The Trees of Prospect Cemetery





Welcome to the Arboretum of Prospect Cemetery

One of the finest tree collections in North America is to be found in Mount Pleasant Cemetery, in Toronto. The collection at Prospect Cemetery is not quite as large, with only 150 or so species, but has the same graceful beauty year-round. To make identification easy, sample trees bear small signs with both their botanical and common names.



Established in 1880, the cemetery was named "Prospect" because it offered such picturesque views. In April 1889, Joseph Earnshaw of Cincinnati, Ohio was hired to lay out the cemetery. His beautifully rendered planting plan, dated July 1889, hangs in the cemetery office.

While some trees within the cemetery as as old as 150 years or more, most of the trees were planted after its founding. Many, like the European larch, are native to other parts of the world. Others are native

to Southern Ontario, but planted since 1890. A few, like the old bur oak, are survivors of the original forest.

Wthin this booklet you will find photographs, descriptions and locations of a number of the cemetery's finest specimens, as well as maps indicating where they are to enable self-guided tours.

There is a glossary at the end of the document.

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The Benefits of Urban Trees

Providing many benefits to urban dwellers, trees are considered a form of "green infrastructure":

Health Benefits

- Trees and green spaces are known to help ease the everyday stress and pressures of life;
- Even brief encounters with nature can improve one's ability to concentrate;
- Trees and other roadside planting and landscaping can lower driver stress;
- Hospital patients with views of trees from their beds spend less time in hospital than those who have no view;
- Trees improve air quality by absorbing air pollutants (filtering particulates out of the air), removing atmospheric carbon dioxide, and producing oxygen. The average urban tree in Canada is estimated to remove about 200 kg of carbon over an 80 year period.

Community and Social Benefits

- Our urban forests improve out quality of life, while beautifying our communities;
- Well-landscaped grounds and trees are among the most important factors considered when people choose a place to live;
- Neighbours enticed outdoors by inviting green spaces, form friendships and community ties;
- Workers who can view nature from their desk are found to have better overall health, greater job satisfaction, lower frustration levels, and increased feelings of satisfaction with life overall;
- Inner city families with trees and greenery in their immediate vicinity have safer domestic environments;
- Well-cared for landscapes contribute to reduced feelings of fear and violence.

Economic and Environmental Benefits

- Properly placed trees can cut air conditioning needs by 30% and can reduce energy used for heating by 20 – 50%;
- Well-landscaped homes can see a 5 20% rise in property values;
- Shoppers have been known to spend up to 12% more for products in business districts with attractive urban forests;
- Trees prevent runoff and erosion, which results in improved water quality and reduced storm-water runoff or flooding;
- For every 1,000 trees, almost 3.8 million litres of storm-water runoff is prevented;
- Trees are also known as the carbon sinks of the earth, with the leaf area of each and every tree adding to the environmental benefits in terms of carbon storage;
- Trees are a critical source of habitat for many wildlife.

A Sampling of the Trees of Prospect Cemetery



1. Douglas Fir, *Pseudotsuga menziesii* (Section 2)

Douglas Fir have needles that are 2-4 cm long and are soft to the touch. Their cones have tongue-like bracts that stick out all over and are a great way to differentiate Douglas Fir from other evergreens. It gets its name from a 19th century Scottish botanist named David Douglas who was known for introducing a number of North American tree species to Europe. In Ontario, Douglas Fir are medium-large growing tree, however on the west coast, they can grow extremely large and up to 120 m tall.

2. Eastern Redbud, *Cercis canadensis* (Section 2)

Eastern Redbuds are known for their vibrant pink flowers in the spring. Their leaves are heart-shaped and the tree itself is a low-growing species that often has multiple stems and twisted-looking bark. Fun fact: their flowers are edible and even taste good when fried. But please don't pick any flowers off this tree!





