

TRAFALGAR – 10 SIDEROAD

County of Wellington	NAI Area # 6487	Credit Valley Conservation Authority
Town of Erin	Size: 255 hectares	Watershed: Credit River
Con 8, Lots 6-10	Ownership: 100% private	Subwatershed: Silver Creek; West Credit River; Black Creek

General Summary

This large natural area in the southern part of Erin is comprised of very diverse wetland communities of swamp, marsh, shallow water and fen. Deciduous, mixed and conifer forests are found on drier, rolling terrain. This area is minimally disturbed and is in good condition. Many rare species and several rare vegetation communities occur here. Biodiversity is high in this area.

This area is well-connected to other nearby large natural areas. This area is in a key location, at the headwaters of three Credit River subwatersheds and close to the boundary between the Credit and Eramosa Rivers, facilitating extensive cross-regional connectivity.

NAI ELC surveyors, botanists and ornithologists inventoried vegetation communities, plants and breeding birds and made incidental observations of other fauna (Table 1), covering 48% of the natural area (determined by access permission). Additional data for part of this area came from a breeding bird survey (using forest bird monitoring methodology) and an amphibian survey (using amphibian road call count methodology) done by a consultant for CVC. With respect to the NAI core inventories (vegetation communities, plants, breeding birds), this area is considered data-complete. Fish species inventories were not done in this area.

Table 1: NAI Field Visits

Visit Date	Inventory Type
19 June 2009	Fauna
27 June 2009	Fauna
20 July 2009	Fauna
18 Sept. 2009	ELC
22 Sept. 2009	ELC
23 Sept. 2009	ELC
24 Sept. 2009	ELC
25 Sept. 2009	ELC
02 Oct. 2009	ELC
05 Oct. 2009	ELC
06 Oct. 2009	ELC
08 Oct. 2009	ELC
15 Oct. 2009	ELC
16 Oct. 2009	ELC
19 Oct. 2009	ELC
28 May 2010	Fauna
11 June 2010	Flora
14 June 2010	Fauna
26 July 2010	Flora
27 July 2010	Flora
29 July 2010	Flora
13 Sept. 2010	Flora

Natural Feature Classifications and Planning Areas

This natural area is part of:
 Life Science ANSI - regionally significant Brisbane Woods
 ESA - Brisbane Woods II ESA
 PSW - Ballinacree Ridge Wetland Complex
 Greenbelt Plan – Natural Heritage System

Physical Features

This area lies in the Horseshoe Moraines physiographic region; characterized by north-south trending ridges of sand and silt glacial deposits. Soils tend to be sandy loams that support high rates of recharge to groundwater aquifers.

This natural area contains part of the headwaters of three Credit River tributaries. Drainage for most of this area forms part of the headwaters of Silver Creek. Drainage from the south corner of this area is part of the headwaters of Black Creek. Black Creek joins Silver Creek in Georgetown, and the combined stream then joins the Credit River in Norval. Water from the north corner of the area forms the headwaters of a tributary of the West Credit River. The West Credit River joins the main Credit at Forks of the Credit.

Groundwater seepage and vernal pools are present in some communities.

Human History

European settlement of this area commenced in the 1820's. The nearby community of Brisbane was laid out in 1854 and in its early days had a blacksmith shop, woodworking shop and two hotels. It was on a stagecoach line between Guelph and Erin Village. From this we can gather that agriculture and logging occurred in the surrounding area.

Historically, parts of this natural area were cleared for agricultural or logging purposes and most of the treed communities are mid-aged. One forest area has scattered Common Apple (*Malus pumila*) trees which could indicate the area was once cleared for grazing or was a small orchard.

Parts of this natural area are bordered by Trafalgar Rd on the southwest, 5 Sideroad on the southeast, and 8th Line to the northeast. Surrounding land uses are agricultural, rural residential and rural estate. Around its margins, the area has been somewhat fragmented by clearing for rural estate homes and some agriculture. A private road and small subdivision of estate homes intrudes deeply into the natural area and creates some additional fragmentation, although due to the size of the lots and likely to the surrounding wetlands, clearing around these homes is minimal.

