rock Spikemoss				S1	1	84.7 ± 0.0	NS
Р	Solidago hispida	Hairy Goldenrod				S1?	2	67.6 ± 7.0	NS
Р	Suaeda rolandii	Roland's Sea-Blite				S1?	6	52.1 ± 2.0	NS
Р	Carex pensylvanica	Pennsylvania Sedge				S1?	3	37.8 ± 3.0	NS
Р	Bolboschoenus robustus	Sturdy Bulrush				S1?	2	35.8 ± 7.0	NS
Р	Allium schoenoprasum	Wild Chives				S1?	5	69.3 ± 0.0	PE
P	Allium schoenoprasum var. sibiricum	Wild Chives				S1?	1	17.1 ± 7.0	NS
Р	Cypripedium arietinum	Ram's-Head Lady's-Slipper			Endangered	S1S2	329	30.1 ± 0.0	NS
Р	Sanicula odorata	Clustered Sanicle			5	S1S2	9	33.0 ± 10.0	NS
5	Draba glabella	Rock Whitlow-Grass				S1S2	2	86.6 ± 0.0	NS
P	Proserpinaca intermedia	Intermediate Mermaidweed				S1S2	1	59.1 ± 0.0	NS
P	Anemone virginiana var. alba	Virginia Anemone				S1S2	5	17.0 ± 5.0	NS
		Small-flowered Grass-of-							NS
Р	Parnassia parviflora	Parnassus				S1S2	1	90.4 ± 1.0	
P	Carex haydenii	Hayden's Sedge				S1S2	4	16.6 ± 1.0	NS
P	Platanthera huronensis	Fragrant Green Orchid				S1S2	2	77.9 ± 10.0	NS
	Calamagrostis stricta ssp.	•							NS
Р	stricta	Slim-stemmed Reed Grass				S1S2	21	73.3 ± 7.0	NO
D	Carex vacillans	Estuarine Sedge				S1S3	5	85.9 ± 0.0	NB
5	Zizia aurea	Golden Alexanders				S133 S2	43	17.0 ± 0.0	NS
		Parlin's Pussytoes				S2	43 13	17.0 ± 0.0 26.4 ± 0.0	NS
	Antennaria parlinii ssp. fallax	Cut-Leaved Coneflower				S2 S2	31	26.4 ± 0.0 17.6 ± 3.0	NS
P	Rudbeckia laciniata					S2 S2			
5	Arabis pycnocarpa	Cream-flowered Rockcress					1	65.2 ± 0.0	NS
	Cardamine maxima	Large Toothwort				S2	2	94.6 ± 0.0	NS
	Hudsonia ericoides	Pinebarren Golden Heather				S2	2	98.9 ± 5.0	PE
Ρ	Desmodium canadense	Canada Tick-trefoil				S2	20	17.0 ± 0.0	NS
Ρ	Hylodesmum glutinosum	Large Tick-trefoil				S2	8	75.4 ± 0.0	NS
P	Anemonastrum canadense	Canada Anemone				S2	6	17.7 ± 0.0	NS
P	Hepatica americana	Round-lobed Hepatica				S2	70	25.2 ± 0.0	NS
P	Ranunculus sceleratus	Cursed Buttercup				S2	20	90.8 ± 0.0	NS
2	Galium boreale	Northern Bedstraw				S2	10	32.3 ± 5.0	NS
Р	Comandra umbellata	Bastard's Toadflax				S2	5	97.3 ± 1.0	NB
Р	Gratiola neglecta	Clammy Hedge-Hyssop				S2	22	30.6 ± 2.0	NS
Р	Dirca palustris	Eastern Leatherwood				S2	75	48.6 ± 7.0	NS
2	Carex chordorrhiza	Creeping Sedge				S2	56	79.3 ± 0.0	NS
C	Carex gynocrates	Northern Bog Sedge				S2	2	59.0 ± 0.0	NS
P	Carex pellita	Woolly Sedge				S2	12	17.2 ± 0.0	NS
P	Carex livida	Livid Sedge				S2	49	51.6 ± 0.0	NS
P	Juncus greenei	Greene's Rush				S2	7	37.5 ± 1.0	NS
P	Juncus alpinoarticulatus ssp. americanus	Northern Green Rush				S2	3	98.7 ± 3.0	PE
P	Allium tricoccum	Wild Leek				S2	45	15.1 ± 13.0	NS
P P						S2 S2	45 149	15.1 ± 13.0 11.7 ± 1.0	NS
F	Lilium canadense	Canada Lily				32	149	11.7 ± 1.0	NS