3. Common Apple, *Malus spp.* (Section 3)

Many different apple varieties grow throughout Ontario and their fruits range in size and taste from big and delicious to small and bitter. Their spring flowers are usually pink or white and have a sweet aroma. Apple trees are low-growing and rarely reach heights taller than 4 m. Unfortunately, they are prone to many diseases, but with proper care and maintenance they can be a beautiful part of any landscape.

4. Paperbark Maple, Acer griseum

(Section 3)

Native to central China, Paperbark Maple are a small-sized species that grows no bigger than 9 m tall and 6 m wide. Its distinct red, exfoliating bark adds a great aesthetic to any landscape. Unlike most other maple trees, this species has leaves that are compound with three leaflets that range from 3-9 cm in length. Its red, orange, and pink fall foliage contrast beautifully with its bark.





5. Ivory Silk, *Lilac Syringa reticulata 'Ivory Silk'* (Section 1)

Ivory Silk Lilac is a low-growing tree that typically grows multiple-stems in an upright structure. Their dense, clustered flowers produce an attractive aroma and are beloved by bees, hummingbirds, and butterflies. The species is native to eastern Asia and is the largest of all lilac species. On average they grow 12 m tall and the trunk rarely exceeds 30 cm in diameter.

6. Serviceberry, *Amelanchier Canadensis* (Section 3)

Serviceberry are another small-sized tree that sometimes grow with a multi-stemmed structure that give it the appearance of a shrub. They are native to southern Ontario and have gray bark that feels smooth and rippled to the touched. Its small leaves range from 1-5 cm in length and its white flowers bloom in the spring. The fruit from Serviceberry is edible and similar in taste and consistency to blueberries, but good luck getting to them before the birds do!





7. Japanese Maple, Acer palmatum (Section 8)

As a low-growing species, Japanese Maples are sometimes referred to as shrubs and are regularly planted as a specimen species in a garden. There are a huge variety of Japanese Maple cultivars that vary from knee-high in height with razor-thin leaves to ones that grow 5 m tall and have leaves with thick lobes. They are a popular species for use among bonsai enthusiasts.

8. White Birch, Betula papyrifera (Section 8)

The papery bark of the White Birch is often easily recognizable. It grows all throughout Canada and its wood is used for firewood and pulp. Its leaves are spade-shaped with serrated edges and grow up to 10cm long. Its bark is highly weather-resistant, however, White Birch are susceptible to insect damage from the Bronze Birch Borer (Agrilus anxius), which can kill the tree if it is already facing other environmental stresses.





9. Copper Beech, *Fagus sylvatica 'Cuprea'* (Section 7)

Copper beech is a cultivar of European beech. An individual European Beech was discovered to have mutated in Germany in 1690 and it's believed that virtually every Copper Beech in the world can be traced back to that mutation. The leaves are purple and sometimes turn a shade of dark-green. Their bark is gray and smooth and some people say its trunk looks like the leg of an elephant. The beech nuts produced by this tree are loved by squirrels and their leaves tend to remain on the stems throughout winter even after they've died.



10. Zelkova, *Zelkova serrata* (Section 10)

Native to Japan, Korea, and China, Zelkova are a medium-sized deciduous tree that can grow up to 30 m tall. It has a unique structure that includes a short trunk that splits into many upright and spreading stems. The outer bark is typically gray that naturally exfoliates in patches to reveal orange inner bark. The small line-like bumps on the bark are called lenticels and they allow for oxygen and carbon dioxide to enter and exit.

11. American Chestnut, *Castanea dentata* (Section 10)

In the past, American Chestnut was one of the most common tree species found in forests across southwestern Ontario. However, the introduction of Chestnut Blight from Asia in the early 1900s significantly reduced the population of this once dominant species and it is now classified as an endangered species at risk in Ontario. The fruit are incredibly prickly and sharp to the touch on the outside, but have edible nuts enclosed within the husk. The leaves are 15-28 cm long with distinct veins and teeth-like tips at the leaf margins.