Vegetation Communities

The general community types present are coniferous forest (3%), deciduous forest (28%), mixed forest (11%), marsh (5%), open fen (3%), treed fen (<1%), coniferous swamp (2%), deciduous swamp (8%), mixed swamp (11%), thicket swamp (2%), mixed shallow aquatic (<1%), open aquatic (<1%), cultural meadow (2%), cultural savannah (3%), cultural woodland (6%) and plantation (16%).

A total of 61 vegetation communities of 36 different types were mapped over the 48% of this area to which the NAI ELC crew had access (Table 2). The Red Maple - Conifer Mixed Organic Swamp (SWM5-1, 2 communities) and Winterberry Organic Thicket Swamp (SWT3-7) communities are provincially rare. The 5 fen communities, Slender Sedge Graminoid Open Fen (FEO1-2, 3 communities), Water Horsetail Open Fen (FEOG1-10) and Tamarack Treed Fen (FET1-1), as well as the Fresh-Moist Sugar Maple – Hemlock Mixed Forest (FOM6-1), the White Cedar - Conifer Organic Coniferous Swamp (SWC3-2) and Willow Organic Thicket Swamp (SWT3-2) are all regionally rare.

One of the Slender Sedge Graminoid Open Fen (FEO1-2) communities has an inclusion of regionally rare Mixed Shrub Fen (FESM1-1) and is complexed with regionally rare community Leatherleaf – Forb Shrub Fen (FES1-4). One of the Dry - Fresh Sugar Maple - Hardwood Deciduous Forest (FODM5-11) communities has an inclusion of provincially rare Red Maple – Conifer Organic Mixed Swamp (SWM5-1, S-rank S3S4). One of the other Dry - Fresh Sugar Maple - Hardwood Deciduous Forest (FODM5-11) communities has an inclusion of regionally rare Fresh – Moist Sugar Maple – Hemlock Mixed Forest (FOM6-1). The White Birch - Poplar Organic Deciduous Swamp (SWD7-1) community has an inclusion of regionally rare Willow Organic Thicket Swamp (SWT3-2). One of the Fresh-Moist White Cedar - Sugar Maple Mixed Forest (FOM7-1) communities also has an inclusion of regionally rare Willow Organic Thicket Swamp (SWT3-2). The White Cedar - Conifer Organic Coniferous Swamp (SWC3-2) community is complexed with the provincially rare Winterberry Organic Thicket Swamp (SWT3-7, S-rank S3S4).

