



Japanese Knotweed (Fallopia japonica)

REPORT SUSPECTED INVASIVE SPECIES

Visit: <https://www.eddmaps.org/ontario/>

Call the Invasive Species Hotline: 1-800-563-7711



Preventing the spread of invasive species is important to preserve native biodiversity and habitat. The Lakehead Watershed has seen a recent rise in invasive species populations, making this the perfect time to familiarize ourselves with these species and report sightings for early control. Everyone can be a Superior Steward by reporting suspected invasive species using the EDDMapS website (<https://www.eddmaps.org/ontario/>).

Read this guide and Ontario's Invasive Species Best Management Practices thoroughly before attempting to control invasive species on your own. Some plants such as Wild Parsnip (*Pastinaca sativa*) and Giant Hogweed (*Heracleum mantegazzianum*) contain a toxic sap and require the use of protective clothing before contact. Each species has its own specifications for control.

PLANTS:

Wild Parsnip (*Pastinaca sativa*)

Growing to a height of 0.5-1.5 metres, Wild Parsnip has a light green and deeply grooved hollow stem. Its leaves alternate along the main stem and are composed of 2-5 pairs of opposing leaflets, with one terminal diamond-shaped leaflet. The leaflets have saw-toothed edges and long petioles (secondary stems connecting the leaves to the main stems). Small, yellow, 5-petalled flowers grow in 15-25 rays/clusters per flower head. Each flower head has the appearance of a flat umbrella. After flowering, small 5-7 millimetre fruits replace each flower. The fruit is a dry, oval shell containing two seeds, light green in colour with light pink at the top of each seed. Fruit dispersal takes place between August and November and can stay viable in the soil for five years.

- **Stem:** Light green and deeply grooved hollow stem, reaching 0.5-1.5 metres tall.
- **Leaves:** Alternate along the main stem. Composed of 2-5 pairs of opposing leaflets, with one terminal diamond-shaped leaflet (compound leaves are composed of leaflets, or multiple leaf-like structures along a

petiole which branches off the main stem). The leaflets have saw-toothed edges and long petioles (secondary stems connecting the leaves to the main stems). Note: the plant takes two or more years to mature and flower, for the first couple years identification is reliant on the leaf morphology of the basal leaves.

- **Flowers:** Small, yellow, 5-petaled flowers growing in 15-25 rays/clusters per flower head. Each flower head has the appearance of a flat umbrella.
- **Fruit:** After flowering, small 5-7 millimetre fruits replace each flower. The fruit is a dry, oval shell containing two seeds, light green in colour with light pink at the top of each seed. Fruit dispersal takes place between August and November and can stay viable in the soil for five years.

Always wear protective clothing and eye protection when controlling Wild Parsnip, Giant Hogweed, or Cow Parsnip. The sap contains toxic compounds (furanocoumarins) that cause rashes, burns, or blisters to skin exposed to the sap and then sunlight. For more information click here.

- **Look-alikes:** Giant Hogweed, Cow Parsnip (native), Queen Anne's Lace, Angelica. Cow Parsnip (*Heracleum maximum*), a native species, is common in the Thunder Bay District and is often mistaken for Wild Parsnip and Giant Hogweed. Cow Parsnip has white flowers in umbrella-shaped clusters, leaves are deeply lobed and are connected to the main stem by a petiole, or leaf stalk.



Umbrella-shaped yellow flower clusters of Wild Parsnip









Oppositely-branched, toothed leaves of Wild Parsnip

Giant Hogweed (*Heracleum mantegazzianum*)

Giant Hogweed has not yet found its way to Northwestern Ontario; however, it is important to be aware of this enormous plant as it has the potential for serious ecological and human health impacts. It can grow up to 5 metres

tall with its stem reaching a diameter of 10-15 centimetres. Its stem is often covered in purple blotches, or completely purple in colour. Its leaf edges are very jagged (think of a sprig of holly) and often grow up to 1 metre wide. Flowers are white and clustered in umbrella-shaped heads which can measure up to 1 metre across. Giant Hogweed sap can cause a condition called phytophotodermatitis, resulting in severe burns and blisters on skin exposed to both the sap and sunlight. Another invasive species, Wild Parsnip, and a native species, Cow Parsnip, require close attention to correctly differentiate these plants from Giant Hogweed. All three species contain the toxic sap in their leaves and stems.

