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NATURAL AREAS SURVEY

UPDATE 1998 February

(Part 1 of Volume 3 of 3)

NOTE:

This Part 1 of Volume 3 of 3, Natural Areas Survey Update, 1998 February, is to be read in conjunction with the Natural Areas Survey Report, 1996 September, (Volume 1 of 3) and Natural Areas Survey Appendices, 1996 September, (Volume 2 of 3).

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NATURAL AREAS SURVEY UPDATE - PART 1 OF VOLUME 3 of 3

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1.0 INTRODUCTION

A Natural Areas Survey for the City of Mississauga was undertaken between 1995 and 1996 (Natural Areas Survey, 1996 September). One hundred and forty-four natural areas were identified that represented the best remaining natural features in the City. Of these 144 natural areas, 141 were classified as either Significant Natural Sites, Natural Sites, or Natural Green Space and three as residential woodlands. Together, the 141 natural areas comprised 7.10% of the total area of the City. Also identified were 55 Special Management Areas (SMAs) and 40 Linkages. Definitions for these classifications are given in the Natural Areas Survey, 1996 September.

Since completion of the Natural Areas Survey in 1996 a number of development projects have been initiated within or adjacent to the natural areas identified in the 1996 survey. A program to update the Natural Areas Survey was initiated in 1998 with the intent of reviewing the current status of the natural areas and updating information on impacts, boundary changes and management needs. The intent is to review natural areas within a different quadrant of the City each year. In 1998, the update was conducted on the natural areas in Wards 5 and 6 as well as additional natural areas throughout the City that were identified as having possible changes. This report documents the methods used, summarizes changes to the natural areas, and provides some recommendations.

2.0 METHODS

2.1 Background Review

Field work requirements for the natural areas were based on a combination of aerial photograph interpretation and literature review. The primary focus of this update was the natural areas located in Wards 5 and 6. Additional natural areas in the City were identified for updates based on a review of recent literature. This literature included Environmental Impact Studies and management/conservation plans. Capital projects undertaken since 1995 within natural areas by the City of Mississauga Transportation and Works Department were reviewed as well. The background literature incorporated into the databases is listed in Appendix 1. Using these sources a preliminary list of 52 natural areas were identified as requiring field work (Appendix 2). Two of these natural areas, CL17 and CL30, were identified for field work to assess recent management initiatives. An additional 17 natural areas were identified as requiring updates to their fact sheets based on the recent literature (Appendix 3).

Using 1998, 1:8000 scale aerial photographs boundary changes to the 52 natural areas were identified by comparing the boundaries established in 1995 to the current conditions. Establishment of a new land use within 500 m of a natural area was also noted. New natural area boundaries were delineated on mylar overlays where applicable. These boundaries were verified in the field and subsequently mapped.

2.2 Fieldwork

All of the 52 natural areas identified for field work received a visit. Appendix 2 lists the type of field work and the date field work was conducted for each of these natural areas. If there was no development within or adjacent to a natural area or change in the boundaries (identified through aerial photograph interpretation and literature review) a site inspection from the road was conducted. A more complete field evaluation was conducted at all natural areas where the boundaries had changed based on the aerial photographs or where development had occurred either within or adjacent to the site. Landowner contact for natural areas in private ownership was undertaken by the City Planning and Building Department. Three sites were not visited due to access difficulties: GT3, ETO3 and NE8. These sites were viewed from the road to detect possible changes from 1996.

The following information was collected for each natural area that received a field visit:

- all flora and fauna species observed were recorded, and specimens collected;
- vegetation community descriptions were updated;
- evidence of disturbance, regeneration and management needs were noted;
- field data sheets were filled out; and
- the overall condition was qualitatively rated in comparison to other sites in the City.

A copy of the field notes and field data sheets were provided to the City for inclusion in the natural area files.

2.3 Analysis

The databases and fact sheets for each natural area were updated based on the literature review and fieldwork carried out in 1998. Changes in the provincial and regional rarity ranks of floral and faunal species were

identified and updated in the relevant databases. Provincial rarity status was based on the following literature, Oldham (1996), Bakowsky (1996) and NHIC (1997a, 1997b, 1997c, 1997d). Regional rarity status was updated based on site records in the databases. The comparison table for the City (Table 4 in the Natural Areas Survey, 1996 September) was updated to allow an comparison of the revised sites in the perspective of the entire City (see Table 3, page 21).

The Floristic Quality Indices (FQI) were updated for natural areas where the floral inventory changed between 1996 and 1998 based on the Floristic Quality Assessment System for Southern Ontario (Oldham *et al.* 1995) adapted for use within the City of Mississauga. For a summary of the methodology and interpretation of the Floristic Quality Assessment see the Natural Areas Survey, 1996 September. Overall, the ranking of the native mean coefficients (high > 4.00, medium = 3.3 to 3.99, low < 3.3) and Floristic Quality Indices (FQIs) (high > 40, medium = 30 to 39.99, low < 30) remained the same between 1996 and 1998.

Recent disturbances, threats and management needs were noted where they changed from the 1996 report. Recommendations for the mitigation of real or potential impacts that resulted from recent developments, including naturalization projects were identified.

2.4 Mapping

Boundary changes identified for natural areas were updated on mylar plots provided by the City. Boundary delineation followed the approach used in the Natural Areas Survey, 1996 September. These revisions were digitized into Intergraph Microstation format and supplied to the City as a DGN file. Page-sized hard copy maps of natural areas with revised boundaries were produced for inclusion with the fact sheets. Natural areas without boundary changes were illustrated with the same maps as those used in the 1996 report. Updated surficial areas for the natural areas and vegetation communities were incorporated into the databases. The updated UTM coordinates for the natural areas and vegetation communities were also incorporated into the databases.

3.0 NATURAL ENVIRONMENT OVERVIEW

3.1 Vegetation Communities

The 48 vegetation communities described for the City (see Table 2 in Natural Areas Survey, 1996 September) were compared between 1996 and 1998 (see Table 2, page 8). In 1996 the total area of natural areas was 2 328.23 ha (5,752.98 ac.) and in 1998 the total area was 2 272.9 ha (5,616.26 ac.), a reduction of 55.33 ha (136.72 ac.). The vegetation communities were grouped into six broad categories to facilitate discussion; valley lands, woodlands, successional, wetlands, anthropogenic and other. The category other was used for three communities (tall grass prairie, beach and unknown) that did not easily fit into one of the other five categories. The most prevalent communities within the City remain those in the valley land category.

Valley lands includes nine vegetation communities (listed in Table 2, page 8). Even though this category is termed valley lands, the boundaries of these vegetation communities do not necessarily follow floodplain boundaries. This category saw a reduction in size of 48.57 ha (120 ac.) between 1996 and 1998. It currently comprises 1253.23 ha (3097 ac.), or 4.3% of the total City area. Five of the vegetation communities in this category are still the most widespread in the City: wooded slope, floodplain, golf course, wooded non-native, and open with open slopes. Wooded slope had an overall increase in area between 1996 and 1998 with the addition of this vegetation community to natural area ETO1. Floodplain and open with open slopes decreased due to the removal of portions of these communities from a number of natural areas. Table 1 (page 7) lists the valley land vegetation communities that were removed from natural areas and the reason for their removal. The other vegetation communities in this category remained the same.

Woodlands includes nineteen vegetation communities (listed in Table 2, page 8), all of which occur outside of valley lands, although intermittent streams may be present within. Between 1996 and 1998 this category was reduced in size by 6.54 ha (16.16 ac.) to 417.89 ha (1032 ac.), or 1.4% of the total City area. Fourteen of the vegetation communities in this category (see Table 2, page 8, for a complete list) are still considered uncommon in the City, each occupying less than 1% of the total area of natural areas or containing an uncommon working group (Krahn *et al.* 1995). Red ash-American elm forest increased in area and number of occurrences due to the addition of this community to natural area GT2. Sugar maple-red oak forest increased in area at MV19 with a larger portion of this community remaining within the residential development. Sugar maple forest, sugar maple-American beech forest, sugar maple-white ash forest, and ash-hickory forest decreased due to the removal of natural area HO2 as well as portions of natural areas HO7, MV19 and EC22. The number of occurrences of red maple-red oak forest, oak-ash forest, and oak-hickory forest increased due to the late addition of information¹ for natural areas SP1 and SP3 in 1996. The other vegetation communities remained the same.

¹ Permission to access natural areas SP1 and SP3 in 1996 was obtained after the Natural Areas Survey, 1996 September, was complete and as a result vegetation community information was not incorporated into the 1996 report.

The successional category has six vegetation communities (listed in Table 2, page 8). This category has decreased in size by 1.7 ha (4.2 ac.) between 1996 and 1998. In 1998 this category comprised 133.5 ha (330 ac.) or 0.46 % of the total City area. Five vegetation communities in this category (see Table 2, page 8, for a complete list) are still considered to be uncommon in the City occupying less than 1% of the total area of natural areas. The number of occurrences of the old field community changed as a result of the late addition of information for natural areas SP1 and SP3 in 1996. The increase in total area for this community was due to changes at a number of natural areas. The early successional forest community had an overall loss in area, with a decrease in size at natural areas HO2 and HO9 and an increase in size at natural area ETO1. The number of occurrences of early successional forest and poplar forest changed as a result of the late addition of information for natural areas SP1 and SP3 in 1996. The decrease in size of the hedgerow, hawthorn thicket and poplar forest communities is due to recalculations of area and not a result of changes in the field. Birch forest remained the same between 1996 and 1998.

The wetland category is composed of six vegetation communities (see Table 2, page 8, for a complete list). Between 1996 and 1998 this category decreased in size by 0.9 ha (2.2 ac.) to a size of 74.9 ha (185 ac.), or 0.25% of the total City area. All of the vegetation communities in this category are still considered to be uncommon in the City occupying less than 1% of the total area of natural areas. The number of occurrences and size of wet meadow changed due to the late addition of information for natural areas SP1 and SP3 in 1996. The decrease in size of the cattail marsh and silver maple forest is due to recalculations of area and not a result of changes in the field. The other vegetation communities in this category remained the same.

Anthropogenic is composed of five vegetation communities (see Table 2, page 8). The size of this category increased between 1996 and 1998 by 2.75 ha (6.8 ac.) to 355.75 ha (879 ac.), or 1.2 % of the total City area. Residential woodland is still considered to be one of the largest communities in the City. Manicured increased in size due to recalculations of area and not a result of changes in the field. The other vegetation communities in this category remained the same.

Other is composed of three vegetation communities that do not easily fit in the other categories: beach, tall grass prairie and unknown (see Table 2, page 8). The number of occurrences of unknown decreased due to the late addition of information for natural areas SP1 and SP3 in 1996. Beach decreased in size due to recalculations of area and not as a result of changes in the field. Tall grass prairie remained the same.

In the 1996 Natural Areas Survey two vegetation communities were considered provincially rare or uncommon, tall grass prairie and willow-buttonbush shrub thicket. Recent literature, Bakowsky (1996), has split the vegetation community willow-buttonbush shrub thicket into willow shrub thicket and buttonbush shrub thicket. The willow-buttonbush community in the City would fall into the former community (willow shrub thicket) which is considered common in the province. The tall grass prairie community is still considered a rare vegetation community within the province.

