



Old Growth in or near the City

by Bohdan Kowalyk



Some ecologists insist that a mature woodland could only develop where there are large areas of interior bird habitat more than 100 metres from an edge. Others can appreciate the contribution of a single semi-lonely tree that has the opportunity to demonstrate local continuity and ripen its potential. In the Greater Toronto Area, it is evident that to achieve the most beneficial landscape possible, planning is needed for a range of well-distributed tree patches of various sizes that may or may not be formally included in a provincially significant natural system. Tree age or size along with species composition and location can be basic measures in determination of ecological, social or economic value.

Old growth has been called the ultimate expression of a mature woodland. A generalized description is that old growth forests are relatively old and relatively undisturbed by humans. The Ontario Ministry of Natural Resources has identified the age-of-onset for old growth to occur when a stand begins to be dominated by trees approaching their maximum sizes for the location. For areas south of the Canadian Shield, age-of-onset has been estimated to be 140 years for hemlock, 120 years for white pine, maple, oak, beech, basswood and ash, and 110 years for cedar. This definition is different from a late successional interpretation of an earlier classification.

Another definition developed by researchers from the northeastern United States refers to a natural community that has at least 4 (usually more) trees per acre that are 150 years old or greater. The 150-year figure is based on changes that appear in the bark, shape of trunk and

canopy branches at that age for many species. Big-tree old growth contains the classic impressive large-diameter trees. Dwarf old growth is comprised of small, bonsai-like twisted trees growing on very severe (though stable) sites. Medium-stature old growth has unimpressive, average-sized trunks and is the hardest to recognize or appreciate. Old growth will often contain abundant dead wood in different stages of decay.

The oldest trees documented in Ontario are white-cedars growing on the cliff edge of the Niagara Escarpment, where a living one had a ring count of 1653 years and a dead one was estimated through cross dating to 1890 years. The trees are small and slow growing, thus able to withstand loadings of ice, snow and wind. Each tree is composed of hydraulically independent units allowing mortality of some parts to occur with little negative effect on remaining parts that continue to live for long periods of time.

The organization Ancient Forest Exploration and Research (www.ancientforest.org) has collected and is seeking examples of old trees of each species native to Ontario. A book on Ontario's old growth forests is expected to be published in late 2006 or 2007. In addition to white-cedar, other species currently with recorded ages of 400 years or more in Ontario include yellow birch, white oak, sugar maple, white pine, hemlock, black gum and red pine. Even species commonly considered "short-lived" or "early successional", such as white birch, trembling aspen, balsam poplar and sassafras have reached ages of 240, 213, 207 and 175 years respectively.

The largest tree in Ontario (considering both diameter and height), as listed in the Ontario Forestry Association's Honour Roll of Ontario Trees, is a cottonwood 265 cm in diameter and 35.4 m tall, followed by a sycamore (263 cm and 29.9 m) and a white pine (172 cm and 45.1 m). In Kentucky, it has been suggested that trees of 1 m diameter or more should be considered state treasures and generally protected from harm.

Most trees in nature do not survive their first year. Thus trees that reach older ages are survivors. Despite years of woodland clearance and development, maturing tree communities with various histories of disturbance occur in scattered known and unknown patches throughout the Greater Toronto Area. In rural areas, their potential long-term value is sometimes recognized only after the municipality has issued a permit without review for removal of the best or largest trees that provide quick financial gain. Such high-grading seriously reduces woodland quality and may lower the fitness of the tree population, particularly of the less abundant species. In urban areas, remnant woodlands that have been retained are often isolated, suffer from site degradation and may be feared by some as hazards or liabilities.

There are management options that can strike an appropriate balance among a multiplicity of objectives. In rural areas, sustained wood production on private lands can be done compatibly with retention and sometimes enhancement of important older woodland characteristics. In urban areas, hazards can be controlled while fostering superior amenity values for the local human population. In any case, site-specific knowledge needs to be applied. Decisions based only on existing remotely gathered information can easily miss some important facts.

For further discussion on such issues in the Greater Toronto Area, contact the local OMNR District Forester at Bohdan.Kowalyk@mnr.gov.on.ca .

photo credit, Molly Crealock. The beech is in Springwater forest, a conservation area near Aylmer in Elgin County . It is probably the one described on the Ancient Forest web site as being 107.5 cm in diameter (at breast height) and 35.5 m tall -- and may not be the biggest beech there.