12. Basswood, *Tilia Americana* (Section 12)

Basswood is another species that is native to Ontario. It has heart-shaped leaves with typically uneven bases and its small brown fruit are attached to helicopter-like bracts that help propel the seeds away in the wind. It can regularly be found growing with a multi-stemmed structure. Its yellow flowers bloom in the middle of summer and have a beautiful sweet smell.

13. Bur Oak, *Quercus macrocarpa* (Section 12)

Bur oaks are native to Ontario and have trunks that can grow up to 1.2m in diameter. They are tolerant of a variety of soil conditions but prefer to be planted in direct sunlight. Their leaves are similar to that of a white oak, however, they can be distinguished by the top three lobes which are bigger than the lobes near the base. Their acorns have bristly caps that cover 2/3 of the acorn, which gives the appearance that the acorn is wearing a winter toque. A fun way to easily identify this tree is if its acorn looks like it's wearing a winter toque and saying "burrr, I'm cold" then it's a bur oak!





14. Ginkgo, *Ginkgo biloba* (Section 11)

Also known as a Maidenhair tree, Ginkgos are a very old species that have some fossils that date as far back as over 200 million years ago. They are native to China, but are now widely cultivated around the world. Their fan-like leaves and tall, slender structure give this tree a unique aesthetic. In the fall, their leaves turn bright yellow before quickly dropping. They prefer direct sunlight, however, they are otherwise quite hardy and have wood that is insect and disease-resistant. It is also a long-lived species with some individual specimens around the world that are believed to be more than 2,000 years old.

15. Shagbark Hickory, *Carya ovata* (Section 14)



As the name suggests, mature Shagbark Hickory trees have outer bark that appears to be flaking off in long "shaggy" strips. They are native to southern Ontario and are capable of living over 300 years and growing over 40 m tall. Their leaves are compound (comprised of usually five leaflets) and can grow over 50 cm long. Their nuts are edible and supposedly have a distinctly sweet taste.

16. London Plane Tree, *Platanus x acerifolia* (Section 15)

London Plane is a hybrid species that was formed by two separate Sycamore species discovered in the 17th century. It has naturally exfoliating bark that some say looks similar to camouflage print clothing. Its leaves are maple-like and can grow up to 20 cm long. Its fruit are 2-3 cm spheres that are fluffy and easily break apart when dispersed through the wind. London Plane are desirable trees for the urban environment as they are efficient at removing pollutants from the air.





17. Colorado Blue Spruce, *Picea pungens* (Section 17)

Be careful of this tree's needles! Although Colorado Blue Spruce are a beautiful shade of blue, they have sharp, stiff needles that are more prickly to the touch than most other evergreen trees in Ontario. The tree grows in a pyramidal shape and produces 8-10 cm orange-brown cones. It can tolerate significantly low temperatures, which makes this an ideal tree for the Canadian winter landscape.

18. Scots Pine, *Pinus sylvestris* (Section 19)

Scots pine is an evergreen tree that is known for its orange-red, flakey upper bark as well as its often contorting structure. Although it is a pine, its needles are short (3-5 cm long) and resemble spruce needles. They are native to many parts of Europe and their wood is frequently used to make pulp products. The cones are smaller than most other pines in Ontario and a mature Scots Pine can be known to live for over 200 years.





19. Bitternut Hickory, *Carya cordiformis* (Section 17)

Bitternut Hickory is native to Ontario and can grow up to 35 m tall. Its wood is durable and widely used to craft furniture and smoke meat. Its leaves can grow up to 12 cm long and often have 7 to 11 leaflets, with the upper leaflets appearing gradually larger than the lower ones. Bitternut Hickory bark has very tight, thin ridges. A tip for anybody wanting to learn winter tree identification is to look for its distinctly yellow buds at the branch tips.



20. Tulip Tree, *Liriodendron tulipifera* (Section 22)

Tulip trees get their name from their flowers that look very similar to tulips. The flowers are often green-yellow with an orange lining. The shape of their leaves are extremely distinct and some might even say they are rectangular in shape with two large lobes at the base. Tulip trees can grow very high up to 60 m tall and have a columnar structure that doesn't often branch outwards.

