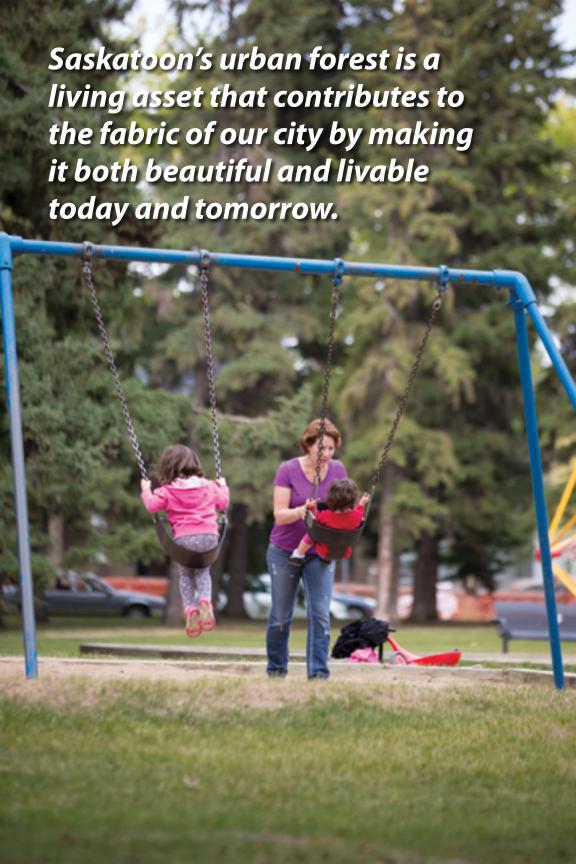




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# Introduction

Trees help to make our communities beautiful and improve our quality of life.

Some benefits trees provide include:

#### **Environmental Benefits**

- Reduce storm water runoff by absorbing and intercepting rainfall, delaying its flow into drainage areas
- Reduce the "heat island"
- Provide essential habitat and corridors for wildlife movement
- Improve air quality by filtering dust and absorbing pollutants

#### Social Benefits

- Create gathering areas and a sense of community
- Reduce stress and improve mental health
- Reduce exposure to UV by providing shade and absorbing up to 95% UV radiation
- · Reduce recovery time after surgery
- Lower blood pressure

#### **Economic Benefits**

- Increase property values as much as 20%
- Attract and maintain business and tourism
- Moderate temperatures and reduce energy needs for heating and cooling



Unfortunately, trees in urban environments are often exposed to harsh conditions. For example:

- · Large areas of pavement reduce a tree's water resources.
- Pesticides and fertilizers required for lawns can cause damage to trees.
- Damage to tree trunks and branches make trees more susceptible to pests and diseases.
- Winter road salts leach into the soil and can restrict a tree's ability to uptake water.
- Many trees are lost to construction activities such as infill housing developments and roadway construction.

You can help ensure Saskatoon's urban forest remains healthy for both your enjoyment and that of future generations by planting trees and maintaining and protecting them through proper tree care.



# **Tree Planting Programs**

### **Boulevard Tree Planting Program**

Urban Forestry is responsible for planting and maintaining trees on boulevards.

### What does the City consider a boulevard?

A boulevard is public land adjacent to private property, such as center medians, the strip of land between the sidewalk and roadway, and the easement at the edge of your property that houses underground utilities and other infrastructure.

### How do I request a boulevard tree?

A boulevard tree request can be submitted in one of three ways:

- Visit <u>saskatoon.ca/treerequest</u> to submit an online form;
- Call Urban Forestry Customer Service at 306-975-2890; or
- Fill out and mail-in the form at the back of this booklet.

*Please note*: A City boulevard must be greater than 3.0m and up-to-grade with topsoil and sod to be considered for a planting site.



