



# LOWER TRENT CONSERVATION

The Simple Guide to...

## Invasive Species

### What Are Invasive Species?

Invasive species are one of the leading threats to Ontario's biodiversity. They are species of plants and animals that are "alien" or "exotic" to a region's natural ecosystem. These species make their way into natural habitats through natural and man-made pathways, ultimately crowding out the native species that were already present and established. They have no natural predators and reproduce extremely quickly, allowing them to easily out-compete native species for food and resources.

However, not all exotic species are deemed "invasive"; it is those species that threaten our ecosystems, economy and society that receive this negative connotation.

### Why Are Invasive Species A Problem?

Invasive species not only pose threats to other plants and animals within an ecosystem, they can also cause extreme social and economic problems for us as well. Every year invasive species cost agriculture and forest industries in Canada \$7.3 billion. Zebra mussels alone have cost between \$3 billion and \$7.5 billion in damages throughout the Great Lakes.

Invasive species can also be dangerous. Species like Giant Hogweed can cause serious and painful burning blisters on the skin if exposed to the sap of the plant. If the sap gets in your eyes, it can also cause temporary or permanent blindness. Invasive aquatic vegetation can make recreational swimming and boating difficult as they form dense clusters.

### Did you Know?

Because of its diverse economy, growing population, and geographic location, Ontario is at the highest risk of species invasions compared to any other Canadian province or territory.

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## How Are Invasive Species Introduced?

- All Terrain Vehicles (ATVs)
- Aquarium, water garden and pet trades
- Ballast water
- Canals and changes to waterways
- Gardening and landscaping
- Movement of live fish and bait
- Movement or transport of topsoil
- Recreational and commercial boating
- Transport of animal carcasses or products made from them
- Transport of raw wood and other forest products
- Water transport and using water for dust control on roads



## What Can You Do To Help?

Unfortunately, once established, these invasive species nearly impossible to eliminate. The active participation of the public, boaters, anglers, campers, hikers, and other recreationalists, is vital to prevent the spread of these invaders. To help prevent the spread, here are a few tips:

- Gardening?** Plant native species.
- Going camping?** Don't transport firewood. Buy it locally; leave what you don't use there.
- Going fishing?** Don't empty your bait bucket in or near water – it's against the law.
- Going boating?** Wash your boat before you move to another lake or river.
- Going hiking?** Clean visible mud, plants and seeds from your boots and other equipment.
- Have a fish pet that is no longer wanted?** Don't release it into the wild and don't flush dead fish down the toilet. Put them in the garbage or compost.
- Have a turtle, fish or other small reptile pet that is no longer wanted?** Don't release it into the wild, find it a new home.
- Travelling?** Don't take plants, plant parts, seeds or fruit across borders.

**Report sightings of invasive species to the Invasive Species Hotline (1-800-563-7711)**

**or through EDDMapS Ontario mobile App (<http://www.eddmaps.org/ontario/>)**

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## Giant Hogweed



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Giant Hogweed, also known as Giant cow parsnip 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.

**CAUTION:** The clear, watery sap of Giant hogweed contains toxins that can cause severe dermatitis (inflammation of the skin). You can get severe burns if the sap gets on your skin and is then exposed to sunlight. Symptoms occur within 48 hours and consist of painful blisters and purple scars that may last for years. Coming in contact with Cow parsnip and Wild parsnip can cause similar reactions.

## Phragmites

Invasive Phragmites (European Common Reed) is an invasive plant causing damage to Ontario's biodiversity, wetlands and beaches. Invasive Phragmites is a perennial grass that has been damaging ecosystems in Ontario for decades. It is not clear how it was transported to North America from its native home in Eurasia.

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. While it prefers areas of standing water, its roots can grow to extreme lengths, allowing



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## Garlic Mustard



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Garlic mustard is an invasive herb native to Europe. It was brought to North America in the early 1800s for use as an edible herb. Available in the early spring and high in vitamins A and C, it has a strong, distinctive smell similar to garlic. Since its arrival in North America it has escaped into the wild and is now one of Ontario's most aggressive forest invaders.

Garlic mustard seeds are easily spread by people and animals. They can remain in the soil for up to 30 years and still be able to sprout. The plant can grow in a wide range of sunny and fully shaded habitats, including undisturbed forest, forest edges, riverbanks and roadsides. Garlic mustard does not provide a valuable food source for native wildlife.

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## Dog-Strangling Vine



The name “dog-strangling vine” refers to two invasive plants native to Eurasia– black swallowwort and pale swallowwort. These look-alike members of the milkweed family were introduced to the northeastern United States in the mid-1800s for use in gardens. In recent years these perennial vines have spread rapidly throughout central and southern Ontario. Because they are so similar, both species have the same common name.

