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Haliburton Highlands Land Trust

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Invasive terrestrial and aquatic plant awareness

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Introduction

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

By contrast, invasive plants come form outside this geographic area. When introduced, there is the potential for them to establish themselves and disrupt the native ecosystem. Often displacing native plants, the result is less biodiversity which means less food and sheltering locations for wildlife dependent on native plants. There can also be economical and social implications.

There are over 700 invasive species in Ontario. They come in many forms including aquatic and terrestrial plants, invertebrates, forest pathogens, wildlife, and fish. They arrive in Ontario in a myriad of ways including international transportation via waterways and air, the landscaping, garden centre and pet trade. Some have been intentionally introduced with good intentions, some arrive inadvertently through global transportation of people and goods.

Not all introduced plants become invasive. Many non-native garden plants do not displace native plant species and are quite benign. Invasive species tend to expand and modify the ecosystem to which they are introduced and can be devastating to their new environment as they are rarely subject to the ecological controls. Invasives are directly linked to biodiversity decline, potentially resulting in species extinction or extirpation from a region. What makes a species invasive is the rate at which it can populate an area unchecked by environmental limiting factors.

Drawing on the paper produced by Kolten Hooper as part of a community-based research project for Trent University and U-Links Centre for Community-Based Research, several terrestrial and aquatic plant species have been identified in Haliburton County and the Highlands Corridor area. To limit the scope of this report, only the more common and problematic invasive plant species were selected which include the following:

Terrestrial

1. Garlic mustard
2. Japanese knotweed
3. Purple loosestrife
4. Phragmites
5. Giant hogweed
6. Dog strangling vine
7. Wild parsnip

Aquatic

8. European frog-bit

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9. Eurasian milfoil

Ground cover

10. Periwinkle
11. Goutweed

The report will cover a basic background of the plant with identification with photos, impacts and preferred habitat. An introduction to control measures will be included. Links to more detailed information will also be provided.

Terrestrial

1. Garlic Mustard

Ontario Invasive Plant Council www.ontarioinvasiceplants.ca

Background

Introduced in the 1800 from Europe, the herb garlic mustard was desired as an edible plant being high in vitamin A and C. Since its arrival it has escaped from cultivation and now one of Ontario's most aggressive forest invaders.

Identification

First year of growth the plant produces no flowers and grows like a rosette of leaves that are kidney shaped with serrated edges. The leaves smell like garlic or onion when crushed between the fingers. In the second year, the plant can grow up to 1 meter tall and produces a cluster of small white flowers with four petals. Narrow, tubular seed pods like a bean pod are produced releasing black seeds in mid-summer. The seeds production is prolific and stands of garlic mustard can double in size every two years.

Impacts

Garlic mustard is allelopathic, which means that its roots produce chemicals that change soil chemistry. This strategy impacts some of the competition and harms native species, some which are endangered like wild ginseng. Garlic mustard can also crowd out native species like trillium and trout lily and it provides no food source for local wildlife.

Preferred Habitat

Garlic mustard can adapt to various habitats, dry to moist soil and can tolerate shade. Garlic mustard grows in a wide range of habitats and spreads quickly in disturbed habitats along roadsides, trails, and fence lines. While tolerant of

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many conditions, the density and health of this invasive is somewhat light dependent, thriving more in open light conditions.

What you can do

- ✓ Best management practices (BMP) would include first learning how to identify garlic mustard.
- ✓ Monitoring your property for this plant, especially in disturbed areas is a proactive step. This invasive spreads through latching their seeds to people, pets and wildlife. They have limited distribution through wind.
- ✓ Early detection and pulling out individual plants before this species gets established is paramount
- ✓ See https://www.invadingspecies.com/invaders/plants/garlic-mustard-2/ for more information on control measures.

2. Japanese Knotweed

Ontario's Invading Species Awareness Program
www.invadingspecies.com

Background

Japanese knotweed is an aggressive semi-woody perennial plant that is native to eastern Asia. In the 1800's it was introduced to North America as an ornamental species and planted for erosion control. Japanese knotweed is especially persistent due to its vigorous root system, which can spread nearly 10 metres from the parent stem and is known to grow through asphalt and concrete. This invader is very persistent and once it becomes established, is incredibly difficult to control.