### **BOULEVARD TREE SPACING REQUIREMENTS**

- 7m (23') between shade trees
- 6m (20') between ornamental trees
- 7m (23') from curb at intersections
- 3m (10') from street lights
- 3m (10') from alleys, fire hydrants & streetlights
- 7m (23') from front of stop signs
- 3m (10') from old water & sewer lines
- 1m (3') from new water & sewer lines
- 1.5m (5') from driveways & private walkways

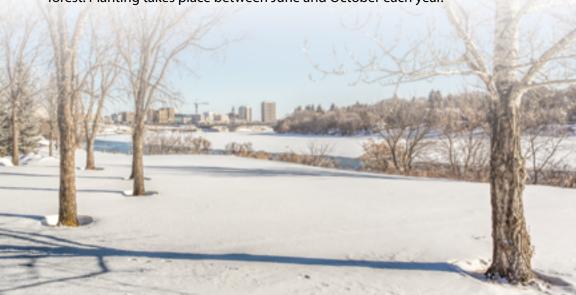


### What happens after a tree request form is submitted?

- All tree planting requests are reviewed and assigned to a Forestry
  Technician within two business days. The Technician will schedule
  a site inspection to determine if there is an appropriate planting
  site. Inspections are done between May and October in the order in
  which the requests are received.
- A notice will be left at your residence or business at the time of inspection advising whether or not a suitable planting site has been identified. When an appropriate planting site is confirmed, a green stake will be placed on the boulevard to mark the area where the tree will be planted. The notice will include the species selected. If there are no underground utility conflicts your request will be placed in a planting queue to be completed by the end of October.
- Tree care information will be left with the homeowner at the time of planting.
- The City is responsible for all pruning maintenance.

### **Urban Reforestation Program**

Urban Forestry proactively selects established neighbourhoods and parks to replace and plant new trees as part of the Urban Reforestation Program. A Forestry Technician chooses appropriate plant sites and tree species that allow for successful establishment and contributes to a sustainable urban forest. Planting takes place between June and October each year.



# **Tree Care**

Proper tree care is critical for the establishment of newly planted trees and beneficial to the health of established trees especially during drought conditions.

# Watering

The amount of water that a tree requires depends on site characteristics, rainfall, soil type and the age, size and species of tree.

In the first three years during a tree's establishment, it is important to keep the root zone moist but not overwatered.

#### How to water a newly planted tree:

- A drip irrigation system works well around the base of the tree, or place a garden hose over the root zone.
- Turn your tap on low and let the water trickle out.
- Sufficient water has been applied when the soil is saturated.
- Keep in mind that tree roots also need oxygen. Allow the surface soil to become dry before the next watering.
- After a few months, expand the watering beyond the root zone to the drip line.
   This will encourage the roots to fan-out into the surrounding soil.
- Do not rely on lawn irrigation (e.g. sprinklers) when it comes to watering your tree.

Example of a drip irrigation system

### How do I know if I am under or over watering the tree?

The symptoms of too much or too little water are similar when it comes to trees. In both cases, water-stressed trees can be more susceptible to insects and disease.

Symptoms that a tree has too little water:

- · Yellowing or wilting leaves.
- · Leaves are scorched on the edges.
- Some trees develop early fall colour and may drop some or all of their leaves prematurely.
- More severe symptoms are a thinning of the canopy, branch dieback or early death.

### Symptoms of too much water:

- Yellowing or wilting leaves.
- Soil that is constantly saturated causes roots to suffocate, die and rot.
- Small leaves, stunted growth and eventual decline of the tree follow.

When the tree has too much water, correct the cause and cut back on watering. Too much water can be caused by:

- · Automatic sprinkler systems
- · Compacted soil
- · High water-table levels
- Weeping tile or sump pump drainage

## **Mulching and Maintaining the Tree Well**

Mulching conserves soil moisture, keeps soil cool, controls weeds and other competing vegetation. The City applies approximately 5-8cm (2-3in) of mulch over the tree's root zone at the time of planting.

### Mulching and tree well tips:

- Keep mulch away from the trunk to avoid bark injury caused by fungi, pests and rodents.
- Mulch helps to control weeds and grass which can compete with tree roots for water and nutrients.
- Keep the tree well free of weeds and grass to protect the tree from damage caused by lawn mowers and weed trimmers.

