

City of Mississauga Natural Areas Survey (2006)

Natural Areas Fact Sheet

NATURAL AREA NAME	PLANNING DISTRICT	AREA (HA)	UTM GRID REFERENCE
EM4	Erin Mills	41.93	6059 48221

1. LOCATION

Along Sawmill Creek from the Collegeway in the south continuing northwest to end at Glen Erin Drive. Sawmill Creek links a number of natural areas throughout its length including EM5, EM14, EM10 and CRR7. The natural areas CRR6 and EM2 are located within 500 m to the east, and southwest, respectively.

2. CLASSIFICATION

Significant Natural Site

3. DESCRIPTION

A. Physical Features

The topography of this site varies from steep ravines to undulating floodplain. A substantial portion of the site includes the floodplain of Sawmill Creek. This site is dominated by deposits of the Iroquois Sand Plain in the east and the Halton Till Plain in the west. Northwest of Sawmill Creek the soil type is imperfectly drained Cooksville clay loam that developed within the Halton Till. Northeast of the creek the soil type is well drained Fox sandy loam that developed within the Iroquois Plain. West of Erin Mills Parkway the soil type is well drained Oneida clay loam that developed within the Halton Till. Soil moisture at this site varies from mesic to wet. Where the creek is not engineered with concrete and gabion baskets the red shale bedrock of the Queenston Formation is periodically exposed. There is year round flow in all parts of Sawmill Creek.

B. Biota

There are 258 floral species and 83 faunal species documented for this site. Seven vegetation communities are present at this site (see accompanying figure); red ash (*Fraxinus pennsylvanica*)-American elm (*Ulmus americana*) forest (BB) [fresh-moist lowland deciduous forest type (FOD7-2)], white pine (*Pinus strobus*)-eastern hemlock (*Tsuga canadensis*)-sugar maple (*Acer saccharum* ssp. *saccharum*) forest (MM) [fresh-moist hemlock coniferous forest type (FOC3-1)], sugar maple-American beech (*Fagus grandifolia*) forest (DD) [dry-fresh sugar maple - beech deciduous forest type (FOD5-2)], sugar maple-eastern hemlock forest (GG) [dry-fresh sugar maple - hemlock mixed forest type (FOM3-2)], wooded non-native valley land (J) [fresh-moist willow lowland forest type (FOD7-3)], old field (C) [dry-moist old field meadow type (CUM1-1)], and sugar maple-American beech-eastern hemlock forest (LL) [fresh-moist sugar maple - hemlock mixed forest type (FOM6-1)]. The red ash-American elm community is located in the extreme south-west corner of the site. To the northeast of this is the white pine-eastern hemlock-sugar maple forest, then the floodplain and finally the sugar maple-American beech forest at the south edge of the Collegeway. Northeast of the Collegeway is the sugar maple-eastern hemlock forest within the floodplain of Sawmill Creek. The wooded non-native valley land and old field communities begin to dominate the floodplain to the north. Between Burnhamthorpe Road and Erin Mills Parkway there is a small sugar maple-beech-hemlock forest.

The red ash-American elm community is an immature forest with an open canopy. Red ash and American elm dominate with a dense subcanopy of common buckthorn (*Rhamnus cathartica*). The disturbed understory is composed of red-osier dogwood (*Cornus stolonifera*), Virginia creeper (*Parthenocissus inserta*), yellow avens (*Geum allepicum*) and garlic mustard (*Alliaria petiolata*).

B. Biota (continued)

The white pine-eastern hemlock-sugar maple forest occurs on a series of steep ridges. This is a mature forest with trees between 80 and 117 years old, thus, qualifying as old growth in places. The trees typically have a diameter of 54 cm and can reach 50 m in height. The canopy dominants are white pine, eastern hemlock and sugar maple. Associate species are red maple (*A. rubrum*), white birch (*Betula papyrifera*) and black cherry (*Prunus serotina*). The shrub layer and understory are both very diverse. Common species include witch hazel (*Hamamelis virginiana*), alternate-leaved dogwood (*C. alternifolia*), woodland ferns (*Dryopteris* spp.), baneberry (*Actaea* spp.), wild ginger (*Asarum canadense*), wild leek (*Allium tricoccum*), and trilliums (*Trillium* spp.). Good regeneration of the canopy dominants is occurring.

The sugar maple-American beech forest occurs adjacent to the Collegeway. Mature sugar maple and American beech dominate this closed canopy with red oak (*Quercus rubra*) as the associate. The shrub layer is dense with choke cherry (*P. pensylvanica*). The understory is depauperate but includes wild leek, Jack-in-the-pulpit (*Arisaema triphyllum*) and false Solomon's-seal (*Maianthemum racemosum*). The trees in this forest community are 80 to 120 years old thus contain old growth elements, and are typically 48 cm in diameter.

