



# Native Woodland and Forest Plantings for businesses and institutions



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One wonderful way to help sustain a healthy environment, while saving money and adding a beautiful feature to any landscape, is by planting native forest or woodland plants. Depending on the size of the site there is potential for an entire forest or small woodland beds. Existing treed areas, flower beds, even lawn can be converted.

Most of Southern Ontario was once covered with magnificent native forests and woodlands with pockets of wetlands, prairies and meadows. The Credit River and nearby urban watersheds were home to several types of forests, including Sugar Maple, Oak-Hickory, Ash and Hemlock among others. Some of the sandier areas contained a rare woodland in the province, Oak Savannah, which is a combination of grassland and Oak woodland.

First Nations carved out small settlements and walking trails. When European settlers arrived in the 1700s, they removed most of the forest for farming, homes, shops, shipbuilding, firewood and other wood products. As human settlement continued, the forest increasingly declined. With recent reforestation, restoration and the growing shift towards ecological landscaping practices, there is a gradual increase in forest cover.

Your business or organization can help restore the forests and this unique natural heritage on your grounds. Every piece of land, large or small, can contribute. Several adjacent pieces of land such as business parks or entire neighbourhoods can help recreate larger forested areas to maximize the benefits.



# Benefits

Whether on larger or smaller sites, native woodland plantings can help sustain and enhance historic native forests and the beautiful native plants that live there, in urban areas and across the watershed. Urban forests are essential for sustaining biodiversity, helping to reduce climate change and urban heat impacts, and improving quality of life for residents.

Woodland plantings create habitat for birds, pollinating insects such as butterflies, and other wildlife. A neighbourhood with many small or large woodlands can help create a connection between nearby natural areas, making it easier for animals and plants to move between their natural habitats.

Other benefits of native woodland plantings include:

- Improvements to stormwater management - enhancing infiltration and helping to reduce flooding
- Improvements to water quantity and quality - using less water, pesticides and fertilizers for maintenance and helping to buffer water features
- Improvements to soil health - decreasing soil compaction, improving natural soil nutrients and replenishing soils
- Reducing air pollution and sequestering carbon
- Using fewer resources and creating fewer greenhouse gases from maintenance activities
- Reducing maintenance costs over the long term
- Reducing costs of replacing annual plants
- Providing shelter from wind and snow in winter and providing shade in summer
- Saving energy and related costs for heating and cooling
- Buffering noise
- Contributing to your company or organization's sustainability goals and reporting
- Some larger sites may be eligible for tax rebates through the provincial MFTIP program
- Greening your public image
- Improving site aesthetics
- Improving the health and productivity of your employees or volunteers
- Providing team-building and educational opportunities for employees
- Creating new green spaces for present and future generations

All things considered, woodland plantings are a great deal for the environment, for people and for your bottom line.



Woodland planting creates privacy on patio, IMAX Corporation, Mississauga.



Greening Corporate Grounds planting, Portico Church, Mississauga.



Canopy layer



photo: Bob Morris



Shrub layer



photo: Bob Morris

Subcanopy layer

Groundcover layer

## A Forest is More Than Trees: Forest Communities

If you explore natural woodlands and forests growing nearby, you will see different types of plants: trees, shrubs and ground vegetation. Together, they make up four layers in a forest:

- Canopy – tallest trees
- Sub-canopy – smaller trees
- Understory – shrubs and tree seedlings
- Ground layer – mosses, grasses, ferns and wildflowers

A woodland or forest planting includes native plants from three or all four of these layers. There are several types of native forests in the Credit River Watershed, each of which have different plants in the layers. To learn more about the specific forest communities and plants of the Credit River and nearby urban watersheds, see Credit Valley Conservation's (CVC) *Native Woodland & Forest Plants for Landscaping*.

Forests also consist of animals that live there or travel through on migration routes, and the air, soil and water that help sustain vegetation and wildlife.

photo: Jon Clayton



photo: Jon Clayton





## Steps to Establishing a Woodland or Forest

Native woodland plantings can be done by internal operations personnel, a hired landscape or ecological firm, or as a team-building activity with staff. Check CVC's *Greening Corporate Grounds* webpage or call *Greening Corporate Grounds* program staff for information on how CVC can help. Plantings can range from large scale to smaller areas that can be expanded over time.