Table 2: ELC Vegetation Communities

Map reference *	Vegetation type	Size in hectares	% of natural area
FOC2-2	Dry-Fresh White Cedar Coniferous Forest (2 communities)	1.19	0.47
FOC4-A	Fresh-Moist White Cedar - White Pine Coniferous Forest	2.05	0.80
FOD5-1	Dry-Fresh Sugar Maple Deciduous Forest	13.83	5.43
FOD5-10	Dry-Fresh Sugar Maple - Paper Birch - Poplar Deciduous Forest (2 communities)	1.37	0.54
FOD5-2	Dry-Fresh Sugar Maple - Beech Deciduous Forest	5.06	1.98
FOD5-8	Dry-Fresh Sugar Maple - White Ash Deciduous Forest (3 communities)	4.43	1.74
FOD6-1	Fresh-Moist Sugar Maple - Ash Deciduous Forest	1.08	0.42
FOD6-5	Fresh-Moist Sugar Maple - Hardwood Deciduous Forest	1.17	0.46
FOD8-1	Fresh-Moist Poplar Deciduous Forest (3 communities)	1.96	0.77
FODM5-11	Dry - Fresh Sugar Maple - Hardwood Deciduous Forest (5 communities)	14.00	5.50
FOM3-2	Dry-Fresh Hemlock - Sugar Maple Mixed Forest	0.78	0.31
FOM6-1	Fresh-Moist Sugar Maple - Hemlock Mixed Forest (4 communities)	5.74	2.25
FOM7-1	Fresh-Moist White Cedar - Sugar Maple Mixed Forest (4 communities)	7.76	3.05
FOM7-2	Fresh-Moist White Cedar - Hardwood Mixed Forest (2 communities)	2.95	1.16
FOMM10-1	Fresh-Moist Balsam Fir- Hardwood Mixed Forest (2 communities)	1.80	0.71
FEO1-2	Slender Sedge Graminoid Open Fen (3 communities)	5.55	2.18
FEOG1-10	Water Horsetail Open Fen	0.98	0.38
FET1-1	Tamarack Treed Fen	0.45	0.18
MAMO1-2	Cattail Graminoid Organic Meadow Marsh	3.40	1.34
MAS2-8	Rice Cut-grass Mineral Shallow Marsh	0.49	0.19
MAS3-1	Cattail Organic Shallow Marsh	2.96	1.16
SWC3-2	White Cedar - Conifer Organic Coniferous Swamp	0.68	0.27
SWD6-1	Red Maple Organic Deciduous Swamp (3 communities)	8.73	3.43
SWD7-1	White Birch - Poplar Organic Deciduous Swamp	1.38	0.54
SWD7-2	Yellow Birch Organic Deciduous Swamp	0.84	0.33
SWDO1-2	Green Ash Organic Deciduous Swamp	3.78	1.49
SWDO3-4	White Elm Organic Deciduous Swamp	1.78	0.70
SWM04-1	Balsam Fir - Hardwood Organic Mixed Swamp (2 communities)	16.09	6.32
SWM04-2	Hemlock- Hardwood Organic Mixed Swamp (2 communities)	2.47	0.97
SWM4-1	White Cedar - Hardwood Organic Mixed Swamp	0.51	0.20
SWM5-1	Red Maple - Conifer Mixed Organic Swamp (2 communities) PROVINCIAL RARE S-RANK S3S4	2.24	0.88
SWM6-1	Birch - Conifer Organic Mixed Swamp	0.71	0.28
SWMM4-2	Black Ash - Conifer Mineral Mixed Swamp	0.94	0.37
SWT3-2	Willow Organic Thicket Swamp	0.27	0.11

SWT3-7	Winterberry Organic Thicket Swamp PROVINCIALY RARE S-RANK S3S4	1.08	0.42
SAM1-A	Water Lily - Bullhead Lily Mixed Shallow Aquatic	0.69	0.27
	TOTAL AREA INVENTORIED	121.19	

* Note: The map reference code refers to the vegetation type shown on mapping for this area and also to the Appendix list of species typically encountered in this vegetation type.

Species Presence

Vascular Plants

Vascular plant biodiversity is very high in this natural area. A total of 399 vascular plant species are recorded for this area, of which 349 (87%) are native. One of these species, Butternut (*Juglans cinerea*), is Endangered both nationally and provincially, as well as being provincially rare (S-rank S3?; Table 3). Ten Butternut trees were located in this area. Most of these trees were mature and though they had cankers present, most were in good health. Sixty-three species are regionally rare (Table 4).

Mud Sedge (*Carex limosa*) was found here, only one of two locations where it was found during NAI fieldwork to date. Its presence is likely due to its preference for bogs and fens, rare habitats in the Credit River watershed. Twig Rush (*Cladium mariscoides*) is believed to be a new record for the Credit River Watershed and Peel Region. Slender Cotton-grass (*Eriophorum gracile*) is a new record for the Credit River watershed and was last recorded in 1890 for Peel Region and is rare in Wellington County. Narrow-panicked Rush (*Juncus brevicaudatus*) is a new species for Wellington County. About 50 European Common Twayblade (*Listera ovata*) plants, an exotic species, were observed near the fen. This is the first known location for this species in the watershed and in Wellington County (Cecile, 2010).

Birds

Breeding bird biodiversity is high in this area. A total of 68 bird species were observed, all of which are native. Two of these species are believed to be visitors but the remaining 66 species showed some level (possible, probable, confirmed) of breeding evidence. Two of these are Species At Risk (Table 3). Canada Warbler (*Wilsonia canadensis*) is Threatened nationally and designated Special Concern provincially and Barn Swallow (*Hirundo rustica*) is Threatened nationally.

