

APPENDIX G

WETLAND EVALUATIONS

Figure 1

Wetland Habitat

Wetlands

- WL-1
0.4ha
- Surveyed Wetland (Labeled by identifier and area in hectares)

Plants

- Aster Borealis population

Project Features

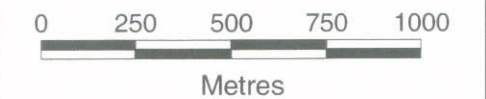
- Proposed Sovereign Resources Quarry Modification Area
- Approved Sovereign Resources Quarry
- Existing Quarry
- Approved Municipal Quarry

Topographic Features

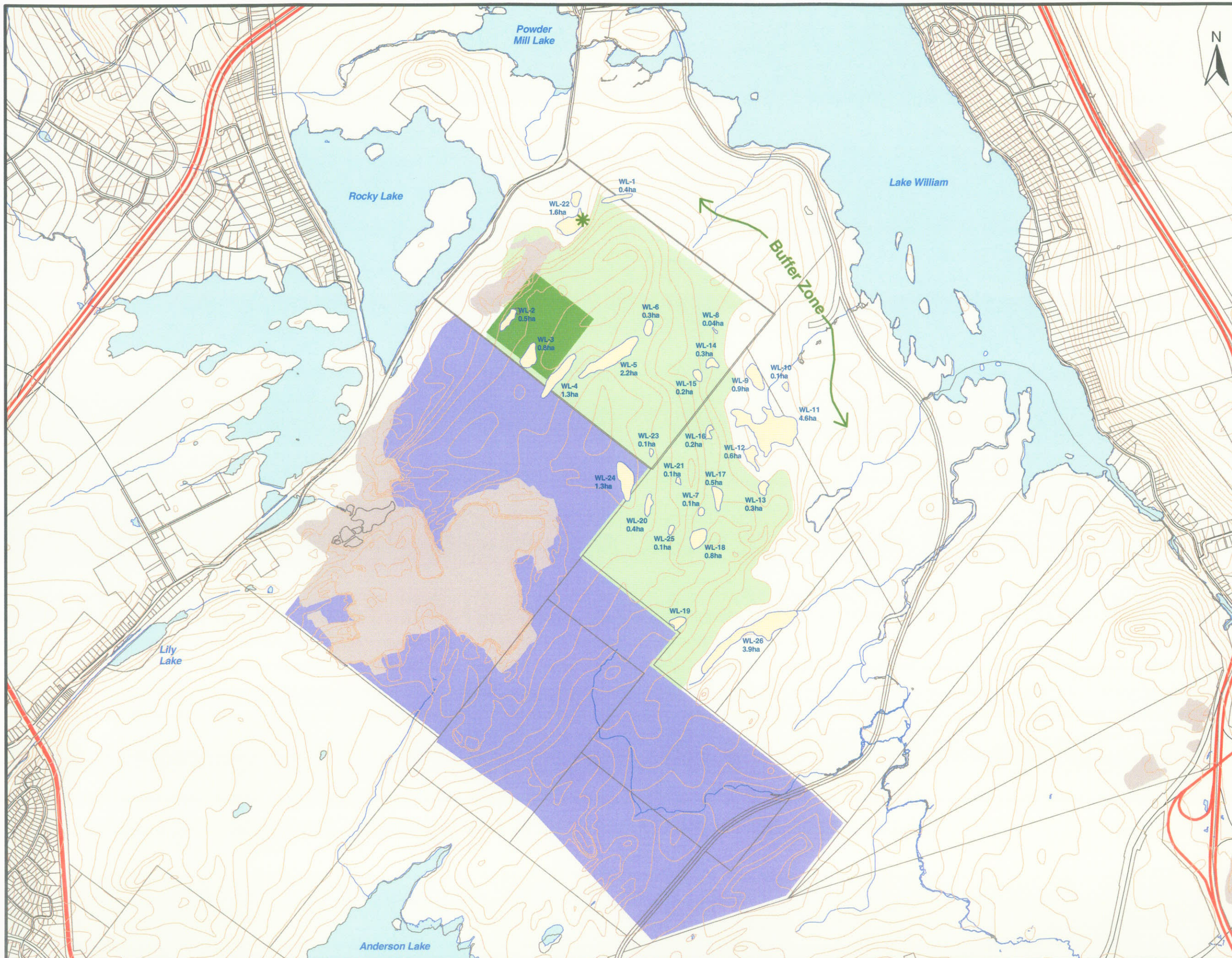
- Elevation Contour (m)
- Stream
- Waterbody
- Property Boundary

Topographic Data Source: Nova Scotia Digital
Topographic Database (NSTDB) from Service Nova Scotia.
Elevation contour data is at 5 metre intervals

Scale 1:20,000



Map Parameters
Projection: 3° MTM
Datum: ATS77
Zone: 5
Date: March 2005
Project: NSD17650



WETLAND EVALUATIONS

1.0 INTRODUCTION

In Nova Scotia, wetlands are protected by the NSEL Wetlands Directive. Any loss of wetland requires preparation of a wetland evaluation to establish the value of the wetland in relation to the merits of the development. Wetland evaluations are required if a project will physically disturb a wetland or if the hydrology of the wetland will be altered by construction or operation of the project. Wetlands greater than two hectares in size are evaluated using the North American Wetlands Conservation Council (Canada) wetland evaluation technique. Wetlands less than two hectares in size can be evaluated using a ten-step evaluation process used by NSEL.

Twenty-six wetlands, either within or adjacent to the proposed Sovereign Resource quarry modification area, were evaluated during field surveys conducted in 2004. The locations of the wetlands are mapped on Figure 1.

The wetland surveys were conducted to provide the information required to conduct wetland evaluations for any of these wetlands which may be adversely affected by the Project. The wetland surveys collected a variety of information including the type of wetland and a description of its hydrology, a description of the wetland habitat types present in the wetland, inventories of vascular plants, birds, mammals, reptiles and amphibians present in the wetland, any evidence of anthropogenic use of the wetland, and any evidence of damage to the wetland caused by anthropogenic activities. The information collected for each wetland was derived largely from field surveys since there is little existing information for most wetlands in Nova Scotia. The sizes and locations of the wetlands were determined from interpretation of 1:10,000 scale air photography and from delineation of the margin of the wetlands on the ground using a Garmin GPS 12 global positioning system.

A summary of wetland characteristics have been provided. The results of the vascular plant surveys conducted in each wetland are presented below in Table 1. Three of the wetlands (Wetlands 5, 11 and 26) evaluated are greater than two hectares in size and were evaluated using the North American Wetlands Conservation Council (Canada) wetland evaluation technique. The remaining 23 wetlands were evaluated using the NSEL ten-step evaluation process. The wetland evaluations are presented in the following section.

Table 1 Vascular Plant Species Found in Wetlands 1 to 26, including ACCDC Ranking		
Binomial	Common Name	ACCDC Provincial Rank
Wetland 1		
<i>Acer rubrum</i>	Red Maple	S5
<i>Alnus incana</i>	Speckled Alder	S5
<i>Aronia arbutifolia</i>	Red Chokeberry	S4S5
<i>Aronia melanocarpa</i>	Black Chokeberry	S5
<i>Betula populifolia</i>	Gray Birch	S5
<i>Chamaedaphne calyculata</i>	Leatherleaf	S5
<i>Drosera rotundifolia</i>	Roundleaf Sundew	S5
<i>Eriophorum vaginatum</i>	Tussock Cotton-Grass	S5

Table 1 Vascular Plant Species Found in Wetlands 1 to 26, including ACCDC Ranking		
Binomial	Common Name	ACCDC Provincial Rank
<i>Gaylussacia baccata</i>	Black Huckleberry	S5
<i>Ilex verticillata</i>	Black Holly	S5
<i>Kalmia angustifolia</i>	Sheep-Laurel	S5
<i>Larix laricina</i>	American Larch	S5
<i>Ledum groenlandicum</i>	Common Labrador Tea	S5
<i>Nemopanthus mucronata</i>	Mountain Holly	S5
<i>Picea mariana</i>	Black Spruce	S5
<i>Pinus strobus</i>	Eastern White Pine	S5
<i>Pteridium aquilinum</i>	Bracken Fern	S5
<i>Rhododendron canadense</i>	Rhodora	S5
<i>Salix bebbiana</i>	Bebb's Willow	S5
<i>Salix eriocephala</i>	Heart-Leaved Willow	S5
<i>Salix pyrifolia</i>	Balsam Willow	S5
<i>Sarracenia purpurea</i>	Northern Pitcher-Plant	S5
<i>Spiraea alba</i>	Narrow-Leaved Meadow-Sweet	S5
<i>Vaccinium angustifolium</i>	Late Lowbush Blueberry	S5
<i>Vaccinium macrocarpon</i>	Large Cranberry	S5
Wetland 2		
<i>Abies balsamea</i>	Balsam Fir	S5
<i>Acer pensylvanicum</i>	Striped Maple	S5
<i>Acer rubrum</i>	Red Maple	S5
<i>Agrostis hyemalis</i>	Rough Bentgrass	S5
<i>Alnus incana</i>	Speckled Alder	S5
<i>Alnus viridis</i>	Green Alder	S5
<i>Aralia nudicaulis</i>	Wild Sarsaparilla	S5
<i>Aster acuminatus</i>	Whorled Aster	S5
<i>Betula papyrifera</i>	Paper Birch	S5
<i>Betula populifolia</i>	Gray Birch	S5
<i>Calamagrostis canadensis</i>	Blue-Joint Reedgrass	S5
<i>Carex trisperma</i>	Three-Seed Sedge	S5
<i>Chamaedaphne calyculata</i>	Leatherleaf	S5
<i>Coptis trifolia</i>	Goldthread	S5
<i>Cornus canadensis</i>	Dwarf Dogwood	S5
<i>Cypripedium acaule</i>	Pink Lady's-Slipper	S5
<i>Epigaea repens</i>	Trailing Arbutus	S5
<i>Eriophorum virginicum</i>	Tawny Cotton-Grass	S5
<i>Gaylussacia baccata</i>	Black Huckleberry	S5
<i>Glyceria canadensis</i>	Canada Manna-Grass	S5
<i>Hamamelis virginiana</i>	American Witch-Hazel	S5
<i>Ilex verticillata</i>	Black Holly	S5
<i>Juncus effusus</i>	Soft Rush	S5
<i>Kalmia angustifolia</i>	Sheep-Laurel	S5
<i>Ledum groenlandicum</i>	Common Labrador Tea	S5
<i>Linnaea borealis</i>	Twinflower	S5
<i>Nemopanthus mucronata</i>	Mountain Holly	S5
<i>Osmunda cinnamomea</i>	Cinnamon Fern	S5
<i>Picea mariana</i>	Black Spruce	S5
<i>Pinus resinosa</i>	Red Pine	S4S5
<i>Polygonum cilinode</i>	Fringed Black Bindweed	S5
<i>Polygonum persicaria</i>	Lady's Thumb	SE
<i>Populus grandidentata</i>	Large-Tooth Aspen	S5
<i>Quercus rubra</i>	Northern Red Oak	S5
<i>Rhododendron canadense</i>	Rhodora	S5
<i>Rosa nitida</i>	Shining Rose	S4
<i>Rubus hispidus</i>	Bristly Dewberry	S5
<i>Salix pyrifolia</i>	Balsam Willow	S5

Table 1 Vascular Plant Species Found in Wetlands 1 to 26, including ACCDC Ranking		
Binomial	Common Name	ACCDC Provincial Rank
<i>Scirpus cyperinus</i>	Black-Girdle Bulrush	S5
<i>Smilacina trifolia</i>	Three-Leaf Solomon's-Plume	S4S5
<i>Spiraea alba</i>	Narrow-Leaved Meadow-Sweet	S5
<i>Spiraea tomentosa</i>	Hardhack Spiraea	S5
<i>Vaccinium angustifolium</i>	Late Lowbush Blueberry	S5
<i>Vaccinium myrtilloides</i>	Velvetleaf Blueberry	S5
Wetland 3		
<i>Acer rubrum</i>	Red Maple	S5
<i>Amelanchier sp.</i>	Shadbush	N/A
<i>Aralia nudicaulis</i>	Wild Sarsaparilla	S5
<i>Aronia arbutifolia</i>	Red Chokeberry	S4S5
<i>Aronia melanocarpa</i>	Black Chokeberry	S5
<i>Betula populifolia</i>	Gray Birch	S5
<i>Carex stricta</i>	Tussock Sedge	S5
<i>Carex trisperma</i>	Three-Seed Sedge	S5
<i>Chamaedaphne calyculata</i>	Leatherleaf	S5
<i>Coptis trifolia</i>	Goldthread	S5
<i>Cornus canadensis</i>	Dwarf Dogwood	S5
<i>Gaultheria procumbens</i>	Teaberry	S5
<i>Gaylussacia baccata</i>	Black Huckleberry	S5
<i>Gaylussacia dumosa</i>	Dwarf Huckleberry	S4
<i>Iris versicolor</i>	Blueflag	S5
<i>Kalmia angustifolia</i>	Sheep-Laurel	S5
<i>Kalmia polifolia</i>	Pale Laurel	S5
<i>Ledum groenlandicum</i>	Common Labrador Tea	S5
<i>Myrica pensylvanica</i>	Northern Bayberry	S5
<i>Nemopanthus mucronata</i>	Mountain Holly	S5
<i>Osmunda cinnamomea</i>	Cinnamon Fern	S5
<i>Picea mariana</i>	Black Spruce	S5
<i>Pinus strobus</i>	Eastern White Pine	S5
<i>Quercus rubra</i>	Northern Red Oak	S5
<i>Rhododendron canadense</i>	Rhodora	S5
<i>Sarracenia purpurea</i>	Northern Pitcher-Plant	S5
<i>Scirpus caespitosus</i>	Tufted Leafless-Bulrush	S5
<i>Smilacina trifolia</i>	Three-Leaf Solomon's-Plume	S4S5
<i>Trientalis borealis</i>	Northern Starflower	S5
<i>Vaccinium angustifolium</i>	Late Lowbush Blueberry	S5
<i>Vaccinium oxycoccos</i>	Small Cranberry	S5
<i>Viburnum nudum</i>	Possum-Haw Viburnum	S5
Wetland 4		
<i>Acer rubrum</i>	Red Maple	S5
<i>Amelanchier Sp.</i>	Shadbush	N/A
<i>Arethusa bulbosa</i>	Swamp-Pink	S4
<i>Betula populifolia</i>	Gray Birch	S5
<i>Carex stricta</i>	Tussock Sedge	S5
<i>Carex trisperma</i>	Three-Seed Sedge	S5
<i>Chamaedaphne calyculata</i>	Leatherleaf	S5
<i>Coptis trifolia</i>	Goldthread	S5
<i>Cornus canadensis</i>	Dwarf Dogwood	S5
<i>Cypripedium acaule</i>	Pink Lady's-Slipper	S5
<i>Drosera rotundifolia</i>	Roundleaf Sundew	S5
<i>Empetrum nigrum</i>	Black Crowberry	S5
<i>Eriophorum virginicum</i>	Tawny Cotton-Grass	S5
<i>Gaylussacia baccata</i>	Black Huckleberry	S5
<i>Gaylussacia dumosa</i>	Dwarf Huckleberry	S4
<i>Ilex verticillata</i>	Black Holly	S5

Table 1 Vascular Plant Species Found in Wetlands 1 to 26, including ACCDC Ranking		
Binomial	Common Name	ACCDC Provincial Rank
<i>Juncus canadensis</i>	Canada Rush	S5
<i>Juncus pelocarpus</i>	Brown-Fruited Rush	S5
<i>Kalmia angustifolia</i>	Sheep-Laurel	S5
<i>Kalmia polifolia</i>	Pale Laurel	S5
<i>Larix laricina</i>	American Larch	S5
<i>Ledum groenlandicum</i>	Common Labrador Tea	S5
<i>Nemopanthus mucronata</i>	Mountain Holly	S5
<i>Nuphar variegata</i>	Yellow Pond-Lily	S5
<i>Nymphaea odorata</i>	American Water-Lily	S5
<i>Osmunda cinnamomea</i>	Cinnamon Fern	S5
<i>Picea mariana</i>	Black Spruce	S5
<i>Pinus strobus</i>	Eastern White Pine	S5
<i>Rhododendron canadense</i>	Rhodora	S5
<i>Rhynchospora alba</i>	White Beakrush	S5
<i>Sarracenia purpurea</i>	Northern Pitcher-Plant	S5
<i>Scirpus caespitosus</i>	Tufted Leafless-Bulrush	S5
<i>Solidago uliginosa</i>	Bog Goldenrod	S5
<i>Utricularia cornuta</i>	Horned Bladderwort	S5
<i>Vaccinium oxycoccos</i>	Small Cranberry	S5
<i>Viburnum nudum</i>	Possum-Haw Viburnum	S5
<i>Xyris difformis</i>	Yellow-Eyed-Grass	S4
<i>Xyris montana</i>	Northern Yellow-Eyed-Grass	S4
Wetland 5		
<i>Acer rubrum</i>	Red Maple	S5
<i>Aronia melanocarpa</i>	Black Chokeberry	S5
<i>Betula cordifolia</i>	Heart-Leaved Paper Birch	S5
<i>Carex stricta</i>	Tussock Sedge	S5
<i>Carex trisperma</i>	Three-Seed Sedge	S5
<i>Chamaedaphne calyculata</i>	Leatherleaf	S5
<i>Coptis trifolia</i>	Goldthread	S5
<i>Cornus canadensis</i>	Dwarf Dogwood	S5
<i>Cypripedium acaule</i>	Pink Lady's-Slipper	S5
<i>Drosera intermedia</i>	Spoon-Leaved Sundew	S5
<i>Drosera rotundifolia</i>	Roundleaf Sundew	S5
<i>Empetrum nigrum</i>	Black Crowberry	S5
<i>Eriophorum virginicum</i>	Tawny Cotton-Grass	S5
<i>Gaultheria hispidula</i>	Creeping Snowberry	S5
<i>Gaylussacia baccata</i>	Black Huckleberry	S5
<i>Gaylussacia dumosa</i>	Dwarf Huckleberry	S4
<i>Ilex glabra</i>	Ink-Berry	S5
<i>Ilex verticillata</i>	Black Holly	S5
<i>Iris versicolor</i>	Blueflag	S5
<i>Juncus pelocarpus</i>	Brown-Fruited Rush	S5
<i>Kalmia angustifolia</i>	Sheep-Laurel	S5
<i>Kalmia polifolia</i>	Pale Laurel	S5
<i>Larix laricina</i>	American Larch	S5
<i>Monotropa uniflora</i>	Indian-Pipe	S5
<i>Myrica pensylvanica</i>	Northern Bayberry	S5
<i>Nemopanthus mucronata</i>	Mountain Holly	S5
<i>Nuphar variegata</i>	Yellow Pond-Lily	S5
<i>Nymphaea odorata</i>	American Water-Lily	S5
<i>Osmunda cinnamomea</i>	Cinnamon Fern	S5
<i>Picea mariana</i>	Black Spruce	S5
<i>Pinus strobus</i>	Eastern White Pine	S5
<i>Quercus rubra</i>	Northern Red Oak	S5
<i>Rhododendron canadense</i>	Rhodora	S5

Table 1 Vascular Plant Species Found in Wetlands 1 to 26, including ACCDC Ranking		
Binomial	Common Name	ACCDC Provincial Rank
<i>Rhynchospora alba</i>	White Beakrush	S5
<i>Sarracenia purpurea</i>	Northern Pitcher-Plant	S5
<i>Scirpus caespitosus</i>	Tufted Leafless-Bulrush	S5
<i>Solidago uliginosa</i>	Bog Goldenrod	S5
<i>Trientalis borealis</i>	Northern Starflower	S5
<i>Utricularia vulgaris</i>	Greater Bladder-Wort	S5
<i>Vaccinium angustifolium</i>	Late Lowbush Blueberry	S5
<i>Vaccinium macrocarpon</i>	Large Cranberry	S5
<i>Vaccinium oxycoccos</i>	Small Cranberry	S5
<i>Viburnum nudum</i>	Possum-Haw Viburnum	S5
<i>Woodwardia virginica</i>	Virginia Chainfern	S4
<i>Xyris difformis</i>	Carolina Yellow-Eyed-Grass	S4
Wetland 6		
<i>Abies balsamea</i>	Balsam Fir	S5
<i>Acer rubrum</i>	Red Maple	S5
<i>Alnus incana</i>	Speckled Alder	S5
<i>Aralia nudicaulis</i>	Wild Sarsaparilla	S5
<i>Aster acuminatus</i>	Whorled Aster	S5
<i>Betula alleghaniensis</i>	Yellow Birch	S5
<i>Carex trisperma</i>	Three-Seed Sedge	S5
<i>Coptis trifolia</i>	Goldthread	S5
<i>Cornus canadensis</i>	Dwarf Dogwood	S5
<i>Drosera rotundifolia</i>	Roundleaf Sundew	S5
<i>Gaultheria hispidula</i>	Creeping Snowberry	S5
<i>Glyceria canadensis</i>	Canada Manna-Grass	S5
<i>Ilex verticillata</i>	Black Holly	S5
<i>Iris versicolor</i>	Blueflag	S5
<i>Kalmia angustifolia</i>	Sheep-Laurel	S5
<i>Nemopanthus mucronata</i>	Mountain Holly	S5
<i>Osmunda cinnamomea</i>	Cinnamon Fern	S5
<i>Picea mariana</i>	Black Spruce	S5
<i>Pinus strobus</i>	Eastern White Pine	S5
<i>Quercus rubra</i>	Northern Red Oak	S5
<i>Sarracenia purpurea</i>	Northern Pitcher-Plant	S5
<i>Smilacina trifolia</i>	Three-Leaf Solomon's-Plume	S4S5
<i>Sorbus americana</i>	American Mountain-Ash	S5
<i>Trientalis borealis</i>	Northern Starflower	S5
<i>Vaccinium myrtilloides</i>	Velvetleaf Blueberry	S5
<i>Viburnum nudum</i>	Possum-Haw Viburnum	S5
Wetland 7		
<i>Acer rubrum</i>	Red Maple	S5
<i>Alnus incana</i>	Speckled Alder	S5
<i>Amelanchier bartramiana</i>	Bartram Shadbush	S5
<i>Aronia melanocarpa</i>	Black Chokeberry	S5
<i>Betula populifolia</i>	Gray Birch	S5
<i>Calamagrostis canadensis</i>	Blue-Joint Reedgrass	S5
<i>Carex echinata</i>	Little Prickly Sedge	S5
<i>Chamaedaphne calyculata</i>	Leatherleaf	S5
<i>Cornus canadensis</i>	Dwarf Dogwood	S5
<i>Diervilla lonicera</i>	Northern Bush-Honeysuckle	S5
<i>Drosera rotundifolia</i>	Roundleaf Sundew	S5
<i>Dryopteris cristata</i>	Crested Shield-Fern	S5
<i>Eriophorum virginicum</i>	Tawny Cotton-Grass	S5
<i>Gaylussacia baccata</i>	Black Huckleberry	S5
<i>Kalmia angustifolia</i>	Sheep-Laurel	S5
<i>Ledum groenlandicum</i>	Common Labrador Tea	S5

Table 1 Vascular Plant Species Found in Wetlands 1 to 26, including ACCDC Ranking		
Binomial	Common Name	ACCDC Provincial Rank
<i>Myrica pensylvanica</i>	Northern Bayberry	S5
<i>Nemopanthus mucronata</i>	Mountain Holly	S5
<i>Osmunda cinnamomea</i>	Cinnamon Fern	S5
<i>Osmunda regalis</i>	Royal Fern	S5
<i>Picea mariana</i>	Black Spruce	S5
<i>Pinus strobus</i>	Eastern White Pine	S5
<i>Rhododendron canadense</i>	Rhodora	S5
<i>Rubus hispidus</i>	a bramble	S?
<i>Salix bebbiana</i>	Bebb's Willow	S5
<i>Salix lucida</i>	Shining Willow	S5
<i>Sarracenia purpurea</i>	Northern Pitcher-Plant	S5
<i>Smilacina trifolia</i>	Three-Leaf Solomon's-Plume	S4S5
<i>Solidago uliginosa</i>	Bog Goldenrod	S5
<i>Spiraea alba</i>	Narrow-Leaved Meadow-Sweet	S5
<i>Vaccinium oxycoccos</i>	Small Cranberry	S5
<i>Viburnum nudum</i>	Possum-Haw Viburnum	S5
Wetland 8		
<i>Acer rubrum</i>	Red Maple	S5
<i>Aronia arbutifolia</i>	Red Chokeberry	S4S5
<i>Betula populifolia</i>	Gray Birch	S5
<i>Carex trisperma</i>	Three-Seed Sedge	S5
<i>Gaylussacia baccata</i>	Black Huckleberry	S5
<i>Glyceria canadensis</i>	Canada Manna-Grass	S5
<i>Kalmia angustifolia</i>	Sheep-Laurel	S5
<i>Ledum groenlandicum</i>	Common Labrador Tea	S5
<i>Osmunda cinnamomea</i>	Cinnamon Fern	S5
<i>Picea mariana</i>	Black Spruce	S5
<i>Rhododendron canadense</i>	Rhodora	S5
<i>Sparganium sp.</i>	Burreed	N/A
<i>Vaccinium angustifolium</i>	Late Lowbush Blueberry	S5
Wetland 9		
<i>Acer rubrum</i>	Red Maple	S5
<i>Alnus incana</i>	Speckled Alder	S5
<i>Aralia nudicaulis</i>	Wild Sarsaparilla	S5
<i>Aster acuminatus</i>	Whorled Aster	S5
<i>Aster radula</i>	Rough-Leaved Aster	S5
<i>Aster umbellatus</i>	Parasol White-Top	S5
<i>Calamagrostis canadensis</i>	Blue-Joint Reedgrass	S5
<i>Carex folliculata</i>	Long Sedge	S5
<i>Carex stricta</i>	Tussock Sedge	S5
<i>Carex trisperma</i>	Three-Seed Sedge	S5
<i>Coptis trifolia</i>	Goldthread	S5
<i>Corylus cornuta</i>	Beaked Hazelnut	S5
<i>Cypripedium acaule</i>	Pink Lady's-Slipper	S5
<i>Fraxinus americana</i>	White Ash	S5
<i>Gaylussacia baccata</i>	Black Huckleberry	S5
<i>Ilex verticillata</i>	Black Holly	S5
<i>Iris versicolor</i>	Blueflag	S5
<i>Kalmia angustifolia</i>	Sheep-Laurel	S5
<i>Larix laricina</i>	American Larch	S5
<i>Maianthemum canadense</i>	Wild Lily-of-The-Valley	S5
<i>Osmunda cinnamomea</i>	Cinnamon Fern	S5
<i>Osmunda regalis</i>	Royal Fern	S5
<i>Picea mariana</i>	Black Spruce	S5
<i>Pinus strobus</i>	Eastern White Pine	S5
<i>Quercus rubra</i>	Northern Red Oak	S5

Table 1 Vascular Plant Species Found in Wetlands 1 to 26, including ACCDC Ranking		
Binomial	Common Name	ACCDC Provincial Rank
<i>Rosa nitida</i>	Shining Rose	S4
<i>Rubus hispidus</i>	Bristly Dewberry	S5
<i>Rubus pubescens</i>	Dwarf Red Raspberry	S5
<i>Smilacina trifolia</i>	Three-Leaf Solomon's-Plume	S4S5
<i>Solidago uliginosa</i>	Bog Goldenrod	S5
<i>Thalictrum pubescens</i>	Tall Meadow-Rue	S5
<i>Thelypteris noveboracensis</i>	New York Fern	S5
<i>Thelypteris palustris</i>	Marsh Fern	S5
<i>Trientalis borealis</i>	Northern Starflower	S5
<i>Viburnum nudum</i>	Poosum-Haw Viburnum	S5
Wetland 10		
<i>Abies balsamea</i>	Balsam Fir	S5
<i>Acer rubrum</i>	Red Maple	S5
<i>Alnus incana</i>	Speckled Alder	S5
<i>Aster acuminatus</i>	Whorled Aster	S5
<i>Aster puniceus</i>	Swamp Aster	S5
<i>Aster radula</i>	Rough-Leaved Aster	S5
<i>Athyrium filix-femina</i>	Lady-Fern	S5
<i>Betula alleghaniensis</i>	Yellow Birch	S5
<i>Betula cordifolia</i>	Heart-Leaved Paper Birch	S5
<i>Brachyelytrum erectum</i>	Bearded Short-Husk	S4S5
<i>Carex disperma</i>	Softleaf Sedge	S5
<i>Carex trisperma</i>	Three-Seed Sedge	S5
<i>Corylus cornuta</i>	Beaked Hazelnut	S5
<i>Dryopteris cristata</i>	Crested Shield-Fern	S5
<i>Gaylussacia baccata</i>	Black Huckleberry	S5
<i>Glyceria canadensis</i>	Canada Manna-Grass	S5
<i>Glyceria grandis</i>	American Mannagrass	S4S5
<i>Iris versicolor</i>	Blueflag	S5
<i>Kalmia angustifolia</i>	Sheep-Laurel	S5
<i>Lycopus uniflorus</i>	Northern Bugleweed	S5
<i>Lysimachia terrestris</i>	Swamp Loosestrife	S5
<i>Maianthemum canadense</i>	Wild Lily-of-The-Valley	S5
<i>Onoclea sensibilis</i>	Sensitive Fern	S5
<i>Osmunda cinnamomea</i>	Cinnamon Fern	S5
<i>Osmunda regalis</i>	Royal Fern	S5
<i>Picea mariana</i>	Black Spruce	S5
<i>Pinus strobus</i>	Eastern White Pine	S5
<i>Puccinellia maritima</i>	American Alkali Grass	S4S5
<i>Quercus rubra</i>	Northern Red Oak	S5
<i>Rubus pubescens</i>	Dwarf Red Raspberry	S5
<i>Sparganium angustifolium</i>	Narrow-Leaf Burreed	S4S5
<i>Spiraea alba</i>	Narrow-Leaved Meadow-Sweet	S5
<i>Thalictrum pubescens</i>	Tall Meadow-Rue	S5
<i>Thelypteris noveboracensis</i>	New York Fern	S5
<i>Thelypteris palustris</i>	Marsh Fern	S5
Wetland 11		
<i>Acer rubrum</i>	Red Maple	S5
<i>Amelanchier sp.</i>	Shadbush	N/A
<i>Andromeda glaucophylla</i>	Bog Rosemary	S5
<i>Aralia nudicaulis</i>	Wild Sarsaparilla	S5
<i>Aronia arbutifolia</i>	Red Chokeberry	S4S5
<i>Aronia melanocarpa</i>	Black Chokeberry	S5
<i>Aster lateriflorus</i>	Farewell-Summer	S5
<i>Aster nemoralis</i>	Bog Aster	S5
<i>Aster puniceus</i>	Swamp Aster	S5