- Trees planted in low areas, compact soil or clay soil will need adequate oxygen and may require less mulch.
- Keep landscape rocks, landscape fabric and artificial turf away from the tree. These products are not recommended because they change the soil composition to the detriment of the tree.

### **Fertilizers and Herbicides**

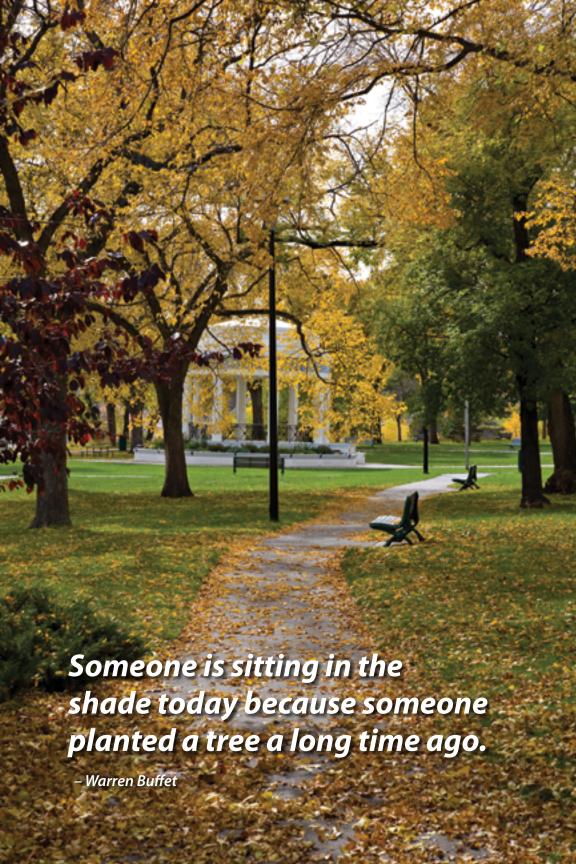
The City does not fertilize trees. Fertilizers can cause trees to produce soft, lush, weak growth that may not harden-off in time for winter. Some fertilizers that are meant for annuals and turf grass are harmful to trees. If applying fertilizer to your lawn or garden, keep it far away from the tree.

Herbicides are also detrimental to trees. Signs and symptoms of herbicide damage appear soon after contact and are easy to identify. Keep herbicides away from the tree's root system, branches, trunk and leaves. Even a small amount of herbicide spray, drift or contaminated water can harm or kill a tree.

### **Long-term Tree Care**

Urban Forestry is responsible for the pruning and protection of all boulevard and park trees in Saskatoon. Neighbourhood boulevard trees are pruned on a seven year cycle by experienced, International Society of Arboriculture (ISA) certified arborists.

If you have a concern about the health or maintenance of a City-owned tree, contact the Urban Forestry Customer Service Desk at 306-975-2890 or visit <u>saskatoon.ca/treeinspection</u> to submit an online request.



# **Tree Species**

This section introduces some of the more common trees Urban Forestry has selected for the Boulevard Tree Planting Program.

A Forestry Technician selects tree species that:

- · are suitable to the intended location;
- · are hardy to our climate;
- · require minimal maintenance; and
- provide natural beauty.

Tree nurseries produce new cultivated tree varieties each year. For the most recent update of tree selections, please visit <a href="mailto:saskatoon.ca/requestatree">saskatoon.ca/requestatree</a>.

### Alder - Alnus

### **Prairie Horizon® Alder**

Alnus hirsuta 'Harbin'

This is a cold hardy tree that will grow in both dry and wet locations. They are fast-growing, have a low canopy and an upright spreading habit. Alders are attractive for their dark green glossy leaves and polished brown-grey bark. Their purple catkins and clusters of small brown cones add winter interest.

Mature height: 12m (40ft)

Spread: 9m (30ft)



### Basswood and Linden - Tilia

Basswoods and Lindens are attractive shade trees that produce fragrant flowers. They are an excellent choice for boulevard planting.