This area supports two species of colonial-nesting birds, Green Heron (*Butorides virescens*) and Barn Swallow, two species of waterfowl, Wood Duck (*Aix sponsa*) and Mallard (*Anas platyrhynchos*) and one species of wetland-nesting bird, Virginia Rail (*Rallus limicola*). Interior forest habitat is present in this area, supporting nine species of area-sensitive forest interior birds, namely Hairy Woodpecker (*Picoides villosus*), Pileated Woodpecker (*Dryocopus pileatus*), Winter Wren (*Troglodytes troglodytes*), Red-breasted Nuthatch (*Sitta canadensis*), Veery (*Catharus fuscescens*), Black-throated Green Warbler (*Dendroica virens*), Black-and-white Warbler (*Mniotilta varia*), Ovenbird (*Seiurus aurocapilla*) and Scarlet Tanager (*Piranga olivacea*). Open successional habitat in this area and in adjacent agricultural and regenerating lands support two species of grassland birds, Eastern Kingbird (*Tyrannus tyrannus*) and Field Sparrow (*Spizella pusilla*). A Great Horned Owl (*Bubo virginianus*) was observed.

Butterflies and Skippers

A total of 18 species of butterflies/skippers were recorded as incidental observations, of which 17 (94%) are native. None are Species At Risk or rare. At least ten Silver-bordered Fritillaries were observed and are restricted to the fens (Curry, 2010).

Dragonflies and Damselflies

A total of 19 species of dragonflies/damselflies were recorded as incidental observations here, all of which are native. Boreal Bluet (*Enallagma boreale*) occurs here, found only at one other site during NAI fieldwork of 2008 and 2009. It is rare in adjacent Halton Region. The Red-waisted Whiteface

(*Leucorrhinia proxima*) and Williamson's Emerald (*Somatochlora williamsoni*) are also present here and are both rare in adjacent Halton Region (Dwyer, 2006). Williamson's Emerald is restricted to the fens (Curry, 2010).

Herpetofauna

Nine herpetofaunal species were recorded here as incidental observations, all of which are native. One of these species, Western Chorus Frog (*Pseudacris triseriata*), is Threatened nationally (Table 3). The Western Chorus Frog and six other frog/toad species were all heard during the breeding season. The other herpetofaunal species here consist of one snake species and one turtle species.

Mammals

Seven native, common species of mammals were detected at this site as incidental observations.

Table 3: Designated Species At Risk

Scientific name	Common name	COSEWIC	COSSARO	S rank	G rank
VASCULAR PLANTS					
<i>Juglans cinerea</i>	Butternut	END	END	S3?	G4
BIRDS					
<i>Hirundo rustica</i>	Barn Swallow	THR		S5B	G5
<i>Wilsonia canadensis</i>	Canada Warbler	THR	SC	S4B	G5
HERPETOFAUNA					
<i>Pseudacris triseriata</i>	Western Chorus Frog	THR		S4	G5

Table 4: Regionally Rare Vascular Plant Species (Kaiser, 2001)

