

A Reference Guide to

# Common Invasive Species in Ontario





# Aquatic Invasive Species

Brazilian Waterweed  
Curly-Leaf Pondweed  
Eurasian Water-Milfoil  
European Frog-bit  
European Water Chestnut  
Fanwort  
Hydrilla  
Parrot Feather  
Water Hyacinth  
Water Lettuce  
Water Soldier  
Yellow Floating Heart  
Yellow Iris



Bright green with  
whorls of leaves  
close together

Leaves 1-3cm long,  
5mm broad, and in  
whorls of 4-8



Flower has 3 small  
petals and sticks  
about 2cm above  
the water

# Brazilian Waterweed/Elodea

(*Egeria densa*)

## Habitat

- Grows in wetlands, lakes, ponds, and slow-flowing streams
- Found in up to 6m of water, but can drift freely
- Only spreads asexually when introduced
- Not currently found in Ontario

## Impacts

- Outcompetes native flora with dense mats, reducing aquatic plant diversity
- Can impact water quality when decomposing
- Can make aquatic recreational activities difficult

## Similar Species

- Canadian Waterweed (bottom right) – has only 3 leaves per whorl
- Hydrilla (top right) – has toothed leaves

*Not currently found in Ontario but is a common aquarium plant.*





Curly/crimpled leaves  
grow up to 10cm long  
and are unlike other  
species here



Turion (located at  
base of roots) allows  
for the growth of new  
individuals without a  
seed



Submergent leaves  
with a flower  
emerging from the  
water in summer to  
early fall

# Curly-Leaf Pondweed

(*Potamogeton crispus*)

## Habitat

- Can grow in freshwater or brackish water and waters of various depths and flows
- Found in open areas with lots of sunlight
- New plants grow from vegetative buds (turions)

## Impacts

- Outcompetes native flora with dense mats, reducing aquatic plant diversity
- Can make aquatic recreational activities difficult



Photo by: SEINet



Small reddish brown flowers grow on a 20cm stalk above water



Plant is completely submerged except for flowers



Groups of 4-5 feather like leaves circle the stem. Leaves have 12+ filaments

# Eurasian Water Milfoil

*(Microphyllum spicatum)*

## Habitat

- Typically grows in water 1-3m deep
- The fast-growing perennial forms dense underwater mats
- Easily spread through currents, boat propellers, trailers, fishing gear
- Found in all Great Lakes and throughout Southern Ontario as well as every other continent except Antarctica

## Impacts

- Large die offs in the fall reduce oxygen levels, affecting local wildlife
- Can interbreed with native milfoils
- Impacts human activities

## Similar Species

- Northern Water-Milfoil (left): leaves have 11 or fewer segments
- Parrotfeather (right): has leaves that rise above the surface of the water, has not yet been found in the wild in Ontario, but is common in the aquarium trade





Single white flower up to 2.5 – 5 cm wide (comparable to a looney); 3 rounded petals; yellow centre



Spongy coating over the middle vein of the underside of the leaf; underside of leaves usually purple-red

Plant can be free floating or put down roots up to 50cm



# European Frog-bit

(*Hydrocharis morsus-ranae*)

## Habitat

- Slow moving waters (Ponds, slow rivers, sheltered lake inlets)
- Forms dense floating mats
- Fast growing
- Native to: Europe, Asia, Africa
- Invasive to: North America (including the Ottawa area)

## Impacts

- Crowd out native flora
- Decomposition or large die offs creates oxygen deprived waters
- Inhibit human recreational activities

## Similar Species

- North American Frog-bit (left): spongy coating covers entire bottom of leaf
- Watershield (centre): leaves do not form rosette and the leaves and stems have a slimy coating
- White Water Lily (right): leaves are much larger and flower petals are slimmer



Emergent  
flowers with four  
white petals



Dense rosette  
of bright green  
leathery leaves

Diamond/fan-  
shaped leaves

Sharply toothed

Spongy swollen  
section that  
help the plant  
float



# European Water Chestnut

(*Trapa natans*)