Identification

Japanese knotweed is a semi-woody perennial plant capable of reaching 1-3 metres in height. The leaves are tear dropped shaped, sharp pointed and dark green. When the plants are large, the stem is smooth and "bamboo-like". Once mature, the stem canes are hollow.

Impacts

Japanese knotweed grows very quickly, and the roots are known to cause damage to building structures and substructures by targeting weak points, such as cracks in masonry, and attempting to grow through them. It grows in dense thickets and outcompetes native species for soil and light. It can establish along riverbanks, where pieces of roots can break off and float downstream to start new populations. Small segments of roots of 1 cm can propagate.

Preferred Habitat

Japanese knotweed prefers moist to wet soils found in wetlands, watercourses, and roadside ditches. Preferring open habitats, Japanese knotweed can also tolerate shaded conditions. Japanese knotweed reproduces mainly via rhizomes, which account for two thirds of the plants total mass and can extend more than 2 m deep and 18 m in length.

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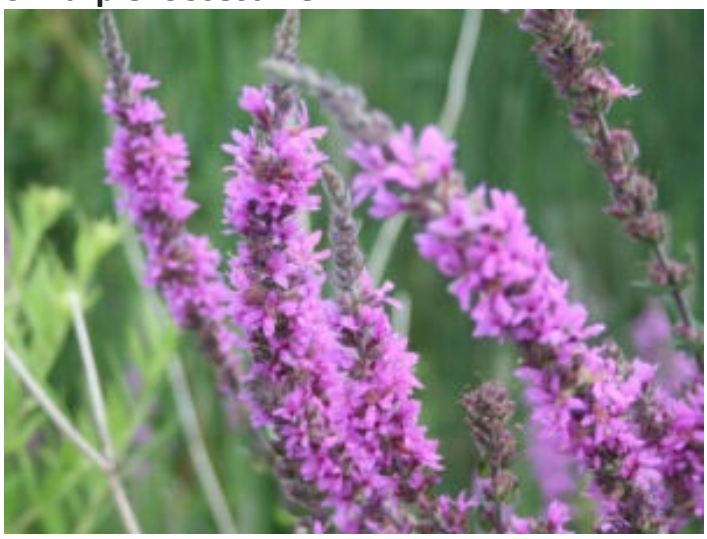
What you can do

- ✓ First learn to identify Japanese knotweed. Early detection is the key to reducing the spread of this invasive. Once established, they can be very difficult to eradicate.
- ✓ Avoid areas where Japanese knotweed is growing to avoid spreading onto your property.
- ✓ Small numbers of plants can be hand pulled out of the ground.
- ✓ All plant debris should be taken to the local landfill. Do not compost.
- ✓ More information on control measures can be found at: https://www.ontarioinvasiveplants.ca/wp-content/uploads/2020/10/JapaneseKnotweed_TD.pdf

3. Purple loosestrife



Ontario's Invading Species Awareness Program
www.invadingspecies.com

Background

Purple loosestrife is a wetland plant native to Europe and Asia that was brought to North America the early 19th century. This highly invasive plant was likely introduced when its seeds were included in soil used as ballast in European sailing ships and discarded in North America.

Identification

Plants average 1-15 flowering stems, although a single rootstock can produce 30-50 erect stems. The stems are woody and feel square. The showy deep pink to purple flowers grows densely clustered on a spike-like stem. Larger plants can grow 2.7 million seeds per growing season allowing stands of purple loosestrife to multiply quickly.

Impacts

Purple loosestrife impacts both wildlife and agriculture. It replaces and displaces native flora and fauna, eliminating food, nesting and shelter for wildlife. Purple loosestrife forms a single species stand that no bird, mammal, or fish depends upon, and germinates faster than many native wetland species. The dense stands outcompete native species for habitat. The government approved release of two beetle species that feed primarily on purple loosestrife has been effective in reducing the plant's population in Ontario.

Preferred Habitat

Purple loosestrife has become a serious invader of wetlands and is also adaptable to roadside areas and other disturbed habitats.