Table 1 Vascular Plant Species Found in Wetlands 1 to 26, including ACCDC Ranking		
Binomial	Common Name	ACCDC Provincial Rank
<i>Aster radula</i>	Rough-Leaved Aster	S5
<i>Aster umbellatus</i>	Parasol White-Top	S5
<i>Betula populifolia</i>	Gray Birch	S5
<i>Calamagrostis canadensis</i>	Blue-Joint Reedgrass	S5
<i>Carex exilis</i>	Coast Sedge	S4
<i>Carex folliculata</i>	Long Sedge	S5
<i>Carex lasiocarpa</i>	Slender Sedge	S5
<i>Carex lurida</i>	Shallow Sedge	S5
<i>Carex stricta</i>	Tussock Sedge	S5
<i>Carex trisperma</i>	Three-Seed Sedge	S5
<i>Chamaedaphne calyculata</i>	Leatherleaf	S5
<i>Cornus canadensis</i>	Dwarf Dogwood	S5
<i>Corylus cornuta</i>	Beaked Hazelnut	S5
<i>Cypripedium acaule</i>	Pink Lady's-Slipper	S5
<i>Drosera intermedia</i>	Spoon-Leaved Sundew	S5
<i>Dryopteris cristata</i>	Crested Shield-Fern	S5
<i>Empetrum nigrum</i>	Black Crowberry	S5
<i>Eriophorum vaginatum</i>	Tussock Cotton-Grass	S5
<i>Eriophorum virginicum</i>	Tawny Cotton-Grass	S5
<i>Euthamia graminifolia</i>	Flat-Top Fragrant-Golden-Rod	S5
<i>Gaylussacia baccata</i>	Black Huckleberry	S5
<i>Gaylussacia dumosa</i>	Dwarf Huckleberry	S4
<i>Hamamelis virginiana</i>	American Witch-Hazel	S5
<i>Ilex verticillata</i>	Black Holly	S5
<i>Iris versicolor</i>	Blueflag	S5
<i>Juncus canadensis</i>	Canada Rush	S5
<i>Juniperus communis</i>	Ground Juniper	S5
<i>Kalmia angustifolia</i>	Sheep-Laurel	S5
<i>Kalmia polifolia</i>	Pale Laurel	S5
<i>Larix laricina</i>	American Larch	S5
<i>Ledum groenlandicum</i>	Common Labrador Tea	S5
<i>Lonicera caerulea</i>	Mountain Fly-Honeysuckle	S4
<i>Lycopus uniflorus</i>	Northern Bugleweed	S5
<i>Lysimachia terrestris</i>	Swamp Loosestrife	S5
<i>Myrica gale</i>	Sweet Bayberry	S5
<i>Nemopanthus mucronata</i>	Mountain Holly	S5
<i>Nuphar variegata</i>	Yellow Pond-Lily	S5
<i>Onoclea sensibilis</i>	Sensitive Fern	S5
<i>Osmunda cinnamomea</i>	Cinnamon Fern	S5
<i>Osmunda regalis</i>	Royal Fern	S5
<i>Picea mariana</i>	Black Spruce	S5
<i>Pinus strobus</i>	Eastern White Pine	S5
<i>Potamogeton robbinsii</i>	Flatleaf Pondweed	S4
<i>Potamogeton confervoides</i>	Algae-like Pondweed	S3S4
<i>Prenanthes trifoliolata</i>	Three-Leaved Rattlesnake-root	S5
<i>Rhododendron canadense</i>	Rhodora	S5
<i>Rhynchospora alba</i>	White Beakrush	S5
<i>Rosa nitida</i>	Shining Rose	S4
<i>Sarracenia purpurea</i>	Northern Pitcher-Plant	S5
<i>Scirpus caespitosus</i>	Tufted Leafless-Bulrush	S5
<i>Solidago rugosa</i>	Rough-Leaf Goldenrod	S5
<i>Solidago uliginosa</i>	Bog Goldenrod	S5
<i>Sparganium americanum</i>	American Bur-Reed	S5
<i>Sparganium angustifolium</i>	Narrow-Leaf Burreed	S4S5
<i>Spiraea alba</i>	Narrow-Leaved Meadow-Sweet	S5
<i>Thalictrum pubescens</i>	Tall Meadow-Rue	S5

Table 1 Vascular Plant Species Found in Wetlands 1 to 26, including ACCDC Ranking		
Binomial	Common Name	ACCDC Provincial Rank
<i>Thelypteris noveboracensis</i>	New York Fern	S5
<i>Thelypteris palustris</i>	Marsh Fern	S5
<i>Utricularia geminiscapa</i>	Hidden-fruited Bladderwort	S4
<i>Utricularia intermedia</i>	Flatleaf Bladderwort	S5
<i>Utricularia vulgaris</i>	Greater Bladder-Wort	S5
<i>Vaccinium oxycoccos</i>	Small Cranberry	S5
<i>Viburnum nudum</i>	Possum-Haw Viburnum	S5
<i>Viola macloskeyi</i>	Smooth White Violet	S5
Wetland 12		
<i>Acer rubrum</i>	Red Maple	S5
<i>Alnus incana</i>	Speckled Alder	S5
<i>Amelanchier sp.</i>	Shadbush	N/A
<i>Aralia nudicaulis</i>	Wild Sarsaparilla	S5
<i>Aronia arbutifolia</i>	Red Chokeberry	S4S5
<i>Aster acuminatus</i>	Whorled Aster	S5
<i>Aster novi-belgii</i>	New Belgium Aster	S5
<i>Aster radula</i>	Rough-Leaved Aster	S5
<i>Aster umbellatus</i>	Parasol White-Top	S5
<i>Betula alleghaniensis</i>	Yellow Birch	S5
<i>Calamagrostis canadensis</i>	Blue-Joint Reedgrass	S5
<i>Carex folliculata</i>	Long Sedge	S5
<i>Carex stricta</i>	Tussock Sedge	S5
<i>Carex trisperma</i>	Three-Seed Sedge	S5
<i>Chelone glabra</i>	White Turtlehead	S5
<i>Coptis trifolia</i>	Goldthread	S5
<i>Corylus cornuta</i>	Beaked Hazelnut	S5
<i>Cypripedium acaule</i>	Pink Lady's-Slipper	S5
<i>Drosera rotundifolia</i>	Roundleaf Sundew	S5
<i>Dryopteris carthusiana</i>	Spinulose Shield Fern	S5
<i>Dryopteris cristata</i>	Crested Shield-Fern	S5
<i>Epilobium palustre</i>	Marsh Willowherb	S5
<i>Eriophorum virginicum</i>	Tawny Cotton-Grass	S5
<i>Fraxinus americana</i>	White Ash	S5
<i>Gaylussacia baccata</i>	Black Huckleberry	S5
<i>Ilex verticillata</i>	Black Holly	S5
<i>Iris versicolor</i>	Blueflag	S5
<i>Kalmia angustifolia</i>	Sheep-Laurel	S5
<i>Lycopodium annotinum</i>	Stiff Clubmoss	S5
<i>Lysimachia terrestris</i>	Swamp Loosestrife	S5
<i>Maianthemum canadense</i>	Wild Lily-of-The-Valley	S5
<i>Monotropa uniflora</i>	Indian-Pipe	S5
<i>Myrica pensylvanica</i>	Northern Bayberry	S5
<i>Onoclea sensibilis</i>	Sensitive Fern	S5
<i>Osmunda cinnamomea</i>	Cinnamon Fern	S5
<i>Osmunda regalis</i>	Royal Fern	S5
<i>Picea mariana</i>	Black Spruce	S5
<i>Pinus strobus</i>	Eastern White Pine	S5
<i>Platanthera blephariglottis</i>	White-Fringe Orchis	S4
<i>Prenanthes trifoliolata</i>	Three-Leaved Rattlesnake-root	S5
<i>Prunus pensylvanica</i>	Fire Cherry	S5
<i>Quercus rubra</i>	Northern Red Oak	S5
<i>Rhododendron canadense</i>	Rhodora	S5
<i>Rosa nitida</i>	Shining Rose	S4
<i>Rubus canadensis</i>	Smooth Blackberry	S5
<i>Rubus hispidus</i>	Bristly Dewberry	S5
<i>Rubus pubescens</i>	Dwarf Red Raspberry	S5

Table 1 Vascular Plant Species Found in Wetlands 1 to 26, including ACCDC Ranking		
Binomial	Common Name	ACCDC Provincial Rank
<i>Smilacina trifolia</i>	Three-Leaf Solomon's-Plume	S4S5
<i>Solidago rugosa</i>	Rough-Leaf Goldenrod	S5
<i>Solidago uliginosa</i>	Bog Goldenrod	S5
<i>Spiraea alba</i>	Narrow-Leaved Meadow-Sweet	S5
<i>Thelypteris noveboracensis</i>	New York Fern	S5
<i>Thelypteris palustris</i>	Marsh Fern	S5
<i>Vaccinium angustifolium</i>	Late Lowbush Blueberry	S5
<i>Viola cucullata</i>	Marsh Blue Violet	S5
<i>Viola macloskeyi</i>	Smooth White Violet	S5
Wetland 13		
<i>Acer rubrum</i>	Red Maple	S5
<i>Alnus incana</i>	Speckled Alder	S5
<i>Aralia nudicaulis</i>	Wild Sarsaparilla	S5
<i>Aster acuminatus</i>	Whorled Aster	S5
<i>Aster radula</i>	Rough-Leaved Aster	S5
<i>Carex trisperma</i>	Three-Seed Sedge	S5
<i>Dryopteris cristata</i>	Crested Shield-Fern	S5
<i>Epilobium palustre</i>	Marsh Willowherb	S5
<i>Eriophorum virginicum</i>	Tawny Cotton-Grass	S5
<i>Gaylussacia baccata</i>	Black Huckleberry	S5
<i>Glyceria grandis</i>	American Mannagrass	S4S5
<i>Ilex verticillata</i>	Black Holly	S5
<i>Kalmia angustifolia</i>	Sheep-Laurel	S5
<i>Maianthemum canadense</i>	Wild Lily-of-The-Valley	S5
<i>Nemopanthus mucronata</i>	Mountain Holly	S5
<i>Osmunda cinnamomea</i>	Cinnamon Fern	S5
<i>Osmunda regalis</i>	Royal Fern	S5
<i>Picea mariana</i>	Black Spruce	S5
<i>Quercus rubra</i>	Northern Red Oak	S5
<i>Rosa nitida</i>	Shining Rose	S4
<i>Rubus hispidus</i>	Bristly Dewberry	S5
<i>Smilacina trifolia</i>	Three-Leaf Solomon's-Plume	S4S5
<i>Vaccinium angustifolium</i>	Late Lowbush Blueberry	S5
<i>Viburnum nudum</i>	Possum-Haw Viburnum	S5
Wetland 14		
<i>Acer rubrum</i>	Red Maple	S5
<i>Alnus incana</i>	Speckled Alder	S5
<i>Aralia nudicaulis</i>	Wild Sarsaparilla	S5
<i>Aster acuminatus</i>	Whorled Aster	S5
<i>Aster novi-belgii</i>	New Belgium American-Aster	S5
<i>Aster radula</i>	Rough-Leaved Aster	S5
<i>Aster umbellatus</i>	Parasol White-Top	S5
<i>Carex echinata</i>	Little Prickly Sedge	S5
<i>Carex folliculata</i>	Long Sedge	S5
<i>Carex trisperma</i>	Three-Seed Sedge	S5
<i>Coptis trifolia</i>	Goldthread	S5
<i>Corylus cornuta</i>	Beaked Hazelnut	S5
<i>Drosera rotundifolia</i>	Roundleaf Sundew	S5
<i>Dryopteris cristata</i>	Crested Shield-Fern	S5
<i>Eriophorum virginicum</i>	Tawny Cotton-Grass	S5
<i>Fragaria virginiana</i>	Virginia Strawberry	S5
<i>Fraxinus americana</i>	White Ash	S5
<i>Gaylussacia baccata</i>	Black Huckleberry	S5
<i>Glyceria grandis</i>	American Mannagrass	S4S5
<i>Hamamelis virginiana</i>	American Witch-Hazel	S5
<i>Ilex verticillata</i>	Black Holly	S5

Table 1 Vascular Plant Species Found in Wetlands 1 to 26, including ACCDC Ranking		
Binomial	Common Name	ACCDC Provincial Rank
<i>Kalmia angustifolia</i>	Sheep-Laurel	S5
<i>Maianthemum canadense</i>	Wild Lily-of-The-Valley	S5
<i>Mitchella repens</i>	Partridge-Berry	S5
<i>Osmunda cinnamomea</i>	Cinnamon Fern	S5
<i>Osmunda regalis</i>	Royal Fern	S5
<i>Platanthera clavellata</i>	Small Green Woodland Orchid	S5
<i>Quercus rubra</i>	Northern Red Oak	S5
<i>Rosa nitida</i>	Shining Rose	S4
<i>Rubus hispidus</i>	Bristly Dewberry	S5
<i>Rubus pubescens</i>	Dwarf Red Raspberry	S5
<i>Smilacina trifolia</i>	Three-Leaf Solomon's-Plume	S4S5
<i>Solidago uliginosa</i>	Bog Goldenrod	S5
<i>Thelypteris noveboracensis</i>	New York Fern	S5
<i>Thelypteris palustris</i>	Marsh Fern	S5
<i>Toxicodendron rydbergii</i>	Northern Poison Oak	S5
<i>Viburnum nudum</i>	Possum-Haw Viburnum	S5
Wetland 15		
<i>Abies balsamea</i>	Balsam Fir	S5
<i>Acer pensylvanicum</i>	Striped Maple	S5
<i>Acer rubrum</i>	Red Maple	S5
<i>Acer spicatum</i>	Mountain Maple	S5
<i>Alnus incana</i>	Speckled Alder	S5
<i>Aralia nudicaulis</i>	Wild Sarsaparilla	S5
<i>Aronia melanocarpa</i>	Black Chokeberry	S5
<i>Aster acuminatus</i>	Whorled Aster	S5
<i>Aster puniceus</i>	Swamp Aster	S5
<i>Aster umbellatus</i>	Parasol White-Top	S5
<i>Betula papyrifera</i>	Paper Birch	S5
<i>Carex folliculata</i>	Long Sedge	S5
<i>Carex trisperma</i>	Three-Seed Sedge	S5
<i>Clintonia borealis</i>	Clinton Lily	S5
<i>Coptis trifolia</i>	Goldthread	S5
<i>Cornus canadensis</i>	Dwarf Dogwood	S5
<i>Corylus cornuta</i>	Beaked Hazelnut	S5
<i>Dryopteris cristata</i>	Crested Shield-Fern	S5
<i>Fagus grandifolia</i>	American Beech	S5
<i>Fragaria virginiana</i>	Virginia Strawberry	S5
<i>Fraxinus americana</i>	White Ash	S5
<i>Glyceria striata</i>	Fowl Manna-Grass	S5
<i>Ilex verticillata</i>	Black Holly	S5
<i>Iris versicolor</i>	Blueflag	S5
<i>Kalmia angustifolia</i>	Sheep-Laurel	S5
<i>Lycopus uniflorus</i>	Northern Bugleweed	S5
<i>Maianthemum canadense</i>	Wild Lily-of-The-Valley	S5
<i>Monotropa uniflora</i>	Indian-Pipe	S5
<i>Osmunda cinnamomea</i>	Cinnamon Fern	S5
<i>Osmunda regalis</i>	Royal Fern	S5
<i>Picea rubens</i>	Red Spruce	S5
<i>Quercus rubra</i>	Northern Red Oak	S5
<i>Rosa nitida</i>	Shining Rose	S4
<i>Rosa carolina</i>	Carolina Rose	S4S5
<i>Rubus pubescens</i>	Dwarf Red Raspberry	S5
<i>Smilacina trifolia</i>	Three-Leaf Solomon's-Plume	S4S5
<i>Sparganium americanum</i>	American Bur-Reed	S5
<i>Spiraea alba</i>	Narrow-Leaved Meadow-Sweet	S5
<i>Thelypteris noveboracensis</i>	New York Fern	S5

Table 1 Vascular Plant Species Found in Wetlands 1 to 26, including ACCDC Ranking		
Binomial	Common Name	ACCDC Provincial Rank
<i>Thelypteris palustris</i>	Marsh Fern	S5
<i>Toxicodendron radicans</i>	Eastern Poison Ivy	S4
<i>Trientalis borealis</i>	Northern Starflower	S5
<i>Viburnum nudum</i>	Poosum-Haw Viburnum	S5
<i>Viola cucullata</i>	Marsh Blue Violet	S5
Wetland 16		
<i>Acer rubrum</i>	Red Maple	S5
<i>Acer spicatum</i>	Mountain Maple	S5
<i>Agrostis hyemalis</i>	Rough Bentgrass	S5
<i>Agrostis perennans</i>	Perennial Bentgrass	S4S5
<i>Alnus incana</i>	Speckled Alder	S5
<i>Amelanchier sp.</i>	Shadbush	N/A
<i>Aronia melanocarpa</i>	Black Chokeberry	S5
<i>Aster acuminatus</i>	Whorled Aster	S5
<i>Aster umbellatus</i>	Parasol White-Top	S5
<i>Athyrium filix-femina</i>	Lady-Fern	S5
<i>Betula alleghaniensis</i>	Yellow Birch	S5
<i>Betula papyrifera</i>	Paper Birch	S5
<i>Carex arctata</i>	Black Sedge	S5
<i>Carex canescens</i>	Hoary Sedge	S5
<i>Carex intumescens</i>	Bladder Sedge	S5
<i>Carex novae-angliae</i>	New England Sedge	S5
<i>Carex trisperma</i>	Three-Seed Sedge	S5
<i>Chelone glabra</i>	White Turtlehead	S5
<i>Coptis trifolia</i>	Goldthread	S5
<i>Cornus canadensis</i>	Dwarf Dogwood	S5
<i>Cypripedium acaule</i>	Pink Lady's-Slipper	S5
<i>Dryopteris carthusiana</i>	Spinulose Shield Fern	S5
<i>Dryopteris cristata</i>	Crested Shield-Fern	S5
<i>Equisetum sylvaticum</i>	Woodland Horsetail	S5
<i>Fraxinus americana</i>	White Ash	S5
<i>Gaylussacia baccata</i>	Black Huckleberry	S5
<i>Glyceria canadensis</i>	Canada Manna-Grass	S5
<i>Glyceria grandis</i>	American Mannagrass	S4S5
<i>Glyceria striata</i>	Fowl Manna-Grass	S5
<i>Ilex verticillata</i>	Black Holly	S5
<i>Iris versicolor</i>	Blueflag	S5
<i>Kalmia angustifolia</i>	Sheep-Laurel	S5
<i>Lycopus americanus</i>	American Bugleweed	S5
<i>Lycopus uniflorus</i>	Northern Bugleweed	S5
<i>Maianthemum canadense</i>	Wild Lily-of-The-Valley	S5
<i>Monotropa uniflora</i>	Indian-Pipe	S5
<i>Onoclea sensibilis</i>	Sensitive Fern	S5
<i>Picea mariana</i>	Black Spruce	S5
<i>Pinus strobus</i>	Eastern White Pine	S5
<i>Populus tremuloides</i>	Quaking Aspen	S5
<i>Prenanthes trifoliolata</i>	Three-Leaved Rattlesnake-root	S5
<i>Quercus rubra</i>	Northern Red Oak	S5
<i>Rubus canadensis</i>	Smooth Blackberry	S5
<i>Rubus hispidus</i>	Bristly Dewberry	S5
<i>Rubus idaeus</i>	Red Raspberry	S5
<i>Rubus pubescens</i>	Dwarf Red Raspberry	S5
<i>Rubus setosus</i>	Bristly Berry	S4?
<i>Salix bebbiana</i>	Bebb's Willow	S5
<i>Sambucus canadensis</i>	Common Elderberry	S5
<i>Solidago rugosa</i>	Rough-Leaf Goldenrod	S5

Table 1 Vascular Plant Species Found in Wetlands 1 to 26, including ACCDC Ranking		
Binomial	Common Name	ACCDC Provincial Rank
<i>Solidago uliginosa</i>	Bog Goldenrod	S5
<i>Sorbus americana</i>	American Mountain-Ash	S5
<i>Spiraea alba</i>	Narrow-Leaved Meadow-Sweet	S5
<i>Trientalis borealis</i>	Northern Starflower	S5
<i>Vaccinium myrtilloides</i>	Velvetleaf Blueberry	S5
<i>Viburnum nudum</i>	Possum-Haw Viburnum	S5
<i>Viola macloskeyi</i>	Smooth White Violet	S5
Wetland 17		
<i>Acer rubrum</i>	Red Maple	S5
<i>Alnus incana</i>	Speckled Alder	S5
<i>Aralia nudicaulis</i>	Wild Sarsaparilla	S5
<i>Aronia melanocarpa</i>	Black Chokeberry	S5
<i>Aster acuminatus</i>	Whorled Aster	S5
<i>Aster radula</i>	Rough Aster	S5
<i>Aster umbellatus</i>	Parasol White-Top	S5
<i>Betula alleghaniensis</i>	Yellow Birch	S5
<i>Betula papyrifera</i>	Paper Birch	S5
<i>Carex folliculata</i>	Long Sedge	S5
<i>Carex trisperma</i>	Three-Seed Sedge	S5
<i>Chelone glabra</i>	White Turtlehead	S5
<i>Clintonia borealis</i>	Clinton Lily	S5
<i>Coptis trifolia</i>	Goldthread	S5
<i>Cornus canadensis</i>	Dwarf Dogwood	S5
<i>Cypripedium acaule</i>	Pink Lady's-Slipper	S5
<i>Drosera rotundifolia</i>	Roundleaf Sundew	S5
<i>Fraxinus americana</i>	White Ash	S5
<i>Gaylussacia baccata</i>	Black Huckleberry	S5
<i>Glyceria striata</i>	Fowl Manna-Grass	S5
<i>Ilex verticillata</i>	Black Holly	S5
<i>Iris versicolor</i>	Blueflag	S5
<i>Kalmia angustifolia</i>	Sheep-Laurel	S5
<i>Maianthemum canadense</i>	Wild Lily-of-The-Valley	S5
<i>Mitchella repens</i>	Partridge-Berry	S5
<i>Monotropa uniflora</i>	Indian-Pipe	S5
<i>Onoclea sensibilis</i>	Sensitive Fern	S5
<i>Osmunda cinnamomea</i>	Cinnamon Fern	S5
<i>Osmunda regalis</i>	Royal Fern	S5
<i>Picea mariana</i>	Black Spruce	S5
<i>Pinus strobus</i>	Eastern White Pine	S5
<i>Platanthera clavellata</i>	Small Green Woodland Orchid	S5
<i>Quercus rubra</i>	Northern Red Oak	S5
<i>Rosa nitida</i>	Shining Rose	S4
<i>Smilacina trifolia</i>	Three-Leaf Solomon's-Plume	S4S5
<i>Thelypteris palustris</i>	Marsh Fern	S5
<i>Toxicodendron radicans</i>	Eastern Poison Ivy	S4
<i>Trientalis borealis</i>	Northern Starflower	S5
<i>Vaccinium myrtilloides</i>	Velvetleaf Blueberry	S5
<i>Viburnum nudum</i>	Possum-Haw Viburnum	S5
<i>Viola cucullata</i>	Marsh Blue Violet	S5
<i>Viola macloskeyi</i>	Smooth White Violet	S5
Wetland 18		
<i>Acer rubrum</i>	Red Maple	S5
<i>Alnus incana</i>	Speckled Alder	S5
<i>Amelanchier sp.</i>	Shadbush	N/A
<i>Aralia nudicaulis</i>	Wild Sarsaparilla	S5
<i>Aster acuminatus</i>	Whorled Aster	S5

Table 1 Vascular Plant Species Found in Wetlands 1 to 26, including ACCDC Ranking		
Binomial	Common Name	ACCDC Provincial Rank
<i>Aster umbellatus</i>	Parasol White-Top	S5
<i>Betula papyrifera</i>	Paper Birch	S5
<i>Carex folliculata</i>	Long Sedge	S5
<i>Carex trisperma</i>	Three-Seed Sedge	S5
<i>Clintonia borealis</i>	Clinton Lily	S5
<i>Coptis trifolia</i>	Goldthread	S5
<i>Cornus canadensis</i>	Dwarf Dogwood	S5
<i>Cypripedium acaule</i>	Pink Lady's-Slipper	S5
<i>Drosera rotundifolia</i>	Roundleaf Sundew	S5
<i>Epilobium palustre</i>	Marsh Willow-Herb	S5
<i>Fraxinus americana</i>	White Ash	S5
<i>Gaylussacia baccata</i>	Black Huckleberry	S5
<i>Glyceria striata</i>	Fowl Manna-Grass	S5
<i>Ilex verticillata</i>	Black Holly	S5
<i>Iris versicolor</i>	Blueflag	S5
<i>Kalmia angustifolia</i>	Sheep-Laurel	S5
<i>Lycopodium annotinum</i>	Stiff Clubmoss	S5
<i>Maianthemum canadense</i>	Wild Lily-of-The-Valley	S5
<i>Osmunda cinnamomea</i>	Cinnamon Fern	S5
<i>Osmunda regalis</i>	Royal Fern	S5
<i>Picea mariana</i>	Black Spruce	S5
<i>Pinus strobus</i>	Eastern White Pine	S5
<i>Populus tremuloides</i>	Quaking Aspen	S5
<i>Quercus rubra</i>	Northern Red Oak	S5
<i>Rosa nitida</i>	Shining Rose	S4
<i>Rubus hispidus</i>	Bristly Dewberry	S5
<i>Rubus pubescens</i>	Dwarf Red Raspberry	S5
<i>Sarracenia purpurea</i>	Northern Pitcher-Plant	S5
<i>Smilacina trifolia</i>	Three-Leaf Solomon's-Plume	S4S5
<i>Thelypteris palustris</i>	Marsh Fern	S5
<i>Toxicodendron radicans</i>	Eastern Poison Ivy	S4
<i>Trientalis borealis</i>	Northern Starflower	S5
<i>Vaccinium angustifolium</i>	Late Lowbush Blueberry	S5
<i>Viburnum nudum</i>	Possum-Haw Viburnum	S5
<i>Viola macloskeyi</i>	Smooth White Violet	S5
Wetland 19		
<i>Acer rubrum</i>	Red Maple	S5
<i>Amelanchier sp.</i>	Shadbush	N/A
<i>Aronia melanocarpa</i>	Black Chokeberry	S5
<i>Betula papyrifera</i>	Paper Birch	S5
<i>Betula populifolia</i>	Gray Birch	S5
<i>Carex stricta</i>	Tussock Sedge	S5
<i>Chamaedaphne calyculata</i>	Leatherleaf	S5
<i>Cornus canadensis</i>	Dwarf Dogwood	S5
<i>Gaylussacia baccata</i>	Black Huckleberry	S5
<i>Kalmia angustifolia</i>	Sheep-Laurel	S5
<i>Ledum groenlandicum</i>	Common Labrador Tea	S5
<i>Myrica gale</i>	Sweet Bayberry	S5
<i>Nemopanthus mucronata</i>	Mountain Holly	S5
<i>Picea mariana</i>	Black Spruce	S5
<i>Pinus strobus</i>	Eastern White Pine	S5
<i>Rhododendron canadense</i>	Rhodora	S5
<i>Rubus hispidus</i>	Bristly Dewberry	S5
<i>Sarracenia purpurea</i>	Northern Pitcher-Plant	S5
<i>Solidago uliginosa</i>	Bog Goldenrod	S5
<i>Vaccinium macrocarpon</i>	Large Cranberry	S5