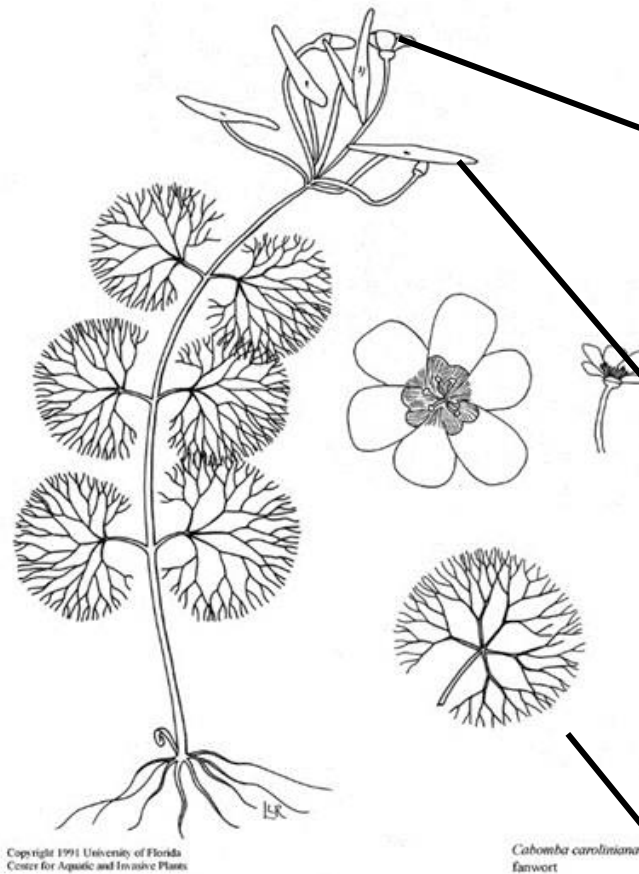
## Habitat

- Found in lakes, rivers, streams, and ponds (soft substrate)
- Found at 2m depth
- Creates dense floating mats

## Impacts

- Shade out native vegetation; reduces plant biodiversity
- Decomposition and little light penetration causes lower dissolved oxygen levels
- Inhibits human recreational activities and causes harm when bared spines accumulate on shore





White to pale  
yellow flowers  
0.6-1.5cm wide

Flowers usually  
rise out of the  
water

Floating,  
oblong leaves

Finely divided,  
fan-shaped  
leaves on  
opposite sides  
of stem



# Fanwort

*(Cabomba caroliniana)*

## Habitat

- Grows in slow moving or stagnant waters less than 3 meters deep
- Tolerates cold temperatures and stays green throughout the year
- Prefers acidic water (pH 4.8-7.8)
- Currently only found in Crowe River watershed northeast of Peterborough

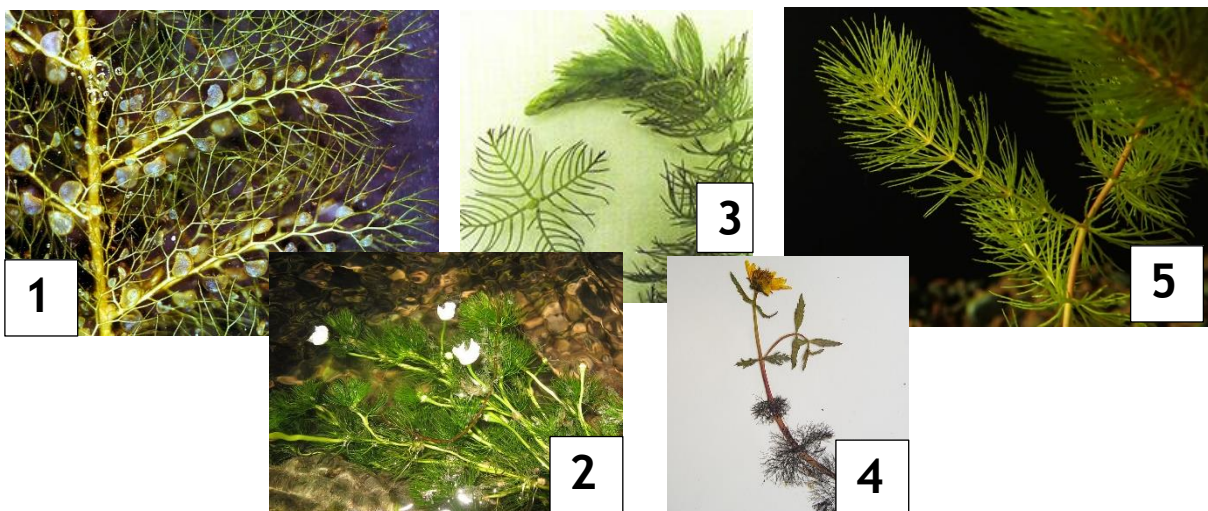
## Impacts

- Outcompetes native flora with dense mats, reducing aquatic plant diversity
- Can make aquatic recreational activities difficult

## Similar Species

- Bladderwort (1): Small hallow sacs all over the plant
- White-water Crowfoot (2): Leaves alternately arranged
- Northern Watermilfoil (3): Leaves do not fork
- Water Marigold (4): Flowers are yellow
- Coontail (5): Leaves fork in full circle

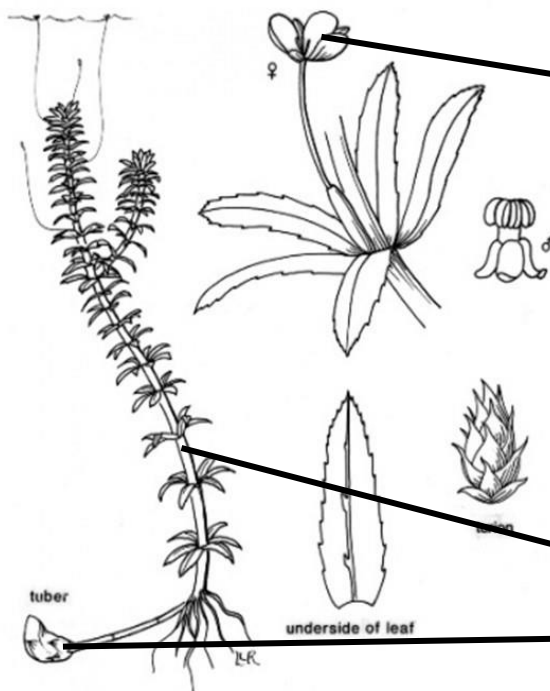
*Currently only found in Crowe River watershed northeast of Peterborough*





