

CROSS POLLINATION

Halton Master Gardeners Monthly Newsletter
SEPTEMBER 2024 | VOL. 17 ISSUE 8

In this issue:

*Prairie Coneflower-Mexican
Hats or Ballerinas?*
Page 01

September Garden 'To-Do' List
Page 03

Butterfly/Larval Host Plants
Page 04

*From Master Gardeners
Gardens - Biodiversity*
Page 06

*10 Ways for Gardeners to
Protect Water Quality...*
Page 0

*Question of the Month,
Parasitic Wasps*
Page 10

Garden Inspiration - Asters
Page 11

What's Growing On
Page 12



Halton Region
Master Gardeners



Photos: Claudette Sims

Prairie Coneflower - Mexican Hats or Ballerinas?

By Claudette Sims, Halton Master Gardener

Prairie Coneflower (*Ratibida columnifera*) is a real star in my garden! It starts blooming in June and continues well into September with fascinating and ever changing shapes and colours. Flowers start out as a dainty green cone with wispy hanging petals. As the flowers mature they open along the cone in an explosion of colour and the wispy petals transform into a recurved skirt reminiscent of a ballerina! The tiny coneflowers open from the base and continue upwards transforming our ballerina's bodice into a ruffled wonder. If you examine the cone carefully, you should notice yellow bumps popping up around the cone.

Each 'bump' is actually a tiny flower offering nectar and pollen for insects. Butterflies and bees are especially attracted to these floral resources. As the cone matures, it changes from a green to grey-brown forming seeds that are a food source for birds. Flowers can be yellow, red or a mix of both. Some people think the red and yellow cultivar looks like a brightly coloured sombrero, giving it the alternative name 'Mexican Hat'. But I prefer to see them as tiny ballerinas gracefully dancing in the wind on their slender stalks.



Tiny ballerina or Mexican Hat?
Image: [Native Plant Society of Texas](#)

Continued on next page

PRAIRIE CONEFLOWER - FOR SPRING TO FALL BLOOMS! (CONT'D)

Prairie Coneflower is an easy to care for plant. It can grow in clay, loam or sandy soil and loves full sun. The deep taproot means it can



withstand drought and heat. It looks great with other prairie plants. Match its cheery flowers with purple [Blazing Star](#), white [Pearly Everlasting](#) or blue [Harebells](#). Prairie Coneflower leaves are deeply cut giving it an airy, elegant and lacy look. The delicate stems may flop, so consider propping it up with other plants or stakes. I've tied my plants loosely to a decorative tea cup on a stake - an attractive and effective solution.



Prairie Coneflower benefits from some kind of support for its delicate stems. This decorative teacup functions as a stake and a source of water for wildlife.

Seedheads are produced all through the growing season and are a food source for birds and wildlife. This one has already served as someone's dinner.



DETAILS AT A GLANCE



FULL SUN



MEDIUM

DRY

Plant Type (Family): Perennial (Asteraceae)
Height/Width: (H)30-90 cm(1-3') (W)30-45 cm(1-1.5')

Flowers: 5 cm/2", yellow/red/brown mi; blooms from June to September

Faunal value: attracts butterflies, nectar for short-tongued bees; seeds for birds

Companion Plants: sunny middle of the border with Pearly Everlasting, Harebells, Blazing Star

Tolerates: drought, dry soil, shallow-rocky soil

Growing advice: benefits from staking/support; easily grown from seed

Native Range: B.C., Canadian prairies, Ontario (introduced)

Supports



[Vascan](#)

Prairie Coneflower is not native to Ontario, but is considered a 'near native'. As a coneflower and a member of the aster family, it is a keystone plant and has ecological value, especially for native bees and small pollinators.

Whether you think the flowers look like tiny ballerinas or Mexican Hats, you will enjoy watching them change appearance and love how easy this plant is to care for.



