

# LANDSCAPE PLANT CARE

## THE DECIDUOUS TREES

Deciduous is from the Latin *deciduus* "that which falls off", from *decidere* "to fall off", which in this case was applied to the nature of some trees to shed their leaves in the fall in our temperate zones. There are about 25 species and their cultivars that are used as landscape trees in our region, mostly in full sun. Some species can withstand some light to moderate shade when young, but require full sun to thrive as they mature in age and height. Of the hardy species in our region, only the *Amelanchier canadensis* (Serviceberry) and *Carpinus caroliniana* (Hornbeam) will tolerate primarily shady conditions. Deciduous trees for the most part will tolerate a wide variety of soil types but, with few exceptions, require at least half a meter of well-drained soil. Some species such as *Quercus* (Oak) and *Acer* (Maple) will send out a taproot to some depth but all species will send the majority of their roots laterally from a few inches to a half meter in depth. Large deciduous trees are often the most prominent feature in the landscape and can dominate a small site, so are best used on the side or back of properties in an accent or screening role. The moderate to small shade trees are more versatile for placement around the home. Shade trees are very beneficial as they can add character and value to your home. They can moderate hot season temperatures, provide cool areas, absorb sound and rain, remove pollutants, provide oxygen and also provide a nurturing area for beneficial insects, birds and small animals. Like many other plants, deciduous trees will benefit from some good organic compost (about 30%) mixed with your original soil and some bone meal (approx. 2 cups) in the base of the hole to promote root development and growth. More detailed information on planting and care is available from Scott's Nursery's nationally certified staff.

The deciduous trees, like other plants, may be subject to disease or insect problems during their lifetime although you may never experience a problem on your property. The risk of disease and insect problems can be reduced with a

relatively simple good care program. Please refer to the information section on disease, insect, physiological damage and good care practice.

Following are short descriptions of the deciduous varieties most often available at the nursery. Some unusual or less hardy varieties may be available by special order in season and when available. Please contact the front yard staff at the nursery for more information on availability.

### **ACER (MAPLE):**

Acer, Latin for Maple (first referred to as the emblem of Canada in 1850) is from the Latin (genitive) 'aceris' and maple from Old English 'mapultreow'. Maple trees are a diverse family of trees and shrubs found worldwide. About 25 species and cultivars are available in the nursery trade in Eastern Canada. Maples are one of the most popular shade and fall colour trees, varying in height from nine to twenty-five meters. Some of the most common species are *rubrum* (Red Maple, with green leaves turning red to yellow in the fall), *saccharum* (Sugar Maple, the largest of the maples), *platanoides* (Norway Maple such as the Crimson King with deep red-purple leaves all summer) and *freemanii* ('Autumn Blaze'). 'Autumn Blaze' is a hybrid of the Silver and Red Maple with the fast growth of the silver and the colour and form of the red. It has become one of the most popular maples in recent years. All maples are tolerant of most soil conditions and pH ranges but do prefer a moist, well-drained soil. However, *Acer rubrum* (Red Maple) can withstand saturated soil for a longer period than most trees which accounts for its presence abutting streams and rivers in the province. Maples are not salt tolerant so placement adjacent to salt prone areas, such as highways, should be avoided. Maples may be prone to nitrogen deficiency in poor soils so amendment of soils with appropriate compost is recommended. Young trees are prone to leaf scorch in hot, dry weather which can be mitigated by an appropriate watering program for the first couple of years. Although you may never have a problem on your property, maples may be susceptible to a variety of fungi, insects and physiological damage. Please refer to the information sections on disease, insect, physiological damage and good care practice.

## **AESCULUS (HORSE CHESTNUT, OHIO BUCKEYE)**

*Aesculus glabra*, commonly known as the Ohio Buckeye is similar in habit to *Aesculus hippocastanum*, the Horse Chestnut. The genus name, *Aesculus*, is the classical Latin name for an oak with edible acorns. However, the fruit of both species is poisonous. Their seeds, leaves, and bark contain the toxic alkaloid aesculin, unlike the “sweet” chestnut species, *Castanea*. The Ohio Buckeye and Horse Chestnut both produce upright white flowers in spring whereas the cultivar ‘Ruby Red’ Horse Chestnut produces brilliant red flowers in spring. The species tend to produce more fruit (nuts) than the cultivars, which are often eaten by squirrels. Both are slow growing, long-lived trees that tend to be well-formed, dense and rounded and often wider than high. At full growth its large canopy can require considerable space, so it should only be planted in open, sunny sites that are on the moist side and well-drained. Horse Chestnut and Ohio Buckeye both may be susceptible to leaf blotch and borers. They are also prone to leaf scorch, particularly when young or on dry sites, which causes the leaf edges to curl and turn brown.