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What you can do

- ✓ Learn to identify Purple Loosestrife. Early detection is important.
- ✓ Best time to remove is when the plant is flowering in June, July and August. Digging up roots or cutting before going to seed are both recommended.
- ✓ Do not compost. Bag and dispose of through regular garbage.
- ✓ Plant only native plants in your garden.
- ✓ See https://www.invadingspecies.com/invaders/plants/purple-loosestrife-2/ for best management practices.

4. Phragmites

Ontario's Invading Species Awareness Program
www.invadingspecies.com

Background

Invasive phragmites also known as the common reed is an invasive plant causing damage to Ontario's biodiversity, wetlands and beaches. Phragmites is a perennial grass that arrived in Ontario via unknown sources. Invasive phragmites is an aggressive plant that spreads quickly and out-competes native species for water and nutrients. It releases toxins from its roots into the soil to hinder the growth of and kill surrounding plants.

Identification

Reaching heights of 5 meters, invasive phragmites have dense, cascading "broom like" flower heads with rough and ridged stalks. One factor making the identification of invasive phragmites difficult is the existence of a closely related native subspecies. Generally, native phragmites do not grow as tall as the invasive plant and does not out-compete other native species. Several characteristics of the plant can be useful in distinguishing between the native variety and invasive *phragmites.* The following information can help in identifying invasive phragmites.

Invasive phragmites

- Grows in stands that can be extremely dense with as many as 200 stems per square metre.
- Can grow so densely that it crowds out other species.
- Has stems that are tan or beige in colour with blue-green leaves and large, dense seedheads.

Native phragmites

- Grows in stands that are usually not as dense as the invasive plant.
- Well-established stands are frequently mixed with other plants.
- Usually has more reddish-brown stems, yellow-green leaves and smaller, sparser seedheads

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Impacts

Following a common theme, invasive phragmites crowd out native vegetation, resulting in decreased plant biodiversity. Invasive phragmites also provide poor habitat and food supplies for wildlife, including several species at risk. The density of the dead stalks can result in a fire hazard.

Preferred Habitat

Thrives in moist to wet soils. Found in wetlands, watercourses, and roadside ditches.

What you can do

- ✓ Learn how to identify invasive phragmites and how to avoid accidentally spreading it through its root fragments and seeds.
- ✓ When leaving an area containing invasive phragmites, inspect, clean and remove mud, seeds and plant parts from clothing, pets (and horses), vehicles (including bicycles and ATVs), and equipment.
- ✓ Do not compost invasive phragmites in your backyard composter.
- ✓ More information on control measures can be found at: http://www.ontarioinvasiveplants.ca/wp-content/uploads/2016/07/Phragmites_BMP_FINAL.pdf.

5. Giant Hogweed

Ontario's Invading Species Awareness Program
www.invadingspecies.com

Background

Giant hogweed is a perennial plant and a member of the carrot family. It is a garden ornamental from southwest Asia that is naturalizing in North America and becoming more common in southern and central Ontario. Giant hogweed has the potential to spread readily and grows along roadsides, ditches and streams. It invades old fields and native habitats such as open woodlands.

Identification

This invasive herb starts off as a rosette of large, lobed leaves. In 2-5 years in produces large white flowers on thick, hollow stems that have reddish-purple flecks and stiff white hairs. Each plant can produce up to 120,000 winged seeds. Once it produces seeds, it dies.

Impacts

Giant hogweed can create excessive erosion of watercourse banks and may crowd out native species. The biggest concern is regarding human health. The clear, watery sap of giant hogweed contains toxins that can cause severe dermatitis (inflammation of the skin). You can get severe burns if you get the sap on your skin and the skin is then exposed to sunlight. Symptoms occur within 48 hours and consist of painful blisters. Purplish scars may form that last for

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many years. Eye contact with the sap has been reported (in the media and by various web sites) to cause temporary or potentially permanent blindness.