The many faces of Prairie Coneflower



SEPTEMBER GARDEN 'TO DO' LIST

By Claudette Sims, Halton Master Gardener

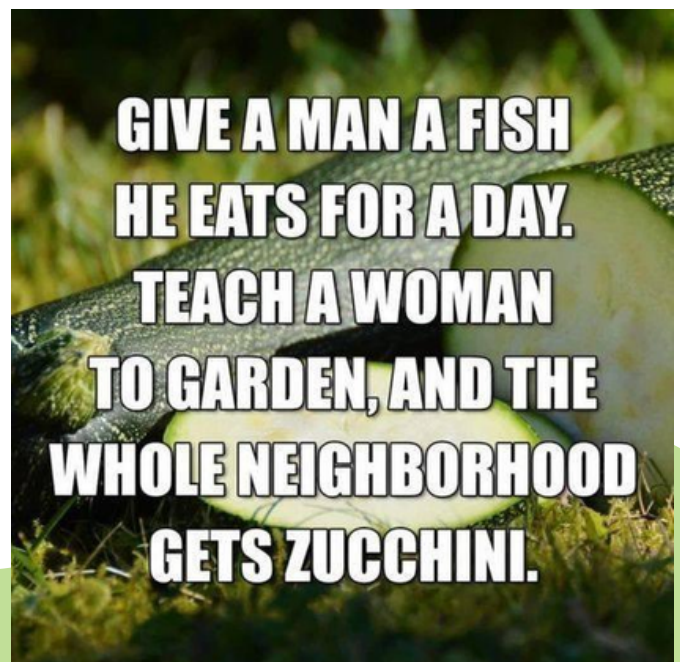
- ☐ **Perennials** – Divide or transplant spring & summer flowering perennials, e.g., iris, peony, phlox, wood poppy, native anemone as the weather cools. Water the new divisions well into the fall. Other perennials can be transplanted or divided if needed when flowers fade. This is a great time to add plants to fill in any gaps. Consider adding native [grasses](#) to give your garden texture and winter interest.
- ☐ **Veggies** – Remove any plants that have stopped producing. Sow cool weather seeds, e.g., lettuce, spinach, arugula and radishes. As the weather cools, harvest green tomatoes & ripen indoors, freeze or use in recipes. Collect and save seeds from [veggies](#), dill, [native plants](#). Cut herbs for [drying in your microwave](#), e.g., parsley, thyme, mint, rosemary.
- ☐ **Trees** – Plant new trees and shrubs now to allow them at least six weeks before frost to form roots. Water transplanted trees weekly until freeze up.
- ☐ **Houseplants** – Transition houseplants from the garden back into your home by moving them to a shadier location. **Inspect** plants for pests and disease. Lift the plant out of the pot carefully and inspect the soil. If pests are present, wash the plant with water or an insecticidal soap solution (some plants are sensitive, so test a leaf if you are not sure). Plants can also be soaked in a large tub of water with a tablespoon of concentrated insecticidal soap (about a 1% solution is desired). Prune back **woody tropicals** such as hibiscus once they are moved. **Orchids:** Moving phalaenopsis orchids can be delayed as a drop in temperatures (to 17C) may encourage flowering. Once inside, 8 to 12 hours of light is optimal for flowering. Continue to fertilize orchids to encourage healthy foliage.

“



Consider choosing asters for your fall containers instead of mums. Mums are native to east Asia and Europe. Asters are native keystone species. They are the host plants for 100 species of butterfly and moth caterpillars and feed 33 species of pollen [specialist bees](#). ”

- ☐ **Lawn** – Choose a rainy day to overseed the lawn, then cover seeds with a top dressing of fine compost or manure. Half the height of the blades of grass should still be visible. Fall feeding with a slow release mineral or organic fertilizer will increase root growth for an early spring green up. Fall is a good time to aerate lawns (sandy soils do not usually need to be aerated). Pull, rake or cut off weeds at ground level. More lawn care suggestions from [Landscape Ontario](#). Rake leaves into flower beds.
- ☐ **Think spring** – Plant spring flowering bulbs such as crocus, tulip, hyacinth now through October. Water bulbs after planting. Do not plant or share [Scilla](#) as it is highly invasive. Consider adding some of our native spring flowers such as Hepatica, [Prairie Smoke](#), [Virginia Bluebells](#), [Bloodroot](#), [Red Columbine](#) or [Ontario Trilliums](#)!