The basic steps are the same regardless of installation method:

1. Understand your site
2. Select preferred forest type(s) and specific plants
3. Consider other design factors
4. Prepare the planting area
5. Installation
6. Maintenance

# 1. Understand Your Site

There are a few types of woodland communities in the Credit River Watershed, based on the ecosystems in which they evolved. For example, forests may have evolved along stream edges, on sandy or rocky beaches along Lake Ontario, on clay soils found in Peel or on sandy pockets in the Oak Ridges moraine. It is best to grow a woodland and associated plants that are suited to the specific site conditions.

A few basic pieces of information are essential for successful native woodland plantings:

- soil type and moisture
- wind
- available space
- shade
- under and above ground infrastructure such as driveways, pipes and hydro lines
- special challenges, such as salt use, major roads, poor air quality
- existing plants, neighbouring plants
- slopes and drainage

Aerial photographs are excellent tools to help understand the history of the site, current layout and how the site relates to nearby natural areas. Aerial photographs can be located through Google Maps, Google Earth, Bing Maps, or the City of Mississauga’s website for land in Mississauga. Look for both current and historic aerial photographs to get a sense of how the site has changed and what features might be restored if still possible.





## Soil Type and Moisture ●

**Test your soil in several locations where you may plant a woodland.**

Main soil-related factors to consider include:

- Soil types
- Moisture levels
- pH (acidity)

Some simple field tests can help to determine soil type and moisture levels. Refer to Canada Mortgage and Housing Corporation's fact sheet on soils noted in resources below. Soil acidity can be assessed by a simple garden centre meter. High acidity is generally a

good place for coniferous or mixed forest. If contaminated soils are suspected, consider hiring a professional to do testing. See CVC's *Ecological Service Providers* list.

Note that soils in many urban and previously farmed or mined environments, such as pits and quarries, have been altered. Soil can be improved to aid with planting and/or start with hardy species that can tolerate current soil conditions. Over time, plantings will help improve soil so that more sensitive species can be added at a later date.



## Wind

**Are there windy areas on your site that could be protected? What is the dominant wind direction?**

Woodlands can help protect buildings from wind and help to reduce energy use. They can also be used to protect parking lots, paths, seating and other spaces. In areas that are excessively windy due to natural or human-created conditions, plant hardy species that do not break easily, such as hardwoods or dense evergreens.



## Slopes and Drainage

### Do you have any slopes or low lying areas on your property?

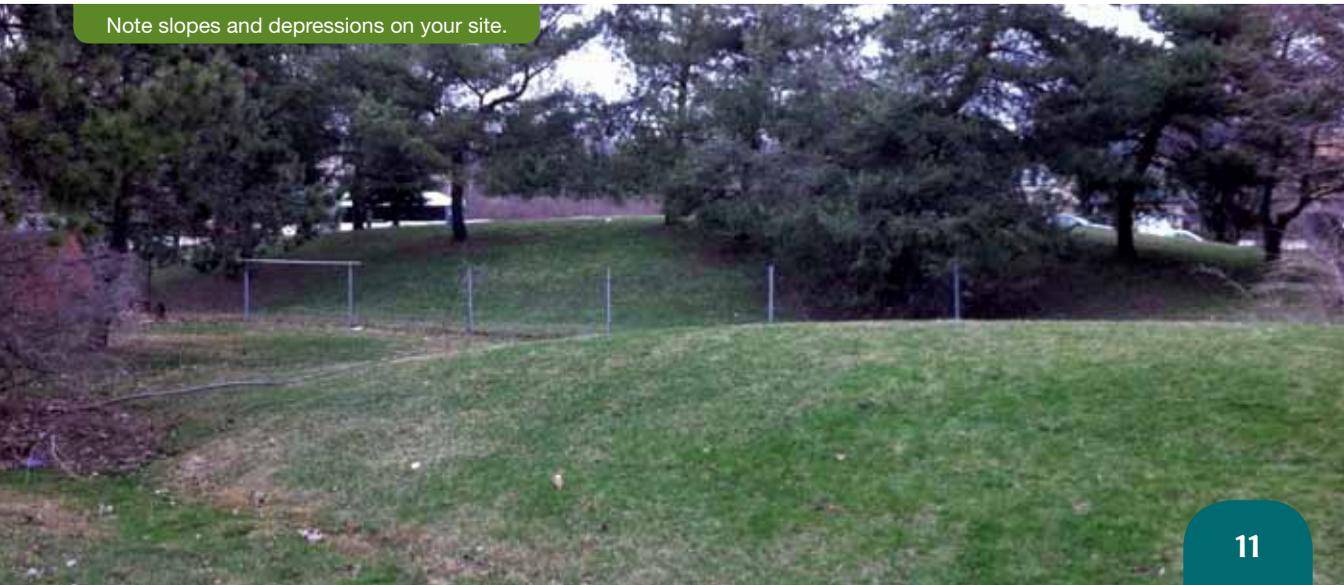
Check for slopes and depressions. Plants can help reduce erosion and make maintenance easier on hard to mow slopes. It is best to select trees and shrubs that are suited to slopes as noted on CVC's *Native Woodland & Forest Plants for Landscaping*.

