

A quick reference guide to

Invasive Plant Species



Acknowledgements

Technical input provided by:

- The Ontario Invasive Plant Council
- Royal Botanical Gardens

Photos and illustrations provided by:

- Credit Valley Conservation
- The Nature Conservancy - US
- Royal Botanical Gardens
- Toronto and Region Conservation
- Ontario Federation of Anglers and Hunters

Text compiled and written by:

- Credit Valley Conservation

Graphic design and production provided by:

- Toronto and Region Conservation

Cover photo: garlic mustard (*Alliaria petiolata*)

Manitoba maple

Acer negundo

Norway maple

Acer platanoides

European or black alder

Alnus glutinosa

European spindletree & winged euonymus

Euonymus europaeus and *E. alatus*

non-native bush honeysuckles

Lonicera spp.

common & glossy buckthorn

Rhamnus cathartica & *R. frangula*

dog-strangling vine

Cynanchum rossicum & *C. nigrum*

garlic mustard

Alliaria petiolata

giant hogweed

Heracleum mantegazzianum

Himalayan balsam

Impatiens glandulifera

Japanese knotweed

Polygonum cuspidatum

reed or giant manna grass

Glyceria maxima

common reed

Phragmites australis

goutweed

Aegopodium podagraria

English ivy

Hedera helix

periwinkle

Vinca minor

Introduction

Southern Ontario's native plants existed here for thousands of years prior to European settlement. This diverse group of plants evolved together with indigenous wildlife, adapting to local climate and soil conditions to create stable natural communities we call ecosystems.

By contrast, invasive plants come from outside this geographic area. When they are introduced, there is potential for them to establish themselves and disrupt established ecosystems forcing out native plants. Fewer native plants results in decreased biodiversity. This can mean less food and shelter for wildlife dependent on native plants. This results in a ripple effect that threatens whole ecosystems and has economic and social implications as well.

What makes a plant invasive?

Not all introduced plants are invasive. Some, like the common dandelion, may be a nuisance, but do not pose a significant threat to native plants and their ecosystems. Others, including many common garden plants are benign and even beneficial. Invasive plants are a concern because they have “displacement capacity” meaning they form such dense colonies or compete so aggressively, that they force out native vegetation.

Invasive plants commonly have one or more of the following characteristics allowing them to out-compete native species:

- High annual seed production and quick establishment of dense colonies;
- Tolerance to a wide range of growing conditions;
- Ability to spread by underground roots and re-grow quickly when disturbed by pulling, cutting or fire;
- A lack of natural predators to keep their population under control in their new environment.

What can I do about invasive plants?

- Learn to properly identify and manage invasive plants on your property. If you are unsure about identification, removal or control measures, contact the organizations listed below.
- When selecting plants for your garden, purchase non-invasive or native plants from reputable suppliers. Native plants will provide a variety of benefits to the insects and wildlife that also depend on them.
- Dispose of yard waste through your local municipality or in your backyard composter. Yard waste dumped in natural areas may contain invasive plant seeds.
- Share this information with your neighbours, friends and family. The more people who know about the problem, the easier it will be to stop the introduction and spread of invasive species.
- When walking or hiking in natural areas, remain on designated trails and keep pets on a leash to avoid disturbing natural vegetation or transferring invasive plants and their seeds to new areas. Always clean off your bike, hiking boots or clothes and brush your dog's fur before leaving the natural area, to avoid accidentally spreading seeds.
- Volunteers are sometimes needed to help with locating and controlling invasive species. For invasive plant management projects in your community contact the organizations listed below.

Getting Help:

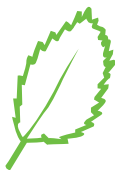
- Ontario Invasive Plant Council, www.ontarioinvasiveplants.ca
- Stewardship Councils c/o Ontario Ministry of Natural Resources, www.mnr.gov.on.ca
- Ontario Federation of Anglers and Hunters, www.ofah.org
- The Invading Species Hotline, [1-800-563-7711](tel:1-800-563-7711)
- Conservation Authorities, www.conservation-ontario.on.ca