P	Cypripedium parviflorum var. pubescens	Yellow Lady's-slipper				S2	27	43.4 ± 7.0	
Р	Cypripedium parviflorum var. makasin	Small Yellow Lady's-Slipper				S2	9	83.7 ± 0.0	NS
Р	Cypripedium reginae	Showy Lady's-Slipper				S2	76	40.0 ± 0.0	NS
P	Platanthera flava var. flava	Southern Rein Orchid				S2	1	95.5 ± 7.0	NS
•	Platanthera flava var.					-			NS
P	herbiola	Pale Green Orchid				S2 S2	11 17	17.0 ± 1.0 6.1 ± 1.0	-
	Platanthera macrophylla	Large Round-Leaved Orchid							NS
Р	Bromus latiglumis	Broad-Glumed Brome				S2	33	33.5 ± 0.0	NS

Group	Scientific Name	Common Name	COSEWIC	SARA	Prov Legal Prot	Prov Rarity Rank	# recs	Distance (km)	Prov
0	Cinna arundinacea	Sweet Wood Reed Grass				S2	19	36.3 ± 0.0	NS
•	Elymus wiegandii	Wiegand's Wild Rye				S2	21	26.0 ± 0.0	NS
)	Festuca subverticillata	Nodding Fescue				S2	13	42.5 ± 1.0	NS
0	Cryptogramma stelleri	Steller's Rockbrake				S2	3	50.7 ± 0.0	NS
c	Cuscuta cephalanthi	Buttonbush Dodder				S2?	2	43.5 ± 1.0	NS
0	Rumex persicarioides	Peach-leaved Dock				S2?	3	75.8 ± 5.0	PE
2	Crataegus submollis	Quebec Hawthorn				S2?	7	23.0 ± 5.0	NS
>	Carex peckii	White-Tinged Sedge				S2?	4	12.4 ± 0.0	NS
5	Thuja occidentalis	Eastern White Cedar			Vulnerable	S2S3	964	38.6 ± 0.0	NS
5	Osmorhiza longistylis	Smooth Sweet Cicely			vuinerable	S2S3	31	18.4 ± 5.0	NS
-									
	Bidens hyperborea	Estuary Beggarticks				S2S3	2	48.6 ± 0.0	NS
	Erigeron philadelphicus	Philadelphia Fleabane				S2S3	8	50.4 ± 5.0	NS
	Lactuca hirsuta	Hairy Lettuce				S2S3	5	78.6 ± 5.0	PE
5	Impatiens pallida	Pale Jewelweed				S2S3	3	31.1 ± 0.0	NS
0	Caulophyllum thalictroides	Blue Cohosh				S2S3	101	17.5 ± 0.0	NS
2	Draba arabisans	Rock Whitlow-Grass				S2S3	13	78.4 ± 0.0	NS
0	Boechera stricta	Drummond's Rockcress				S2S3	12	14.0 ± 1.0	NS
5	Stellaria humifusa	Saltmarsh Starwort				S2S3	5	61.8 ± 1.0	NS
2	Oxybasis rubra	Red Goosefoot				S2S3	6	47.6 ± 0.0	NS
2	Hypericum majus	Large St John's-wort				S2S3	21	30.0 ± 0.0	NS
5		Disguised St. John's-wort				S2S3	8	30.0 ± 0.0 32.7 ± 1.0	NS
	Hypericum x dissimulatum								
	Empetrum atropurpureum	Purple Crowberry				S2S3	3	98.8 ± 5.0	PE
5	Euphorbia polygonifolia	Seaside Spurge				S2S3	6	63.1 ± 1.0	PE
0	Myriophyllum farwellii	Farwell's Water Milfoil				S2S3	13	34.9 ± 1.0	NS
2	Hedeoma pulegioides	American False Pennyroyal				S2S3	11	34.5 ± 1.0	NS
5	Oenothera fruticosa ssp.	Narrow-leaved Evening				S2S3	6	17.1 ± 7.0	NS
	tetragona	Primrose				0200	Ũ	11.1 ± 1.0	
5	Polygonum aviculare ssp.	Box Knotweed				S2S3	7	17.1 ± 7.0	NS
	buxiforme	20/////000				0200	•		
5	Polygonum oxyspermum	Ray's Knotweed				S2S3	2	98.4 ± 5.0	PE
	ssp. raii	,							
0	Polygonum oxyspermum	Sharp-fruit Knotweed				S2S3	1	91.3 ± 0.0	NS