21. Northern Catalpa, *Catalpa speciosa* (Section 21)

You may recognize the long, slender, legume-like pods that this tree drops. Northern Catalpas are native to a small section of the Midwest United States, however, they are commonly planted along streets and in parks in Toronto. Because it is located in a cemetery, this particular tree does not have to deal with the same urban stresses as a tree planted along the street and is therefore able to grow as high as 30 m tall. Its leaves are large and heart-shaped and its flowers are white and trumpet-shaped.





22. Tamarack, *Larix laricina* (Section 22)

Also known as Hackmatack and Larch, Tamarack are deciduous evergreen trees that are native to every province and territory in Canada. It prefers wet, swampy locations but is tolerant of cemetery soil conditions such as this. Its needles are short (2-3 cm long) and exist in shoots of 10-20 needles. Its bark is flakey and plated and is generally considered a specimen tree in gardens or parks. Much like the Dawn Redwood, Tamarack needles turn orange in the fall before dropping.

23. Black Alder, Alnus glutinosa (Section 23)

Black Alders are medium-sized, often short-lived trees that are native to Europe. This individual is larger than average and may grow up to 30 m tall. The leaves of Black Alder have a short stalk and are often rounded with a bit of an oblong shape. Their fruit looks like miniature pine cones that often grow in bunches. Traditionally, Black Alder wood is used for tanning and dyeing.





24. Black Walnut, *Juglans nigra* (Section 24)

Native to North America, Black Walnut trees can grow up to 40 m tall and are valued for their lumber. Like the English Walnut, their leaves are compound and their nuts are edible, although they're generally not recommended to be harvested in an urban environment such as this because they can become contaminated if they've already started to decompose. Black Walnuts exhibit a phenomenon known as allelopathy. This means that the roots release a chemical that inhibits growth of nearby plants that share the same soil and are not resistant.



25. Dawn Redwood, *Metasequoia glyptostroboides* (Section 25)

Originally thought to be extinct, Dawn Redwood trees were first discovered in the mid-1900s in central China and are often referred to as "living fossils." They are closely related to California's giant Redwood Sequoia trees. Dawn Redwood are fast-growing and can reach up to 40 m tall. Their leaves are soft and unlike most coniferous (evergreen) trees, they are deciduous, which means they drop their leaves in the autumn. Their fruit look like cherry-sized pine cones.

26. Ironwood, *Ostrya virginiana* (Section 29)

As the name suggests, Ironwood are known for having tough, dense bark. The outer bark also exfoliates in thin plates that naturally flake off. Their leaves can grow to 13 cm long and feel smooth, almost fluffy to the touch. They are considered an understory species, which means they are slowgrowing and rarely reach heights greater than 15 m. They are sometimes referred to as Hophornbeam trees as their fruit resembles hops.





27. Katsura Tree, *Cercidiphyllum japonicum* (Section 30)

Katsura trees are known for their small heart-shaped leaves and beautiful autumn colour that explodes with bright yellow, pink, orange and red. The bark is usually quite coarse and furrowed and it's very common for the trunk to fork into multi-stems. Katsura trees are native to China and Japan. This species is dioecious, which means that there are both male and female trees that produce different flowers. When pollinated, female trees will produce small 2 cm fruit pods along the branches.

28. English Walnut, *Juglans regia* (Section 31S)

If you've ever wondered what kind of tree produces the regular edible walnuts that can be found in any grocery store then look no further! Originating in Europe, English Walnut trees are now cultivated all over the world. They can be distinguished from the native Black Walnut (Juglans nigra) by their smooth, lightly furrowed white-gray bark. Their leaves are compound, which means that there are multiple leaflets on every leaf, and grow up to 40 cm long. The tree itself can reach heights of 25-30 m.