Plant recognition terms

Leaf shape



entire



toothed/serrated



compound
leaf



lobed
leaf



lance shaped



heart shaped



tear drop
shaped



egg shaped

Arrangement

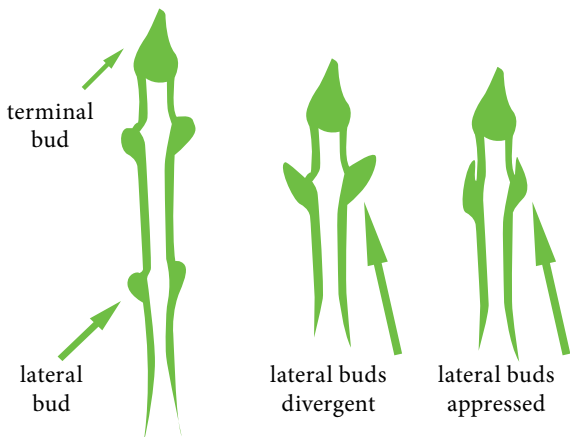


opposite



alternate

Buds



Stems/Bark



Lenticel- small openings in the bark of some trees that allow air exchange.

Stem sheath- portion of leaf that wraps around and joins leaf to stem.



Ligule- found at the inner base of the leaf, between where the leaf attaches to the main stem and the stem itself. Commonly forms a translucent membrane or a fringe of hairs.



bark



Manitoba maple seeds

compound, irregularly lobed leaf



Manitoba maple
(*Acer negundo*)

Manitoba maple

(*Acer negundo*)

Plant Type: Tree.

Arrangement: Opposite.

Leaf: Compound leaf, three to seven leaflets, irregularly lobed.

Bark: Greyish brown bark. Mature bark with narrow firm ridges.

Seed/Flowers: Winged seeds joined at a $< 45^\circ$ angle.

Buds/Stem: Egg shaped buds are covered in fine white hairs. Young twigs are shiny green-purple with a waxy white coating that rubs off.

Habitat: Dry, but mostly fresh soils in various habitats, most often in floodplains.

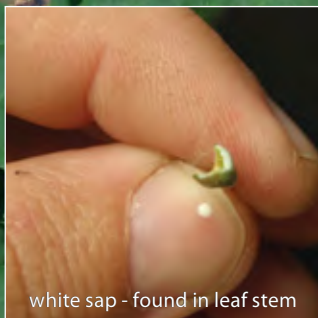
Similar native species: Ash species (*Fraxinus spp.*) have compound leaves with no lobes; terminal buds are pointed. Elderberry (*Sambucus spp.*) are multi-stemmed shrubs with clusters of berry-like fruit.



mature bark



Norway maple seeds



white sap - found in leaf stem



Norway maple
(*Acer platanoides*)

Norway maple

(*Acer platanoides*)

Plant type: Tree.

Arrangement: Opposite.

Leaf: Five lobed (wider than long) leaf, dark green to purple. Black-spot fungus on leaves is common. White, milky sap found in leaf stem.

Bark: Finely ridged dark bark.

Seed/Flowers: Winged seed; typical of maples. Joined at a 180° angle.

Buds/Stem: Terminal bud is plump and blunt tipped stem buds are round, soft and reddish brown. Twigs are shiny reddish brown.

Habitat: Dry to moist soils in forest and successional areas, often used as urban street tree.

Similar native species: Sugar maple (*Acer saccharum*) leaves are five lobed and longer than wide. Buds on sugar maple are sharp pointed, not blunt and seeds form a “U” shape. Clear sap is found in leaf stem. Norway maple bark can be mistaken for white ash when not in leaf. However, the bark is considerably darker than white ash.



bark showing 'lenticels'



long stalked 'fruit'(non-native)



leaves

European or black alder
(*Alnus glutinosa*)

European or black alder

(*Alnus glutinosa*)

Plant type: Shrub/small tree.

Arrangement: Alternate.

Leaf: Oblong shaped leaf with blunt tip.

Bark: Grayish dark brown with obvious, silver lenticels.

Seed/Flowers: Pine-cone shaped fruit on European alder is large (about 2 cm), and on a long stalk (> 1 cm).

Buds/Stem: Buds are 'lightbulb' shaped.

Habitat: Moist and wet soils in and around wetlands and waterways.

Similar native species: Speckled alder (*Alnus incana* ssp. *rugosa*) leaves are wedge shaped and come to a point. Seed cone is short stalked (stems are $\leq .5$ cm). The speckled alder is a multi-stemmed tall shrub, while European alder grows more like a tree from a single stem.



two-parted seed of winged euonymus



four-parted seed of native burning bush and European spindle tree



running strawberry and European spindle tree



winged euonymus
(*E. alatus*)

European spindle tree & winged euonymus

(*Euonymus europaeus* & *E. alatus*)

Plant type: Shrub/small tree.