## **AMELANCHIER (SERVICEBERRY, JUNE BERRY, SHADBUSH)**

The genus name *Amelanchier* comes from amelanquier, the French name for a serviceberry native to the Provençal region of France. There are about 16 species worldwide but the principle species in the nursery trade in Eastern Canada is *Amelanchier arborea* (Downy Serviceberry) and its cultivars. However, *Amelanchier alnifolia* (Saskatoon Serviceberry) and some others are sometimes known in trade. Serviceberries hybridize freely in the wild, resulting in many combinations of traits and identification problems. Serviceberries are a popular choice because of their small size (6-8m), appeal through the seasons and their tolerance of heavy to moderate shade. Some varieties turn brilliant red in autumn. They are excellent as understory trees near forest margins or in dappled light conditions. They are tolerant of dry soils and usually grow well in a variety of soil conditions. In the spring, *Amelanchier* blossoms entice beneficial insects, such as bees and butterflies. As they are early bloomers, they are a very important source of food for these emerging insects. Many species of birds feast on the

berries including orioles, thrushes, woodpeckers and waxwings. Serviceberries are affected by the same pests and diseases that affect apple and pear trees (also members of the Rose family) including rusts, mildew, and leaf spot, but none appear to affect native serviceberries very seriously.

### **BETULA (BIRCH)**

Birch is a broadleaved hardwood tree of the genus *Betula* (Latin meaning tar or pitch) in the family *Betulaceae*. The *Betulaceae* family includes alders, hazels and hornbeams and is closely related to the beech/oak family. The common name birch comes from Old English 'birce'. Birches are best known for their white, paper-like bark. About 50 species are found in Arctic and northern temperate regions worldwide but only a few species such as *papyrifera* (Paper Birch), *utilis* (Himalayan Birch), *nigra* (River or Red Birch), *pendula* (European White and Weeping Birch) and their cultivars are common in the nursery trade. Popular as single trunk specimens or in clumps, they are one of the most striking trees in the landscape with their white bark and graceful foliage. Most species prefer moist, slightly acidic, well-drained soils and sunlight; although they tend to be robust in all but the poorest conditions. They are best pruned in summer and fall due to their tendency to bleed sap in late winter and spring. Birches are seldom affected by fungus but are prone to insect damage from aphids, borers and the Birch Leafminer. Maintaining a healthy tree with good care practice will reduce the chance of infestation. Nematodes that attack the Birch Leafminer larvae are now available as an alternative to chemical control.

### **CARPINUS (HORNBEAM)**

*Carpinus* is derived from the Latin word for the European Hornbeam. It was associated with the Latin name for axle, which obviously requires a hard wood such as the hornbeam. Hornbeam is also referred to as ironwood in some places. The native species, *Carpinus caroliniana*, is the most common in our region because of its zone 3 hardiness. It is very similar to the European Hop Hornbeam, *Carpinus betulus*, which even though it is a less hardy zone five, may be grown here in our locality if suitably protected for the first few years. It reaches 10 to 20

meters in height, has a wide, spreading conical crown and smooth, gray-green bark (often fluted). It is an excellent and underrated tree for planting in smaller sites. Its catkins, unusual fruit, distinctive bark and yellow fall colour make it a visually interesting addition to the urban landscape. It is relatively slow-growing (faster in sun and enriched soil), but unlike most trees, it can withstand all but heavy shade. It is tolerant of most soil conditions but prefers a moist, well-drained, relatively fertile soil. Their spent leaves enrich compost and soil as they retain nitrogen and phosphorus. An additional feature is that the Hop Hornbeam is relatively free of insect pests and diseases.

## **CATALPA**

Catalpa is from the Cherokee name Catawba and is a genus of flowering plants in the family *Bignoniaceae*. The only two species hardy and common in our region are *Catalpa speciosa*, (Northern Catalpa) and *Catalpa bungei* (Umbrella Catalpa). The Northern Catalpa may reach fifteen meters when full grown. It is a fast growing, upright tree with heart-shaped green leaves and white pendulous flowers in late June. Both the Umbrella Catalpa and Northern Catalpa, when young, have large leaves. Catalpa is tolerant of most soils but prefers deep, moist, fertile soils. However it is capable of withstanding hot and dry environments. It does best in full sun but will tolerate partial shade. Although they have a relatively brittle wood and may lose twigs or small branches in heavy wind or ice, they are very resilient, well-rooted trees. If pruned to control height to about 5m or so, they maintain a large leaf size of up to 25cm wide which makes a striking specimen in the landscape. They may be prone to leaf spot, powdery mildew and moth damage but it is seldom a concern.