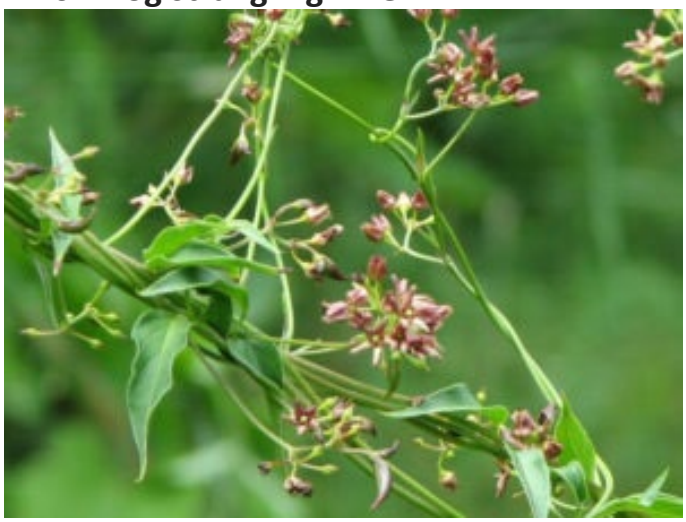
Preferred Habitat

Giant hogweed prefers wet soils in forests, meadows and a variety of wetlands.

What you can do

- ✓ Learn to identify giant hogweed.
- ✓ If you find it on your property, consider hiring a professional exterminator to remove it.
- ✓ Control of giant hogweed includes protective clothing, mechanical and chemical procedures, and careful disposal.
- ✓ See https://www.invadingspecies.com/invaders/plants/giant-hogweed-2/ for more information on control procedures.

6. Dog strangling vine



Ontario's Invading Species Awareness Program
www.invadingspecies.com

Background

The name dog-strangling vine refers to two invasive plants native to Eurasia that are look-alike members of the milkweed family. Introduced in the mid-1800s for use in gardens, these perennial vines have spread rapidly throughout central and southern Ontario. Because they are so similar, both species have the same common name. This plant poses no threat to dogs.

Identification

This herb has lance shaped leaves with small edges. The flowers are pink or purple with five pedals. They produce a unique seed pod like a bean pod with seeds attached to downy "umbrellas" making them easily spread by the wind. The plant can produce up to 28,000 seeds per square metre. Grows 1-2 meters high and wraps itself around other plants and structures.

Impacts

Dog-strangling vine forms dense stands that overwhelm and crowd out native plants and young trees, preventing forest regeneration. Dense colonies form mats of interwoven vines that are difficult to walk through and interfere with forest management and recreational activities. Deer and other browsing animals also avoid dog-strangling vine, which can increase grazing pressure on more palatable native plants. The vine threatens the monarch butterfly, a species at risk in Ontario. The butterflies lay their eggs on the plant, but the larvae are unable to complete their life cycle and do not survive.

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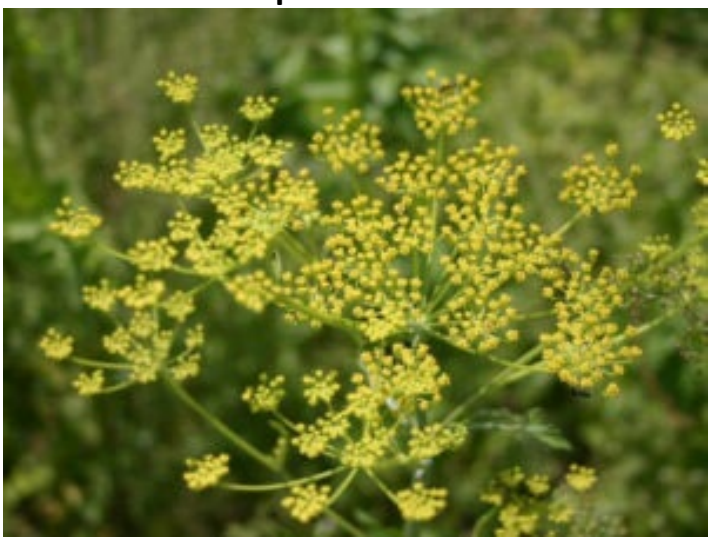
Preferred Habitat

Dog-strangling vine prefers dry to moist soils and the vine has invaded ravines, hillsides, fence lines, stream banks, roadsides and utility corridors.

