



# Native Woodland Gardens for homes



## **contents**

- 3** Native Woodland Gardens
- 4** Benefits
- 6** A Forest is More Than Trees: Forest Communities
- 8** Steps to Establishing a Woodland Garden
  - 9** - Know Your Yard
  - 16** - Select Your Community and Your Plants
  - 18** - Other Design Considerations
  - 19** - Prepare Your Garden Area
  - 20** - Installation
  - 22** - Maintenance
- 23** References and Added Resources

# Native Woodland Gardens

One wonderful way to help sustain a healthy environment while adding a beautiful feature to your home is by growing a small forest or woodland garden. You can start with any situation — existing trees, flower beds, even lawn can be converted.

Most of Southern Ontario was once covered in 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, among others, sugar maple, oak-hickory, ash and hemlock. Some of the sandier areas contained a rare community in the province, oak savannah.

First Nations carved out small settlements and walking trails. When Europeans arrived in the late 1700s, they deforested much of the area for farming, buildings, shipbuilding, firewood and other wood products. As human settlement increased, the forests continued to decline. With recent reforestation, restoration and ecological landscaping efforts, we are slowly starting to see an increase in forest cover.

You can help sustain and restore our forests and our unique natural heritage in your home landscape. Every piece of land, large or small, can contribute!

photo: Green Insight

# Benefits

Woodland gardens can help enhance the urban forest and forest cover across the watershed. Urban forests are essential for helping to reduce climate change and urban heat. They can also provide shelter from wind and snow in winter.

Woodland gardens help sustain and enhance the remaining pockets of historic forest and the beautiful native plants that live there, both of which are diminishing in our watershed and across the province.

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

Other benefits to you and the wider community include:

- Improved air, soil and water quality
- Improved water quantity, by helping water soak into the ground and reducing the need for watering
- Reduced heating and air conditioning costs, and related use of energy and other natural resources
- Reduced maintenance costs, time, equipment and noise pollution once the garden is established
- Less costly than replacing annuals every year

A woodland garden provides an attractive natural alternative to lawn and standard garden beds, and can even be grown on rooftops or balconies. A woodland garden can be a welcome green oasis for you, your family and your friends.







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 the natural woodlands and forests growing nearby, you will note different types of plants: trees, shrubs and ground vegetation. Together, they make up the four layers in a woodland:

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

A woodland garden 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 the animals that live there or travel through on migration routes, and the air, soil and water that help sustain vegetation and wildlife.





## Steps to Establishing a Woodland Garden

For a hobby gardener or naturalist, establishing and maintaining a native woodland garden will likely be a pleasurable experience. Those who prefer minimal gardening can start small and build up the garden over time. Some may prefer to hire an ecological landscaping or gardening firm to help out.

The basic steps are the same regardless of how or what you choose to install:

1. Understand your site (Know Your Yard)
2. Select your preferred community and specific plants
3. Consider other design factors
4. Prepare your garden area
5. Install your garden
6. Maintain your garden

## 1. Know Your Yard

There are a few types of woodlands and associated plants in our 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 the clay soils of the Peel plain or on sandy pockets in the Oak Ridges Moraine. It is best to grow a woodland and associated plants that are suited to your site conditions.

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



### Soil Type and Moisture ●

**Dig down to check your soil in several locations in your yard where you may plant a woodland.**

The main soil-related factors to consider include:

- Soil types
- Moisture levels
- Ph (acidity)

What kind of soil do you have: sand, clay, loam, or a mix?

Some simple field tests can help you determine your soil type and moisture levels. Refer to CMHC's *Know Your Soils* fact sheet (see references). Ph can be assessed by a simple garden centre meter. Low Ph is a good place for coniferous or mixed forest.

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



## 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 yard get?

0-4 hours = full shade

4-6 hours = part shade

6+ hours = full sun

Shade from existing trees can create ideal conditions for woodland plantings. If some of your yard gets full sun you can grow woodland edge species, grow a full woodland garden over time as it starts to get shadier, or consider a native prairie or meadow garden in that location. See CVC's *Ecological Landscaping Resources* for more information.