The plant can produce up to 2,400 seeds per square metre. The seeds are easily spread by the wind, and new plants can grow from root fragments, making it difficult to destroy. The vine has invaded ravines, hillsides, fence lines, stream banks, roadsides and utility corridors. Dog-strangling vine is also found in prairies, alvars (limestone plains), plantations of pine trees and natural forests.

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## Himalayan Balsam

Himalayan balsam is an annual herb, native to the western Himalayas. In the early 1800s it was introduced to many parts of Europe, New Zealand and North America as a garden ornamental. Himalayan Balsam has an orchid shaped flower resembling a British policeman’s helmet, which gave rise to its other common name of “Policeman’s helmet”.

Himalayan balsam can completely cover an area and crowd out native vegetation. Mature seed capsules explode when touched and can eject seeds as much as 5 m from the parent plant, giving it the alternate common name of “Touch-Me-Not plant”. It is mostly found in riparian areas, especially river edges



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## Purple Loosestrife



Since it was brought to North America, purple loosestrife has become an invader of wetlands, roadsides and disturbed areas. The plant forms dense stands with thick mats of roots that can extend over vast areas. The stands reduce nutrients and space for native plants and degrade habitat for wildlife. Each plant can grow as many as 30 flowering stems that can produce up to 2.7 million seeds each year. The tiny seeds are easily spread by water, wind, wildlife and humans.

In 1992, the Canadian and American governments approved the release of two European leaf-eating beetles. The beetles are natural enemies of purple loosestrife and feed primarily on the plant, although they occasionally eat other species of loosestrife. This biological control of purple loosestrife can reduce populations by up to 90% and allow native plants to re-establish. The beetles were widely released in Ontario, and purple loosestrife populations at many of these sites have been significantly reduced.

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4. John M. Randall, The Nature Conservancy, Bugwood.org 5. Jan Samanek, State Phytosanitary Administration, Bugwood.org 6. Steve Dewey, Utah State University, Bugwood.org

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## European Buckthorn



Common buckthorn (also known as European buckthorn) is a small shrub or tree native to Eurasia. It was introduced to North America in the 1880s as an ornamental shrub and was widely planted for fencerows and windbreaks in agricultural fields. Since then it has spread aggressively throughout southern Ontario and in other provinces.

Common buckthorn can thrive in a wide range of soil and light conditions, enabling it to invade a variety of habitats. It is most often found in woodlands and open fields, where it forms dense stands under which few other plants can grow. Buckthorn can spread widely with the help of birds and animals that eat its fruit carry the seeds long distances and deposit them in their droppings. Stands of buckthorn can invade roadsides, riverbanks, mature forests, farm fields and hydro corridors.

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## Emerald Ash Borer

Emerald Ash Borer is a forest pest native to Asia that has killed millions of Ash trees in southwestern Ontario, and the Great Lakes States. Due to its major economic and environmental threat, the Canadian Food Inspection Agency has prohibited the movement of firewood and any material made from Ash trees outside of designated areas under an Infested Places Order.

The Emerald Ash Borer attacks both healthy and stressed Ash trees when its larvae tunnel through the tree's vascular system which delivers water, nutrients and sugars throughout the tree. Emerald Ash Borer will only travel a few kilometers per year on its own; however it can be easily dispersed long distances by people moving infested materials, such as firewood, logs, lumber, and woodchips.



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## Gypsy Moth



Gypsy moth is an insect native to Europe and Asia that has been severely weakening trees across North America. Gypsy moth was introduced to North America in the late 1860's near Boston and has spread over the past century. Despite the successful use of insect predators, as well as fungal and viral controls, gypsy moth populations do occasionally reach outbreak levels and continue to expand their range.

Gypsy moth caterpillars defoliate host trees, mostly hardwood species, such as: oak, birch, poplar, willow, maple and others. During outbreak years, nearly all broadleaf trees may be completely defoliated, caterpillars appear everywhere, and "frass" (caterpillar droppings) appear to rain from the trees. Adult gypsy moths are only seen in mid-summer when temperatures are above freezing. This species is known to infest trees in woodland or suburban areas.

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7. Leslie J. Mehrhoff, University of Connecticut, Bugwood.org 8. Debbie Miller, USDA Forest Service, Bugwood.org 9. USDA APHIS PPQ Archive, USDA APHIS PPQ, Bugwood.org

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## Eurasian Water-Milfoil



Eurasian water-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 may have been introduced through the aquarium trade or the ballast water of ships.

Eurasian water-milfoil prefers shallow water one to three metres deep, but can root in up to 10 metres of water. A fast-growing perennial, it forms dense underwater mats that shade other aquatic plants. When large stands begin to die off in the fall, the decaying plants can reduce oxygen levels in the water.

The plant can interbreed with native milfoils, creating a more aggressive form of the invasive species. Because tiny plant pieces can develop into new plants, Eurasian water-milfoil is easily spread when water currents, boat propellers, trailers or fishing gear carry plant fragments to new areas.