Also, watch the way water or snow melt drains on your land. Areas that drain more slowly or are seasonally wet may be a great location for a wetter community type such as Red Maple or mixed forest for wet to moist sites.

A wetter area may also be a great location for a stormwater or aquatic habitat project. See CVC's *Ecological Landscaping Resources* webpage for more information.

Finally, check the direction of slopes. North-facing slopes tend to be cooler and windier, east-facing are warmer with morning sun, south-facing tend to be hotter and brighter, and west-facing are windier with evening sun. All of these are suited to woodlands, but species and maintenance requirements will vary. Select species to aid with cooling or wind protection, such as conifers or mixed forest for north and west slopes, and deciduous forest for east and south slopes.

Note slopes and depressions on your site.





## Shade ●

### How much shade does your intended planting location receive throughout the day?

Woodland plants thrive in shade or part shade. How many hours of sunlight does your site get?

0-4 hours = full shade

4-6 hours = part shade

6+ hours = full sun

In areas with full sun, woodland edge species or sun-tolerant trees can be grown initially; more shade-tolerant species can be added as shade increases. You can also consider a native prairie

or meadow planting in sunny locations. See CVC's *Ecological Landscaping Resources* webpage for more information.



## Under and Above Ground Infrastructure ■■■

**Note under and above ground infrastructure to ensure you do not damage utilities or create a safety problem.**

Above ground, make note of overhead wires, utility poles, fences, surrounding buildings and foundations, and other built elements. Plant the right sizes and/or maintain proper distances from these so that trees and shrubs have room to grow.

Underground, there could be gas pipelines, cables, water and sewer connections. To reduce chances of injuries to yourself or damage to underground services, contact

your local municipality before you dig. Also, check with your operations staff to see if there are underground facilities, such as cisterns, cooling tanks or irrigation lines specific to your company.



## Available Space

**Choose areas where you may want to grow or expand a woodland planting.**

Assess how much space there is to work with and what existing elements, such as picnic tables, loading docks or corporate signs, you will have to work around. A few things to consider include:

- What are your organization's future development plans for the site? Will the area remain a woodland for a long time? In the event of unforeseen development, can at least some plants be transplanted if needed?
- Elements that will not likely change often, such as parking lots and main pathways.
- How do people use the space? Do you want a woodland near or far from activities? Would employees like to look out at the woodland from office windows? Would you like a woodland garden to welcome people at the front entrance?
- Consider all uses of the land. For example, do people take a shortcut across the lawn? Plant fuller species to block this, or create a path to allow it.
- Are there unused areas that could be planted?
- Plan for what plants will look like in 20 years.
- Consider other possible environmental projects on the land, such as prairie-meadow plantings or low-impact stormwater features. CVC's *Greening Corporate Grounds Checklist* and program staff can help you identify projects.
- Place large trees a minimum of three metres away from buildings.
- If you are leasing, contact your landlord for permission and possibly assistance with the project. Increasing numbers of leasing firms are now interested in ecological landscaping and restoration.

## digging on your land?

Be careful not to dig where there are underground pipes, cables or wires. A week or more before digging call your municipality at 311 or a general information line. They will identify various utilities that you need to contact. In some cases, a representative from the utility will come to your grounds and mark the locations of utilities. Others noted by your municipality will provide you with instructions as to the best approach for ensuring safety.



## Existing Plants

### Identify existing plants.

Take note of any existing native plants or plant communities on your site. Existing woodlands, tree groupings or shrub beds may be excellent places to start expanding your native plantings. Native species that are thriving on your site are also a good clue as to what plants might work best.

