INVASIVE TERRESTRIAL PLANT SPECIES

A QUICK REFERENCE GUIDE

Acknowledgements

TECHNICAL INPUT PROVIDED BY:

Ontario Invasive Plant Council
Ontario Ministry of Natural Resources and Forestry
Credit Valley Conservation
Ontario Federation of Anglers and Hunters

TEXT COMPILED AND WRITTEN BY:

Ontario Federation of Anglers and Hunters

GRAPHIC DESIGN AND PRODUCTION BY:

Adam Connor
www.adamconnor.ca

COVER PHOTO(S):

Rob Routledge, Sault College, Bugwood.org
Leslie J. Mehrhoff, University of Connecticut, Bugwood.org
John M. Randall, The Nature Conservancy, Bugwood.org
Chris Evans, University of Illinois, Bugwood.org

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INTRODUCTION

Invasive species are plants, animals, and micro-organisms that, when introduced outside of their natural environment, out-compete native species (Government of Canada, 2016). Invasive species can have harmful consequences for the natural environment, economy, and society, including human health. However, not all introduced species are invasive. Some, like the introduced Chinook salmon (*Oncorhynchus tshawytscha*), produce economic incentives for society, while also not posing a significant threat to native fish and their ecosystems.

Invasive species, by contrast, are a concern because they have a 'displacement capacity,' meaning they out-compete our native species for space, food, and other resources.

Invasive terrestrial plants can overwhelm a variety of habitats, out-competing native flora for light and nutrients. For example, Invasive plants can impact native forest succession by shading out native saplings, establish in open habitats thus reducing the diversity of native pollinator-friendly species, and spread along riparian areas impacting sensitive fish and herptile habitat.

HOW DO INVASIVE TERRESTRIAL PLANTS ARRIVE AND SPREAD?

Invasive terrestrial plants may be spread or introduced through many means, such as infested packaging material, seed dispersal via both environmental and human sources, or by escaping from gardens.

INVASIVE SPECIES ACT, 2015

The Ontario Invasive Species Act (ISA) came into force on November 3rd, 2016. The goal of the Invasive Species Act is to support the prevention, early detection, response to and eradication of invasive species in Ontario. Preventing invasive species from arriving and becoming established in Ontario is critical in the fight against this growing threat. Some key elements of the Invasive Species Act include:

- Giving Ontario the tools to regulate invasive species as either prohibited or restricted and banning activities such as buying, selling, possessing and transporting certain invasive species;
- Enabling response actions to address urgent threats; and
- Helping to promote compliance through modernized inspection and enforcement measures.

INVASIVE TERRESTRIAL PLANT SPECIES REGULATED AS RESTRICTED UNDER THE INVASIVE SPECIES ACT, 2015 AS OF JANUARY 1ST, 2018

In Ontario, it's **illegal** to import, deposit, release, breed/grow, buy, sell lease or trade the following species. It is also illegal to bring these plants into provincial parks and conservation reserves and to possess, transport, deposit or release them in these protected areas.

European Common Reed
(Phragmites australis subsp. australis) page 4

Dog-Strangling Vine
(Cynanchum rossicum) page 48

Black Dog-Strangling Vine
(Cynanchum louiseae) page 48

Japanese Knotweed *(Fallopia japonica) page 30*

If you see an invasive terrestrial plant species in the wild, please contact the toll-free Invading Species Hotline at **1-800-563-7711**

WHAT CAN I DO?

- Learn to identify invasive species that are a threat to Ontario and how to prevent the spread of these unwanted species.
- Avoid using invasive plants in gardens. Instead, buy native or non-invasive plants from reputable garden suppliers. Native plants provide habitat and food sources for native wildlife. See the Grow Me Instead Guide
- Dispose of invasive plants in the garbage. Do not put them in the compost or discard them in natural areas.
- Inspect clothing, equipment and pets when exiting or entering a natural area to avoid transporting seeds and root fragments to new locations.
- Report all sightings to the Invading Species Hotline **1-800-563-7711** or visit the Early Detection and Distribution Mapping System (EDDMapS) Ontario to report a sighting.
- Understand the Invasive Species Act, 2015. If you have any information about the illegal importation, distribution, or sale of prohibited or restricted invasive plants, report it immediately to the Ontario Ministry of Natural Resources and Forestry TIPS line at **1-877-TIPS-MNR** (**847-7667**) toll-free any time.

HOW TO REPORT INVASIVE SPECIES

- **Call:** 1-800-563-7711
- **Email:** info@invadingspecies.com
- **Create a profile:** on EDDMapS.org/Ontario and submit your reports digitally.

TEMPLATE FOR REPORTING A SIGHTING

When submitting a report through the Invading Species Hotline or online at EDDMapS.org/Ontario, it is best to have the following information on hand to submit a complete report:

What?

What species do you suspect you encountered? Are there native lookalikes that you may not have considered?

Picture?

In order to confirm reports, a picture is required. However, with some high-priority species (e.g. Asian Carps), it is best to always report if you suspect you have encountered one!

When and where?

Be sure to note the date and geographical location where you encountered the invasive plant (e.g. latitude and longitude).

Specimen?

Do you have the plant on hand? If so, call **1-800-563-7711** and ISAP staff will direct you on your next steps.

Grasses

RESTRICTED INVASIVE SPECIES (ISA)

EUROPEAN COMMON REED

Phragmites australis subsp. australis

PLANT TYPE: PERENNIAL GRASS

ARRANGEMENT

- Alternate.

