High Park Oak Woodlands

Provincial Life Science ANSI Fact Sheet

LS-ANSI AREA NAME	DATE (Y/M/D)	OBSERVER NAME(S)
High Park Oak Woodlands Provincial Life Science ANSI	2009/10/15	Sarah Mainguy, Leah Lefler & Nancy Falkenberg
PLANNING DISTRICT City of Toronto	**AREA (HA)** 102.98 ha	**UTM GRID REFERENCE (CENTROID)** 624000 4833500

SIGNIFICANCE OF FEATURE

INTERNATIONAL___ NATIONAL___ PROVINCIAL **X** REGIONAL___ LOCAL___

OTHER DESIGNATIONS

Portions designated City of Toronto ESA (High Park), City of Toronto Potential ESA (Ellis Avenue, High Park Extension)

LOCATION

The High Park Oak Woodlands Provincial LS-ANSI is located east of the Humber River near the Lake Ontario waterfront. The ANSI is separated from Lake Ontario by major arterial roads and highways: The Queensway and the Gardiner Expressway. The west side is bounded by urban residential housing and Grenadier Pond, a large human-modified lake at the southwest corner. The ANSI is bounded to the north and east by Bloor Street and Parkside Drive. Beyond these arterial roads lies urban development. The ANSI consists of a mosaic of natural areas, which are interspersed with ponds and manicured parkland. The central part of the park is not contained within the ANSI boundaries.

SUMMARY

This LS-ANSI is situated in Ecodistrict 7E-4 in Ecoregion 7. This region encompasses the area of south-western Ontario referred to as the Carolinian life zone or the eastern deciduous forest region. High Park is situated near the northern edge of this region, where it merges with the Huron-Ontario section of the Great Lakes forest region and Ecoregion 6. Consequently the ecosystems of High Park share features of both. The forest at this study area is predominantly deciduous, with some coniferous components. The flora contains a portion of Carolinian species and a number of prairie and savannah associate species.

High Park is located just north of the Lake Ontario shoreline, on the dry soils of a sand plain. It represents the last sizeable natural area remaining on Toronto's Iroquois sand plain. Historically, the study area supported spectacular open oak woodlands or savannahs and pine barrens, with rich assemblages of prairie grasses and forbs. In contrast, scattered wet depressions contained cool mixed swamps, marshes, ponds and, up until 1905, a sphagnum bog. High Park is dissected by two major stream valleys and several associated tributary valleys, with a large plateau in the centre of the park. Grenadier Pond, one of the City of Toronto's only remaining lakeshore marshes, occupies most of the western side of the park (Varga 1989). High Park is one of the most significant natural areas in Toronto, especially in terms of its vegetation communities and rare flora. This LS-ANSI captures a wide diversity of native ecosystems, which include mature upland forests of black oak, white oak, red oak, black cherry, red maple, hemlock, white birch, beech, white ash, and white pine, as well as successional forests and cultural communities. The study area also contains bottomland forest and wetland communities, such as thicket swamps, meadow marsh, shallow marsh and submerged and floating-leaved aquatic.

This LS-ANSI provides habitat to a number of significant flora and fauna species, including 271 flora species and 71 fauna species. These species include Carolinian species restricted to the southern portion of Ontario, prairie and savannah associate species, wetland-dependent species, area-sensitive wetland and forest species, and species rarely found in urbanized contexts. The presence of such a list of species is unusual in southern Ontario, particularly within an urban landscape matrix.

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REPRESENTATIVE LANDFORM FEATURE

High Park Oak Woodlands is the last sizeable natural area remaining on the City of Toronto's Iroquois Sand Plain, the best remaining example of oak savannah on the Iroquois Plain in Ecodistrict 7E-4 (a provincially rare community type). The study area's surficial geology is Lake Iroquois shallow-water deposits of sand and silty sand.