Check also for existing native plants or plant communities on adjacent sites, such as a neighbour's woodland or a publicly owned forest. If plants are thriving and site conditions are similar, consider complementing the feature

with a similar community type. Many small spaces together can help create larger habitats.

Look also for other natural features such as wetlands, streams, or shorelines on your site or adjacent sites. You can help protect these features by planting a woodland buffer along the edges.

In addition, note any non-native plants on your site. Some non-native species are relatively harmless, and you can choose to keep them or remove them. It is best to remove any invasive plants and cultivars of native plants. For information about invasive plants in this area, see the Invasives section of Watershed Science on CVC's website. Cultivars are native plants that are genetically altered for specific traits such as larger flowers. They can cross breed with native plants and weaken their adaptations to local conditions so are generally not recommended. You may want to remove unwanted plants all at once or gradually as your native woodland evolves. Refer also to the discussion below on selecting your community.

Goutweed is a common, aggressive invasive plant that is difficult to eliminate and can escape into nearby woodlands and forests, displacing native groundcovers.



Avoid using toxic herbicides to kill unwanted vegetation. There is a province-wide ban on cosmetic pesticides in Ontario. Although they can be used by qualified applicators to remove some particularly harmful pests, hand pulling weeds and other more natural methods of dealing with pests are preferred. Pesticides can kill healthy soil bacteria and nutrients, pollute the air and water, and harm desirable insects and other fauna such as pets, frogs and birds. Some are harmful to human health. If you have a large site that is full of invasives, you might consider a one-time application of a low toxicity herbicide, as hand removal can become onerous. To ensure invasive plants do not re-colonize, replant or seed with natives as soon as the herbicide is no longer active. For more information on non-toxic pest management see the References and Additional Resources section.



### Special Challenges



**For example: road salt, compaction, pollutants.**

Plants living in cities, or beside roads or some industries, may face some added stresses.

**Salt** applied to roads and sidewalks in winter can have negative affects on plants, shrubs and trees. Avoid planting salt-sensitive plants in areas where road salt is sprayed. Look for a more environmentally-friendly alternative to salt and use it sparingly on driveways, parking areas and walkways. Permeable paving also helps reduce the need for de-icing. Also, plant salt tolerant, hardy plants where snow will be piled in winter.

**Compaction.** Avoid excessive foot or vehicle traffic through the woodland. Loosen soil with a pitchfork occasionally if needed. Keeping soil relatively loose and aerated will help sustain plant health.

**Pollution** from vehicle emissions or some industries can contaminate the plants' air and water. Avoid planting sensitive plants right next to areas with excessive vehicle exhaust or other pollutants. Work with hardy plants in these areas. There is very little published information on plants and the impact of emissions, but you can ask your plant supplier for recommendations. Consider developing a pollution prevention plan to reduce pollutants on your property. For more information, see the Pollution Prevention section in Low Impact Development on CVC's website.



● **Soil Type and Moisture** Test your soil in several locations where you may plant a woodland.

↙ **Wind** Are there windy areas on your site that could be protected? What is the dominant wind direction?

..... **Slopes and Drainage** Do you have any slopes or low lying areas on your property?

● **Shade** How much shade does your intended planting location receive throughout the day?

--- **Infrastructure** Note under and above ground infrastructure to ensure you do not damage utilities or create a safety problem.

○ **Available Space** Choose areas where you may want to grow or expand a woodland planting.

🌿 **Existing Plants** Identify existing plants.

○ **Special Challenges** For example: road salt, compaction, pollutants.

Careful site assessment can help you produce a plan that works for the site, such as the initial *Greening Corporate Grounds* site plan for Teck Metals, Mississauga.



### PHASE 1

-  woodland planting
-  formal native species planting
-  enhance with native plants

### PHASE 2

-  woodland planting
-  prairie planting
-  enhance with native plants

### PHASE 3

-  woodland planting
-  low maintenance lawn
-  formal planting
-  permeable paving
-  enhance with native plants



Staghorn Sumach

## 2. Select the Forest Type(s) and Specific Plants

You can discover what grows naturally in the local area by exploring local remnant natural areas. Other local resources include:

- The Plants, Animals & Communities section in Watershed Science on CVC's website
- CVC's Ecological Landscaping Resources on CVC's website
- CVC's *Greening Corporate Grounds Program* (see CVC's website for contact information)
- Mississauga *Natural Areas Survey* on Mississauga's website
- If outside Mississauga, check with the local municipal Parks Department or naturalist club for added resources in your area

In many urban areas there is a mix of native and non-native species in remnant woodlands. Non-natives generally migrated from farms, gardens or landscaping, or were accidentally introduced via international travel. A true native planting will only include native species but can include any “friendly” non-native plants. Do not plant any invasives or cultivars of native plants.

