

BLIND LINE - HOCKLEY (MONORA PARK AND AREA)

Dufferin County	NAI Area # 264	Credit Valley Conservation Authority
Town of Mono	Size: 79 hectares	Watershed: Credit River
Con 2 WHS, Lots 4-5	Ownership: 31% private, 69% public (Credit Valley Conservation, Town of Mono)	Subwatershed: Credit River: Orangeville to Melville

General Summary

This natural area is comprised of rolling upland forests and lowland swamps. It contains several ponds, the main one (within Monora Park) created by damming of a stream that flows through the area and drains to the east into Island Lake.

Groundwater seepage occurs throughout the natural area and provides cold-water habitat and a reliable water supply for wildlife. The rolling terrain with a mix of upland forests and low-lying wetlands create microhabitats which allow this natural area to a high floral biodiversity. The area is in relatively good condition although recreational use has caused some light to moderate disturbance. The natural area shape shows some fragmentation due to adjacent land use developments.

NAI botanists and ornithologists inventoried plants and breeding birds (Table 1), covering 92% of the natural area (determined by access permission). CVC ELC surveyors inventoried vegetation communities and made incidental observations of flora and fauna in 2006, covering 74% of the area. With respect to the NAI core inventories (vegetation communities, plants, breeding birds), this area is considered data-complete, however there is one large deciduous forest community that is key in the area and which has not been surveyed. Additional incidental records were contributed by other observers. Fish were inventoried at a sampling station downstream from the natural area. As there were no barriers between this station and some streams of the natural area (below the dam in natural area), the fish data was extrapolated upstream to the natural area. Sampling has not been done above the dam, but below the dam the stream splits into several that penetrate other parts of the natural area.

Table 1: NAI Field Visits

Visit Date	Inventory Type
30 June 2006	Fish
16 July 2007	Fish
17 June 2008	Fauna
25 June 2008	Fauna

27 Aug. 2008	Flora
28 Aug. 2008	Flora
25 Sept. 2008	Flora
9 July 2009	Fish

Natural Feature Classifications and Planning Areas

This natural area is part of:
PSW - Orangeville Wetland Complex
Greenbelt Plan – Natural Heritage System

Physical Features

This natural area is in the Hillsburgh Sandhills physiographic region; characterized by large, rolling hills of coarse glacial sediments that deeply bury the bedrock. Soils tend to be sandy loams that support high rates of recharge to groundwater aquifers. The easternmost corner of this area falls into the Horseshoe Moraines physiographic region; characterized by north-south trending ridges of sand

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and silt glacial deposits. Soils of this region also tend to be sandy loams that support high rates of recharge to groundwater aquifers.

Several small cold-water streams drain this area, joining together before passing under Hurontario St. and into Island Lake a short distance away. Thus, this area forms part of the headwaters of the Credit River. One of the streams is dammed within the natural area, forming a pond.

Human History

This natural area is located on the northern outskirts of Orangeville. The town was first settled by Europeans in the 1820's and 1830's and originally called Griggs Mill, after James Griggs, builder of the first sawmill on Mill Creek. It was later named Orangeville after an early entrepreneur, Orange Lawrence. In the early 1870's, the Toronto, Grey and Bruce Railway opened between Toronto and Owen Sound and Orangeville became a major station. At that time, Orangeville was shipping out up to 16 railway loads of grain a day (much of it wheat) as well as lumber. By 1875, there was a foundry, three wood-planing mills, two saw-mills, a tannery, a carding mill and a number of carriage and wagon makers. These early industries suggest that logging, grain cultivation, and raising livestock were major land uses in the surrounding area. The population of Orangeville grew rapidly in the late 1800's but by 1901 the general population of Dufferin County had begun to decline. This was partially due to children of early settlers moving away to new farmland, but also due to poor soil fertility caused by erosion of the light soils after logging. Around this time, water flow levels began to drop which also affected the operation of water-powered mills (Roberts, 2009; Town of Orangeville, 2010).

Historically, parts of this natural area appear to have been heavily logged. A landowner reported an old gravel pit within this natural area that was filled in and planted with trees (pers. comm., landowner, 2008).

A large portion of this natural area is included in Monora Park, a public park (owned by CVC and managed by the Town of Mono) developed for passive recreation. The park has approximately 20 km of trails for walking and cross-country skiing within the natural area, plus manicured picnicking and playing field areas not included in the delineated natural area (Town of Mono, Undated).

The natural area is bordered by Blind Line, and for a short distance, by Hockley Rd. and Hurontario St. Surrounding land uses are rural residential, residential subdivision, manicured recreational, aggregate extraction and regenerating old fields.