### **American Basswood**

Tilia americana

This attractive large shade tree is easy to maintain and grows at a moderate rate. It is a low-headed pyramidal tree in its youth, becoming more round as it matures. The striking dark green leaves are large and broad, growing up to 20cm (8") on a mature tree. The leaves are beautiful in autumn when they turn vivid yellow. The basswood also produce fragrant yellow flowers in late June.

Mature height: 15m (50ft)

Spread: 8m (26ft)



### Little Leaf Linden

Tilia cordata

This tree is pyramidal in shape when young and becomes more rounded as it ages. It is an excellent shade tree, well-suited for street planting. It produces white to yellow fragrant flowers.

Mature height and spread: varies depending on cultivated varieties.

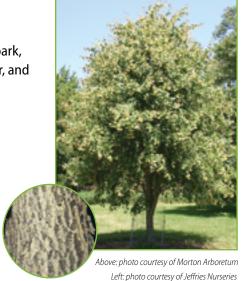
## **Mongolian Linden**

Tilia mongolica

This linden has interesting exfoliating bark, fragrant yellow flowers in early summer, and a golden fall colour.

*Mature height:* 10-12m (35-40ft)

Spread: 8m (26ft)



## Birch - Betula

Birch trees can be identified by the classic white peeling bark that adds aesthetic appeal in the winter months.

## **Paper Birch**

Betula papyrifera

This moderate growing, upright tree makes a valuable landscape feature. The paper-like bark is attractive throughout the year and the leaf colour in the fall is a brilliant yellow. Paper birch is not drought tolerant and requires more water.

Mature height: 12m (40ft)

Spread: 9m (30ft)



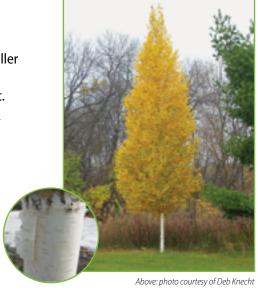
### **Asian White Birch**

Betula platyphylla

This is a narrow tree suitable for smaller yards. It is hardier than paper birch, drought tolerant and insect resistant.

Mature height: 10m (35ft)

Spread: 3m (10ft)



# **Buckeye - Aesculus**

# **Ohio Buckeye**

Aesculus glabra

This is a low headed tree with an upright oval form. It does best when planted in a sheltered location, but can tolerate most urban environmental conditions. Its leaves are dark green and and have an exotic appearance. They may turn red, orange or yellow in the fall. It will produce a large brown nut covered by a prickly husk. There are several mature Ohio buckeye at the Forestry Farm.

Mature height: 6-12m (20-40ft) Spread: 6-12m (20-40ft)



# **Cherry** - *Prunus*



Right: photo courtesy of Anne Elliott

# **Amur Cherry**

Prunus maackii

Amur cherry is a fast growing ornamental tree with attractive copper-orange bark, dark green leaves, and white flowers in the spring.

Mature height and spread: varies depending on cultivated varieties.



# **Ornamental Crabapple - Malus**

An ornamental crabapple is an attractive tree for the landscape. They are appreciated for their beautiful flowers, outstanding fragrance, hardiness and ability to grow in most conditions.

## **Spring Snow Crabapple**

Malus x adstringens 'Spring Snow'

This is an attractive tree that has glossy green foliage and is covered with fragrant white flowers in the spring. It has an oval form and produces little-to-no fruit.

*Mature height:* 6-8m (20-26ft) Spread: 6m (20ft)



# **Rosybloom Crabapple**

Malus x adstringens

This is an outstanding flowering crabapple tree with an oval crown and deep purple leaves. It has delicate rose-pink flowers early in the spring and very small dark red fruit.

Mature height: 4-6m (13-20ft) *Spread*: 3-5m (10-16ft)

# **Purple Spire® Crabapple**

Malus x adstringens 'Jefspire'

This tree has a compact narrow form that is ideal for planting on side boulevards or in small spaces. It has attractive purple foliage and pink flowers followed by edible reddish-purple fruit.