Table 1: Valley Land Vegetation Communities Removed From Natural Areas Between 1996 and 1998 and the Reason for Removal

Natural Area	Vegetation Communities	Reason for Removal
CRR6	wooded slope	small portion removed for residential development
ETO1	floodplain open with open slopes	portion manicured to river banks and portion reassigned to other vegetation communities removed for school development
ETO3	floodplain wooded slope	portion removed for airport development portion removed for airport development
ETO4	wooded slope	small portion removed for corporate development
HO6	open with open slopes	portion ploughed
HO7	floodplain	removed for community centre development
MA1	open with open slopes	portion manicured
MV19	floodplain	portion removed for residential development
MV2	wooded slope open with open slopes	portion removed for Mavis Road extension portion removed for Mavis Road extension
NE11	open with open slopes	small portion manicured
NE5	open with open slopes	small portion removed with extension of commercial and industrial development
NE8	open with open slopes	large portion removed for airport development
SV12	open with open slopes	large portion removed for GO Station development

3.2 Flora

In 1996, the flora of Mississauga consisted of 1,101 plant species, of which 431 (39%) were introduced and 670 (61%) were native. In 1998, two new species were documented for the City bringing the flora to 1,103 species, of which 431 (39%) are introduced and 672 (61%) are native. Virginia creeper (*Parthenocissus quinquefolia*) was documented for natural area MI4 by Dougan & Associates (1996) and stiff clubmoss (*Lycopodium annotinum*) was documented for natural area EC13 by Varga (1998b). In 1996 the average proportion of non-native species for the areas surveyed was 28.4% with a range of 4% to 60%. In 1998, this increased to 29.6% with a range of 4.3% to 69.2% (see Table 3, page 21).

In 1996, 435 (65%) of the native species were considered rare to uncommon (including extirpated species) within the City and 235 (35%) were considered common. In 1998, 435 (65%) are considered rare to uncommon and 237 (35%) are considered common. Definitions of rarity status can be found in Appendix 4 Natural Areas Survey, 1996 September. This increase in the number of common species is due to the documentation of a number of new sites for some plant species, resulting in a change in their status (Appendix 4). Two native species had their status changed from uncommon to common. This was offset by the two new native species documented for the City that were given a rarity status of rare. Six non-native species had their status changed from uncommon to common. Five native species and one non-native species considered extirpated in 1996 were found to have recent records in the database that were overlooked in 1996 and their status was changed to rare.

In 1996, thirteen extant provincially rare species were documented for the City. In 1998, only ten plant species considered provincially rare by the NHIC (Oldham 1996) are currently known to occur in the City of Mississauga (see Appendix 5). Three species considered provincially rare in 1996 are no longer considered as such by the Natural Heritage Information Centre (NHIC) (Oldham 1996) and have been removed from the relevant natural area fact sheets. These species are: butternut (*Juglans cinera*), hairy goldenrod (*Solidago hispida*) and nut grass (*Cyperus lupulinus*).

One plant record from existing reports and studies is considered an unlikely occurrence and may have been misidentified. This species requires confirmation before it is added to the floral database. Tall northern green orchid (*Platanthera hyperborea* var. *huronensis*) documented for natural area CL 30 (fieldwork TF/EF/BM 97) is most likely helleborine (*Epipactis helleborine*).

3.3 Floristic Quality Assessment

Table 3 (page 21) shows the FQI and native mean coefficient for all natural areas that were assessed. In 1996, 107 of the 144 natural areas were assessed. FQIs ranged from 2.68 to 80.10 and the native mean coefficients ranged from 1.20 to 4.82. The majority of natural areas fell in the medium range of native mean coefficients (3.3 to 3.99) and in the low range for the FQIs (<30.00). Of the 69 natural areas identified in this update, FQIs and native mean coefficients were re-calculated for only those sites that had a change in their floral inventories. The range of FQIs and native mean coefficients remained the same. The majority of natural areas still fall in the medium range of native mean coefficients and the low range of FQIs.

Sixteen natural areas increased their FQI in this update, however only one site, a residential woodland (MI4), increased its FQI rank from medium (36.65) to high (40.13). Increases in FQIs at these sixteen natural areas are the result of more complete inventories of flora species and are probably closer reflections of actual conditions. Fifteen natural areas saw a decrease in their native mean coefficient. Five of these decreased

their rank from high (>4.00) to medium (3.3 to 3.99); CRR2, EC22, HO3, HO7 and MV12. These new native mean coefficients probably more accurately reflect the floral species composition of these natural areas. Six sites increased their native mean coefficient; none of these changed their ranking (*i.e.*, from medium to high). A decrease in the native mean coefficient indicates an increase in the numbers of native species with low coefficients documented for these natural areas. An increase in the native mean coefficient is the result of the documentation of additional conservative species within natural areas.

3.4 Fauna

In 1998, a number of natural areas had additional faunal records documented (see Appendix 7) however, no new species were documented for the City of Mississauga. The fauna information for the City is still very limited and additional surveys of the fauna that use the City's natural areas need to be conducted.

Significant wildlife species documented for the City are listed in Appendix 6. There are currently 40 provincially significant bird species documented for the City, the majority (58%) of which are either migrants, wintering, or accidental (*i.e.*, are not known to breed in the City). Of the 44 bird species considered provincially significant in 1996, four are no longer considered significant by the NHIC (NHIC 1997a). These species are: osprey (*Pandion haliaetus*), Cooper's hawk (*Accipiter cooperii*), common moorhen (*Gallinula chloropus*) and dickcissel (*Spiza americana*). One amphibian species and three reptile species documented for the City are currently considered to be provincially significant (NHIC 1997c and 1997d). Two amphibian species, pickerel frog (*Rana palustris*) and common musk turtle (*Sternotherus odoratus*), considered provincially significant in 1996 are now considered to be common in the province. Two of the reptile species are considered to be historical records.

3.5 Significant Features

The Ministry of Natural Resources (OMNR) recently updated the Areas of Natural and Scientific Interest (ANSIs) in the Regional Municipality of Peel (Varga 1998a). The Lorne Park Prairie regional life science ANSI is now confined to the railway right-of-way and is included in natural areas CL30, CL31, CL22, and CL24. The Credit River Marshes and Stavebank Oak Woods regional life science ANSIs have been combined into one ANSI located within natural areas CRR8 and CRR9. The Creditview Woods regional life science ANSI located within natural area CR1 has been de-listed and is no longer considered an ANSI. Local life science ANSIs are no longer recognized by the OMNR and as a result five local ANSIs located within natural areas EC1, GT4/H09, CL21, SP3 and CRR1 have also been de-listed.

No natural areas have had their Environmentally Significant Area (ESA) or wetland status changed. The Creditview Wetland (EC13) underwent a review of its wetland status in 1998 and was confirmed to be a provincially significant wetland (Varga 1998b).

4.0 NATURAL AREAS FRAMEWORK

Table 3 (page 21) summarizes the current information available for each natural area in the City of Mississauga, updating Table 4 from Natural Areas Survey, 1996 September. This includes the following information:

- the classification of the natural areas following the system outlined in the Natural Areas Survey, 1996 September;
- designation of the natural area as a significant feature (ANSI, ESA, evaluated wetland);
- size of the natural area in hectares and acres;
- the number of flora species;
- the proportion of the flora that are non-native;
- the native FQI and native mean coefficient;
- the number of vegetation communities;
- the number of provincially and regionally significant flora and fauna species;
- the number of birds, mammals, and herptiles; and
- the condition of the natural areas.

Appendix 7 documents the changes for natural areas that occurred between 1996 and 1998 using the same categories.

Figure 1 shows the locations of natural areas, Special Management Areas, Residential Woodlands and Linkages, updating Figure 2 from Natural Areas Survey, 1996 September. Due to the scale of mapping, Significant Natural Sites, Natural Sites and Natural Greenspace are not discriminated on this map, but are all labelled as “natural area”. In addition, the location of “minor natural features” and “shoreline reaches” as described in the Natural Areas Survey, 1996 September, are illustrated.

A total of 141 proposed natural areas classified as Significant Natural Site, Natural Site and Natural Green Space were identified in the Natural Areas Survey. In addition to these natural areas three Residential Woodlands were identified, totalling 252 ha (621.67 ac.). Fifty-five Special Management Areas, and 40 Linkages were also proposed. Table 4 (page 26) shows the number of natural areas in each of the three classes (Significant Natural Site, Natural Site, and Natural Green Space), as well as the total area of each class, and the proportion of each class in relation to the total area in the natural area system and in relation to the entire City for both 1996 and 1998. In the 1996 Natural Areas Survey, 7.10% of the entire City was proposed as natural area.

In 1998, based on the updated information, 140 natural areas remain, totalling 6.92% of the entire City. There was no change to the three Residential Woodlands. In addition Fifty-one Special Management Areas and 37 Linkages remain. Four Special Management Areas associated with natural areas ETO4 (south of Highway 401), GT4/HO9, GT2 and ETO3 were lost due to development since 1996. The Special Management Area associated with natural area NE6 decreased in size due to development. Three linkages located between natural areas MV2 and MV3, GT4/HO9 and GT2, and south of natural area GT4/HO9 were lost due to development.

A total of 55.85 ha (121.50 ac.) designated as natural area was lost, primarily due to development. One Natural Site (HO2) was completely removed by development. The Significant Natural Sites AW1, CE12/SV12, CV12, LV1 and SV1 were downgraded to Natural Sites because butternut (*Juglans cinera*) is

no longer considered a provincially significant plant species and therefore they no longer fulfilled any criteria to be classified as Significant Natural Sites. The Significant Natural Site MV12 was downgraded to Natural Site because it has been bisected by Mavis Road and no longer is considered a woodland greater than 10 ha (25 ac.). As a result it no longer fulfils any criteria to be classified as a Significant Natural Site. Natural Site MB9 was downgraded to Natural Green Space because the regionally significant species it supported are now considered common and therefore it no longer fulfils any criteria to be classified as a Natural Site. Natural Green Space MA1 was upgraded to Natural Site due to the documentation of three plant species considered regionally rare. As a result this site now fulfils the criteria to be considered a Natural Site.