Table 1 Vascular Plant Species Found in Wetlands 1 to 26, including ACCDC Ranking		
Binomial	Common Name	ACCDC Provincial Rank
<i>Vaccinium oxycoccos</i>	Small Cranberry	S5
<i>Viburnum nudum</i>	Possum-Haw Viburnum	S5
Wetland 20		
<i>Acer rubrum</i>	Red Maple	S5
<i>Amelanchier bartramiana</i>	Bartram Shadbush	S5
<i>Aronia melanocarpa</i>	Black Chokeberry	S5
<i>Betula populifolia</i>	Gray Birch	S5
<i>Chamaedaphne calyculata</i>	Leatherleaf	S5
<i>Gaylussacia baccata</i>	Black Huckleberry	S5
<i>Kalmia angustifolia</i>	Sheep-Laurel	S5
<i>Ledum groenlandicum</i>	Common Labrador Tea	S5
<i>Myrica pensylvanica</i>	Northern Bayberry	S5
<i>Nemopanthus mucronata</i>	Mountain Holly	S5
<i>Picea mariana</i>	Black Spruce	S5
<i>Pinus strobus</i>	Eastern White Pine	S5
<i>Rhododendron canadense</i>	Rhodora	S5
<i>Sarracenia purpurea</i>	Northern Pitcher-Plant	S5
<i>Solidago uliginosa</i>	Bog Goldenrod	S5
<i>Vaccinium angustifolium</i>	Late Lowbush Blueberry	S5
<i>Viburnum nudum</i>	Possum-Haw Viburnum	S5
Wetland 21		
<i>Acer rubrum</i>	Red Maple	S5
<i>Alnus incana</i>	Speckled Alder	S5
<i>Aster radula</i>	Rough-Leaved Aster	S5
<i>Aster nemoralis</i>	Bog Aster	S5
<i>Betula papyrifera</i>	Paper Birch	S5
<i>Carex folliculata</i>	Long Sedge	S5
<i>Carex trisperma</i>	Three-Seed Sedge	S5
<i>Cornus canadensis</i>	Dwarf Dogwood	S5
<i>Drosera rotundifolia</i>	Roundleaf Sundew	S5
<i>Gaylussacia baccata</i>	Black Huckleberry	S5
<i>Glyceria canadensis</i>	Canada Manna-Grass	S5
<i>Ilex verticillata</i>	Black Holly	S5
<i>Kalmia angustifolia</i>	Sheep-Laurel	S5
<i>Larix laricina</i>	American Larch	S5
<i>Ledum groenlandicum</i>	Common Labrador Tea	S5
<i>Nemopanthus mucronata</i>	Mountain Holly	S5
<i>Osmunda cinnamomea</i>	Cinnamon Fern	S5
<i>Picea mariana</i>	Black Spruce	S5
<i>Rubus hispidus</i>	Bristly Dewberry	S5
<i>Smilacina trifolia</i>	Three-Leaf Solomon's-Plume	S4S5
<i>Thelypteris palustris</i>	Marsh Fern	S5
<i>Viburnum nudum</i>	Possum-Haw Viburnum	S5
<i>Viola macloskeyi</i>	Smooth White Violet	S5
Wetland 22		
<i>Abies balsamea</i>	Balsam Fir	S5
<i>Acer rubrum</i>	Red Maple	S5
<i>Acer spicatum</i>	Mountain Maple	S5
<i>Alnus incana</i>	Speckled Alder	S5
<i>Aralia nudicaulis</i>	Wild Sarsaparilla	S5
<i>Aronia melanocarpa</i>	Black Chokeberry	S5
<i>Aster acuminatus</i>	Whorled Aster	S5
<i>Aster borealis</i>	Boreal American-Aster	S2?
<i>Aster lanceolatus</i>	White Panicked American-Aster	S4S5
<i>Aster lateriflorus</i>	Farewell-Summer	S5
<i>Aster nemoralis</i>	Bog Aster	S5

Table 1 Vascular Plant Species Found in Wetlands 1 to 26, including ACCDC Ranking		
Binomial	Common Name	ACCDC Provincial Rank
<i>Aster novi-belgii</i>	New Belgium American-Aster	S5
<i>Aster radula</i>	Rough-Leaved Aster	S5
<i>Aster umbellatus</i>	Parasol White-Top	S5
<i>Athyrium filix-femina</i>	Lady-Fern	S5
<i>Bartonia paniculata</i>	Twining Bartonia	S4S5
<i>Betula alleghaniensis</i>	Yellow Birch	S5
<i>Betula cordifolia</i>	Heart-Leaved Paper Birch	S5
<i>Betula papyrifera</i>	Paper Birch	S5
<i>Betula populifolia</i>	Gray Birch	S5
<i>Calamagrostis canadensis</i>	Blue-Joint Reedgrass	S5
<i>Carex echinata</i>	Little Prickly Sedge	S5
<i>Carex paupercula</i> var. <i>irrigua</i>	Boreal Bog Sedge	S5
<i>Carex trisperma</i>	Three-Seed Sedge	S5
<i>Chelone glabra</i>	White Turtlehead	S5
<i>Comptonia peregrina</i>	Sweet Fern	S5
<i>Cornus canadensis</i>	Dwarf Dogwood	S5
<i>Corylus cornuta</i>	Beaked Hazelnut	S5
<i>Drosera rotundifolia</i>	Roundleaf Sundew	S5
<i>Dryopteris carthusiana</i>	Spinulose Shield Fern	S5
<i>Dryopteris cristata</i>	Crested Shield-Fern	S5
<i>Epilobium leptophyllum</i>	Linear-leaved Willow-herb	S5
<i>Equisetum sylvaticum</i>	Woodland Horsetail	S5
<i>Eriophorum virginicum</i>	Tawny Cotton-Grass	S5
<i>Eupatorium perfoliatum</i>	Common Boneset	S5
<i>Euthamia graminifolia</i>	Flat-Top Fragrant-Golden-Rod	S5
<i>Fraxinus americana</i>	White Ash	S5
<i>Galium palustre</i>	Marsh Bedstraw	S5
<i>Gaultheria hispidula</i>	Creeping Snowberry	S5
<i>Gaylussacia baccata</i>	Black Huckleberry	S5
<i>Glyceria canadensis</i>	Canada Manna-Grass	S5
<i>Glyceria striata</i>	Fowl Manna-Grass	S5
<i>Ilex verticillata</i>	Black Holly	S5
<i>Iris versicolor</i>	Blueflag	S5
<i>Kalmia angustifolia</i>	Sheep-Laurel	S5
<i>Larix laricina</i>	American Larch	S5
<i>Linnaea borealis</i>	Twinline	S5
<i>Lycopus uniflorus</i>	Northern Bugleweed	S5
<i>Maianthemum canadense</i>	Wild Lily-of-The-Valley	S5
<i>Myrica pensylvanica</i>	Northern Bayberry	S5
<i>Nemopanthus mucronata</i>	Mountain Holly	S5
<i>Onoclea sensibilis</i>	Sensitive Fern	S5
<i>Osmunda cinnamomea</i>	Cinnamon Fern	S5
<i>Osmunda claytoniana</i>	Interrupted Fern	S5
<i>Picea glauca</i>	White Spruce	S5
<i>Picea mariana</i>	Black Spruce	S5
<i>Pinus resinosa</i>	Red Pine	S4S5
<i>Pinus strobus</i>	Eastern White Pine	S5
<i>Platanthera blephariglottis</i>	White-Fringe Orchis	S4
<i>Platanthera clavellata</i>	Small Green Woodland Orchid	S5
<i>Pogonia ophioglossoides</i>	Rose Pogonia	S4
<i>Prenanthes trifoliolata</i>	Three-Leaved Rattlesnake-root	S5
<i>Prunus pensylvanica</i>	Fire Cherry	S5
<i>Quercus rubra</i>	Northern Red Oak	S5
<i>Rhododendron canadense</i>	Rhodora	S5
<i>Rosa nitida</i>	Shining Rose	S4
<i>Rubus hispidus</i>	Bristly Dewberry	S5

Table 1 Vascular Plant Species Found in Wetlands 1 to 26, including ACCDC Ranking		
Binomial	Common Name	ACCDC Provincial Rank
<i>Rubus idaeus</i>	Red Raspberry	S5
<i>Rubus pubescens</i>	Dwarf Red Raspberry	S5
<i>Rubus setosus</i>	Bristly Berry	S4?
<i>Salix bebbiana</i>	Bebb's Willow	S5
<i>Scirpus cyperinus</i>	Black-Girdle Bulrush	S5
<i>Smilacina trifolia</i>	Three-Leaf Solomon's-Plume	S4S5
<i>Sparganium americanum</i>	American Bur-Reed	S5
<i>Spiraea alba</i>	Narrow-Leaved Meadow-Sweet	S5
<i>Spiraea tomentosa</i>	Hardhack Spiraea	S5
<i>Thelypteris noveboracensis</i>	New York Fern	S5
<i>Thelypteris palustris</i>	Marsh Fern	S5
<i>Typha latifolia</i>	Broad-Leaf Cattail	S5
<i>Vaccinium angustifolium</i>	Late Lowbush Blueberry	S5
<i>Vaccinium myrtilloides</i>	Velvetleaf Blueberry	S5
<i>Viburnum opulus</i>	Guelder-rose	S5
<i>Viburnum nudum</i>	Possum-Haw Viburnum	S5
<i>Viola cucullata</i>	Marsh Blue Violet	S5
<i>Viola macloskeyi</i>	Smooth White Violet	S5
Wetland 23		
<i>Acer rubrum</i>	Red Maple	S5
<i>Alnus incana</i>	Speckled Alder	S5
<i>Alnus viridis</i>	Green Alder	S5
<i>Aronia melanocarpa</i>	Black Chokeberry	S5
<i>Aster nemoralis</i>	Bog Aster	S5
<i>Betula populifolia</i>	Gray Birch	S5
<i>Calamagrostis canadensis</i>	Blue-Joint Reedgrass	S5
<i>Chamaedaphne calyculata</i>	Leatherleaf	S5
<i>Gaylussacia baccata</i>	Black Huckleberry	S5
<i>Kalmia angustifolia</i>	Sheep-Laurel	S5
<i>Ledum groenlandicum</i>	Common Labrador Tea	S5
<i>Myrica gale</i>	Sweet Bayberry	S5
<i>Picea mariana</i>	Black Spruce	S5
<i>Rhododendron canadense</i>	Rhodora	S5
<i>Rosa nitida</i>	Shining Rose	S4
<i>Rubus hispidus</i>	a bramble	S?
<i>Rubus setosus</i>	Bristly Berry	S4?
<i>Spiraea alba</i>	Narrow-Leaved Meadow-Sweet	S5
<i>Spiraea tomentosa</i>	Hardhack Spiraea	S5
<i>Viburnum nudum</i>	Possum-Haw Viburnum	S5
Wetland 24		
<i>Abies balsamea</i>	Balsam Fir	S5
<i>Aronia melanocarpa</i>	Black Chokeberry	S5
<i>Betula populifolia</i>	Gray Birch	S5
<i>Calamagrostis canadensis</i>	Blue-Joint Reedgrass	S5
<i>Chamaedaphne calyculata</i>	Leatherleaf	S5
<i>Cladium mariscoides</i>	Twig Rush	S5
<i>Kalmia angustifolia</i>	Sheep-Laurel	S5
<i>Larix laricina</i>	American Larch	S5
<i>Ledum groenlandicum</i>	Common Labrador Tea	S5
<i>Nemopanthus mucronata</i>	Mountain Holly	S5
<i>Picea mariana</i>	Black Spruce	S5
<i>Pinus strobus</i>	Eastern White Pine	S5
<i>Populus tremuloides</i>	Quaking Aspen	S5
<i>Rhododendron canadense</i>	Rhodora	S5
<i>Sarracenia purpurea</i>	Northern Pitcher-Plant	S5
<i>Solidago uliginosa</i>	Bog Goldenrod	S5

Table 1 Vascular Plant Species Found in Wetlands 1 to 26, including ACCDC Ranking		
Binomial	Common Name	ACCDC Provincial Rank
Wetland 25		
<i>Alnus incana</i>	Speckled Alder	S5
<i>Amelanchier bartramiana</i>	Bartram Shadbush	S5
<i>Betula populifolia</i>	Gray Birch	S5
<i>Carex trisperma</i>	Three-Seed Sedge	S5
<i>Chamaedaphne calyculata</i>	Leatherleaf	S5
<i>Cornus canadensis</i>	Dwarf Dogwood	S5
<i>Gaylussacia baccata</i>	Black Huckleberry	S5
<i>Kalmia angustifolia</i>	Sheep-Laurel	S5
<i>Larix laricina</i>	American Larch	S5
<i>Ledum groenlandicum</i>	Common Labrador Tea	S5
<i>Nemopanthus mucronata</i>	Mountain Holly	S5
<i>Picea mariana</i>	Black Spruce	S5
<i>Pinus strobus</i>	Eastern White Pine	S5
<i>Rhododendron canadense</i>	Rhodora	S5
<i>Sarracenia purpurea</i>	Northern Pitcher-Plant	S5
<i>Smilacina trifolia</i>	Three-Leaf Solomon's-Plume	S4S5
<i>Vaccinium angustifolium</i>	Late Lowbush Blueberry	S5
<i>Vaccinium macrocarpon</i>	Large Cranberry	S5
<i>Vaccinium oxycoccos</i>	Small Cranberry	S5
<i>Viburnum nudum</i>	Possum-Haw Viburnum	S5
Wetland 26		
<i>Abies balsamea</i>	Balsam Fir	S5
<i>Acer rubrum</i>	Red Maple	S5
<i>Agrostis hyemalis</i>	Rough Bentgrass	S5
<i>Alnus incana</i>	Speckled Alder	S5
<i>Alnus viridis</i>	Green Alder	S5
<i>Andromeda glaucophylla</i>	Bog Rosemary	S5
<i>Aralia nudicaulis</i>	Wild Sarsaparilla	S5
<i>Aronia melanocarpa</i>	Black Chokeberry	S5
<i>Aster acuminatus</i>	Whorled Aster	S5
<i>Aster nemoralis</i>	Bog Aster	S5
<i>Aster radula</i>	Rough-Leaved Aster	S5
<i>Aster X blakei</i>	White Panicked American-Aster	N/A
<i>Betula alleghaniensis</i>	Yellow Birch	S5
<i>Betula populifolia</i>	Gray Birch	S5
<i>Calamagrostis canadensis</i>	Blue-Joint Reedgrass	S5
<i>Calopogon tuberosus</i>	Tuberous Grass-Pink	S4
<i>Carex folliculata</i>	Long Sedge	S5
<i>Carex lasiocarpa</i>	Slender Sedge	S5
<i>Carex stricta</i>	Tussock Sedge	S5
<i>Carex trisperma</i>	Three-Seed Sedge	S5
<i>Chamaedaphne calyculata</i>	Leatherleaf	S5
<i>Coptis trifolia</i>	Goldthread	S5
<i>Cornus canadensis</i>	Dwarf Dogwood	S5
<i>Drosera rotundifolia</i>	Roundleaf Sundew	S5
<i>Dryopteris cristata</i>	Crested Shield-Fern	S5
<i>Empetrum nigrum</i>	Black Crowberry	S5
<i>Equisetum sylvaticum</i>	Woodland Horsetail	S5
<i>Eriocaulon aquaticum</i>	Seven-Angled Pipewort	S5
<i>Eriophorum virginicum</i>	Tawny Cotton-Grass	S5
<i>Fraxinus americana</i>	White Ash	S5
<i>Gaylussacia baccata</i>	Black Huckleberry	S5
<i>Glyceria canadensis</i>	Canada Manna-Grass	S5
<i>Glyceria grandis</i>	American Mannagrass	S4S5
<i>Glyceria X laxa</i>	Northern Mannagrass	S4?

Table 1 Vascular Plant Species Found in Wetlands 1 to 26, including ACCDC Ranking		
Binomial	Common Name	ACCDC Provincial Rank
<i>Ilex verticillata</i>	Black Holly	S5
<i>Iris versicolor</i>	Blueflag	S5
<i>Kalmia angustifolia</i>	Sheep-Laurel	S5
<i>Kalmia polifolia</i>	Pale Laurel	S5
<i>Larix laricina</i>	American Larch	S5
<i>Ledum groenlandicum</i>	Common Labrador Tea	S5
<i>Lysimachia terrestris</i>	Swamp Loosestrife	S5
<i>Myrica gale</i>	Sweet Bayberry	S5
<i>Nemopanthus mucronata</i>	Mountain Holly	S5
<i>Nuphar variegata</i>	Yellow Pond-Lily	S5
<i>Nymphaea odorata</i>	American Water-Lily	S5
<i>Osmunda cinnamomea</i>	Cinnamon Fern	S5
<i>Osmunda regalis</i>	Royal Fern	S5
<i>Picea mariana</i>	Black Spruce	S5
<i>Pinus strobus</i>	Eastern White Pine	S5
<i>Pontederia cordata</i>	Pickereel Weed	S5
<i>Potamogeton sp.</i>	Pondweed	N/A
<i>Rhododendron canadense</i>	Rhodora	S5
<i>Rhynchospora alba</i>	White Beakrush	S5
<i>Rhynchospora alba</i>	White Beakrush	S5
<i>Rosa nitida</i>	Shining Rose	S4
<i>Rubus hispidus</i>	Bristly Dewberry	S5
<i>Rubus sp.</i>	Blackberry	N/A
<i>Salix discolor</i>	Pussy Willow	S5
<i>Sarracenia purpurea</i>	Northern Pitcher-Plant	S5
<i>Scirpus caespitosus</i>	Tufted Leafless-Bulrush	S5
<i>Scirpus subterminalis</i>	Water Bulrush	S5
<i>Smilacina trifolia</i>	Three-Leaf Solomon's-Plume	S4S5
<i>Solidago uliginosa</i>	Bog Goldenrod	S5
<i>Sparganium angustifolium</i>	Narrow-Leaf Burreed	S4S5
<i>Sparganium emersum</i>	Narrow-Leaf Burreed	S5
<i>Spiraea alba</i>	Narrow-Leaved Meadow-Sweet	S5
<i>Spiraea tomentosa</i>	Hardhack Spiraea	S5
<i>Thelypteris noveboracensis</i>	New York Fern	S5
<i>Thelypteris palustris</i>	Marsh Fern	S5
<i>Triadenum fraseri</i>	Marsh St. John's-Wort	S5
<i>Triadenum virginicum</i>	Marsh St. John's Wort	S4S5
<i>Trientalis borealis</i>	Northern Starflower	S5
<i>Utricularia vulgaris</i>	Greater Bladder-Wort	S5
<i>Vaccinium angustifolium</i>	Late Lowbush Blueberry	S5
<i>Vaccinium macrocarpon</i>	Large Cranberry	S5
<i>Vaccinium oxycoccos</i>	Small Cranberry	S5
<i>Viola macloskeyi</i>	Smooth White Violet	S5
<i>Viola sp.</i>	Violet	N/A

2.0 NORTH AMERICAN WETLAND CONSERVATION COUNCIL WETLAND EVALUATIONS

2.1 Wetland 5

2.1.1 Description (Wetland 5)

Wetland 5 is a 2.2 ha wetland complex composed of coniferous treed basin swamp, tall shrub dominated basin swamp, coniferous treed basin bog, low shrub dominated basin bog, and open water wetland. The coniferous treed basin swamp plant community is characterized by a moderate tree canopy dominated by black spruce (*Picea mariana*), with lesser amounts of red maple (*Acer rubrum*) and white pine (*Pinus strobus*). Small patches of shrubs are scattered throughout, dominated by sheep-laurel (*Kalmia angustifolia*), but including black huckleberry (*Gaylussacia baccata*), small black spruce and possum-haw viburnum (*Viburnum nudum*). Groundcover is mostly sphagnum moss, with three-seed sedge (*Carex trisperma*), broom mosses and cinnamon fern (*Osmunda cinnamomea*).

The tall shrub dominated basin swamp plant community is characterized by a well developed tall shrub canopy composed mainly of a mixture of mountain holly (*Nemopanthus mucronata*) and rhodora (*Rhododendron canadense*), with sheep-laurel, possum-haw viburnum, and scattered red maple. The ground vegetation layer is sparse, consisting of sphagnum moss and some reindeer lichen (*Cladonia rangiferina*). Tree cover consists of some black spruce and scattered white pine.

The basin bog habitat is of two types. The first type is coniferous treed basin bog. The tree canopy consists of black spruce trees with lesser numbers of white pine and larch (*Larix laricina*). Shrub cover is relatively dense, consisting mainly of sheep-laurel and black huckleberry, with some possum-haw viburnum, common labrador tea (*Ledum groenlandicum*), mountain holly, and leatherleaf (*Chamaedaphne calyculata*). The ground vegetation layer is a mixture of sphagnum moss and reindeer lichen (*Cladonia alpestris*), with scattered tussock sedge (*Carex stricta*).

The second basin bog habitat, low shrub dominated basin bog does not contain any trees, and is dominated by a dense carpet of sphagnum moss, punctuated by patches of graminoids the most abundant of which are tawny cotton-grass (*Eriophorum virginicum*) and white beakrush (*Rhynchospora alba*). The shrub layer is patchy and composed mainly of leatherleaf, black huckleberry, sheep-laurel, and northern bayberry (*Myrica pensylvanica*).

Aquatic plants found within the open water wetland habitat included American water-lily (*Nymphaea odorata*), greater bladder-wort (*Utricularia vulgaris*) and yellow pond-lily (*Nuphar variegata*).

A vegetation survey was conducted in the wetland that revealed the presence of 47 species of vascular plant. The wetland is characterized by average plant species richness. None of the species encountered is considered to be rare nationally (COSEWIC 2004) or provincially (ACCDC 2004; NSDNR 2002).

A wildlife survey conducted in the wetland revealed the presence of eight species of birds, two species of mammal and one species of amphibian in the wetland. Bird species recorded in and near the wetland included American Robin, Black-capped Chickadee, Blue Jay, Common Raven, Common Yellowthroat, Hermit Thrush, Palm Warbler and Yellow Warbler. Suitable nesting habitat is present in the wetland for most of these species. None of these species is considered to be rare or sensitive nationally (COSEWIC 2004) or provincially (ACCDC 2004; NSDNR 2002).

Red squirrel (*Tamiasciurus hudsonicus*), and varying hare (*Lepus americanus*) were the only mammal species noted during the survey. None of these species is considered to be rare or sensitive (COSEWIC 2004, NSDNR 2003) and are characteristic of the surrounding terrestrial habitats.

The amphibian species recorded in the wetland was northern spring peeper (*Pseudoacaris crucifer*). The open water wetland provides potential breeding habitat for a variety of amphibian species. All of these wildlife species are common.

The wetland is located at the divide between two watersheds, Rocky Lake to the west, and Lake William to the east. The wetland receives little inflow from surrounding uplands. There is no outflow, therefore the wetland would drain by subsurface flow, and thereby contribute marginally to groundwater recharge. The relatively small size and the lack of upland flow inputs would suggest the wetland has very little influence on the regulation of surface flow in the watersheds.

The wetland appears to have relatively little socio-economic value. There is no evidence to indicate that it is used for recreational, agricultural, cultural, or business purposes. The wetland is not part of any protected area such as a national or provincial park, national wildlife area, federal migratory bird sanctuary, ecological reserve, provincial wildlife management area, wildlife refuge, or game sanctuary. There is no evidence of anthropogenic disturbance of the wetland in the past.

2.1.2 Wetland Values (Wetland 5)

The following table provides a summary of the functional analysis and significance of the wetland values for Wetland 5 in accordance with the requirements of the North American Conservation Council Wetland Evaluation Process.

Wetland Values (Wetland 5)				
	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function (Provide Highlights Only)
LIFE SUPPORT VALUES: <u>Hydrological Values</u>				
Value of the wetland in contributing to surface and groundwater stocks				
* Does the wetland contribute to recharge of regional water supply aquifers?	N	NA	NA	No regional aquifer supply.
* Does the wetland provide flood protection benefits?	N	NA	NA	No flood protection value due to minimal drainage area.

Wetland Values (Wetland 5)				
	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function (Provide Highlights Only)
Does the wetland contribute to usable surface water?	N	NA	NA	No current water treatment value due to lack of upstream development and little drainage area.
Does the wetland provide erosion control?	N	NA	NA	There is currently little flow into and through wetland.
Does the wetland provide flow augmentation to users through a headwater position in the catchment basin?	N	NA	NA	Insignificant due to size of wetland and lack of downstream users.
* Does the wetland reduce tidal impacts?	N	NA	NA	No tidal and influence.
LIFE SUPPORT VALUES: Biogeochemical Values				
Value of the wetland in contributing to surface and groundwater quality				
* Does the wetland receive significant pollution of a type amenable to amelioration by wetlands?	N	NA	NA	
Does the wetland provide storage for agricultural runoff?	N	NA	NA	
* Does the wetland provide for containment of toxics contained in surface run-off or through discharge flow?	N	NA	NA	
Does the wetland provide for sediment flow stabilization?	N	NA	NA	
Does the wetland have high nutrient levels which support significant wildlife populations?	N	NA	NA	
LIFE SUPPORT VALUES: Habitat Values				
Role of the wetland in contributing to the well-being of important plant and animal values				
* Are there any rare, threatened or endangered animal or plant species present?	N	NA	NA	
* Does the wetland contain high quality significant habitats for migratory birds?	N	NA	NA	
Does the wetland provide habitat for sport and/or commercial fish?	N	NA	NA	No fish were reported or are likely present.
Does the wetland provide significant habitat for reptiles and amphibians?	N	NA	NA	Northern spring peepers were recorded in the wetland, and there is some open water habitat.
Does the wetland provide significant habitat for crustaceans?	N	NA	NA	
Does the wetland provide significant habitat for mammals?	N	NA	NA	
* Does the wetland support a significant animal or plant species in unusual abundance?	N	NA	NA	
Does the wetland and its associated vegetation protect natural shorelines?	N	NA	NA	
* Is the wetland ranked as a Class I, II, or III wetland by Canada Land Inventory or other accepted evaluation system?	N	NA	NA	
LIFE SUPPORT VALUES: Ecological Values				
Role of the wetland in stimulating relations of plant and animal communities				
Does the wetland support an extensive ecosystem complex including uplands?	N	NA	NA	

Wetland Values (Wetland 5)				
	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function (Provide Highlights Only)
* Has a regional threshold been reached where the significance of wetland ecosystems for the entire region will be compromised by further degradation?	N	NA	NA	
* Is the wetland considered a classic example of its type?	N	NA	NA	
Are there few remaining natural, unimpacted wetlands of this type in the region?	N	NA	NA	
Does the wetland contain, owe its existence to, or is it a part of or ecologically associated with, a geological feature which is an excellent representation of its type?	N	NA	NA	
Does the wetland form an integral part of an important water drainage system?	N	NA	NA	
* Does the wetland display biological diversity that is of interest?	N	NA	NA	
SOCIAL/CULTURAL VALUES: <u>Aesthetic Values</u>				
Role of the wetland in the quality of the scenic environment				
Is the wetland visible from a provincial/territorial highway, a designated scenic highway/road or a passenger railway?	N	NA	NA	
Does the wetland provide a valuable aesthetic or open space function?	N	NA	NA	
Does the wetland add substantially to the visual diversity of the landscape?	N	NA	NA	
* Is the wetland an important sightseeing locale?	N	NA	NA	
SOCIAL/CULTURAL VALUES: <u>Recreational Values</u>				
Role of the wetland in the quality of the scenic environment				
Does the wetland provide a base for viewing or photographing large numbers of wildlife?	N	NA	NA	
Does the wetland provide opportunities for boating?	N	NA	NA	The open water habitat is very small and remote.
Does the wetland provide winter recreation opportunities?	N	NA	NA	
Does the wetland provide high quality sport hunting or fishing?	N	NA	NA	
SOCIAL/CULTURAL VALUES: <u>Education and Public Awareness Values</u>				
Role of the wetland in stimulating public values and understanding				
Is the wetland used for scientific research?	N	NA	NA	
* Is the wetland used for educational and interpretation purposes?	N	NA	NA	
Does the wetland exist close to a large urban population?	Y	L	L	The wetland is located near Bedford, NS, but access is restricted due to safety concerns.
Does the wetland receive large numbers of visitors?	N	NA	NA	

Wetland Values (Wetland 5)				
	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function (Provide Highlights Only)
SOCIAL/CULTURAL VALUES: <u>Public Status Values</u>				
Role of the wetland in creating a sense of public ownership				
Is the wetland part of the pattern of settlement and rural/urban lifestyle?	N	NA	NA	
Is the wetland a designated site of special public interest?	N	NA	NA	
* Is the wetland a unique national, provincial or regional resource?	N	NA	NA	
Are there policies/programs to support conservation/restoration of the wetland?	Y	P	L	NSEL Wetland Directive, the Federal Policy on Wetland Conservation
Does the wetland provide for easy public access?	N	NA	NA	
Is the wetland public land?	N	NA	NA	
SOCIAL/CULTURAL VALUES: <u>Cultural Attribute Values</u>				
Role of the wetland in the identity of the people in the area				
Does the wetland form part of the historical/cultural heritage of a regional population?	N	NA	NA	
* Does the wetland contain archaeological or paleontological resources?	N	NA	NA	
Is the wetland utilized for cultural events or cultural renewal?	N	NA	NA	
*Does the wetland form part of a native traditional use area?	N	NA	NA	
WETLAND PRODUCTION VALUES: <u>Agricultural Values</u>				
Role of the wetland in contributing to agricultural production				
Does the wetland provide water for livestock?	N	NA	NA	
Does the wetland provide a source of forage?	N	NA	NA	
* Does the wetland provide a source of water for crop irrigation?	N	NA	NA	
Does the wetland serve to reduce topsoil erosion?	N	NA	NA	
Does the wetland serve to increase soil moisture and enhance agricultural crop production?	N	NA	NA	
WETLAND PRODUCTION VALUES: <u>Renewable Resource Values</u>				
Role of the wetland in contributing to the viability of renewable resource harvest				
* Is the wetland used for commercial or subsistence hunting, trapping and fishing?	N	NA	NA	
Does the wetland provide opportunities for non-commercial uses of fish, wildlife, crustaceans and/or water resources?	N	NA	NA	Access to the area is restricted.
Can forest resources of the wetland be harvested?	Y	L	L	Timber harvesting could occur only in conjunction with quarry development.
* Are there other commercial uses of the wetland, such as harvesting opportunities for wild rice, cranberries, or gathering crabs and oysters?	N	NA	NA	

Wetland Values (Wetland 5)				
	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function (Provide Highlights Only)
WETLAND PRODUCTION VALUES: <u>Non-renewable Resource Values</u>				
Role of the wetland in contributing non-renewable resources for consumption				
* Is the wetland used as a commercial source of peat for horticulture or energy?	N	NA	NA	
Does the wetland occur over known mineral or gas and oil deposits?	Y	L	L	The wetlands are found on quartzite deposits that the client would like to quarry.
WETLAND PRODUCTION VALUES: <u>Tourism and Recreational Values</u>				
Role of the wetland in stimulating tourism and recreation economic benefits				
* Does the wetland represent an important local, regional, or provincial tourism or recreation attraction?	N	NA	NA	
Does the wetland contribute to the local, regional, or provincial tourism and recreation economy?	N	NA	NA	
Does the wetland contribute to national and international tourism development?	N	NA	NA	
WETLAND PRODUCTION VALUES: <u>Urban Values</u>				
Role of the wetland in contributing to urban economic values				
* Is the wetland used to provide water for industry?	N	NA	NA	
* Is the wetland used as a means of sewage treatment?	N	NA	NA	
* Is the wetland a direct source of domestic water supply?	N	NA	NA	
Does the wetland enhance residential, commercial or industrial development values?	N	NA	NA	
Does the wetland contribute to urban flood protection and associated land values?	N	NA	NA	
Key				
* = Critical Values	Level of Criterion Significance:		Expected Impact of Project Upon Wetland Values:	
Are Criteria Present?	N = National		H = High	
Y = Yes: confirmed presence	P = Provincial		M = Moderate	
L = Likely: data suggests the presence but the presence is unconfirmed	R = Regional		L = Low	
P = Possibly: location and circumstance suggests presence but no data are available	L = Local		NA = Not Applicable	
N = No: not present	NE = Negligible			
U = Unknown	NA = Not Applicable			

Summary of Wetland Evaluation

The following table presents a summary of the wetland evaluation for Wetland 5.