Mature height: 5m (15ft)

Spread: 2m (6ft)



# Lilac – Syringa

## **Japanese Tree Lilac**

Syringa reticulata

This tree features showy plumes of fragrant white flowers in late spring, early summer. It has dark green foilage throughout the season and cherry-like bark.

Mature height: 5-8m (16-26ft) Spread: 4-6m (14-20ft)



# Elm - Ulmus

### **American Elm**

Ulmus americana

American elm is considered a majestic tree that adds a feeling of richness to Saskatoon's downtown and older residential neighbourhoods. It is a high-headed spreading tree with a unique umbrella shape; these characteristics make them ideal for street boulevards and for providing excellent shade.

Due to the threat of Dutch Elm Disease, the Province of Saskatchewan issues a pruning ban between April 1 and August 31, and does not allow elm to be transported or stored as firewood.

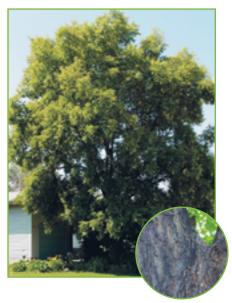
Mature height: 20-30m (66-98ft) Spread: 15-25m (50-82ft)





## Maple - Acer

Maples have a wide range of shapes, textures and colours. In the fall, they can turn a stunning yellow, orange or vibrant red depending on the tree.



# Manitoba Maple (Boxelder)

Acer negundo

This is a fast growing, irregular branched tree that produces seed. It is very hardy and able to withstand difficult urban conditions. The bark is dark brown and furrowed. There are many Manitoba maples in the older neighbourhoods of Saskatoon.

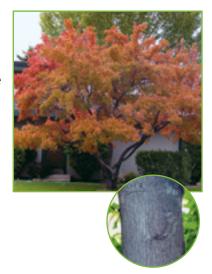
Mature height: 12-15m (40-50ft) Spread: 12-15m (40-50ft)

# **Amur Maple**

Acer ginnala

This small low-headed ornamental tree has dark green three-lobed leaves. The fall foliage can range from orange to an outstanding red, particularly when planted in the full sun. Amur maple produces a two-winged seed that resembles a miniature lobster claw and contrasts nicely with the foliage. It is adaptable to a relatively wide range of soil and pH ranges. Single-stemmed trees are the best form for boulevard use.

Mature height: 3-5m (10-16ft) Spread: 3-5m (10-16ft)



## Hot Wings® Maple

Acer tataricum 'GarAnn'

This attractive maple tree has dark green foilage and showy bright red seeds (samaras). This is a low maintenance maple tree that is considered drought and alkaline tolerant.

Mature height: 7-8m (23-26ft) Spread: 6m (20ft)



# Silver Maple

Acer saccharinum

This attractive oval-shaped tree has many ornamental attributes. Its deeply lobed leaves are light green on top and silvery beneath. The leaves turn brilliant yellow in the fall. This tree is fast growing and prefers a moist site. It is susceptible to die-back in exposed sites or when under moisture stress.

Mature height: 16-20m (52-65ft) Spread: 7-10m (23-35ft)



### Mountain-ash - Sorbus

Mountain-ash have showy white flowers that develop into bright orangered fruits that add aesthetic appeal in the winter months.



# **European Mountain-ash**

Sorbus aucuparia

This oval-shaped tree has dark green compound leaves with showy white flowers in the spring, followed by bright orange-red fruit in the fall. This tree will attract birds and provide interest to the winter landscape. The single-stemmed trees are the most appropriate form for boulevards. The mountain-ash requires well-drained locations.

Mature height: 6-8m (20-26ft) Spread: 4-6m (13-20ft)

## **Showy Mountain-ash**

Sorbus decora

This small ornamental tree is very hardy in our prairie climate but requires a welldrained location. It is more resistant to fire blight than other susceptible species.

