

CREDITVIEW - QUEEN

Region of Peel	NAI Area # 1123	Credit Valley Conservation Authority
City of Brampton	Size: 28 hectares	Watershed: Credit River
Con 3W, Lots 1-2	Ownership: 14% private, 86% public (City of Brampton)	Subwatershed: Churchville Creek Tributary 8B

General Summary

This linear natural area is comprised predominantly of lowland deciduous forest communities and cultural meadow, thicket and plantations that extend along the valley of Churchville Creek. A small tributary known locally as Drinkwater Tributary, is part of this natural area and confluences with Churchville Creek downstream of Chinguacousy Road at the Orangeville Railway Development Corporation (ORDC) rail-line culvert.

For an area of its size, and particularly for an urban natural area, this site has a high diversity of breeding birds. The area also supports four Species At Risk (all are also provincially rare) and a provincially rare vegetation community. The site includes small wetland patches (too small to be mapped under ELC criteria) that are part of a provincially significant wetland complex.

NAI ELC surveyors, botanists and ornithologists inventoried vegetation communities, plant species and breeding birds and made incidental observations of other fauna (Table 1), covering 82% of the natural area (determined by access permission). With respect to the NAI core inventories (vegetation communities, plants, breeding birds), this area is considered data-complete. Fish were inventoried within the natural area and also at an upstream sampling site. As there are no barriers between the two sampling sites, the data from the upstream site was extrapolated downstream and combined with the data from the on-site sampling station.

Table 1: NAI Field Visits

Visit Date	Inventory Type
27 Apr. 2001	Fish
12 May 2009	ELC, Flora
01 June 2009	Fauna
26 June 2009	Fauna

18 Aug. 2009	ELC, Flora
17 Sept. 2009	ELC, Flora
05 Nov. 2009	Fish

Natural Feature Classifications and Planning Areas

This natural area is part of:
PSW - Churchville-Norval Wetland Complex

Physical Features

This area is in the Peel Plain physiographic region; characterized by flat to undulating topography. Soils of this region tend to be low-permeability clays, deposited during the glacial retreat.

Churchville Creek traverses this natural area and joins the Credit River less than one kilometre downstream, west of Upper Churchville Road and north of Steeles Avenue. Churchville Creek winds along the bottom of its valley system and is joined by several tributaries, of which only the Drinkwater Tributary has been maintained in the urban landscape. Drinkwater Tributary flows from a stormwater management facility in Drinkwater Community Park (east of Chinguacousy Road), through Calmist Park, west under Chinguacousy Road within a ravine features that is defined on the north side by the ORDC railline and confluences with Churchville Creek at the ORDC culvert.

Human History

Churchville village was settled in 1815 and while the exact history of this property is not known, much of the countryside around Churchville and Brampton was farmed until a surge of urban development started in the 1960's around Brampton and by the late 1990's was also beginning to occur around Churchville (City of Brampton, 2010; Groundspeak, 2010; The Corporation of the Town of Brampton, 1973). While the heritage Village of Churchville is generally defined south of Steeles Avenue, the lands north of Steeles Ave. are considered part of Churchville-Eldorado.

The tableland areas adjacent to the village of Churchville including the Churchville Creek valley corridor were generally in agricultural use, including some gentle valley slopes and valley floors, while the steep-sided valley slopes remained in a natural vegetated state. Recent developments of the tablelands adjacent to this valley corridor began in the early 2000's and brought this natural area within the urban area of Brampton.

The ORDC rail line runs adjacent to the west and north edge of much of this natural area. There is a narrow strip of vegetation along the rail line which intersects with the vegetation communities of the Churchville Creek valley and the small tributary stream known as the Drinkwater Tributary. Tableland west of the valley previously in agricultural use is now undergoing natural succession. An adjacent cultural meadow patch over 2 ha in size with hydro transmission towers, while not included in this natural area supports the function of the natural area.

Surrounding land use includes single-family residential subdivisions to the southeast and a few established residences on larger lots to the west, commercial and institutional uses, a few agricultural fields and the rail-line. Two stormwater management ponds abut the natural area near the north end and at the southeast corner respectively. A linear strip of the natural vegetation extends to Chinguacousy Road in the northeast along the Drinkwater Tributary.

Vegetation Communities

The general community types present are deciduous forest (63%), mixed forest (1%), open aquatic (3%), cultural meadow (7%), cultural thicket (3%), cultural woodland (4%) and plantation (7%).

Sixteen vegetation communities were mapped for this area, comprised of 14 vegetation types (Table 2). One of these types, Fresh-Moist Black Walnut Lowland Deciduous Forest (FOD7-4, S-rank S2S3) is provincially rare.

Two communities (Fresh-Moist Oak-Sugar Maple Deciduous Forest, FOD9-1; and Fresh-Moist Oak-Beech Deciduous Forest, FOD9-A) are abundant producers of mast (nuts).