BUTTERFLY-LARVAL HOST PLANTS

Olga Marranca, Halton Master Gardeners

I was inspired to write about larval host plants when I noticed a caterpillar larva of a Black Swallowtail Butterfly, *Papilio polyxenes* on dill, *Anethum graveolens* (at least what was left of my dill after he grazed on the entire plant!).

Why Host Plants?

Host plants are an essential ecological requirement providing food for larvae prior to the adult stage of the insect. While we may be familiar with the Monarch butterfly's need for milkweed, there are many other larvae that also require specific plants to support their lifecycle.

Where Should I Plant them?

Plants should be accessible to butterflies so they can easily locate them to lay their eggs. Grouping several plant together in large plantings (1 metre in size), will provide a banquet for multiple larvae. Adding flowers that provide nectar for adult butterflies will encourage them to visit your garden.

“One of the most rewarding parts of gardening is observing the wildlife you have brought into your yard.” Claudette Sims











Larva, Black Swallowtail Butterfly (Olga Marranca)

What else should I do?

Be prepared for the larvae to eat those host plants! It's a sure sign that you have provided a biodiverse nurturing garden for the butterflies. Avoid the use of store bought pesticides or home made remedies. Remember, the application of these products are indiscriminate and can kill or harm both the adults or larvae.























Lepidoptera Species and Their Host Plants			
Lepidoptera Species	Adult	Larva / Caterpillar	Host Plant
Giant Swallowtail, <i>Papilio cresphontes</i>			Common Hop-tree (<i>Ptelea trifoliata</i>), Common Prickly-ash (<i>Zanthoxylum americanum</i>)
Spicebush Swallowtail , <i>Papilio troilus</i>			Northern Spicebush (<i>Lindera benzoin</i>), Sassafras (Sassafras albidum), Tulip Tree (<i>Liriodendron tulipifera</i>)
Black Swallowtail, <i>Papilio polyxenes</i>			Parsley family such as fennel, dill, Golden Alexanders (<i>Zizia aurea</i>)
Eastern Tiger Swallowtail , <i>Papilio glaucus</i> Linnaeus			Tulip Tree (<i>Liriodendron tulipifera</i>), Cherry (<i>Prunus</i> spp.), Ash (<i>Fraxinus</i> spp.) Willows (<i>Salix</i> spp.) Poplar (<i>Populus</i> spp.), Birch (<i>Betula</i>)

Continued on next page

BUTTERFLY LARVAL HOST PLANTS (CONT'D)



Lepidoptera Species	Adult	Larval / Caterpillar	Host Plant
Juvenal's Duskywing, <i>Erynnis juvenalis</i>			Oaks (<i>Quercus</i> spp.)
Northern Cloudy Wing, <i>Thorybes bathyllus</i>			American Hog-peanut (<i>Amphicarpaea bracteata</i>), Other Legumes (<i>Fabaceae</i> spp.)
Silver-spotted Skipper, <i>Epargyreus clarus</i>			Legumes (<i>Fabaceae</i> spp.)
Dun Skipper, <i>Euphyes vestris</i>			Sedges (<i>Carex</i> spp.)
Hobomok Skipper, <i>Poanes hobomok</i>			Grasses (<i>Poa</i> spp.)
Summer Azure, <i>Celastrina neglecta</i>			Dogwoods (<i>Cornus</i> spp.), New Jersey Tea (<i>Ceanothus americanus</i>), Cherry (<i>Prunus</i> spp.), <i>Viburnum</i> spp.
Great Spangled Fritillary , <i>Speyeria cybele</i>			Violets (<i>Viola</i> spp.)
Northern Crescent , <i>Phyciodes cocyta</i>			Aster (<i>Symphyotrichum</i> spp.)
American Lady, <i>Vanessa atalanta</i>			Pearly Everlasting (<i>Anaphalis margaritacea</i>), Stinging Nettle (<i>Urtica dioica</i>), Canada Wood Nettle, (<i>Laportea canadensis</i>)
Mourning Cloak , <i>Nymphalis antiopa</i> (Linnaeus)			Willow (<i>Salix</i> spp.), Elm (<i>Ulm</i> spp.), Poplars (<i>Populus</i> spp.), Common Hackberry (<i>Celtis occidentalis</i>)



Look for October's Newsletter for Pests, Diseases and Plants That Host Invasive Species!