Scientific name	Common name	S rank	G rank
VASCULAR PLANTS			
<i>Acorus americanus</i>	American Sweetflag	S4	G5
<i>Agrostis scabra</i>	Rough Bentgrass	S5	G5
<i>Andromeda polifolia</i> ssp. <i>glaucophylla</i>	Bog Rosemary	S5	G5T5
<i>Brachyelytrum erectum</i>	Bearded Shorthusk	S4S5	G5
<i>Campanula aparinoides</i>	Marsh Bellflower	S5	G5
<i>Carex atherodes</i>	Awned Sedge	S4S5	G5
<i>Carex canescens</i> ssp. <i>canescens</i>	Silvery Sedge	S5	G5T5
<i>Carex chordorrhiza</i>	Creeping Sedge	S5	G5
<i>Carex echinata</i> ssp. <i>echinata</i>	Little Prickly Sedge subspecies	S5	G5T5
<i>Carex lasiocarpa</i>	Slender Sedge	S5	G5
<i>Carex limosa</i>	Mud Sedge	S5	G5
<i>Carex magellanica</i> ssp. <i>irrigua</i>	Boreal Bog Sedge	S5	G5T5
<i>Carex prairea</i>	Prairie Sedge	S5	G5?
<i>Carex trisperma</i> var. <i>trisperma</i>	Three-seed Sedge subspecies	S5	G5T5
<i>Carex woodii</i>	Pretty Sedge	S4	G4
<i>Chamaedaphne calyculata</i>	Leatherleaf	S5	G5
<i>Cypripedium reginae</i>	Showy Lady's-slipper	S4	G4
<i>Chrysosplenium americanum</i>	American Golden-saxifrage	S5	G5
<i>Corallorhiza trifida</i>	Early Coralroot	S5	G5
<i>Dalibarda repens</i>	Robin Runaway	S4S5	G5
<i>Diplazium pycnocarpon</i>	Glade Fern	S4	G5
<i>Drosera rotundifolia</i>	Roundleaf Sundew	S5	G5
<i>Dulichium arundinaceum</i>	Three-way Sedge	S5	G5

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<i>Epilobium coloratum</i>	Purple-leaf Willow-herb	S5	G5
<i>Gaultheria hispidula</i>	Creeping Snowberry	S5	G5
<i>Glyceria borealis</i>	Small Floating Manna-grass	S5	G5
<i>Glyceria septentrionalis</i>	Floating Manna-grass	S4	G5
<i>Juncus brevicaudatus</i>	Narrow-panicled Rush	S5	G5
<i>Lactuca biennis</i>	Tall Blue Lettuce	S5	G5
<i>Ledum groenlandicum</i>	Common Labrador Tea	S5	G5
<i>Lonicera oblongifolia</i>	Swamp Fly-honeysuckle	S4S5	G4
<i>Ludwigia palustris</i>	Marsh Seedbox	S5	G5
<i>Lycopodium annotinum</i>	Stiff Clubmoss	S5	G5
<i>Lycopodium obscurum</i>	Tree Clubmoss	S4	G5
<i>Menyanthes trifoliata</i>	Bog Buckbean	S5	G5
<i>Osmunda claytoniana</i>	Interrupted Fern	S5	G5
<i>Oxalis acetosella</i> ssp. <i>montana</i>	Mountain Woodsorrel	S5	G5
<i>Phlox divaricata</i>	Wild Blue Phlox	S4	G5
<i>Picea mariana</i>	Black Spruce	S5	G5
<i>Pilea fontana</i>	Springs Clearweed	S4	G5
<i>Platanthera obtusata</i>	Small Northern Bog-orchid	S5	G5
<i>Ranunculus flabellaris</i>	Yellow Water-crowfoot	S4?	G5
<i>Ranunculus pensylvanicus</i>	Bristly Crowfoot	S5	G5
<i>Ribes glandulosum</i>	Skunk Currant	S5	G5
<i>Ribes hirtellum</i>	Smooth Gooseberry	S5	G5
<i>Ribes hudsonianum</i>	Northern Black Currant	S5	G5
<i>Salix pedicellaris</i>	Bog Willow	S5	G5
<i>Salix serissima</i>	Autumn Willow	S4	G4
<i>Sarracenia purpurea</i>	Northern Pitcher-plant	S5	G5
<i>Solidago uliginosa</i>	Bog Goldenrod	S5	G4G5
<i>Symphyotrichum urophyllum</i>	Arrow-leaved Aster	S4	G4G5
<i>Thelypteris noveboracensis</i>	New York Fern	S4S5	G5
<i>Triosteum aurantiacum</i>	Coffee Tinker's-weed	S5	G5
<i>Utricularia minor</i>	Lesser Bladderwort	S5	G5
<i>Vaccinium macrocarpon</i>	Large Cranberry	S4S5	G4
<i>Vaccinium myrtilloides</i>	Velvetleaf Blueberry	S5	G5
<i>Vaccinium oxycoccos</i>	Small Cranberry	S5	G5
<i>Viburnum rafinesquianum</i>	Downy Arrowwood	S5	G5
<i>Viola macloskeyi</i> ssp. <i>pallens</i>	Smooth White Violet	S5	G5T5
<i>Wolffia arrhiza</i>	Spotless Watermeal	S4S5	G5

Site Condition and Disturbances

This is a large natural area is in good condition. In spite of some fragmentation, particularly by the estate home subdivision and private road, there are still extensive cohesive areas of interior forest habitat and undisturbed areas. Most of the forest communities are mid-aged and were historically cleared for agriculture, grazing or logging. Selective logging persists in some sections.