What you can do

- ✓ Learn how to identify dog-strangling vine and how to avoid accidentally spreading this invasive plant.
- ✓ When leaving an area containing dog-strangling vine, inspect, clean and remove mud, seeds and plant parts from clothing, pets (and horses), vehicles (including bicycles and ATVs), and equipment.
- ✓ Do not compost dog-strangling vine in your backyard composter.
- ✓ For best practices related to Dog-strangling vine see https://www.ontarioinvasiveplants.ca/wp-content/uploads/2016/06/OIPC_BMP_DogStranglingVine.pdf

7. Wild Parsnip



Ontario's Invading Species Awareness Program
www.invadingspecies.com

Background

Wild parsnip is an invasive plant native to Europe and Asia. It was likely brought to North America by European settlers, who grew it for its edible root. Wild parsnip has escaped from cultivated gardens and spread across the continent. Their roots are edible, but the sap of the plant can cause severe burns. Wild parsnip, which is also known as poison parsnip, is a member of the carrot/parsley family.

Identification

Wild parsnip grows up to 1.5 metres tall and has a single green stem that is two to five centimetres thick and is smooth with few hairs. It has compound leaves that are arranged in pairs, with sharply toothed leaflets that are shaped like a mitten. Yellowish green flowers form umbrella-shaped clusters 10 to 20 centimetres across like Queen Anne's ace and giant hogweed which look similar but their flowers are white.

Impacts

A common theme with invasive plant species, the Wild Parsnip can out compete native plants and reduce biodiversity. The stems, leaves and flowers all have chemicals that increase skin sensitivity to sunlight resulting in intense burns, rashes or blisters.

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Preferred Habitat

The plant can form dense stands and spreads quickly in disturbed areas such as abandoned yards, waste dumps, meadows, open fields, roadsides and railway embankments. Its seeds are easily dispersed by wind and water, and on mowing or other equipment.

What you can do

- ✓ Learn how to identify wild parsnip and other invasive plants.
- ✓ Stay on trails and away from areas known to have wild parsnip or other invasive species.
- ✓ Inspect, clean and remove mud, seeds and plant parts from clothing, pets (including horses), vehicles (including bicycles) and equipment such as mowers and tools.
- ✓ Avoid disturbing soil and removing plants from natural areas; they may be rare native plants or even invasive plants.
- ✓ Care must be taken to remove Wild parsnip. See https://www.ontarioinvasiveplants.ca/resources/best-management-practices/ for more information on wild parsnip control.

Aquatic

8. European Frog-bit

Ontario's Invading Species Awareness Program
www.invadingspecies.com

Background

European frog-bit is an invasive aquatic plant native to Europe and parts of Asia and Africa. In 1932, the plant was brought from Europe to the Central Experimental Farm in Ottawa for possible commercial use as an ornamental plant. In 1939, it was found in the Rideau Canal. Since then, it has spread to several rivers, Lake Ontario, Lake Erie, and other inland waters.

Identification

This plant can float free or put down roots up to 50 cm long in shallow water. It produces a single white flower up to 2 cm wide with three rounded petals and a yellow centre. Leaves are round to heart-shaped, 2.5 to five cm wide – about the size of a Canadian loonie. The leaf bottom is purple/red with a spongy coating along the middle vein of the leaf that allows it to float on the water.

Impacts

The fast-growing plant forms thick mats that reduce biodiversity by crowding out native plants and preventing sunlight from reaching submerged plants. When a large colony of the plant dies and decomposes, it removes oxygen from the water, which can affect fish communities and other aquatic life.

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Dense masses of European frog-bit can hinder swimmers and boaters, prevent other recreational uses of waterways, and clog streams.

Preferred Habitat

European frog-bit prefers slow-moving waters, such as sheltered inlets, ponds, slow-running rivers, and ditches.

What you can do

- ✓ Learn how to identify European frog-bit and how to prevent accidentally spreading this plant.
- ✓ Avoid planting European frog-bit in your aquarium, water garden or pond. Aquarium hobbyists and water gardeners should only use native or non-invasive plants.
- ✓ See https://www.invadingspecies.com/invaders/aquatic-plants/european-frog-bit-2/ for more information on European frog-bit controls.

9. Eurasian milfoil

https://www.natureconservancy.ca/en/what-we-do/resource-centre/invasive-species/

Background

Eurasian milfoil is an invasive aquatic plant native to Europe, Asia, and northern Africa. Introduced to North America in the 19th century, it is now one of the most widely distributed invasive aquatic plants on the continent. It is suspected to have been introduced via ballast water but was then moved around within the province through recreational watercrafts and natural expansion.