Figure 1: Legend For Natural Area Framework for the City of Mississauga

(Note: There are 140 natural areas and 3 Residential Woodlands identified on Figure 1, however 148 areas are listed below because 5 span two planning districts and are thus listed twice)

SOUTHDOWN

1. SD1
2. SD4
3. SD5 (Meadowwood)

CLARKSON-LORNE PARK

4. CL52 (Meadowwood)
5. CL1 (Meadowwood)
6. CL9 (Ratray Marsh)
7. CL8
8. CL15
9. CL16 (Jack Darling Park)
10. CL17 (Lorne Park Estates)
11. CL13
12. CL43
13. CL42
14. CL21 (Birch Glen)
15. CL39 (Whiteoaks)
16. CL22
17. CL30 (Lorne Park Prairie)
18. CL31 (Lornewood Creek Trail)
19. CL24 (Tecumseh)
20. CL26
24. CRR9 (Credit River Flats)

PORT CREDIT

21. PC1 (Rhododendron Gardens)
22. PC2 (Port Credit Memorial)
23. PC3

MINEOLA

24. CRR9 (Credit River Flats)
25. MI4
26. MI1

LAKEVIEW

27. LV3 (Adamson Estate)
28. LV4 (Helen Molasy Memorial)
29. LV5
30. LV2
31. LV1 (Marie Curtis)
32. ETO8
33. LV14 (Lakeview Golf Course)
34. LV6
35. LV7 (Cawthra Woods)
36. ETO7

SHERIDAN PARK

37. SP1
38. SP3

SHERIDAN

39. SH6
40. CRR7
41. CRR8

ERINDALE

40. CRR7
41. CRR8
42. ER6
43. CRR6

COOKSVILLE

44. CV1 (Iroquois Flats)
45. CV2
46. CV12 (Richard Jones)
47. CV10
48. CV8 (Camilla)

DIXIE

36. ETO7
49. ETO6
50. AW1 (Willowcreek)

WESTERN BUSINESS PARK

51. WB1 (Erin Mills Twin Arena)

ERIN MILLS

52. EM30 (Tom Chater Memorial)
53. EM6 (King's Masting)
54. EM2 (South Common)
55. EM10
56. EM14
57. EM4
58. EM5 (Glen Erin Trail)
43. CRR6
59. EM21 (Richard F.C. Mortensen)

CREDITVIEW

60. CR1

FAIRVIEW

61. FV1
62. FV3

CITY CENTRE

63. CC1 (Bishopstoke Walk)

MISSISSAUGA VALLEY

64. MY1 (Mississauga Valley)
65. MY3 (Stonebrook)

APPLEWOOD

50. AW1 (Willowcreek)
66. AW4 (Applewood Hills)
67. AW3 (Applewood Hills)
68. ETO5
49. ETO6

RATHWOOD

- 69. ETO4
- 70. RW5 (Applewood Hills)
- 71. RW6 (Applewood Hills)
- 72. RW4 (Rathwood District)
- 73. RW1
- 74. RW2 (Woodington Green)

CHURCHILL MEADOWS

- 75. CM7
- 76. CM9
- 77. CM11
- 78. CM12
- 79. CM17
- 80. CM13

CENTRAL ERIN MILLS

- 81. CE7 (Sugar Maple Woods)
- 82. CE9 (Quenippenon Meadows)
- 83. CE10 (Erin Wood)
- 84. CE5
- 85. CE1 (Woodland Chase Trail)
- 86. CE12 (Bonnie Brae)
- 87. CRR5
- 88. CRR4

STREETSVILLE

- 89. SV12 (Bonnie Brae)
- 90. SV10
- 88. CRR4
- 91. SV1 (Turney Woods)
- 92. CRR3
- 93. CRR2

EAST CREDIT

- 87. CRR5
- 88. CRR4
- 92. CRR3
- 93. CRR2
- 94. EC22
- 95. EC10
- 96. EC13
- 97. EC1

HURONTARIO

- 98. HO1
- 100. HO3 (Staghorn Woods)
- 101. HO6
- 102. HO7
- 103. HO9 (Britannia Woods)

NORTHEAST

- 104. NE4
- 105. NE3
- 106. NE2
- 107. NE1
- 108. NE6

NORTHEAST

- 109. NE5
- 110. NE7
- 69. ETO4
- 111. ETO3
- 112. NE8
- 113. NE10
- 114. NE11
- 115. NE12
- 116. ETO2
- 117. ETO1
- 118. NE9 (Wildwood)

LISGAR

- 119. LS1 (Lisgar Meadow Brook)
- 120. LS2
- 121. LS3 (Trelawny Woods)

MEADOWVALE

- 122. ME10 (Eden Woods)
- 123. ME12 (Lake Wabukayne)
- 124. ME11 (Lake Aquitaine)
- 125. ME9 (Maplewood)
- 126. ME8 (Windrush Woods)

MEADOWVALE BUSINESS PARK

- 127. MB9
- 128. MB7 (Mullet Creek)
- 129. MB8
- 130. MB3
- 131. MB5
- 132. MB4
- 133. MB6 (Totoredaca)
- 134. MB2
- 135. MB1

MEADOWVALE VILLAGE

- 136. MV19
- 137. CRR1 (Meadowvale Conservation Area)
- 138. MV18
- 139. MV2
- 140. MV3
- 141. MV12
- 142. MV14
- 143. MV11
- 144. MV15
- 93. CRR2

GATEWAY

- 145. GT1
- 146. GT3
- 147. GT2
- 148. GT4 (Brittania Woods)

MALTON

- 149. MA1

Insert Figure 1: Natural Areas Framework

Table 4: Comparison of Natural Area Classes for the City of Mississauga in 1996 and 1998

Classification	Number of Sites		Total Area (ha)		Total Area (acres)		Proportion of Natural Areas System		Proportion of the City	
	1996	1998	1996	1998	1996	1998	1996	1998	1996	1998
Significant Natural Site (SNS)	51	45	1530.17	1423.39	3779.52	3517.15	74%	70%	5.23%	4.91%
Natural Site (NS)	59	64	349.92	426.35	864.30	1053.50	17%	21%	1.2%	1.41%
Natural Green Space (GS)	31	31	197.05	171.55	486.71	423.89	9%	9%	0.67%	0.60%
TOTAL	141	140	2077.14	2021.29	5130.53	4994.54	100%	100%	7.10%	6.92%

The proposed natural areas are not evenly distributed in the City. Table 5 (page 26) shows the number and area of natural areas associated with the three major landform types in the City. Most of the natural areas (73 areas or 78% of the natural areas system) are associated with valley systems. The number of natural areas located on the table lands was 60 in 1996 and now is 59 with the removal of natural area HO2 for residential development. Table land natural areas are small (mean size of 5.5 ha or 13.6 ac.) when compared to the valley land areas (mean size of 22 ha or 54.3 ac.). In addition, table land natural areas (which are mainly wooded) tend to be discrete islands that have limited connections to other remnant natural features. Valley lands are better connected by virtue of the linearity of the landform and historically have been better protected from development. From a City-wide perspective, in 1998 only 1.1% of the landbase is represented in table land natural areas, down 0.4% from 1996. This reinforces the need for protection of table land features within the City.

Table 5: Comparison of Natural Areas by Major Landform Type in 1996 and 1998

Landform Type	No. of Sites		Size (ha)		Size (acres)		Mean Size (ha)		Mean Size (acres)		Proportion of Natural Area System		Proportion of entire City	
	1996	1998	1996	1998	1996	1998	1996	1998	1996	1998	1996	1998	1996	1998
valley lands and associated table lands	73	73	1626.3	1588	4016.96	3923.89	22.28	21.75	55.03	53.74	78.3%	78.5%	5.6%	5.43%
table lands	60	59	339.89	328.46	839.53	811.61	5.66	5.57	13.98	13.76	16.4%	16.2%	1.16%	1.12%
wetlands and associated valley land	6	6	103.69	100.40	256.11	248.09	17.28	16.73	42.70	41.34	5.0%	5.0%	0.36%	0.34%
TOTAL	139*	138*	2069.9*	2016.9*	5112.6*	4983.6*	-	-	-	-	99.7%*	99.7%*	7.1%	6.9%

* Note: two small areas such did not readily fall into these three categories and were omitted from this analysis so figures differ slightly from those provided elsewhere in the report.

5.0 CONDITION OF NATURAL AREAS

5.1 Condition

Generally, the natural areas within the City that were surveyed continue to be in fair condition (see Table 3, page 21). It should be noted that 1998 was a year of exceptionally low precipitation. Many natural areas, in particular table land woodlots, were affected by these drought conditions. The most prevalent effect was smaller populations of many native ground cover species. Other impacts included dry soil conditions, an increase in exposed soil, an apparent increase in the populations of non-native species and a loss of leaves in canopy trees. These effects are most likely short-term as plants have a number of strategies to ensure their survival during a drought, including seeds that can survive a number of years without germinating, or the plant remaining underground as tubers or rhizomes instead of producing stems, leaves and flowers.

Eight natural areas (CE10, EC22, ETO1, ETO3, GT4/HO9, HO1, HO7 and MV19) had their condition downgraded in 1998. The poorer conditions at these natural areas can be attributed to either the removal of a portion of the site for development or increased pressure within the site as a result of adjacent development. Two of these sites, MV19 and GT4/HO9, were downgraded from excellent to good as a result of the increased pressure from adjacent development. One site CL30 (Lorne Park Prairie) has been upgraded marginally due to an increase in the number of flora species probably resulting from the prescribed burn conducted in 1997.

5.2 Disturbances

The most common disturbances within natural areas are still those associated primarily with increased use following development in adjacent areas. Examples of these disturbances include: the creation of *ad hoc* trails, the use of mountain bikes, garbage, encroachment, and vandalism. These disturbances have become more prevalent at all of the natural areas surveyed and especially in table land forests where adjacent development has recently occurred.

5.3 Development

Another disturbance that caused impacts was development that resulted in removal of portions of natural areas. Twenty of the 52 natural areas surveyed in 1998 had decreased in overall size due to development. Some impacts that resulted from the removal of portions of natural areas included increased light penetration in the remainder of the area, and changes in the vegetation structure. Other potential long-term impacts that could occur are changes in the moisture (soil and air), temperature and precipitation within the natural area. A number of sites that decreased in size as a result of development should be revisited in the spring and early summer during the next update to accurately determine the extent of changes to the vegetation. These sites are: HO7, SV1, CE10, EC22, GT4/HO9 and MV19.

5.4 Non-native Species

There has been an increase in the proportion of non-native plant species in the 52 natural areas surveyed between 1996 and 1998. Eighteen non-native species decreased their regional rarity status within the City

due to an increase in site records. Four of these species are considered invasive non-native species: dog-strangling vine (*Vincetoxicum rossicum*), white poplar (*Populus alba*), Japanese knotweed (*Polygonum cuspidatum*) and white mulberry (*Morus alba*). An increase in the presence of these species within the City's natural areas is a serious management concern. If allowed to continue increasing their populations, these species could easily replace native plant species in a number of natural areas. A City-wide strategy and management plans should be developed to deal with these exotic species before they are no longer manageable.

6.0 RECOMMENDATIONS

1. Conduct intensive early spring or summer field visits to natural areas identified in 1998 with decreases in understorey flora species to accurately document remaining vegetation and management needs. These natural areas should include EC22, GT4/HO9, MV19, HO7, SV1 and CE10.
2. Initiate greater control over natural areas to reduce impacts related to human use. This is best achieved through site-specific conservation plans. Issues addressed in the conservation plans should include, but not be limited to: access issues, appropriate activities, non-native plant control, and restoration initiatives (see the Natural Areas Survey, 1996 September, for a complete description of conservation plan requirements).
3. Continue restoration initiatives, in particular the native planting scheme for Jack Darling Park and the prescribed burns at Lorne Park Prairie. Consider similar prairie initiatives for the other natural areas that contain remnants of the Lorne Park Prairie, CL24, CL31 and CL22. In particular, the manicured park at the south end of natural area CL24 is a good candidate for restoration initiatives.
4. Develop a City-wide strategy and management plans to deal with invasive non-native species especially, dog-strangling vine (*Vincetoxicum rossicum*), white poplar (*Populus alba*), Japanese knotweed (*Polygonum cuspidatum*) and white mulberry (*Morus alba*).
5. Initiate a public education program in concert with stewardship initiatives to involve local citizens in the management of natural areas as outlined in the Natural Areas Survey, 1996 September.