Vegetation Communities

The general community types present are coniferous forest (32%), deciduous forest (18%), marsh (3%), coniferous swamp (7%), deciduous swamp (5%), thicket swamp (0.5%), open aquatic (2%), cultural meadow (5%), cultural woodland (5%) and plantation (22%).

A total of 14 vegetation communities of ten different types were mapped for this natural area (Table 2). One community, the White Cedar - Conifer Organic Coniferous Swamp (SWC3-2), community is regionally rare. One community was only classified to ecosite level, Mineral Cultural Woodland Ecosite (CUW1, 3 communities).

Table 2: ELC Vegetation Communities

Map reference *	Vegetation type	Size in hectares	% of natural area
FOC2-2	Dry-Fresh White Cedar Coniferous Forest	25.29	32.21
FOD3-1	Dry-Fresh Poplar Deciduous Forest (2 communities)	1.56	1.99
MAM3-2	Reed-canary Grass Organic Meadow Marsh	1.30	1.66

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SWC3-2	White Cedar - Conifer Organic Coniferous Swamp	5.26	6.70
SWD4-3	Paper Birch - Poplar Mineral Deciduous Swamp (2 communities)	4.20	5.35
SWT2-1	Alder Mineral Thicket Swamp	0.40	0.51
SAM1-4	Pondweed Mixed Shallow Aquatic	0.94	1.20
CUM1-1	Dry – Moist Old Field Meadow (2 communities)	0.34	0.43
CUW1-A3	Native Deciduous Cultural Woodland (2 communities)	2.45	3.12
CUP3-1	Red Pine Coniferous Plantation	16.01	20.39
	TOTAL AREA INVENTORIED	57.75	

* 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

Plant species diversity is high in this natural area. A total of 273 vascular plant species are recorded for this area, of which 220 (81%) are native. One plant species, Butternut (*Juglans cinerea*, S-rank S3?) is Endangered nationally and provincially (Table 3), as well as provincially rare. Three Butternut saplings and two trees in poor condition were observed. Another plant species, Great St. John's-wort (*Hypericum ascyron*, S-rank S3?), is provincially rare. Sixteen plant species are regionally rare (Table 4).

Breeding Birds

A total of 52 species of birds are recorded, of which 51 (98%) are native. Two of these are believed to be visitors, but the remaining bird species noted were observed during the breeding season and displayed some level (possible, probable, confirmed) of breeding evidence. Included in these is a Barred Owl (*Strix varia*) reported by a landowner (landowner, pers. comm., 2008).

This site supports one species of colonial-nesting bird, Great Blue Heron (*Ardea herodias*). Interior forest habitat is present at this site, supporting eight species of area-sensitive forest interior birds, namely Hairy Woodpecker (*Picoides villosus*), Pileated Woodpecker (*Dryocopus pileatus*), Red-breasted Nuthatch (*Sitta canadensis*), Black-throated Blue Warbler (*Dendroica caerulescens*), Black-throated Green Warbler (*Dendroica virens*), Black-and-white Warbler (*Mniotilta varia*), Winter Wren (*Troglodytes troglodytes*) and Ovenbird (*Seiurus aurocapilla*). Open and successional habitat, predominantly adjacent to this area, supports two species of grassland bird, the Field Sparrow (*Spizella pusilla*) and Brown Thrasher (*Toxostoma rufum*). The area also supports one raptor species, the Osprey (*Pandion haliaetus*).

Fish

Seven fish species were detected in this area, all of which are native. The streams in this natural area support coldwater fish communities. Brook Trout (*Salvelinus fontinalis*), a species of cold-water habitats, is present and is an indicator of the good quality of the habitat.

Butterflies and Skippers

Seven species of butterflies/skippers were recorded as incidental observations, of which 6 (86%) are native. One of these species, Monarch (*Danaus plexippus*), is Special Concern both nationally and provincially (Table 3). The Monarch is provincially rare (S-rank S2N, S4B).

Dragonflies and Damselflies

Five species of dragonflies/damselflies were detected as incidental observations at this site. All are native and none are Species At Risk or provincially rare.

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Herpetofauna

Three native species of herpetofauna were recorded here as incidental observations; two frog species and one turtle species.

Mammals

Eleven species of native mammals were detected at this site as incidental observations. All are common.