## **CELTIS OCCIDENTALIS (COMMON HACKBERRY)**

*Celtis occidentalis* or Common Hackberry is a deciduous tree native to North America. *Celtis* is probably the Greek term for an unrelated tree whereas the species name *occidentalis* means western or of the Western Hemisphere. The name hackberry may derive from 'hagberry', a word used in Scotland for bird cherry (*Prunus avium*), which has similar fruit. It is a medium to fast growing,

moderately long-lived hardwood that produces small berries which turn orange-red to dark purple in the autumn. The berries often persist on the trees for several months and are eaten by a number of birds and mammals. Hackberry forms a medium sized tree, thirty to fifty feet in height in favorable conditions. It is noted for its tolerance to adverse conditions including drought, wind and flooding, although it will perform best in moist, rich soils. It is known as fairly disease and insect resistant in good conditions but can develop unusual growths called witches' broom from a combination of mite and fungus.

### **CRATAEGUS (HAWTHORN)**

*Crataegus* is from the Latin name for the hawthorn, from the Greek 'krataigos' meaning thorn-tree and 'kratos' for strength, because of the strong hard wood. The common name is from the Anglo-Saxon 'haguthorn' meaning a fence with thorns. *Crataegus* is also called 'thornapple' or 'hawberry'. This is a very large genus of hundreds of shrubs and trees in the family *Rosaceae*, native to temperate regions of the Northern Hemisphere. Only two species of hawthorn cultivars are commonly used in landscape in our region. *Crataegus laevigata*, ('Crimson Cloud' and 'Paul's Scarlet') are noted for their red flower display in spring. *Crataegus mordenensis* ('Toba' and 'Snowbird') were developed in Canada and are slightly hardier than *laevigata*. 'Snowbird' has showy double white flowers and the double flowers of 'Toba' open white to light pink and brighten to pink at maturity. They are a small to moderate sized tree growing to around eight meters in height and six meters wide with small pome fruit. The usually thorny branches have leaves that turn yellow in the fall. Hawthorns provide food and shelter for many species of birds and mammals and the flowers are important for many nectar-feeding insects. Hawthorn may be prone to rust or blight which is generally preventable. 'Crimson Cloud' is reputed more resistant to blight and 'Snowbird' more resistant to rust. You may never experience a problem on your property though.

## **ELEAGNUS ANGUSTIFOLIA (RUSSIAN OLIVE)**

*Elaeagnus* is from new Latin, from Greek elaiagnos meaning a kind of willow and *Angustifolia* is a Latin adjective meaning 'narrow-leaved'. It is generally a small tree of eight by six meters but may grow up to ten meters in a good situation. A shrubby plant may require some pruning to establish a good tree form. Russian Olive is silver-gray to gray-green in summer and known for its gray foliage effect. It has fragrant, creamy yellow flowers in spring and produces golden berries. It does best in light, sandy soils but withstands adverse conditions including salt spray. It prefers a sunny location and does best if well maintained. Russian olive is prone to some fungi that cause leaf spot or rust but rarely to an extent requiring treatment.

## **FAGUS (BEECH)**

The genus word *Fagus* is related to Latin *fagus* 'beech', Greek *phagos* 'edible oak', and Beech from Old English 'bēce', of Germanic origin. There are over ten species of *Fagus* (Beech) recognized worldwide but only one native species in Canada, *Fagus grandifolia*. This North American species is seldom used in the landscape trade because of its slow growth and limited availability, due in part to difficulty in propagation. Beech stands in Eastern North America have also been ravaged in recent years by North America Beech Bark Disease (BBD), although resistant plants are now often available. The rare use of this species in the landscape is unfortunate, as it is quite suitable in the right location where a striking, large, long-lived native tree is desired. It may live over 300 years as a sturdy, imposing tree attaining 30 to 40 meters of height. The bark is smooth and light grey and branches spread horizontally to form a rounded top. The dense canopy features dark-green, glossy, prominently veined leaves that turn copper colour in the fall and hold on most of the winter. Beech leaves contain a high concentration of nitrogen and contribute to the beneficial humus in soils. The fruit, called mast, is a small nut 10–15mm long but is only produced in quantity after substantial tree growth. Beech will tolerate partial shade and grows on a wide range of soil types providing the top 30cm of soil is well-drained. The cultivars (about 10) of *Fagus sylvatica*, the European Beech, are the most common species in the landscape

trade but due to their zone 5b requirement are most suitable to the more southern sections of the maritime region or a pleasant micro-climate. The purple leaf varieties such as 'Dawyck Purple' or its weeping form are most common in trade and very attractive in the landscape. Few disease or insect problems are noted in this species in our region.