- [The Upper Thames Larval Host Plants](#)
- [Toronto Entomologists' Association](#)
- [North American Insects and Spiders](#)
- [Featured Creatures](#)

Further Information

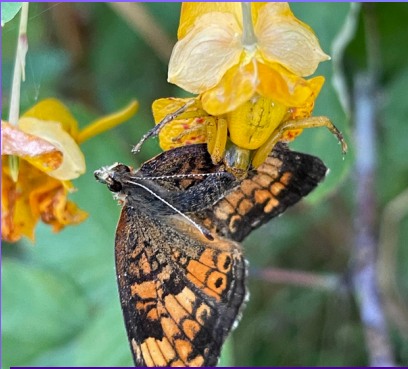
- [Cambridge Butterfly Conservatory](#)
- [Bug Guide](#)
- [The Butterflies of Nova Scotia](#)
- [Butterflies and Moths of North America](#)





From the Gardens of Halton Region Master Gardeners

Biodiversity in Action



Here's a Goldenrod Crab Spider, stealthily disguised in the Spotted Jewelweed (*Impatiens capensis*), who has caught a Variegated Fritillary butterfly. Seen at the Princess Point tallgrass prairie in Hamilton.

Monag



American goldfinch (*Spinus tristis*) on a purple giant hyssop (*Agastache scrophularifolia*). This is a breeding male eating the not-quite-mature seeds. *Agastache* is a favourite with finches, sparrows, juncos and other seed-eating birds. *Agastache scrophularifolia* is a big, long-blooming, trouble-free native plant that provides nectar for bees, butterflies, and hummingbirds.

Ber



It was exciting to see the Spring Azure butterfly visiting its host plant New Jersey Tea (*Ceanothus americanus*) in early July.

Janet M.



The Tomato Hornworm parasitized by wasp larva, *Cotesia congregatus*. In this photo, the wasp larvae haven't yet emerged but are getting nourished by the hornworm.

(See Page 10)

Kirsten



The tricolored bumblebee (*Bombus ternarius*), a native ground-nesting pollinator with a one-season colony cycle, is a vital contributor to our ecosystems.

Here, it feeds on the vibrant Sneezeweed, (*Helenium autumnale*), a native perennial that brightens late summer and fall with its striking blooms in Oakville.

Cathy

Continued on next page

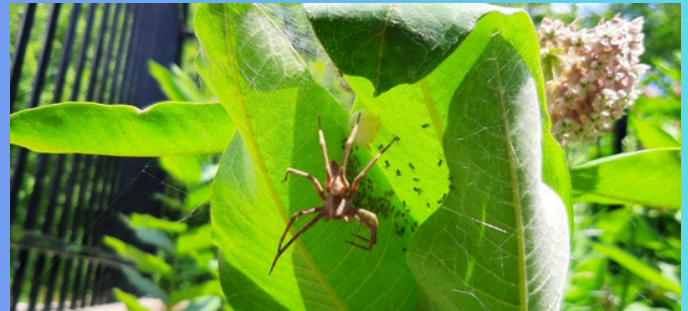
From the Gardens of Halton Master Gardeners (cont'd)

Biodiversity in Action (Cont'd)



"A natural pest control agent, the Ambush bug (*Phymata* sp.), lies in wait for its next meal, camouflaged in the shadows on Zigzag Goldenrod (*Solidago flexicaulis*) in an Oakville front yard."

Cathy



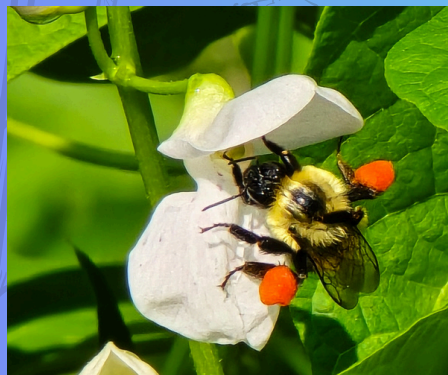
The female nursery web spider (*Pisaurina mira*) pictured here with her babies made a nest on a common milkweed plant (*Asclepias syriaca*). Often confused with wolf spiders it can grow 15mm in length. This doting mother will continue to fiercely guard her spiderlings until they reach their first molting stage when they will leave the nest.

