

## Candidate Tree Species to Replace the Ash Component in Restoration and Reforestation Projects within Toronto & Region Conservation Authority Watersheds

The list below provides alternative species to replace ash in restoration and reforestation projects within the TRCA. It provides alternatives to fill the ash component of a planting plan which in most cases should include coniferous and other deciduous species. Based on the nature of sites commonly planted by the TRCA and its partners, a number of selection criteria were considered in choosing these candidate species. The criteria ultimately focus on the likelihood of successful propagation, transplantation and site restoration. No one species can replace the wide site compatibility and survival rates of white and green ash and history has shown the danger in overreliance on individual species. As in all tree planting, success depends on choosing the correct species for the site conditions and limiting vegetative competition and damage from deer and rodents. This list is not comprehensive - on individual sites, with appropriate care, several other species could be considered.

SPECIES	SELECTION CRITERIA							PREFERRED SITE CONDITIONS	
	Native*	Indigenous**	Site Adaptability	Transplantability	Seed/Propagule Availability	Ease of Propagation	Pests***	Soils	Soil Moisture
Silver Maple ( <i>Acer saccharinum</i> )	yes	yes	wide	excellent	readily; local seed	high	several, none serious	all	prefers moist to wet will tolerate a wide range of moisture conditions
Hackberry ( <i>Celtis occidentalis</i> )	yes	marginally	very wide	excellent	intermittent; local seed	high	several, none serious	all (prefers limestone based)	prefers moist, well-drained will tolerate a wide range of moisture conditions
Eastern Cottonwood ( <i>Populus deltoides ssp deltoide</i> )	yes	marginally	moderately wide	fair to good	readily; local hrdwd cuttings	high	several, some debilitating	all	prefers moist to wet
Freeman Maple ( <i>Acer saccharinum x rubrum</i> )	yes	probable	moderately wide	good	good; local seed	good	several none serious	all	prefers moist to moderately wet will tolerate a wide range of moisture conditions
Black Cherry ( <i>Prunus serotina</i> )	yes	yes	somewhat restricted	good	intermittent; local seed	high	several, some debilitating	prefers sandy loam & loams	prefers moist, well-drained poor growth on very dry or very wet
Paper Birch ( <i>Betula papyrifera</i> )	yes	yes	somewhat restricted	good	intermittent; local seed	moderate	several, some debilitating	prefers sandy loam	prefers moist, well-drained
Big-Toothed Aspen ( <i>Populus grandidentata</i> )	yes	yes	somewhat restricted	good	sporadic; local seed	moderate	several, some debilitating	all (prefers sandy loam)	prefers moist to moderately wet
Trembling Aspen ( <i>Populus tremuloides</i> )	yes	yes	wide	good	sporadic; local seed	moderate	several, some debilitating	all	prefers moist, well-drained will grow on dry sites
American Sycamore ( <i>Plantanus occidentalis</i> )	yes	marginally	wide	excellent	uncertain; local seed & cuttings	good	several, none serious	all (prefers sandy loam & loams)	prefers moist to wet
Bur Oak ( <i>Quercus macrocarpa</i> )	yes	yes	wide	fair	intermittent; local seed	high	several, none serious	all	prefers moist, well-drained will grow on shallow soil & drought prone sites
For use as a minor component									
Elm, White & Slippery ( <i>Ulmus americana &amp; rubra</i> )	yes	yes	wide	good	intermittent; local seed	moderate	several, some lethal	all	prefers moist to wet

\* growing naturally within southern Ontario; \*\* local adaptation to environmental conditions with TRCA watersheds;

\*\*\* both biotic (i.e. insects, diseases, mammals) and abiotic (i.e. weather), debilitating = stressful/of concern but not generally lethal