### **FRAXINUS (ASH)**

Fraxinus is from Latin meaning spear and Ash is from Old English 'æsce', which also referred to spear. There are over fifty species of ash worldwide but only a couple of species in the landscape trade in our region. The Mountain Ash is a *Rowan* species and not from this family of trees. The most common ashes are cultivars of *Fraxinus americana* (White Ash) and *Fraxinus pennsylvanica* (Green or Red Ash). The White Ash is a medium growth tree attaining 20-30 meters of height with nearly equal width. Its leaves turn yellow and then to maroon in the fall. It prefers moist, well-drained soil in full sun. The Green Ash reaches 16-30 meters in height with a spread of about half that. It is very tolerant of most soil conditions, including salt, as long as it is in a well-drained, sunny location. Some nurseries and suppliers in Ontario have removed *Fraxinus* from sale due to infestation by the Emerald Ash Borer and Asian Longhorned Beetle. These insects are not a problem here at this time but may become so in the future. Once a tree is infested treatment is difficult, so alternative trees may be preferable in the landscape. Good care practice may reduce the possibility of infestation by these or other pests.

### **GINKGO BILOBA (MAIDENHAIR TREE)**

*Ginkgo* is derived from two Japanese words, yin meaning silver and kou meaning apricot. The species name *biloba* refers to the leaves, which are partially divided into two lobes. The common name maidenhair tree refers to the resemblance between ginkgo leaves and those of some maidenhair ferns. Ginkgo is native to China and like the Dawn Redwood, is a living fossil. It is one of the world's oldest plant species and is the sole remaining survivor of the family *Ginkgoaceae*. There are over twenty cultivars of this species which have been introduced since the

tree was first cultivated in Europe and North America in the mid-seventeen hundreds. Only a few cultivars are common in our region. Usually pyramidal when young, it becomes a wide, spreading tree with age. It can attain heights of 16-25 meters with variable spread. *Ginkgo* is hardy in zone 4 and prefers a light, deep, moist soil but will tolerate most soil conditions in full sun situations. In addition, it is salt and heat tolerant. It should be pruned while dormant or in spring only, as summer pruning is reputed to retard growth. It is typically slow-growing but will provide faster growth with good care practice. A mature *Ginkgo* is an impressive sight due to its structure and the leaves may produce spectacular fall colour when frost does not cause an early leaf drop. Very few fungi and insects are known to infest this species.

### **GLEDITSIA TRIACANTHOS (HONEY LOCUST)**

The genus name *Gleditsia* commemorates the German botanist Johann Gleditsch (1714-1786) who was the director of the Berlin Botanic Garden. The species name *triacanthos* is from Greek and is in reference to the three-pronged thorns on the wild species. The honey in Honey Locust refers to a sweet substance that is found in the tree's seed pods. Only four or five varieties of the Honey Locust are common in trade including 'Shademaster' and 'Sunburst'. The Honey Locust should not be confused with the 'Black Locust' which is a different species in the *Robena* genus. The Honey Locust is a medium-sized tree having angular branches and delicate foliage with compound leaves. The fragrant, pendulous flowers appear in late May and attract pollinators. It may attain a height of 16-30 meters and a width of 10-15 meters. It is a tough tree which transplants easily and tolerates most well-drained soils, salt, heat and drought. It is a fast grower and may live over one hundred years. The fast growth rate and tolerance of poor site conditions makes it a valued tree in areas where shade is wanted quickly. Honey Locust is usually not vulnerable to fatal pests or diseases.

### **MAGNOLIA**

Magnolias are an ancient plant that has been around for millions of years. However, this genus of about 200 species was only first described by Charles

Plumier in 1703 who named them after Pierre Magnol, a French botanist. There were no bees when this genus came into existence, so the flower evolved to attract beetles for pollination. Magnolias may be evergreen or deciduous and bear beautiful flowers. As magnolias became more popular, intense breeding programs began in the early 19th century to develop varieties with more numerous flowers, a wider range of flower colors and later-blooming plants whose flowers would not be destroyed by late frosts. The most popular cultivars are noted for their showy, fragrant flowers which are white, pink, red, purple or yellow. Flowers open in early spring before their leaves emerge, although a late frost can nip the flowers in the bud. Magnolias have large, shiny green, leathery leaves and do best in full sun or dappled shade in a rich, well-drained but moisture retentive soil. A magnolia might benefit from a location shaded from the hot afternoon sun. If possible, avoid exposed, windy locations because strong winds can damage large flowers and the typically brittle branches. Although well-established plants can be moderately drought tolerant, they will benefit from good care practice in their early years. The saucer magnolia, *Magnolia × soulangeana*, is the hybrid plant that most people associate with the Magnolia family. Most varieties grow to tree size whereas some hybrids are in that gray area between a very small tree and large shrub. The hardiest species in our immediate region are the hybrids based on the Japanese Magnolia species such as *Magnolia stellata* (Star Magnolia). Star Magnolia is a broad and spreading small tree or large shrub, ultimately reaching five meters tall or more. It is a slow grower with fairly large leaves which sometimes turn yellow before falling. Another popular hybrid from this species is 'Leonard Messel', a cross of *M. kobus* and *M. stellata* 'Rosea'. It has star-shaped flowers with 12 narrow petals, white on the inside and purplish-pink on the outside. Recent introductions of hybrids between *Magnolia liliiflora* and *Magnolia stellata*, include 'Ann', 'Betty', 'Susan' and 'Jane'. Although these hybrids are zone 5, they do reasonably well in the Fredericton region in a suitably protected location. They flower a little later than most magnolias making them less of a target for late spring frosts. This species is readily adaptive to the southern coastal regions of the Maritimes. They are, as a group, quite resistant to insect and disease problems although some hybrids are