>	Rumex triangulivalvis	Triangular-valve Dock				S2S3	7	29.5 ± 0.0	NS
2	Primula mistassinica	Mistassini Primrose				S2S3	17	17.0 ± 0.0	NS
5	Anemone quinquefolia	Wood Anemone				S2S3	19	28.7 ± 0.0	NS
5	Caltha palustris	Yellow Marsh Marigold				S2S3	98	46.0 ± 0.0	NS
2	Amelanchier fernaldii	Fernald's Serviceberry				S2S3	1	61.7 ± 5.0	NS
5	Potentilla canadensis	Canada Cinquefoil				S2S3	4	34.4 ± 5.0	NS
5									
	Galium obtusum	Blunt-leaved Bedstraw				S2S3	1	81.4 ± 1.0	NB
5	Salix pellita	Satiny Willow				S2S3	8	32.9 ± 7.0	NS
5	Tiarella cordifolia	Heart-leaved Foamflower				S2S3	223	9.2 ± 0.0	NS
5	Agalinis purpurea var.	Small-flowered Purple False				S2S3	28	27.1 ± 0.0	NS
-	parviflora	Foxglove				3233	20	27.1 ± 0.0	
2	Boehmeria cylindrica	Small-spike False-nettle				S2S3	3	60.5 ± 0.0	NS
2	Carex adusta	Lesser Brown Sedge				S2S3	5	14.9 ± 7.0	NS
2	Carex capillaris	Hairlike Sedge				S2S3	2	66.3 ± 0.0	NS
5	Carex comosa	Bearded Sedge				S2S3	22	14.9 ± 7.0	NS
- D						S2S3	5	37.7 ± 1.0	NS
,)	Carex houghtoniana	Houghton's Sedge					5 9		
	Carex hystericina	Porcupine Sedge				S2S3		29.5 ± 0.0	NS
0	Eleocharis ovata	Ovate Spikerush				S2S3	12	12.0 ± 0.0	NS
0	Scirpus pedicellatus	Stalked Bulrush				S2S3	7	37.8 ± 0.0	NS
>	Vallisneria americana	Wild Celery				S2S3	9	34.6 ± 1.0	NS
b	Najas gracillima	Thread-Like Naiad				S2S3	2	83.1 ± 0.0	NS
2	Goodyera pubescens	Downy Rattlesnake-Plantain				S2S3	14	44.2 ± 0.0	NS
	Spiranthes casei var.	,							NS
0	novaescotiae	Case's Ladies'-Tresses				S2S3	1	46.2 ± 0.0	110
	novaescollae								
2	Spiranthes lucida	Shining Ladies'-Tresses				S2S3	27	17.0 ± 0.0	NS

Group	Scientific Name	Common Name	COSEWIC	SARA	Prov Legal Prot	Prov Rarity Rank	# recs	Distance (km)	Prov
))	Potamogeton friesii	Fries' Pondweed				S2S3	16	17.8 ± 5.0	NS
	Woodsia glabella	Smooth Cliff Fern				S2S3	2	26.7 ± 1.0	NS
,	Botrychium lanceolatum ssp.	Narrow Triangle Moonwort				S2S3	12	20.5 ± 1.0	NS
,	angustisegmentum Botrvchium simplex	Least Moonwort				S2S3	5	50.9 ± 0.0	NS
)	Ophioglossum pusillum	Northern Adder's-tongue				S2S3	5	19.0 ± 0.0	NS
5	Potamogeton pulcher	Spotted Pondweed			Vulnerable	S3	3	51.1 ± 2.0	NS
5	Angelica atropurpurea	Purple-stemmed Angelica			Vullerable	S3	9	37.6 ± 0.0	NS
5	Conioselinum chinense	Chinese Hemlock-parsley				S3	7	29.6 ± 5.0	NS
2	Hieracium robinsonii	Robinson's Hawkweed				S3	3	17.3 ± 7.0	NS
5	lva frutescens	Big-leaved Marsh-elder				S3	50	81.3 ± 0.0	NS
5	Senecio pseudoarnica	Seabeach Ragwort				S3	22	17.1 ± 7.0	NS
P	Symphyotrichum boreale	Boreal Aster				S3	32	17.1 ± 7.0	NS
>	Symphyotrichum undulatum	Wavy-leaved Aster				S3	7	84.4 ± 0.0	NS