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
BUTTERFLIES					
<i>Danaus plexippus</i>	Monarch	SC	SC	S2N,S4B	G5

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

Scientific name	Common name	S rank	G rank
VASCULAR PLANTS			
<i>Agrostis scabra</i>	Ticklegrass	S5	G5
<i>Carex laevivaginata</i>	Smooth-sheath Sedge	S4	G5
<i>Cirsium muticum</i>	Swamp Thistle	S5	G5
<i>Dalibarda repens</i>	Robin Runaway	S4S5	G5
<i>Epilobium coloratum</i>	Purple-leaf Willow-herb	S5	G5
<i>Geum rivale</i>	Purple Avens	S5	G5
<i>Heracleum lanatum</i>	Cow-parsnip	S5	G5
<i>Hypericum ascyron</i>	Great St. John's-wort	S3?	G4
<i>Juniperus communis var. depressa</i>	Dwarf Juniper	S5	G5T5
<i>Lactuca biennis</i>	Tall Blue Lettuce	S5	G5
<i>Lonicera oblongifolia</i>	Swamp Fly-honeysuckle	S4S5	G4
<i>Oclemena nemoralis</i>	Bog Aster	S5	G5
<i>Orthilia secunda</i>	One-side Wintergreen	S5	G5
<i>Oxalis acetosella ssp. montana</i>	Mountain Woodsorrel	S5	G5
<i>Salix nigra</i>	Black Willow	S4?	G5
<i>Schoenoplectus acutus</i>	Hard-stem Bulrush	S5	G5

Site Condition and Disturbances

Monora Park makes up a considerable part of this natural area. The park has a network of wide trails used for hiking and cross-country skiing that sustain light to moderate use. Some of the trails are used for walking dogs-off leash, and this practice may be affecting breeding bird diversity in this area. Despite having suitable habitat for birds, the upland deciduous forests are under-utilized by birds, possibly due to off-leash dogs and the wide trails that fragment the forest and make breeding birds more susceptible to predators (Curry, 2008).

At certain seasons, some of the trails in the wetter areas become quite muddy and trail width has increased around the worst spots.

This area has also been fragmented by residential development and by manicuring of parts of the park for recreational activities. The establishment of a residential development along Starrview Rd. has fragmented part of what was once this larger natural area, leaving a natural area to the south isolated by residential use.

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Alien species are occasional and cause only light disturbance.

Ecological Features and Functions

A portion of this natural area is in the provincially significant Orangeville Wetland Complex.

Situated as it is in the upper watershed, this natural area's wetlands and groundwater seepage help to maintain the quality and quantity of water throughout the Credit River system. Forested upland areas provide source water protection.

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. The riparian areas provide a transitional zone between terrestrial and aquatic habitats, helping to maintain the water quality of 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 regionally rare vegetation community and thus has the potential to support additional biodiversity above and beyond that found in common community types.

This natural area extends to three roads, and connects with other natural areas across those roads. To the west there are two areas of linkage with meadows and successional communities, which in turn are adjacent to natural communities, across Blind Line. There is linkage to the east across Hurontario St. along the stream that runs from this natural area into a marshy bay of Island Lake a short distance away. This linkage is narrow and tenuous but it is not long. The best area of connectivity is with an extensive natural area to the north across Hockley 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.

This area contains seeps.

This area contains a regionally rare vegetation community.

The natural area supports two Species At Risk (one plant species, one butterfly species), two provincially rare species (one plant species, one butterfly species) and 16 regionally rare plant species.

Interior forest habitat is present at this site, supporting eight species of area-sensitive forest interior birds.

The natural area supports one species of colonial-nesting bird, one raptor species and two grassland bird species.

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

Further fragmentation of this area is discouraged. Past fragmentation from adjacent land uses has substantially reduced the amount of interior forest habitat that would have been available.

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This occurrence of public parkland with adjacent residential development and moderate park use creates opportunities to present messaging on natural area stewardship issues such as preventing the spread of invasive species, the importance of staying on trails and keeping pets leashed on the trails as well.

Reduction of trail width may help to prevent forest fragmentation. Closure of redundant or unsanctioned trails will help to reduce the impact of trails on the habitats they pass through, possibly enhancing wildlife usage of the area. In wetter areas, trails could either be rerouted to drier locations (where widening will not occur) or boardwalks could be installed to protect the sensitive wet ground from trampling and from trail widening.

An opportunity exists, when the gravel pit is abandoned, or when parts of it are no longer used, to create habitat for bank-nesting bird species (like swallows and kingfishers) by preventing the infill and grading of the pit walls.

The health of the Butternut trees present here could be assessed by a Butternut Assessor to determine whether any individuals might be considered for inclusion in the Butternut recovery program.

This natural area has two mature forest communities that could be checked for old-growth forest characteristics.

Due to the moderate amount of recreational trail use of this area, this would be a good location to conduct invasive species mapping and monitoring, particularly along trails, waterways, behind residences, and along its border with Highway 10/24. Controls might be considered if localized populations can be removed before they spread to problematic levels.

An early-season botanical survey for spring ephemeral plant species should be conducted as the botanical surveys done in 2008 were not carried out until later in the summer. Spring or early summer surveys would be expected to yield additional plant species for this natural area.