3-8 leaves per whorl;  
leaves attached directly  
to stem; 1-2cm long

Saw-toothed leaf  
edges easily seen  
with the naked eye



Flowers are very small  
(petals are 2-4mm wide);  
white-reddish or white to  
light green with red  
stripes; when open they  
float on the surface of  
the water

Stem grows up to 7.5mm  
long; stems are rooted  
and grow from a potato  
life tuber



*Hydrilla verticillata*  
Hydrilla

# Hydrilla

(*Hydrilla verticillata*)

## Habitat

- Completely submergent (grows underwater)
- Found in still and flowing waters, and varying levels of light and nutrients
- Can grow up to 2.5cm/day
- Can grow from small fragments, which are easily spread

## Impacts

- Grows into a dense monoculture that crowds out native flora, reducing habitat and biodiversity
- Blocks sunlight
- Creates stagnant water; breeding grounds for mosquitoes

## Similar Species

- Brazilian Elodea (pic): Has minutely toothed edges not visible to the naked eye, no tubers at the root bas
- Canada Waterweed (pic): Three leaves in a whorl, toothed edges not visible to the human eye, no tubers





20-30 segments per leaf

Submersed bright green  
leaves are whorled

White flowers on axil of  
leaves on the terminal spike



# Parrot Feather

(*Myriophyllum aquaticum*)

## Habitat

- Found in shallow waters of ponds, lakes, streams, and ditches

## Impacts

- Native vegetation could be displaced
- Impedes on recreational activities
- Can clog waterways

## Similar Species

- Northern Water-milfoil (bottom left): Leaves have <11 segments on each leaf
- Native Coontail (top right): Has forking leaves around stem



6 petaled violet-blue flowers

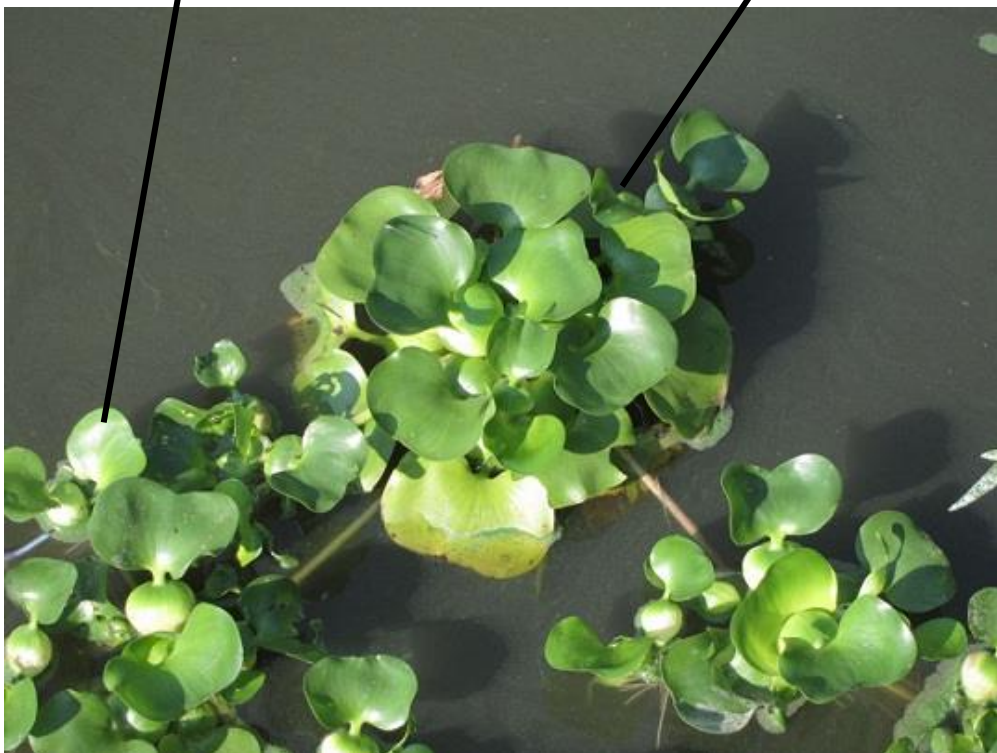
1 out of the 6 petals has a deeper colour with a yellow spot

4-15 on a spike above water



Thick and glossy leaves that are emergent or floating

Egg-shaped to round leaves forming a rosette



# Water Hyacinth

(*Eichhornia crassipes*)

## Habitat

- Found in warm climates in ponds, rivers, canals, and ditches

## Impacts

- Forms thick mats alters oxygen levels and composition of invertebrate and fish communities
- It outcompetes native vegetation for space, light, and nutrients
- Impedes on recreational activities
- Decreases water movement, blocks irrigation canals, delays hydroelectric and water treatment plants