7.0 REFERENCES CITED

- Bakowsky, W.D. 1996. Natural Heritage Resources of Ontario: Vegetation Communities of Southern Ontario. Natural Heritage Information Centre, Ontario Ministry of Natural Resources, Peterborough, Ontario. 21pp.
- Dougan & Associates. 1996. Environmental Impact Study and Tree Preservation Plan. West End Development Corp., Part of Lots 1 and 2, Range 2, Credit Indian Reserve (1584, 1592, and 1600 Hurontario Street), City of Mississauga. 16pp. + appendices.
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- Oldham, M.J. 1996. Natural Heritage Resources of Ontario: Rare Vascular Plants. Natural Heritage Information Centre, Ontario of Ministry of Natural Resources. 53pp.
- Varga, S. 1998a. Letter to Thomas Mokrzycki, Commissioner of Planning and Development re: updates of Areas of Natural and Scientific Interest (ANSIs). 6pp + maps (scale 1:10,000 and 1:50,000).
- Varga, S. 1998b. Letter to Anthony Goodban, Ecoplans Limited re: Creditview Wetland, some corrections and additions to the September 10, 1998 letter. 3pp.

Appendix 1: Reports examined for background review

The format of this appendix follows Appendix 2 in the Natural Areas Survey, 1996 September. The numbers correspond to those used in the database for literature references.

- 168 Dougan & Associates. 1996b. Environmental Impact Study and Preliminary Tree Preservation Plan. Draft Report. Draft Plan No. 21T-95020 Diano/Bonofiglio City of Mississauga. Prepared for Diano & 919848 Ont. Ltd.
- 169 Strybos Associates Ltd. 1996. Scoped Environmental Impact Study Preliminary Report. East of Mavis Road, South of Central Parkway West Extension. Part of Lot 20, Concession 1, North of Dundas Street, City of Mississauga, Region of Peel. Prepared for 720 Bay Capital Inc. – Bramalea. 18 pp.
- 170 Dougan & Associates. 1996a. Environmental Impact Study and Tree Preservation Plan. West End Development Corp., Part of Lots 1 and 2, Range 2, Credit Indian Reserve (1584, 1592, and 1600 Hurontario Street), City of Mississauga. 16 pp. + appendices.
- 171 Dougan & Associates. 1997. Environmental Impact Study. Cawthra Community Centre, City of Mississauga. Prepared for the City of Mississauga, Community Services Department. 29 pp. + appendices.
- 172 Geomatics International Inc. 1996. Proposed Hurontario Community Centre Development Concepts. Environmental Impact Study. Prepared for the City of Mississauga, Community Services Department. 42 pp.
- 173 Fleisher Ridout Partnership Inc. 1997. Environmental Impact Study Pharmacia Upjohn Property, Spectrum Way, Mississauga, Ontario. Prepared for Internorth Construction Limited.
- 173 Geomatics International Inc. 1998. Environmental Impact Study. Major Spectator Arena and Entertainment Complex, City of Mississauga – Phase 1 (Part of Lots 4 & 5, Concession 2, E.H.S., Toronto Township). 29 pp.
- 174 Strybos Associates Ltd. 1997. Scoped Environmental Impact Study and Preliminary Tree Preservation Plan. Graylight Properties Ltd. & Gateshead Enterprises Limited. East of Mavis Road, North of Future Bristol Road West. Part of Lots 2 and 3, Concession 2 W.H.S., City of Mississauga, Regional Municipality of Peel. Prepared for Graylight Developments Inc. 11 pp.
- 176 Golder Associates. 1996. Loyalist Creek Rehabilitation Study. Prepared for Transportation and Works Department, City of Mississauga. 64 pp. + appendices.
- 175 Transportation and Works. 1998. Natural Area Survey Review Checklist. Transportation and Works, Environmental Engineering. April 1998.
- 177 Environmental Water Resources Group Ltd. 1996. Birchwood Creek Drainage Study Final Report. Prepared for Transportation and Works Department, City of Mississauga.

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- 179 Falby Burnside and Associates Ltd. 1995. Design Brief for First Flush Pond No. 3 (FFP3) Meadow Ridge Development Markborough Properties Inc. 12 pp. + appendices.
- 180 Falby Burnside and Associates Ltd. 1995. Design Brief for First Flush Pond No. 1 (FFP1) Meadow Ridge Development Markborough Properties Inc. 12 pp. + appendices.
- 181 R.E. Winter and Associates Ltd. 1997. City of Mississauga, City Centre Master Drainage Plan. 64 pp. + appendices.
- 182 Rand Engineering Corporation. 1996. Design Report Fletcher's Creek Stormwater Management Facility #5 Meadowvale Village Secondary Plan Area, City of Mississauga, Region of Peel. 24 pp. + appendices.
- 183 Urban Ecosystems Limited. 1997. Preliminary Servicing and Drainage Report. DiBlasio Estates West and East, Diano/Bonofiglio Subdivision, Meadowvale Village Secondary Plan Area. Draft. 47 pp. + appendices.
- 184 Ecoplans Limited. 1994. Creditview Wetland – Management Plan, City of Mississauga. 21pp.
- 185 Walton, G., and P. Lyons. 1997. Cawthra Woods Management Plan. Community Services, City of Mississauga. 82 pp.
- 186 Geomatics International Inc. 1997. Cawthra Woods Implementation Plan. Prepared for City of Mississauga. 41pp.

Appendix 3: Additional Natural Areas (Outside Wards 5 and 6) Identified for Fact Sheet Updates Based on the Background Literature Review²

Natural Area	Reason for Update
AW1	provincially significant species status change
AW3	capital project occurred within natural area
CC1/MY1	capital project occurred within natural area
CL21	ANSI status changed
CL24	ANSI status changed
CL39	capital project occurred within natural area
CL9	provincially significant species status change
CV2	provincially significant species status change
CV12	provincially significant species status change
EM4	provincially significant species status change capital works project occurred within natural area
SP3	ANSI status changed
LV1	provincially significant species status change
LV3	capital project occurred within natural area
LV4	capital project occurred within natural area
LV14	capital project occurred within natural area
MB8/ME8	provincially significant species status change
ME10	provincially significant species status change

² Status of provincially significant species in the province were updated by Oldham (1996)
Status of ANSIs in the region were updated by Varga (1998a)

Appendix 4: Regional Rarity Rank Updates for the Flora of the City of Mississauga

Regional rarity ranks are defined in Appendix 4 of the Natural Areas Survey, 1996 September. A rank of 0 is extirpated, a rank of 1 is rare, a rank of 2 is uncommon, and a rank of 3 or 4 is common.

Scientific Name	Common Name	Non-native	# of Occurrences	Regional Rarity Rank	
				1996	1998
<i>Acer saccharinum</i>	silver maple		64	3	4
<i>Angelica atropurpurea</i>	angelica		7	1	2
<i>Arisaema triphyllum</i>	Jack-in-the-pulpit		63	3	4
<i>Athyrium thelypteroides</i>	silvery glade fern		5	1	2
<i>Calamagrostis canadensis</i>	Canada blue-joint		5	1	2
<i>Carex albursina</i>	sedge		5	1	2
<i>Carex cephalophora</i>	sedge		5	1	2
<i>Carpinus caroliniana</i>	blue beech		46	3	4
<i>Carya cordiformis</i>	bitternut hickory		44	3	4
<i>Carya ovata</i>	shagbark hickory		55	3	4
<i>Catalpa speciosa</i>	catalpa	yes	5	1	2
<i>Caulophyllum thalictroides</i>	blue cohosh		14	2	3
<i>Circaea lutetiana</i>	enchanter's nightshade		88	3	4
<i>Convallaria majalis</i>	lily-of-the-valley	yes	15	2	3
<i>Echinochloa microstachya</i>	barnyard grass		1	0	1
<i>Epilobium hirsutum</i>	hairy willowherb		12	2	3
<i>Fraxinus excelsior</i>	European ash	yes	1	0	1
<i>Geranium maculatum</i>	wild cranesbill		46	3	4
<i>Hemerocallis fulva</i>	orange day-lily	yes	12	2	3
<i>Hypericum majus</i>	St. John's-wort		1	0	1
<i>Leonurus cardiaca</i>	motherwort	yes	45	3	4
<i>Lonicera morrowii</i>	honeysuckle	yes	5	1	2
<i>Lycopodium digitatum</i>	ground cedar		1	0	1
<i>Lysimachia nummularia</i>	moneywort	yes	7	1	2
<i>Maianthemum racemosum</i>	false Solomon's-seal		60	3	4
<i>Morus alba</i>	white mulberry	yes	8	1	2
<i>Myosotis sylvatica</i>	forget-me-not	yes	5	1	2
<i>Onoclea sensibilis</i>	sensitive fern		47	3	4
<i>Picea glauca</i>	white spruce	yes	9	1	2

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Scientific Name	Common Name	Non-native	# of Occurrences	Regional Rarity Rank	
				1996	1998
<i>Pinus banksiana</i>	Jack pine	yes	6	1	2
<i>Pinus resinosa</i>	red pine	yes	16	2	3
<i>Podophyllum peltatum</i>	May-apple		65	3	4
<i>Polygonum cuspidatum</i>	Japanese knotweed	yes	12	2	3
<i>Populus alba</i>	white poplar	yes	6	1	2
<i>Populus tremuloides</i>	trembling aspen		50	3	4
<i>Prunus serotina</i>	black cherry		76	3	4
<i>Quercus macrocarpa</i>	bur oak		56	3	4
<i>Ribes americanum</i>	wild black currant		50	3	4
<i>Ribes cynosbati</i>	prickly gooseberry		56	3	4
<i>Ribes rubrum</i>	red currant	yes	14	2	3
<i>Salix alba</i>	white willow	yes	40	3	4
<i>Solidago flexicaulis</i>	zig-zag goldenrod		52	3	4
<i>Solidago uliginosa</i>	bog goldenrod		1	0	1
<i>Syringa vulgaris</i>	lilac	yes	14	2	3
<i>Trillium grandiflorum</i>	white trillium		60	3	4
<i>Thelypteris noveboracensis</i>	New York fern		4	1	2
<i>Verbena simplex</i>	vervain		1	0	1
<i>Vincetoxicum rossicum</i>	dog-strangling vine	yes	9	1	2

Appendix 4:

Regional Rarity Rank Updates for the Flora of the City of Mississauga

Appendix 5: Updated Provincially Significant Native Flora Species

Documented for the City of Mississauga based on Oldham (1996). Rarity ranks are defined in Appendix 4 of the Natural Areas Survey, 1996 September.