*Mature height:* 4-8m (13-26ft) Spread: 4-6m (13-20ft)



### Oak - Quercus

Oaks are long-living stately trees. They can be identified by their unique leaf shape and cork-like bark.



### **Bur Oak**

Quercus macrocarpa

This is an attractive, long-lived shade tree that is ideal for our prairie environment. It has interesting corky bark and lobed leaves that turn an antique yellow in the fall.

*Mature height:* 15-20m (50-65ft) *Spread:* 10m (33ft)

### **Northern Pin Oak**

Quercus ellipsoidalis

This is a long-lived shade tree that is tolerant of alkaline soils. The dark green lobed leaves turn a spectacular red colour in the fall.

Mature height: 18m (60ft)

Spread: 12m (40ft)



# Walnut - Juglans

These trees have unique branching and foliage. Branching begins low on the trunk. Compound leaves with long narrow leaflets give these trees a tropical-like appearance, with leaves turning yellow in the fall. Walnut species need to be planted in a sunny location.

### **Black Walnut**

Juglans nigra

Black walnut is a large shade tree. The leaves are dark green and have a tropicallike appearance. It produces large, round nuts which make this tree more suitable for large open areas.

Mature height: 14m (45ft)

Spread: 9m (30ft)



### Butternut

Juglans cinerea

The butternut tree differs from the black walnut in that it has oblong nuts and the bark is smoother and lighter in colour. It is well adapted to saline soils.

Mature height: 14m (45ft)

Spread: 9m (30ft)





# **Tree Protection**

Whether you are a homeowner wishing to re-landscape or a business owner planning to build near a City-owned tree, you are responsible for providing tree protection measures.

### **Tree Protection Policy**

City of Saskatoon Council Policy C09-011, Trees on City Property, states that trees on City property may not be removed, pruned or destroyed in any way. The City requires residents, contractors and agencies working near City-owned trees to take reasonable precautions to prevent damage to such trees.

Any unauthorized excavation, removal, relocation, pruning, damage (in part or whole) of a City-owned tree is not permitted and may result in a fine or penalty.

A refundable deposit may be required, as a damage holdback, to ensure tree protection is in compliance with the Tree Protection Policy.

### How do I know if a tree is City-owned or private?

Any tree physically located on City property is a City-owned tree protected by the Tree Protection Policy. This includes, but is not limited to parks, the easement at the edge of your property, the boulevard strip between a sidewalk and roadway, center medians and buffers.

To find out if the tree at the edge of your property is City-owned, contact Urban Forestry Customer Service at 306-975-2890.

### How will tree protection affect my building plans?

Tree protection must be taken into account during the planning, design, demolition and construction stages of your build. Areas of consideration include your overall building footprint, all utility installations including water and sewer, driveways, walk-paths, garages and landscaping.

#### What do the tree protection requirements include?

#### Design

- · Limit new building footprints to avoid future conflicts
- · Place utilities including water and sewer three metres from trees
- Place driveways and walk paths three metres from trees
- Place garages at a greater distance from trees to avoid future conflicts
- Do not plan to regrade the surface of the boulevard

#### Demolition

- Follow the tree protection plan provided
- Avoid soil compaction by cushioning the area with six inches of wood mulch
- · Avoid storing materials and equipment under tree canopies
- Avoid any physical damage
- Water root zones frequently

#### Excavation

- Avoid excavation within three metres of a tree
- · Only excavate on one side of a tree
- Cut exposed roots cleanly with a sharp tool and cover with soil immediately
- Water root zones frequently

### **Building Construction**

- · Stay out of the tree protection zone
- Establish a separate staging and parking area for equipment away from the trees
- Avoid soil compaction by cushioning the area with six inches of wood mulch
- Avoid any physical damage
- · Water root zones frequently

### We want to work with you!

Contact Urban Forestry Customer Service at 306-975-2890 to schedule a site meeting before you proceed with any construction near City-owned trees.

For more information about tree protection requirements, visit <u>saskatoon.ca/treeprotection</u>.