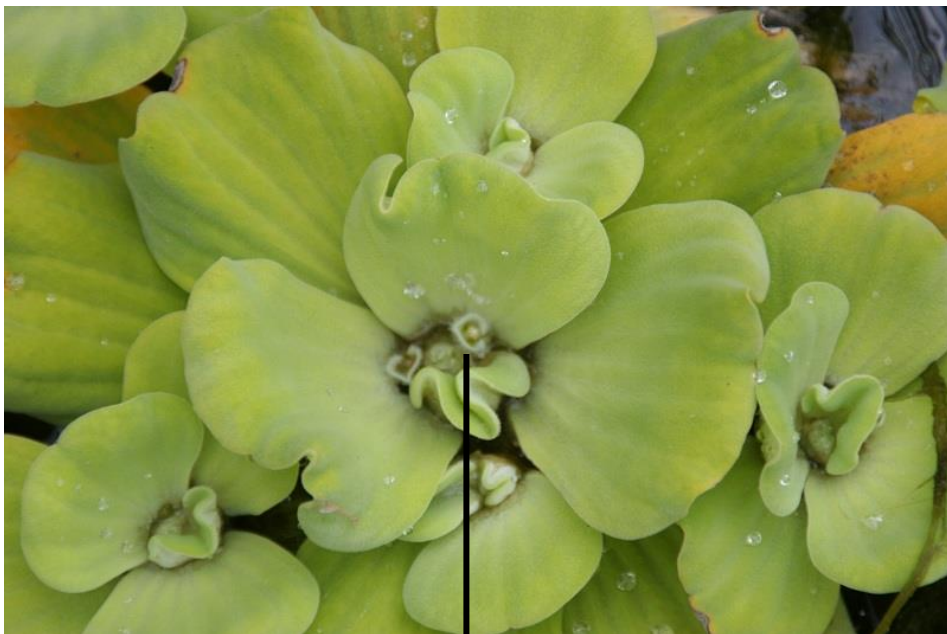


Free-floating plant



Rounded light green leaves  
forming a rosette

Tiny white hairs coating the  
leaf



Small white/pale green  
flower on stalk in the centre  
of rosette

# Water Lettuce

(*Pistia Stratiotes*)

## Habitat

- Forms thick mats
- Found in slow-moving waters like lakes, ponds, rivers, streams, and ditches

## Impacts

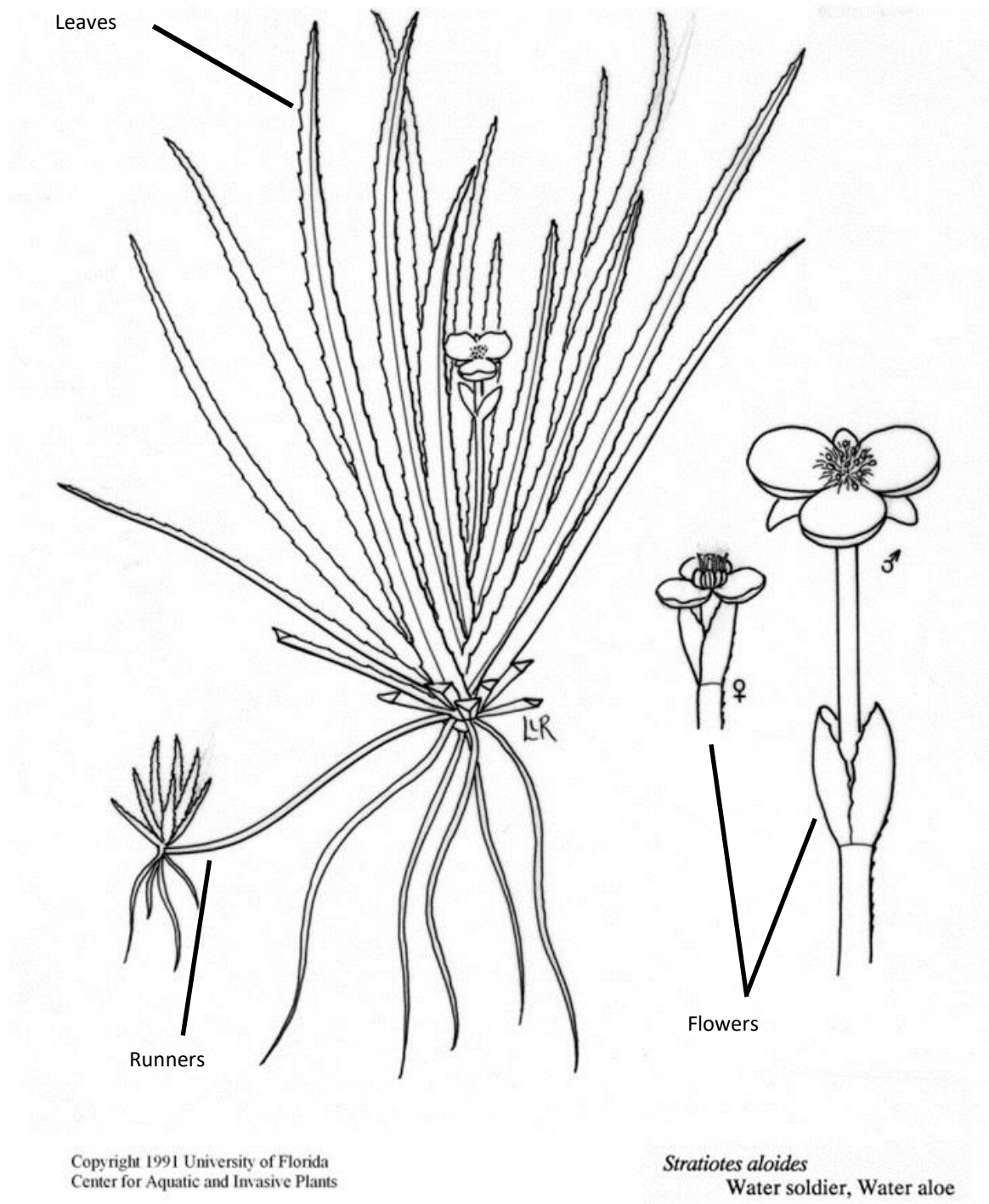
- Forms thick mats prevent growth of native vegetation from stopping light penetration
- Plant decomposition decreases oxygen levels in the water
- Impedes on recreational activities