Scientific Name	Common Name	G_Rank	COSEWIC	MNR	S_Rank	R_Rank	Location
<i>Astragalus neglectus</i>	Cooper's milk-vetch	G4			S3	1	CRR6
<i>Aureolaria flava</i>	false foxglove	G5			S3	1	CRR7
<i>Carex amphibola</i>	narrow-leaf sedge	G5			S2	1	CRR6
<i>Carex gracilescens</i>	slender sedge	G5? ³			S3	1	CRR8
<i>Crataegus corusca</i>	hawthorn	G3G5			S2S3	1	CRR6
<i>Mertensia virginica</i>	Virginia bluebells	G5			S3	1	Clarkson-Lorne Park
<i>Muhlenbergia sylvatica</i>	muhly grass	G5			S2	1	EM4, ETO3
<i>Oenothera clellandii</i>	sundrops	G3G5			S1	1	Clarkson-Lorne Park
<i>Panax quinquefolia</i>	ginseng	G4	THR		S3	2	mentioned in Peel Flora
<i>Potentilla paradoxa</i>	lower great lakes cinquefoil	G5			S3	1	Lake Ontario shoreline

³ A question mark means that a rank is tentatively assigned (Oldham 1996)

Table 2: A Comparison of the Vegetation Communities Mapped for the City of Mississauga in 1996 and 1998

(grouped according to six broad categories, their areas, their proportion of the total vegetation area and their proportion of the total City area) [communities are based on classifications of Bakowsky (1995) and Kavanaugh and McKay-Kuja (1992) see Natural Areas Survey, 1996 September].

Community Code	Vegetation Community	# Occurrences		Area				Proportion of Natural Areas (%)		Proportion of City Area (%)	
		1996	1998	1996		1998		1996	1998	1996	1998
				(ha)	(acres)	(ha)	(acres)				
	Valley Lands										
A	wooded slope	19	20	347.36	857.98	348.54	861.23	14.92	15.33	1.19	1.19
B	floodplain	22	21	458.42	1132.30	426.21	1053.15	19.69	18.75	1.57	1.46
G	golf course	4	4	101.18	249.91	101.19	250.04	4.35	4.45	0.35	0.35
J	wooded non-native valley lands	18	18	93.43	230.77	94.36	233.16	4.01	4.15	0.32	0.32
K	open with open slopes valley lands	31	32	229.02	565.68	210.58	520.34	9.84	9.26	0.78	0.72
L	wooded native valley lands	5	5	39.77	98.23	39.78	98.29	1.71	1.75	0.14	0.14
M	open with wooded slopes valley lands	2	2	5.26	12.99	5.25	12.97	0.23	0.23	0.02	0.02
N	open with manicured slopes valley lands	2	2	22.16	54.74	22.15	54.73	0.95	0.97	0.08	0.08
O	manicured with wooded slopes valley lands	1	1	5.17	12.77	5.17	12.77	0.22	0.23	0.02	0.02
	<i>Totals</i>			1301.77	3215.37	1253.23	3096.68	55.92	55.12	4.47	4.3
	Woodlands										
BB	red ash-American elm forest	14	15	35.32	87.24	35.61	87.99	1.52	1.57	0.12	0.12
CC	sugar maple forest	7	7	14.79	36.53	13.12	32.42	0.64	0.58	0.05	0.04
DD	sugar maple-American beech forest	15	16	108.35	267.62	102.44	253.13	4.65	4.51	0.37	0.35

Table 2: continued

Community Code	Vegetation Community	# Occurrences		Area				Proportion of Natural Areas (%)		Proportion of City Area (%)	
		1996	1998	1996		1998		1996	1998	1996	1998
				(ha)	(acres)	(ha)	(acres)				
EE	sugar maple-white ash forest	9	9	63.06	155.76	62.18	153.64	2.71	2.74	0.22	0.21
FF	sugar maple-red oak forest	10	10	42.48	104.93	44.96	111.09	1.82	1.98	0.15	0.15
GG	sugar maple-eastern hemlock forest	1	1	16.03	39.59	16.07	39.71	0.69	0.71	0.05	0.05
II	sugar maple-black cherry forest	1	1	1.93	4.77	1.94	4.79	0.08	0.08	0.01	0.01
KK	sugar maple-American beech-red oak forest	5	5	29.46	72.77	29.46	72.77	1.27	1.30	0.10	0.1
LL	sugar maple-American beech-eastern hemlock forest	1	1	4.44	10.97	4.45	11.00	0.19	0.20	0.02	0.02
MM	white pine-eastern hemlock-sugar maple forest	1	1	6.77	16.72	6.77	16.72	0.29	0.30	0.02	0.02
NN	eastern hemlock forest	3	3	4.09	10.10	4.11	10.16	0.18	0.18	0.01	0.01
OO	red maple-red oak forest	5	6	30.24	74.69	30.24	74.69	1.30	1.33	0.10	0.10
PP	American beech forest	1	1	2.56	6.32	2.56	6.32	0.11	0.11	0.01	0.01
RR	oak-ash forest	8	9	28.61	70.67	28.57	70.60	1.23	1.26	0.10	0.10
QQ	bur oak-American beech forest	1	1	2.24	5.53	2.24	5.53	0.10	0.10	0.01	0.01
SS	oak-hickory forest	5	7	24.20	59.77	23.56	58.22	1.04	1.04	0.08	0.08
TT	ash-hickory forest	3	3	6.94	17.14	6.68	16.51	0.30	0.29	0.02	0.02
VV	black cherry-eastern hemlock-white ash forest	1	1	2.02	4.99	2.03	5.02	0.09	0.09	0.01	0.01
WW	bur oak-black walnut forest	1	1	0.90	2.22	0.90	2.22	0.04	0.04	0.00	0.00
	<i>Totals</i>			424.43	1048.33	417.89	1032.53	18.25	18.41	1.45	1.41

Table 2: continued

Community Code	Vegetation Community	# Occurrences		Area				Proportion of Natural Areas (%)		Proportion of City Area (%)	
		1996	1998	1996		1998		1996	1998	1996	1998
				(ha)	(acres)	(ha)	(acres)				
	Successional										
C	old field	26	27	88.45	218.47	95.33	235.56	3.80	4.19	0.30	0.33
D	hedgerow	5	5	7.68	18.97	7.01	17.32	0.33	0.31	0.03	0.02
E	early successional forest	9	10	21.68	53.55	14.66	36.22	0.93	0.65	0.07	0.05
P	hawthorn thicket	4	4	14.54	35.91	14.35	35.46	0.62	0.63	0.05	0.05
XX	birch forest	1	1	0.46	1.14	0.46	1.14	0.02	0.02	0.00	0.00
YY	poplar forest	1	2	2.37	5.85	1.69	4.18	0.10	0.07	0.01	0.01
	<i>Totals</i>			135.18	333.89	133.5	329.88	5.8	5.87	0.46	0.46
	Wetland										
V	cattail marsh	13	14	27.73	68.49	26.99	66.69	1.19	1.19	0.09	0.09
W	open water marsh	6	6	22.70	56.07	22.70	56.07	0.97	1.00	0.08	0.08
X	willow-buttonbush swamp thicket	1	1	2.77	6.84	2.77	6.84	0.12	0.12	0.01	0.01
Y	wet meadow	1	3	3.43	8.47	3.72	9.19	0.15	0.16	0.01	0.01
Z	willow-ash forest	2	2	0.55	1.36	0.56	1.38	0.02	0.02	0.00	0.00
AA	silver maple forest	5	5	18.59	45.92	18.14	44.82	0.80	0.80	0.06	0.06
	<i>Totals</i>			75.77	187.15	74.88	184.99	3.25	3.29	0.25	0.25
	Anthropogenic										
F	manicured	11	11	72.41	178.85	75.16	185.71	3.11	3.31	0.25	0.26
H	urban lake	2	2	7.26	17.93	7.26	17.93	0.31	0.32	0.02	0.02

Table 2: continued

Community Code	Vegetation Community	# Occurrences		Area				Proportion of Natural Areas (%)		Proportion of City Area (%)	
		1996	1998	1996		1998		1996	1998	1996	1998
				(ha)	(acres)	(ha)	(acres)				
I	wooded residential	3	3	251.59	621.43	251.59	621.67	10.81	11.07	0.86	0.86
T	plantation	11	11	21.58	53.30	21.57	53.30	0.93	0.95	0.07	0.07
UU	black walnut grove	1	1	0.17	0.42	0.17	0.42	0.01	0.01	0.00	0.00
	<i>Totals</i>			353.01	871.93	355.75	879.03	15.17	15.66	1.2	1.21
	Other										
R	beach	3	3	2.36	5.83	1.96	4.84	0.10	0.09	0.01	0.01
S	tall grass prairie	1	1	0.06	0.15	0.06	0.15	0.00	0.00	0.00	0.00
U	unknown	5	3	35.65	88.06	35.64	88.06	1.53	1.57	0.12	0.12
	<i>Totals</i>			38.07	94.04	37.66	93.05	1.63	1.66	0.13	0.13

Table 3: Summary of Natural Area Features, Their Significant Features and Condition

Update of Table 4 in the Natural Areas Survey, 1996 September. Classification abbreviations are as follows: SNS = Significant Natural Site, NS = Natural Site, NGS = Natural Greenspace, and RW = Residential Woodland. Native FQI and native mean C are defined in the Natural Areas Survey, 1996 September. Definitions for provincially significant species (prov. sig. species) and regionally significant species (reg. sig. species) are in the Natural Areas Survey, 1996 September, with updates as discussed in this report. Condition is explained in Appendix 1 of the Natural Areas Survey, 1996 September, abbreviations are as follows: E = excellent, G = good, F = fair, P = poor, and n/a = not available. * Areas evaluated in 1998. † Areas evaluated that changed between 1996 and 1998 (see Appendix 7 for a summary of the changes).