LOOK-ALIKES	FLOWER	LEAF
<p>GIANT HOGWEED</p>	 <p><i>Photo by Emily Johnston, (Ontario Federation of Anglers and Hunters)</i></p>	 <p><i>Photo by Charles Alderson</i></p>
<p>COW PARSNIP</p>		
<p>WILD PARSNIP</p>		

Cow Parsnip is most commonly mistaken for Giant Hogweed. Its leaves are similar but Giant Hogweed's are much larger, with more jagged edges, and without a leaf stalk connecting the leaves to the main stem. Giant Hogweed's stem is covered with coarse hairs and purple blotches, or is completely purple; Cow Parsnip has few hairs along the stem and can have purple blotches, though never has a completely purple stem. Overall, Giant Hogweed is significantly larger than Cow Parsnip.

- **Stem:** Often 10-15 centimetres wide with coarse hairs/bristles and purple pigmentation.
- **Leaves:** Leaves are shiny and large, with leaf edges coarse and serrated.
- **Flowers:** Flowerheads form a large umbrella-shape, growing up to 1.5 metres in diameter. Per stem there are more than 50 small white ray flowers that compose each flower cluster.
- **Fruit:** Seeds are dry, flattened and oval in shape. Each seed has brown lines extending $\frac{3}{4}$ of the seed length.

Always wear protective clothing and eye protection when controlling Wild Parsnip, Giant Hogweed, or Cow Parsnip. The sap contains toxic compounds (furanocoumarins) that cause rashes, burns, or blisters to skin exposed to the sap and then sunlight. For more information, visit https://www.ontarioinvasiveplants.ca/wp-content/uploads/2016/06/OIPC_BMP_Hogweed.pdf.

Japanese Knotweed (*Fallopia japonica*)

Initially introduced from Europe as an ornamental shrub, this plant now takes over riparian areas, ditches and fence lines. Japanese Knotweed grows in large bamboo-like clumps, reaching heights of 1-3 metres. Its stem is light green and reddish-purple, hollow, and smooth. At each node, where a leaf branches off the main stem, there is a red-brown ring around the stem. New stems emerging in the spring resemble asparagus and are more purple than green in colour. Leaves zig-zag along the stem and are triangular, with a pointed tip and flat base. Flowers are small white sprays between the leaves, with winged fruit appearing in September.



- **Stem:** Light green with mottled purple and 2.5 centimeters in diameter. Stem is smooth, hollow, and has red-brown nodes where leaves branch off the main stem.
- **Leaves:** Leaves alternate along the stem in a distinct zigzag pattern and are oval to triangular in shape, with a pointed tip, flat base, and a long stalk connecting the leaves to the main stem.
- **Flowers:** Small white flowers bloom near the end of the stem and between the leaves late July or August. The flowers bloom in branching clusters, generally longer than the closest leaves.
- **Fruit:** Seeds are winged, triangular, a translucent light-green colour, and very small. Regeneration of the plant is primarily achieved via underground rhizomes (roots). Pieces of the stem or rhizome as small as 1 centimetre can produce new plants within 6 days when submerged in water.
- **Look-alikes:** While there are other plants with similar leaves (generally twining *Lonicera* sp.), none are comparable in size to Japanese Knotweed. Giant Knotweed (*Fallopia sachalinensis*) has been found in southern Ontario and is similar in appearance to Japanese Knotweed, but has not yet been observed in Northwestern Ontario.

Find description of Japanese Knotweed in greater detail here: https://www.ontarioinvasiveplants.ca/wp-content/uploads/2016/06/OIPC_BMP_JapaneseKnotweed.pdf.

Garlic Mustard (*Alliaria petiolata*)

One of Ontario's most aggressive invaders, Garlic Mustard is easily identified by a strong garlic odor emitted from young leaves when crushed. During its first two years of establishment, it has two distinct life stages. In its first year, dark green, kidney-shaped leaves with scalloped edges grow in low-lying basal rosettes. In its second year of growth the plant sends up a long stem, 0.3-1.2 metres tall, with triangular, sharply toothed leaves alternating along the stem. Second year plants produce small white flowers with four petals that turn into long seed pods (siliques) 3-6 centimetres long mid-summer. The low-lying, kidney-shaped leaves from its first year of growth are still present.

- **Stem:** Smooth, green stem reaching up to 1.2 metres in height.
- **Leaves:** First year plants are just a rosette of kidney-shaped leaves with scalloped edges. Second year plants have triangular-shaped leaves alternating along the stem.
- **Flowers:** Second year plants produce small, white 4-petaled flowers near the top of the stem.
- **Fruit:** Slender seedpods, or siliques, range from 2-6 centimetres in length.

Find description of Garlic Mustard in greater detail here: https://www.ontarioinvasiveplants.ca/wp-content/uploads/2016/07/OIPC_BMP_GarlicMustard.pdf.