The large deciduous forest community in the core of the natural area should be surveyed if access permission can be obtained.

Data gaps exist for reptiles and amphibians, small mammals, bats, dragonflies/damselflies and butterflies. Given the more northern affinities of the flora and cold-water streams, additional inventories that target these groups may be productive.

Literature Cited

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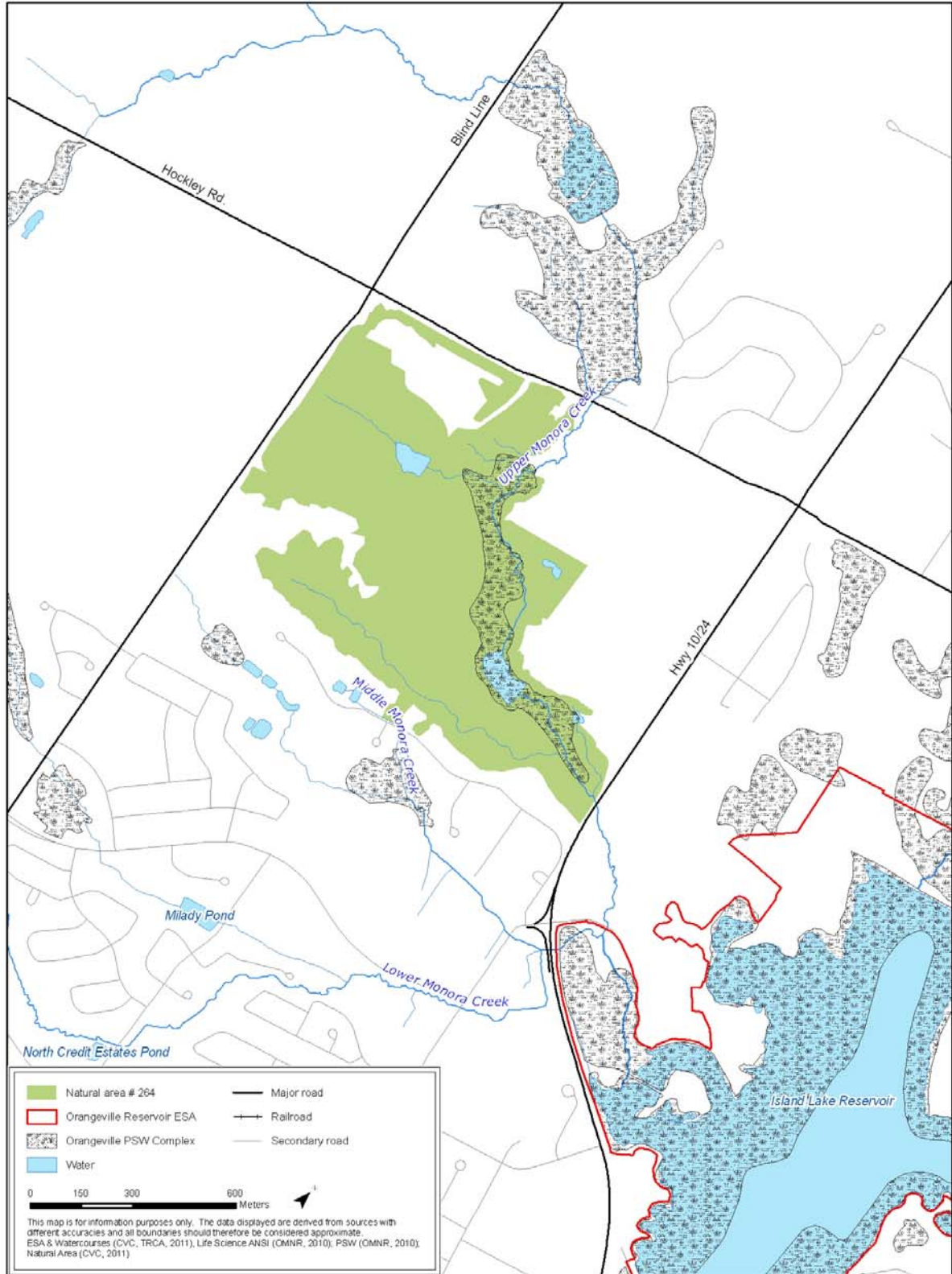
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BLIND LINE - HOCKLEY (MONORA PARK AND AREA)

Blind Line - Hockley Context Map (NAI Area # 264)



This map is for information purposes only. The data displayed are derived from sources with different accuracies and all boundaries should therefore be considered approximate. ESA & Watercourses (CVC, TRCA, 2011), Life Science ANSI (OMNR, 2010), PSW (OMNR, 2010), Natural Area (CVC, 2011)

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Blind Line - Hockley Vegetation Communities Map (NAI Area # 264)