29. Norway Spruce, *Picea abies* (Section 30)

Norway Spruce are large, pyramidal evergreen trees. They are often confused with White Spruce (*Picea glauca*) but can be distinguished by their long, cylindrical cones and weeping structure. They can grow up to 50 m tall and their cones are beloved by squirrels who often leave discarded piles of cone husks at the base of the tree. They are native to Europe and are one of the most commonly used species for Christmas trees around the world.

30. White Oak, Quercus alba

(Section 37)

Native to Ontario, White Oaks are long-lived species that produce long, thin acorns. Their leaves are lobed leaves and grow to be 15-22 cm long. White Oaks have gray-brown bark and lush green leaves that turn red to brown in autumn. The "white" in the name is a reference to the colour of the lumber when finished. White oaks are susceptible to compaction and salt damage typically found on City streets and are therefore better suited to green spaces such as Prospect Cemetery.





31. Northern Red Oak, *Quercus rubra* (Section 38)

Red oaks are native to south-central Canada and are able to grow as far east as Prince Edward Island. Known for their distinct lobed leaves and vibrant red fall foliage, red oaks are capable of living up to 400 years. Their acorns are rounded and grow up to 2 cm wide. Despite their bitter taste, they are prized by local squirrels, deer, and birds. Red Oak are commonly planted as specimen trees that add great aesthetic value to parks and gardens. Due to their taproot, they are often difficult to transplant.

32. White Willow, *Salix alba* (Section 40)

Willows are known to be fast-growing and relatively short-lived as they opt to put their resources towards growth instead of strengthening their structure and fighting off disease. Their leaves grow up to 10 cm long and 2 cm wide. They are often pale-coloured and give the appearance that they are drooping. Its wood is tough and light and is historically used to make charcoal. Identifying the exact species of a given willow can often be difficult because they naturally hybridize with other willow species.





33. Camperdown Elm, *Ulmus glabra 'Camperdownii'* (Section 39)

In the early 1800s, the head forester of the Camperdown House in Dundee, Scotland discovered a genetically mutated Scotch Elm (*Ulmus glabra*) that exhibited weeping and twisted structure. That tree still stands today and every Camperdown Elm, including this one, can be traced back to it. To create this cultivar, cuttings of the original tree are grafted to the trunk of an existing Scotch Elm. The grafting point is clearly visible as an indented line just below where the trunk turns to branches. Camperdown Elms will never grow more than a few meters high and maintain their weeping structure throughout their lifespan.







GLOSSARY

Acorn - nut-like fruit of an oak with a scaly cap.

Acuminate - tapering gradually to a point.

Alternate leaves - leaves arranged on alternating sides of the twig.

Bark - the protective external layer of tissue on the stems and roots of trees and shrubs.

Berry - an indehiscent fruit, with the seeds immersed in the pulp, for instance tomato.

Bole - also trunk refers to the main wooden axis of a tree.

Bract - modified leaf associated with flower or inflorescence, differing in shape, size or colour from other leaves (and without an axillary bud).

Capsule - dry fruit that splits open, usually along several lines, to reveal many seeds inside.

Catkin - dense, cylindrical, often drooping cluster of unisexual apetalous flowers found especially in willows, birches, and oaks

Compound leaves - leaves with more than one leaflet attached to a stalk called a rachis.

Conifer - trees and shrubs that usually bear their seeds in cones and are mostly evergreen; includes pines, firs, spruces, yews and Douglas fir.

Cross section- surface or section of tree shown when wood is cross-cut; shows the circular growth rings.

DBH, or Diameter at breast height - is a standard method of expressing the diameter of the trunk or bole of a standing tree. DBH is one of the most common dendrometric measurements. The diameter is measured at 1.37 (4.5 ft.) metres above ground.

Deciduous - having leaves that die and fall off trees after one growing season.

Deciduous Conifer - trees form cones and sprout needles like conifer trees. They change colours in the fall and lose their needles every year like deciduous trees.

Dioecious - having unisexual flowers with staminate (male) and pistillate (female) flowers born on different trees.

Drupe - fleshy fruit with a single stone or pit.