Summary of Wetland Values Significance and Expected Impact (Wetland 5)												
	Criteria Present				Level of Criterion Significance					Expected Impact		
	Y	L	P	C	N	P	R	L	NE	H	M	L
Life Support Values												
Hydrological	0	0	0	0	0	0	0	0	0	0	0	0
Biogeochemical	0	0	0	0	0	0	0	0	0	0	0	0
Habitat	0	0	0	0	0	0	0	0	0	0	0	0
Ecological	0	0	0	0	0	0	0	0	0	0	0	0
Social/Cultural Values												
Aesthetic	0	0	0	0	0	0	0	0	0	0	0	0
Recreational	0	0	0	0	0	0	0	0	0	0	0	0
Education and Public Awareness	1	0	0	0	0	0	0	1	0	0	0	1
Public Status	1	0	0	0	0	1	0	0	0	0	0	1
Cultural Attribute	0	0	0	0	0	0	0	0	0	0	0	0
Production Values												
Agricultural	0	0	0	0	0	0	0	0	0	0	0	0
Renewable Resource	1	0	0	0	0	0	0	1	0	0	0	1
Non-renewable Resource	1	0	0	0	0	0	0	1	0	0	0	1
Tourism and Recreational	0	0	0	0	0	0	0	0	0	0	0	0
Urban	0	0	0	0	0	0	0	0	0	0	0	0
Total Occurrences	4	0	0	0	0	1	0	3	0	0	0	4
Key												
Are Criteria Present?				Level of Criterion Significance:					Expected Impact of Project Upon Economy:			
Y = Yes: confirmed presence				N = National					H = High			
L = Likely: data suggests the presence but the presence is unconfirmed				P = Provincial					M = Moderate			
P = Possibly: location and circumstance suggests presence but no data are available				R = Regional					L = Low			
C = Critical value: value whose product, service or function is very important to society or where an important threshold may be exceeded, resulting in loss of the function and value.				L = Local								
				NE = Negligible								

Trigger Factors: a combination of factors may suggest wetland protection, project acceptance and/or mitigation of project if 3 or more critical criteria are marked "yes", criteria are present and/or over 50% of criteria have national/provincial/regional significance and/or over one third of expected project impact is high then, the evaluator should recognize that the wetland has major significance and/or could be significantly affected by the proposed project.

2.1.4 Summary of Critical Values (Wetland 5)

In the wetland evaluation process, some functions are considered more important than others and are identified as critical values. Critical value notation indicates a wetland value whose product, service or function is very important to society or where an important threshold or function may be exceeded, resulting in the loss of the function and value (Bond et al. 1992). The wetland evaluation did not identify any critical values for the wetland. Overall, the wetland has relatively low value.

2.1.5 Recommended Action (Wetland 5)

The Project should proceed as planned, with the necessary habitat compensation suitable for wetlands of relatively low value.

2.2 Wetland 11

2.2.1 Description (Wetland 11)

Wetland 11 is a 4.6 ha wetland complex composed of low shrub dominated basin bog, floating bog, open water wetland, mixedwood treed stream swamp, and deciduous treed stream swamp. It is associated with the headwaters of Toddy Brook (Stream B), which flows to the northeast to Lake William.

The bog habitat is of two types. The first type is low shrub dominated basin bog. It is characterized by a well developed low shrub canopy composed of (in decreasing abundance) leatherleaf, black chokeberry (*Aronia melanocarpa*), rhodora, sweet bayberry (*Myrica gale*), black huckleberry, and sheep-laurel. The ground vegetation layer contains sphagnum moss, some northern pitcher-plant (*Sarracenia purpurea*) and tussock sedge. Tree cover is sparse, with some larch, scattered red maple and white pine. The floating bog is dominated by a dense carpet of sphagnum moss, with graminoids including white beakrush and coast sedge (*Carex exilis*). It has no tree cover, and a sparse shrub cover of leatherleaf and scattered sweet bayberry.

The most abundant aquatic plants found within the small open water wetland habitat include yellow pond-lily and greater bladder-wort.

There are two types of treed stream swamp in this wetland. The mixedwood treed stream swamp plant community is characterized by a moderately dense tree canopy dominated by red maple and larch. The shrub layer is dominated by black holly, with some black huckleberry and possum-haw viburnum. Groundcover is mostly sphagnum moss, with tussock sedge and scattered bog aster (*Aster nemoralis*). Deciduous treed stream swamp has a denser tree canopy containing mostly red maple with some yellow birch (*Betula alleghaniensis*) and white ash (*Fraxinus americana*). The sparse shrub layer contains speckled alder, red maple saplings, and possum-haw viburnum. The ground vegetation is dominated by sphagnum moss, with cinnamon fern, regal fern (*Osmunda regalis*), tussock sedge, and bristly dewberry.

A vegetation survey was conducted in the wetland that revealed the presence of 73 species of vascular plant. The wetland is characterized by average plant species richness. None of the species encountered is considered to be rare nationally (COSEWIC 2004) or provincially (ACCDC 2004; NSDNR 2002).

A wildlife survey conducted in the wetland revealed the presence of eleven species of birds, three species of mammal and three species of amphibian in the wetland. Bird species recorded in the wetland included Alder Flycatcher, American Robin, Black-and-white Warbler, Black-capped Chickadee, Black-throated Green Warbler, Canada Warbler, Common Yellowthroat, Hermit Thrush, Magnolia Warbler, Ovenbird and White-throated Sparrow. Suitable nesting habitat is present in the wetland for all of these species. None of these species is considered to be rare or sensitive nationally (COSEWIC 2004) or provincially (ACCDC 2004; NSDNR 2002). The Canadian Wildlife Service however has identified a

number of “Target” species that include species currently common (e.g. ranked S4 to S5 by ACCDC) and not currently assessed as sensitive or at risk by NSDNR (“Green”) but whose population trends indicate a decline in the populations. Canada Warbler has been listed as a species of concern by Bird Studies Canada. Although this species is still relatively common in Nova Scotia, it appears to be undergoing a non-cyclic decline in abundance.

Meadow vole (*Microtus pensylvanicus*), varying hare and white-tailed deer (*Odocoileus virginianus*) were mammal species noted during the survey. None of these species is considered to be rare or sensitive (COSEWIC 2004, NSDNR 2003) and are characteristic of the surrounding terrestrial habitats.

Amphibian species recorded in the wetland included green frog (*Rana clamitans melanota*), pickerel frog (*Rana palustris*) and yellow-spotted salamander (*Ambystoma maculatum*). All of these species are common. These were associated with the open water wetland which provides breeding habitat for amphibians.

Wetland 11 is located at the base of a long slope and is the headwaters for Toddy Brook. This would suggest that it is a groundwater discharge site rather than a groundwater recharge site.

Wetland 11 is the largest of the wetlands evaluated and receives surface water and groundwater inputs from upland areas. However, a hydrological investigation of the study area (Hydro-Com Technologies 2005 (letter report)) indicates the wetland has minimal effects on local hydrology, as the wetland contains minimal storage and does little to moderate high flows.

Approximately 76% of its drainage area is located within the proposed quarry area and will be redirected (west) as a result of quarry development.

The wetland appears to have relatively little socio-economic value. There is no evidence to indicate that it is used for recreational, agricultural, cultural, or business purposes. The wetland is not part of any protected area such as a national or provincial park, national wildlife area, federal migratory bird sanctuary, ecological reserve, provincial wildlife management area, wildlife refuge, or game sanctuary. There is no evidence of anthropogenic disturbance of the wetland in the past.

2.2.2 Wetland Values (Wetland 11)

The following table provides a summary of the functional analysis and significance of the wetland values for Wetland 11 in accordance with the requirements of the North American Conservation Council Wetland Evaluation Process.

Wetland Values (Wetland 11)				
	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function (Provide Highlights Only)
LIFE SUPPORT VALUES: Hydrological Values				
Value of the wetland in contributing to surface and groundwater stocks				
* Does the wetland contribute to recharge of regional water supply aquifers?	N	NA	NA	No regional aquifer water supply.
* Does the wetland provide flood protection benefits?	P	NE	H	Negligible flood protection benefits due to lack of storage capacity of wetland.
Does the wetland contribute to usable surface water?	P	NE	H	Negligible benefits for current surface water usage due to lack of upstream development and of downstream users.
Does the wetland provide erosion control?	N	NA	NA	There is currently little flow into and through wetland.
Does the wetland provide flow augmentation to users through a headwater position in the catchment basin?	P	NE	H	Negligible flow augmentation benefits due to small size of wetland and lack of downstream users.
* Does the wetland reduce tidal impacts?	N	NA	NA	Not tidal influence.
LIFE SUPPORT VALUES: Biogeochemical Values				
Value of the wetland in contributing to surface and groundwater quality				
* Does the wetland receive significant pollution of a type amenable to amelioration by wetlands?	N	NA	NA	
Does the wetland provide storage for agricultural runoff?	N	NA	NA	
* Does the wetland provide for containment of toxics contained in surface run-off or through discharge flow?	N	NA	NA	
Does the wetland provide for sediment flow stabilization?	N	NA	NA	
Does the wetland have high nutrient levels which support significant wildlife populations?	N	NA	NA	
LIFE SUPPORT VALUES: Habitat Values				
Role of the wetland in contributing to the well-being of important plant and animal values				
* Are there any rare, threatened or endangered animal or plant species present?	N	NA	NA	Canada Warbler is not a listed species, however there is evidence of a noncyclical decline in population. Habitat is not likely limiting in the region.
* Does the wetland contain high quality significant habitats for migratory birds?	N	NA	NA	
Does the wetland provide habitat for sport and/or commercial fish?	N	NA	NA	No fish were reported or are likely present.
Does the wetland provide significant habitat for reptiles and amphibians?	N	NA	NA	Three species of amphibian were recorded in the wetland, and there is open water habitat. The wetland provides good amphibian habitat but not significant habitat.
Does the wetland provide significant habitat for crustaceans?	N	NA	NA	

Wetland Values (Wetland 11)				
	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function (Provide Highlights Only)
Does the wetland provide significant habitat for mammals?	N	NA	NA	
* Does the wetland support a significant animal or plant species in unusual abundance?	N	NA	NA	
Does the wetland and its associated vegetation protect natural shorelines?	N	NA	NA	
* Is the wetland ranked as a Class I, II, or III wetland by Canada Land Inventory or other accepted evaluation system?	N	NA	NA	
LIFE SUPPORT VALUES: Ecological Values				
Role of the wetland in stimulating relations of plant and animal communities				
Does the wetland support an extensive ecosystem complex including uplands?	N	NA	NA	
* Has a regional threshold been reached where the significance of wetland ecosystems for the entire region will be compromised by further degradation?	N	NA	NA	
* Is the wetland considered a classic example of its type?	N	NA	NA	
Are there few remaining natural, unimpacted wetlands of this type in the region?	N	NA	NA	
Does the wetland contain, owe its existence to, or is it a part of or ecologically associated with, a geological feature which is an excellent representation of its type?	N	NA	NA	
Does the wetland form an integral part of an important water drainage system?	N	NA	NA	
* Does the wetland display biological diversity that is of interest?	N	NA	NA	
SOCIAL/CULTURAL VALUES: Aesthetic Values				
Role of the wetland in the quality of the scenic environment				
Is the wetland visible from a provincial/territorial highway, a designated scenic highway/road or a passenger railway?	N	NA	NA	
Does the wetland provide a valuable aesthetic or open space function?	N	NA	NA	
Does the wetland add substantially to the visual diversity of the landscape?	N	NA	NA	
* Is the wetland an important sightseeing locale?	N	NA	NA	
SOCIAL/CULTURAL VALUES: Recreational Values				
Role of the wetland in the quality of the scenic environment				
Does the wetland provide a base for viewing or photographing large numbers of wildlife?	N	NA	NA	
Does the wetland provide opportunities for boating?	N	NA	NA	The open water habitat is very small and remote.
Does the wetland provide winter recreation opportunities?	N	NA	NA	
Does the wetland provide high quality sport hunting or fishing?	N	NA	NA	

Wetland Values (Wetland 11)				
	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function (Provide Highlights Only)
<u>SOCIAL/CULTURAL VALUES: Education and Public Awareness Values</u>				
Role of the wetland in stimulating public values and understanding				
Is the wetland used for scientific research?	N	NA	NA	
* Is the wetland used for educational and interpretation purposes?	N	NA	NA	
Does the wetland exist close to a large urban population?	Y	NE	L	The wetland is located near Bedford, NS, but access is poor.
Does the wetland receive large numbers of visitors?	N	NA	NA	
<u>SOCIAL/CULTURAL VALUES: Public Status Values</u>				
Role of the wetland in creating a sense of public ownership				
Is the wetland part of the pattern of settlement and rural/urban lifestyle?	N	NA	NA	
Is the wetland a designated site of special public interest?	N	NA	NA	
* Is the wetland a unique national, provincial or regional resource?	N	NA	NA	
Are there policies/programs to support conservation/restoration of the wetland?	Y	P	L	NSEL Wetland Directive, the Federal Policy on Wetland Conservation
Does the wetland provide for easy public access?	N	NA	NA	
Is the wetland public land?	N	NA	NA	
<u>SOCIAL/CULTURAL VALUES: Cultural Attribute Values</u>				
Role of the wetland in the identity of the people in the area				
Does the wetland form part of the historical/cultural heritage of a regional population?	N	NA	NA	
* Does the wetland contain archaeological or paleontological resources?	N	NA	NA	
Is the wetland utilized for cultural events or cultural renewal?	N	NA	NA	
* Does the wetland form part of a native traditional use area?	N	NA	NA	
<u>WETLAND PRODUCTION VALUES: Agricultural Values</u>				
Role of the wetland in contributing to agricultural production				
Does the wetland provide water for livestock?	N	NA	NA	
Does the wetland provide a source of forage?	N	NA	NA	
* Does the wetland provide a source of water for crop irrigation?	N	NA	NA	
Does the wetland serve to reduce topsoil erosion?	N	NA	NA	
Does the wetland serve to increase soil moisture and enhance agricultural crop production?	N	NA	NA	
<u>WETLAND PRODUCTION VALUES: Renewable Resource Values</u>				
Role of the wetland in contributing to the viability of renewable resource harvest				
* Is the wetland used for commercial or subsistence hunting, trapping and fishing?	N	NA	NA	

Wetland Values (Wetland 11)				
	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function (Provide Highlights Only)
Does the wetland provide opportunities for non-commercial uses of fish, wildlife, crustaceans and/or water resources?	P	NE	L	The wetland may provide opportunities for sport hunting of varying hare and white-tailed deer.
Can forest resources of the wetland be harvested?	Y	NE	L	The small amount of forest would not make commercial harvest viable, without harvesting the surrounding landscape. Harvesting of resources would occur in advance of quarrying activities.
* Are there other commercial uses of the wetland, such as harvesting opportunities for wild rice, cranberries, or gathering crabs and oysters?	N	NA	NA	
WETLAND PRODUCTION VALUES: <u>Non-renewable Resource Values</u>				
Role of the wetland in contributing non-renewable resources for consumption				
* Is the wetland used as a commercial source of peat for horticulture or energy?	N	NA	NA	There is some minor peat resources, however it would not be economical for commercial development,
Does the wetland occur over known mineral or gas and oil deposits?	Y	L	L	The wetlands are found on quartzite deposits that the client would like to quarry.
WETLAND PRODUCTION VALUES: <u>Tourism and Recreational Values</u>				
Role of the wetland in stimulating tourism and recreation economic benefits				
* Does the wetland represent an important local, regional, or provincial tourism or recreation attraction?	N	NA	NA	
Does the wetland contribute to the local, regional, or provincial tourism and recreation economy?	N	NA	NA	
Does the wetland contribute to national and international tourism development?	N	NA	NA	
WETLAND PRODUCTION VALUES: <u>Urban Values</u>				
Role of the wetland in contributing to urban economic values				
* Is the wetland used to provide water for industry?	N	NA	NA	
* Is the wetland used as a means of sewage treatment?	N	NA	NA	
* Is the wetland a direct source of domestic water supply?	N	NA	NA	
Does the wetland enhance residential, commercial or industrial development values?	N	NA	NA	

Wetland Values (Wetland 11)				
	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function (Provide Highlights Only)
Does the wetland contribute to urban flood protection and associated land values?	N	NA	NA	
Key				
* = Critical Values	Level of Criterion Significance:		Expected Impact of Project Upon Wetland Values:	
Are Criteria Present?	N = National		H = High	
Y = Yes: confirmed presence	P = Provincial		M = Moderate	
L = Likely: data suggests the presence but the presence is unconfirmed	R = Regional		L = Low	
P = Possibly: location and circumstance suggests presence but no data are available	L = Local		NA = Not Applicable	
N = No: not present	NE = Negligible			
U = Unknown	NA = Not Applicable			

2.2.3 Summary of Wetland Evaluation

The following table presents a summary of the wetland evaluation for Wetland 11.

Summary of Wetland Values Significance and Expected Impact (Wetland 11)												
	Criteria Present				Level of Criterion Significance					Expected Impact		
	Y	L	P	C	N	P	R	L	NE	H	M	L
Life Support Values												
Hydrological	0	0	3	0	0	0	0	0	3	3	0	0
Biogeochemical	0	0	0	0	0	0	0	0	0	0	0	0
Habitat	0	0	0	0	0	0	0	0	0	0	0	0
Ecological	0	0	0	0	0	0	0	0	0	0	0	0
Social/Cultural Values												
Aesthetic	0	0	0	0	0	0	0	0	0	0	0	0
Recreational	0	0	0	0	0	0	0	0	0	0	0	0
Education and Public Awareness	1	0	0	0	0	0	0	0	1	0	0	1
Public Status	1	0	0	0	0	1	0	0	0	0	0	1
Cultural Attribute	0	0	0	0	0	0	0	0	0	0	0	0
Production Values												
Agricultural	0	0	0	0	0	0	0	0	0	0	0	0
Renewable Resource	1	0	1	0	0	0	0	0	2	0	0	2
Non-renewable Resource	1	0	0	0	0	0	0	1	0	0	0	1
Tourism and Recreational	0	0	0	0	0	0	0	0	0	0	0	0
Urban	0	0	0	0	0	0	0	0	0	0	0	0
Total Occurrences	4	0	4	0	0	1	0	1	6	3	0	5
Key												
Are Criteria Present?	Level of Criterion Significance:				Expected Impact of Project Upon Economy:							
Y = Yes: confirmed presence	N = National				H = High							
L = Likely: data suggests the presence but the presence is unconfirmed	P = Provincial				M = Moderate							
P = Possibly: location and circumstance suggests presence but no data are available	R = Regional				L = Low							
C = Critical value: value whose product, service or function is very important to society or where an important threshold may be exceeded, resulting in loss of the function and value.	L = Local											
	NE = Negligible											

Trigger Factors: a combination of factors may suggest wetland protection, project acceptance and/or mitigation of project if 3 or more critical criteria are marked "yes", criteria are present **and/or** over 50% of criteria have national/provincial/regional significance **and/or** over one third of expected project impact is high **then**, the evaluator should recognize that the wetland has major significance **and/or** could be significantly affected by the proposed project.

2.2.4 Summary of Critical Values (Wetland 11)

In the wetland evaluation process, some functions are considered more important than others and are identified as critical values. Critical value notation indicates a wetland value whose product, service or function is very important to society or where an important threshold or function may be exceeded, resulting in the loss of the function and value (Bond *et al.* 1992). No critical values were identified for the wetland.

The wetland provides habitat for a bird species that is still relatively common in the region and in the study area, however this species has undergone noncyclic population declines. Canada Warbler, however, is not restricted to habitat provided by the wetland.

2.2.5 Recommended Action (Wetland 11)

The Project should proceed as proposed. Avoidance of the wetland footprint with a 30 m buffer maintained between the quarry and the wetland may be sufficient to minimize impacts.

2.3 Wetland 26

2.3.1 Description (Wetland 26)

Wetland 26 is a 3.9 ha wetland complex composed of mixed wood treed stream swamp, deciduous treed stream swamp, low shrub dominated stream swamp, low shrub dominated shore bog, and open water wetland.

There are two types of treed stream swamp in the wetland. The mixedwood treed stream swamp plant community is characterized by a relatively well developed tree canopy dominated by black spruce and red maple, with yellow birch, balsam fir (*Abies balsamea*) and some white ash. The shrub layer is dominated by black holly, with young black spruce, speckled alder and green alder (*Alnus viridis*), possum-haw viburnum and sheep-laurel. Groundcover is mostly sphagnum moss, with a high cover of cinnamon fern, and some three-seed sedge, regal fern, marsh fern (*Thelypteris palustris*) and Goldthread (*Coptis trifolia*).

Deciduous treed stream swamp is a minor wetland element, located near the outflow of the wetland. The tree canopy is red maple. The shrub layer is relatively sparse, containing small bristleberry (*Rubus setosus*), hardhack spiraea (*Spiraea tomentosa*), narrow-leaved meadow-sweet (*Spiraea alba*), and scattered sweet bayberry. The ground vegetation is dominated by blue-joint reedgrass (*Calamagrostis canadensis*), with bristly dewberry (*Rubus hispidus*), a hybrid white paniced American-aster (*Aster X blakei*), and rough-leaf goldenrod (*Solidago rugosa*).

Low shrub stream swamp is a transitional habitat near the stream with a few scattered tree-sized red maple, and a shrub layer consisting of sweet bayberry, narrow-leaved meadow-sweet, red maple, rhodora, speckled alder, leatherleaf, and sheep-laurel. Sphagnum moss dominates the groundcover, but also has tussock sedge and bristly dewberry as co-dominants. Scattered bog goldenrod (*Solidago uliginosa*) is also present.

Low shrub dominated shore bog is present in the central portion of the wetland. The bog habitat contains scattered tree-sized larch and black spruce. The shrub layer is dense and diverse, with black huckleberry, leatherleaf, black chokeberry, bog rosemary (*Andromeda glaucophylla*), rhodora, common labrador tea, sheep-laurel, pale laurel (*Kalmia polifolia*), and sweet bayberry, as well as shrub-sized larch, black spruce, and red maple. The ground vegetation consists of a carpet of sphagnum moss, with patches of tufted leafless-bulrush (*Scirpus caespitosus*), northern pitcher-plant (*Sarracenia purpurea*), and small cranberry (*Vaccinium oxycoccos*).

There are several ponds of varying sizes all connected to the stream and considered part of the wetland. The edge of the open water wetland habitat is crowded with various wetland shrubs, the most abundant of which is sweet bayberry. Aquatic vegetation is variable and consists primarily of yellow pond-lily, greater bladder-wort and burreed (*Sparganium* spp.). The large pond also has some pickerel weed (*Pontederia cordata*), water bulrush (*Scirpus subterminalis*), seven-angled pipewort (*Eriocaulon aquaticum*), American water-lily, and pondweed (*Potamogeton* sp.). The cover of aquatic vegetation in the large pond was low, however the smaller ponds have up to 40% vegetation cover.

A vegetation survey was conducted in the wetland that revealed the presence of 78 species of vascular plant. The wetland is characterized by moderate plant species richness. None of the species encountered is considered to be rare nationally (COSEWIC 2004) or provincially (ACCDC 2004; NSDNR 2002).

A wildlife survey conducted in the wetland revealed the presence of three species of birds, two species of mammal and two species of amphibian. Bird species recorded during the fall wetland survey included Black-capped Chickadee, Swamp Sparrow and American Robin. Suitable nesting habitat is present in the wetland for these species. It is likely other species that frequent stream-side and open water habitats would be present. Other bird species recorded in the vicinity may also be found in or near this wetland, including Common Yellowthroat, Black-throated Green Warbler, Black-and-white Warbler, Dark-eyed Junco, White-throated Sparrow, Canada Warbler, Alder Flycatcher, and Palm Warbler. None of these species is considered to be rare or sensitive nationally (COSEWIC 2004) or provincially (ACCDC 2004; NSDNR 2002), however, as previously noted, Canada Warbler is a species with a noncyclic population decline that has been identified by the Canadian Wildlife Service as a "Target" species.

Meadow vole and white-tailed deer were mammal species noted during the survey. None of these species is considered to be rare or sensitive (COSEWIC 2004, NSDNR 2004a) and are characteristic of the surrounding terrestrial habitats.

Amphibian species recorded in the wetland included green frog and pickerel frog, and the ponds likely contain bull frog, though none were observed. These are common species. Based on the habitat and the proximity of other populations. The wetland contains suitable breeding habitat for four-toed salamander, an uncommon species in Nova Scotia.

The wetland occupies a rocky basin, edged by steep slopes that gradually falls away towards the northeast, where the stream flows out of the wetland and down a rocky slope. A second wetland is located upstream of Wetland 26. The two wetlands are separated by a narrow band of upland habitat. The wetland's water source is supplied by both surface water and groundwater. The southwestern end gives rise to a tributary that flows through the wetland and through several ponds of varying sizes, joining Marshall Brook, which flows to the northeast to Lake William. The potential reduction in annual runoff volume of the tributary to Marshall Brook associated with quarrying activity is estimated at 12%. Approximately 58% of its drainage area is located within the proposed quarry area and will be redirected as the quarry develops. The wetland does not contain a substantial storage area and likely does little to moderate high flows in the tributary to Marshall Brook.

The wetland appears to have relatively little socio-economic value. There is no evidence to indicate that it is used for recreational, agricultural, cultural, or business purposes. The wetland is not part of any protected area such as a national or provincial park, national wildlife area, federal migratory bird sanctuary, ecological reserve, provincial wildlife management area, wildlife refuge, or game sanctuary. There is no evidence of anthropogenic disturbance of the wetland in the past. There may be some potential for hunting, as white-tailed deer were noted to use the wetland, and berry picking is possible (e.g. blueberry and cranberry), however, access is poor.

2.3.2 Wetland Values (Wetland 26)

The following table provides a summary of the functional analysis and significance of the wetland values for Wetland 26 in accordance with the requirements of the North American Conservation Council Wetland Evaluation Process.

Wetland Values (Wetland 26)				
	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function (Provide Highlights Only)
LIFE SUPPORT VALUES: <u>Hydrological Values</u>				
Value of the wetland in contributing to surface and groundwater stocks				
* Does the wetland contribute to recharge of regional water supply aquifers?	N	NA	NA	No regional aquifer water supply.
* Does the wetland provide flood protection benefits?	P	L	H	Minimal due to location of wetland in upper section of stream.
Does the wetland contribute to usable surface water?	P	NE	H	Negligible benefits for current surface water usage due to lack of upstream development and downstream users.