prone to powdery mildew, especially in closed-in locations. The most common problem is leaf scorch which is more likely to occur in plants before they are well established, or those in poor site conditions such as hot afternoon sun.

### **MALUS (CRABAPPLE)**

The word Malus has a number of meanings in Latin but the meaning for this plant is from the Late Latin feminine noun meaning apple or fruit; from malum apple and from Greek (Doric) malon. It is a genus of trees and shrubs from the family *Rosaceae*. The term crabapple comes from Middle English and was probably of Nordic origin. They share the same genus (*Malus*) as apples. Several crabapple species are native to North America such as *Malus coronaria*, *Malus fusca*, and *Malus ioensis*. Most crabapple species were native to Europe and introduced here by early settlers. Hybridization over the centuries has resulted in hundreds of varieties. Crabapples are probably the most popular ornamental tree in Canada. They are showy spring bloomers, have a variety of colorful foliage and may provide an attractive fruit display in the fall. Some varieties with larger fruit such as 'Dolgo' are often used for preserves. Crabapples contain high amounts of pectin which helps to firm up jellies, jams, and apple butter. They are also valuable to wildlife, especially cedar waxwings. Crabapple species and cultivars have historically been susceptible to a wide range of diseases, notably apple scab fungus and cedar-apple rust. Many modern cultivars possess superior resistance to these diseases. Crabapple trees can reach from 5-8 meters in size and most have a good rounded form. Some weeping varieties such as 'Louisa' and 'Red Jade' have become more popular in recent years as an attractive specimen plant. 'Louisa' has graceful arching branches, pink flowers and small gold coloured fruit in fall. 'Red Jade' has long-lasting white flowers and was named for its striking red fruit in fall. Some of the more popular cultivars are 'Prairiefire', 'Profusion', 'Makamik' and 'Thunderchild'. We have been quite impressed by several new disease resistant cultivars such as 'Rudolph' and 'Royal Raindrops'. 'Royal Raindrops' is proving to be a hardy alternative to the Japanese maple with its cut leaves that are wine red in color and mature to green with burgundy overtones, eventually turning orange-red in the fall. Some varieties of crabapple may

experience occasional problems with insects such as aphids but are not particularly noted for insect problems. Some are more prone than others to disease such as rust and scab but it is preventable. Some newer varieties appear highly resistant to disease. Rodent damage on young trees and planting in tight, poorly-drained soils is probably the leading cause of death with this species.

## **PRUNUS**

Prunus is Latin for plum tree, from Greek proumnē. *Prunus* is a genus of trees and shrubs which includes the plums, cherries, peaches, nectarines, apricots and almonds. Around 400 species are spread throughout the northern temperate regions of the globe and although most are fruit bearing trees, some are only common as ornamentals. The most common ornamental trees used in this region are the *Prunus virginiana* 'Shubert' (Shubert Choke Cherry) and *Prunus cerasifera* 'Newport' (Newport Purple-Leaf Plum). Those that have seen a mature and healthy Newport Plum have often wanted this ornamental tree on their property because of its startling coloration and profusion of pinkish-white flowers that bloom in early spring. It is a zone 5 tree, hardiest of the purple-leaved plums, but may require some winter protection until well established in all but the most southerly areas of New Brunswick. It can attain heights of 5-7 meters in a good site location and forms a rounded head of red-purple foliage. It is tolerant of most well-drained soil conditions and is somewhat salt tolerant. The downside is that the *Prunus* family is not only susceptible to insects such as aphids and borers but is also susceptible to the fungus *Apiosporina morbosa*, which causes a condition known as 'blackknot' that is easily distinguished by the typical large black growth that appears on infected branches. Once established it will destroy the plant but it is generally preventable with a maintenance program.

The ornamental cherry species are another *Prunus* group available for small trees in the landscape. The hardy ornamental chokecherry for this region is *Prunus virginiana* 'Shubert' (Shubert Chokecherry) which can attain heights of 8 meters with a spread of 4 meters. 'Schubert' is known for its unusual leaf colour change from green in spring to reddish purple by summer. Chokecherries bloom profusely in the spring with delicate, fragrant white flower clusters followed by small black

berries that attract birds. The berries are tiny, juicy and good for wine or jelly but the seeds of the plant are toxic, as are the leaves and stems. It has similar maintenance requirements to the Newport Plum mentioned above. Both of these ornamental species are very worthwhile specimens to the gardener that is willing to provide some moderate care.