Carley



Giant Swallowtail, the largest butterfly in North America nectaring on *Vernonia* spp. Common Hop-tree and Common Prickly-ash are the host plants for the caterpillars.

Claudette



A female Common Eastern Bumblebee (*Bombus impatiens*) pollinating runner beans (*Phaseolus coccineus*). Runner beans require pollination by large-bodied bees to set a good crop.

Janet P.



A huge draw for all pollinators: *Pycnanthemum verticillatum* var. *pilosum* - Hairy Mountain Mint.

Sheelagh



Swamp Milkweed 'Cinderella' (*Asclepias incarnata*) supports a variety of pollinators while being a host plant for the Monarch Butterfly caterpillar. No 'cats' yet, but here is a pollinator (possibly a *Megachile* spp. – Leafcutter bee) in June.

Isabel



10 WAYS TO PROTECT WATER QUALITY & MITIGATE EXTREME WEATHER EVENTS

Janet Mackey, Halton Master Gardeners

The summer of 2024 will likely be remembered for extreme weather events. Perhaps you, like me, watched as motorists were stranded, neighbours' homes flooded and nearby water quality was affected by algae growth. Although this is upsetting, as gardeners working together we can have a tremendous impact in mitigating such events. Remember it only takes 15 minutes for water from your property to reach a local waterway. Here are some suggestions:



Image: [Hamilton Spectator July 18, 2024](#)

- 1 Keep hard (impermeable) surfaces to a minimum:
 - i.e., use permeable pavers, mulch stones, gravel, wood decking

- 2 Add a [rain garden](#):
 - Direct downspouts to grassy areas or mulched garden beds
 - Create [swales](#) or berms to channel water so that water absorbs into the soil instead of flowing onto sidewalks, streets or driveways
 - Add a planting buffer strip to slow water from draining into nearby creeks or onto hard surfaces

- 3 Conserve water use:
 - Use rain barrel/s
 - Mulch bare soil to protect it from evaporation resulting in water loss
 - Mow turf grass at 3" (at a higher height than you might think) to protect the roots rather than on a schedule

- 4 Prevent or reduce [soil compaction](#):
 - Example: Protect the soil during construction using large plywood sheets or stand on long boards while working

- 5 Reduce [erosion](#):
 - [Stabilize slopes with suitable plants](#) reducing erosion and runoff

SLOW IT DOWN
SOAK IT IN
SPREAD IT OUT



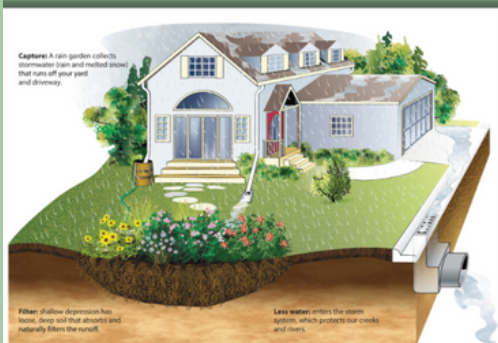
- 6 Avoid unnecessary use of fertilizers:
 - Test your soil before using unnecessary fertilizers ([Univ. of Guelph Soil Tests](#))
 - Recycle your grass clippings on the lawn. They provide nitrogen as they break down.
- 7 Prevent sources of chemicals from reaching waterways:
 - Fill fueled vehicles such as lawn-mowers over an area such as turf grass
 - Prevent over-spray from fertilizer spreaders; fertilizer on sidewalks and roadways will end up in storm sewers and eventually, waterways
 - Dispose of household chemicals responsibly
 - Avoid use of pesticides & herbicides
- 8 Select plants appropriate to the location, light and soil conditions:
 - When plants are correctly sited, less watering will be needed over time
 - Choose plants that increase infiltration
- 9 If you have a septic system, be sure to conduct routine maintenance
- 10 Clear your local storm drains of contaminants & debris (including pet waste).
 - Remove garden waste from hard surfaces

We can do this!