Arrangement: Both species are opposite in their arrangement.

Leaf: Both species have a finely toothed, tear shaped leaf that is widest at the middle.

Bark: Young bark smooth and green (*E. europaeus*) with prominent raised ridges on *E. alatus* stems. Rough texture and peeling bark when mature.

Seed/Flowers: European spindle tree has a four-parted fruit with yellowish flowers in small clusters. Winged euonymus has a two-parted fruit, with yellow/green flowers.

Buds/Stem: European spindle tree stems are green and smooth, winged euonymus has prominent winged stems.

Habitat: Dry to fresh soils in successional areas and forests.

Similar native species: Native strawberry bush (*E. obovatus*) is a ground hugging vine; leaf wider at the tip not the middle. Native burning bush (*E. alpinum*) is most often mistaken for European spindle tree. It has a four-parted seed, but differs with dark purple flowers in large clusters in the spring.



bark



flower



fruit

non-native bush honeysuckles
(*Lonicera* spp.)

non-native bush honeysuckles

(*Lonicera* spp.)

Plant type: Shrub can be 1.5 m to 4 m tall.

Arrangement: Opposite.

Leaf: All species have leaves with smooth margins. Leaf can be hairy or smooth.

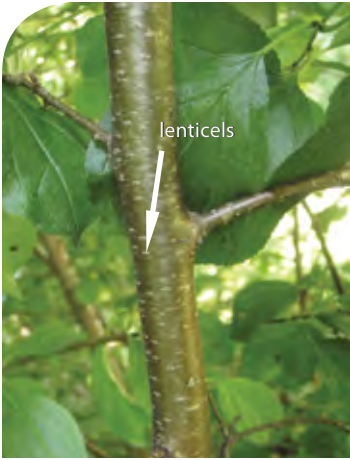
Bark: Generally papery.

Seed/Flowers: Showy flowers (various colours: white, pink, yellow, orange); fruit typically two bright red berries fused together.

Buds/Stem: Brittle stems. Growth form tends to be messy and tangled. Older stems are hollow.

Habitat: Various: dry to fresh soils in forest and successional areas.

Similar native species: Bush (*Diervilla lonicera*) is < 1 m in height, fly (*L. canadensis*) is < 1.5 m in height, Glaucous (*L. dioica*) and hairy (*L. hirsuta*) honeysuckle are both vines. Older stems are solid. Difficult to identify these species. Consult an expert if uncertain.



common & glossy buckthorn
(*Rhamnus cathartica* & *R. frangula*)

common & glossy buckthorn

(*Rhamnus cathartica* & *R. frangula*)

Plant type: Shrub/small tree.

Arrangement: Common buckthorn are sub-opposite (almost opposite). Glossy buckthorn are alternate.

Leaf: The common buckthorn leaf is egg shaped, edge of the leaf is "pebbled" (small rounded teeth). Veins converging toward leaf top. The glossy buckthorn leaf is more slender (tear drop shaped) and smooth margined.

Bark: Smooth, young bark with prominent raised patches or lenticels; rough texture and peeling bark when mature.

Seed/Flowers: Flowers are green-yellowish, small and inconspicuous. Green berries becoming purplish/black in late summer, berry > 1 cm in diameter.

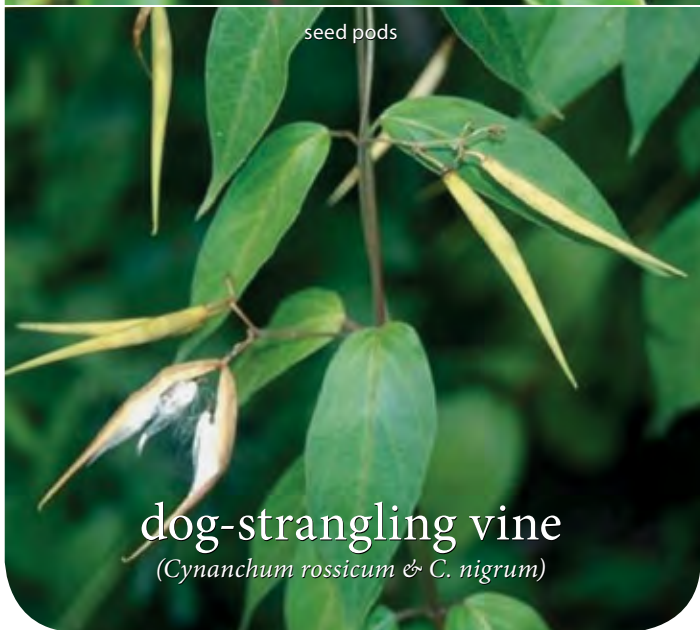
Buds/Stem: Common buckthorn has thorn-like tip on many twigs. Glossy buckthorn buds have no bud scales and lack thorny tips to twigs.