### **PYRUS CALLERYANA (ORNAMENTAL PEAR)**

*Pyrus* is from Latin *pyrus*, *pirus* or pear-tree whereas the English word pear is probably from Germanic *pera*, from Latin *pira*. The species name *Calleryana* was named for Joseph Callery. *Pyrus* is another member of the *Rosaceae* family of plants. This ornamental species, *Pyrus calleryana*, is native to China and Vietnam and around a half dozen cultivars are available in trade, several of which are hardy for this region. It is a deciduous tree, growing to 10-15 meters in height with a conical crown and dark green foliage. The leaves turn brilliant colours in the fall, ranging from yellow and orange to more common red, pink, purple, and bronze. Sometimes, individual leaves may display colour mix as well. However, since the color often develops very late in fall, the leaves may be killed by a hard frost before full color can develop. It is tolerant of most soil conditions but performs best when grown in reasonably well-drained loams with consistent moisture in full sun. It can tolerate some drought once established. Generally it is tolerant of urban conditions, but is susceptible to limb breakage from strong wind, ice or snow, which selective pruning when young may mitigate. The symmetric and narrow pyramidal shape makes this cultivar a good selection for smaller sites. This species is very resistant to disease and insect problems.

### **QUERCUS (OAK)**

The genus name *Quercus* comes from the Latin name for oak tree, from the family *Fagaceae*, which also includes the Beeches. It is a favored tree in many places. The genus contains about 600 species worldwide of which about ten species can be found in Canada. Oaks are subdivided into two main groups, red and white. This division is based on the appearance of the leaves and the acorns. Included in the red oak group are Red Oak, Black, Pin, Northern Pin and Scarlet.

The species in the white group are White Oak, Bur, English and Chestnut Oak. *Quercus rubra* (Red Oak) is the most common species native to this province, attaining heights of 18 meters and a spread of 15 meters at maturity. *Quercus macrocarpa* (Bur Oak) is the most common white oak in our maritime region and hybridizes easily with other white oak species, resulting in a variety of leaf forms. Bur Oak makes up about 5 percent of the native oak species in New Brunswick. It may reach 20 meters high at full growth. In addition to the native Bur and Red Oak, a number of other species and cultivars are available in trade including *Quercus plustris* (Pin Oak), *Quercus robur*, (English Oak) and a few other less common species. The oak's preference is for deep, rich, well-drained sandy or clay loam soil but it will tolerate a variety of soil conditions. Its strong early root growth and its deep tap root system allow it to take advantage of harsher conditions than many other species. The Red Oak will tolerate longer periods of water saturation than many other species which is why the Red Oak and Red Maple are predominant along the bottom lands and our flood-prone water courses. There is also a recognized sub-species of Red Oak in the northern part of the province known as the 'Coastal Red Oak'. Another attribute of the Red Oak is its fairly fast rate of growth. Many insects and diseases affect the health of red oak trees. However, they are most damaging when combined with other stressors or when the trees are growing in low, moist areas. Although oaks are prone to a few fungal infestations, they rarely cause a problem that necessitates treatment. Several insects are known to attack oaks including gall producing insects, borers, gypsy moth and forest tent caterpillar. Good care practice will reduce the likelihood or extent of a problem.

### **ROBINA PSEUDOACACIA (BLACK LOCUST)**

The genus name Robinia comes from Jean Robin who first grew the tree in France. *Pseudoacacia* means 'False Acacia' and comes from the similarities between this tree and the Acacia. Black Locust is a rapidly growing deciduous tree that is native to North America. Black Locust trees became very popular in England in the early 1800's after William Cobbett: MP; journalist; and author of the English Gardener, Rural Rides and other works, enthusiastically promoted this tree after a sojourn in

this part of the world. He spent part of his early career in Fredericton, NB as part of the military establishment. The Black Locust is a fast grower and although not long-lived, can reach up to 20 meters in a suitable location. As such, the species is unsuitable for small gardens but there are two cultivars common in our region, 'Purple Robe' and 'Frisia', that top out at 13 meters or less. The 'Purple Robe' cultivar is known for its new purplish foliage and its long pendulous clusters of dark purple flowers. 'Frisia' is a smaller tree with bright yellow-green leaves. Although the Black Locust does not tolerate shade or wet soils, it can survive fairly harsh conditions like drought and is salt tolerant. Black Locust prefers soils that are rich but will grow on poorer soils and actually helps to improve them as it is able to fix nitrogen in the soil. Black Locust has a compound leaf, similar to *Gleditsia* (Honey Locust) although they are different species. Springtime flowers are white to lavender or purple, pendulous and fragrant with a very pleasant scent. The tree is able to spread from underground roots although the species seems more inclined to do so. The leaflets fold together in wet weather and at night. The Black Locust is prone to some fungus and insect infestation but healthy, vigorous trees are seldom affected. Good care practice will reduce the likelihood or extent of a problem.