After selecting the forest type(s) that are suited to the area and your site, refer to CVC's *Native Woodland & Forest Plants for Landscaping* for some species to grow. Select a mix of trees, shrubs and ground layer plants. In some locations, more than one forest type may be suitable, depending on size, topography, soil types and other factors noted above. For example, the site may support a wetter riparian forest, an upland Sugar Maple forest and an Oak forest.



Purple-flowering Raspberry



Wild Ginger

Choose plants that will provide interest and colour through the seasons, such as Staghorn Sumach for vibrant fall colour, Wild Ginger for attractive summer foliage, or Purple-Flowering Raspberry for showy summer blooms.

Although all native plantings will provide habitat for fauna, plant a few species that produce especially attractive food or shelter for birds, butterflies or other special fauna of your choice. Refer to CVC's *Ecological Landscaping Resources* webpage for more information. Nurseries that specialize in native plants can also help select suitable plants. Refer to *Native Plant Nurseries and Seed Sources* on CVC's website.

## planting rare species

Special care should be taken when considering planting rare species. If suitable, it is good to include some locally or regionally rare plants to sustain these plants in this area. Using rare plants sourced from distant locations can lead to cross-breeding and weakening of local populations that are adapted to the local environment. When selecting rare plants, purchase plants from a nursery that provides regionally sourced materials as noted on CVC's *Native Plant Nurseries and Seed Sources* list. If working with provincially or nationally rare plants, you are legally required to contact your local Ministry of Natural Resources office. If your project is part of a permit application, more common native plants are required, as permit approval staff are not able to verify sources of rare plants.

### 3. Other Design Considerations

Other considerations when designing the site include:

- If the space is not already shady, shade can be created relatively quickly with a trellis, fence or arbour, or wait until new trees and shrubs grow before planting species that require shade.
- For safety reasons, avoid softwood trees, such as willows and Manitoba maple (a soft hardwood), directly beside buildings, trails and other built structures.
- Also for safety purposes, consider leaving open sight lines in some areas. Low-growing shrubs and ground flora combined with tall deciduous trees is a good option for these areas.
- Consider placing wet-moist woodland plantings near disconnected downspouts for “automatic” watering. To avoid flooding in high volume rainfalls, be careful to direct water away from foundations or other features, such as walkways. You can also create a more designed woodland “rain garden” in these areas, for added stormwater benefits.
- Plant a full ground cover layer for a more natural look, or intersperse plants with mulch for a “neater” appearance.

#### make a good green impression!

You can help dispel the idea that native plantings are “messy” and promote them as naturally beautiful alternatives to more manicured spaces by following a few simple guidelines:

- **Control the spread of invasive species and noxious weeds** - Remove undesirable plants by hand or with equipment, pulling all root and root pieces. Check with your municipality to see if there is a noxious weed by-law with a list of noxious weeds that must be removed.
- **Maintain a neat edge** - Mow a strip, or use decorative stone mulch, permeable bricks, low-growing native ground covers or small shrubs along edges of planted areas to frame the site.
- **Make the area look designed and inviting** - Create added visual appeal with large rocks, a bench, or a garden sculpture.
- **Do not block street or parking lot views** - Ensure that plants do not create a safety hazard for vehicles or pedestrians. Prune or thin as needed.
- **Talk to employees and neighbours** - Explain to staff, colleagues and neighbouring businesses what is happening to the site, including the many benefits.

To help keep the woodland attractive and safe over time, see more tips in the Maintenance section.

- Woodlands can provide a sense of separation. For example, place your woodland between a parking lot and a building (while ensuring that site lines for safety and security are maintained), or use it as a buffer from neighbouring properties.
- Create privacy or hide fences and other less attractive parts of the site with dense shrubs or small trees.
- A path or seating area will encourage employees to enjoy the woodland.
- If encroachment, trampling or trespassing is an issue, consider extra dense plantings or installing a fence along the woodland edge.
- Place garbage and recycling bins near areas of high use, such as lunch areas or paths.
- Consider other site furniture or artistic features, such as benches, picnic tables or sculptures.