5	Symphyotrichum ciliolatum	Fringed Blue Aster				S3	23	37.4 ± 0.0	NS
Р	Betula michauxii	Michaux's Dwarf Birch				S3	31	58.6 ± 0.0	NS
5	Betula pumila	Bog Birch				S3	21	59.5 ± 0.0	NS
2	Cardamine parviflora	Small-flowered Bittercress				S3	9	86.5 ± 0.0	NS
0	Palustricodon aparinoides	Marsh Bellflower				S3	43	12.2 ± 0.0	NS
2	Mononeuria groenlandica	Greenland Stitchwort				S3	12	71.1 ± 0.0	NS
0	Sagina nodosa	Knotted Pearlwort				S3	9	94.1 ± 1.0	NS
2	Sagina nodosa ssp. borealis	Knotted Pearlwort				S3	9	95.8 ± 0.0	NS
5	Stellaria longifolia	Long-leaved Starwort				S3	19	16.5 ± 0.0	NS
5	Ceratophyllum echinatum	Prickly Hornwort				S3	38	19.4 ± 0.0	NS
P	Triosteum aurantiacum	Orange-fruited Tinker's Weed				S3	93	9.3 ± 0.0	NS
0	Viburnum edule	Squashberry				S3	3	24.6 ± 0.0	NS
>	Crassula aquatica	Water Pygmyweed				S3	2	98.4 ± 5.0	PE
Р	Empetrum eamesii	Pink Crowberry				S3	6	70.9 ± 5.0	PE
5	Geranium bicknellii	Bicknell's Crane's-bill				S3	11	30.5 ± 2.0	NS
D	Myriophyllum verticillatum	Whorled Water Milfoil				S3	12	39.6 ± 0.0	NS
b	Epilobium strictum	Downy Willowherb				S3	56	17.9 ± 5.0	NS
0	Polygala sanguinea	Blood Milkwort				S3	36	13.3 ± 1.0	NS
0	Persicaria arifolia	Halberd-leaved Tearthumb				S3	90	24.7 ± 0.0	NS
	Plantago rugelii	Rugel's Plantain				S3	8	17.1 ± 7.0	NS
	Primula laurentiana	Laurentian Primrose				S3	7	92.7 ± 0.0	NS
P	Samolus parviflorus	Seaside Brookweed				S3	14	35.3 ± 0.0	NS
P	Pyrola minor	Lesser Pyrola				S3	3	19.2 ± 0.0	NS
-	Anemone virginiana	Virginia Anemone				S3	19	17.0 ± 0.0	NS
P	Galium labradoricum	Labrador Bedstraw				S3	96	37.8 ± 0.0	NS
P P	Salix pedicellaris	Bog Willow				S3	62	38.4 ± 0.0	NS
	Salix sericea	Silky Willow				S3	1	70.7 ± 1.0	NS
0	Saxifraga paniculata ssp. laestadii	Laestadius' Saxifrage				S3	4	86.5 ± 1.0	NS
b	Lindernia dubia	Yellow-seeded False Pimperel				S3	51	25.7 ± 0.0	NS
b	Laportea canadensis	Canada Wood Nettle				S3	64	16.3 ± 0.0	NS
b	Pilea pumila	Dwarf Clearweed				S3	34	29.2 ± 0.0	NS
2	Viola nephrophylla	Northern Bog Violet				S3	10	6.7 ± 1.0	NS
2	Carex bebbii	Bebb's Sedge				S3	35	17.0 ± 0.0	NS
2	Carex castanea	Chestnut Sedge				S3	39	55.6 ± 0.0	NS
2	Carex cryptolepis	Hidden-scaled Sedge				S3	18	26.8 ± 10.0	NS
þ	Carex eburnea	Bristle-leaved Sedge				S3	12	31.5 ± 0.0	NS
2	Carex hirtifolia	Pubescent Sedge				S3	55	12.5 ± 0.0	NS
2	Carex lupulina	Hop Sedge				S3	63	26.8 ± 10.0	NS
2	Carex rosea	Rosy Sedge				S3	44	12.5 ± 0.0	NS
P	Carex swanii	Swan's Sedge				S3	3	92.1 ± 0.0	NS
Р	Carex tenera	Tender Sedge				S3	11	25.4 ± 0.0	NS

Р							
	Carex tribuloides	Blunt Broom Sedge		S3	13	14.5 ± 0.0	NS
P	Carex tuckermanii	Tuckerman's Sedge		S3	53	24.9 ± 0.0	NS
Р	Carex atratiformis	Scabrous Black Sedge		S3	3	76.9 ± 1.0	NS