### **SALIX (WEEPING WILLOW)**

*Salix* is from Latin, meaning willow, whereas willow is from the Old English 'welig', of Germanic origin. *Salix* is a genus of trees and shrubs of the willow family *Salicaceae* which include about 300 species of willows, sallows, and osiers. These deciduous trees and shrubs are found primarily on moist soils in cold and temperate regions of the Northern Hemisphere. The most common tree cultivars used in our region are *Salix alba* 'Tristin' (Golden Weeping Willow) and *Salix babylonica* 'Prairie Cascade' (Weeping Willow). *Salix babylonica* (Babylon Willow or Weeping Willow) is a species of willow native to northern China and introduced centuries ago along the Silk Road to the Middle East and Europe where hybridization with indigenous forms resulted in *Salix alba*. Willows are very cross-fertile and numerous hybrids occur, both naturally and in cultivation. Willow trees are a fast growing shade tree that can reach up to 13-15 meters in width and

height. They prefer full sun and moist soils. The flowers are produced in catkins in the early spring. 'Tristis' (Golden Weeping Willow) is a weeping tree with yellow branches that become reddish-orange in winter. A mature Weeping Willow in a suitable location is a magnificent specimen. Willow roots spread widely and are very aggressive in seeking out moisture so some distance should be provided from any drain system (20-30m). Non-perforated water and sewer lines are resistant to root invasion. Willows may be attacked by several insects such as aphids, borers, assorted caterpillars, beetles and are also susceptible at times to fungi causing willow scab and blight. There appears to be significant variability in susceptibility due in part to the genetic mix from the considerable hybridization that has occurred in this species. Good care practice may reduce the possibility of infestation by these or other pests.

### **SORBUS (MOUNTAIN ASH/ROWAN)**

The Latin name *Sorbus* came into Old English as syrfe from the Latin name sorbus, a root word for 'red or reddish-brown'. Rowan is from Old English read, and is from a Germanic source meaning raud-inan, 'to redden', in regard to the berry colour. The two most common varieties are *Sorbus aucuparia* (European Mountain Ash) native to Eurasia and *Sorbus Americana* (American Mountain Ash) native to North America. Another of this tree's common names is Witchwoode and in the UK and parts of Canada it is known as a Rowan. In some parts of Canada the Mountain Ash is also called Dogberry. In North America it is most frequently known as the Mountain Ash. The name Mountain Ash comes from the similarity of the leaves to the ash tree along with the fact that Rowan trees frequently grow high in the mountains. The Mountain Ash is in fact not an ash tree at all but a member of the rose family (see Fraxinus). As the common name suggests, this is a tree of cool mountain climates that dislikes dry soils and hot, humid summers. This tree is happiest in part-shade conditions, often partially under the canopy of other larger trees. They prefer acidic soil with moist, well-drained humus. It is somewhat intolerant of urban pollution but is a good small tree for home landscapes and is highly ornamental with its long-lasting berries. In suitable conditions it does well in our northern climate. It typically grows to 6-9

meters tall with an open, rounded crown. It is noted for its nice form, small five-petaled white spring flowers and attractive compound, pinnate leaves. Flowers are followed by bright orange-red berries that ripen in late summer and remain on the tree well into fall. The berries are attractive to birds and animals and may be made into jelly. Rowan trees are very strong growing trees and unlikely to suffer from many pests and diseases, especially in our northern climate. They are known to be susceptible to fungi causing cankers, crown gall, powdery mildew and rust as well as insects including borers, aphids, sawfly and scale. Stressed trees are generally more susceptible to attack, especially from canker and borers. Their leaves tend not to be consumed by insects, thereby reducing disease transmission. Good care practice will reduce the occurrence of insect and disease problems although it will not deter deer, who love the leaves of the Rowan.

### **SYRINGA RETICULATA (IVORY SILK LILAC)**

The genus name *Syringa* is Latin from Greek 'syrinx', meaning a pipe. This comes from the use of the plants for making pipes. *Reticulata* is Latin meaning net-veined. Lilac is from Old French lilas, from Arabic lilak and basically refers to a colour. *Syringa reticulata* is also called the Japanese Lilac in reference to its native home in Northern Japan. Some varieties of lilac may reach heights of 5-6 meters under ideal conditions. These are more shrub-like in habit compared to the more tree-like form of *reticulata*, which may attain heights of near 10 meters and widths of 6 meters. Although there are a number of cultivars, the Ivory Silk Lilac is most often used in our region. It forms a graceful, oval shape, is compact and is a very suitable tree for smaller sites. In addition, it is hardy, relatively trouble free and produces large, fragrant, white flowers in June that are quite showy against the dark green leaves. It prefers a well-drained, slightly acidic, highly organic soil but is otherwise quite tolerant. The Ivory Silk Lilac has few insect or disease problems in our region but like other trees, it will respond to good care practice.