## Wind ↘

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

Woodland gardens can help protect your home from wind and help you reduce energy use. In excessively windy areas, plant hardy species that do not break easily such as hardwoods and dense evergreens.



## Existing Plants



**Take note of any existing native and non-native plants on your site.**

An existing tree or shrub bed may be an excellent place to start. Native plants that are thriving on your site are also a good clue as to what might work best.

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 a list of invasives, see CVC's *Most Unwanted Invasive*

**Garden Plants.** Cultivars are native plants that genetically are altered for specific traits such as larger flowers. Cultivars can cross breed with native plants and weaken their adaptations to local conditions so are generally not recommended. You can remove all unwanted plants at once, or gradually as your native woodland garden evolves.

Check also for existing native plants or plant communities on adjacent sites, such as a neighbour's woodland garden or a public forest. If the plants are thriving and site conditions are similar, you may want to complement the feature with a similar community type. Many small spaces together can help create larger habitats. Refer also to the discussion on selecting your community in Step 2.

Do not use toxic herbicides to kill unwanted vegetation. There is a province-wide ban on the use of 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, harm desirable insects and other animals, such as pets, frogs and birds. Some are harmful to human health. See the resources section on page 23 for more information.



## Slopes and Drainage

**Do you have any slopes or low-lying areas in your yard?**

Check for slopes and depressions. Plants can help reduce erosion and make maintenance of those hard-to-mow slopes easier. It is best to select plants that are suited to slopes as noted on CVC's *Native Woodland & Forest Plants for Landscaping*. Ensure that the plants you select are also suited to the direction of the sun and wind.

Also, watch the way water or snow melt drains in your yard. 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-moist sites.



## Infrastructure

**Note under- and above-ground infrastructure to ensure you do not do any damage 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 infrastructure so that your trees and shrubs have plenty of room to grow.

Underground, there may be gas pipelines, cables, water and sewer connections. To

reduce the possibility of injury to yourself or damage to underground services, contact your municipality before you dig.



## Available Space

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

Assess how much space you have to work with and what existing elements, such as a garden shed or deck, you have to work around.

A few things to consider include:

- Elements you will not likely change such as your driveway and main pathways.
  - Are there unused areas in your yard where you could plant?
- What do you do in your yard? Do you want your woodland near or far from these activities?
  - Would you like to look out at your woodland from your deck or have it welcome people at the front of your house or both?
  - Consider all uses of your site. For example, do people take a shortcut across your yard? Plant taller species to block this, or create a path to allow it.
  - Remember that your trees and shrubs will grow much larger. Plan for what they will look like in 20 years.
  - Place large trees a minimum of 3 metres away from your house.

## digging in your yard?

Be careful not to dig where you could hit underground pipes, cables or wires. A week or more before you plan to dig, call your municipality at 311 or a general information line. They will identify the various utilities you need to call. In some cases, a representative will come to your house and mark the locations of the utilities. In other cases, service providers will give you instructions about the best approach for ensuring safety.