Wetland Values (Wetland 26)				
	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function (Provide Highlights Only)
Does the wetland provide erosion control?	N	NA	NA	There is currently flow into and through the wetland.
Does the wetland provide flow augmentation to users through a headwater position in the catchment basin?	P	NE	H	Negligible due to size of wetland and lack of downstream users.
* Does the wetland reduce tidal impacts?	N	NA	NA	No tidal influence.
LIFE SUPPORT VALUES: Biogeochemical Values				
Value of the wetland in contributing to surface and groundwater quality				
* Does the wetland receive significant pollution of a type amenable to amelioration by wetlands?	N	NA	NA	
Does the wetland provide storage for agricultural runoff?	N	NA	NA	
* Does the wetland provide for containment of toxics contained in surface run-off or through discharge flow?	N	NA	NA	
Does the wetland provide for sediment flow stabilization?	N	NA	NA	
Does the wetland have high nutrient levels which support significant wildlife populations?	N	NA	NA	
LIFE SUPPORT VALUES: Habitat Values				
Role of the wetland in contributing to the well-being of important plant and animal values				
* Are there any rare, threatened or endangered animal or plant species present?	P	L	L	Good potential for four-toed salamander. This species is "Yellow" listed by NSDNR but is more abundant and widespread than previously thought.. Canada Warbler (not a listed species, however has undergone non-cyclic population declines) not recorded, but may use a portion of the habitat.
* Does the wetland contain high quality significant habitats for migratory birds?	N	NA	NA	
Does the wetland provide habitat for sport and/or commercial fish?	N	NA	NA	
Does the wetland provide significant habitat for reptiles and amphibians?	N	NA	NA	Several amphibians were noted or there is suitable habitat for others, including four-toed salamander. The habitat is good for amphibians but is not significant.
Does the wetland provide significant habitat for crustaceans?	N	NA	NA	
Does the wetland provide significant habitat for mammals?	N	NA	NA	
* Does the wetland support a significant animal or plant species in unusual abundance?	N	NA	NA	
Does the wetland and its associated vegetation protect natural shorelines?	N	NA	NA	

Wetland Values (Wetland 26)				
	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function (Provide Highlights Only)
* Is the wetland ranked as a Class I, II, or III wetland by Canada Land Inventory or other accepted evaluation system?	N	NA	NA	
LIFE SUPPORT VALUES: <u>Ecological Values</u>				
Role of the wetland in stimulating relations of plant and animal communities				
Does the wetland support an extensive ecosystem complex including uplands?	N	NA	NA	
* Has a regional threshold been reached where the significance of wetland ecosystems for the entire region will be compromised by further degradation?	N	NA	NA	
* Is the wetland considered a classic example of its type?	N	NA	NA	
Are there few remaining natural, unimpacted wetlands of this type in the region?	N	NA	NA	
Does the wetland contain, owe its existence to, or is it a part of or ecologically associated with, a geological feature which is an excellent representation of its type?	N	NA	NA	
Does the wetland form an integral part of an important water drainage system?	N	NA	NA	
* Does the wetland display biological diversity that is of interest?	N	NA	NA	
SOCIAL/CULTURAL VALUES: <u>Aesthetic Values</u>				
Role of the wetland in the quality of the scenic environment				
Is the wetland visible from a provincial/territorial highway, a designated scenic highway/road or a passenger railway?	N	NA	NA	
Does the wetland provide a valuable aesthetic or open space function?	N	NA	NA	
Does the wetland add substantially to the visual diversity of the landscape?	N	NA	NA	
* Is the wetland an important sightseeing locale?	N	NA	NA	
SOCIAL/CULTURAL VALUES: <u>Recreational Values</u>				
Role of the wetland in the quality of the scenic environment				
Does the wetland provide a base for viewing or photographing large numbers of wildlife?	N	NA	NA	
Does the wetland provide opportunities for boating?	N	NA	NA	The open water habitat is relatively small and remote.
Does the wetland provide winter recreation opportunities?	N	NA	NA	
Does the wetland provide high quality sport hunting or fishing?	N	NA	NA	
SOCIAL/CULTURAL VALUES: <u>Education and Public Awareness Values</u>				
Role of the wetland in stimulating public values and understanding				
Is the wetland used for scientific research?	N	NA	NA	
* Is the wetland used for educational and interpretation purposes?	N	NA	NA	

Wetland Values (Wetland 26)				
	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function (Provide Highlights Only)
Does the wetland exist close to a large urban population?	Y	NE	L	The wetland is located near Bedford, NS, but access is poor.
Does the wetland receive large numbers of visitors?	N	NA	NA	
SOCIAL/CULTURAL VALUES: Public Status Values				
Role of the wetland in creating a sense of public ownership				
Is the wetland part of the pattern of settlement and rural/urban lifestyle?	N	NA	NA	
Is the wetland a designated site of special public interest?	N	NA	NA	
* Is the wetland a unique national, provincial or regional resource?	N	NA	NA	
Are there policies/programs to support conservation/restoration of the wetland?	Y	P	L	NSEL Wetland Directive, the Federal Policy on Wetland Conservation
Does the wetland provide for easy public access?	N	NA	NA	
Is the wetland public land?	N	NA	NA	
SOCIAL/CULTURAL VALUES: Cultural Attribute Values				
Role of the wetland in the identity of the people in the area				
Does the wetland form part of the historical/cultural heritage of a regional population?	N	NA	NA	
* Does the wetland contain archaeological or paleontological resources?	N	NA	NA	
Is the wetland utilized for cultural events or cultural renewal?	N	NA	NA	
*Does the wetland form part of a native traditional use area?	N	NA	NA	
WETLAND PRODUCTION VALUES: Agricultural Values				
Role of the wetland in contributing to agricultural production				
Does the wetland provide water for livestock?	N	NA	NA	
Does the wetland provide a source of forage?	N	NA	NA	
* Does the wetland provide a source of water for crop irrigation?	N	NA	NA	
Does the wetland serve to reduce topsoil erosion?	N	NA	NA	
Does the wetland serve to increase soil moisture and enhance agricultural crop production?	N	NA	NA	
WETLAND PRODUCTION VALUES: Renewable Resource Values				
Role of the wetland in contributing to the viability of renewable resource harvest				
* Is the wetland used for commercial or subsistence hunting, trapping and fishing?	N	NA	NA	
Does the wetland provide opportunities for non-commercial uses of fish, wildlife, crustaceans and/or water resources?	P	L	L	The wetland may provide opportunities for sport hunting of white-tailed deer. Berry picking possible, but not likely.

Wetland Values (Wetland 26)				
	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function (Provide Highlights Only)
Can forest resources of the wetland be harvested?	Y	L	L	Some mature forest present, but relatively small area. Surrounding landscape has burned in the past 30 years.
* Are there other commercial uses of the wetland, such as harvesting opportunities for wild rice, cranberries, or gathering crabs and oysters?	N	NA	NA	
WETLAND PRODUCTION VALUES: Non-renewable Resource Values				
Role of the wetland in contributing non-renewable resources for consumption				
* Is the wetland used as a commercial source of peat for horticulture or energy?	N	NA	NA	There has some minor peat resources, however it would not be economical for commercial development.
Does the wetland occur over known mineral or gas and oil deposits?	Y	L	L	The wetlands are found on quartzite deposits that the client would like to quarry in the adjacent land. The wetland is outside the proposed quarry area.
WETLAND PRODUCTION VALUES: Tourism and Recreational Values				
Role of the wetland in stimulating tourism and recreation economic benefits				
* Does the wetland represent an important local, regional, or provincial tourism or recreation attraction?	N	NA	NA	
Does the wetland contribute to the local, regional, or provincial tourism and recreation economy?	N	NA	NA	
Does the wetland contribute to national and international tourism development?	N	NA	NA	
WETLAND PRODUCTION VALUES: Urban Values				
Role of the wetland in contributing to urban economic values				
* Is the wetland used to provide water for industry?	N	NA	NA	
* Is the wetland used as a means of sewage treatment?	N	NA	NA	
* Is the wetland a direct source of domestic water supply?	N	NA	NA	
Does the wetland enhance residential, commercial or industrial development values?	N	NA	NA	
Does the wetland contribute to urban flood protection and associated land values?	N	NA	NA	
Key				
* = Critical Values	Level of Criterion Significance:		Expected Impact of Project Upon Wetland Values:	
Are Criteria Present?	N = National		H = High	
Y = Confirmed presence	P = Provincial		M = Moderate	
L = Likely: data suggests the presence but the presence is unconfirmed	R = Regional		L = Low	
P = Possibly: location and circumstance suggests presence but no data are available	L = Local		NA = Not Applicable	
N = No: not present	NE = Negligible			
U = Unknown	NA = Not Applicable			

2.3.3 Summary of Wetland Evaluation

The following table presents a summary of the wetland evaluation for Wetland 26.

Summary of Wetland Values Significance and Expected Impact (Wetland 26)												
	Criteria Present				Level of Criterion Significance					Expected Impact		
	Y	L	P	C	N	P	R	L	NE	H	M	L
Life Support Values												
Hydrological	0	0	3	0	0	0	0	1	2	3	0	1
Biogeochemical	0	0	0	0	0	0	0	0	0	0	0	0
Habitat	0	0	1	0	0	0	0	1	0	0	0	1
Ecological	0	0	0	0	0	0	0	0	0	0	0	0
Social/Cultural Values												
Aesthetic	0	0	0	0	0	0	0	0	0	0	0	0
Recreational	0	0	0	0	0	0	0	0	0	0	0	0
Education and Public Awareness	1	0	0	0	0	0	0	0	1	0	0	1
Public Status	1	0	0	0	0	1	0	0	0	0	0	1
Cultural Attribute	0	0	0	0	0	0	0	0	0	0	0	0
Production Values												
Agricultural	0	0	0	0	0	0	0	0	0	0	0	0
Renewable Resource	1	0	1	0	0	0	0	2	0	0	0	2
Non-renewable Resource	1	0	0	0	0	0	0	1	0	0	0	1
Tourism and Recreational	0	0	0	0	0	0	0	0	0	0	0	0
Urban	0	0	0	0	0	0	0	0	0	0	0	0
Total Occurrences	4	0	5	0	0	1	0	5	3	3	0	7
Key												
Are Criteria Present?				Level of Criterion Significance:				Expected Impact of Project Upon Economy:				
Y = Yes: confirmed presence				N = National				H = High				
L = Likely: data suggests the presence but the presence is unconfirmed				P = Provincial				M = Moderate				
P = Possibly: location and circumstance suggests presence but no data are available				R = Regional				L = Low				
C = Critical value: value whose product, service or function is very important to society or where an important threshold may be exceeded, resulting in loss of the function and value.				L = Local								
				NE = Negligible								

Trigger Factors: a combination of factors may suggest wetland protection, project acceptance and/or mitigation of project if 3 or more critical criteria are marked "yes", criteria are present and/or over 50% of criteria have national/provincial/regional significance and/or over one third of expected project impact is high then, the evaluator should recognize that the wetland has major significance and/or could be significantly affected by the proposed project.

2.3.4 Summary of Critical Values (Wetland 26)

In the wetland evaluation process, some functions are considered more important than others and are identified as critical values. Critical value notation indicates a wetland value whose product, service or function is very important to society or where an important threshold or function may be exceeded, resulting in the loss of the function and value (Bond *et al.* 1992). The wetland evaluation identifies one critical value for the wetland: the possibility of harbouring four-toed salamanders. The significance of these functions are limited. The wetland is outside of the Project boundaries. The minimum 30 m buffer to be maintained between the quarry and the wetland may be sufficient to minimize hydrologic impacts. Potential habitat of four-toed salamanders should not be significantly affected. Four-toed salamanders are more abundant and widespread than previously thought.

Overall, the wetland has moderate value but the wetland functions that provide this value will not be substantially altered as a result of quarry activities.

2.3.5 Recommended Action (Wetland 26)

It is recommended the Project proceed as proposed. Wetland 26 will be avoided and a minimum 30 m buffer will be maintained.

3.0 NOVA SCOTIA DEPARTMENT OF THE ENVIRONMENT AND LABOUR TEN-STEP WETLAND EVALUATIONS

3.1 Introduction

This report outlines the results of wetland evaluations conducted for 23 wetlands less than 2 ha in size within or adjacent to the proposed Project boundaries. The wetland field surveys were conducted between August 12 and September 3, 2004 with additional information collected during the bird surveys conducted on May 20, June 4, and June 14, 2004.

3.2 Wetland 1

The following table summarizes the wetland evaluation for Wetland 1.

Wetland 1	
Wetland Type:	Low shrub dominated basin bog
Size:	0.40 ha
Dominant Vegetation:	Low shrub dominated basin bog
Trees:	<i>Acer rubrum</i> 5%, <i>Picea mariana</i> 2%, <i>Pinus strobus</i> 4%, <i>Betula populifolia</i> 5%, <i>Larix laricina</i> 3%
Shrubs:	<i>Chaemadaphne calyculata</i> 50%, <i>Rhododendron canadense</i> 20%, <i>Kalmia angustifolia</i> 20%, <i>Spirea alba</i> 2%, <i>Aronia melanocarpa</i> 1%
Ground Vegetation:	<i>Sphagnum</i> 80%, <i>Sarracenia purpurea</i> 4%, <i>Vaccinium macrocarpon</i> <1%, <i>Drosera rotundifolia</i> <1%, <i>Vaccinium oxycoccos</i> <1%
Vascular plant list:	25 species. No rare species encountered
Wildlife:	No rare or sensitive species encountered.
Birds:	None
Mammals:	White-tailed Deer (tracks)
Herpetiles:	None
Hydrology:	The wetland is located in a shallow basin that has no apparent inflow or outflow.
Anthropogenic uses:	None noted
Comments:	This wetland is on the northern boundary, located mostly outside the proposed quarry modification area. It is bisected by a power transmission line.

Step 1 Evaluate Wildlife Habitat Potential

Wetland 1 has been mapped on the Wetlands Atlas for Nova Scotia but no Golet score has been assigned to it indicating that the Golet score is less than 60. The Golet score is a system for ranking wetlands in regards to their value as wildlife habitat. Wetlands with scores greater than 65 are considered to be good wildlife habitat and the wildlife habitat potential should be taken into consideration before development is permitted in these wetlands.

No bird species were recorded in the wetland during the field survey. The wetland undoubtedly provides nesting habitat for bird species. The wetland contains low-shrub habitat which would provide habitat for bird species such as American Robin, Common Yellowthroat, Swamp Sparrow, and White-throated Sparrow. There is no open water present within or near the wetland so it is not expected to

provide valuable waterfowl habitat. The only sign of mammals recorded in the wetland was white-tailed deer tracks. No herpetiles were observed in the wetland during the field survey. No open water is present in the wetland so it is not expected to provide good amphibian breeding habitat.

The wetland does not provide significant wildlife habitat. Small basin bogs such as this are a common wetland type in the area so this wetland does not provide a unique habitat type. Wildlife species present or that may be present in the wetland are also found in adjacent open habitats. In addition, the small size of the wetland also limits its value as wildlife habitat.

Step 2 Evaluate for Rare and Endangered Species

None of the bird, mammal or amphibian species recorded in or near the wetland are considered to be rare in Nova Scotia (ACCDC 2004; NSDNR 2002; NSDNR 2003) or Canada as a whole (COSEWIC 2004). A vegetation survey was conducted in the wetland to determine if any rare vascular plants were present. A total of 25 species (Table 1) were found in the wetland, none of which is considered to be rare in Nova Scotia (ACCDC 2004; NSDNR 2002; NSDNR 2003) or Canada (COSEWIC 2004).

Step 3 Evaluate Groundwater Recharge Potential

The wetland is located in a small basin with no obvious outflow. Surface water entering the wetland would be lost either as evapotranspiration or would percolate into the underlying till and become groundwater. As such, it appears that this wetland has some groundwater recharge potential. Given the small size of the wetland and the lack of down gradient groundwater users, this function is not considered to be significant.

Step 4 Evaluate the Role of the Wetland in Surface Flow Regulation

The wetland is small and has no apparent outflow or inflow. As such it does not play a significant role in surface water flow regulation.

Step 5 Evaluate the Agricultural use of the Wetland

The wetland is not used for agricultural production and has no potential to be used for agricultural production.

Step 6 Evaluate the Potential Role of the Wetland in Water Treatment.

The wetland probably provides a water treatment service. The wetland is located adjacent to a recently constructed woods road and probably receives some silt laden run-off from the road. Wetlands are effective at filtering sediment from surface waters and can be expected to improve the quality of road run-off draining into it. Given the location of the wetland on the edge of the property (most of the wetland is located outside of the property) it is not anticipated that it will be affected by quarrying activity. As such, the water treatment function of the wetland will not be impeded.

Step 7 Evaluate the Potential for Peat Development

The wetland is too small to provide potential for commercial peat extraction and the peat present in the wetland would have a high wood content reducing its value as horticultural peat.

Step 8 Have You Addressed all Potential Issues with the Wetland Proposal?

All potential issues have been addressed.

Step 9 Address Additional Concerns

There are no additional concerns.

Step 10 Summary of Wetland Evaluation

Overall, this wetland is not considered to be significant. It is small and does not provide unique habitat for plants or animals. This wetland has limited value as wildlife habitat due to its small size and low habitat diversity. No rare or endangered species were encountered in the wetland. The wetland has no potential for agricultural production, nor has any real peat development potential, nor does it play a significant role in the hydrology of the area. The wetland probably has a water quality function, acting as a settling pond for run-off from a new woods road located adjacent to the wetland. Given the location of the wetland on the property line, it is not expected that it will be affected by quarrying activity and this function will continue.

3.4 Wetland 2

The following table presents a summary of the wetland evaluation for Wetland 2.

Wetland 2	
Wetland Type:	Wetland complex consisting of mixedwood treed basin swamp and graminoid dominated basin fen.
Size:	0.46 ha
Dominant Vegetation:	graminoid dominated basin fen
Trees:	<i>Acer rubrum</i> (2%)
Shrubs:	<i>Chamaedaphne calyculata</i> (12%), <i>Spiraea alba</i> (10%), <i>Spiraea tomentosa</i> (5%), <i>Rhododendron canadense</i> (1%)
Ground Vegetation:	<i>Moss sp.</i> (60%), <i>Calamagrostis canadensis</i> (50%), <i>Scirpus cyperinus</i> (30%)
Dominant Vegetation:	Mixedwood treed basin swamp
Trees:	<i>Acer rubrum</i> (25%), <i>Abies balsamea</i> (10%), <i>Picea mariana</i> (5%)
Shrubs:	<i>Ilex verticillata</i> (35%), <i>Abies balsamea</i> (5%), <i>Alnus incana</i> (5%), <i>Acer rubrum</i> (2%)
Ground Vegetation:	<i>Sphagnum spp.</i> (90%), <i>Osmunda cinnamomea</i> (30%), <i>Smilacina trifolia</i> (15%), <i>Carex trisperma</i> (20%)
Vascular plant list:	44 species. No rare species encountered
Wildlife:	No rare or sensitive species encountered.
Birds:	Black-capped Chickadee, Blue-headed Vireo, Common Yellowthroat

Wetland 2	
Mammals:	White-tailed Deer, Bobcat tracks observed
Herpetiles:	Green Frog
Hydrology:	The wetland is located in a shallow basin with no inflow or outflow. A shallow vernal pool (graminoid dominated basin fen) has formed at the northern end of the wetland where construction of a quarry road had impeded drainage.
Anthropogenic uses:	None observed
Comments:	Wetland affected by road construction at edge of quarry. Hydrology is affected resulting in a seasonal (vernal) pool at the north end of the wetland. It is also located immediately adjacent to an abandoned power transmission line.

Step 1 Evaluate Wildlife Habitat Potential

Wetland 2 has been mapped on the Wetlands Atlas for Nova Scotia but no Golet score has been assigned to it indicating that the Golet score is less than 60. The Golet score is a system for ranking wetlands in regards to their value as wildlife habitat. Wetlands with scores greater than 65 are considered to be good wildlife habitat and the wildlife habitat potential should be taken into consideration before development is permitted in these wetlands.

Bird species recorded in the wetland during the field survey included Black-capped Chickadee, Blue-headed Vireo, and Common Yellowthroat. The wetland provides mostly foraging habitat for bird species. Open water present at the north end of the wetland near a quarry road is small and seasonal, so it is not expected to provide valuable waterfowl habitat. Mammals recorded in the wetland included white-tailed deer, and bobcat tracks were noted. Green frog was the only herpetile species observed in the wetland during the field survey. It was associated with small windthrow pools present in the mixedwood treed basin swamp. The vernal pool (graminoid dominated basin fen) may provide suitable breeding habitat for wood frogs but is unlikely to retain surface water long enough to allow other amphibians to breed successfully.

The wetland does not provide significant wildlife habitat. Wildlife species present or that may be present in the wetland are also found in nearby open habitats. In addition, the small size of the wetland also limits its value as wildlife habitat.

Step 2 Evaluate for Rare and Endangered Species

None of the bird, mammal or amphibian species recorded in or near the wetland are considered to be rare in Nova Scotia (ACCDC 2004; NSDNR 2002; NSDNR 2003) or Canada as a whole (COSEWIC 2004). A vegetation survey was conducted in the wetland to determine if any rare vascular plants were present. A total of 44 species (Table 1) were found in the wetland, none of which is considered to be rare in Nova Scotia (ACCDC 2004; NSDNR 2002; NSDNR 2003) or Canada (COSEWIC 2004).

Step 3 Evaluate Groundwater Recharge Potential

The wetland has no obvious outlet suggesting that water is lost either through evapotranspiration or percolation into the underlying till. As such, the wetland acts as a groundwater recharge site. Given the small size of the wetland and the fact that there are no local groundwater users, the value of this function is considered to be low.

Step 4 Evaluate the Role of the Wetland in Surface Flow Regulation

The wetland is small and has no obvious outflow suggesting that it has very little effect on surface water flow regulation.

Step 5 Evaluate the Agricultural use of the Wetland

The wetland is not used for agricultural production and has no potential to be used for agricultural production.

Step 6 Evaluate the Potential Role of the Wetland in Water Treatment.

The wetland is located at the edge of an access road at the southern edge of the existing Tidewater quarry. The access road has created the vernal pool; however, run-off from the road flows downhill towards the quarry and does not enter the wetland. As such, the wetland does not receive effluent and does not perform a water treatment function.

Step 7 Evaluate the Potential for Peat Development

The wetland is too small to provide potential for commercial peat extraction and the peat present in the wetland would have a high wood content reducing its value as horticultural peat.

Step 8 Have You Addressed all Potential Issues with the Wetland Proposal?

All potential issues have been addressed.

Step 9 Address Additional Concerns

There are no additional concerns.

Step 10 Summary of Wetland Evaluation

Overall, this wetland is not considered to be significant. It is small and does not provide unique habitat for plants or animals. This wetland has limited value as wildlife habitat due to its small size and low

habitat diversity. No rare or endangered species were encountered in the wetland. The wetland has no potential for agricultural production, nor has any real peat development potential, nor does it play a significant role in the hydrology of the area.

3.5 Wetland 3

The following table presents a summary of the wetland evaluation for Wetland 3.

Wetland 3	
Wetland Type:	Coniferous treed basin bog
Size:	0.82 ha
Dominant Vegetation:	
Trees:	<i>Picea mariana</i> (20%), <i>Pinus strobes</i> (15%),
Shrubs:	<i>Rhododendron canadense</i> (35%), <i>Kalmia angustifolia</i> (30%), <i>Chamaedaphne calyculata</i> (20%), <i>Ledum groenlandicum</i> (10%), <i>Viburnum nudum</i> (5%)
Ground Vegetation:	<i>Sphagnum sp.</i> (70%), <i>Cladonia rangiferina</i> (10%), <i>Sarracenia purpurea</i> (5%)
Vascular plant list:	32 Species. No rare species encountered
Wildlife:	No rare or sensitive species encountered.
Birds:	American Robin, Black-and-white Warbler, Black-throated Green Warbler, Common Yellowthroat, Nashville Warbler
Mammals:	None
Herpetiles:	None
Hydrology:	The wetland is situated in a shallow basin with no inflow or outflow channel.
Anthropogenic uses:	None observed.
Comments:	

Step 1 Evaluate Wildlife Habitat Potential.

Wetland 3 has been mapped on the Wetlands Atlas for Nova Scotia but no Golet score has been assigned to it indicating that the Golet score is less than 60. The Golet score is a system for ranking wetlands in regards to their value as wildlife habitat. Wetlands with scores greater than 65 are considered to be good wildlife habitat and the wildlife habitat potential should be taken into consideration before development is permitted in these wetlands.

Bird species recorded in the wetland during the field survey included American Robin, Black-and-white Warbler, Black-throated Green Warbler, Common Yellowthroat, and Nashville Warbler. There is no open water in the wetland, so it is not expected to provide valuable waterfowl habitat. No mammals were recorded in the wetland. Four-toed salamander was the only herpetile species observed in the wetland during the field survey, (See Step 2 below for more discussion).

The wetland does not provide significant wildlife habitat. Wildlife species present or that may be present in the wetland are also found in nearby open habitats. In addition, the small size of the wetland also limits its value as wildlife habitat.

Step 2 Evaluate for Rare and Endangered Species

A vegetation survey was conducted to determine if any rare vascular plant species were present. A total of 32 species of vascular plant were encountered during the survey (Table 1), none of which is considered to be rare in Nova Scotia (ACCDC 2004; NSDNR 2002; NSDNR 2003) or Canada (COSEWIC 2004). None of the bird species recorded in the wetland are considered to be rare nationally (COSEWIC 2003) or provincially (ACCDC 2003, NSDNR 2003).

Step 3 Evaluate Groundwater Recharge Potential

The wetland has no obvious outlet suggesting that water is lost either through evapotranspiration or percolation into the underlying till. As such, the wetland acts as a groundwater recharge site. Given the small size of the wetland and the fact that there are no local groundwater users, the value of this function is considered to be low.

Step 4 Evaluate the Role of the Wetland in Surface Flow Regulation

The wetland is small and has no obvious outflow suggesting that it has very little effect on surface water flow regulation.

Step 5 Evaluate the Agricultural use of the Wetland

The wetland is not used for agricultural production and has no potential to be used for agricultural production.

Step 6 Evaluate the Potential Role of the Wetland in Water Treatment.

The wetland does not receive any effluent and therefore does not currently play a role in water treatment.

Step 7 Evaluate the Potential for Peat Development

The wetland is too small to provide potential for commercial peat extraction and the peat present in the wetland would have a high wood content reducing its value as horticultural peat.

Step 8 Have You Addressed all Potential Issues with the Wetland Proposal?

All potential issues have been addressed.

Step 9 Address Additional Concerns

There are no additional concerns.

Step 10 Summary of Wetland Evaluation

Overall, this wetland is not considered to be significant. It is small and does not provide unique habitat for plants or animals. This wetland has limited value as wildlife habitat due to its small size and low habitat diversity. No rare or endangered species were encountered in the wetland. The wetland has no potential for agricultural production, nor does it have any real peat development potential. The wetland does not play a significant role in the hydrology of the area.

3.6 Wetland 4

The following table presents a summary of the wetland evaluation for Wetland 4.

Wetland 4	
Wetland Type:	Wetland complex composed of tall shrub dominated basin swamp, low shrub dominated shore bog, coniferous treed basin bog, coniferous treed basin swamp, and open water wetland.
Size:	1.33 ha
Dominant Vegetation:	Tall shrub dominated basin swamp
Trees:	<i>Picea mariana</i> (15%), <i>Pinus strobus</i> (5%), <i>Larix laricina</i> (2%), <i>Acer rubrum</i> (1%)
Shrubs:	<i>Nemopanthus mucronata</i> (60%), <i>Viburnum nudum</i> (15%), <i>Gaylussacia baccata</i> (5%)
Ground Vegetation:	<i>Sphagnum spp.</i> (30%), <i>Coptis trifolia</i> (1%),
Dominant Vegetation:	Low shrub dominated shore bog
Trees:	None
Shrubs:	<i>Gaylussacia dumosa</i> (10%), <i>Chamaedaphne calyculata</i> (8%), <i>Empetrum nigrum</i> (5%), <i>Myrica gale</i> (2%)
Ground Vegetation:	<i>Sphagnum spp.</i> (90%), <i>Eriophorum virginicum</i> (20%), <i>Rhynchospora alba</i> (10%), <i>Sarracenia purpurea</i> (5%), <i>Juncus pelocarpus</i> (2%)
Dominant Vegetation:	Coniferous treed basin bog
Trees:	<i>Picea mariana</i> (10%), <i>Pinus strobus</i> (5%), <i>Larix laricina</i> (1%)
Shrubs:	<i>Gaylussacia dumosa</i> (35%), <i>Chamaedaphne calyculata</i> (30%), <i>Kalmia angustifolia</i> (25%), <i>Picea mariana</i> (15%), <i>Viburnum nudum</i> (2%), <i>Aronia melanocarpa</i> (2%)
Ground Vegetation:	<i>Sphagnum sp.</i> (30%), <i>Sarracenia purpurea</i> (2%), <i>Carex stricta</i> (1%)
Dominant Vegetation:	Coniferous treed basin swamp
Trees:	<i>Picea mariana</i> (35%), <i>Acer rubrum</i> (5%), <i>Larix laricina</i> (2%), <i>Pinus strobes</i> (2%)
Shrubs:	<i>Nemopanthus mucronata</i> (10%), <i>Ilex verticillata</i> (5%), <i>Kalmia angustifolia</i> (5%), <i>Gaylussacia baccata</i> (2%), <i>Picea mariana</i> (2%)
Ground Vegetation:	<i>Sphagnum sp.</i> (90%), <i>Osmunda cinnamomea</i> (40%), <i>Smilacina trifolia</i> (15%), <i>Carex trisperma</i> (2%)
Dominant Vegetation:	Shallow water wetland
Trees:	None
Shrubs:	None
Ground Vegetation:	<i>Nymphaea odorata</i> (25%), <i>Nuphar variegata</i> (5%)
Vascular plant list:	38 Species . No rare species encountered
Wildlife:	No rare or sensitive species encountered.
Birds:	American Goldfinch, Blue Jay, Common Yellowthroat, Hermit Thrush, Red-breasted Nuthatch, Dark-eyed Junco, Ruby-crowned Kinglet, Osprey, Red-tailed Hawk
Mammals:	Red Squirrel, White-tailed Deer
Herpetiles:	Bullfrog, Green Frog, Wood Frog, Pickerel Frog
Hydrology:	The wetland is situated in a valley between two parallel bedrock ridges. There is no apparent inflow or outflow.
Anthropogenic uses:	None observed
Comments:	Wetland contains a flark (bog pond).