Continued on next page

10 WAYS FOR GARDENERS TO PROTECT WATER QUALITY & MITIGATE STORM DAMAGE (CONT'D)

IS A RAIN GARDEN RIGHT FOR ME?



1. Do you have a low lying area on your property where water naturally flows during a heavy storm?
2. Are you interested in installing a new garden, or do you have an existing garden that you would like to redesign?
3. Is your potential garden space at least 3 metres away from any building foundation on your property?

4. Is your potential garden space relatively flat? (between 1% and 5% slope)
5. Is there a source of water to feed your potential garden space, such as a downspout or a rain barrel?

If you answered 'YES' to all of the above, you are ready to install your rain garden!

[*A Complete Guide to Building a Rain Garden - Toronto Region Conservation Authority*](#)

RESOURCES:



- City of Hamilton Residents
[Raingarden Residential Rebate Program](#)



- Region of Halton Including Burlington, Oakville, Milton and Georgetown
[Healthy Neighboursheds Conservation Halton](#)

Learn More:

- [A Gardener's Guide to Protecting Water Quality](#)
- [Conserve & Protect Water](#) - Sonoma Master Gardeners



Check out the new [bioswale on Plains Road in Burlington, Ontario](#)

Images: J. Mackey





By Hariette Henry, Halton Master Gardener

Your photo is of a [tomato hornworm caterpillar, *Manduca quinquemaculata*](#), a common garden pest that feeds on plants in the nightshade or *Solanaceae* family, such as tomatoes, peppers, eggplants, and potatoes. The hornworm in the photo has been parasitized, likely by a [Braconid wasp](#).

What you refer to as eggs are actually cocoons. The female wasp lays eggs inside the hornworm. As the wasps develop, they feed on the hornworm's insides, eventually killing it. When the tiny wasps are ready to pupate, they form white silken cocoons on the outside of the caterpillar's body. They eventually emerge as tiny adult wasps ready to parasitize their next victim.

The threat to your tomato plants is not the wasps but the hornworms. If you come across a garden pest being parasitized by a wasp or tachinid fly you should leave them alone. These insects are considered beneficial as they perform the important service of keeping pest insects under control. In this case the braconid wasps are disrupting their hornworm host's development, effectively stopping the pest in its tracks.

There are several different caterpillars that feed on tomato plants but hornworms are probably the ones of greatest concern. [Tomato hornworm, *Manduca quinquemaculata* and tobacco hornworm *Manduca sexta*](#) are large (up to 4" long) green caterpillars that do quite a lot of damage in a short amount of time.

“Can you identify the tiny white eggs and the host in this photo? Are either of them a bad sign for my tomato plants?”



Photo: P.A. Russ

They typically start feeding on the leaves of the upper part of the plant first. They blend in so well due to their protective green colouring that they may not be noticed until it is too late. When they feed, they create dark green or black droppings (frass) that are clearly visible on the plants and on the ground. The defoliation increases as the caterpillars become bigger. The last stage of the caterpillar consumes nearly as much as all the younger stages combined.

To protect your tomato plants from a possible hornworm defoliation you may want to:

- Check your plants at least twice a week in the summer
- Remove weeds from around your tomato plants to reduce the number of sites where worms can lay eggs

If you find hornworms you will want to:

- Hand pick and destroy them, or toss them into a bucket of soapy water
- Move the caterpillars to another part of the garden where birds can feed on them
- Encourage the presence of other natural enemies of hornworms such as lady beetles and green lacewings that often prey upon the eggs and young caterpillars
- Till the soil after harvest to destroy burrowing caterpillars and pupae
- Applying Bt can be tricky since it must be consumed by the caterpillar or it doesn't work; it also requires multiple applications





Garden Inspiration!



Asters: A Beautiful Keystone Species!