Site Number	Site Code	Classification	Designation	Area		Flora							Fauna				Condition
				(ha)	(acres)	total	# non-native (proportion)	native FQI	native mean C	# vegetation communities	prov. sig. species	reg. sig. species	# birds	# mammals	# herptiles	prov. sig. species	
1	SD1	NS		19.50	48.16	96	27 (28.1%)	30.22	3.64	5		4	13	4	2		Fair
2	SD4	NS		26.58	65.65	65	16 (24.6%)	26.14	3.73	1		2					n/a
3	SD5	SNS		13.74	33.94	38	4 (10.5%)	28.13	4.82	2		2	2				Good
4	CL52	NGS		6.67	16.47	34	18 (52.9%)	12.75	3.19	1			10	1			Poor
5	CL1	SNS		13.74	33.94	38	4 (10.5%)	28.13	4.82	2		2	2				Good
6*	CL9	SNS	ESA,ANSI,wetland	46.89	115.82	496	161 (32.3%)	80.1	4.38	13		132	200	23	22	1	Good
7	CL8	SNS	wetland	11.28	27.86	57	10 (17.5%)	21.73	3.17	7		4	13	10	1		Good
8	CL15	NS		0.83	2.05	44	9 (18.2%)	24.51	4.14	1		3	2	2			Fair
9*	CL16	NS		8.52	21.04	134	42 (30.6%)	38.47	4.01	5		13	38	17			Fair-Poor
10	CL17	RW		33.28	82.20	71	13 (18.6%)			1		18			4		n/a
11	CL13	NGS		1.50	3.70	40	23 (55.0%)	8.25	1.94	2			2				Poor
12	CL43	NS		4.16	10.27	69	11 (16.2%)	29.27	3.88	2		5	5	1			Fair
13	CL42	NS		8.87	21.91	103	28 (27.2%)	35.8	4.13	3		9	4	1			Fair-Poor
14*	CL21	SNS	ESA,wetland	9.36	23.12	97	22 (21.6%)	38.91	4.49	3		20	2		1		Fair
15*	CL39	SNS		12.98	32.06	250	72 (28.4%)	54.72	4.10	2		40	22	5	8		Fair
16	CL22	SNS	ESA,ANSI	17.85	44.09	134	45 (34.4%)	37.74	4.07	1	1	15	2	1	6		Good
17*	CL30	SNS	ESA,ANSI	0.06	0.15	46	16 (34.8%)	25.56	4.67	1		11					Fair-Poor
18	CL31	SNS	ESA,ANSI	2.78	6.87	50	26 (50.0%)			1		2	1				Poor
19*	CL24	SNS	ESA, ANSI	7.80	19.27	216	51 (23.0%)	58.06	4.56	3		36	6	1			Good
20	CL26	NS		4.34	10.72	157	58 (35.7%)	31.66	3.18	2		14	5	2			Fair
21	PC1	NS		1.09	2.69	87	39 (44.8%)	26.56	3.83	1		9	68	1			Poor
22	PC2	NGS		4.37	10.79					1							Poor
23	PC3	NS		1.73	4.27	11				1							n/a

Table 3: continued

Site Number	Site Code	Classification	Designation	Area		Flora							Fauna				Condition
				(ha)	(acres)	total	# non-native (proportion)	native FQI	native mean C	# vegetation communities	prov. sig. species	reg. sig. species	# birds	# mammals	# herptiles	prov. sig. species	
24	CRR9	SNS	ESA,ANSI,wetland	25.63	63.31	37	14 (37.8%)	17.1	3.57	3		12	10	1	13		Fair
25	MI4	RW		165.14	407.90	134	41 (30.6%)	40.13	4.16	1		14	2		3		Fair
26	MI1	NS		6.31	15.59	9	5 (44.4%)			1							Fair
27	LV3	NS		3.54	8.74	80	34 (40.0%)	24.33	3.59	3			18	2			Fair
28	LV4	NGS		0.95	2.35					1							Poor
29	LV5	NGS		1.09	2.69					1							Poor
30	LV2	NS		2.09	5.16	52	11 (42.3%)	11.62	3.00	1			3				Poor
31	LV1	NS		14.03	34.65	83	34 (40.2%)	23.09	3.33	4			8				Fair
32	ET08	SNS		16.67	41.17	86	34(37.6%)	26.05	3.65	3		4	2	4	1		Fair
33	LV14	NGS		1.95	4.82	35	17 (45.7%)	13.67	3.22	1							Poor
34	LV6	NS		2.02	4.99	61	19 (29.5%)	24.38	3.76	1		3					Fair
35	LV7	SNS	ESA,ANSI	21.56	53.25	300	103 (34.0%)	58.71	4.18	2		49	68	7	5	1	Good
36	ET07	SNS	ESA	27.18	67.13	84	35(39.3%)	21.39	3.04	2		2	11	2	11	1	Fair
37	SP1	NS		9.05	22.36	108	27 (24.3%)	33.99	3.80	1		11	4	1			Fair
38	SP3	SNS		8.84	21.84	134	30 (21.8%)	41.09	4.05	1		11	5	2	1		Good
39	SH6	NS		6.85	16.92	70	32 (46.4%)	21.37	3.51	2		1	4				Poor
40	CRR7	SNS	ESA,ANSI	88.96	219.73	74	18 (23.0%)	34.88	4.66	3	1	9			9		Good
41	CRR8	SNS	ESA,ANSI,wetland	110.62	273.23	43	3 (7.0%)			4	1	30	8	1	4		Good
42	ER6	SNS		1.56	3.85	36	13 (36.1%)	16.26	3.39	1			1				Poor
43	CRR6	SNS	ESA,ANSI	213.22	526.86	277	91 (32.5%)	64.67	4.74	4	3	73	87	8	17	1	Good
44	CV1	NS		1.48	3.66	29	9 (31.0%)	13.86	3.10	1			5	1			Fair
45	CV2	RW		53.17	131.33	143	43 (29.6%)	41.71	4.19	1		10	6	1			Fair
46	CV12	NS		6.99	17.26	201	89 (44.2%)	37.19	3.55	3		14	2	1			Fair
47	CV10	NS		4.59	11.34	20	9 (40.0%)	8.74	2.64	2			2				Poor
48	CV8	NS		7.87	19.44	39	18 (43.6%)	13.53	2.95	4		1	1				Poor
49	ET06	SNS		11.39	28.13					3							Poor
50	AW1	NS		7.98	19.71	51	18 (35.0%)	18.45	3.21	3		1	5	1			Poor
51	WB1	NS		7.12	17.59	53	9 (17.0%)	25.93	3.91	3			4		1		Fair
52	EM30	NS		5.56	13.73	52	5 (9.6%)	29.61	4.32	2		6	9	8			Good

Table 3: continued

Site Number	Site Code	Classification	Designation	Area		Flora							Fauna				Condition
				(ha)	(acres)	total	# non-native (proportion)	native FQI	native mean C	# vegetation communities	prov. sig. species	reg. sig. species	# birds	# mammals	# herptiles	prov. sig. species	
53	EM6	NS		1.07	2.64	53	11 (20.8%)	25.00	3.86	1		1	6	1			Fair
54	EM2	SNS		4.9	12.10	63	12 (19.0%)	28.85	4.04	1			8	1			Fair
55	EM10	NS		3.99	9.85	43	9 (18.6%)	21.78	3.74	2			4	2			Fair
56	EM14	NS		9.61	23.74	49	22 (42.9%)	15.40	2.96	2			4				Poor
57	EM4	SNS	ESA, ANSI	46.82	115.64	228	64 (27.3%)	55.05	4.30	8	1	30	67	4	6		Good-Fair
58	EM5	NS		1.88	4.64	49	9 (32.7%)	22.27	3.94	1			4				Fair
59	EM21	NS		1.13	2.79	42	8 (16.7%)	21.27	3.65	1			2	1			Fair
60	CR1	SNS	ESA	4.90	12.10	47	3 (4.3%)	29.55	4.45	2		6	2	1			Fair
61	FV1	NS		2.23	5.51	46	9 (19.6%)	20.55	3.38	1		1	2				Fair
62	FV3	NS		7.00	17.29	59	15 (23.7%)	25.63	3.86	3			15	2			Fair
63	CC1	NS		15.33	37.86	130	43 (32.6%)	35.58	3.84	2		7	8	1	5		Fair
64	MY1	NS		15.33	37.86	130	43 (32.6%)	35.58	3.84	2		7	8	1	5		Fair
65	MY3	NGS		3.71	9.16	26	18 (69.2%)	6.01	2.13	1							Poor
66	AW4	NGS		11.71	28.92					1							Poor
67	AW3	NGS		7.92	19.56	33	21 (60.6%)			2			4	1			Poor
68	ET05	SNS		9.12	22.53					2							Poor
69	ET04	SNS	ESA	58.00	143.32	141	37 (26.2%)	43.93	4.31	3		15	24	3	9		Fair
70	RW5	NGS		3.51	8.67					1							Poor
71	RW6	NGS		7.31	18.06					1							Poor
72	RW4	NS		1.08	2.67	32	7 (18.2%)	22.36	4.38	1			3				Fair
73	RW1	SNS		2.11	5.21	69	12 (17.4%)	34.04	4.51	1		3		1			Fair
74	RW2	NGS		3.50	8.64					1							Poor
75	CM7	SNS		11.38	28.11	88	18 (20.5%)	34.78	4.16	3		4	15	1	5		Excellent
76	CM9	NS		3.37	8.32	62	12 (17.7%)	27.58	3.90	2		3	8	2			Good
77	CM11	NS		2.24	5.53	22	1 (4.5%)	18.33	4.00	1			1				Good
78	CM12	NS		8.22	20.30	54	8 (14.8%)	27.42	4.04	2		2	11	2	5		Good
79	CM17	NS		8.39	20.72	25	4 (16.0%)	16.80	3.67	1			5				Fair
80	CM13	NGS		0.77	1.90	37	14 (35.1%)	16.26	3.39	1			1	1			Poor
81	CE7	SNS		10.08	24.90	88	28 (31.8%)	30.47	3.93	2		4	2	1	7		Good
82	CE9	NS		4.83	11.93	58	14 (24.1%)	26.99	4.07	3		2	2	1			Fair
83	CE10	SNS		18.20	44.95	93	19 (20.4%)	36.04	4.19	3		7	9	2	2		Good-Fair

Table 3: continued

Site Number	Site Code	Classification	Designation	Area		Flora							Fauna				Condition	
				(ha)	(acres)	total	# non-native (proportion)	native FQI	native mean C	# vegetation communities	prov. sig. species	reg. sig. species	# birds	# mammals	# herptiles	prov. sig. species		
115*	NE12	NGS		6.49	16.03					1								Poor
116	ET02	SNS		13.01	32.13	20	12 (60.0%)	3.54	1.25	1			2	1				Poor
117	ET01	SNS		9.13	22.56	37	11 (29.7%)	15.30	3.00	4		1	3	1				Fair-Poor
118	NE9	NS		43.66	107.88	67	27 (40.3%)	20.55	3.25	4		5	12	1	1			Fair
119	LS1	SNS	wetland	28.92	71.43	63	14 (20.6%)	27.14	3.88	3		7	4					Good-Poor
120	LS2	NS		1.26	3.11	45	14 (31.1%)	22.09	3.97	1			2					Fair
121	LS3	NS		3.00	7.41	66	23 (33.3%)	23.94	3.65	2		2	1	1	2			Fair
122	ME10	SNS		4.18	10.32	56	15 (27.3%)	24.67	3.90	1		3	4					Fair
123	ME12	NGS		2.90	7.16	49	28 (57.1%)	12.00	2.62	1			7	2	7			Poor
124	ME11	NGS		4.36	10.77	51	24 (47.1%)	16.17	3.11	1			5	2	4			Poor
125	ME9	NS		2.39	5.90	44	11 (25.0%)	25.59	4.45	1		2	2	1				Fair
126	ME8	SNS		15.98	39.47	88	13 (26.4%)	30.25	3.78	2		4	3	3	4			Fair
127	MB9	NGS		6.60	16.30					1					2			Poor
128	MB7	NGS		10.45	25.81					1								Poor
129	MB8	SNS		15.98	39.47	88	13 (26.4%)	30.25	3.78	2		4	3	3	4			Fair
130	MB3	NGS		7.11	17.56					1								Poor
131	MB5	NS		0.90	2.22	42	4 (9.8%)	23.67	3.89	1								Poor
132	MB4	NS		1.93	4.77	40	11 (27.5%)	19.31	3.59	1								Poor
133	MB6	SNS		23.7	58.54	84	15 (16.7%)	30.70	3.70	2		6	1	1	2			Good
134	MB2	NS		1.34	3.31	41	6 (14.6%)	23.66	4.00	1		1	1					Poor
135	MB1	NS		0.94	2.32	34	6 (17.6%)	22.87	4.32	1								Fair
136	MV19	SNS		22.66	55.99	202	53 (25.7%)	51.04	4.18	3		29	14	6	3			Good
137	CRR1	SNS	ESA	71.40	176.36	76	23 (30.3%)	26.65	3.66	5	1	4	6	2	1			Fair
138*	MV18	NS		3.14	7.76	19	1 (5.3%)			2		1	2					Fair
139	MV2	SNS	ESA,ANSI	78.83	194.79	215	69 (31.6%)	47.59	3.94	4		20	59	12	2	1		Good-Fair
140*	MV3	NS		2.67	6.59	46	13 (27.7%)	21.61	3.71	1								Fair
141	MV12	NS		13.38	33.06	115	35 (30.4%)	35.33	3.95	3		6	8	3				Fair
142*	MV14	NGS		4.55	11.24					1								Poor
143*	MV11	NS		2.90	7.16	24	4 (16.7%)	17.44	3.9	1			1					Fair
144*	MV15	NS		10.7	26.43	53	25 (45.3%)	14.74	2.79	2		1	7	1				Poor
145	GT1	NS		5.77	14.25	33	8 (24.2%)	17.00	3.40	1		1						Fair