Entire margin - leaf margins that are smooth (not toothed).

Evergreen - trees and shrubs that retain their live, green leaves during the winter and for two or more growing seasons.

Family - group of closely related species and genera; scientific name ends in "aceae".

Genus - a group of one or more species with similar features or ancestry in common.

Globose - spherical.

Habit - the general external appearance of a plant, including its size, shape, texture and orientation.

Husk - the outer shell or coating of a seed.

Inflorescence - the flowering portion of a plant; several flowers closely grouped together to form an efficient structured unit; the grouping or arrangement of flowers on a plant.

Lateral buds - buds found along the length of the twig (not at the tip); they occur where the previous year's leaves were attached.

Leaflets - small blades of a compound leaf attached to a stalk (rachis); without buds where they attach.

Lobe - part of a leaf (or other organ), often rounded, formed by incisions to about halfway to the midrib.

Marcescence - the retention of dead plant organs that normally are shed. It is most obvious in deciduous trees that retain leaves through the winter; withering but not falling off.

Margin - the edge, as in the edge of a leaf blade.

Monoecious - having unisexual flowers with staminate (male) and pistillate (female) flowers borne on the same tree, though often on different branches.

Needles - very thin, sharp, pointed, pin-like leaves; found on pines, firs and some other softwoods.

Nut - hard, dry fruit with an outer husk that sometimes does not split open readily and an inner shell that is papery to woody.

Opposite leaves - leaves arranged directly across from each other on the twig.

Orbicular - circular in outline.

Oval - broadly elliptic, with the width greater than one-half the length.

Palmate - leaf with veins radiating out from a central point (usually at the top of a petiole), resembling spread out fingers pointing away from the palm; having several lobes (typically 5–7) whose midribs all radiate from one point (resembling the palm of a hand).

Panicle - a compound raceme; an indeterminate inflorescence in which the flowers are borne on branches of the main axis or on further branches of these.

Pendulous - hanging, for example an ovule attached to a placenta on the top of the ovary.

Petal - a usually showy part of the corolla of a flower with multiple parts.

Petiole - a slender stalk that supports a simple leaf.

Pinnately compound - compound leaves in which leaflets are attached laterally along the rachis or stalk; leaves may be once, twice, or three-times pinnately compound.

Raceme - an indeterminate inflorescence in which the main axis produces a series of flowers on lateral stalks, the oldest at the base and the youngest at the top.

Rachis - the central stalk to which leaflets of a compound leaf are attached.

Samara - dry fruit with one or two flat wings attached to a seed.

Sapwood - living wood, often light coloured, found between the bark or cambium and the heartwood, usually darker coloured.

Serrate - toothed with asymmetrical teeth pointing forward; like the cutting edge of a saw.

Sessile - attached directly by the base; not raised upon a stalk or peduncle.

Simple leaves - leaves with one blade attached to a petiole, or stalk.

Species - trees with similar characteristics and that are closely related to each other; species is used in both the singular and plural sense.

Stamen - the pollen-bearing (male) organ of a flower.

Terminal bud - bud appearing at the apex, or end, of a twig; usually larger than other lateral buds.

Toothed/serrated margin - leaf margin with coarse, fine, sharp or blunt teeth.

Tree - though no scientific definition exists to separate trees and shrubs, a useful definition for a tree is a woody plant having one erect perennial stem (trunk) at least 7.5 cm in diameter at a point 1.37 m above the ground, a definitely formed crown of foliage, and a mature height of at least 3.9 m.



Daylight Saving Time to September 30th October 1st to Eastern Standard Time Eastern Standard Time to DST GATE CLOSING TIMES:

6:00 p.m. 5:30 p.m. 8:00 p.m.

> Office Hours: 8:00 a.m. - 5:00 p.m. Monday to Saturday Fax: 416-6561-4061 1450 St. Clair Avenue West Phone: 416-651-4040 Toronto, ON M6E 1E6





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Prospect Cemetery

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