### **TILIA (LINDEN)**

Latin Tilia is cognate to Greek ptelea, 'elm tree', ultimately from a Proto Indo-European word ptel-ejā with a meaning of perhaps 'broad-leaved'. Linden is from

Old English lind or linde, cognate to Latin lentus, meaning 'flexible'. There are about 30 species and many cultivars. This is one of the most-loved trees of England, France and Germany. It is called the Lime Tree in England and often called Basswood in Canada and the United States. *Tilia* is a genus of about 30 species of trees native throughout most of the temperate Northern Hemisphere. Although the exact number of species is uncertain as many, if not most of the species will hybridize readily. One of the main differences between the European and American Linden is leaf size. The former has smaller leaves than the latter, whose leaves can grow up to 18cm in length and 12cm in width. A number of species and are found in the nursery trade in our region including: *T. americana*, *T. cordata*, *T. flavescans*, *T. mongolica*, *T. tomentosa* and *T. x europea*. There are a number of cultivars, with the most popular being 'Redmond', 'Greenspire' and 'Glenleven'. They are mostly large, deciduous trees typically reaching 25-40 meters tall. The leaves of all the *Tilia* species are heart-shaped with tiny fruit, resembling peas. The tree produces drooping clusters of yellowish, often fragrant flowers and is an important honey plant for beekeepers. The flowers are also used for herbal teas and herbal medicine. In their youth, Linden trees have a pyramidal shape, though as the tree grows, it develops a more rounded crown. While the tree grows exceptionally well and rapidly in moist, fertile soil, it does tolerate clay soils that have adequate drainage. *Tilia* is classified as a nitrogen-demanding species because it grows poorly on sites deficient in nitrogen. With increasing organic nitrogen supply, growth subsequently increases. The species grows on soils ranging in pH from 5.0 to 7.5 but does better in the less acidic to slightly basic part of this range. The linden is recommended as an ornamental tree when a mass of foliage or a deep shade is desired. They are ideal for blocking wind and for yielding fragrant flowers. Avoid planting near parking lots as their nectar may drip and damage car paint. Lindens are large trees with extensive root systems and should be located in open spaces away from structures. They are prone to aphid infestations although we seldom see a problem here in the northern limit of their range. Otherwise, they rarely have a problem with insects or disease in our region. Young trees are susceptible to girdling by mice and need a preventative shield, especially in winter.

## ULMUS (ELM)

*Ulmus* is from Latin meaning elm tree and elm is from Old English and related to Old German elme, elm from Latin ulmus. Majestic American Elms were among the most popular and recognizable street trees in North American towns and cities due to their rapid growth and tolerance of urban conditions. Their graceful form produced archways over streets such as in Fredericton, NB, which was called “The city of stately elms”. This however, led to extreme overplanting of the species and ultimately produced an unhealthy monoculture of elms that had no resistance to disease and pests. Unfortunately, Dutch Elm Disease (DED), caused by the fungus *Ceratocystis ulmi*, has now wiped out about 95 percent of the American elm population in Eastern Canada and the United States. DED interferes with the circulation of water and nutrients, resulting in wilting symptoms and eventually death. Very few trees may be naturally tolerant to the pathogen.

*Ulmus americana* (American Elm) is also known as white elm, water elm or soft elm and is most common on flats and bottom lands throughout its range but is not restricted to these sites. The American elm grows best on rich, well-drained loams. Soil moisture greatly influences growth. American elm is classed as intermediate in shade tolerance among the eastern hardwoods and like most trees is more tolerant of shade when young. It is an extremely hardy tree that can withstand winter temperatures as low as  $-42^{\circ}\text{C}$ . There are several cultivars available that show high resistance to DED such as *Ulmus japonica* ‘Discovery’, *Ulmus carpinifolia x parvifolia* ‘Frontier’ and *Ulmus americana* ‘Princeton’. There are several other species which are difficult to source in the nursery trade. Unfortunately, the elm is also susceptible to a number of other fungi and many insect pests including the elm beetle and Japanese beetle which are prevalent in our region. Although capable of being a magnificent and stately shade tree on the large size, or a specimen tree, it is most likely a challenge for the serious gardener and will take more care and attention than many other species.

Please refer to the information sections on disease, insect, physiological damage and good care practice found in “[Deciduous Trees – Good Care Practice](#)” also located under the shade tree section of the website.