Non-native species are only occasionally present, and localized when they do occur.

A beaver dam was removed historically and the previously flooded area is regenerating amongst the remnant standing dead trees.

Other disturbances noted include an old tree house in a mature maple tree and dumping of lawn waste on the edge of the natural area. There are some (private) well marked trails that sustain light recreational use.

Non-native species are occasional with a notable invasive species being Common Buckthorn (*Rhamnus cathartica*).

Ecological Features and Functions

This natural area is part of the regionally significant Brisbane Woods Life Science ANSI, and most of it is also part of the Brisbane Woods II ESA. The area includes part of the provincially significant Ballinafad Ridge Wetland Complex.

With forest communities greater than 4 ha and wetlands over 0.5 ha in size, this natural area has the potential to support and sustain biodiversity, healthy ecosystem functions and to provide long-term resilience for the natural system.

By containing a very high number of habitat types, this natural area has the potential for high biodiversity function, particularly for species that require more than one habitat type for their life needs. This natural area contains provincially rare and regionally rare vegetation communities and thus has the potential to support additional biodiversity above and beyond that found in common community types.

This natural area has extensive areas of connectivity with other natural habitat across 5 Sideroad and Eighth Line as well as a smaller amount of linkage with successional habitat across part of Trafalgar Rd. The relatively close proximity of other areas of natural habitat creates above-average potential for wildlife movement between natural areas, species dispersal and recovery from disturbance, creating additional resilience for the ecosystem.

Three major tributaries of the Credit River (Silver Creek, West Credit River, Black Creek) have their headwaters in this area and thus this natural area supports the connectivity function of the Credit River and its tributaries by providing a natural habitat corridor that facilitates the cross-regional movement of wildlife along this corridor between major provincial corridors.

This natural area lies close to the boundary between the Credit River watershed and the Eramosa River watershed (a tributary of the Grand River). Connectivity between this natural area and natural areas across the watershed boundary supports additional cross-regional species movement.

This natural area contains seeps.

This natural area contains vernal pools.

This natural area supports two provincially rare vegetation types and eight regionally rare vegetation communities (of five vegetation types).

This area provides habitat for four Species At Risk (one plant species, two bird species, one frog species), one provincially rare plant species and 63 regionally rare plant species.

Interior forest habitat is present here, supporting nine species of area-sensitive forest interior birds.

Wetlands of this area support the breeding of one species of wetland-breeding birds, two waterfowl species, two colonial-nesting bird species and two grassland bird species.

Wetlands of this area support amphibian breeding.

Based on the above features, this area should be evaluated to determine if significant wildlife habitat is present in accordance with the Provincial Policy Statement.

Opportunities

Due to the excellent condition of this area, and the low numbers of exotic plant species present here, an opportunity exists to engage landowners in monitoring and controlling any localized occurrences of problematic species, before they can spread throughout communities.

The health of the Butternut trees could be assessed by a Butternut Assessor to determine whether any individuals are candidates for inclusion in the Butternut recovery program. .

Existing linkages to adjacent natural areas are good and maintenance and enhancement where possible of this linkages is encouraged.

This natural area contains a mature forest community which could be checked for old-growth forest characteristics.

Data gaps exist for dragonflies and butterflies. Due to the biodiversity of these groups determined so far only from incidental observations conducted within a relatively short time frame (relative to flying season for these groups), additional targeted inventories for dragonflies/damselflies and butterflies would likely prove to be productive.