LANDFORM – VEGETATION ASSOCIATIONS

The High Park Oak Woodlands ANSI contains 80.39 ha of critical representation within Ecodistrict 7E4. This critical representation is composed of savannah, deciduous forest and wetland vegetation communities on Lake Iroquois shallow water deposits, and deciduous forest on older lakes deep water deposits. The ANSI is located at the northern limits of the Carolinian zone in Canada, and supports a flora characteristic of the transition between this zone and the more northern Great Lakes-St. Lawrence forest zone.

The following vegetation-landform associations have formed on Lake Iroquois shallow-water deposits of sand and silty sand on the South Slope of the Iroquois Plain at the High Park Oak Woodlands Life Science ANSI:

Percentage of High Park ANSI composed of urban greenspace in MNR's coarse grained analysis: 100%

Landform	Vegetation	Amount (ha)	Identified in Gap Analysis (Y/N)	Exists in Site (Y/N)	Dominant Species	ELC Code(s)	Comments	Critical (Y/N)
Lake Iroquois; shallow water deposits	cultural	22.42	N	Y		CUM1, CUP3, CUW1	coarse lacustrine and glaciolacustrine	N
Lake Iroquois; shallow water deposits	deciduous forest	18.81	N	Y	red oak, black oak, white ash	FOD1, FOD2, FOD4	coarse lacustrine and glaciolacustrine	Y
Lake Iroquois; shallow water deposits	deciduous swamp	1.35	N	Y	Freeman's maple, Manitoba maple	SWD3	coarse lacustrine and glaciolacustrine	Y
Lake Iroquois; shallow water deposits	mixed forest	0.17	N	Y	hemlock, sugar maple	FOM3	coarse lacustrine and glaciolacustrine	N
Lake Iroquois; shallow water deposits	open wetland	21.69	N	Y	cattail, red-osier dogwood, sweetflag, alder	MAM2, MAS2, SWT2, OAO, SAM1	coarse lacustrine and glaciolacustrine	Y
Lake Iroquois; shallow water deposits	prairie	37.59	N	Y	black oak	TPS1	coarse lacustrine and glaciolacustrine	Y
Older Lakes; deep water deposits	deciduous forest	0.95	N	Y	red oak, red maple, black cherry	FOD2	fine lacustrine and glaciolacustrine	Y
	Total (ha):	**102.98**					**Critical Representation (ha):**	**80.39**

CONDITION: GOOD

1. MODERN PROCESSES OF LANDSCAPE CHANGE
    a. NATURAL AREAS CONVERTED TO OTHER LAND USES
        i. large manicured areas within ANSI (most omitted from ANSI boundary)
        ii. paved paths, parking lots and park infrastructure (buildings, sports fields) throughout ANSI
    b. RECENT REGENERATION
        i. considerable regeneration in cultural upland communities throughout; however prescribed burns are regularly conducted to manage succession
        ii. abundant deer and rabbit browsing
    c. RIVER DYNAMICS: N/A
    d. LAKEFRONT MARSH DYNAMICS: N/A
    e. LAKESHORE DYNAMICS
        i. lakeshore cut-off from ANSI by three major roads (The Queensway, The Gardiner Expressway and The Lakeshore Boulevard)
2. DISTURBANCE TO NATURAL AREAS
    a. ENCROACHMENT
        i. surrounded by intensive urban development except at south end (roads)
        ii. evidence of garbage dumping along paths within ANSI
        iii. debris dumped behind residences at edges of ANSI (building debris, garbage, compost)
        iv. some structures encroach on ANSI behind residences (gardens, paths, steps, compost piles)
        v. evidence of unauthorized vehicle use
    b. ROADS, NOISE AND LIGHTING
        i. southern part of ANSI is abutted by three primary roads (The Queensway, The Gardiner Expressway and The Lakeshore Boulevard)
        ii. much of the ANSI is well-lit at night
        iii. high level of noise from traffic can be heard throughout most of ANSI
    c. RECREATION IMPACTS
        i. paved and ad hoc paths throughout much of the ANSI; few areas without ad hoc paths
    d. DOMESTIC ANIMALS
        i. dogs off-leash in this area; extensive use
    e. INVASIVE SPECIES
        i. common buckthorn abundant to dominant in understory of some forest communities
        ii. cultural thicket and cultural woodland are dominated by non-native shrubs and/or trees (Manitoba maple, buckthorn, Tartarian honeysuckle)
        iii. garlic mustard extensive in understory of some forest communities
        iv. non-native particularly abundant along paths and along edges bordering residential developments