Table 3: continued

Site Number	Site Code	Classification	Designation	Area		Flora							Fauna				Condition
				(ha)	(acres)	total	# non-native (proportion)	native FQI	native mean C	# vegetation communities	prov. sig. species	reg. sig. species	# birds	# mammals	# herptiles	prov. sig. species	
146	GT2	NS		7.20	17.78	56	10 (17.9%)	26.24	3.87	6		6	9	3	1		Good
147	GT3	NS		2.67	6.59	43	12 (25.6%)	19.04	3.42	2		1	1				Fair
148	GT4	SNS	ESA	16.09	39.76	202	55 (26.7%)	50.64	4.18	1		21	11	1			Good-Poor
149	MA1	NS		24.06	59.45	50	25 (50.0%)	14.00	2.80	1		3	2				Poor

Appendix 2: Field Work Identified for Natural Areas and Date Completed

Field work identified for natural areas based on aerial photograph interpretation and literature review. Natural Areas are grouped into categories based on the type of change identified either within or adjacent to the natural area. Field work indicates the type of visit the natural area received, a field visit or a road side visit (see section 2.2 for an explanation). Ownership indicates whether the natural area is privately owned and therefore required access permission or whether it was a City owned site (*i.e.*, parkland or greenbelt).

Natural Area	Impacts (Based on Review of Aerial Photographs and Literature Review)	Fieldwork	Ownership	Date Completed
Minor Development Adjacent to Natural Areas				
CRR2	Additional residential development to east (along Second Line south of 401)	field visit	parkland	09/10/98
CRR6	Minor additional development in vicinity (off of O'Neill Court)	field visit	parkland	08/20/98
EC1	Development occurring in vicinity	road visit	private	08/20/98
EC22	Residential development now complete along edges	field visit	private	09/10/98
ETO2	Minor development upstream of Area	field visit	parkland	09/03/98
ETO4	Minor development adjacent to Area; intensified trail use (bikes)	field visit	parkland	09/03/98
GT3	Minor additional development nearby	road visit	private	08/27/98
GT4	New residential development south of Matheson Road	field visit	parkland	08/27/98
NE6	Additional parking lot to north of area	field visit	private	09/17/98
NE7	Possible dumping at Britannia Rd.	road visit	inaccessible greenbelt	09/03/98
NE9	Minor development in and adjacent to area	field visit	changes on private land	09/03/98
Major Development Adjacent to Natural Areas				
CE10	Extensive residential development to north; adjacent development now complete	field visit	parkland	08/20/98
CE12	GO Transit parking lot; residential development to west nearing completion	field visit	greenbelt	08/20/98
CRR1	Residential development occurring adjacent to western edge of Area	field visit	parkland	09/17/98
EC13	Development adjacent and additional development proposed	field visit	private	11/04/98
FV1	Minor change to boundary due to residential development; more development occurring to north	field visit	parkland	08/27/98

Appendix 2: continued

Natural Area	Impacts (Based on Review of Aerial Photographs and Literature Review)	Fieldwork	Ownership	Date Completed
GT1	Additional subdivision being built nearby	road visit	private	08/20/98
GT2	Spectator Arena development to south	field visit	parkland	08/27/98
HO1	Nearby subdivisions now complete	field visit	parkland	08/27/98
HO3	Additional residential development occurring south of the area between McLaughlin Road and Bristol Road	field visit	private	09/17/98
MV14	Land to west at primary stage of development	road visit	private	09/17/98
MV18	Extensive development occurring in vicinity (residential and otherwise)	road visit	private	09/17/98
MV2	Extensive residential development occurring adjacent to north (between Second Line West and Mavis Road)	field visit	private	09/17/98
Minor Development Within Natural Areas				
CRR3	Enhanced trail system in area; expanded recreation centre adjacent (off Grove Avenue)	field visit	parkland	09/10/98
ETO1	Minor boundary change due to addition of a sports field	field visit	changes on private land	09/03/98
HO6	Part of area has been ploughed	road visit	changes on private land	08/27/98
MA1	Additional landscaping in area	field visit	parkland	09/03/98
NE11	Additional landscaping in area	field visit	greenbelt	09/03/98
NE5	Minor boundary change due to parking lot extension	road visit	inaccessible greenbelt	09/03/98
Major Development Within Natural Areas				
ETO3	Major revision to boundaries (Pearson International Airport)	road visit	private	09/03/98
NE8	Major revision to boundaries (Pearson International Airport)	road visit	private	09/03/98
HO7	Western half of area cleared for development	field visit	parkland	08/27/98
HO9	Extensive portion cleared for residential development on east side of Kennedy Road	field visit	parkland	08/27/98
MV12	Mavis Road extension bisects area and development occurring adjacent	field visit	parkland	09/17/98
SV1	New townhouse development has altered northern boundary	field visit	parkland	08/20/98

Appendix 2: continued

Natural Area	Impacts (Based on Review of Aerial Photographs and Literature Review)	Fieldwork	Ownership	Date Completed
SV12	Most of the area has been converted into a new GO Transit parking facility	field visit	greenbelt	08/20/98
MV19	Extensive residential development occurring within, adjacent to and proposed	field visit	parkland	09/17/98
No Change				
CRR4	No change	road visit	private	08/20/98
CRR5	No change	road visit	private	08/20/98
CE5	No change	road visit	inaccessible greenbelt	08/20/98
MV11	No change	road visit	private	09/17/98
MV15	No change	road visit	private	09/17/98
CR1	No change	road visit	parkland	08/27/98
SV10	No change	road visit	inaccessible greenbelt	08/20/98
MB9	No change	road visit	private	08/20/98
Proposed Development no change on aerial photograph				
EC10	Landfill adjacent to south may be converting to other uses (i.e., golf course) and residential development proposed within area	road visit	private	08/20/98
HO2	Development proposed to clear area (area had been cleared by time of visit)	road visit	private	08/20/98
LV7	Expansion of facilities proposed adjacent south of area	fieldwork	parkland	08/27/98
MI4	Additional residential development proposed within area	road visit	parkland	08/27/98
MV3	Development proposed in vicinity	road visit	private	09/17/98
Expansion to Natural Areas				
NE10	Possible minor expansion of boundary	road visit	private	09/03/98
NE12	Possible minor expansion of boundary	road visit	greenbelt	09/03/98
Assessment of Management Initiatives				
CL16	Investigate native plantings	field visit	parkland	08/27/98

Appendix 2: continued

Natural Area	Impacts (Based on Review of Aerial Photographs and Literature Review)	Fieldwork	Ownership	Date Completed
CL30	Monitor management	field visit	parkland	08/27/98

Appendix 6: Updated Provincially Significant Native Fauna Species

Documented for the City of Mississauga, including migrant and wintering bird species. Rarity ranks are defined in Appendix 4 of the Natural Areas Survey, 1996 September.

Scientific Name	Common Name	Historical	G_Rank	S_Rank	MNR	COSEWIC	Notes
<i>Gavia stellata</i>	red-throated loon		G5	S1N			migrant
<i>Podiceps auritus</i>	horned grebe		G5	S1S2B			migrant
<i>Podiceps grisegena</i>	red-necked grebe		G5	S3B		NAR	migrant
<i>Ixobrychus exilis</i>	least bittern		G5	S3B		VUL	possibly breeding
<i>Casmerodius albus</i>	great egret		G5	S2B			possibly breeding
<i>Nycticorax nycticorax</i>	black-crowned night-heron		G5	S3B			possibly breeding
<i>Cygnus columbianus</i>	tundra swan		G5	S3B			migrant
<i>Anas clypeata</i>	northern shoveler		G5	S3S4B			possibly breeding
<i>Aythya valisineria</i>	canvasback		G5	S1B			wintering
<i>Aythya americana</i>	redhead		G5	S2B			possibly breeding
<i>Aythya marila</i>	greater scaup		G5	S2B			wintering
<i>Clangula hyemalis</i>	oldsquaw		G5	S3B			wintering
<i>Melanitta perspicillata</i>	surf scoter		G5	S1B			migrant
<i>Melanitta fusca</i>	white-winged scoter		G5	S2B			migrant
<i>Bucephala albeola</i>	bufflehead		G5	S3B			wintering
<i>Lophodytes cucullatus</i>	hooded merganser		G5	S3S4N,S5B			possibly breeding
<i>Oxyura jamaicensis</i>	ruddy duck		G5	S2B			possibly breeding
<i>Buteo lineatus</i>	red-shouldered hawk	LV7	G5	S4B	VUL	VUL	MV2, LV7
<i>Buteo lagopus</i>	rough-legged hawk		G5	S1B		NAR	wintering
<i>Falco peregrinus</i>	peregrine falcon		G4	S2B	END	END	migrant
<i>Fulica americana</i>	American coot		G5	S3S4		NAR	possibly breeding

