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The Oaks of High Park

by David Orsini

Valued by the Druids as places of worship, by military strategists of yesteryear for shipbuilding, and by carpenters throughout the ages for the strength and trueness of the wood, oaks are a much revered group of trees. There are about 450 different species of oaks distributed worldwide. Sixty-eight species are found across North America, three of which – Black Oak, Red Oak and White Oak are indigenous to High Park. The park has always been known for the magnificent, wide-branched oaks scattered throughout it. The oaks of High Park are well-adapted to the dry and nutrient-deficient soils of the park. These sandy soils were laid by Lake Ontario's prehistoric predecessor Lake Iroquois which covered the park 12,000 years ago. It is the sandy soils of the central upland plains of the park which have led to the evolution of the present-day savannah. A savannah is broadly defined as a plant community containing a discontinuous canopy of trees and a groundlayer of grasses and wildflowers. This plant community has been described as island-like stands of trees in a sea of prairie. A prairie is a grassland-herb ecosystem. Poor, well-drained soils and periodic, naturally occurring fires appear to be responsible for the presence of savannas. Tree species naturally occurring in savannah areas are deep-rooted to maximize moisture intake and have thick bark to protect them from fire. Savannahs occur throughout the world and contain many different tree species. In the savannah areas of High Park the predominant tree is the Black Oak. The average life expectancy of the Black Oak is 150-200 years, this is less than the Red Oak which is 250-300 years, and White Oak which is 500 or more. The scientific name of the Black Oak *velutina* derives from the velvety surface of the shoot, leaf, and leafstalk. The fuzz on the upper side of the leaf falls off, leaving it stiff and parchment-like. This leaf-coating helps to minimize moisture loss through transpiration. The Black Oak was once called the Yellow-bark Oak for its inner bark is a bright orange-yellow and can be used fresh or dried to produce a yellow dye.

A study of the oak savannas of High Park conducted by Applied Ecological Services in 1993 found that most of the oaks in the park are nearing the end of their life expectancy. In their botanical inventory AES found very few young oaks to replace the older ones. With so little regeneration of oaks and with so many of the existing ones in a geriatric state, there will soon be a sharp decline in the health and number of oaks in High Park. Reasons for the alarmingly low reproduction of oaks in High Park include human disturbance, squirrel predation of acorns (the seed of oaks), aggressiveness of introduced plant species, and the absence of fire. With approximately one million people visiting High Park each year, impacts of human use of the park are quite substantial. With no natural predators the squirrel population in the park has continually increased over the years. Due to the imbalance created by a rising squirrel population and a decreasing number of oaks which produce one of their major food sources – the acorn – few oak seeds remain for reproduction. Introduced plants from Europe and Asia such as Norway Maple, Tartarian Honeysuckle, Multiflora Rose and Common Buckthorn have no natural controls and proliferate at an alarming rate. Their rapid spread increases competition and

shade which inhibit oak germination. With the absence of fire comes the build up of leaves and other organic debris. Acorns must reach the mineralized soil layer to germinate. Ground fires eliminate the leaf layer and create a nutrient release for the oaks and the other fire-dependent flora of the savannah.

Repairing ecosystems has been compared to fixing a clock. In order to repair it you first have to save the pieces. But time is running out. While High Park has the most significant oak savannah ecosystem in the Metropolitan Toronto area, other areas with noteworthy savannas include Lambton Park by the Humber River and the Dundas Street Bridge, Ryding Avenue by George Bell Arena, and Kew Gardens in The Beaches. These fragments are a clue to just how vast the oak savannas once were.