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## Zebra and Quagga Mussels

Zebra and quagga mussels are freshwater bivalves native to the Black Sea region of Eurasia. Both species were believed to have been introduced in the late 1980's by ballast water from transoceanic ships.

Zebra and quagga mussels are capable of heavily colonizing hard and soft surfaces, including, docks, boats, break walls and beaches. These colonization's are also responsible for clogging intake structures in power stations and water treatment plants.



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## Water Soldier



Water soldier is an invasive perennial aquatic plant that is native to Europe and northwest Asia. The first wild population in North America was found in the Trent River in 2008, near the Hamlet of Trent River, Ontario. Water soldier is used as an ornamental plant in water gardens; the likely source of its introduction to the Trent River.

Since the water soldier population in the Trent River is the first in North America, it is very important to prevent the plant's introduction and spread to new locations. The Ministry of Natural Resources, with support from partnering agencies including the Ontario Federation of Anglers and Hunters, Lower Trent Conservation, Ministry of the Environment and Parks Canada is monitoring and tracking the spread of water soldier within this water body and undertaking a variety of control measures to prevent its spread to new locations.

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10. Alison Fox, University of Florida, Bugwood.org 11. Amy Benson, U.S. Geological Survey, Bugwood.org 12. Vaclav, Aquapage.eu, 2009

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## Round Goby



The round goby is a small, bottom-dwelling invasive fish. Native to the Black and Caspian seas in eastern Europe, it was first found in North America in 1990 in the St. Clair River north of Windsor, Ontario. Researchers believe the fish was brought to North America in the ballast water of ships from Europe. In less than a decade the round goby has successfully spread through all five Great Lakes and has begun to invade inland waters. In some areas the fish has reached densities of more than 100 fish per square metre.

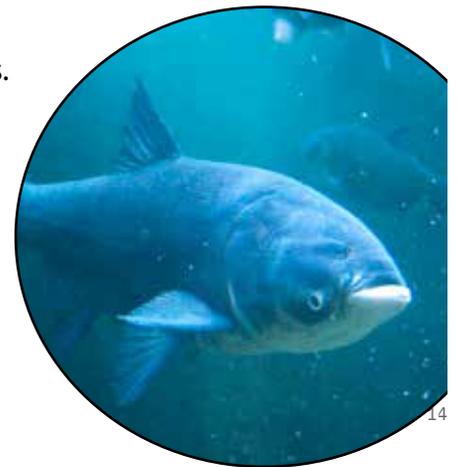
Round goby prefer waters with rocky and sandy bottoms. They feed aggressively on insects and other small organisms found on lake and river bottoms. Adult round goby eat large quantities of zebra and quagga mussels, and occasionally small fish and fish eggs. Their aggressive eating habits and ability to spawn several times each season have helped them multiply and spread quickly.

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## Asian Carps

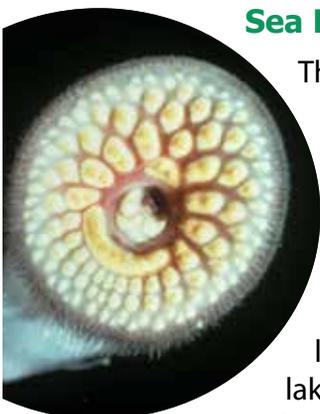
Asian carps were brought from Asia to North America in the 1960s and 70s. Since then they have migrated north through U.S. waterways towards the Great lakes. Preventing Asian carps from spreading into the Great Lakes is the best way to prevent harm to Ontario's native fish species.

Asian carps prefer cool to moderate water temperatures, like those found near the shores of the Great Lakes. If Asian carps become established in Ontario waters, they could potentially eat the food supply that our native fish depend on and crowd them out of their habitat. The decline of native fish species could damage sport and commercial fishing in Ontario.



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## Sea Lamprey



The sea lamprey is a primitive, eel-like fish native to the northern Atlantic Ocean and the Baltic, western Mediterranean and Adriatic seas. Sea lampreys invaded the Great Lakes in the early 20th century through shipping canals.

In their native range, lampreys live part of their lives in salt water, but they have adapted to living entirely in fresh water in the Great Lakes. As adults they spawn in rivers and streams. The eggs hatch into larvae that live on organic matter in stream bottoms until they transform into parasites that migrate downstream to lakes. The adult lampreys spend 12 to 20 months feeding on the blood of other lake-dwelling fish, until they are ready to travel upstream to spawn. The complete life cycle usually lasts five to nine years.

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13. Center for Great Lakes and Aquatic Sciences Archive, University of Michigan, Bugwood.org 14. Ontario's Invading Species Awareness Program, Asian Carp 15. U.S. Fish and Wildlife Service Archive, US Fish and Wildlife Service, Bugwood.org