Step 1 Evaluate Wildlife Habitat Potential

Wetland 4 has been mapped on the Wetlands Atlas for Nova Scotia but no Golet score has been assigned to it indicating that the Golet score is less than 60. The Golet score is a system for ranking wetlands in regards to their value as wildlife habitat. Wetlands with scores greater than 65 are considered to be good wildlife habitat and the wildlife habitat potential should be taken into consideration before development is permitted in these wetlands.

Bird species recorded in the wetland during the field surveys included American Goldfinch, Blue Jay, Common Yellowthroat, Hermit Thrush, Red-breasted Nuthatch, Dark-eyed Junco, Ruby-crowned Kinglet, Osprey, and Red-tailed Hawk. Open water is present in the wetland in the form of a bog pond, however it is not expected to provide valuable waterfowl habitat. Mammals recorded in the wetland included white-tailed deer and red squirrel. Herpetile species observed in the wetland during the field survey included bullfrog, green frog, wood frog and pickerel frog, mostly associated with the flark, which provides good amphibian breeding habitat.

The wetland does not provide significant wildlife habitat. The wildlife species encountered are common in the region and in the general area. The relatively small size of the wetland limits its value as wildlife habitat.

Step 2 Evaluate for Rare and Endangered Species

None of the bird, mammal or amphibian species recorded in or near the wetland are considered to be rare in Nova Scotia (ACCDC 2004; NSDNR 2002; NSDNR 2003) or Canada as a whole (COSEWIC 2004). A vegetation survey was conducted in the wetland to determine if any rare vascular plants were present. A total of 38 species (Table 1) were found in the wetland, none of which is considered to be rare in Nova Scotia (ACCDC 2004; NSDNR 2002; NSDNR 2003) or Canada (COSEWIC 2004).

Step 3 Evaluate Groundwater Recharge Potential

The wetland has no obvious outlet suggesting that water is lost either through evapotranspiration or percolation into the underlying till. As such, the wetland acts as a groundwater recharge site. Given the small size of the wetland and the fact that there are no local groundwater users, the value of this function is considered to be low.

Step 4 Evaluate the Role of the Wetland in Surface Flow Regulation

The wetland is small and has no obvious outflow suggesting that it has very little effect on surface water flow regulation.

Step 5 Evaluate the Agricultural use of the Wetland

The wetland is not used for agricultural production and has no potential to be used for agricultural production.

Step 6 Evaluate the Potential Role of the Wetland in Water Treatment.

The wetland does not receive any effluent and therefore does not currently play a role in water treatment.

Step 7 Evaluate the Potential for Peat Development

The wetland is too small to provide potential for commercial peat extraction and the peat present in the wetland would have a high wood content reducing its value as horticultural peat.

Step 8 Have You Addressed all Potential Issues with the Wetland Proposal?

All potential issues have been addressed.

Step 9 Address Additional Concerns

There are no additional concerns.

Step 10 Summary of Wetland Evaluation

Overall, this wetland is not considered to be significant. It is relatively small and does not provide unique habitat for plants or animals however it does contain a small flark, which provides some breeding habitat for amphibian species. This wetland has limited value as wildlife habitat due to its small size habitat diversity. No rare or endangered species were encountered in the wetland. The wetland has no potential for agricultural production, nor has any real peat development potential, nor does it play a significant role in the hydrology of the area.

3.7 Wetland 6

The following table presents a summary of the wetland evaluation for Wetland 6.

Wetland 6	
Wetland Type:	Mixed wood treed basin swamp
Size:	0.34 ha
Dominant Vegetation:	
Trees:	<i>Picea mariana</i> (35%), <i>Acer rubrum</i> (10%), <i>Betula alleghaniensis</i> (5%), <i>Abies balsamea</i> (5%)
Shrubs:	<i>Abies balsamea</i> (5%), <i>Nemopanthus mucronata</i> (5%), <i>Ilex verticillata</i> (5%), <i>Acer rubrum</i> (2%), <i>Alnus incana</i> (<1%)
Ground Vegetation:	<i>Sphagnum spp.</i> (85%), <i>Osmunda cinnamomea</i> (30%), <i>Cornus canadensis</i> (15%), <i>Aralia nudicaulis</i> (10%), <i>Carex trisperma</i> (10%), <i>Coptis trifolia</i> (5%)
Vascular plant list:	26 species. No rare species encountered.
Wildlife:	No rare or sensitive species encountered.
Birds:	American Robin, Black-capped Chickadee, Blue Jay
Mammals:	Red Squirrel, White-tailed Deer
Herpetiles:	None
Hydrology:	Wetland has formed in a basin situated between two parallel bedrock ridges. It appears to receive groundwater inputs from Wetland 5 and discharges via a small underground stream that eventually drains into Lake William.
Anthropogenic uses:	None observed
Comments:	Heavy blowdown.

Step 1 Evaluate Wildlife Habitat Potential

The wetland has not been mapped on the Wetlands Atlas for Nova Scotia so no Golet score is available for the wetland. Bird species recorded in the wetland during the field surveys included American Robin, Black-capped Chickadee and Blue Jay. There is no open water present within or near the wetland so it is not expected to provide valuable waterfowl habitat. Mammals recorded in the wetland included white-tailed deer and red squirrel. No herpetile species were observed in the wetland during the field survey.

The wetland does not provide significant wildlife habitat. The wildlife species encountered are common in the region and in the general area. The small size of the wetland limits its value as wildlife habitat.

Step 2 Evaluate for Rare and Endangered Species

None of the bird, mammal or amphibian species recorded in or near the wetland are considered to be rare in Nova Scotia (ACCDC 2004; NSDNR 2002; NSDNR 2003) or Canada as a whole (COSEWIC 2004). A vegetation survey was conducted in the wetland to determine if any rare vascular plants were present. A total of 26 species (Table 1) were found in the wetland, none of which is considered to be rare in Nova Scotia (ACCDC 2004; NSDNR 2002; NSDNR 2003) or Canada (COSEWIC 2004).

Step 3 Evaluate Groundwater Recharge Potential

Water exits the wetland through a small underground stream that comes to the surface at various locations along a small valley that extends to Lake William. This would suggest that the wetland is a groundwater discharge site rather than a groundwater recharge site.

Step 4 Evaluate the Role of the Wetland in Surface Flow Regulation

The wetland is unlikely to play a significant role in surface water flow regulation due to the small size of the wetland. The wetland may help to even out stream flow by storing and slowly releasing surface water. The wetland does not receive any effluent and therefore does not currently play a role in water treatment.

Step 5 Evaluate the Agricultural use of the Wetland

The wetland is not used for agricultural production and has no potential to be used for agricultural production.

Step 6 Evaluate the Potential Role of the Wetland in Water Treatment.

The wetland does not receive any effluent and therefore does not currently play a role in water treatment.

Step 7 Evaluate the Potential for Peat Development

There is no peat present in this wetland, therefore, there is no potential for peat development.

Step 8 Have You Addressed all Potential Issues with the Wetland Proposal?

All potential issues have been addressed.

Step 9 Address Additional Concerns

There are no additional concerns.

Step 10 Summary of Wetland Evaluation

Overall, this wetland is not considered to be significant. It is small and does not provide unique habitat for plants or animals. This wetland has limited value as wildlife habitat due to its small size habitat diversity. No rare or endangered species were encountered in the wetland. The wetland has no potential for agricultural production, nor has any peat development potential, nor does it play a significant role in the hydrology of the area.

3.8 Wetland 7

The following table presents a summary of the wetland evaluation for Wetland 7.

Wetland 7	
Wetland Type:	Low shrub dominated basin bog
Size:	0.13 ha
Dominant Vegetation:	
Trees:	<i>Betula populifolia</i> (3%), <i>Acer rubrum</i> (2%), <i>Pinus strobus</i> (2%)
Shrubs:	<i>Chamaedaphne calyculata</i> (40%), <i>Kalmia angustifolia</i> (40%), <i>Gaylussacia baccata</i> (20%), <i>Rhododendron canadense</i> (20%), <i>Alnus incana</i> (1%)
Ground Vegetation:	<i>Sphagnum spp.</i> (50%), <i>Osmunda cinnamomea</i> (5%), <i>Calamagrostis canadensis</i> (1%), <i>Eriophorum virginicum</i> (1%), <i>Sarracenia purpurea</i> (1%), <i>Smilacina trifolia</i> (1%)
Vascular plant list:	32 species. No rare species encountered
Wildlife:	No rare or sensitive species encountered.
Birds:	None
Mammals:	None
Herpetiles:	None
Hydrology:	The wetland is located in a basin between two hills and has no inflow or outflow.
Anthropogenic uses:	None observed
Comments:	

Step 1 Evaluate Wildlife Habitat Potential

The wetland has not been mapped on the Wetlands Atlas for Nova Scotia so no Golet score is available for the wetland. No bird species were recorded in the wetland during the field survey. The wetland undoubtedly provides nesting habitat for some bird species. The wetland contains low-shrub habitat which would provide habitat for bird species such as American Robin, Common Yellowthroat, Swamp Sparrow, and White-throated Sparrow. There is no open water present within or near the wetland so it is not expected to provide valuable waterfowl habitat. No mammals or herpetiles were recorded in the wetland during the field survey. No open water is present in the wetland so it is not expected to provide good amphibian breeding habitat.

The wetland does not provide significant wildlife habitat. Small basin bogs such as this The wetland has no obvious outlet suggesting that water is lost either through evapotranspiration or percolation into the underlying till. As such, the wetland acts as a groundwater recharge site. Given the small size of the wetland and the fact that there are no local groundwater users, the value of this function is considered to be low. are a common wetland type in the area so this wetland does not provide a unique habitat type. Wildlife species present or that may be present in the wetland are also found in adjacent open habitats. In addition, the small size of the wetland also limits its value as wildlife habitat.

Step 2 Evaluate for Rare and Endangered Species

None of the bird, mammal or amphibian species recorded in or near the wetland are considered to be rare in Nova Scotia (ACCDC 2004; NSDNR 2002; NSDNR 2003) or Canada as a whole (COSEWIC 2004). A vegetation survey was conducted in the wetland to determine if any rare vascular plants were

present. A total of 32 species (Table 1) were found in the wetland, none of which is considered to be rare in Nova Scotia (ACCDC 2004; NSDNR 2002; NSDNR 2003) or Canada (COSEWIC 2004).

Step 3 Evaluate Groundwater Recharge Potential

The wetland has no obvious outlet suggesting that water is lost either through evapotranspiration or percolation into the underlying till. As such, the wetland acts as a groundwater recharge site. Given the small size of the wetland and the fact that there are no local groundwater users, the value of this function is considered to be low. The wetland is small and has no obvious outflow suggesting that it has very little effect on surface water flow regulation.

Step 4 Evaluate the Role of the Wetland in Surface Flow Regulation

The wetland is small and has no obvious outflow suggesting that it has very little effect on surface water flow regulation.

Step 5 Evaluate the Agricultural use of the Wetland

The wetland is not used for agricultural production and has no potential to be used for agricultural production.

Step 6 Evaluate the Potential Role of the Wetland in Water Treatment.

The wetland does not receive any effluent and therefore does not currently play a role in water treatment.

Step 7 Evaluate the Potential for Peat Development

The wetland is too small to provide potential for commercial peat extraction and the peat present in the wetland would have a high wood content reducing its value as horticultural peat.

Step 8 Have You Addressed all Potential Issues with the Wetland Proposal?

All potential issues have been addressed.

Step 9 Address Additional Concerns

There are no additional concerns.

Step 10 Summary of Wetland Evaluation

Overall, this wetland is not considered to be significant. It is small and does not provide unique habitat for plants or animals. This wetland has limited value as wildlife habitat due to its small size and low habitat diversity. No rare or endangered species were encountered in the wetland. The wetland has no potential for agricultural production, nor has any real peat development potential, nor does it play a significant role in the hydrology of the area.

3.9 Wetland 8

The following table presents a summary of the wetland evaluation for Wetland 8.

Wetland 8	
Wetland Type:	Tall shrub dominated basin swamp
Size:	0.04 ha
Dominant Vegetation:	
Trees:	<i>Acer rubrum</i> (2%), <i>Picea mariana</i> (<1%)
Shrubs:	<i>Nemopanthus mucronata</i> (25%), <i>Kalmia angustifolia</i> (20%), <i>Gaylussacia baccata</i> (15%), <i>Ledum groenlandicum</i> (10%), <i>Rhododendron canadense</i> (10%)
Ground Vegetation:	<i>Sphagnum sp.</i> (90%), <i>Osmunda cinnamomea</i> (5%), <i>Glyceria canadensis</i> (2%), <i>Carex trisperma</i> (1%), <i>Eriophorum virginicum</i> (1%)
Vascular plant list:	13 species. No rare species encountered
Wildlife:	Canada Warbler, a CWS "target" species.
Birds:	American Goldfinch, Canada Warbler
Mammals:	White-tailed deer
Herpetiles:	Pickrel Frog
Hydrology:	The wetland is located in a shallow basin with no apparent inflow or outflow.
Anthropogenic uses:	None observed
Comments:	

Step 1 Evaluate Wildlife Habitat Potential

The wetland has not been mapped on the Wetlands Atlas for Nova Scotia so no Golet score is available for the wetland. Bird species recorded in the wetland during the field surveys included American Goldfinch and Canada Warbler. There is no open water present within or near the wetland so it is not expected to provide valuable waterfowl habitat. White-tailed deer was the only mammal recorded in the wetland. Pickerel frog was the only herpetile species observed in the wetland during the field survey.

The wetland does not provide significant wildlife habitat. The wildlife species encountered are common in the region and in the general area. The small size of the wetland limits its value as wildlife habitat.

Step 2 Evaluate for Rare and Endangered Species

A vegetation survey was conducted in the wetland to determine if any rare vascular plants were present. Only 13 species (Table 1) were found in the wetland, none of which is considered to be rare in Nova Scotia (ACCDC 2004; NSDNR 2002; NSDNR 2003) or Canada (COSEWIC 2004). None of the bird,

mammal or amphibian species recorded in or near the wetland are considered to be rare in Nova Scotia (ACCDC 2004; NSDNR 2002; NSDNR 2003) or Canada as a whole (COSEWIC 2004). The Canadian Wildlife Service however has identified a number of “target” species that include species currently common (*e.g.*, ranked S4 or S5 by ACCDC) and not currently assessed as sensitive or at risk by NSDNR (“Green”), but whose population trends indicate a decline in the populations. Canada Warbler has been listed as a species of concern by Bird Studies Canada. Although this species is still relatively common in Nova Scotia, it appears to be undergoing a non-cyclic decline in abundance. Canada Warbler is one of these species, and one was recorded in the wetland. It is unlikely that Canada Warblers nest in the wetland. The wetland is too small to provide sufficient resources for nesting and the wetland is surrounded by habitat not suitable for Canada Warblers. The Canada Warbler recorded in the wetland was observed outside of the breeding season in early September.

Step 3 Evaluate Groundwater Recharge Potential

This wetland complex has some groundwater recharge potential, however given its very small size, the contribution would be very small. In addition, there are no groundwater users down gradient of the wetland.

Step 4 Evaluate the Role of the Wetland in Surface Flow Regulation

Given the small size of the wetland and the fact that it is not part of a stream course, wetland 8 does not play a significant role in surface water flow regulation.

Step 5 Evaluate the Agricultural use of the Wetland

The wetland is not used for agricultural production and has no potential to be used for agricultural production.

Step 6 Evaluate the Potential Role of the Wetland in Water Treatment.

The wetland does not receive any effluent and currently does not provide a water treatment function.

Step 7 Evaluate the Potential for Peat Development

Some peat is present in the wetland, however, given the small size of the wetland and its isolation from other peatlands with deposits large enough to harvest, there is no potential for peat harvesting in this wetland.

Step 8 Have You Addressed all Potential Issues with the Wetland Proposal?

All potential issues have been addressed.

Step 9 Address Additional Concerns

There are no additional concerns.

Step 10 Summary of Wetland Evaluation

Overall, this wetland is not considered to be significant. It is very small and does not provide unique habitat for plants or animals. This wetland has limited value as wildlife habitat due to its small size and low habitat diversity. No rare or endangered species were encountered in the wetland, however the wetland may provide feeding habitat for Canada Warbler, a bird species that has undergone some historic declines. This species was recorded in a number of wetlands in the area as well as mature mixedwood forest. The wetland has no potential for agricultural production, nor has any peat development potential, nor does it play a significant role in the hydrology of the area.

3.10 Wetland 9

The following table presents a summary of the wetland evaluation for Wetland 9.

Wetland 9	
Wetland Type:	Deciduous treed basin swamp
Size:	0.86 ha
Dominant Vegetation:	
Trees:	<i>Acer rubrum</i> (35%), <i>Fraxinus americana</i> (5%), <i>Picea mariana</i> (2%), <i>Larix laricina</i> (<1%), <i>Pinus strobus</i> (<1%)
Shrubs:	<i>Ilex verticillata</i> (15%), <i>Alnus incana</i> (10%), <i>Fraxinus americana</i> (2%)
Ground Vegetation:	<i>Sphagnum spp.</i> (90%), <i>Osmunda cinnamomea</i> (60%), <i>Carex stricta</i> (10%), <i>Calamagrostis canadensis</i> (5%)
Vascular plant list:	35 species. No rare species encountered
Wildlife:	Canada Warbler, Olive-sided Flycatcher, and Purple Finch are CWS "Target" species, and Four-toed Salamander, is a S3 listed species (ACDC) and yellow listed species by NSDNR.
Birds:	American Redstart, Black-and-white Warbler, Black-capped Chickadee, Black-throated Green Warbler, Blue-headed Vireo, Canada Warbler, Common Yellowthroat, Dark-eyed Junco, Magnolia Warbler, Olive-sided Flycatcher, Palm Warbler, Purple Finch
Mammals:	Red Squirrel, White-tailed Deer
Herpetiles:	Four-toed Salamander, Northern Spring Peeper
Hydrology:	The wetland is located in a shallow basin that has no apparent in flow or outflow. It is likely that the wetland discharges water through an underground stream connected to Toddy Brook.
Anthropogenic uses:	None observed
Comments:	

Step 1 Evaluate Wildlife Habitat Potential

The wetland has not been mapped on the Wetlands Atlas for Nova Scotia so no Golet score is available for the wetland. Bird species recorded in the wetland during the field surveys included American Redstart, Black-and-white Warbler, Black-capped Chickadee, Black-throated Green Warbler, Blue-

headed Vireo, Canada Warbler, Common Yellowthroat, Dark-eyed Junco, Magnolia Warbler, Olive-sided Flycatcher, Palm Warbler and Purple Finch. There is no open water present within or near the wetland that is large enough to provide valuable waterfowl habitat. Red squirrel and white-tailed deer were the only mammals recorded in the wetland. Herpetile species observed in the wetland included four-toed salamander and northern spring peeper. Small windthrow pools provide suitable breeding habitat for some amphibian species such as four-toed salamander, northern spring peeper and wood frogs.

The wetland does not provide significant wildlife habitat. The small size of the wetland limits its value as wildlife habitat.

Step 2 Evaluate for Rare and Endangered Species

A vegetation survey was conducted in the wetland to determine if any rare vascular plants were present. A total of 35 species (Table 1) were found in the wetland, none of which is considered to be rare in Nova Scotia (ACCDC 2004; NSDNR 2002; NSDNR 2003) or Canada (COSEWIC 2004). None of the bird, or mammal species recorded in or near the wetland are considered to be rare in Nova Scotia (ACCDC 2004; NSDNR 2002; NSDNR 2003) or Canada as a whole (COSEWIC 2004). The Canadian Wildlife Service however has identified a number of “target” species that include species currently common (*e.g.*, ranked S4 or S5 by ACCDC) and not currently assessed as sensitive or at risk by NSDNR (“Green”), but whose population trends indicate a decline in the populations. Three of the bird species recorded in or near the wetland, Canada Warbler, Olive-sided Flycatcher and Purple Finch are considered “target” species, and one was recorded in the wetland. Purple Finch was relatively common in the Project area, typically found in several terrestrial habitats types. Canada Warbler was found in several other wetlands as well as mature mixedwood forest. Olive-sided Flycatcher however was found only in Wetland 9. Historically there has been a good population of Olive-sided Flycatchers immediately to the northeast of the project near the rail line near Lake William (F. Lavender, pers. comm.)

One relatively rare amphibian species, the four-toed salamander, was found in the wetland. Four-toed salamander is listed by NSDNR as a yellow species indicating that it is sensitive to anthropogenic activities. Local herpetologists believe that this species is more widespread and abundant than previously thought. A recent study (JWEL 1999) corroborates this belief. The study found four-toed salamander nest sites in 25 of 46 locations tested with a total of 79 nests found in the 25 sites where the species was present. Nests were found in a variety of natural and anthropogenic sites. Jacques Whitford field biologists have encountered four-toed salamanders at a wide variety of locations in Nova Scotia.

Four-toed salamanders are able to adapt to changing conditions and have been found nesting in a variety of disturbed sites including roadside ditches, beaver floodings, wheel ruts and old borrow pits. Given these findings, expansion of the quarry is not expected to have a significant long-term effect on local four-toed salamander populations.

Step 3 Evaluate Groundwater Recharge Potential

Given the proximity of this wetland to a small stream and its location near the base of a long slope it is likely that the wetland is a groundwater discharge site rather than a groundwater recharge site.

Step 4 Evaluate the Role of the Wetland in Surface Flow Regulation

The wetland may contribute to surface water flow regulation in Toddy Brook by augmenting flows during low flow periods. However, given the small size of the wetland and its limited storage capacity, this function is not significant.

Step 5 Evaluate the Agricultural use of the Wetland

The wetland is not used for agricultural production and has no potential to be used for agricultural production.

Step 6 Evaluate the Potential Role of the Wetland in Water Treatment.

The wetland does not receive any effluent and does not play a role in water treatment.

Step 7 Evaluate the Potential for Peat Development

Observations made at windthrow pools suggest that the wetland contains a layer of woody peat that is less than one meter thick. The small size of the wetland combined with the poor quality of the peat would indicate that there is no potential for peat development.

Step 8 Have You Addressed all Potential Issues with the Wetland Proposal?

All potential issues have been addressed.

Step 9 Address Additional Concerns

There are no additional concerns.

Step 10 Summary of Wetland Evaluation

Overall, this wetland is not considered to be significant. It is less than one hectare and does not provide unique habitat for plants or animals. No rare or endangered species were encountered in the wetland, with the exception of four-toed salamander, which has shown to be relatively widespread adaptable in the region. The wetland provides suitable nesting habitat for Canada Warbler, Purple Finch and Olive-sided Flycatcher, bird species that have undergone some historic declines. Two of these species were recorded in a number of habitats in the area and there is an historic population to the northeast, outside

the Project area. The wetland has no potential for agricultural production, nor has any peat development potential, nor does it play a significant role in the hydrology of the area.

3.11 Wetland 10

The following table presents a summary of the wetland evaluation for Wetland 10.

Wetland 10	
Wetland Type:	Deciduous treed stream swamp
Size:	0.13 ha
Dominant Vegetation:	
Trees:	<i>Betula alleghaniensis</i> (25%), <i>Acer rubrum</i> (15%), <i>Fraxinus americana</i> (10%), <i>Abies balsamea</i> (1%)
Shrubs:	<i>Ilex verticillata</i> (15%), <i>Alnus incana</i> (10%), <i>Fraxinus americana</i> (1%)
Ground Vegetation:	<i>Sphagnum spp.</i> (85%), <i>Osmunda cinnamomea</i> (60%), <i>Osmunda regalis</i> (15%), <i>Aster acuminatus</i> (5%), <i>Glyceria grandis</i> (5%)
Vascular plant list:	35 species. No rare species encountered
Wildlife:	Canada Warbler, a CWS "Target" Species.
Birds:	Black-throated Green Warbler, Canada Warbler, Red-eyed Vireo
Mammals:	None
Herpetiles:	None
Hydrology:	The wetland is located in a small perched basin along a small stream.
Anthropogenic uses:	None observed
Comments:	

Step 1 Evaluate Wildlife Habitat Potential

The wetland has not been mapped on the Wetlands Atlas for Nova Scotia so no Golet score is available for the wetland. Bird species recorded in the wetland during the field surveys included Black-throated Green Warbler, Canada Warbler, Red-eyed Vireo. There is no open water present within or near the wetland so it is not expected to provide valuable waterfowl habitat. No mammal or herpetile species were observed in the wetland during the field survey.

The wetland does not provide significant wildlife habitat. The wildlife species encountered are common in the region and in the general area. The small size of the wetland limits its value as wildlife habitat.

Step 2 Evaluate for Rare and Endangered Species

A vegetation survey was conducted in the wetland to determine if any rare vascular plants were present. A total of 35 species (Table 1) were found in the wetland, none of which is considered to be rare in Nova Scotia (ACCDC 2004; NSDNR 2002; NSDNR 2003) or Canada (COSEWIC 2004). None of the bird species recorded in or near the wetland are considered to be rare in Nova Scotia (ACCDC 2004; NSDNR 2002; NSDNR 2003) or Canada as a whole (COSEWIC 2004). The Canadian Wildlife Service however has identified a number of "target" species that include species currently common (*e.g.*, ranked S4 or S5 by ACCDC) and not currently assessed as sensitive or at risk by NSDNR ("Green"), but whose population trends indicate a decline in the populations. Canada Warbler is one of these species, and one

was recorded in the wetland. Canada Warbler was found in several other wetlands as well as mature mixedwood forest.

Step 3 Evaluate Groundwater Recharge Potential

Given the location of the wetland at the base of a long slope and its position on a small stream, it more likely that the wetland is a groundwater discharge site rather than a groundwater recharge site.

Step 4 Evaluate the Role of the Wetland in Surface Flow Regulation

The wetland may help to regulate surface water flow in Toddy Brook by augmenting stream flow during low flow periods. Given the small size of the wetland and its limited storage capacity this function is not considered to be significant.

Step 5 Evaluate the Agricultural use of the Wetland

The wetland is not used for agricultural production and has no potential to be used for agricultural production.

Step 6 Evaluate the Potential Role of the Wetland in Water Treatment.

The wetland currently does not play a role in water treatment.

Step 7 Evaluate the Potential for Peat Development

The wetland contains shallow deposits of woody peat, however, given the small size of the wetland and the poor quality of the peat, there is no potential for peat harvesting.

Step 8 Have You Addressed all Potential Issues with the Wetland Proposal?

All potential issues have been addressed.

Step 9 Address Additional Concerns

There are no additional concerns.

Step 10 Summary of Wetland Evaluation

Overall, this wetland is not considered to be significant. It is very small and does not provide unique habitat for plants or animals. This wetland has limited value as wildlife habitat due to its small size and low habitat diversity. No rare or endangered species were encountered in the wetland, however the

wetland may provide some suitable habitat for Canada Warbler, a bird species that has undergone some historic declines. This species was recorded in a number of wetlands in the area as well as mature mixedwood forest. The wetland has no potential for agricultural production, nor has any peat development potential, nor does it play a significant role in the hydrology of the area.

3.12 Wetland 12

The following table presents a summary of the wetland evaluation for Wetland 12.

Wetland 12	
Wetland Type:	Wetland complex composed of deciduous treed basin swamp and graminoid dominated basin bog
Size:	0.59 ha
Dominant Vegetation:	Deciduous treed basin swamp
Trees:	<i>Acer rubrum</i> (25%), <i>Betula alleghaniensis</i> (2%), <i>Fraxinus americana</i> (5%)
Shrubs:	<i>Ilex verticillata</i> (5%), <i>Alnus incana</i> (25%), <i>Acer rubrum</i> (1%)
Ground Vegetation:	<i>Sphagnum spp.</i> (60%), <i>Osmunda cinnamomea</i> (70%), <i>Carex trisperma</i> (5%), <i>Smilacina trifolia</i> (1%), <i>Rubus hispidus</i> (2%)
Dominant Vegetation:	Graminoid dominated basin bog
Trees:	<i>Acer rubrum</i> (2%)
Shrubs:	<i>Alnus incana</i> (5%), <i>Acer rubrum</i> (<1%), <i>Viburnum nudum</i> (<1%)
Ground Vegetation:	<i>Sphagnum spp.</i> (95%), <i>Carex stricta</i> (20%), <i>Calamagrostis canadensis</i> (10%), <i>Rubus hispidus</i> (40%), <i>Osmunda cinnamomea</i> (25%), <i>Thelypteris palustris</i> (15%), <i>Solidago uliginosa</i> (1%)
Vascular plant list:	58 species. No rare species encountered
Wildlife:	No rare or sensitive species encountered.
Birds:	American Robin, Black-and-white Warbler, Common Yellowthroat, Hairy Woodpecker, Hermit Thrush,
Mammals:	White-tailed Deer, Varying Hare
Herpetiles:	Green Frog
Hydrology:	The wetland is located in a shallow basin. There is a small spring located at the southern end of the wetland. There is no apparent inflow or outflow stream. The wetland probably discharges into Wetland 11 through an underground stream.
Anthropogenic uses:	None observed
Comments:	

Step 1 Evaluate Wildlife Habitat Potential

The wetland has not been mapped on the Wetlands Atlas for Nova Scotia so no Golet score is available for the wetland. Bird species recorded in the wetland during the field surveys included American Robin, Black-and-white Warbler, Common Yellowthroat, Hairy Woodpecker and Hermit Thrush. There is no open water present within or near the wetland other than a few windthrow pools and a small pool associated with a spring so it is not expected to provide valuable waterfowl habitat. Mammals recorded in the wetland included white-tailed deer and varying hare. The only herpetile species recorded in the wetland during the field survey was green frog.

The wetland does not provide significant wildlife habitat. The wildlife species encountered are common in the region and in the general area. The relatively small size of the wetland limits its value as wildlife habitat.