Interrupts water flow irrigation and flood control canals



# Water Soldier

(*Stratiotes aloides*)



# Water Soldier

*(Stratiotes aloides)*

Leaves are rigid, serrated, and very sharp

Leaves up to 40 cm long, sword shaped, and bright green

Flowers white with three petals

Mature plants reproduce by runners in mud or by floating

Form extremely dense mats that look like manicured lawns

*Currently only found in the Peterborough and  
Lake Simcoe Regions*





Circular or heart-shaped leaves



Yellow, 5-petaled flower with fringed petals

Emergent from water

# Yellow Floating Heart

(*Nymphoides peltata*)

## Habitat

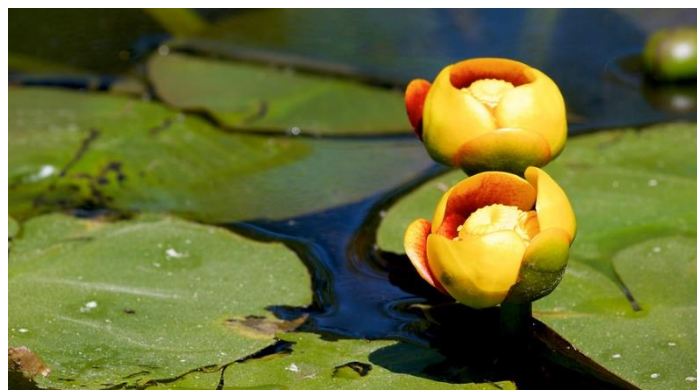
- Grows in water up to 4 m deep
- Found in slow-moving waters like lakes, ponds, rivers, canals, and also can grow in damp mud

## Impacts

- Forms thick mats that shades out native vegetation and degrades habitat for fish and wildlife
- Decreases oxygen levels in the water
- Affects recreational activities and water quality

## Similar Species

- Native yellow pond lily (bottom left): Yellow flowers are not fringed
- Bullhead lily (bottom right): Yellow flowers are not fringed





3 yellow upright  
petals



3 yellow drooping  
sepals with  
purple/brown  
markings



Sword-  
shaped  
leaves that  
are very  
linear

# Yellow Iris

(*Iris pseudacorus*)

## Habitat

- Found in wetlands and in shallow waters along side lakes, ponds, rivers, and streams

## Impacts

- Native species get displaced from the thick mats of rhizomes and dead leaves
- Can block water flow in irrigation and flood control ditches
- Can create a drier environment and reduce habitat availability for wildlife
- Poisonous if consumed by humans and animals; sap can cause dermatitis

## Similar Species

- Native Blue Flag (bottom left and right): Has shorter stems and is more purple around the leaf base





# Terrestrial Invasive Species

Garlic Mustard

Giant Hogweed

Himalayan Balsam

Invasive Phragmites

Japanese Knotweed

Lily-of-the-Valley

Periwinkle

Purple Loosestrife

Spotted Knapweed

Wild Chervil

Wild Parsnip



Heart-shaped leaves with a  
saw tooth margin

Prominent veining

When crushed it smells like  
garlic



Young leaves are  
more round



Cluster of  
small white,  
four-petaled  
flowers

# Garlic Mustard

(*Alliaria petiolata*)

## Habitat

- Found in sunny and shaded areas
- Some habitats include undisturbed forests, forest edges, riverbanks, and roadsides

## Impacts

- Displaces native wildflowers, like Spring beauty, Wild ginger, and Trilliums
- Loss of diversity causes a threat to native insects, like butterflies
- Increases at risk species, such as American ginseng
- Interferes with the germination of seeds from trees

## Similar Species

- Violets (bottom left): Leaves are more finely serrate
- Wild Ginger (bottom right): Leaves have an entire margin



Small white flowers in a large umbrella-like cluster up to 1m wide



Lobed leaves arranged alternately; sharply pointed; up to 2m wide

Large hairy stems with purple spots; can grow up to 5.5m tall



# Giant Hogweed

(*Heracleum mantegazzianum*)