Habitat: Various - forest, thickets, meadows, dry to moist soils.

Similar native species: Native dogwoods, which lack the thorny "tip". Native dogwoods are truly opposite in arrangement of twigs; only alternate leaved (pagoda) dogwood has alternate branching.



C. rossicum flowers



seed pods

dog-strangling vine
(*Cynanchum rossicum* & *C. nigrum*)

dog-strangling vine

(*Cynanchum rossicum* & *C. nigrum*)

Plant type: Herb, twining vine.

Arrangement: Opposite.

Leaf: Lance shaped, smooth margin (edge).

Bark: n/a.

Seed/Flowers: Bean shaped seed pod with seeds attached to downy 'umbrellas'. Flowers - pink (*C. rossicum*) or purple (*C. nigrum*) with five petals.

Buds/Stem: n/a.

Habitat: Dry to moist soils; more dominant in meadows and woodland edges.

Similar native species: Swamp milkweed (*Asclepias incarnata*), is an upright plant, typically found in wetland habitats.



young/first year growth



second year growth & flowers



garlic mustard
(*Alliaria petiolata*)

garlic mustard

(*Alliaria petiolata*)

Plant type: Herb.

Arrangement: Alternate.

Leaf: Saw tooth like edge, elongated heart shape with prominent veins. Garlic/onion smell when crushed. Young (first year) leaves are kidney shaped.

Bark: n/a.

Seed/Flowers: Cluster of small white flowers with four petals. Small black < 1 mm rounded seed found in elongated 'tube-like' seed pods (similar to a bean pod).

Buds/Stem: n/a.

Habitat: Various – dry to moist soils, in all habitat types, less often in meadows.

Similar native species: n/a.



stem with purple spots



young stem



flower and leaves

giant hogweed
(*Heracleum mantegazzianum*)

giant hogweed

(*Heracleum mantegazzianum*)

Plant type: Herb. Mature plants can be over 3 m tall.

Arrangement: Alternate.

Leaf: Lobed leaf 1-2 m wide, lobes sharp-pointed.

Bark: n/a.

Seed/Flowers: Small, white flowers in a large umbrella-shaped cluster, .75 m wide.

Buds/Stem: Hairy stem with purple spots.

Habitat: Fresh to wet soils in forests, swamps, meadows, marshes.

Similar native species: Cow parsnip (*Heracleum maximum*) – has smaller flowers, no purple spots on stems. Angelica (*Angelica atropurpurea*) has a rounded-topped flower cluster and leaves divided into many leaflets and the stem is hairless.

Do not touch this plant because it is poisonous. If you do, wash your skin immediately in cool soapy water and do not expose the area to sunlight.



native jewelweed flower and stem



Himalayan balsam flower and stem



flower

Himalayan balsam

(*Impatiens glandulifera*)

Himalayan balsam

(*Impatiens glandulifera*)

Plant Type: Herb, 1 - 3 m in height.

Arrangement: Alternate.

Leaf: Lance shaped leaf with sharply toothed edges.

Bark: n/a.

Seed/Flowers: Flowers- pink, large and showy.

Buds/Stem: Fleshy reddish stem.

Habitat: Wet and moist soils in wetlands and floodplains.

Similar native species: Touch-me-nots or jewelweeds (*Impatiens capensis*) - have orange or yellow flowers. Leaf more oblong shaped and coarsely toothed.



stem



flower

typical growth form



Japanese knotweed
(*Polygonum cuspidatum*)

Japanese knotweed

(*Polygonum cuspidatum*)

Plant Type: Herb, 2 - 4 m in height.

Arrangement: Alternate.

Leaf: Tear drop shaped, sharp pointed, dark green, flattened at base.

Bark: n/a.