Woodlands are one of several possible outdoor environmental projects. If you wish to join CVC's *Greening Corporate Grounds Program*, CVC staff will work with you on our site checklist to determine what projects interest you and where woodlands would work best.

## cost considerations

Determining whether you want to design and implement your own ecological site or hire someone to do it for you will depend on available personnel, time, budget, size of the site and desired result. For many corporate or institutional sites, some of the work can be done by existing operations staff or landscape contractors, willing employees or volunteers. CVC's *Greening Corporate Grounds Program* can provide advice on site conditions, a concept plan (as opposed to a detailed plan), a plant list, and advice on installation and maintenance. If you choose to work with your employees or volunteers, CVC will also help you coordinate planting events. Alternatively, you can hire professionals to aid with planning and/or installation. CVC's *Greening Corporate Grounds Program* will still provide you with advice on site conditions, a concept plan, and advice on plants, installation and maintenance.

A woodland can be installed in stages or all at once, depending on budget and site size. The main costs of planting will be plants, possibly site preparation (depending on soil conditions), mulch if used, and personnel. Plantings will require the most maintenance and related costs for the first two to three years. Once established, native woodland plantings will require less maintenance and expenses than lawns, non-native plants and annual beds.

For various environmentally friendly landscape designers, contractors and consultants refer to CVC's *Ecological Service Providers* list noted in resources below.

## 4. Prepare the Planting Area

As noted in the infrastructure section above, check with the relevant municipality and your organization's operations staff before digging.

There are seven recommended ways to prepare a planting bed:

- **Cutting:** Remove lawn using a shovel, cutting horizontally. Remove all visible root pieces. Some topsoil may need to be added; select the best soil type for your chosen plant community. Plant into the new soil.
- **Smothering:** Cover the lawn using several layers of wet newspaper or biodegradable plastic landscaping fabric and cover with 10-15 cm of topsoil. Plant into this new soil. Roots of new plants will break through the fabric or newspaper. For more deeply rooted plants, cut the fabric or paper only where planting.
- **Tilling:** For larger sites, tilling can be used but there will likely be more “weeds” for the first two to three years compared with other approaches. To preserve topsoil, shallow tilling is preferable to deep tilling.
- **Scarifying:** This method loosens soils while aiding with weed removal without turning soils over. It can be done with a scarifier, a tool available at landscape equipment sales or rental firms, or by hand with a rake or pitchfork. Tines go into the ground, loosen the soils and can in part pick up weeds. Pull any remaining visible weeds and roots. Follow-up with overseeding or planting.
- **Solarizing:** Cover lawn using thick black plastic. Leave on for a full season. Most but not all vegetation will be overheated and die. Some removal of more persistent weeds will still be needed.
- **Pit and Mound:** For larger sites, use a bulldozer to create varied micro-topography known as pits and mounds. This is a relatively new and very successful approach to preparing sites for forest plantings. The pits and mounds are intended to emulate the micro-topography of forest floors, and are known to speed up the creation of topsoil and diverse habitats. Cut various sized pits 15-20 cm in depth and mound soil beside pits.
- **Direct Planting:** Plant directly into lawn or fields. It is best to plant relatively close together to shade out unwanted grasses or “weeds” more quickly. To diversify the ground layer, plant plugs or mow and over-seed with native plants. Like tilling, this method may result in more “weeds” and more maintenance for the first two to three years.

Regardless of the selected method, extra weeding will be necessary for a year or two until new vegetation is established and lawn or other former vegetation seeds and roots are gone.

Smothering with landscape fabric at Fielding Chemical Technologies, Mississauga.



The addition of organic matter may or may not be desirable, depending on soil and plant selection. Some plants thrive in sandy or clay soils while others require improved nutrients, moisture and/or drainage provided by organic matter. Plants themselves will also help improve soil conditions over time. If appropriate, work in compost or decomposing leaves to a depth of 10-15 cm. When planting beneath existing trees, avoid damaging tree roots and do not bury the root crown with any soil additions or mulch.