The sugar maple-eastern hemlock forest occurs on the rolling floodplain of Sawmill Creek. Mature sugar maple and eastern hemlock form a closed canopy with red oak and American beech as the associates. The understory here is composed of meadow rue (*Thalictrum* spp.), blue cohosh (*Caulophyllum thalictroides*), tall buttercup (*Ranunculus acris*), large-leaved aster (*Aster macrophyllus*), and false Solomon's-seal. The canopy is 40 m in height and the trees are typically 36 cm in diameter. Red oaks reaching 112 cm in diameter and eastern hemlock reaching 79 cm in diameter are not uncommon.

The wooded non-native valley land community also occurs along the floodplain of Sawmill Creek. Scattered mature willow (*Salix alba*) and red ash form an open canopy above a subcanopy of Manitoba maple (*A. negundo*). Riverbank grape and the invasive species garlic mustard, multiflora rose (*Rosa multiflora*), and Tartarian honeysuckle (*Lonicera tatarica*) are prevalent in the dense understory.

The old field community occurs in scattered locations along the edge of the site. Common species include tall goldenrod (*Solidago altissima*), bird vetch (*Vicia cracca*), wild carrot (*Daucus carota*), smooth brome (*Bromus inermis* ssp. *inermis*), and orchard grass (*Dactylis glomerata*).

The sugar maple-American beech-eastern hemlock forest is located within the floodplain of Sawmill Creek. The open canopy is dominated by immature sugar maple, American beech, and eastern hemlock with black walnut (*Juglans nigra*) as the associate. The canopy trees in this community are also greater than 100 years old.

From the perspective of wildlife habitat, this natural area is large and diverse, with several nodes of habitat that have a low edge-to-interior ratio, though it is split into three parts that are separated by busy roads (The Collegeway). There are 70 bird species, 7 mammals, 3 amphibians and 3 reptiles recorded from this site. However, during the 2006 field visits the number and diversity of species heard within this natural area was surprisingly low, and almost all species were habitat generalists that utilize a variety of forest and successional habitats within the City, such as northern cardinal, black-capped chickadee and American robin. The exceptions to this were species such as eastern wood-pewee, eastern screech-owl and several red-eyed vireo, both species specific to intermediate-aged or mature forest habitats. Three area-sensitive forest species were also noted: white-breasted nuthatch, red-breasted nuthatch and pine warbler (the latter two species specific to coniferous habitat, noted on the hemlock forest slope). Also adding to the diversity were a few species of successional habitats such as gray catbird (a Credit Valley Conservation Species of

B. Biota (continued)

Conservation Concern that is common in Mississauga) and cedar waxwing. A fox cub was noted within this natural area, indicating that foxes breed at this site. Several other urban predators were noted, including skunk, raccoon, and a domestic cat (seen in the narrowest portion). During the spring and fall migration periods, the diversity of birds is expected to increase as species utilize remnant natural areas as stopovers *en route* to breeding or wintering habitat. Also, a few species such as snowy owl and common redpoll move south in winter and may utilize natural areas in the City. This site is extensively used by fauna species throughout the year. Fish species that utilize Sawmill Creek are common to the credit river watershed. Sawmill Creek is classified as a type 2 fishery within this site.

4. CONDITION

This site currently ranges between good (southern portion) to fair (northern portion) condition. Some of the more common disturbances are an extensive paved formal trails, as well as an unpaved, unplanned trail network, a mountain bike course, evidence of bush parties, extensive trampling at the bottom of the coniferous slope, past logging evidence, tree poaching, vandalism, erosion on valley walls, residential encroachment, and extensive soil compaction. Gabion baskets and concrete channelization have replaced the natural habitat along sections of Sawmill Creek. Channel improvements are planned along Sawmill Creek throughout this site. In 1998 work was conducted from the Collegeway to Featherstone Drive. Recent development has resulted in a reduction in the area of the site and subsequent boundary revisions. A field visit in 1999 indicated that most of the sugar maple-American beech community has been removed on the west side and there appeared to be tree mortality in the floodplain. The floodplain community was removed by townhouse development prior to 2006. Invasive plant species prevalent at this site include garlic mustard, common buckthorn, multiflora rose, Tartarian honeysuckle, and dog-strangling vine (*Vincetoxicum nigrum*). Seven-six introduced plant species are present at this site (representing 29.46% of the total number of species present). The native FQI value continues to increase from 55.05 in 1996 and 56.25 in XX to its present value of 57.15. In contrast, the native mean coefficient continues to decrease from 4.30 in 1996 and 4.26 in xx to its present value of 4.24¹. Surrounding land use is residential.