Seed/Flowers: Flowering stalk of many small greenish-white flowers.

Buds/Stem: Large plant with a 'bamboo-like' stem. Stem light green maturing to tan colour.

Habitat: Moist to wet soils found in wetlands, water-courses and roadside ditches.

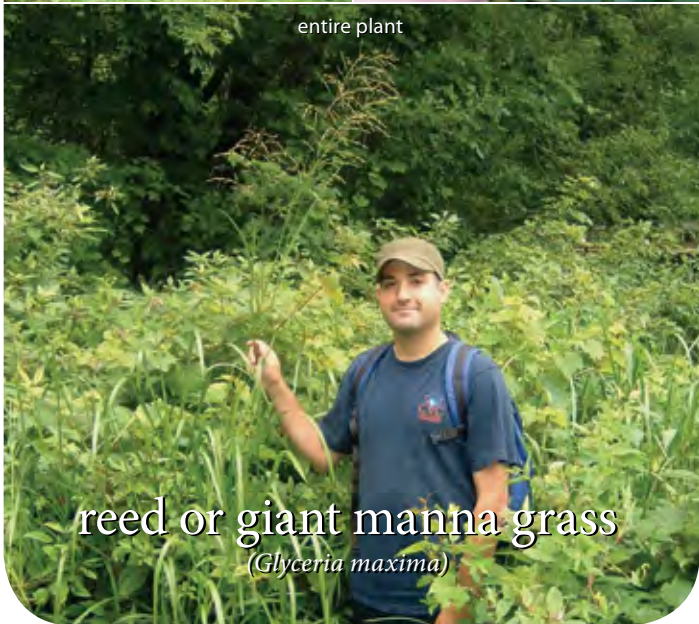
Similar native species: none.



flower cluster



tube-like infold



entire plant

reed or giant manna grass
(*Glyceria maxima*)

reed or giant manna grass

(*Glyceria maxima*)

Plant type: Grass. Mature plants grow over 1.5 m.

Arrangement: Alternate.

Leaf: Stem sheaths near the base are slightly rough. Ligule when pulled from stem is infolded (tube-like). Base reddish in spring, but fading as season progresses. Red/purple tinge often still detectable on outer sheath at base of stem in late season. Stems are robust; fleshy and thick. In cross section they are somewhat flattened or oval in shape.

Bark: n/a.

Seed/Flowers: Upright with a cascading broom like 'flower' head.

Buds/Stem: n/a.

Habitat: Moist to fresh soils in open wetlands and edges of riverbank.

Similar native species: The native species of manna grass (*Glyceria sp.*), including tall northern, eastern and rattlesnake grass, have smooth stem sheaths and flowering heads tend to bend over and not stand upright. Rarely do these native species exceed 1.5 m in height.



close-up of flower

"flower" head



ligule



common reed
(*Phragmites australis*)

common reed

(*Phragmites australis*)

Plant type: Grass.

Arrangement: Alternate.

Leaf: Broad leaf > 1 cm wide.

Bark: n/a.

Seed/Flowers: Dense cascading 'broom-like' flower head. 'Cottony' in appearance when mature.

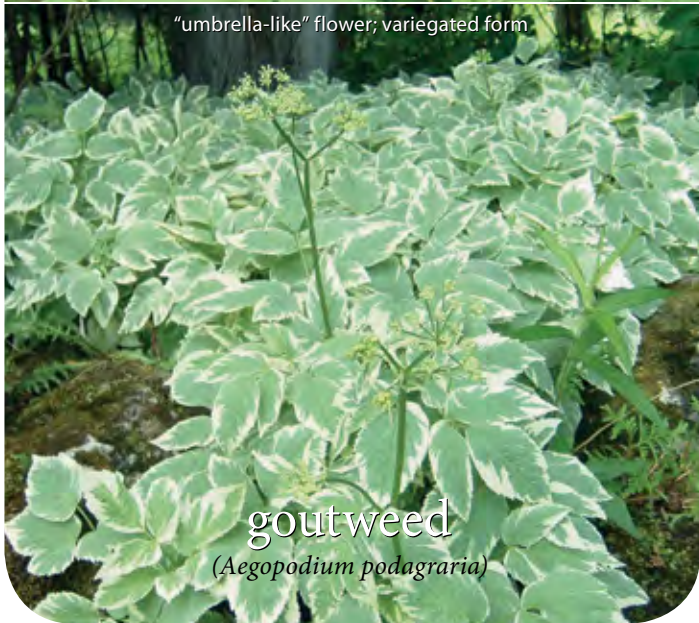
Buds/Stem: Stems rough and ridged, ligule a densely hairy band. Hairy band less conspicuous later in season. Mature plants > 3 m tall.