SIGNIFICANT FEATURES

Inventory work, along with existing reports, was used to identify and assess significant features. Significant species recorded in the study area include 26 regionally rare (rare in MNR's former Central Region, Riley 1989) and 110 locally rare plant species (rare in Ecodistrict 7E-4, according to Varga *et al.* 2000), and three provincially rare (according to NHIC 2008) and eleven locally rare (according to TRCA) fauna species.

1. SIGNIFICANT VEGETATION COMMUNITIES

High Park has been repeatedly recognized as an important natural area by naturalists, by the public and by public agencies. The dry black oak forests and savannahs with a prairie understory supported on the plateau and upper ravine slopes of the study area are considered a provincially rare community type. Varga's study of the area (1989) identified nine vegetation types as significant and sensitive areas. These areas are comprised of all of the larger examples of native upland and wetland communities, totalling 48.2 ha. In addition to this rare vegetation type, a high diversity of vegetation communities are supported by the study area, including wetlands, deciduous forests, mixed forests, savannahs and meadow habitat. There are elements of prairie and savannah on dry, sandy soils present within the park. The black oak forests and savannahs support an assemblage of species characteristic of open oak woodlands and savannahs that once broadly covered the area.

2. SIGNIFICANT FAUNA SPECIES

A total of 26 rare fauna species have been recorded in the area, including 7 area sensitive species, 2 provincially rare species, and 11 species identified as significant within the jurisdiction of the TRCA. Significant species known to breed in the study area include Blanding's turtle (*Emydoidea blandingii*), an S3 species, considered Threatened and therefore protected by Ontario's Endangered Species Act. The presence of breeding area sensitive species, such as Cooper's hawk, yellow-throated vireo, white-breasted nuthatch, blue-gray gnatcatcher, red-breasted nuthatch, hairy woodpecker and pine warble, indicates that suitable habitat is present to support some area-sensitive species. This finding is particularly significant in urbanized and fragmented environments.

3. SIGNIFICANT FLORA SPECIES

A total of 271 floral species have been recorded in the study area, of which about 197 species (73%) are native. This number, however, is incomplete as most study efforts have documented only significant species within the ANSI, and it is likely many common species are not documented. Most species records were recorded during the 1989 study completed by Steve Varga for the High Park Oak Woodlands ANSI; however, some additional species were noted by L. Lefler (unpub. field notes) in 2009. The mean Coefficient of Conservatism for the area is 5.9 and the mean Floristic Quality Index (FQI) is 82.6, which is exceptionally high for a natural area within an urban environment (most ravines in Mississauga and Toronto range between 10 and 20). A total of 113 rare plant species were noted

Based on rankings given by the OMNR (S-ranks), Regional Municipality of York, the GTA, TRCA (L-ranks) and Ecodistrict 7E-4. 110 are considered rare or extirpated in Ecodistrict 7E-4. Changes in the number of significant species encountered at the High Park ANSI between 1989 and 2009 can, in part, be attributed to changes in species' statuses, nomenclature changes and level of survey effort.