## Special Challenges

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

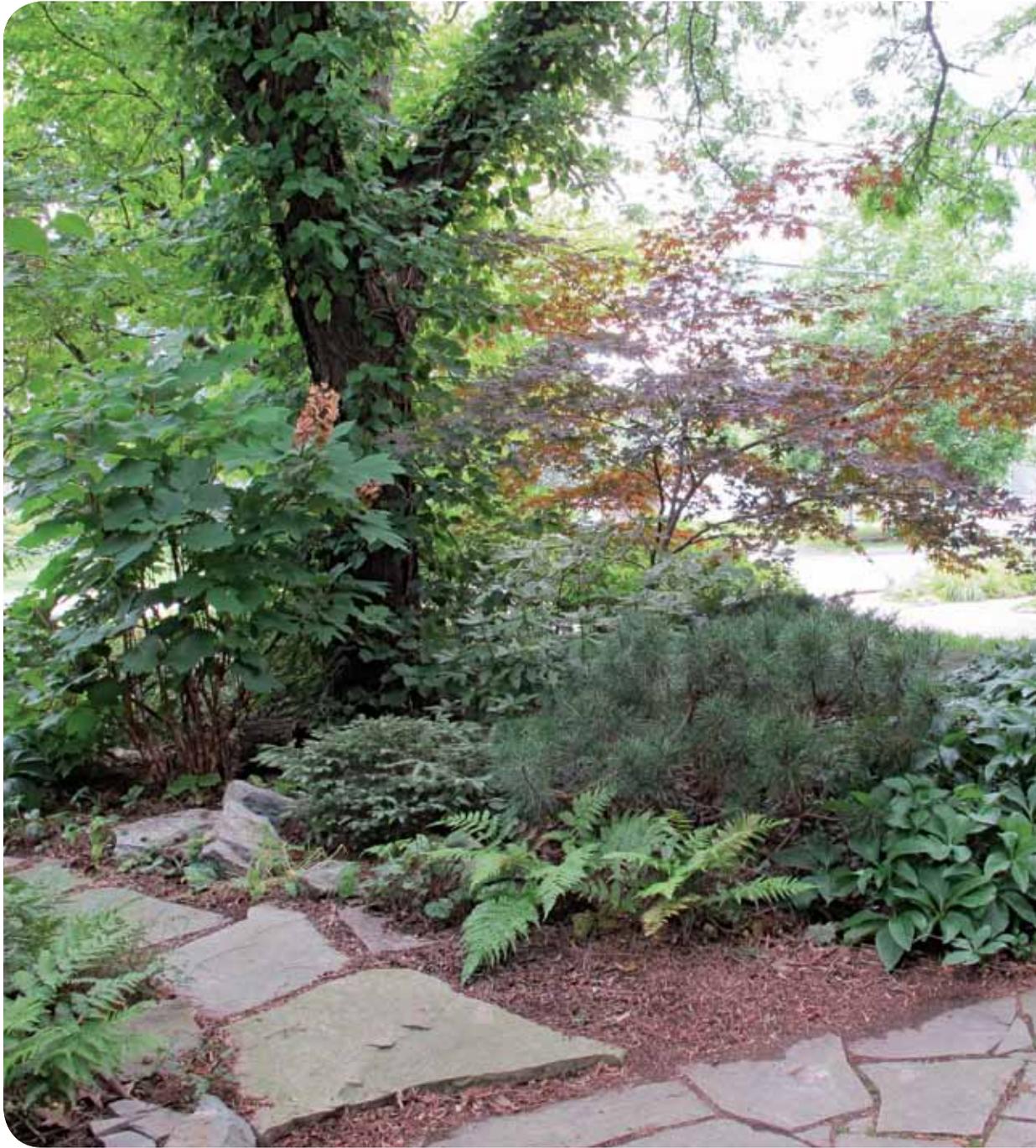
Plants living in cities, or beside roads or some industries, may face added stresses.

**Compaction.** Avoid excessive foot or vehicle traffic through the garden. Loosen soil with a pitchfork or other tool occasionally if needed. Keep your soil relatively loose and aerated to help sustain plant health.

**De-icing Salt.** Salt applied to roads and sidewalks in winter can have negative effects on your garden. Avoid planting salt-sensitive

plants in areas where road salt is sprayed. Look for a more environmentally-friendly alternative, such as sand, and use it sparingly on your own driveway and walkways. Permeable paving also helps reduce the need for de-icing.

**Other Air and Water Pollutants.** Pollution from car emissions or some industries can contaminate the plants' air and water. Avoid planting sensitive plants right next to areas with excessive vehicle exhaust or beside industries with notable pollutants. Work with hardy or emissions-tolerant plants in these areas. There is very little published information on plants and emissions, but you can ask your supplier for recommendations.