Habitat: Moist to wet soils. Found in wetlands, water-courses and road side ditches.

Similar native species: Species of manna grass (*Glyceria* sp.) including tall northern, eastern and rattlesnake grass. A native common reed exists but has a smooth stem and the ligule is not hairy. It is also quite rare.



non-variegated form



"umbrella-like" flower; variegated form

goutweed

(*Aegopodium podagraria*)

goutweed

(*Aegopodium podagraria*)

Plant type: Herb.

Arrangement: Alternate.

Leaf: Compound leaf with serrated edges, can be non-variegated or variegated green and white.

Bark: n/a.

Seed/Flowers: Flat topped 'umbrella like' flower head with many small white flowers.

Buds/Stem: n/a.

Habitat: Various – dry to fresh soils in forest and successional areas. An escapee from residential gardens.

Similar native species: Water hemlock (*Cicuta maculata*) – found in wet areas. Angelica (*Angelica atropurpurea*) has similar compound leaves but grows up to 2 m tall. Golden alexanders (*Zizia aurea*) is a rare native plant found in flood plains with similar but more slender leaves and yellow flowers in May to June.

A close-up photograph of English ivy (Hedera helix) growing on a forest floor. The image shows numerous green, heart-shaped leaves with prominent white veins, interspersed with brown, dried leaves and thin, brown stems. The background is a dense carpet of similar foliage.

vine-like growth form

English ivy
(*Hedera helix*)

English ivy

(*Hedera helix*)

Plant Type: Herb/Vine.

Arrangement: Alternate.

Leaf: Three-lobed evergreen leaf with light coloured veins.

Bark: n/a.

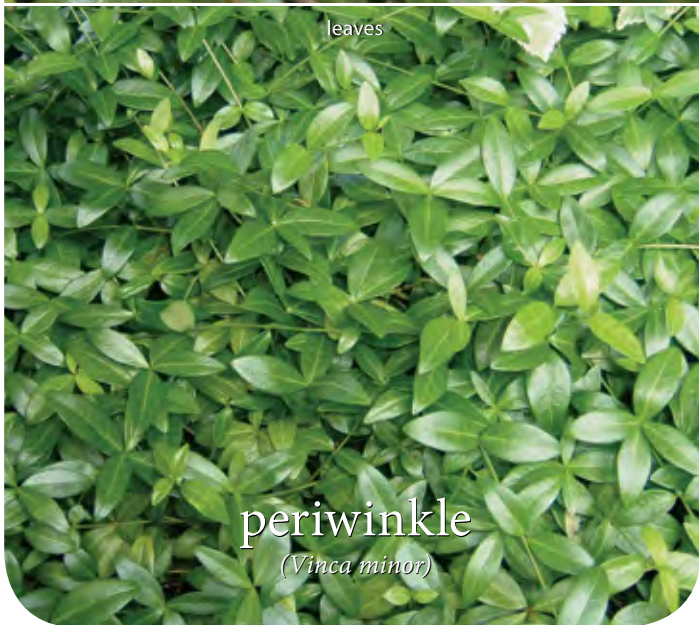
Buds/Stem: Grows as ground cover and vine.

Habitat: A variety of soils from dry to fresh in successional and forested habitats. An escapee from residential gardens.

Similar native species: none.



flowers



leaves

periwinkle
(*Vinca minor*)

periwinkle

(*Vinca minor*)

Plant type: Herb.

Arrangement: Opposite.

Leaf: Lance shaped, shiny, evergreen.

Bark: n/a.

Seed/Flowers: Showy blue/purple flowers.

Buds/Stem: A creeping, trailing ground plant.

Habitat: Dry to fresh soils in successional areas, forests and along streams and wetlands. Typically associated with residential gardens.

Similar native species: Wintergreen (*Gaultheria procumbens*) has similar leaves, but has an obvious minty smell when the leaf is crushed. Partridgeberry (*Mitchella repens*) is also found in forests. Similar leaves but more round to egg-shaped with prominent pale veins, flowers are white followed by red berries.