The low percentage of non-native taxa is very surprising given the study area's proximity to a large urban area, former and present human use, and a high degree of habitat fragmentation. Furthermore, the native flora represents a complement of species that is very rare in Ontario. Although situated at the northern edge of the deciduous forest region, the study area supports a number of Carolinian and prairie/savannah species. A total of 13 Carolinian species and 37 prairie/savannah species were noted in the study area. Conversely, 8 species more typical of Boreal Forest Regions to the north were noted in the study area. High Park sustains a significant floristic assemblage not replicated elsewhere in Ecodistrict 7E-4.

SIGNIFICANT FLORA SPECIES continued…

4. COLONIAL BIRD SPECIES

Colonial bird species, such as green heron (*Butorides virescens*), have been noted within the study area boundaries. Although breeding evidence has not been confirmed, it is suspected that these species nest in the large colony at the Leslie Spit on the Lake Ontario waterfront and use the High Park area as foraging habitat.

5. AMPHIBIAN BREEDING HABITAT

The wetlands within High Park have been identified as important amphibian breeding habitat for northern leopard frog (*Rana pipiens*), American toad (*Bufo americanus*), and green frog (*Rana clamitans*), all of which have recently been identified in the area. Recent surveys of these wetlands in 2007 (Dougan and Associates, unpub. field notes) indicate that several amphibian species continue to use these habitats to breed.

SIZE

High Park Oak Woodlands Provincial LS-ANSI, at approximately 102.98 ha in size, is the largest natural area remaining on Toronto's Iroquois sand plain.

DIVERSITY

The High Park ANSI encompasses exceptional diversity not replicated elsewhere in Ecodistrict 7E-4, including:

- Seventeen vegetation ecosites, which include provincially rare vegetation communities, and nine different landform-vegetation associations;
- 271 flora species (197 native), including 85 wetland-dependent plants, 13 Carolinian species, 37 prairie/savannah species and 8 northern species;
- 56 bird species, including 7 area-sensitive species (cooper's hawk, yellow-throated vireo, pine warbler, blue-gray gnatcatcher, hairy woodpecker, white-breasted nuthatch, red-breasted nuthatch) which require large tracts of forested habitat, and 8 significant species (L3) within the TRCA (black crowned night-heron, double-crested cormorant, green heron, wood duck, wood thrush, cooper's hawk, yellow-throated vireo, pine warbler);
- 8 mammal species;
- 1 amphibian species, including species that require vernal pools, permanent wetlands and/or riverine habitats to breed; and
- 6 reptile species, including 4 that are dependent on aquatic habitats.

ECOLOGICAL FUNCTIONS

- High Park represents a large natural area, just north of Lake Ontario, in the City of Toronto. It provides a refuge for species within one of the most urbanized areas in North America. Migrating birds have been noted to use the area as stopover habitat during spring and fall migration periods. As such, the study area provides an indirect provincial-scale linkage between the lake and more northern parts of the province.
- It provides habitat for numerous rare species, including Carolinian and prairie/savannah species, as well as significant wildlife habitat.
- Important habitat for migrating birds.
- Successional processes persist, supported by management practices.
- Provides connected habitat for species that move between upland and lowland habitats.
- 7 area-sensitive species have been noted in the High Park Oak Woodlands ANSI, including species that depend on large areas of dense forest, open woodlands, deciduous and mixed forest, deciduous swamp and pine dominated forest. This indicates that the habitats present in the study area are sufficiently large and diverse to support a wide diversity of species.
- Old growth forest (defined as forest over 140 years old) has been noted in some areas of the ANSI.
- Large native communities supporting vegetation structures that do not require intensive management for long-term persistence are located within the ANSI.
- It provides a linkage to remnant natural areas to the west of the park.

ECOLOGICAL FUNCTIONS continued…

- Marshes and ponds located in the ANSI filter and retain water, and contribute to water quality. The large permeable surfaces and ponds within the ANSI also contribute to local ground water recharge and discharge.
- High Park represents a large natural area in the City of Toronto, which provides refuge for wildlife species from noise and light pollution.