Step 2 Evaluate for Rare and Endangered Species

None of the bird, mammal or amphibian species recorded in or near the wetland are considered to be rare in Nova Scotia (ACCDC 2004; NSDNR 2002; NSDNR 2003) or Canada as a whole (COSEWIC 2004). A vegetation survey was conducted in the wetland to determine if any rare vascular plants were present. A total of 58 species (Table 1) were found in the wetland, none of which is considered to be rare in Nova Scotia (ACCDC 2004; NSDNR 2002; NSDNR 2003) or Canada (COSEWIC 2004).

Step 3 Evaluate Groundwater Recharge Potential

The presence of a spring at the southern end of the wetland suggests that the wetland is a groundwater discharge site rather than a groundwater recharge site.

Step 4 Evaluate the Role of the Wetland in Surface Flow Regulation

The wetland may contribute to surface water flow regulation by augmenting stream flow in Toddy Brook during low flow periods. Given the small size of the wetland and its limited storage capacity this function is not considered to be significant.

Step 5 Evaluate the Agricultural use of the Wetland

The wetland is not used for agricultural production and has no potential to be used for agricultural production.

Step 6 Evaluate the Potential Role of the Wetland in Water Treatment.

The wetland does not play a role in water treatment.

Step 7 Evaluate the Potential for Peat Development

The wetland is too small to provide potential for commercial peat extraction and the peat present in the wetland is less than one meter thick would have a high wood content reducing its value as horticultural peat.

Step 8 Have You Addressed all Potential Issues with the Wetland Proposal?

All potential issues have been addressed.

Step 9 Address Additional Concerns

There are no additional concerns.

Step 10 Summary of Wetland Evaluation

Overall, this wetland is not considered to be significant. It is relatively small and does not provide unique habitat for plants or animals. This wetland has limited value as wildlife habitat due to its small size. No rare or endangered species were encountered in the wetland. The wetland has no potential for agricultural production, nor has any real peat development potential, nor does it play a significant role in the hydrology of the area.

3.13 Wetland 13

The following table presents a summary of the wetland evaluation for Wetland 13.

Wetland 13	
Wetland Type:	Deciduous treed basin swamp
Size:	0.32 ha
Dominant Vegetation:	
Trees:	<i>Acer rubrum</i> (30%), <i>Picea mariana</i> (2%)
Shrubs:	<i>Ilex verticillata</i> (15%), <i>Viburnum nudum</i> (5%), <i>Nemopanthus mucronata</i> (30%), <i>Gaylussacia baccata</i> (5%), <i>Alnus incana</i> (8%), <i>Kalmia angustifolia</i> (10%)
Ground Vegetation:	<i>Sphagnum spp.</i> (90%), <i>Osmunda cinnamomea</i> (40%), <i>Smilacina trifolia</i> (8%), <i>Glyceria grandis</i> (8%), <i>Carex trisperma</i> (5%)
Vascular plant list:	24 species. No rare species encountered
Wildlife:	No rare or sensitive species encountered.
Birds:	American Robin, Chestnut-sided Warbler, Hermit Thrush, White-throated Sparrow
Mammals:	White-tailed Deer, Varying Hare
Herpetiles:	Green Frog
Hydrology:	The wetland is located in a small shallow basin. There is a small spring at the southern end of the wetland. There is no apparent outflow, however the topography of the area and the presence of a small spring at the southern end of the nearby Wetland 12 suggests that Wetland 13 probably discharges to Wetland 12 through an underground stream.
Anthropogenic uses:	None observed
Comments:	

Step 1 Evaluate Wildlife Habitat Potential

The wetland has not been mapped on the Wetlands Atlas for Nova Scotia so no Golet score is available for the wetland. Bird species recorded in the wetland during the field surveys included American Robin, Chestnut-sided Warbler, Hermit Thrush, and White-throated Sparrow. There is no open water present within or near the wetland other than a few windthrow pools and a short channel near a spring at the southern end of the wetland so it is not expected to provide valuable waterfowl habitat. Mammals recorded in the wetland included white-tailed deer and varying hare. The only herpetile species recorded in the wetland during the field survey was green frog.

The wetland does not provide significant wildlife habitat. The wildlife species encountered are common in the region and in the general area. The relatively small size of the wetland limits its value as wildlife habitat.

Step 2 Evaluate for Rare and Endangered Species

None of the bird, mammal or amphibian species recorded in or near the wetland are considered to be rare in Nova Scotia (ACCDC 2004; NSDNR 2002; NSDNR 2003) or Canada as a whole (COSEWIC 2004). A vegetation survey was conducted in the wetland to determine if any rare vascular plants were present. A total of 24 species (Table 1) were found in the wetland, none of which is considered to be rare in Nova Scotia (ACCDC 2004; NSDNR 2002; NSDNR 2003) or Canada (COSEWIC 2004).

Step 3 Evaluate Groundwater Recharge Potential

The presence of a spring at the southern end of the wetland suggests that the wetland is a groundwater discharge site rather than a groundwater recharge site.

Step 4 Evaluate the Role of the Wetland in Surface Flow Regulation

The wetland may contribute to surface water flow regulation by augmenting stream flow in Toddy Brook during low flow periods. Given the small size of the wetland and its limited storage capacity this function is not considered to be significant.

Step 5 Evaluate the Agricultural use of the Wetland

The wetland is not used for agricultural production and has no potential to be used for agricultural production.

Step 6 Evaluate the Potential Role of the Wetland in Water Treatment.

The wetland does not play a role in water treatment.

Step 7 Evaluate the Potential for Peat Development

The wetland contains shallow deposits of woody peat, however, given the small size of the wetland and the poor quality of the peat, there is no potential for peat harvesting.

Step 8 Have You Addressed all Potential Issues with the Wetland Proposal?

All potential issues have been addressed.

Step 9 Address Additional Concerns

There are no additional concerns.

Step 10 Summary of Wetland Evaluation

Overall, this wetland is not considered to be significant. It is relatively small and does not provide unique habitat for plants or animals. This wetland has limited value as wildlife habitat due to its small size. No rare or endangered species were encountered in the wetland. The wetland has no potential for agricultural production, nor has any real peat development potential, nor does it play a significant role in the hydrology of the area.

3.14 Wetland 14

The following table presents a summary of the wetland evaluation for Wetland 14.

Wetland 14	
Wetland Type:	Deciduous treed basin swamp
Size:	0.29 ha
Dominant Vegetation:	
Trees:	<i>Acer rubrum</i> (35%), <i>Fraxinus americana</i> (5%)
Shrubs:	<i>Ilex verticillata</i> (40%), <i>Alnus incana</i> (10%), <i>Viburnum nudum</i> (5%)
Ground Vegetation:	<i>Sphagnum</i> spp. (90%), <i>Osmunda cinnamomea</i> (30%), <i>Glyceria canadensis</i> (10%), <i>Carex folliculata</i> (5%), <i>Aster umbellatus</i> (2%)
Vascular plant list:	37 species. No rare species encountered
Wildlife:	No rare or sensitive species encountered.
Birds:	None
Mammals:	Eastern Chipmunk, Red Squirrel, White-tailed Deer
Herpetiles:	Green Frog, Northern Spring Peeper
Hydrology:	The wetland is located in a shallow basin at the base of a long slope. There is no apparent inflow or outflow.
Anthropogenic uses:	None observed
Comments:	

Step 1 Evaluate Wildlife Habitat Potential

The wetland has not been mapped on the Wetlands Atlas for Nova Scotia so no Golet score is available for the wetland. No birds were recorded in the wetland during the field surveys. There is no open water present within or near the wetland so it is not expected to provide valuable waterfowl habitat. Mammals recorded in the wetland included eastern chipmunk, red squirrel, and white-tailed deer. Herpetile species recorded in the wetland during the field survey included green frog and northern spring peeper.

The wetland does not provide significant wildlife habitat. The wildlife species encountered are common in the region and in the general area. The relatively small size of the wetland limits its value as wildlife habitat.

Step 2 Evaluate for Rare and Endangered Species

None of the mammal or amphibian species recorded in or near the wetland are considered to be rare in Nova Scotia (ACCDC 2004; NSDNR 2002; NSDNR 2003) or Canada as a whole (COSEWIC 2004). A vegetation survey was conducted in the wetland to determine if any rare vascular plants were present. A

total of 37 species (Table 1) were found in the wetland, none of which is considered to be rare in Nova Scotia (ACCDC 2004; NSDNR 2002; NSDNR 2003) or Canada (COSEWIC 2004).

Step 3 Evaluate Groundwater Recharge Potential

Given the location of this wetland at the base of a long slope as well as the abundance of underground streams in the area it is likely that this wetland is groundwater discharge site rather than a groundwater recharge site. Water probably discharges from the wetland via an underground stream.

Step 4 Evaluate the Role of the Wetland in Surface Flow Regulation

The wetland may contribute to surface flow regulation by evening out flow in down gradient brooks, however, given the small size of the wetland this function is not significant.

Step 5 Evaluate the Agricultural use of the Wetland

The wetland is not used for agricultural production and has no potential to be used for agricultural production.

Step 6 Evaluate the Potential Role of the Wetland in Water Treatment.

The wetland does not play a role in water treatment.

Step 7 Evaluate the Potential for Peat Development

The shallow deposits of woody peat in the wetland are not large enough or of sufficient quality to facilitate peat harvesting.

Step 8 Have You Addressed all Potential Issues with the Wetland Proposal?

All potential issues have been addressed.

Step 9 Address Additional Concerns

There are no additional concerns.

Step 10 Summary of Wetland Evaluation

Overall, this wetland is not considered to be significant. It is relatively small and does not provide unique habitat for plants or animals. This wetland has limited value as wildlife habitat due to its small size. No rare or endangered species were encountered in the wetland. The wetland has no potential for agricultural production, nor has any real peat development potential, nor does it play a significant role in the hydrology of the area.

3.15 Wetland 15

The following table presents a summary of the wetland evaluation for Wetland 15.

Wetland 15	
Wetland Type:	Deciduous treed basin swamp
Size:	0.24 ha
Dominant Vegetation:	
Trees:	<i>Fraxinus americana</i> (20%), <i>Quercus rubra</i> (30%), <i>Betula papyrifera</i> (15%), <i>Acer rubrum</i> (10%), <i>Picea rubens</i> (10%)
Shrubs:	<i>Ilex verticillata</i> (30%), <i>Acer spicatum</i> (20%), <i>Acer pensylvanicum</i> (10%), <i>Alnus incana</i> (10%), <i>Corylus cornuta</i> (10%), <i>Aronia melanocarpa</i> (5%), <i>Kalmia angustifolia</i> (5%)
Ground Vegetation:	<i>Osmunda cinnamomea</i> (40%), <i>Sphagnum spp.</i> (40%), <i>Rubus pubescens</i> (10%), <i>Aronia melanocarpa</i> (5%), <i>Thelypteris noveboracensis</i> (5%), Moss Spp. (20%)
Vascular plant list:	44 species. No rare species encountered
Wildlife:	No rare or sensitive species encountered.
Birds:	None
Mammals:	None
Herpetiles:	Green Frog
Hydrology:	The wetland is located in a shallow basin at the base of a long slope. An underground stream flows into the upslope side of the wetland. There is no apparent outflow although the wetland probably discharges through an underground stream.
Anthropogenic uses:	An old transmission line access road runs along the edge of the wetland although there has been no recent human activity.
Comments:	

Step 1 Evaluate Wildlife Habitat Potential

The wetland has not been mapped on the Wetlands Atlas for Nova Scotia so no Golet score is available for the wetland. No birds or mammals were recorded in the wetland during the field surveys. There is no open water present within or near the wetland so it is not expected to provide valuable waterfowl habitat. Green frog was the only herpetile species recorded in the wetland during the field survey.

The wetland does not provide significant wildlife habitat. The wildlife species encountered or are likely to be encountered in the wetland are common in the region and in the general area. The relatively small size of the wetland limits its value as wildlife habitat.

Step 2 Evaluate for Rare and Endangered Species

None of the wildlife species recorded in or near the wetland are considered to be rare in Nova Scotia (ACCDC 2004; NSDNR 2002; NSDNR 2003) or Canada as a whole (COSEWIC 2004). A vegetation survey was conducted in the wetland to determine if any rare vascular plants were present. A total of 44 species (Table 1) were found in the wetland, none of which is considered to be rare in Nova Scotia (ACCDC 2004; NSDNR 2002; NSDNR 2003) or Canada (COSEWIC 2004).

Step 3 Evaluate Groundwater Recharge Potential

The presence of the wetland at the base of a long slope as well as the presence of an underground inflow to the wetland suggests that the wetland is a groundwater discharge site rather than a groundwater recharge site.

Step 4 Evaluate the Role of the Wetland in Surface Flow Regulation

The wetland may contribute to regulation of surface water flow by augmenting flows during low flow periods. The wetland is probably connected to surface water streams by underground streams. Given the small size of the wetland and its limited storage capacity, the ability of the wetland to regulate surface water flow is not expected to be significant.

Step 5 Evaluate the Agricultural use of the Wetland

The wetland is not used for agricultural production and has no potential to be used for agricultural production.

Step 6 Evaluate the Potential Role of the Wetland in Water Treatment.

The wetland does not play a role in water treatment.

Step 7 Evaluate the Potential for Peat Development

The shallow deposits of woody peat in the wetland are not large enough or of sufficient quality to facilitate peat harvesting.

Step 8 Have You Addressed all Potential Issues with the Wetland Proposal?

All potential issues have been addressed.

Step 9 Address Additional Concerns

There are no additional concerns.

Step 10 Summary of Wetland Evaluation

Overall, this wetland is not considered to be significant. It is relatively small and does not provide unique habitat for plants or animals. This wetland has limited value as wildlife habitat due to its small size. No rare or endangered species were encountered in the wetland. The wetland has no potential for agricultural production, nor has any real peat development potential, nor does it play a significant role in the hydrology of the area.

3.16 Wetland 16

The following table presents a summary of the wetland evaluation for Wetland 16.

Wetland 16	
Wetland Type:	Deciduous treed basin swamp
Size:	0.21 ha
Dominant Vegetation:	
Trees:	<i>Acer rubrum</i> (20%), <i>Fraxinus americana</i> (10%), <i>Picea mariana</i> (5%), <i>Betula papyrifera</i> (2%)
Shrubs:	<i>Ilex verticillata</i> (80%), <i>Alnus incana</i> (40%), <i>Gaylussacia baccata</i> (20%), <i>Spiraea alba</i> (10%), <i>Viburnum nudum</i> (2%)
Ground Vegetation:	<i>Sphagnum spp.</i> (50%), <i>Glyceria striata</i> (2%)
Vascular plant list:	57 species. No rare species encountered
Wildlife:	No rare or sensitive species encountered.
Birds:	None
Mammals:	None
Herpetiles:	Wood Frog
Hydrology:	The wetland is located in a shallow basin at the base of a long slope. An underground stream flows into the upslope side of the wetland. There is no apparent outflow although the wetland probably discharges through an underground stream.
Anthropogenic uses:	An old transmission line access road runs along the edge of the wetland although there has been no recent human activity.
Comments:	

Step 1 Evaluate Wildlife Habitat Potential

The wetland has not been mapped on the Wetlands Atlas for Nova Scotia so no Golet score is available for the wetland. No birds or mammals were recorded in the wetland during the field surveys. There is no open water present within or near the wetland so it is not expected to provide valuable waterfowl habitat. Wood frog was the only herpetile species recorded in the wetland during the field survey.

The wetland does not provide significant wildlife habitat. The wildlife species encountered or are likely to be encountered in the wetland are common in the region and in the general area. The relatively small size of the wetland limits its value as wildlife habitat.

Step 2 Evaluate for Rare and Endangered Species

None of the wildlife species recorded in or near the wetland are considered to be rare in Nova Scotia (ACCDC 2004; NSDNR 2002; NSDNR 2003) or Canada as a whole (COSEWIC 2004). A vegetation survey was conducted in the wetland to determine if any rare vascular plants were present. A total of 57 species (Table 1) were found in the wetland, none of which is considered to be rare in Nova Scotia (ACCDC 2004; NSDNR 2002; NSDNR 2003) or Canada (COSEWIC 2004).

Step 3 Evaluate Groundwater Recharge Potential

The presence of the wetland at the base of a long slope as well as the presence of an underground inflow to the wetland suggests that the wetland is a groundwater discharge site rather than a groundwater recharge site.

Step 4 Evaluate the Role of the Wetland in Surface Flow Regulation

The wetland may contribute to regulation of surface water flow by augmenting flows during low flow periods. The wetland is probably connected to surface water streams by underground streams. Given the small size of the wetland and its limited storage capacity, the ability of the wetland to regulate surface water flow is not expected to be significant.

Step 5 Evaluate the Agricultural use of the Wetland

The wetland is not used for agricultural production and has no potential to be used for agricultural production.

Step 6 Evaluate the Potential Role of the Wetland in Water Treatment.

The wetland does not play a role in water treatment.

Step 7 Evaluate the Potential for Peat Development

The wetland contains shallow deposits of woody peat, however, given the small size of the wetland and the poor quality of the peat, there is no potential for peat harvesting.

Step 8 Have You Addressed all Potential Issues with the Wetland Proposal?

All potential issues have been addressed.

Step 9 Address Additional Concerns

There are no additional concerns.

Step 10 Summary of Wetland Evaluation

Overall, this wetland is not considered to be significant. It is relatively small and does not provide unique habitat for plants or animals. This wetland has limited value as wildlife habitat due to its small size. No rare or endangered species were encountered in the wetland. The wetland has no potential for agricultural production, nor has any real peat development potential, nor does it play a significant role in the hydrology of the area.

3.17 Wetland 17

The following table presents a summary of the wetland evaluation for Wetland 17.

Wetland 17	
Wetland Type:	Mixedwood treed basin swamp
Size:	0.51 ha
Dominant Vegetation:	
Trees:	<i>Acer rubrum</i> (40%), <i>Picea mariana</i> (15%), <i>Fraxinus americana</i> (7%), <i>Pinus strobus</i> (5%), <i>Quercus rubra</i> (1%)
Shrubs:	<i>Ilex verticillata</i> (70%), <i>Alnus incana</i> (20%), <i>Gaylussacia baccata</i> (10%), <i>Viburnum nudum</i> (5%), <i>Kalmia angustifolia</i> (2%)
Ground Vegetation:	<i>Sphagnum spp.</i> (80%), <i>Osmunda cinnamomea</i> (30%), <i>Smilacina trifolia</i> (5%), <i>Thelypteris palustris</i> (3%), <i>Aster acuminatus</i> (2%), <i>Coptis trifolia</i> (2%)
Vascular plant list:	42 species. No rare species encountered
Wildlife:	No rare or sensitive species encountered.
Birds:	American Robin, Black-and-white Warbler, Black-throated Green Warbler, Black-capped Chickadee, Cape May Warbler, Common Yellowthroat, Hermit Thrush, Nashville Warbler, Evidence of Pileated Woodpecker
Mammals:	red squirrel and raccoon,
Herpetiles:	None
Hydrology:	The wetland is located in a basin in a valley between two hills. There is no apparent inflow or outflow.
Anthropogenic uses:	An old transmission line service road runs along the western edge of the wetland. There has been no recent human activity in the vicinity of the wetland.
Comments:	

Step 1 Evaluate Wildlife Habitat Potential

The wetland has not been mapped on the Wetlands Atlas for Nova Scotia so no Golet score is available for the wetland. Bird species recorded in or immediately adjacent the wetland during the field surveys included American Robin, Black-and-white Warbler, Black-throated Green Warbler, Black-capped Chickadee, Cape May Warbler, Common Yellowthroat, Hermit Thrush, Nashville Warbler, and evidence of Pileated Woodpecker was also recorded. There is no open water present within or near the wetland so it is not expected to provide valuable waterfowl habitat. Mammals recorded in the wetland included red squirrel and raccoon. No herpetile species were recorded in the wetland.

The wetland does not provide significant wildlife habitat. The wildlife species encountered are common in the region and in the general area. The relatively small size of the wetland limits its value as wildlife habitat, although species breeding in surrounding forested habitat likely use the wetland for foraging.

Step 2 Evaluate for Rare and Endangered Species

None of the bird, mammal or amphibian species recorded in or near the wetland are considered to be rare in Nova Scotia (ACCDC 2004; NSDNR 2002; NSDNR 2003) or Canada as a whole (COSEWIC 2004). A vegetation survey was conducted in the wetland to determine if any rare vascular plants were present. A total of 42 species (Table 1) were found in the wetland, none of which is considered to be rare in Nova Scotia (ACCDC 2004; NSDNR 2002; NSDNR 2003) or Canada (COSEWIC 2004).

Step 3 Evaluate Groundwater Recharge Potential

The wetland has no obvious outlet suggesting that water is lost either through evapotranspiration or percolation into the underlying till. As such, the wetland probably acts as a groundwater recharge site. Given the small size of the wetland and the fact that there are no local groundwater users, the value of this function is considered to be low.

Step 4 Evaluate the Role of the Wetland in Surface Flow Regulation

Given the small size of the wetland and the fact that it is not part of a stream course, this wetland does not play a significant role in surface water flow regulation.

Step 5 Evaluate the Agricultural use of the Wetland

The wetland is not used for agricultural production and has no potential to be used for agricultural production.

Step 6 Evaluate the Potential Role of the Wetland in Water Treatment.

The wetland does not play a role in water treatment.

Step 7 Evaluate the Potential for Peat Development

The wetland contains shallow deposits of woody peat, however, given the small size of the wetland and the poor quality of the peat, there is no potential for peat harvesting.

Step 8 Have You Addressed all Potential Issues with the Wetland Proposal?

All potential issues have been addressed.

Step 9 Address Additional Concerns

There are no additional concerns.

Step 10 Summary of Wetland Evaluation

Overall, this wetland is not considered to be significant. It is relatively small and does not provide unique habitat for plants or animals. This wetland some value as wildlife habitat given the number of bird species recorded, however the wetland is relatively small, and the species encountered are common in the Project area and the region. No rare or endangered species were encountered in the wetland. The wetland has no potential for agricultural production, nor has any real peat development potential, nor does it play a significant role in the hydrology of the area.

3.18 Wetland 18

The following table presents a summary of the wetland evaluation for Wetland 18.

Wetland 18	
Wetland Type:	Mixedwood treed basin swamp
Size:	0.77 ha
Dominant Vegetation:	
Trees:	<i>Acer rubrum</i> (50%), <i>Pinus strobus</i> (20%), <i>Picea mariana</i> (10%), <i>Betula papyrifera</i> (2%), <i>Fraxinus americana</i> (1%)
Shrubs:	<i>Ilex verticillata</i> (30%), <i>Gaylussacia baccata</i> (10%), <i>Alnus incana</i> (2%), <i>Kalmia angustifolia</i> (2%), <i>Viburnum nudum</i> (2%)
Ground Vegetation:	<i>Sphagnum spp.</i> (90%), <i>Osmunda cinnamomea</i> (20%), <i>Aralia nudicaulis</i> (2%), <i>Rubus hispidus</i> (2%)
Vascular plant list:	40 species. No rare species encountered
Wildlife:	Four-toed Salamander, is a S3 listed species (ACCDC) and yellow listed species by NSDNR.
Birds:	None
Mammals:	None
Herpetiles:	None
Hydrology:	The wetland is located in a basin in a valley between two hills. There is no apparent inflow or outflow.
Anthropogenic uses:	None observed
Comments:	

Step 1 Evaluate Wildlife Habitat Potential

The wetland has not been mapped on the Wetlands Atlas for Nova Scotia so no Golet score is available for the wetland. No bird or mammal species were recorded in the wetland during the field surveys. There is no open water present within or near the wetland other than a few small windthrow pools so it is not expected to provide valuable waterfowl habitat. One amphibian species, four-toed salamander, was found in the wetland.

The wetland does not provide significant wildlife habitat. Bird species recorded in other mixed treed swamps in the Project area and that could be found in the wetland include American Robin, Blue-headed Vireo, Nashville Warbler, Black-and-white Warbler, Black-throated Green Warbler, Black-capped Chickadee and Blue Jay. The relatively small size of the wetland limits its value as wildlife habitat, although species breeding in surrounding forested habitat likely use the wetland for foraging.

Step 2 Evaluate for Rare and Endangered Species

One relatively rare amphibian species, the four-toed salamander, was found in the wetland. A female four-toed salamander and her clutch of eggs were found in a small pool near the southern edge of the wetland. Four-toed salamanders nest in sphagnum moss hummocks at the edges of pools or sluggish streams. Suitable four-toed salamander nesting habitat was found only at the southern edge of the wetland where several small pools were found. Four-toed salamander is listed by NSDNR as a yellow species indicating that it is sensitive to anthropogenic activities. Local herpetologists believe that this

species is more widespread and abundant than previously thought. A recent study (JWEL 1999) corroborates this belief. The study found four-toed salamander nest sites in 25 of 46 locations tested with a total of 79 nests found in the 25 sites where the species was present. Nests were found in a variety of natural and anthropogenic sites. Jacques Whitford field biologists have encountered four-toed salamanders at a wide variety of locations in Nova Scotia.

Four-toed salamanders are able to adapt to changing conditions and have been found nesting in a variety of disturbed sites including roadside ditches, beaver floodings, wheel ruts and old borrow pits. Given these findings, expansion of the quarry is not expected to have a significant long-term effect on local four-toed salamander populations.

A vegetation survey was conducted in the wetland to determine if any rare vascular plants were present. A total of 40 species (Table 1) were found in the wetland, none of which is considered to be rare in Nova Scotia (ACCDC 2004; NSDNR 2002; NSDNR 2003) or Canada (COSEWIC 2004).

Step 3 Evaluate Groundwater Recharge Potential

The wetland has no obvious outlet suggesting that water is lost either through evapotranspiration or percolation into the underlying till. As such, the wetland probably acts as a groundwater recharge site. Given the small size of the wetland and the fact that there are no local groundwater users, the value of this function is considered to be low.

Step 4 Evaluate the Role of the Wetland in Surface Flow Regulation

Given the small size of the wetland and the fact that it is not part of a stream course, Wetland 18 does not play a significant role in surface water flow regulation.

Step 5 Evaluate the Agricultural use of the Wetland

The wetland is not used for agricultural production and has no potential to be used for agricultural production.

Step 6 Evaluate the Potential Role of the Wetland in Water Treatment.

The wetland does not play a role in water treatment.

Step 7 Evaluate the Potential for Peat Development

The wetland contains shallow deposits of woody peat, however, given the small size of the wetland and the poor quality of the peat, there is no potential for peat harvesting.

Step 8 Have You Addressed all Potential Issues with the Wetland Proposal?

All potential issues have been addressed.

Step 9 Address Additional Concerns

There are no additional concerns.

Step 10 Summary of Wetland Evaluation

Overall, this wetland is not considered to be significant. It is less than one hectare and does not provide unique habitat for plants or animals. One uncommon species, four-toed salamander, was found in the wetland. Recent studies have shown that this species is more abundant and widely distributed than previously thought. The wetland has no potential for agricultural production, nor has any real peat development potential, nor does it play a significant role in the hydrology of the area.

3.19 Wetland 19

The following table presents a summary of the wetland evaluation for Wetland 19.

Wetland 19	
Wetland Type:	Low shrub dominated basin bog
Size:	0.41 ha
Dominant Vegetation:	
Trees:	<i>Acer rubrum</i> (3%), <i>Betula populifolia</i> (2%), <i>Pinus strobus</i> (1%)
Shrubs:	<i>Chamaedaphne calyculata</i> (60%), <i>Kalmia angustifolia</i> (30%), <i>Rhododendron canadense</i> (30%), <i>Gaylussacia baccata</i> (30%), <i>Myrica gale</i> (1%)
Ground Vegetation:	<i>Sphagnum spp.</i> (80%), <i>Sarracenia purpurea</i> (<1%), <i>Rubus hispidus</i> (<1%)
Vascular plant list:	22 species. No rare species encountered
Wildlife:	No rare or sensitive species encountered.
Birds:	Common Yellowthroat
Mammals:	None
Herpetiles:	None
Hydrology:	This wetland is situated in a shallow basin located at the base of several small hills. There is no apparent inflow or out flow.
Anthropogenic uses:	None observed
Comments:	

Step 1 Evaluate Wildlife Habitat Potential

Wetland 19 has been mapped on the Wetlands Atlas for Nova Scotia but no Golet score has been assigned to it indicating that the Golet score is less than 60. The Golet score is a system for ranking wetlands in regards to their value as wildlife habitat. Wetlands with scores greater than 65 are considered to be good wildlife habitat and the wildlife habitat potential should be taken into consideration before development is permitted in these wetlands.

Common Yellowthroat was the only bird species recorded in the wetland during the field survey. There is no open water present within or near the wetland so it is not expected to provide valuable waterfowl habitat. There was no sign of mammals and no herpetiles observed in the wetland during the field survey.

The wetland does not provide significant wildlife habitat. These relatively low diversity, small basin bogs are a common wetland type in the area so this wetland does not provide a unique habitat type. Wildlife species present or that may be present in the wetland are also found in adjacent open habitats. In addition, the small size of the wetland also limits its value as wildlife habitat.

Step 2 Evaluate for Rare and Endangered Species

None of the wildlife species recorded in or near the wetland are considered to be rare in Nova Scotia (ACCDC 2004; NSDNR 2002; NSDNR 2003) or Canada as a whole (COSEWIC 2004). A vegetation survey was conducted in the wetland to determine if any rare vascular plants were present. Only 22 species (Table 1) were found in the wetland, none of which is considered to be rare in Nova Scotia (ACCDC 2004; NSDNR 2002; NSDNR 2003) or Canada (COSEWIC 2004).