Identification

Eurasian milfoil is a perennial plant that grows under the water surface. Feather-like green leaves circle the stem in groups of four or five. Leaves have 12 or more thread-like segments. Tiny, reddish flowers grow on spikes 5 to 20 cm long that rise above the water towards late summer (August-September).

Impacts

The rapid growth of this plant reduces biodiversity by competing aggressively with native plants. Decomposition reduces oxygen levels in the water, which can lead to fish die-offs. Thick mats of Eurasian milfoil can hinder recreational activities such as swimming, boating, and fishing. Dense stands can create stagnant water, which is an ideal habitat for mosquitoes.

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Preferred Habitat

Eurasian milfoil prefers shallow water 1-3 m deep but can root in up to 10 m of water. Being a fast-growing perennial, it forms dense underwater mats that shade out other aquatic plants.

What you can do

- ✓ Learn how to identify Eurasian milfoil and how to prevent accidentally spreading this plant with your watercraft or fishing equipment.
- ✓ Avoid infested areas or reduce your speed when travelling near Eurasian water-milfoil infestations. If boating, your propeller can dislodge fragments and spread the pieces to new areas. New plants can grow from small pieces of the plant.
- ✓ Avoid planting Eurasian water milfoil in your aquarium, water garden or pond.
- ✓ Never release unwanted aquarium plants or pets. Unlike terrestrial plants, aquatic plants can be composted so long as the compost is at least 30m from the water's edge.
- ✓ See https://www.invadingspecies.com/invaders/aquatic-plants/eurasian-water-milfoil-2/ for more information on the Eurasian milfoil.

Ground Cover Plants

10. Periwinkle

Ontario's Invading Species Awareness Program
www.invadingspecies.com

Background

Common invasive ground covers like Periwinkle are native to Europe and Asia and were introduced to North America as ornamental plants.

Identification

Periwinkle can grow to up to 15 cm tall. Their leaves are opposite along stem and are pointed, dark green and shiny. Their flowers are showy blue/purple with 5 petals.

Impacts

Periwinkle can grow into dense carpets of vegetation that limit the amount of sunlight available to other species, affecting overall plant diversity. Periwinkle spreads through seed dispersal, as well as through underground stems and roots. These plants are shade tolerant and once established, are highly competitive. Periwinkle leaves are toxic to most grazers and seeds are too small for birds to consume.

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Preferred Habitat

As invasive ground cover, Periwinkle thrives in disturbed areas and prefer shady or semi-shady areas. They commonly grow in rich, moist soils and can be found along streams and wetlands but can also spread under a forest canopy. Commonly associated with residential gardens.

What you can do

- ✓ Learn how to identify Periwinkle.
- ✓ Avoid using Periwinkle as a ground cover or in your garden.
- ✓ See https://www.conservationhalton.ca/wp-content/uploads/2022/05/factsheetperwinkle.pdf for more information on Periwinkle.

11. Goutweed

Ontario's Invading Species Awareness Program
www.invadingspecies.com

Background

Goutweed is native to Europe and Asia and were introduced to North America as an ornamental plant.

Identification

Goutweed can grow up to 1 m tall but normally grows closer to the ground. The leaves arrange themselves in an alternate pattern along stem and have serrated edges. The natural plant leaf is light green but some garden centres are supplying plants with variegated leaves which are green in the centre and white on the margins like the photo provided. Goutweed produces small white flowers which are umbels (umbrella-like) and flat.

Impacts

Goutweed is an aggressive invasive plant that forms dense patches, displaces native species, and greatly reduces species diversity in the ground layer. Goutweed patches also inhibit the establishment of conifers and other native tree species.

Preferred Habitat

It appears to do best on moist soil and is shade tolerant, capable of invading closed-canopy forests.

What you can do

- ✓ Learn to identify Goutweed.
- ✓ Avoid buying non-native plants for you garden, especially ground cover plants.
- ✓ For Goutweed control see https://www.ontarioinvasiveplants.ca/resources/best-management-practices/ or https://www.torontomastergardeners.ca/wp-content/uploads/2021/09/Goutweed.pdf

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