Forest communities are almost entirely mid-aged with one area of young forest, and one area of mature forest, (a Sugar Maple-Hardwood Forest behind Tatra Cres.).

Table 2: ELC Vegetation Communities

Map reference *	Vegetation type	Size in hectares	% of natural area
FOD6-5	Fresh-Moist Sugar Maple –Hardwood Deciduous Forest	4.05	14.65
FOD7-3	Fresh-Moist Willow Lowland Deciduous Forest	2.96	10.68
FOD7-4	Fresh-Moist Black Walnut Lowland Deciduous Forest PROVINCIAL RARE S-rank S2S3	1.66	5.99
FOD7-A	Fresh-Moist Manitoba Maple Lowland Deciduous Forest (3 communities)	4.45	16.10
FOD9-1	Fresh-Moist Oak-Sugar Maple Deciduous Forest	0.73	2.63
FOD9-A	Fresh-Moist Oak-Beech Deciduous Forest	0.92	3.31
FODM5-11	Dry-Fresh Sugar Maple-Hardwood Deciduous Forest	2.54	9.19
FOM3-1	Dry-Fresh Hardwood Hemlock Mixed Forest	0.35	1.25

OA01-T	Turbid Open Aquatic	0.36	1.31
CUM1-A	Native Forb Old Field Meadow	1.56	5.62
CUM1-b	Exotic Cool-season Grass Old Field Meadow	0.47	1.70
CUT1-A1	Native Deciduous Sapling Cultural Thicket	0.73	2.63
CUP1-A	Restoration Deciduous Plantation	1.38	4.97
CUP3-2	White Pine Coniferous Plantation	0.55	1.99
	TOTAL AREA INVENTORIED	22.71	

* 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

A total of 166 species of vascular plants are recorded for this area, of which 105 (63%) are native. None are Species At Risk, or provincially or regionally rare.

Breeding Birds

A total of 55 bird species occur in this area, of which 53 (96%) of which are native. Three of the species observed during the inventories are presumed to be visitors and seven were migrants. The remaining 45 bird species displayed some level (possible, probable, or confirmed) of breeding evidence at this site. One of these, Barn Swallow (*Hirundo rustica*) is Threatened nationally (Table 3).

This area supports four species of colonial-nesting birds, namely Great Blue Heron (*Ardea herodias*), Northern Rough-winged Swallow (*Stelgidopteryx serripennis*), Cliff Swallow (*Petrochelidon pyrrhonota*), and Barn Swallow. This area supports one species of waterfowl, Mallard (*Anas platyrhynchos*). Forests of this area support two area-sensitive forest interior bird species, the Hairy Woodpecker (*Picoides villosus*) and Pileated Woodpecker (*Dryocopus pileatus*). Successional habitats support four grassland bird species, namely Savannah Sparrow (*Passerculus sandwichensis*), Eastern Kingbird (*Tyrannus tyrannus*), Vesper Sparrow (*Pooecetes gramineus*) and Willow Flycatcher (*Empidonax traillii*); of which the Savannah Sparrow is area-sensitive.

Fish

A total of eight native fish species are recorded in the area. One of these, Redside Dace (*Clinostomus elongates*), is Endangered both nationally and provincially, and is also provincially rare (Table 3). White Sucker (*Catostomus commersonii*) adults and young of the year were also recorded.

Butterflies and Skippers

A total of four species of butterflies/skippers were recorded as incidental observations, of which two (50%) are native. One of these species, Monarch (*Danaus plexippus*), is Special Concern both nationally and provincially and is also provincially rare (Table 3).

Dragonflies and Damselflies

Two species of native damselflies were observed here as incidental observations.

Herpetofauna

A total of four native species of herpetofauna were recorded at this site as incidental observations. One of these, Eastern Snapping Turtle (*Chelydra serpentina*), is Special Concern both nationally and provincially and is also provincially rare (Table 3). The Snapping Turtle was using the gravel along the railway as a nesting location. An American Bullfrog (*Rana catesbeiana*) was heard calling in this natural area and may be an introduced individual.

Mammals

Four native mammal species, all common, are present at this site, recorded as incidental observations.

Table 3: Designated Species At Risk

Scientific name	Common name	COSEWIC	COSSARO	S rank	G rank
BIRDS					
<i>Hirundo rustica</i>	Barn Swallow	THR		G5	S5B
BUTTERFLIES					
<i>Danaus plexippus</i>	Monarch	SC	SC	S2N, S4B	G5
HERPETOFAUNA					
<i>Chelydra serpentina</i>	Eastern Snapping Turtle	SC	SC	S3	G5T5
FISH					
<i>Clinostomus elongatus</i>	Redside Dace	END	END	S2	G4

Site Condition and Disturbances

The urban development surrounding this natural area contributes to a variety of disturbances.