## 5. Plant Installation

**Sourcing** - Purchase plants from a native plant nursery that provides locally sourced seeds and plants. Plants will flourish if sourced locally because of similarities with soil and weather conditions. Purchasing locally sourced plants also contributes to restoring local native biodiversity. Watch for plants available in some nurseries and garden centres that are labelled “native” but come from far away, are native to other regions of Canada but not to the Credit River area, or are cultivars of natives.

**Seeding and/or Planting** - You can combine seeding of ground layer plants with planting woody plants, or only work with plants. Seeding in a ground layer will be less expensive and can help reduce weeds, but it will take a little longer to establish. Trees and shrubs planted as seeds take a long time to grow. If planting woody seeds, the seeds and seedlings may need to be protected from squirrels and other fauna with small wire cages until the seedlings are established.

**Timing** - May to mid-June is the best time to plant because temperatures are right and rainfall is usually abundant. Mid-September to late-October is also a good time to plant but some trees may not do as well during this period. Refer to CVC’s *Native Woodland & Forest Plants for Landscaping* for species that are more sensitive to fall planting. Planting can be done in summer, but it is not the preferred time as plants will likely require too much water. Bare root plants are best planted in early spring or late fall when they are dormant.

Seeding is best done in late-October to November. Seed will lie dormant until spring and will start to germinate with spring thaw. Seeding can be done in spring provided seeds are pre-stratified (ask your supplier). Seeding in summer is not recommended as seeds and seedlings will be too heat stressed.

**Spacing** - Space trees one to three metres apart depending on the anticipated size of the plant. Shrubs can be spaced one-half to one metre, and ground layer spacing will generally be at 15-30 cm. Before planting, set plants out where they will be planted. Then adjust the plants according to their spacing requirements and your preferences. Use tree guards to avoid rodent damage.

**Planting and Immediate Care** - For instructions on how to plant trees and shrubs refer to *How to Plant a Potted Tree or Shrub* on CVC’s website. Apply mulch over new planting beds to help retain moisture, reduce weed growth and insulate plants from seasonal extremes. Use 10 to 15 cm of mulch around the base of trees and shrubs in a 45 cm diameter circle. To avoid mold and to allow water to freely travel to roots, keep the mulch at least 10 cm away from the base of trees and shrubs. Mulch mats can also be used. Do not apply mulch over seeds as it will bury the seeds. Apply only a thin straw mulch blanket if needed to retain seeds on a slope. As the garden matures, falling leaves will provide natural mulch.

Immediately after planting, deeply water at the base of the plant using a slow to moderate shower to avoid washing away mulch or soil.

If seeding, follow nursery guidelines for volume of seed and planting instructions. Most herbaceous seeds are best mixed with light soil and gently raked into the ground. Gently press seeds into contact with soil, being careful not to crush seeds or compact the soil. If seeding in the spring, water with a light mist until the soil is moist. Water lightly daily, unless there is rain, until the seeds germinate.

With increasingly erratic weather due to climate change, some plants or seedlings may be lost to untimely heat waves, frost, droughts or floods. Some normal dieback of trees and shrubs also occurs as they adapt to being moved. Before diagnosing plants as dead, check just under bark and/or at the root crown to see if there is any living tissue. If there is living tissue, prune dead branches and plants will generally revive over a season. Replace lost plants with new plants.

Greening Corporate Grounds fall planting, Oxford Properties, Mississauga.



## 6. Maintenance

Depending on size and species, it can take two to three years for woody plants to become fully established. Keep new plantings moist for the first few weeks and after that water regularly during dry periods until established. Use water from rain barrels or a cistern to help to conserve water. For irrigation systems, sensors and timers can reduce excess water use. Provide enough water to keep deep roots moist. Trees and shrubs need more water than herbaceous plants.

Remove weeds regularly. Pull weeds out by hand or with weed removal equipment, ensuring the whole root is removed but keeping soil disturbance to a minimum. This is most easily accomplished after a rainfall when soil is moist.

If mulch is used, top up as necessary to keep moisture in and weeds out. Once canopy closure has occurred, mulching should not be necessary. Allow leaves to remain on the ground in fall as they provide nutrients and help rebuild topsoil. Leaving dead wood to decay is also beneficial in areas where it won't interfere with human safety or access.

As plants become established, the need to weed will decrease. If there are invasive plants growing nearby, you may need to remove those from the site regularly. Once established, watering will only be needed during drought if plants are showing signs of drying or heat stress.

Prune sparingly and watch for particularly damaging insects or diseases. It is best to use non-toxic methods to treat diseases or insects whenever possible.