Sugar maple (*Acer saccharinum*)

## 2. Select Your Community and Your Plants

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

- CVC's *Ecological Landscaping Resources* web page
- CVC's *Your Green Yard* workshops (see CVC's website)
- City of Mississauga's *Natural Areas Survey*
- If you are outside Mississauga, check with your local municipal parks department or naturalist club for added resources for your area.

A cautionary note that in many areas of our watershed, you will find a mix of native and non-native species in remnant woodlands. Non-natives generally migrated from farms or gardens, or were accidentally introduced. A true native garden will only include native species, but you can choose whether or not to include any “friendly” non-native plants. As noted above, do not plant invasives or cultivars of native plants.



Christmas fern (*Polystichum acrostichoides*)



Wild columbine (*Aquilegia canadensis*)

Once you have selected the preferred community suited to your area and site, refer to CVC's *Native Woodland & Forest Plants for Landscaping* for some species you can grow. Select a mix of trees, shrubs and ground layer plants.

You can also choose plants that will provide interest and colour through all seasons such as sugar maple for vibrant fall colour, ferns for attractive summer foliage, or wild columbine for showy spring blooms.

Although all native plant gardens will provide habitat for wildlife, you can plant a few species that produce especially attractive food or shelter for birds, butterflies or other special wildlife. Refer to CVC's *Ecological Landscaping Resources* web page for more information.

Nurseries that specialize in native plants can also help you select suitable plants. Refer to CVC's *Native Plant Nurseries and Seed Sources*.

### 3. Other Design Considerations

It helps to sketch your ideas on a piece of paper. You can draw a bird's-eye view of your yard or work with an aerial photo, placing your woodland garden and any other design features on the page. Make a list of your site observations, and note your preferred community and species. Also, measure the space for your new garden so you know how many plants to grow.

Other considerations when designing your garden include:

- If you do not have a shaded yard you can create shade quickly with a trellis, fence or arbour, or wait until your new trees grow.
- For safety reasons, avoid softwood trees right beside your home or garage.
- For a more natural look, avoid planting in straight lines.
- For added attractiveness, plant taller growing species toward the back or centre of your garden and shorter plants toward the front.
- Create privacy or hide fences and other less attractive parts of your site with dense shrubs or small trees.
- You can plant ground cover for fuller coverage and a more natural look, or intersperse plants with mulch for a “neater” appearance. In a garden setting, the choice is a matter of personal preference.