Exotic plant species are occasional to abundant throughout this area. Some of these exotic species are invasive, notably Common Buckthorn (*Rhamnus cathartica*), Manitoba Maple (*Acer negundo*) and Garlic Mustard (*Alliaria petiolata*)

Some clearing of vegetation under the forest canopy layer and the mowing of stream channels were noted which impact the overall resilience of the vegetation communities, as does the existence of planted non-native trees and shrubs.

Ecological Features and Functions

A marsh at the southern part of this natural area is included in the provincially significant Churchville-Norval Wetland Complex.

With forest communities greater than 2 ha, this natural area has the potential to support and sustain biodiversity, healthy ecosystem functions and to provide long-term resilience for the natural system. The riparian area provides a transitional zone between terrestrial and aquatic habitats, helping to maintain the water quality in the stream, and providing a movement corridor for plants and wildlife.

By containing a relatively 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 a provincially rare vegetation community and thus has the potential to support additional biodiversity above and beyond that found in common community types.

There are areas of natural vegetation across the ORDC rail-line, to the north up the Churchville Creek valley, and to the south linking this area with the vegetated corridor of the Credit River. Connectivity with these nearby natural areas is broad, extending for the full width of the natural areas. 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.

The Credit River runs west of this area and thus, this natural area supports the connectivity function of the Credit River and its tributaries which function as a natural habitat corridor that facilitates the cross-regional movement of wildlife between major provincial corridors (i.e. Lake Ontario to Niagara Escarpment).

This natural area includes a provincially rare vegetation type and four Species At Risk (one bird species, one butterfly species, one turtle species, one fish species). The three species are also provincially rare.

This area supports four species of colonial-nesting birds, one waterfowl species, two species of area-sensitive forest interior birds and four species of grassland birds (including one area-sensitive species).

This site supports Bullfrogs. This area supports turtle breeding, with a turtle species using the gravel substrate adjacent to the rail-line as nesting habitat. Wetlands of the area may 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, Region of Peel Official Plan, and Brampton Official Plan.

As communities that are capable of high mast (nut) production, the Fresh-Moist Oak - Sugar Maple Deciduous Forest (FOD9-1) and Fresh-Moist Oak - Beech Deciduous Forest (FOD9-A) communities are an importance source of food for a variety of fauna species.

Opportunities

This area has been fragmented by activities which have resulted in both cultural vegetation communities as well as impacting natural communities. Further fragmentation of this natural area is discouraged. Where possible, increasing the width of the natural area by restoration plantings or by allowing manicured or agricultural areas to revert back to natural vegetation, would serve to improve the ecological function of this area.

Past practices such as mowing near waterways and clearing of underbrush in forests (removal of understory) have damaged natural communities by reducing the structural complexity of the community, which affects the cover or shelter available to fauna and the number of microhabitats available for bird nesting. Clearing of underbrush means removing saplings that would eventually form the forest canopy, as older trees succumb to age and disease. Mowing near waterways may reduce the ability of the stream banks to withstand erosion and allows more light into the stream, thereby increasing water temperatures (and potentially affecting fish species present). Allowing a naturally vegetated buffer to flourish along stream banks maintains the functions of the stream and riparian area. If some clearing is needed, limiting it to small "nature appreciation" spots is preferable.

Given the broad connectivity of this natural area with the Credit River corridor, and the extent of natural area abutting on road and railway line, a study to assess the extent of wildlife road mortality may be productive. Road signage advising of crossing fauna may help to protect wildlife movement.

The distribution and extent of invasive species in the natural area could be monitored. Control of at least some invasive species might be considered.

Additional investigation would determine if turtles are also using the sandy substrate of the old field cultural meadow as nesting habitat.

Butterfly and dragonfly/damselfly records for this site are incidental and restricted to only one part of the flight season. Additional inventories targeting these groups may be productive. As well, bat inventories may be productive, given the presence of open water and nearby open fields that are attractive to bat species.

This natural area has one mature forest community and should be checked for old-growth forest characteristics.

Literature Cited

City of Brampton. 2010. **Brampton's History**. Available at <http://www.brampton.ca/> Last Accessed 23 November 2010.

Groundspeak, Inc. 2010. **The Founding of Brampton**. Available at <http://www.waymarking.com/> Last Accessed 23 November 2010.

Kaiser, J. 2001. **The Vascular Plant Flora of the Region of Peel and the Credit River Watershed**. Prepared for: Credit Valley Conservation, the Regional Municipality of Peel, Toronto and Region Conservation Authority.

The Corporation of the Town of Brampton and the Brampton Centennial Committee, 1973. **Brampton's 100th Anniversary**

Creditview - Queen Context Map (NAI Area # 1123)