SIGNIFICANCE LEVEL

This provincial ANSI meets the criteria for provincial significance, based on representation of critical landform/vegetation associations, diversity, ecological functions and special features

MANAGEMENT RECOMMENDATIONS

1. STEWARDSHIP

The High Park Oak Woodlands LS-ANSI is owned by the City of Toronto. Adjacent lands are largely residential and commercial. Over the years, numerous stewardship activities have occurred within the study area boundaries to encourage site restoration, particularly of the oak savannah ecosystem, and recreational opportunities. Community members are involved in various stewardship activities at High Park, including community member involvement with the High Park Master Plan, Friends of High Park stewardship group and various local school groups. The presence of such a large natural area within the City of Toronto is important for promoting the values of the environment to the public. Impacts noted in 2008 include the presence of invasive non-native species and encroachment in various forms, including dumping and the creation of *ad hoc* paths. Future stewardship activities could focus on the removal of invasive non-native species, education campaigns on the appropriate use of natural areas and the closure of unsanctioned trails.

2. NATURAL AREA BOUNDARIES

The portion of the study area fulfilling the criteria for the selection of a provincially significant ANSI corresponds with park boundaries, excluding the centre manicured portion. Because of the present land use, condition and high concentration of developed facilities, this area was excluded from the ANSI. Several interior areas within the ANSI are included because of their roles as corridors and habitat linkages, and because of their potential contribution to the overall continuity of the ANSI. These sites are also potential locations for restoration to occur. Given the number of rare species located on site, it is recommended that populations of these species be monitored and mapped.

3. NATURAL AREA RESTORATION & BUFFERING

The use of native species, of local provenance, modelled on the local vegetation communities, respecting the processes of natural restoration is recommended. Areas where aggressive invasive non-native species occur should be managed appropriately, including a schedule for removal, site restoration and monitoring. In addition to the removal of invasive species, it is also recommended that plantings from natural areas be removed to restore a more natural forested community structure. Specific restoration activities recommended here include the restoration of the Grenadier Pond marshes and the expansion of black oak savannahs on site.

A buffer is recommended around the outer edge of the ANSI wherever possible sufficient to protect the natural features and functions within, should development be proposed adjacent to the ANSI. Residential lots backing onto the study area often impinge on the ANSI edge through the extension of mown lawns, dumping, release of domestic animals, *etc.* Abutting landowners should be provided with information that will assist them in appropriate stewardship of lands that are within or abut the ANSI. Restoration should occur where encroachment is affecting the function of the ANSI.

MANAGEMENT RECOMMENDATIONS continued…

4. LAND USES AND EXTERNAL INFLUENCES

Past and present activities in the study area have left residual negative impacts on the ANSI and its significant natural features. Only activities that are consistent with the protection of the study area's natural features and functions should be permitted. Trail usage should be monitored and the presence of *ad hoc* trails should be kept to a minimum to prevent further fragmentation. Moreover, dumping occurring within and surrounding the ANSI should be monitored and removed where feasible to prevent further impacts to sensitive species and ecosystem functions. High Park is a very popular recreation destination. Impacts resulting from various forms of recreation in the ANSI must be balanced with ecological requirements to sustain the existing natural heritage features, and a recreational system should be designed in such a way as to allow for recommended restoration on site.

RATIONALE FOR BOUNDARY REVISIONS

ANSI boundaries are generally consistent with guidelines. They were revised slightly to reflect the extent of natural vegetation around the perimeter. Several anthropogenic areas were omitted along edges and roadways. Some cultural communities have been included within the ANSI boundaries because of the function they provide to adjacent habitats and their restoration potential. Several areas dominated by park infrastructure within the ANSI have been omitted, which is consistent with past approaches to boundary delineation.

SUPPORTING DOCUMENTATION

NHIC; Varga 1989

FIELD VISIT DATES

Field visits were made to the ANSI on April 29th, May 1st, June 9th, June 16th, June 21st, and June 25th 2006, September 8th, 2008 and October 20th, 2009.