Plants will naturally start to spread and new native plants may appear. These new additions can be controlled or left to grow. Consider over-seeding or infill planting in gaps once the woodland has become more established.

For more details on long-term maintenance requirements see CVC's *Woodland Planting After-care Guidelines*. Ecological landscape maintenance guidelines can be further developed with internal operations staff or landscape firms. Refer to CVC's *Ecological Service Providers* list for ecological maintenance providers and related services.

Sit back and enjoy a wonderful new habitat. Watch as others also dig in and help our cities gradually grow greener.

For information or to join the *Greening Corporate Grounds Program* contact CVC's *Greening Corporate Grounds Coordinator*. The program is available only in Peel Region at this time. Refer to CVC and Partners in Project Green websites listed in the Resources section.

# References and Additional Resources

Credit Valley Conservation website [www.creditvalleyca.ca](http://www.creditvalleyca.ca)

- Greening Corporate Grounds Program [www.creditvalleyca.ca/gcg](http://www.creditvalleyca.ca/gcg)
- Ecological Landscaping Resources [www.creditvalleyca.ca/landscaping](http://www.creditvalleyca.ca/landscaping)
- Plants, Animals and Communities [www.creditvalleyca.ca/plants-animals-communities](http://www.creditvalleyca.ca/plants-animals-communities)
- *Ecological Service Providers (pdf)* [www.creditvalleyca.ca/ecoproviders](http://www.creditvalleyca.ca/ecoproviders)
- *Native Woodland & Forest Plants for Landscaping (pdf)* [www.creditvalleyca.ca/woodlandplants](http://www.creditvalleyca.ca/woodlandplants)
- *Native Plant Nurseries and Seed Sources (pdf)* [www.creditvalleyca.ca/nurseries](http://www.creditvalleyca.ca/nurseries)
- *How to Plant a Potted Tree or Shrub (pdf)* [www.creditvalleyca.ca/howtoplant](http://www.creditvalleyca.ca/howtoplant)
- *Woodland Planting After-care Guidelines (pdf)* [www.creditvalleyca.ca/aftercare-woodland](http://www.creditvalleyca.ca/aftercare-woodland)
- *The Most Unwanted Invasive Garden Plants (pdf)* [www.creditvalleyca.ca/unwanted-invasive-garden-plants](http://www.creditvalleyca.ca/unwanted-invasive-garden-plants)
- Pollution Prevention [www.creditvalleyca.ca/pollution-prevention](http://www.creditvalleyca.ca/pollution-prevention)

City of Mississauga website. *Living Green Master Plan; Natural Areas Survey; Urban Forestry* [www.mississauga.ca](http://www.mississauga.ca)

City of Brampton website. *Brampton Grow Green; Trees, Plants and Flowers, Pests and Disease* [www.brampton.ca](http://www.brampton.ca)

Region of Peel website. *Peel Climate Change Strategy; Peel Region Urban Forest Strategy; Water Smart Peel* [www.peelregion.ca](http://www.peelregion.ca)

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## Organizations

Canadian Business and Biodiversity Council. [www.businessbiodiversity.ca](http://www.businessbiodiversity.ca)

Environment Canada. [www.ec.gc.ca](http://www.ec.gc.ca)

Green Infrastructure Ontario Coalition. [www.greeninfrastructureontario.org](http://www.greeninfrastructureontario.org)

Landscape Ontario. [www.horttrades.com](http://www.horttrades.com)

Ontario Forestry Association. [www.oforest.ca](http://www.oforest.ca)

Organic Landscape Association. [www.organiclandscape.org](http://www.organiclandscape.org)

Ontario Ministry of Environment. [www.ene.gov.on.ca](http://www.ene.gov.on.ca)

Ontario Ministry of Natural Resources. [www.mnr.gov.on.ca](http://www.mnr.gov.on.ca)

Partners in Project Green. [www.partnersinprojectgreen.com](http://www.partnersinprojectgreen.com)

Society for Ecological Restoration Ontario. [www.serontario.org](http://www.serontario.org)

Trees Ontario. [www.treesontario.ca](http://www.treesontario.ca)

This guide was adapted from Daigle and Havinga, *Restoring Nature's Place* - see full reference above.

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CVC's Greening Corporate Grounds is now offered as an initiative of Partners in Project Green.