Step 3 Evaluate Groundwater Recharge Potential

The wetland has no obvious outlet suggesting that water is lost either through evapotranspiration or percolation into the underlying till. As such, the wetland probably acts as a groundwater recharge site. Given the small size of the wetland and the fact that there are no local groundwater users, the value of this function is considered to be low.

Step 4 Evaluate the Role of the Wetland in Surface Flow Regulation

The wetland is small and has no obvious outflow suggesting that it has very little effect on surface water flow regulation.

Step 5 Evaluate the Agricultural use of the Wetland

The wetland is not used for agricultural production and has no potential to be used for agricultural production.

Step 6 Evaluate the Potential Role of the Wetland in Water Treatment.

The wetland does not play a role in water treatment.

Step 7 Evaluate the Potential for Peat Development

The wetland is too small to provide potential for commercial peat extraction.

Step 8 Have You Addressed all Potential Issues with the Wetland Proposal?

All potential issues have been addressed.

Step 9 Address Additional Concerns

There are no additional concerns.

Step 10 Summary of Wetland Evaluation

Overall, this wetland is not considered to be significant. It is small and does not provide unique habitat for plants or animals. This wetland has limited value as wildlife habitat due to its small size and low habitat diversity. No rare or endangered species were encountered in the wetland. The wetland has no potential for agricultural production, nor has any real peat development potential, nor does it play a significant role in the hydrology of the area.

3.20 Wetland 20

The following table presents a summary of the wetland evaluation for Wetland 20.

Wetland 20	
Wetland Type:	Low shrub dominated basin bog
Size:	0.36 ha
Dominant Vegetation:	
Trees:	<i>Pinus strobus</i> (5%), <i>Picea mariana</i> (2%), <i>Acer rubrum</i> (2%), <i>Betula populifolia</i> (1%)
Shrubs:	<i>Kalmia angustifolia</i> (50%), <i>Rhododendron canadense</i> (40%), <i>Chamaedaphne calyculata</i> (30%), <i>Gaylussacia baccata</i> (30%), <i>Ledum groenlandicum</i> (5%)
Ground Vegetation:	<i>Sphagnum sp.</i> (60%), <i>Cladonia sp.</i> (5%), <i>Sarracenia purpurea</i> (<1%)
Vascular plant list:	17 species. No rare species encountered
Wildlife:	No wildlife encountered.
Birds:	None
Mammals:	None
Herpetiles:	None
Hydrology:	The wetland is located in perched basin between several low hills. There is no apparent inflow or out flow.
Anthropogenic uses:	None observed
Comments:	

Step 1 Evaluate Wildlife Habitat Potential

The wetland has not been mapped on the Wetlands Atlas for Nova Scotia so no Golet score is available for the wetland. No bird species were recorded in the wetland during the field survey. The wetland undoubtedly provides nesting habitat for bird species. The wetland contains low-shrub habitat which would provide habitat for bird species such as American Robin, Common Yellowthroat, Swamp Sparrow, and White-throated Sparrow. There is no open water present within or near the wetland so it is not expected to provide valuable waterfowl habitat. There was no sign of mammals and no herpetiles observed in the wetland during the field survey.

The wetland does not provide significant wildlife habitat. These relatively low diversity, small basin bogs are a common wetland type in the area so this wetland does not provide a unique habitat type. Wildlife that may be present in the wetland are also found in adjacent open habitats. In addition, the small size of the wetland also limits its value as wildlife habitat.

Step 2 Evaluate for Rare and Endangered Species

A vegetation survey was conducted in the wetland to determine if any rare vascular plants were present. Only 17 species (Table 1) were found in the wetland, none of which is considered to be rare in Nova Scotia (ACCDC 2004; NSDNR 2002; NSDNR 2003) or Canada (COSEWIC 2004).

Step 3 Evaluate Groundwater Recharge Potential

The wetland has no obvious outlet suggesting that water is lost either through evapotranspiration or percolation into the underlying till. As such, the wetland probably acts as a groundwater recharge site. Given the small size of the wetland and the fact that there are no local groundwater users, the value of this function is considered to be low.

Step 4 Evaluate the Role of the Wetland in Surface Flow Regulation

Given the small size of the wetland and the fact that it is not part of a stream course, Wetland 20 does not play a significant role in surface water flow regulation.

Step 5 Evaluate the Agricultural use of the Wetland

The wetland is not used for agricultural production and has no potential to be used for agricultural production.

Step 6 Evaluate the Potential Role of the Wetland in Water Treatment.

The wetland does not play a role in water treatment.

Step 7 Evaluate the Potential for Peat Development

The wetland is too small to provide potential for commercial peat extraction.

Step 8 Have You Addressed all Potential Issues with the Wetland Proposal?

All potential issues have been addressed.

Step 9 Address Additional Concerns

There are no additional concerns.

Step 10 Summary of Wetland Evaluation

Overall, this wetland is not considered to be significant. It is small and does not provide unique habitat for plants or animals. This wetland has limited value as wildlife habitat due to its small size and low habitat diversity. No rare or endangered species were encountered in the wetland. The wetland has no potential for agricultural production, nor has any real peat development potential, nor does it play a significant role in the hydrology of the area.

3.21 Wetland 21

The following table presents a summary of the wetland evaluation for Wetland 21.

Wetland 21	
Wetland Type:	Mixedwood treed basin bog
Size:	0.08 ha
Dominant Vegetation:	
Trees:	<i>Acer rubrum</i> (40%), <i>Picea mariana</i> (15%), <i>Larix laricina</i> (5%), <i>Betula papyrifera</i> (1%)
Shrubs:	<i>Ilex verticillata</i> (15%), <i>Alnus incana</i> (10%), <i>Gaylussacia baccata</i> (10%), <i>Nemopanthus mucronata</i> (10%)
Ground Vegetation:	<i>Sphagnum spp.</i> (90%), <i>Osmunda cinnamomea</i> (50%), <i>Glyceria canadensis</i> (10%), <i>Carex trisperma</i> (5%), <i>Rubus hispidus</i> (5%)
Vascular plant list:	23 species. No rare species encountered
Wildlife:	No rare or sensitive species encountered.
Birds:	Black-throated Green Warbler
Mammals:	None
Herpetiles:	None
Hydrology:	The wetland is located in a basin between two hills and has no inflow or outflow.
Anthropogenic uses:	None observed
Comments:	

Step 1 Evaluate Wildlife Habitat Potential

The wetland has not been mapped on the Wetlands Atlas for Nova Scotia so no Golet score is available for the wetland. Black-throated Green Warbler was the only bird species recorded in the wetland during the field survey. There is no open water present within or near the wetland so it is not expected to provide valuable waterfowl habitat. There was no sign of mammals and no herpetiles observed in the wetland during the field survey.

The wetland does not provide significant wildlife habitat. Bird species recorded in other mixed treed swamps in the Project area and that could also be found in the wetland include American Robin, Blue-headed Vireo, Nashville Warbler, Black-and-white Warbler, Black-capped Chickadee and Blue Jay. The small size of the wetland limits its value as wildlife habitat, although species breeding in surrounding forested habitat likely use the wetland for foraging.

Step 2 Evaluate for Rare and Endangered Species

None of the wildlife species recorded in or near the wetland are considered to be rare in Nova Scotia (ACCDC 2004; NSDNR 2002; NSDNR 2003) or Canada as a whole (COSEWIC 2004). A vegetation survey was conducted in the wetland to determine if any rare vascular plants were present. Only 17 species (Table 1) were found in the wetland, none of which is considered to be rare in Nova Scotia (ACCDC 2004; NSDNR 2002; NSDNR 2003) or Canada (COSEWIC 2004).

Step 3 Evaluate Groundwater Recharge Potential

The wetland has no obvious outlet suggesting that water is lost either through evapotranspiration or percolation into the underlying till. As such, the wetland probably acts as a groundwater recharge site. Given the small size of the wetland and the fact that there are no local groundwater users, the value of this function is considered to be low.

Step 4 Evaluate the Role of the Wetland in Surface Flow Regulation

The wetland is small and has no obvious outflow suggesting that it has very little effect on surface water flow regulation.

Step 5 Evaluate the Agricultural use of the Wetland

The wetland is not used for agricultural production and has no potential to be used for agricultural production.

Step 6 Evaluate the Potential Role of the Wetland in Water Treatment.

The wetland does not play a role in water treatment.

Step 7 Evaluate the Potential for Peat Development

The wetland is too small to provide potential for commercial peat extraction and the peat present in the wetland would have a high wood content reducing its value as horticultural peat.

Step 8 Have You Addressed all Potential Issues with the Wetland Proposal?

All potential issues have been addressed.

Step 9 Address Additional Concerns

There are no additional concerns.

Step 10 Summary of Wetland Evaluation

Overall, this wetland is not considered to be significant. It is very small and does not provide unique habitat for plants or animals. This wetland has limited value as wildlife habitat due to its small size and low habitat diversity. No rare or endangered species were encountered in the wetland. The wetland has no potential for agricultural production, nor has any real peat development potential, nor does it play a significant role in the hydrology of the area.

3.22 Wetland 22

The following table presents a summary of the wetland evaluation for Wetland 22.

Wetland 22	
Wetland Type:	Wetland complex composed of immature deciduous treed stream swamp, tall shrub dominated flat bog, tall shrub dominated stream swamp
Size:	1.61 ha
Dominant Vegetation:	Immature deciduous treed stream swamp
Trees:	<i>Acer rubrum</i> (5%)
Shrubs:	<i>Betula populifolia</i> (25%), <i>Alnus incana</i> (15%), <i>Ilex verticillata</i> (15%), <i>Viburnum nudum</i> (10%), <i>Nemopanthus mucronata</i> (5%), <i>Spiraea alba</i> (5%), <i>Picea mariana</i> (2%)
Ground Vegetation:	<i>Sphagnum spp.</i> (90%), <i>Osmunda cinnamomea</i> (35%), <i>Cornus canadensis</i> (5%), <i>Carex trisperma</i> (1%), <i>Dryopteris cristata</i> (1%)
Dominant Vegetation:	Tall shrub dominated flat bog
Trees:	None
Shrubs:	<i>Alnus incana</i> (15%), <i>Betula populifolia</i> (10%), <i>Ilex verticillata</i> (5%), <i>Acer rubrum</i> (5%), <i>Viburnum nudum</i> (10%)
Ground Vegetation:	<i>Sphagnum spp.</i> (90%), <i>Rubus hispidus</i> (30%), <i>Eriophorum virginicum</i> (10%), <i>Glyceria canadensis</i> (7%), <i>Carex trisperma</i> (2%)
Dominant Vegetation:	Tall shrub dominated stream swamp
Trees:	None
Shrubs:	<i>Alnus incana</i> (70%), <i>Ilex verticillata</i> (15%), <i>Betula populifolia</i> (1%), <i>Salix bebbiana</i> (1%), <i>Acer spicatum</i> (<1%)
Ground Vegetation:	<i>Sphagnum spp.</i> (90%), <i>Viola cucullata</i> (5%), <i>Onoclea sensibilis</i> (2%), <i>Osmunda cinnamomea</i> (2%), <i>Rubus pubescens</i> (<1%)
Vascular plant list:	86 Species. <i>Aster borealis</i> ranked S2? (ACDC 2004)

Wetland 22	
Wildlife:	Canada Warbler, a CWS "Target" species
Birds:	Ruffed Grouse, Alder Flycatcher, American Robin, Black-and-white Warbler, Blue Jay, Blue-headed Vireo, Canada Warbler, Common Yellowthroat, Goldfinch, Magnolia Warbler, Nashville Warbler, Northern Parula Warbler, Red-breasted Nuthatch, Red-eyed Vireo, and Wilson's Warbler
Mammals:	Eastern chipmunk, Raccoon, Red Squirrel, Varying Hare, and White-tailed Deer
Herpetiles:	Wood Frog
Hydrology:	The wetland is located in a valley situated between a drumlin and a bedrock ridge. A small stream arises in the wetland and flows into Powder Mill Lake.
Anthropogenic uses:	Timber in the wetland was harvested approximately 15 years ago. The wetland receives inputs of water from settling ponds in the Tidewater Quarry. A causeway was constructed across the wetland many decades ago to provide access to an explosives storage building which has been abandoned for many years.
Comments:	

Step 1 Evaluate Wildlife Habitat Potential.

The wetland has not been mapped on the Wetlands Atlas for Nova Scotia so no Golet score is available for the wetland. During the field surveys, all species of bird, mammal, reptile and amphibian detected within and immediately adjacent to the wetland were recorded. Wildlife species were detected on the basis of visual sightings, vocalizations, tracks, feces, skeletal remains, and distinctive signs such as claw marks or dens.

The wetland was surveyed for birds, mammals and herpetiles on May 20, June 4, June 14, and September 2, 2004. Birds observed in the wetland included Ruffed Grouse, Alder Flycatcher, American Robin, Black-and-white Warbler, Blue Jay, Blue-headed Vireo, Canada Warbler, Common Yellowthroat, Goldfinch, Magnolia Warbler, Nashville Warbler, Northern Parula Warbler, Red-breasted Nuthatch, Red-eyed Vireo, and Wilson's Warbler. Eastern Chipmunk and red squirrel were observed in the wetland, and tracks and other sign of raccoon, varying hare and white-tailed deer were observed in the wetland, suggesting that these mammals use the wetland or travel through it. Wood frog was the only herpetile species noted from the wetland. The wetland contains only a few small pools which suggests that it does not provide valuable habitat for waterfowl or semi-aquatic mammals such as muskrat (*Ondatra zibethicus*) and beaver (*Castor canadensis*). The few small pools present in the wetland provide limited amphibian breeding habitat. These pools do not provide suitable habitat for fish. Overall, the wetland is considered to have relatively low value as wildlife habitat, with the exception perhaps of terrestrial bird species.

Step 2 Evaluate for Rare and Endangered Species

A vegetation survey was conducted to determine if any rare vascular plant species were present. A total of 86 species of vascular plant were encountered during the survey (Table 1). Boreal American-Aster (*Aster borealis*), ranked "S2?" by the Atlantic Canada Conservation Data Centre (ACCDC 2004), and "Yellow" by Nova Scotia Department of Natural Resources (NSDNR 2002) was recorded in the wetland. No other species found in the wetland is considered to be rare in Nova Scotia or Canada

(Committee on the Status of Endangered Wildlife in Canada (COSEWIC) 2003). None of the bird, mammal and amphibian species recorded in the wetland are considered to be rare nationally (COSEWIC 2003) or provincially (ACCDC 2003, NSDNR 2003).

Step 3 Evaluate Groundwater Recharge Potential

The wetland is the headwaters for a small stream suggesting that it is a groundwater discharge area rather than a groundwater recharge area.

Step 4 Evaluate the Role of the Wetland in Surface Flow Regulation

The wetland may play a role in surface water flow regulation by augmenting stream flow during low flow periods and slowing the flow of water during high flow periods. Given the small size of the wetland, this function is not expected to be significant at a regional or local level.

Step 5 Evaluate the Agricultural use of the Wetland

The wetland is not used for agricultural production nor does it have any agricultural potential due to its small size.

Step 6 Evaluate the Potential Role of the Wetland in Water Treatment

The wetland currently receives water from the existing Sovereign Resource quarry. The settling pond for the quarry decants into the southern end of the wetland. The wetland may help to polish the quarry drainage water by filtering out suspended particulates. The plant communities located at the outflow of the settling pond appear to be healthy suggesting that existing inputs of surface water from the quarry are not adversely affecting the wetland.

Step 7 Evaluate the Potential for Peat Development

The wetland is too small to provide potential for commercial peat extraction and the peat present in the wetland would have a high wood content reducing its value as horticultural peat.

Step 8 Have you Addressed all Potential Issues with the Wetland Proposal?

All issues have been addressed.

Step 9 Address Additional Concerns

There are no additional concerns.

Step 10 Summary of Wetland Evaluation

This wetland provides several wetland functions including the provision of habitat for a rare plant species (*Aster borealis*), polishing of surface water discharged from the existing quarry and a minor role in surface water flow regulation. The wetland does not have potential for development as agricultural land or for peat harvesting. It is recommended that a buffer zone be established around the wetland in an effort to maintain the functions of this wetland. A hydrological study should be conducted to determine the size of the buffer required to maintain the functions of the wetland.

3.23 Wetland 23

The following table presents a summary of the wetland evaluation for Wetland 23.

Wetland 23	
Wetland Type:	Low shrub dominated basin bog
Size:	0.07 ha
Dominant Vegetation:	
Trees:	<i>Acer rubrum</i> (5%), <i>Picea mariana</i> (5%)
Shrubs:	<i>Myrica gale</i> (50%), <i>Chamaedaphne calyculata</i> (20%), <i>Spiraea alba</i> (5%), <i>Aronia melanocarpa</i> (2%), <i>Rhododendron canadense</i> (2%)
Ground Vegetation:	<i>Sphagnum spp.</i> (80%), <i>Calamagrostis Canadensis</i> (15%), <i>Rubus hispidus</i> (10%)
Vascular plant list:	20 species. No rare species encountered
Wildlife:	No wildlife encountered.
Birds:	None
Mammals:	None
Herpetiles:	None
Hydrology:	The wetland is situated in a shallow basin perched between several low hills. There is no apparent inflow or out flow.
Anthropogenic uses:	None observed
Comments:	

Step 1 Evaluate Wildlife Habitat Potential

The wetland has not been mapped on the Wetlands Atlas for Nova Scotia so no Golet score is available for the wetland. No bird species were recorded in the wetland during the field survey. The wetland undoubtedly provides nesting habitat for bird species. The wetland contains low-shrub habitat which would provide habitat for bird species such as American Robin, Common Yellowthroat, Swamp Sparrow, and White-throated Sparrow. There is no open water present within or near the wetland so it is not expected to provide valuable waterfowl habitat. There was no sign of mammals and no herpetiles observed in the wetland during the field survey.

The wetland does not provide significant wildlife habitat. These relatively low diversity, small basin bogs are a common wetland type in the area so this wetland does not provide a unique habitat type. Wildlife that may be present in the wetland are also found in adjacent open habitats. In addition, the small size of the wetland also limits its value as wildlife habitat.

Step 2 Evaluate for Rare and Endangered Species

A vegetation survey was conducted in the wetland to determine if any rare vascular plants were present. Only 20 species (Table 1) were found in the wetland, none of which is considered to be rare in Nova Scotia (ACCDC 2004; NSDNR 2002; NSDNR 2003) or Canada (COSEWIC 2004).

Step 3 Evaluate Groundwater Recharge Potential

The wetland may function as a groundwater recharge site. It receives both surface water and groundwater inputs from a portion of a watershed; however, there is no evident surface water outflow suggesting that water is lost from the wetland through evapotranspiration and groundwater flow. There are no nearby users of groundwater. Given the small size of the wetland and the lack of nearby groundwater users it is not expected to play a significant role in the replenishment of local water supplies.

Step 4 Evaluate the Role of the Wetland in Surface Flow Regulation

The wetland is small and has no obvious outflow suggesting that it has very little effect on surface water flow regulation.

Step 5 Evaluate the Agricultural use of the Wetland

The wetland is not used for agricultural production and has no potential to be used for agricultural production.

Step 6 Evaluate the Potential Role of the Wetland in Water Treatment.

The wetland does not play a role in water treatment.

Step 7 Evaluate the Potential for Peat Development

The wetland is too small to provide potential for commercial peat extraction.

Step 8 Have You Addressed all Potential Issues with the Wetland Proposal?

All potential issues have been addressed.

Step 9 Address Additional Concerns

There are no additional concerns.

Step 10 Summary of Wetland Evaluation

Overall, this wetland is not considered to be significant. It is very small and does not provide unique habitat for plants or animals. This wetland has limited value as wildlife habitat due to its small size and low habitat diversity. No rare or endangered species were encountered in the wetland. The wetland has no potential for agricultural production, nor has any real peat development potential, nor does it play a significant role in the hydrology of the area.

3.24 Wetland 24

The following table presents a summary of the wetland evaluation for Wetland 24.

Wetland 24	
Wetland Type:	Low shrub dominated basin bog
Size:	1.34 ha
Dominant Vegetation:	
Trees:	<i>Pinus strobus</i> (3%), <i>Picea mariana</i> (2%), <i>Betula populifolia</i> (1%), <i>Larix laricina</i> (1%)
Shrubs:	<i>Kalmia angustifolia</i> (70%), <i>Rhododendron canadense</i> (20%), <i>Chamaedaphne calyculata</i> (15%), <i>Aronia melanocarpa</i> (5%), <i>Nemopanthus mucronata</i> (2%), <i>Ledum groenlandicum</i> (1%)
Ground Vegetation:	<i>Sphagnum spp.</i> (20%), <i>Cladium mariscoides</i> (15%), <i>Calamagrostis canadensis</i> (<1%), <i>Solidago uliginosa</i> (<1%), <i>Sarracenia purpurea</i> (<1%)
Vascular plant list:	16 species. No rare species encountered
Wildlife:	No rare or sensitive species encountered.
Birds:	Common Yellowthroat, Palm Warbler
Mammals:	None
Herpetiles:	None
Hydrology:	The wetland is situated in a shallow basin perched between several low hills. There is no apparent inflow or out flow.
Anthropogenic uses:	None observed
Comments:	

Step 1 Evaluate Wildlife Habitat Potential

Wetland 24 has been mapped on the Wetlands Atlas for Nova Scotia but no Golet score has been assigned to it indicating that the Golet score is less than 60. The Golet score is a system for ranking wetlands in regards to their value as wildlife habitat. Wetlands with scores greater than 65 are considered to be good wildlife habitat and the wildlife habitat potential should be taken into consideration before development is permitted in these wetlands.

Bird species recorded in the wetland during the field survey included Common Yellowthroat and Palm Warbler. There is no open water present within or near the wetland so it is not expected to provide valuable waterfowl habitat. There was no sign of mammals and no herpetiles observed in the wetland during the field survey.

The wetland does not provide significant wildlife habitat. These relatively low diversity, small basin bogs are a common wetland type in the area so this wetland does not provide a unique habitat type. Wildlife species present or that may be present in the wetland are also found in adjacent open habitats. In addition, the relatively small size of the wetland also limits its value as wildlife habitat.

Step 2 Evaluate for Rare and Endangered Species

None of the bird, mammal or amphibian species recorded in or near the wetland are considered to be rare in Nova Scotia (ACCDC 2004; NSDNR 2002; NSDNR 2003) or Canada as a whole (COSEWIC 2004). A vegetation survey was conducted in the wetland to determine if any rare vascular plants were present. Only 16 species (Table 1) were found in the wetland, none of which is considered to be rare in Nova Scotia (ACCDC 2004; NSDNR 2002; NSDNR 2003) or Canada (COSEWIC 2004).

Step 3 Evaluate Groundwater Recharge Potential

The wetland may function as a groundwater recharge site. It receives both surface water and groundwater inputs from a portion of a watershed; however, there is no evident surface water outflow suggesting that water is lost from the wetland through evapotranspiration and groundwater flow. There are no nearby users of groundwater. Given the small size of the wetland and the lack of nearby groundwater users it is not expected to play a significant role in the replenishment of local water supplies.

Step 4 Evaluate the Role of the Wetland in Surface Flow Regulation

The wetland is small and has no obvious outflow suggesting that it has very little effect on surface water flow regulation.

Step 5 Evaluate the Agricultural use of the Wetland

The wetland is not used for agricultural production and has no potential to be used for agricultural production.

Step 6 Evaluate the Potential Role of the Wetland in Water Treatment.

The wetland does not play a role in water treatment.

Step 7 Evaluate the Potential for Peat Development

The wetland is too small to provide potential for commercial peat extraction.

Step 8 Have You Addressed all Potential Issues with the Wetland Proposal?

All potential issues have been addressed.

Step 9 Address Additional Concerns

There are no additional concerns.

Step 10 Summary of Wetland Evaluation

Overall, this wetland is not considered to be significant. It is small and does not provide unique habitat for plants or animals. This wetland has limited value as wildlife habitat due to its small size and low habitat diversity. No rare or endangered species were encountered in the wetland. The wetland has no potential for agricultural production, nor has any real peat development potential, nor does it play a significant role in the hydrology of the area.

3.25 Wetland 25

The following table presents a summary of the wetland evaluation for Wetland 25.

Wetland 25	
Wetland Type:	Low shrub dominated basin bog
Size:	0.13 ha
Dominant Vegetation:	
Trees:	<i>Betula populifolia</i> (6%), <i>Larix laricina</i> (3%), <i>Pinus strobus</i> (3%), <i>Picea mariana</i> (2%)
Shrubs:	<i>Chamaedaphne calyculata</i> (70%), <i>Kalmia angustifolia</i> (30%), <i>Rhododendron canadense</i> (30%), <i>Gaylussacia baccata</i> (15%), <i>Alnus incana</i> (2%)
Ground Vegetation:	<i>Sphagnum spp.</i> (70%), <i>Sarracenia purpurea</i> (3%), <i>Smilacina trifolia</i> (3%), <i>Vaccinium macrocarpon</i> (<1%), <i>Vaccinium oxycoccos</i> (<1%)
Vascular plant list:	20 species. No rare species encountered
Wildlife:	No rare or sensitive species encountered.
Birds:	Common Yellowthroat
Mammals:	None
Herpetiles:	None
Hydrology:	The wetland is located in a perched basin between several low hills. There is no apparent inflow or out flow.
Anthropogenic uses:	None observed
Comments:	

Step 1 Evaluate Wildlife Habitat Potential

The wetland has not been mapped on the Wetlands Atlas for Nova Scotia so no Golet score is available for the wetland. Common Yellowthroat was the only bird species recorded in the wetland during the field survey. There is no open water present within or near the wetland so it is not expected to provide valuable waterfowl habitat. There was no sign of mammals and no herpetiles observed in the wetland during the field survey.

The wetland does not provide significant wildlife habitat. These relatively low diversity, small basin bogs are a common wetland type in the area so this wetland does not provide a unique habitat type. Wildlife species present or that may be present in the wetland are also found in adjacent open habitats. In addition, the small size of the wetland also limits its value as wildlife habitat.

Step 2 Evaluate for Rare and Endangered Species

None of the wildlife species recorded in or near the wetland are considered to be rare in Nova Scotia (ACCDC 2004; NSDNR 2002; NSDNR 2003) or Canada as a whole (COSEWIC 2004). A vegetation survey was conducted in the wetland to determine if any rare vascular plants were present. Only 20 species (Table 1) were found in the wetland, none of which is considered to be rare in Nova Scotia (ACCDC 2004; NSDNR 2002; NSDNR 2003) or Canada (COSEWIC 2004).

Step 3 Evaluate Groundwater Recharge Potential

The wetland may function as a groundwater recharge site. It receives both surface water and groundwater inputs from a portion of a watershed; however, there is no evident surface water outflow suggesting that water is lost from the wetland through evapotranspiration and groundwater flow. There are no nearby users of groundwater. Given the small size of the wetland and the lack of nearby groundwater users it is not expected to play a significant role in the replenishment of local water supplies.

Step 4 Evaluate the Role of the Wetland in Surface Flow Regulation

The wetland is small and has no obvious outflow suggesting that it has very little effect on surface water flow regulation.

Step 5 Evaluate the Agricultural use of the Wetland

The wetland is not used for agricultural production and has no potential to be used for agricultural production.

Step 6 Evaluate the Potential Role of the Wetland in Water Treatment.

The wetland does not play a role in water treatment.

Step 7 Evaluate the Potential for Peat Development

The wetland is too small to provide potential for commercial peat extraction.

Step 8 Have You Addressed all Potential Issues with the Wetland Proposal?

All potential issues have been addressed.

Step 9 Address Additional Concerns

There are no additional concerns.

Step 10 Summary of Wetland Evaluation

Overall, this wetland is not considered to be significant. It is small and does not provide unique habitat for plants or animals. This wetland has limited value as wildlife habitat due to its small size and low habitat diversity. No rare or endangered species were encountered in the wetland. The wetland has no potential for agricultural production, nor has any real peat development potential, nor does it play a significant role in the hydrology of the area.

4.0 REFERENCES

- ACCDC (Atlantic Canada Conservation Data Centre). 2004. Species Lists and Rare Species. Internet Publication: <http://www.accdc.com/info/lists/>.
- Bond, W.K., K.W. Cox, T. Heberlein, E.W. Manning, D.R. Witty, and D.A. Young. 1992. Wetland Evaluation Guide. North American Wetlands Conservation Council (Canada), Issues Paper, No. 1992-1.
- Committee on the Status of Endangered Wildlife in Canada (COSEWIC). 2004. Canadian Species at Risk. Internet Publication: http://www.sis.ec.gc.ca/mapps/ec_species/htdocs/ec_species_e.phtml.
- Erskine, A. J. 1992. Atlas of Breeding Birds of the Maritime Provinces. Nimbus Publishing Ltd. and the Nova Scotia Museum, Halifax, NS, 270 pp.
- National Wetlands Working Group. 1987. The Canadian Wetland Classification System. Lands Conservation Branch, Canadian Wildlife Service, Environment Canada; Ecological Land Classification Series No. 21. 17 pp.
- Nova Scotia Department of Natural Resources (NSDNR). 2002. General Status Ranks of Wild Species in Nova Scotia. Internet Publication: <http://www.gov.ns.ca/natr/wildlife/genstatus/ranks.asp>.
- Nova Scotia Department of Natural Resources (NSDNR). 2003. Species at Risk in Nova Scotia. Internet Publication: <http://www.gov.ns.ca/natr/wildlife/endgrd/specieslist.htm>.
- Pronych, G. and A. Wilson. 1993. Atlas of Rare Vascular Plants in Nova Scotia. Nova Scotia Museum of Natural History, Halifax, NS, Curatorial Report No. 78. 331 pp.