5. SIGNIFICANCE

- High FQI and native mean coefficient.
- This site is designated as an Environmentally Significant Area (Ivor's Bird Sanctuary), and both a provincial and regional life science Area of Natural and Scientific Interest (Roy Ivor's Woodlot).
- Important nesting and wintering habitat for birds.
- Butternut (*Juglans cinerea*) considered a "species at risk" within the province (COSSARO) and nationally (COSEWIC) is documented from this site.
- One species documented for this site, woodland satin grass (*Muhlenbergia sylvatica*), is considered rare within the province by the NHIC.
- Four plant species documented for this site are considered rare within the City (known from 3 or fewer locations). These species are: crested wood fern (*Dryopteris cristata*), woodland satin grass, one-seed bur-cucumber (*Sicyos angulatus*)², and river wild-rye (*Elymus riparius*).
- Thirty-two plant species documented for this site are considered uncommon within the City (known from 4 to 10 locations). These species are: rattlesnake fern (*Botrychium virginianum*), glandular wood fern (*D. intermedia*), interrupted fern (*Osmunda claytoniana*) oak fern (*Gymnocarpium dryopteris*), American yew (*Taxus canadensis*), tamarack (*Larix laricina*), bottle-brush grass (*Elymus hystrix*), the sedges (*Carex intumescens*, *C. scoparia*), starry false Solomon's-seal (*Maianthemum stellatum*), slippery elm (*Ulmus rubra*), long-leaved chickweed (*Stellaria longifolia*), round-lobed hepatica (*Anemone americana*), three-leaved toothwort (*Cardamine x maxima*), foam flower (*Tiarella cordifolia*), swamp red currant (*Ribes triste*), Saskatoon-berry (*Amelanchier alnifolia*), hawthorn (*Crataegus succulenta*), Canada plum (*Prunus nigra*), barren strawberry (*Waldsteinia fragarioides*), mountain maple (*Acer spicatum*), black ash (*Fraxinus nigra*), Indian hemp (*Apocynum cannabinum*),

5. SIGNIFICANCE (continued)

Canada honeysuckle (*L. canadensis*), downy arrow-wood (*Viburnum rafinesquianum*), Indian tobacco (*Lobelia inflata*), great lobelia (*Lobelia siphilitica*), American groundnut (*Apios americana*), pearly everlasting (*Anaphalis margaritacea*), Canada honewort (*Cryptotaenia canadensis*), pointed-leaved tick-trefoil (*Desmodium glutinosum*), marginal fern wood (*Dryopteris marginalis*), and river wild-rye (*Elymus riparius*).

- Five resident bird species are considered species of concern by the Credit Valley Conservation Authority. These species are: common grackle, eastern wood-pewee, pine warbler, red-breasted nuthatch and gray catbird.
- Large size (41.93 ha).
- Close proximity to natural areas EM2 and CRR6.
- Directly connects to natural area EM5.
- Contributes to the linkage function of Sawmill Creek and the Credit River.
- Floodplain provides floodwater storage for Sawmill Creek.
- Diversity of plant species (258 species).
- Diversity of vegetation communities (7 communities).
- Canopy trees greater than 100 years old.
- The white pine-eastern hemlock-sugar maple forest, the sugar maple-eastern hemlock, and the sugar maple-American beech-eastern hemlock forest are uncommon vegetation communities within the City.

6. MANAGEMENT NEEDS

- The City parks, Windy Hollow and the Sawmill Valley Trail, are included within this natural area.
- This is an excellent site in the context of the City and should be a priority for a Conservation Plan, especially in view of the recent development that has infringed on the site.
- Exotics in some areas (*i.e.*, the red ash-American elm forest and the wooded non-native valley land) pose a significant threat and should be managed. Dog-strangling vine in particular should be eliminated through soil removal or herbicides before it becomes more widespread. This species can spread quickly to other areas and no effective control strategies are known for it.
- Impacts from the proximity to residential areas warrants control of access.

7. PRINCIPLE REFERENCES

Brownell (1993)
Bruce A. Brown Associated Limited (1994)
City of Mississauga (1978b)
Construction Control Inc. (1998)
Dougan and Associates (1997b)
Ecologistics Limited (1979)
Ecoplans Limited (1988b)
Hanna (1984)
LGL Environmental Research Associates (2002)
Milus Bollenberghe Topps (1982)
Proctor & Redfern Limited (1992)
Starr Landscape Group Limited (1978)
Transportation and Works (1998)

¹Floristic quality is explained in the method section (2.3).

²Historical record, this species has not been documented for this site since 1973.