# **Tree Pests**

### **Common Aesthetic Pests**

There are many organisms that co-exist with trees. The following are examples of common insects and mites that may inhabit our trees. While they may change the appearance, these pests do not affect the survival of our trees.



**Gall mites** are commonly found on linden and silver maple.

Photo courtesy of Milan Zubrik, Forest Research Institute - Slovakia, buawood.ora



Oak galls are caused by a small wasp and can be found on the twigs and leaves of bur oak.



Ash leaf cone rollers roll the leaves of green, black and mancana ash. The damage is noticeable, but has no affect on the growth or survival of ash trees.



Photo courtesy of Joseph Berger, bugwood.org

**Cankerworms** are a common defoliator in Saskatoon. Generally, they do not affect tree survival. Female cankerworms must walk up the trunk of the tree to lay their eggs. For this reason, banding the trunk is an effective tool to reduce cankerworm populations. Place the bands in the fall after the first frost and remove them in early June.



Forest tent caterpillar is a common defoliator in Saskatoon. This insect feeds on a large number of host trees and is often seen on ash, chokecherry and poplar. Outbreaks of this insect can last up to seven years. Despite occasionally being seen in large numbers, it is rare that forest tent caterpillars cause tree decline.



Maple bugs (or boxelder bugs) are often found clustering on houses and garages, particularly those with southern or western exposure. As the insects cluster, they can stain exterior surfaces or potentially get inside homes. The insect primarily feeds on seeds of the boxelder (Manitoba maple) and ash. The feeding does not harm the tree.

For more information, visit <u>saskatoon.ca/treepests</u>.

### **Serious Pests**

Some pests cause serious damage. Some of the signs and symptoms of serious pests include chewed or peeling bark, dying branches and significant defoliation (more than 50 percent of the entire tree). Tree diversity is one way to reduce the spread of these damaging pests, as many favour specific species of trees.



**Cottony ash psyllid** is a non-native pest that impacts black and mancana ash. Very little is known about this insect. It has been associated with significant loss of black and mancana ash in many communities, including Saskatoon. Management of this insect is very challenging because it spreads quickly and causes rapid decline of susceptible trees.

For more information, visit saskatoon.ca/cottonyashpsyllid.



Photo courtesy of Joseph O'Brien, USDA Forest Service, bugwood.org

**Dutch elm disease** is a serious disease that is difficult to detect and causes elm tree. mortality. The Province of Saskatchewan prohibits:

- tranporting elm wood unless to a designated disposal site (e.g. City of Saskatoon Landfill);
- storing any elm material (e.g. firewood and brush); and
- pruning of elms from April 1 to August 31.



**Emerald ash borer** is a beetle that attacks ash trees. It is spreading rapidly in northeastern North America. It is difficult to detect until the tree is in decline; however, better traps are allowing for earlier detection of the beetle. The City of Saskatoon monitors for the presence of the emerald ash borer.



**Voles and rabbits** feed on bark in winter and can cause enough damage to kill a tree within one season. Voles and rabbits prefer ash but will also feed on oak, apple and cherry trees.

For more information on tree pests visit <u>saskatoon.ca/treepests</u>. To report a serious pest issue, contact Urban Biological Services at 306-975-3300.



#### **KEEP OUR URBAN FOREST GROWING**

# **Order Your FREE Tree Today**

For a list of available tree species or to submit your request online, visit **saskatoon.ca/requestatree** or contact Urban Forestry Customer Service at 306-975-2890

Please fill out	and return this form to request your free boulevard tree.
Homeowners	may list their choice of tree species in order of preference. filled subject to species availability and suitability to the site.
Date	
Telephone	
Homeowner's	s Name
Address	
Second choice	e
Third choice	
•	y of Saskatoon, Urban Forestry O1 Avenue P North, Saskatoon SK S7L 7K6
	9





The best time to plant a tree was twenty years ago.
The second best time is now.

- Chinese proverb





Urban Forestry
1101 Avenue P North, Saskatoon, SK S7L 7K6
306-975-2476

saskatoon.ca/trees