## Habitat

- Found in wet soils in forests, swamps, meadows, marshes, along roadsides and streams
- Introduced from southwest Asia to North America and is becoming more common in Ontario

## Impacts

- Sap contains a toxin that can cause severe burns if it comes in contact with skin that is exposed to sunlight
- Grows quickly and shades native plants

## Similar Species

- Queen Anne's-Lace (left); much smaller, flowers are more tightly clustered
- Cow Parsnip (centre): has smaller flowers, no purple spots on stems
- Purplestem angelica (right): has rounded-topped flower clusters and leaves are divided into many leaflets



Smooth, hollow  
stems are purple-  
reddish colour; able  
to grow 1-3m tall



Leaves are 6-15cm  
with sharply  
toothed edges



Pink and/or white  
flowers with five  
petals, similar to a  
Snapdragon  
flower

# Himalayan Balsam

(*Impatiens glandulifera*)

## Habitat

- Found on the river edges, but can sometimes be found in wetlands
- Develops seed pods that burst when touched, when released the seeds can travel along the water
  - Each plant can produce up to 800 seeds per year
- Found in 8 Canadian provinces (including Ontario)

## Impacts

- Soil erosion along river banks from inhibiting the growth of shrubs and trees
- Produce a lot of nectar, attracting pollinators disproportionately and taking away from native flora
- Reduces biodiversity, impacting habitat of wildlife

## Similar Species

- Jewelweed: Native species; leaves are not as heavily toothed; flowers are yellow-orange



Photo credit: Discover life

Photo credit: Discover life

Photo credit: Go Botany



Dense seed heads

Rich green to green-blue leaves

Brown/beige stems (native Phragmites has red stems)



Grows very tall – up to 5m; grows very densely

# Invasive Phragmites

*(Phragmites australis sub australis)*

## Habitat

- Stands can be as dense as 200 stems per meter squared
- Grows in wetlands, along shorelines, and is commonly found along highways
- Typically grows in standing water, but can also send down long taproots to access water further down

## Impacts

- Release toxins into the soil to inhibit the growth of other plants, allowing it to spread quickly into a large stand; reduces biodiversity
- Transforms aquatic areas into semi-aquatic areas through increased local evapotranspiration
- Can affect pastureland and aquatic recreational activities

## Native Phragmites

- Grow in stands that are less dense than the invasive Phragmites
- Well established stands are usually mixed with other plants

Invasive Phragmites



Native Phragmites



Flowers are small and greenish-white; fruit is small and white with wings

Ovate leaves with a flat base; 3-6 inches long and 2-5 inches wide



Stems appear bamboo-like; smooth, round, reddish-purple; can reach 1-3m in height

