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HUMAN IMPACTS ON PLANT LIFE IN HIGH PARK

Information in this article was gleaned from www.highpark.org and *High park – Restoring a Jewel of Toronto's Park System* written by Joanna Kidd, LURA Consulting, Tove Christensen and Beth McEwen, Forestry, Parks and Recreation Division, City of Toronto, published in 2000, which is also accessible through the website.

When the Howard family deeded their "High Park" estate to the City of Toronto as a public park in 1873, they stipulated that it was to be left in as natural a state as possible and remain free in perpetuity to the citizens of Toronto. I have the good fortune to live near High Park, and have spent countless pleasurable hours exploring it, so I am grateful to the Howards for their foresight and to the many people who are diligently working to preserve this treasure in our City. Having recently been asked to represent TFN on the High Park Community Advisory Council, I am becoming increasingly aware of the value of the park, and the significant impacts (both detrimental and restorative) that people have had on its flora and fauna.

What's so special about High Park?

About a third of High Park's terrestrial system is considered to be ecologically significant because of the rare vegetation and plant species found there. Most notable is the black oak savannah, which dominates the park's sandy uplands. An oak savannah is a community of widely spaced oak trees with a ground layer of grasses and wild-flowers, which exists in poor, well-drained soils and is dependent on periodic naturally occurring fires to create conditions needed for successful reproduction. Because of extensive development in the Great Lakes Region, less than 1 per cent remains of the 10,000 hectares of prairie and savannahs that once existed in Southern Ontario. High Park's 110 acres of oak woodland is the largest remnant.

Due to its location near the northeastern edge of the Eastern Deciduous or Carolinian forest zone, High Park has a great diversity of plant species – 57 with southern or prairie affinities, several with northern (boreal) affinities and 2 which are characteristic of Great Lakes shoreline habitats. Forests of red oak, red maple and eastern hemlock grow on the park's moist ravine slopes, while sassafras can be found on its south-facing slopes. High Park has a wealth of rare plants – 4 species that are provincially or nationally rare and 37 that are regionally rare. These include wood betony, woodland fern-leaf, cup-plant, stiff gentian, Virginia yellow flax, shrubby St.John's-wort, wild blue lupine and sweet-flag. The Province of Ontario has declared 73 hectares of High Park to be an Area of Natural and Scientific Interest.

Harmful Practices

Significant changes began to occur in the Park in the early 1900s in response to public demand for recreational facilities. Trees were cleared to make room for playing fields and toboggan runs, and roads were built to improve access. Park managers began planting non-native trees and replacing native groundcovers with turf grass. Mowing destroyed oak seedlings before they could become established. During the 1950s and 1960s, the development of major facilities such as Hillside Gardens, the swimming pool, Grenadier Restaurant, food concessions and parking lots further infringed on natural areas, and 45% of the natural shoreline of Grenadier Pond was replaced by a concrete curb and manicured turf grass.

Wake-up Call!

Studies undertaken in the 1980s and 1990s revealed that High Park's forests, meadows, wetlands, ponds and streams had been seriously affected by development. The introduction of recreational facilities had significantly reduced the size of the black oak savannah. Suppression of fire, planting of non-native species and mowing, had interfered with the natural regeneration of native vegetation. Consequently, most of the oaks were over 150 years old; it was expected that half of them would be lost within 30 years, and there were few young trees coming along to replace them. Also many native plant species had been lost or were rapidly declining, and disturbances in the park's environment had provoked infestations of invasive plant species. Purple loosestrife, which has few natural enemies and is capable of prolific

growth, had invaded and colonized wetlands and stream banks, forcing out native plants. Grenadier Pond was being polluted by the excrement of Canada Geese grazing on the turf along its shores.

Restoration Efforts
In response to these findings, an extensive restoration program was undertaken.

Prescribed burns, carried out each spring since 1997, have proven highly successful. They promote the growth of oak seedlings, rare shrubs such as low-bush blueberries and black huckleberry, as well as native sedges, prairie tall-grasses and herbaceous plants - wild lupines, woodland sunflowers, wild geranium, early meadow-rue and bracken fern. Fire releases seeds stored in the soil and encourages the sprouting of established plants. It burns off dead vegetation, allowing acorns to come into contact with the earth and seedlings to receive more sun, and the conversion of leaf litter into ash releases nutrients which boost plant growth. Burns also control some species of invasive plants, such as Himalayan balsam and garlic mustard.

Planting and seeding of native plants has been undertaken to re-introduce species historically found in the park and increase the populations of some dwindling species. Seeds from native plants, such as big bluestem, woodland sunflower, cylindric blazing star, Pennsylvania sedge and shrubby St.John's-wort, are collected by volunteers, propagated in the park's greenhouses and planted in appropriate areas. Where possible, seeds are obtained locally, preferably from within the park. To avoid importing seeds of invasive species, soil is not brought into the park.

To address the problem of invasive plants already in the park, various management tools are employed, as appropriate for each species. The strategy for garlic mustard is to hand pull the plants before they go to seed. Another approach is biological control. Since 1998, the Toronto Region Conservation Authority has been conducting a bio-control program whereby two non-native leaf-eating beetles are effectively reducing the amount of purple loosestrife around Grenadier Pond. In keeping with the City's commitment to reduce the use of pesticides, chemical treatment is used only as a last resort. However, painting with herbicides is the only practical way to combat European buckthorn and dog-strangling vine. A few non-native trees, such as Norway and Manitoba maples, have been removed and replaced with native trees.

A shoreline naturalization project has been under-way since 1995. Sections of the concrete curbs were removed, and mowed lawn replaced with bulrushes, sedges and wildflowers. These plants along the water's edge discourage Canada Geese from grazing near the pond and help to filter and improve the water. They also provide spawning areas for fish and habitat for turtles, birds and insects.

Over the years, pedestrians have created many small footpaths and redundant trails, fragmenting natural areas, destroying native vegetation and encouraging the spread of invasive plants. The City is in the early stages of developing a designated nature trail system designed to avoid sensitive terrain such as erodable slopes, wetlands and areas where rare plant species are found.

All these efforts help to increase the diversity and richness of native plant communities and associated wildlife within High Park. The projects are long-term and, as I frequent the park week by week, I am not always conscious of how it is changing. However, while looking through some photos recently, I was startled to see dramatic differences in a particular spot by Grenadier Pond. The first photo was taken about 12 years ago; the second shows the prevalence of purple loosestrife 5 or so years ago, and the third was taken this year. Progress is indeed being made!

Article and photos by Wendy Rothwell