Literature Cited

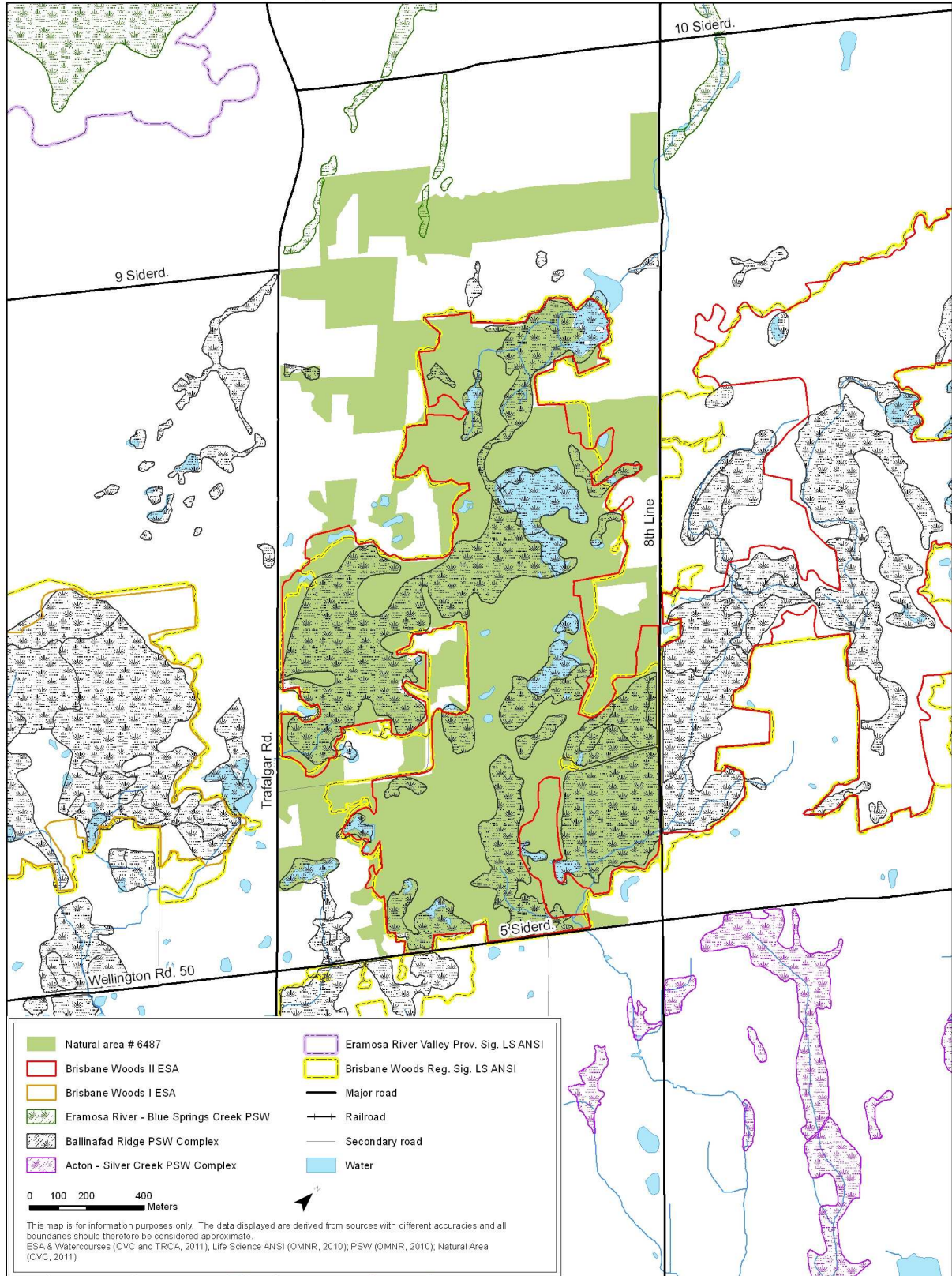
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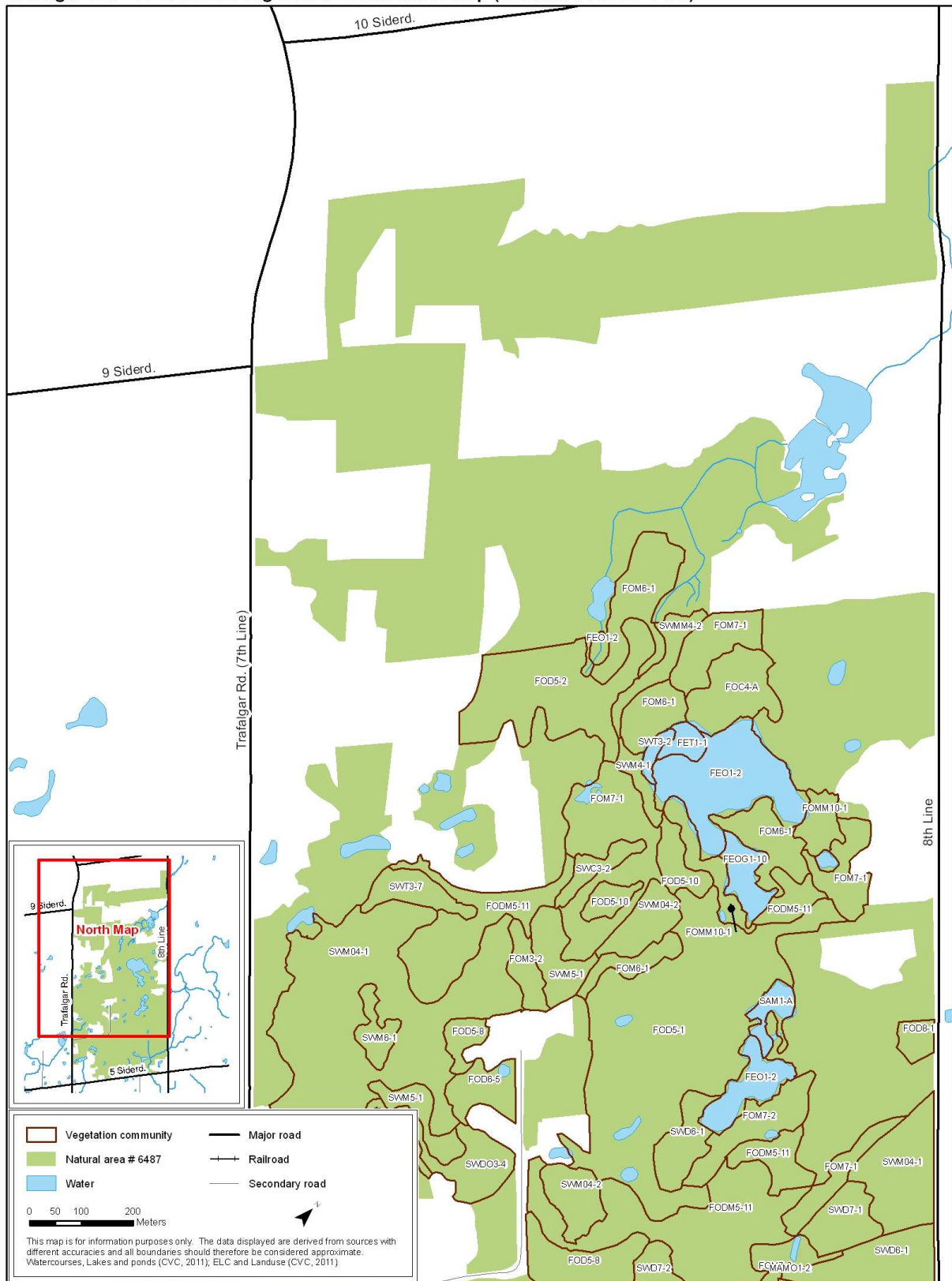
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Trafalgar - 10 Sideroad Context Map (NAI Area # 6487)



Trafalgar Rd. - 10 Sideroad Vegetation Communities Map (North NAI Area # 6487)



Trafalgar Rd. - 10 Sideroad Vegetation Communities Map (South NAI Area # 6487)