Р	Eleocharis nitida	Quill Spikerush		S3	11	53.7 ± 7.0	NS
Р	Eleocharis flavescens var. olivacea	Bright-green Spikerush		S3	5	36.8 ± 0.0	NS
Ρ	Eriophorum gracile Juncus stygius ssp.	Slender Cottongrass		S3	56	18.2 ± 10.0	NS NS
P	americanus	Moor Rush		S3	76	80.4 ± 0.0	
Р	Coeloglossum viride	Long-bracted Frog Orchid		S3	1	34.8 ± 0.0	NS
Р	Cypripedium parviflorum	Yellow Lady's-slipper		S3	590	39.0 ± 1.0	NS
P	Neottia bifolia	Southern Twayblade		S3	83	3.2 ± 0.0	NS
P	Platanthera grandiflora	Large Purple Fringed Orchid		S3	177	13.9 ± 1.0	NS
Р	Platanthera hookeri	Hooker's Orchid		S3	32	30.2 ± 0.0	NS
Р	Dichanthelium linearifolium	Narrow-leaved Panic Grass		S3	5	17.1 ± 0.0	NS
Р	Piptatheropsis canadensis	Canada Ricegrass		S3	8	16.9 ± 1.0	NS
Р	Poa glauca	Glaucous Blue Grass		S3	8	66.3 ± 0.0	NS
Р	Stuckenia filiformis	Thread-leaved Pondweed		S3	3	97.3 ± 0.0	PE
P	Potamogeton praelongus	White-stemmed Pondweed		S3	39	12.2 ± 1.0	NS
P	Potamogeton richardsonii	Richardson's Pondweed		S3	6	17.0 ± 7.0	NS
2	Potamogeton zosteriformis	Flat-stemmed Pondweed		S3	26	34.6 ± 2.0	NS
2	Asplenium viride	Green Spleenwort		S3	12	33.4 ± 7.0	NS
5	Dryopteris fragrans	Fragrant Wood Fern		S3	15	5.0 ± 4.0	NS
Þ	Sceptridium dissectum	Dissected Moonwort		S3	9	22.4 ± 5.0	NS
5	Polypodium appalachianum	Appalachian Polypody		S3	16	17.2 ± 0.0	NS
D	Persicaria amphibia var. emersa	Long-root Smartweed		S3?	5	59.9 ± 0.0	NS
c	Spiranthes ochroleuca	Yellow Ladies'-tresses		S3?	58	5.2 ± 0.0	NS
c	Diphasiastrum x sabinifolium	Savin-leaved Ground-cedar		S3?	13	12.4 ± 0.0	NS
5	Bidens vulgata	Tall Beggarticks		S3S4	7	18.4 ± 0.0	NS
2	Erigeron hyssopifolius	Hyssop-leaved Fleabane		S3S4	35	26.7 ± 0.0	NS
2	Hieracium paniculatum	Panicled Hawkweed		S3S4	11	17.1 ± 0.0	NS
P	Bidens beckii	Water Beggarticks		S3S4	29	23.4 ± 1.0	NS
Ρ	Packera paupercula	Balsam Groundsel		S3S4	115	17.0 ± 0.0	NS
Р	Atriplex glabriuscula var. franktonii	Frankton's Saltbush		S3S4	18	32.6 ± 2.0	NS
Р	Shepherdia canadensis	Soapberry		S3S4	113	81.8 ± 1.0	NS
Р	Vaccinium boreale	Northern Blueberry		S3S4	5	69.2 ± 1.0	NS
>	Vaccinium cespitosum	Dwarf Bilberry		S3S4	51	18.5 ± 0.0	NS
P	Vaccinium corymbosum	Highbush Blueberry		S3S4	5	90.8 ± 0.0	NS
P	Fagus grandifolia	American Beech		S3S4	776	2.9 ± 0.0	NS
P	Bartonia virginica	Yellow Bartonia		S3S4	1	70.7 ± 7.0	NS
Þ	Proserpinaca pectinata	Comb-leaved Mermaidweed		S3S4	5	51.9 ± 1.0	NS
P	Nuphar microphylla	Small Yellow Pond-lily		S3S4	10	28.3 ± 1.0	NS
Þ	Persicaria pensylvanica	Pennsylvania Smartweed		S3S4	34	14.0 ± 0.0	NS
P	Fallopia scandens	Climbing False Buckwheat		S3S4	40	17.1 ± 7.0	NS
P	Rumex pallidus	Seabeach Dock		S3S4	1	89.0 ± 0.0	NS