# Japanese Knotweed

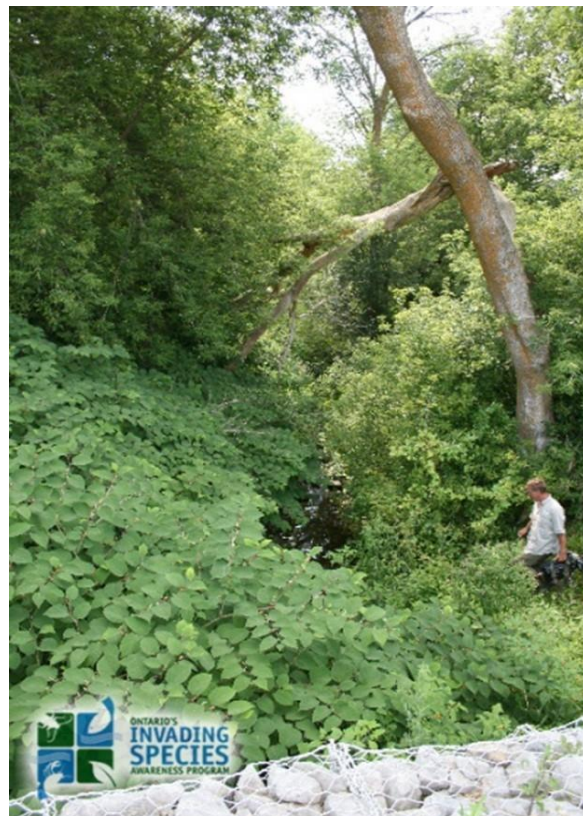
*(Reynoutria japonica)*

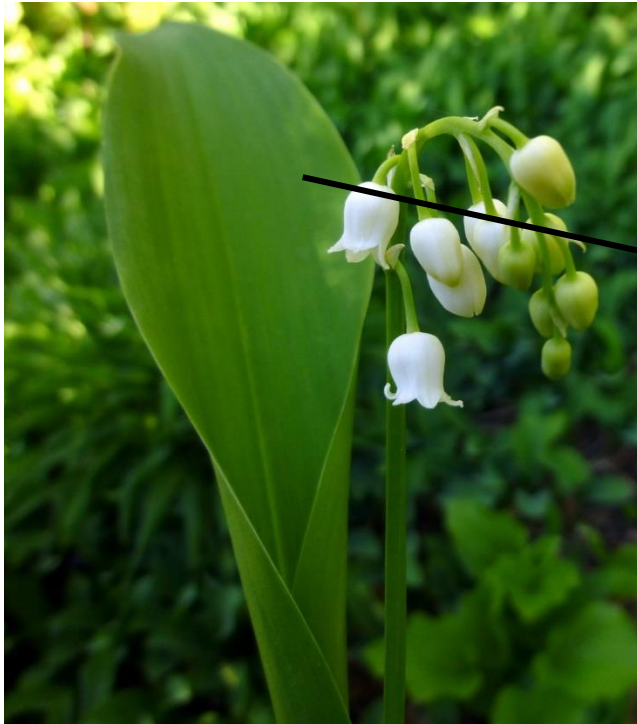
## Habitat

- Found primarily in gardens, along riverbanks, along roadsides and near old buildings/former building sites
- Root system can spread up to 10m from the parent stem
- Established in Canada from Ontario to Newfoundland and British Columbia

## Impacts

- Spreads quickly and forms dense stands; reducing biodiversity
- Roots have been known to break through asphalt and concrete
- Populations are extremely persistent





1-2 oblong elliptic leaves



5-10 small drooping bell-shaped flowers



Produces red/orange berries in fall

# Lily-of-the-Valley

(*Convallaria majalis*)

## Habitat

- Found in undisturbed woodlands and fresh forest edges
- Roots spread out extensively from underground rhizomes
- Easily grows in sunny areas, and can tolerate fully and partially shaded areas

## Impacts

- Spreads quickly and forms dense stands
- Crowds out other plants nearby, especially low growing plants
- Draws nutrients and water away from native plants and disturbs the local flora
- Toxins can cause grave illness and in some cases death to humans and animals (toxins concentrated in roots and berries)

## Similar Species

- False Solomon's Seal (top middle): Stem zigzags between alternating leaves
- Rose-twisted Stalk (top right): Often pink flowers that hang below the plant from each leaf axil
- Blue-bead Lily (bottom right): Glossy leaves with a prominent central vein (looks like tongue)





Blue/purple  
showy  
flowers

Lance-shaped  
leaves that are  
small and shiny

Plant creeps/trails  
along the ground



# Periwinkle

(*Vinca minor*)

## Habitat

- Found in woodlands and riparian areas
- Prefers moist soil, but with withstand periodic droughts
- Tolerate full sunny and shaded areas, but prefers partial sun

## Impacts

- Spreads quickly and forms dense mats that blocks out sunlight for other plants nearby
- Persistent vegetative and root dispersal and growth
- Leaves are toxic for most grazers

## Similar Species

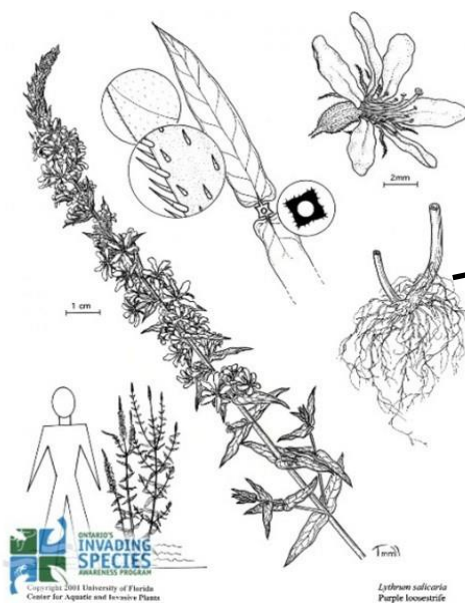
- Wintergreen (bottom right): Leaves obviously have a minty smell when crushed
- Partridgeberry (bottom left): Round to egg-shaped leaves with prominent pale veins; white flowers; red berries





Leaves are opposite or whorled; 3-10cm long; smooth edges

Stems are woody and square; can grow up to 2.4m tall



Stems grow upward from one horizontal underground stem (rhizome)



Flowers grow in bunches at the tip of the stem; individual flowers have 5-7 pink-purple petals up to 1cm long

# Purple Loosestrife

(*Lythum salicaria*)

## Habitat

- Native to Europe and Asia, commonly found throughout North America
- Serious invader of wetlands, roadsides and disturbed areas
- Once established, forms dense stands with thick mats of roots