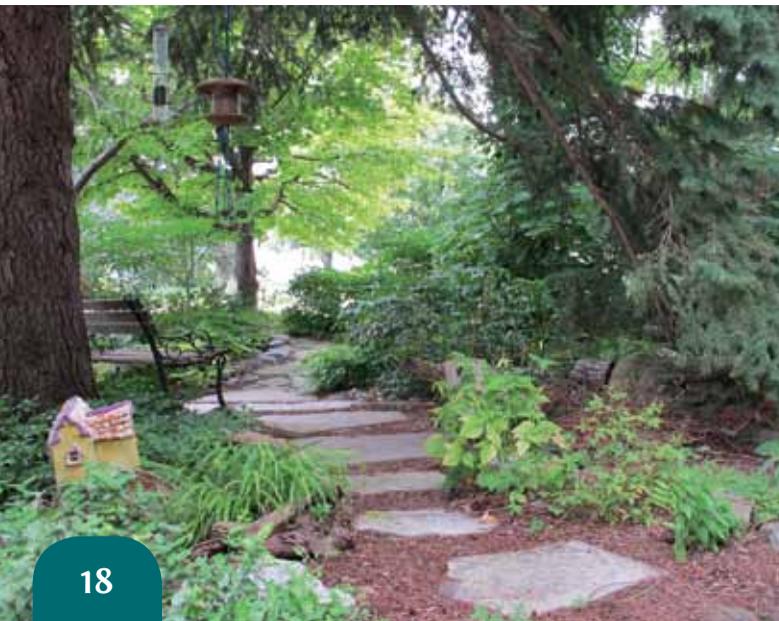


photo: James Dale



photo: Alice Kong

## make a good green impression!

You can help dispel the idea that native plant gardens 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 by hand, getting all the root and root pieces. Note that many cities and towns have noxious weed by-laws with lists of noxious weeds that must be removed.
- **Maintain a neat garden edge.** Use decorative stone mulch along edges, or plant a border of low-growing ground covers or small shrubs to frame the garden.
- **Make the garden look designed and inviting.** Create added visual appeal with a rock, a bench or a garden sculpture. If you have space, plan a path and possibly a seating area in your garden.
- **Do not block street views.** Ensure that your plants do not create a safety hazard for vehicles or pedestrians. Prune or thin as needed.
- **Talk to your neighbours.** Explain to your neighbours what you are doing and the environmental and personal benefits of your new garden. They may want to try it too.

To help keep your garden attractive and safe over time, see more tips in the Maintenance section on page 22.

## 4. Prepare Your Garden Area

There are two recommended ways to remove lawn to prepare a new garden bed:

- **Cutting.** Remove lawn using a shovel, cutting horizontally. Remove all visible root pieces. You may need to add topsoil - add 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 the new plants will break through the fabric or newspaper. For more deeply rooted plants, cut the fabric or paper only where you want to plant.



Garden bed preparation:  
smothering



Adding new topsoil



Coconut coir (husks) added  
to heavy clay for aeration

Whichever method you choose, be prepared to pull extra weeds for a year or two until the new vegetation is established and lawn seeds and roots are gone.

The addition of organic matter may or may not be desirable, depending on your soil and your selected plants. Some plants thrive in sandy or clay soils; others require improved nutrients, moisture and/or drainage provided by organic matter. Note that the plants themselves will also help improve soil conditions over time. If appropriate for your site, work in compost or decomposing leaves to a depth of 10-15 cm.

If you are gardening beneath an existing tree avoid damaging the tree roots and do not bury the root crown if you need to add soil.

## 5. Installation

Purchase from a native plant nursery that provides locally sourced seeds and plants. The closer the seed source to your area of the watershed, the better the plant will grow in your soil and weather conditions, and the more you will be contributing 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 our area, or are cultivars of natives.

You can combine seeding of ground layer herbaceous 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. Most home gardeners prefer not to plant woody seeds, but you can try. Until they are established, you may need to protect woody seeds and seedlings from squirrels and other wildlife with small wire cages.

May to mid-June is the best time to plant because temperatures are right and rainfall is usually abundant. Mid-September to mid-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 they 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 late November. Seed will lie dormant until spring and will start to germinate with the 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 more vulnerable to heat stress.

With increasingly erratic weather due to climate change, you may lose some plants or seedlings due to untimely heat waves, frost or floods. You can replace with new plants if necessary. You can also expect some normal dieback of trees and shrubs as they adapt to being moved. You can prune dead branches and the plants will generally revive over a season.



Space trees 1-3 metres apart depending on the anticipated size of the plant. Shrubs can be spaced 1/2 to 1 metre, and ground layer spacing will generally be at 15-30 cm. Before planting set your plants out where you want them to go. Then adjust according to their spacing requirements and your preferences.

For instructions about how to plant trees and shrubs, refer to CVC's *How to Plant a Potted Tree or Shrub*.

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

watering daily, unless there is rain, until the seeds germinate. If seeding in fall, do not water as it is best if the seeds lie dormant until spring thaw.

You may wish to apply mulch over your new garden bed to help retain moisture, reduce weed growth and insulate new plants from seasonal extremes. 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 a natural mulch.

## 6. Maintenance

Keep new plantings moist for the first few weeks, and after that water regularly during dry periods. To conserve drinking water, water from a rain barrel. Provide enough water to keep deep roots moist. Trees and shrubs need more water than herbaceous plants.