Þ	Pyrola asarifolia	Pink Pyrola		S3S4	14	17.2 ± 1.0	NS
P		alder-leaved buckthorn		S3S4	400	17.2 ± 1.0 29.1 ± 0.0	NS
P P	Endotropis alnifolia Amelanchier spicata	Running Serviceberry		S3S4 S3S4	400 13	29.1 ± 0.0 37.3 ± 5.0	NS
P P	Crataegus succulenta	Fleshy Hawthorn		S3S4 S3S4	5	37.3 ± 5.0 85.9 ± 5.0	PE
Р	Fragaria vesca ssp. americana	Woodland Strawberry		S3S4	71	12.2 ± 0.0	NS
P	Fragaria vesca	Woodland Strawberry		S3S4	12	42.4 ± 0.0	NS
P	Galium aparine	Common Bedstraw		S3S4 S3S4	34	42.4 ± 0.0 19.4 ± 0.0	NS
P	Gallum aparine Geocaulon lividum	Northern Comandra		S3S4 S3S4	34 12	19.4 ± 0.0 34.9 ± 0.0	NS
	Geocaulon IIVluulli			0004	12	34.9 ± 0.0	
P	Limosella australis	Southern Mudwort		S3S4	32	36.4 ± 0.0	NS

Taxonomic									
Group	Scientific Name	Common Name	COSEWIC	SARA	Prov Legal Prot	Prov Rarity Rank	# recs	Distance (km)	Prov
Р	Verbena hastata	Blue Vervain				S3S4	248	15.7 ± 0.0	NS
Р	Viola sagittata var. ovata	Arrow-Leaved Violet				S3S4	11	62.5 ± 0.0	NS
Р	Viola selkirkii	Great-Spurred Violet				S3S4	5	34.9 ± 0.0	NS
Р	Symplocarpus foetidus	Eastern Skunk Cabbage				S3S4	137	46.1 ± 0.0	NS
Р	Carex argyrantha	Silvery-flowered Sedge				S3S4	5	79.0 ± 5.0	PE
Р	Triglochin gaspensis	Gasp ⊢⊢ Arrowgrass				S3S4	21	83.5 ± 0.0	NB
Р	Juncus acuminatus	Sharp-Fruit Rush				S3S4	7	51.3 ± 2.0	NS
Р	Juncus subcaudatus	Woods-Rush				S3S4	20	25.1 ± 3.0	NS
Ρ	Luzula parviflora ssp. melanocarpa	Black-fruited Woodrush				S3S4	5	50.3 ± 0.0	NS
Р	Goodyera repens	Lesser Rattlesnake-plantain				S3S4	21	62.5 ± 1.0	PE
Р	Liparis loeselii	Loesel's Twayblade				S3S4	23	20.8 ± 1.0	NS
Р	Platanthera obtusata	Blunt-leaved Orchid				S3S4	6	41.0 ± 1.0	NS
Р	Platanthera orbiculata	Small Round-leaved Orchid				S3S4	40	4.6 ± 0.0	NS
Р	Alopecurus aequalis	Short-awned Foxtail				S3S4	29	17.6 ± 1.0	NS
Р	Dichanthelium clandestinum	Deer-tongue Panic Grass				S3S4	170	50.2 ± 5.0	NS
Р	Panicum philadelphicum	Philadelphia Panicgrass				S3S4	15	28.5 ± 0.0	NS
Р	Koeleria spicata	Narrow False Oats				S3S4	17	17.0 ± 0.0	NS
Р	Asplenium trichomanes	Maidenhair Spleenwort				S3S4	12	81.4 ± 1.0	NS
Р	Equisetum pratense	Meadow Horsetail				S3S4	15	8.6 ± 0.0	NS
Р	Diphasiastrum complanatum	Northern Ground-cedar				S3S4	22	23.4 ± 0.0	NS
Р	Diphasiastrum sitchense	Sitka Ground-cedar				S3S4	5	11.1 ± 5.0	NS
Р	Huperzia appressa	Mountain Firmoss				S3S4	17	4.6 ± 7.0	NS
Р	Sceptridium multifidum	Leathery Moonwort				S3S4	10	35.6 ± 0.0	NS
Р	Botrychium matricariifolium	Daisy-leaved Moonwort				S3S4	11	12.7 ± 1.0	NS
Р	Viola canadensis	Canada Violet				SH	2	18.1 ± 7.0	NS

5.1 SOURCE BIBLIOGRAPHY (100 km)

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

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