Appendix 6: continued

Scientific Name	Common Name	Historical	G_Rank	S_Rank	MNR	COSEWIC	Notes
<i>Calidris melanotos</i>	pectoral sandpiper		G5	S2B			migrant
<i>Calidris alpina</i>	dunlin		G5	S3B			migrant
<i>Calidris himantopus</i>	stilt sandpiper		G5	S3B			migrant
<i>Limnodromus griseus</i>	short-billed dowitcher		G5	S2S3B			migrant
<i>Phalaropus tricolor</i>	Wilson's phalarope		G5	S3B			migrant
<i>Larus marinus</i>	great black-backed gull		G5	S2B			wintering
<i>Sterna caspia</i>	Caspian tern		G5	S3B		VUL	migrant
<i>Sterna paradisaea</i>	arctic tern		G5	S3B			accidental
<i>Chlidonias niger</i>	black tern		G4	S3B	VUL	NAR	possibly breeding
<i>Asio flammeus</i>	short-eared owl		G5	S2N		VUL	CL9
<i>Melanerpes erythrocephalus</i>	red-headed woodpecker		G5	S3B	VUL	VUL	CL9, CRR6, PC1
<i>Empidonax virescens</i>	Acadian flycatcher		G5	S2B		END	possibly breeding
<i>Thryothorus ludovicianus</i>	Carolina wren		G5	S3			resident
<i>Mimus polyglottos</i>	mockingbird		G5	S3S4			resident
<i>Lanius excubitor</i>	northern shrike		G5	S3B			wintering
<i>Lanius ludovicianus</i>	loggerhead shrike		G5	S2B	END	END	migrant
<i>Icteria virens</i>	yellow-breasted chat	yes	G5	S2S3B	VUL	VUL	GT4/HO9
<i>Ambystoma jeffersonianum</i>	Jefferson salamander complex		G5	S2			LV7, CRR6
<i>Clemmys insculpta</i>	wood turtle		G4	S2	VUL	VUL	ETO7
<i>Heterodon platirhinos</i>	eastern hognose snake	yes	G5	S3	VUL	VUL	CL9
<i>Elaphe vulpina</i> ssp. <i>gloydi</i>	eastern fox snake	yes	G5T3	S3			Credit River

Appendix 7: Comparison of Natural Areas Between 1996 and 1998

Abbreviations as follows: SNS = Significant Natural Site, NS = Natural Site, NGS = Natural Green Space, Increase = ↑, Decrease = ↓. Native FQI and native mean coefficient as well as definitions for provincially and regionally significant species are defined in the Natural Areas Survey, 1996 September. Capital projects completed is based on Transportation and Works (1998). Condition is explained in the Natural Areas Survey, 1996 September.

Site	Classification	Designation	Area	Flora	Vegetation Communities	Fauna	Capital Projects Completed	Condition
AW1	↓ SNS to NS			no provincially significant species				
AW3							natural channel design incorporated additional armour stone installed	
CC1/MY1				flora ↑ 129 to 130 regionally significant species ↑ 5 to 7			channel improvements	
CE5								
CE10				flora ↑ 73 to 93 non-native species ↑ 13 to 19 (20.4%) FQI ↑ 33.82 to 36.04 regionally significant species ↑ 6 to 7				↓ good to fair-good
CE12/SV12	↓ SNS to NS		↑ 17.61 to 19.33 ha (43.5 to 47.8 ac.)	flora ↑ 52 to 91 non-native species ↑ 19 to 39 (41.8%) FQI ↑ 17.76 to 22.19 native mean C ↓ 3.09 to 3.08 no provincially significant species one regionally significant species added		birds ↑ 4 to 13 mammals ↑ 1 to 3 1 herptile added	creek engineered water quantity facility added	
CL9				flora ↑ 491 to 495 non-native ↑ 156 to 161 (32.3%) no provincially significant species regionally significant species ↑ 125 to 132				
CL16				flora ↑ 119 to 134 non-native species ↑ 33 to 42 (30.6%) FQI ↑ 37.63 to 38.47 native mean C ↓ 4.06 to 4.01 regionally significant species ↑ 11 to 13		birds ↑ 37 to 38 mammals ↑ 16 to 17		

Appendix 7: Comparison of Natural Areas Between 1996 and 1998

Abbreviations as follows: SNS = Significant Natural Site, NS = Natural Site, NGS = Natural Green Space, Increase = ↑, Decrease = ↓. Native FQI and native mean coefficient as well as definitions for provincially and regionally significant species are defined in the Natural Areas Survey, 1996 September. Capital projects completed is based on Transportation and Works (1998). Condition is explained in the Natural Areas Survey, 1996 September.

Site	Classification	Designation	Area	Flora	Vegetation Communities	Fauna	Capital Projects Completed	Condition
CL21		ANSI status removed		regionally significant species ↑ 18 to 20				

Appendix 7: continued

Site	Classification	Designation	Area	Flora	Vegetation Communities	Fauna	Capital Projects Completed	Condition
CL24		ANSI/ESA status added		flora ↑ 213 to 216 regionally significant species ↑ 31 to 36				
CL30				flora ↑ from 24 to 46 non-native species ↑ 8 to 16 (34.8%) FQI calculated, 25.56 native mean C calculated, 4.67 no provincially significant species				↑ poor to fair-poor
CL39				flora ↑ 245 to 250 non-native species ↑ 69 to 72 (28.4%) FQI ↑ 54.51 to 54.72 native mean C ↓ 4.13 to 4.10 regionally significant species ↓ 41 to 40		birds ↑ 6 to 22 mammals ↑ 2 to 5	water quantity ponds dredged in 1996	
CR1		ANSI status removed						
CRR1		ANSI status removed		flora ↑ 41 to 76 non-native species ↑ 12 to 23 (30.3%) FQI calculated, 26.65 native mean C calculated, 3.66 regionally significant species ↑ 2 to 4		birds ↑ 2 to 6		
CRR2				flora ↑ 89 to 100 non-native species ↑ 30 to 31 (31.0%) FQI ↑ 32.94 to 32.99 native mean C ↓ 4.29 to 3.97 regionally significant species ↓ 3 to 2		birds ↑ 13 to 14		
CRR3				flora ↑ 34 to 74 non-native species ↑ 5 to 26 (35.1%) FQI calculated, 25.26 native mean C calculated, 3.65		birds ↑ 1 to 7		
CRR4								
CRR5				no provincially significant species				

Appendix 7: continued

Site	Classification	Designation	Area	Flora	Vegetation Communities	Fauna	Capital Projects Completed	Condition
CRR6			↓ 213.66 to 213.22 ha (527.7 to 526.86 ac.)	flora ↑ 269 to 277 non-native species ↑ 88 to 91 (32.5%) FQI ↑ 63.63 to 64.67 native mean C ↑ 4.73 to 4.74 provincially significant species ↓ 4 to 3 regionally significant species ↑ 65 to 73				
CRR7				flora ↑ 61 to 74 non-native species ↑ 10 to 18 (23.0%) FQI ↑ 33.89 to 34.88 native mean C ↓ 4.75 to 4.66 regionally significant species ↑ 8 to 9			channel improvements to Loyalist Creek	
CRR8				provincially significant species ↓ 2 to 1 regionally significant species ↓ 31 to 30			channel improvements to Wolfedale Creek	
CV2				flora ↑ 142 to 143 no provincially significant species regionally significant species ↓ 12 to 10				
CV12	↓ SNS to NS			flora ↑ 199 to 201 no provincially significant species regionally significant species ↑ 13 to 14				
EC1		ANSI status removed						
EC10								
EC13				flora ↑ 162 to 168 non-native species ↑ 19 to 29 (16.7%) FQI ↑ 50.73 to 53.01 native mean C ↑ 4.40 to 4.50 regionally significant species ↑ 58 to 65				
EC22			↓ 2.63 to 2.32 ha (6.40 to 5.73 ac.)	flora ↑ 39 to 55 non-native species ↑ 4 to 7 (12.7%) FQI ↑ 24.00 to 25.26 native mean C ↓ 4.06 to 3.65				↓ fair to fair-poor

Appendix 7: continued

Site	Classification	Designation	Area	Flora	Vegetation Communities	Fauna	Capital Projects Completed	Condition
GT4/HO9		ANSI status removed	↓ 27.06 to 16.09 ha (66.84 to 39.76 ac.)	flora ↑ 201 to 202 FQI ↑ 50.40 to 50.64 native mean C ↑ 4.17 to 4.18 regionally significant species ↓ 22 to 21	↓ 2 to 1	birds ↑ 9 to 11 no provincially significant species		↓ excellent-poor to good-poor
HO1				flora ↑ 20 to 23 percent non-native species ↓ 25 to 21.7 % FQI ↑ 16.27 to 17.44 native mean C ↓ 4.20 to 4.11		birds ↑ 2 to 3		↓ fair to fair-poor
HO2	site has been removed							
HO3				flora ↑ 49 to 56 non-native species ↑ 9 to 11 (19.6%) FQI ↑ 25.61 to 25.79 native mean C ↓ 4.06 to 3.84		birds ↑ 11 to 12		
HO6			↓ 9.57 to 8.50 ha (23.64 to 21.00 ac.)					
HO7			↓ 4.09 to 2.11 ha (10.10 to 5.21 ac.)	flora ↑ 54 to 59 FQI ↓ 26.53 to 26.43 native mean C ↓ 4.00 to 3.78	↓ 3 to 2	birds 2		↓ fair to fair-poor
LV1	↓ SNS to NS			flora ↑ 82 to 83 no provincially significant species				
LV3							channel improvements to Cooksville Creek shoreline erosion control	
LV4							channel improvements to Cooksville Creek	

Appendix 7: continued

Site	Classification	Designation	Area	Flora	Vegetation Communities	Fauna	Capital Projects Completed	Condition
LV7				flora ↑ 292 to 300 non-native species ↑ 101 to 103 (34%) FQI ↑ 57.67 to 58.71 native mean C ↑ 4.17 to 4.18 regionally significant species ↑ 46 to 49		birds ↑ 65 to 68 mammals ↑ 6 to 7 herptiles ↑ 3 to 5		
LV14							channel improvements to Applewood Creek	
MA1	↑ NGS to NS		↓ 25.79 to 24.06 ha (63.70 to 59.45 ac.)	flora 50 non-native species 25 (50%) FQI calculated, 14.00 native mean C calculated, 2.80 regionally significant species 3		birds 2		
MB8/ME8				flora ↑ 87 to 88 no provincially significant species				
MB9	↓ NS to NGS			no regionally significant species		herptiles 2		
ME10				flora ↑ 55 to 56 no provincially significant species regionally significant species ↑ 2 to 3				
MI4				flora ↑ 97 to 134 non-native species ↑ 27 to 41 (30.6%) FQI ↑ 36.65 to 40.13 native mean C ↓ 4.32 to 4.16 regionally significant species ↑ 5 to 14		birds 2	repaired retaining wall on Mary Fix Creek	
MV2			↓ 80.18 to 78.83 ha (198.04 to 194.79 ac.)	flora ↑ 200 to 215 non-native species ↑ 60 to 69 (31.6%) FQI ↑ 46.99 to 47.59 native mean C ↓ 3.97 to 3.94 no provincially significant species		birds ↑ 58 to 59 mammals ↑ 10 to 12		
MV3				flora ↓ 47 to 46				
MV11								
MV12	↓ SNS to NS		↑ 13.28 to 13.38 ha (32.80 to 33.06 ac.)	flora ↑ 103 to 115 non-native species ↑ 32 to 35 (30.4%) FQI ↑ 33.94 to 35.33 native mean C ↓ 4.03 to 3.95		birds ↑ 5 to 8		