Until your garden is established, you will need to remove weeds regularly. Pull the weeds by hand, ensuring the whole root is removed but keeping soil disturbance to a minimum. This is easiest done after a rainfall when the soil is moist. Top up mulch as necessary to keep moisture in and weeds out.

As your garden becomes established, you will need to weed less often. If your neighbours have invasive plants they do not want to remove, you may need to remove them from your yard regularly. Watering will only be needed during drought if plants are showing signs of drying or heat stress.

You can prune sparingly and watch for particularly damaging insects or diseases. As noted, it is best to use non-toxic methods to treat diseases or insects whenever possible.

Your plantings will start to spread and new native plants may appear - you can control those or let them be. For more details on long term maintenance requirements see CVC's *Woodland Planting After-care* fact sheet.

Sit back and enjoy your wonderful new habitat. Watch as others join you and our cities gradually grow greener!



# References and Added Resources

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

- Ecological Landscaping Resources [www.creditvalleyca.ca/landscaping](http://www.creditvalleyca.ca/landscaping)
- Your Green Yard Program [www.creditvalleyca.ca/ygy](http://www.creditvalleyca.ca/ygy)
- *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 (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)
- Resource Library [www.creditvalleyca.ca/resource-library](http://www.creditvalleyca.ca/resource-library)

City of Brampton. Urban Forestry webpages. [www.brampton.ca/en/residents/trees-plants-flowers](http://www.brampton.ca/en/residents/trees-plants-flowers)

1996-2010. City of Mississauga. *Natural Areas Survey*.  
[www5.mississauga.ca/research\\_catalogue/F\\_14\\_NAS\\_2009\\_Update.pdf](http://www5.mississauga.ca/research_catalogue/F_14_NAS_2009_Update.pdf)

City of Mississauga. Urban Forestry webpages. [www.mississauga.ca/portal/residents/urbanforestry](http://www.mississauga.ca/portal/residents/urbanforestry)

2009. City of Toronto. *Go Natural in the Garden* fact sheet series.  
[www.toronto.ca/health/pesticides/go\\_natural\\_factsheets.htm](http://www.toronto.ca/health/pesticides/go_natural_factsheets.htm)

2000. Daigle, Jean-Marc and Donna Havinga. *Restoring Nature's Place: A Guide to Naturalizing Ontario Parks and Greenspace*. Schomberg: Ecological Outlook and Ontario Parks Association. Available from [info@ecologicaloutlook.ca](mailto:info@ecologicaloutlook.ca) (for advanced gardeners/landscape managers).

2004. Havinga, Donna for Canada Mortgage and Housing (CMHC). *Know Your Soils* fact sheet. Ottawa: CMHC. [www.cmhc-schl.gc.ca/en/co/maho/la/la\\_001.cfm](http://www.cmhc-schl.gc.ca/en/co/maho/la/la_001.cfm)

1999. Johnson, Lorraine. *100 Easy-to-grow Native Plants for Canadian Gardens*. Toronto: Whitecap.

Region of Peel. Water Smart Peel gardening information and rain barrels.  
[www.peelregion.ca/watersmartpeel/outdoor](http://www.peelregion.ca/watersmartpeel/outdoor)

For more information, contact CVC Urban Outreach at 905-670-1615, email [greencities@creditvalleyca.ca](mailto:greencities@creditvalleyca.ca).

© 2012, Credit Valley Conservation. For permission to reprint or post on a website contact Supervisor, Urban Outreach at CVC.





1255 Old Derry Road  
Mississauga, Ontario L5N 6R4

Phone: 905-670-1615

Toll Free: 1-800-668-5557

Fax: 905-670-2210

Website: [www.creditvalleyca.ca](http://www.creditvalleyca.ca)

E-mail: [cvc@creditvalleyca.ca](mailto:cvc@creditvalleyca.ca)