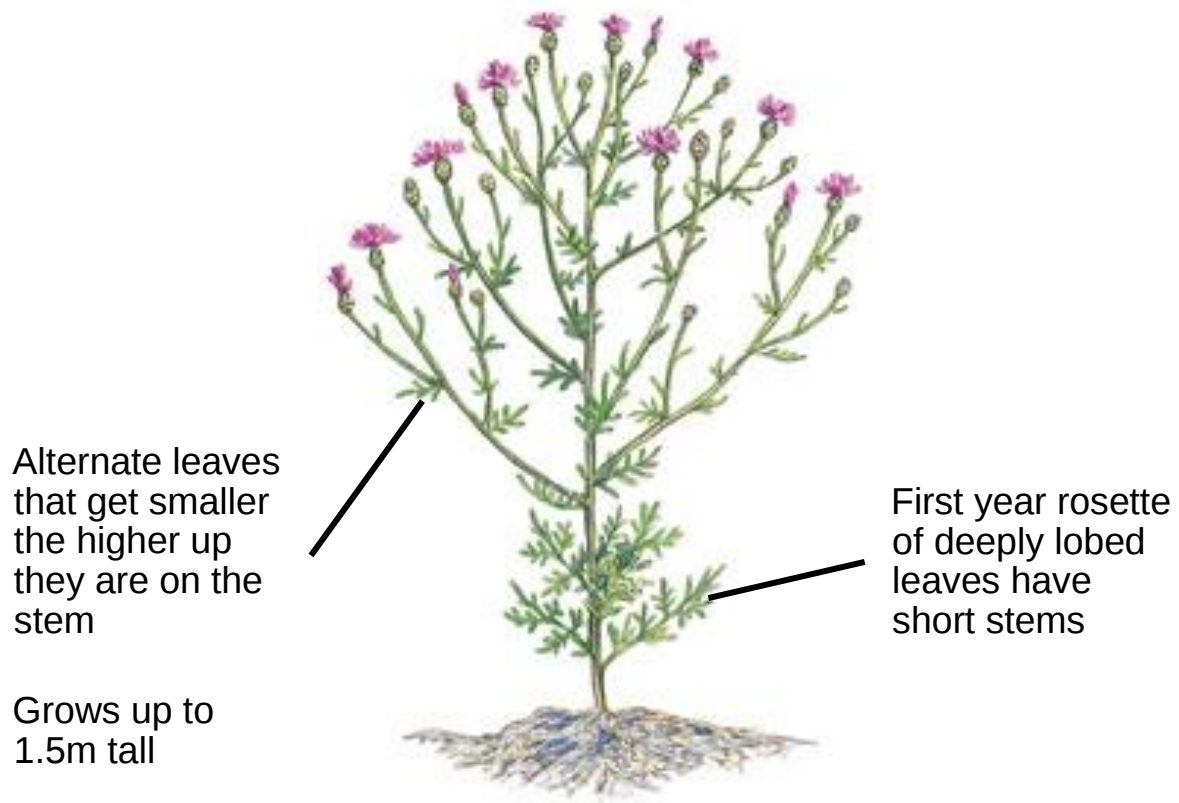
## Impacts

- Stands reduce nutrient availability for native plants; reducing biodiversity
- In 1992, the Canadian and American governments released two beetles to reduce the Purple Loosestrife populations; since their release, populations of Purple Loosestrife have decreased

## Similar Species

- Fireweed (1): has a spiral leaf arrangement (rather than opposite/whorled)
- Blue Vervain (2): flowers are much smaller; multiple flowering heads per stem
- Blazing Stars (3): individual flowers/petals are small and narrow; flowering heads are larger
- Native Winged Loosestrife (4): much smaller, leaves are not willow-like (as in Purple Loosestrife)
- Native Swamp Loosestrife (5): flowers occur between pairs of opposite leaves





# Spotted Knapweed

(*Centaurea maculosa*)

## Habitat

- Tolerates partial to full sun
- Tolerates a wide range of soil conditions including a drought

## Impacts

- Threatens survival hood of at risk and native species
- Reduces biodiversity and alters community composition
  - Direct → predation, hybridization
  - Indirect → Modify habitat, change dynamics of native species

## Similar Species

- Pitcher's Thistle (bottom three): Does not have dark bracts, no spots on flower head





Twice or thrice  
cut compound  
leaves that have  
a triangular  
outline

Leaves somewhat  
shiny on top with  
short hairs below

Basal leaves are the  
largest and long-stalked;  
leaves get smaller and  
stalkless ascending up  
the stem



Umbels including 4-15  
umbellets with ~20  
small clustered flowers  
with a flat top

# Wild Chervil

(*Anthriscus sylvestris*)

## Habitat

- Tolerates partial shade to full sun
- Prefers open habitats like roadsides, open woodlands, riparian areas, and fields, but tolerates wet to moist soils

## Impacts

- Aggressive competitor that limits water and nutrients for other native plants and shades vegetation
- When it matures, it forms dense stands with unappetizing vegetation for livestock
- Easily spread through seeds with wind, humans, animals, and more
- Deep roots make it harder to manage





Compound leaves with  
oppositely or whorled  
arrangement

Leaflets are mitten-shaped  
with a sharply toothed  
margin



Stem is smooth with  
few hairs

Yellow/greenish flowers  
in umbel-shaped clusters



# Wild Parsnip

(*Patinaca sativa*)

## Habitat

- Prefers partial to full sun and can tolerate many soil types
- Found in open meadows, open woodlands, roadsides, agriculture, and riparian areas

## Impacts

- Forms very dense stands
- Reduces biodiversity from outcompeting native species
- Reduces quality of agricultural crop (hay, oats, alfalfa)
- Chemicals in plant when eaten by an animal reduces weight and fertility
- Stem, leaves, and flowers are extremely dangerous for humans when touched and exposed to sun

## Similar Species

- Cow parsnip (left): Plant has large white umbel-shaped flowers and stem is covered in white hairs
- Angelica (right): Stems are hairless and flowers are globed shaped