New England Aster

Symphyotrichum novae-angliae
(Full sun in moist to average soil)



White Wood Aster

Eurybia divaricata
(Shade to part-shade with
average to moist soil)



[Asters as a
Keystone Species](#)



Big Leaf Aster

Eurybia macrophylla
(Great for full, dry shade)



Calico Aster

Symphyotrichum lateriflorum
(part shade to full sun with moist to dry soil)



Sky Blue Aster

Symphyotrichum oolentangiense
(dry to moist, well-drained soil in full sun)

What's Growing On?

By Trish Moraghan, Halton Master Gardener



OAK RIDGES MORaine LAND TRUST

Webinar

Falling for Autumn
Birding

September 17th
7:00 PM
Virtual

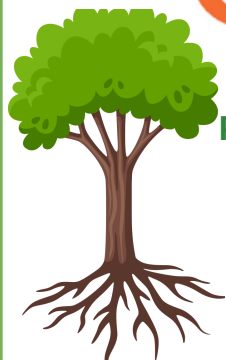


Learn more about the fascinating
migration of hummingbirds,
warblers, shorebirds and more.

[Register here](#)

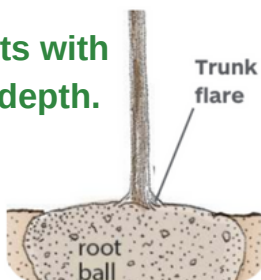


Credit Valley
Conservation
inspired by nature



Putting down roots with
proper planting depth.

[Learn more here](#)



When planting a tree or digging a new garden, call *before* you dig!



Requesting a locate
before you dig is free,
easy and it's the law.

[Learn more here](#)



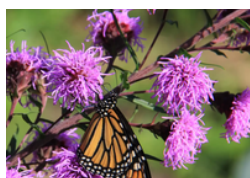
What's Growing On?



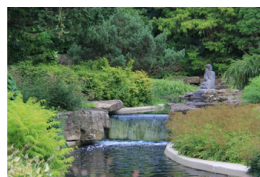
Royal
Botanical
Gardens



[Gardener's Club](#)



[Bloom Watch](#)



[Rock Garden](#)



[School Programs](#)

Tree Day and Plant Sale

Sat. Sept., 7, 2024 10 AM to 3 PM



*Tours, trails,
demonstrations,
information booths,
plant sale and more!*



[Learn more here](#)

Check our [calendar](#) for events

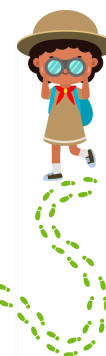


Halton Region Master Gardeners

Come Grow with Us

Pollinator Garden Scavenger Hunt

POLLINATORS	HOST, NECTAR & POLLEN SOURCES	HABITAT
BUMBLEBEE	Native Grass (Little Bluestem)	BARE SOIL
BUTTERFLY	MILKWEED	MUD
MOTH	DISC SHAPED FLOWERS (Aster family, Black-eyed Susan)	WATER SOURCE
HUMMINGBIRD	TUBULAR SHAPED FLOWER (Columbine)	FALLEN LEAVES
FLY	BOWL-SHAPED FLOWER (Wild Rose, Buttercups)	OLD WOOD/LOGS
BEETLE	LIPPED FLOWER (Pea family, Runner Beans)	HOLLOW STEMS (i.e., Echinacea)
BEE WITH POLLEN	UMBELS (Carrot family)	MESSY LAWN/LONG GRASS



[Activities for young gardeners](#)

About Our Newsletter

Cross Pollination is published monthly from February to December and is written and prepared by our dedicated volunteers. Halton Master Gardeners are experienced gardeners who have studied horticulture extensively and continue to upgrade their skills through technical training. We strive to provide science-based, sustainable gardening information to the general public. The information in our newsletter has been verified by our volunteers to the best of our abilities, but given the scope of horticulture and science some concepts may not reflect current knowledge. The content displayed in our newsletter is the intellectual property of Halton Region Master Gardeners and their authors. It can be shared in its entirety, but specific content should not be reused, republished or reprinted without the author's consent.

Copy Editor: Isabel Belanger

Content Editor: Olga Marranca

Your [donations](#) support our work!