The basal leaves of Garlic Mustard; photo courtesy of Ted Armstrong

Himalayan Balsam (*Impatiens glandulifera*)

Initially introduced as a garden ornamental, Himalayan Balsam is a commonly found invasive species around Thunder Bay that shades out native understory vegetation. Known for their “exploding” seed pods, Himalayan Balsam resembles other flowers in the genus *Impatiens*, commonly known as “touch-me-not’s”. When the seed capsules mature they explode when touched, quickly spreading seeds and expanding existing populations. It typically grows 1-3 metres tall, its stem is tinged with red and its leaves are a deep green and 5-20 centimetres long with a pointed tip and finely toothed edges. The flowers are pink with a hooded shape and bottom lip. Find it along riverbanks and in fields.

- **Stem:** Grows 1-3 metres tall and is tinged with red/purple.
- **Leaves:** Deep green leaves 5-25 centimetres long, elliptical in shape and with toothed edges.
- **Flowers:** Pink; deeper pink colour at base of flower, and lighter colour on hooded and lipped petals. Flowers are 3-4 centimetres tall and 2 centimetres across.
- **Fruit:** Fruit is contained in seed capsules, slightly smaller in size than the flowers. Once mature, the seed capsules will explode when touched, ejecting their seeds.
- **Look-alikes:** Spotted Jewelweed, Pale Touch-me-not



Pink flower and green seed pods of Himalayan Balsam



Himalayan Balsam's red-tinged stem with 4-6 sides

European Common Reed or Invasive Phragmites (*Phragmites australis subsp. australis*)

Invasive Phragmites grows in dense stands, sometimes with as many as 200 stems per square metre, crowding out other species. It can reach up to 5 metres tall and has tan stems with blue-green leaves and large, dense seedheads. Leaves are long and slender and difficult to remove from dead stems. It is found frequently in roadside ditches.

- **Stem:** Straight, reed-like, hollow stems green in colour and rough-textured. The intersection where the leaf joins the stem has a fringe of short hairs along the top edge of a small 0.1-0.4 millimetre membrane (known as the ligule).
- **Leaves:** Linear to lanceolate with pointed tips and a blue-green colour. Leaf sheaths (where the leaf attaches to and encircles the stem) adhere tightly to the stem even after the plant has died.
- **Flowers:** An inflorescence oblong and purple when young, straw-coloured at maturity. Clusters are taller than wide, reaching 15-35 centimetres tall.
- **Fruit:** Seeds are 2-3 millimetres long and arranged along the panicle inflorescence. As seeds mature, the panicles (seed stalk) begin to look “fluffy” as the spikelets containing the seeds open.
- **Look-alikes:** Native Phragmites grows in stands less dense than Invasive Phragmites, and usually has reddish-brown stems, yellow-green leaves and smaller seedheads.

Purple Loosestrife (*Lythrum salicaria*)

Rapidly spreading across North American wetlands, shorelines and roadside ditches, Purple Loosestrife has already made its way to Thunder Bay. Often composed of 1-15 flowering stems, the plant mass grows to 60-120 centimetres tall. Stems are stiff, square (with 4-6 sides) and green in colour, turning to reddish brown or purple as they age. Leaves are lance-shaped with smooth edges and fine hairs. Flowers are deep pink to purple and arranged in a dense terminal spike of clustered flowers. Each flower is composed of 5-7 petals, each around 10 millimetres long.

- **Stem:** Stiff and box-shaped, with 4-6 sides. Smooth or finely hairy with evenly spaced nodes (where leaf meets the stem) and short branches. Young shoots are green and turn red-brown or purple with age.
- **Leaves:** Simple, narrow and lance-shaped, arranged opposite one another along a stem. Leaves have smooth edges and fine hairs, similar to the stem.
- **Flowers:** Deep pink to purple in colour and arranged in a terminal spike. Each flower is composed of 5-7 petals, which appear wrinkly upon close inspection and vary from 7-10 millimetres long.
- **Fruit:** Seeds are enclosed in a small capsule, 3-6 millimetres in length. Each seedpod can contain more than one hundred seeds.
- **Look-alikes:** Fireweed, Blue Vervain

Find description of Purple Loosestrife in greater detail here: <https://www.ontarioinvasiveplants.ca/wp-content/uploads/2016/07/Purple-Loosestrife-BMP-April-2016-final.pdf>.

Yellow Iris (*Iris pseudacorus*)

Frequently planted in backyard ponds and gardens, Yellow Iris forms dense stands and displaces native plants such as Northern Blue Flag Iris (*Iris versicolor*). Flowers have three drooping, yellow sepals (they look like petals) with purple-brown markings that surround three smaller upright petals. Leaves are flat, 2-3 centimetres wide and up to 1 metre long. Yellow Iris is the only iris in North America with entirely yellow flowers, though when not flowering can easily be mistaken for the native Blue Flag Iris (*Iris versicolor*). The native iris is smaller, with leaves 10-80 centimetres long and purple-blue flowers.

- **Stem:** Ranges from 0.5-1.5 metres in height.
- **Leaves:** Flattened, 2-3 centimetres wide and up to 1 metre long, fanning out from the base of the plant.
- **Flowers:** Bloom at the top of stem 30 centimetres to 1 metre tall, generally growing in groups of 2-10 flowers.
- **Fruit:** Seeds are closely packed in capsules 4-8 centimetres long.
- **Look-alikes:** The native Blue Flag Iris when not flowering.

INSECTS, FISH & AQUATIC INVERTEBRATES:

Emerald Ash Borer (*Agrilus planipennis*)

Identify Emerald Ash Borers on ash trees by their metallic blue-green backs, narrow in shape and hairless, growing between 8-14 millimetres long. Larvae feed on the inner bark and sapwood of *Fraxinus sp.* trees. Mature larvae are 26 to 23 millimetres long and creamy white and the abdomen is 10-segmented. Read more here: <http://www.invadingspecies.com/emerald-ash-borer/>.

Sea Lamprey (*Petromyzon marinus*)

Adults are eel-shaped and 30 to 76 centimetres with no scales. Skin is grey to dark brown with a lighter underside, and seven obvious gill openings. Sharp teeth radiate around a tongue at the centre of a sucker mouth. Find more

details here: <http://www.invadingspecies.com/sea-lamprey/>.

Round Goby (*Proterorhinus semilunaris*)

The Round Goby, also known as the Tubenose Goby, is a small, bottom-dwelling invasive fish found in Lake Superior. The fish are typically 7.5-12.5 centimetres in length, brown in colour with dark brown spots and a prominent black circle on its dorsal fin. Spawning males are almost black in colour. They are aggressive bottom feeders and spawn multiple times each year; native species are being out-competed for habitat and food. Find more details here: <http://www.invadingspecies.com/round-goby/>.

Rusty Crayfish (*Orconectes rusticus*)

Native to the Ohio River Basin in the United States, Rusty Crayfish can consume twice as much food as native crayfish. They are large, reaching 7.5-13 centimetres from eyes to tail, with rusty coloring on each side of their shell. Claws are gray to red-brown with black bands near the tips and have an oval gap when closed. Find more photos and information here: <http://www.invadingspecies.com/rusty-crayfish/>.

Eurasian Ruffe (*Gymnocephalus cernuus*)

Eurasian Ruffe is a small member of the perch family that has been found in the Kaministiquia River in Thunder Bay. It directly competes for food and habitat and predated native sportfish eggs. Their perch-shaped body is less than 20 centimetres long with an olive-brown back and pale sides. Their dorsal fins are joined and they lack scales on their head. Find more details here: <http://www.invadingspecies.com/eurasian-ruffe/>.

Spiny and Fishhook Waterfleas (*Bythotrephes longimanus* and *Cercopagis pengoi*)

Lakehead University Researcher Dr. Michael Rennie is investigating the effects of Spiny Waterflea on the health of the walleye population in the lakes of Quetico Provincial Park. Their main diet is zooplankton, an important food source for lots of fish. Smaller than your thumbnail, waterfleas are difficult to identify and a microscope is required to distinguish native from invasive species. Spiny Waterfleas have 1-3 barbs along their straight tail and a red stripe running half the length of the tail. Find more information here: <http://www.invadingspecies.com/spiny-and-fishhook-waterfleas/>.

Zebra and Quagga Mussels (*Dreissena polymorpha* and *Dreissena bugensis*)

Zebra Mussels have been found by the Ministry of Natural Resources and Forestry in the Thunder Bay Harbour and Nipigon Bay, most notably. Anglers must take precautions to stop the spread of the invasive species to other inland lakes, where the warmer waters are a more inviting habitat for Zebra Mussels. Boats should be thoroughly cleaned, inspected, and drained before being transported between lakes. Zebra Mussels average 2-2.5 centimetres, are triangular, and black or brown with white-yellow zigzag lines across its back. Find more information here: <http://www.invadingspecies.com/zebra-quagga-mussels/>.

Data sourced from: Ontario's Invading Species Awareness Program, Ontario Ministry of Natural Resources and Forestry, and Ontario Invasive Plant Council.