LEAVES

- Long tapered leaf 2-4 cm wide, blue-green.
- Leaf sheaths remain attached and are difficult to remove.

FLOWERS/SEEDS

- Dense cascading 'broom-like' reddish-brown flower head.
- 'Cottony' in appearance when mature.

BUDS/STEM

- Stems rough and ridged, ligule a densely hairy band.
- Mature plants 2-4 m tall.

HABITAT

- Moist to wet soils, full to partial sun.
- Found in riparian areas; coastal habitats, wetlands, watercourses, and road side ditches.

LOOKALIKE SPECIES

- The native species of manna grass (Glyceria spp.), including tall northern, eastern, and rattlesnake grass.
- A native common reed exists but has a smooth, often red stem, and does not grow as densely as invasive *Phragmites*.

MISCANTHUS

Miscanthus sinensis & M. sacchariflorus

PLANT TYPE: PERENNIAL GRASS

ARRANGEMENT

» Alternate.

LEAVES

» Leaves form from a central clump, radiating like a fountain from base of plants.

FLOWERS/SEEDS

» Flowering stalk up to 1.5 m tall.

» Light silvery pink-reddish flowers, turning tan in fall.

BUDS/STEM

» Typically reaches 2-4 m or higher.

HABITAT

» Tolerable of a range of conditions, from dry to moist soils, prefers partial to full sun.

» Found along roadsides, forest edges, old fields, and riparian areas.

REED OR GIANT MANNA GRASS

Glyceria maxima (Hartm.) Holmb.

PLANT TYPE: PERENNIAL GRASS

ARRANGEMENT

- Alternate.

LEAVES

- Stem sheaths near the base are slightly rough. Ligule when pulled from stem is 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.

FLOWERS/SEEDS

- Upright with a cascading broom like 'flower' head.

BUDS/STEM

- Mature plants up to or greater than 1.5 m.

HABITAT

- Moist to fresh soils in open wetlands and edges of watercourses.

LOOKALIKE SPECIES

- The native species of manna grass (*Glyceria spp.*), 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.

Herbs

GARLIC MUSTARD

Alliaria petiolata

PLANT TYPE: HERBACEOUS BIENNIAL

ARRANGEMENT

- Alternate.

LEAVES

- Saw-tooth edge, elongated heart shape with prominent veins. Garlic/onion smell when crushed.
- Young (first year) leaves are more rounded than mature leaves.

FLOWERS/SEEDS

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

HABITAT

- Found in a wide range of sunny and fully shaded habitats, including undisturbed forest, forest edges, riverbanks, and roadsides.

LOOKALIKE SPECIES

- First-year garlic mustard can resemble a number of species native to Ontario, including violets (*Viola spp.*) and wild ginger (*Asarum canadense*).
- First-year garlic mustard leaves will have a distinct garlic smell when crushed.

GIANT HOGWEED

Heracleum mantegazzianum

PLANT TYPE: HERBACEOUS PERENNIAL

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.

ARRANGEMENT

- Alternate.

LEAVES

- Lobed leaf 1-2 m wide, lobes sharp-pointed and irregular.

FLOWERS/SEEDS

- Small, white flowers in a large umbrella-shaped cluster, 75 cm wide.

BUDS/STEM

- Hairy stem with purple spots.

HABITAT

- Fresh to wet soils in swamps, riparian areas, meadows, and woodlands.

LOOKALIKE SPECIES

- Cow parsnip (*Heracleum maximum*) typically does not exceed heights of 1-2 m. It has smaller flowers, no distinct purple spots on stems, and leaves are not as shiny, or deeply and irregularly lobed as giant hogweed. The sap of cow parsnip contains the same toxic properties as giant hogweed and contact with this plant should also be avoided. Cow parsnip is native to Ontario and in some cases is regionally rare and is not considered invasive. Control of cow parsnip should only be undertaken where it poses a health and safety hazard.
- Angelica (*Angelica atropurpurea*), native to Ontario, has rounded-topped flower cluster, shaped like a globe, leaves divided into many leaflets and the stem is hairless.

GOUTWEED

Aegopodium podagraria

PLANT TYPE: HERBACEOUS PERENNIAL

ARRANGEMENT

» Opposite.

LEAVES

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

FLOWERS/SEEDS

» Flat-topped 'umbrella like' flower head with many small white flowers.

BUDS/STEM

» Upright, hollow, and grooved.

HABITAT

» Various – dry to fresh soils in forest, successional areas, and urban environments. An escapee from residential gardens.

LOOKALIKE 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.

HIMALAYAN BALSAM

Impatiens glandulifera

PLANT TYPE: HERBACEOUS ANNUAL

ARRANGEMENT

» Alternate.

LEAVES

» Lance-shaped leaf with sharply toothed edges.

FLOWERS/SEEDS

» Flowers are pink, large, and showy.

BUDS/STEM

» Fleshy, reddish stem, reaching 1-3 m in height.

HABITAT

» Wet and moist soils in wetlands, floodplains, and riparian areas.

LOOKALIKE SPECIES

» Touch-me-nots or jewelweeds (*Impatiens capensis*)- have orange or yellow flowers, and leaves are more oblong-shaped (below). Jewelweed is native to Ontario.

RESTRICTED INVASIVE SPECIES (ISA)

JAPANESE KNOTWEED

Fallopia japonica

PLANT TYPE: HERBACEOUS PERENNIAL

ARRANGEMENT

- Alternate.

LEAVES

- Tear-drop shaped, sharp pointed, dark green, and flattened at base.

FLOWERS/SEEDS

- Flowering stalk of many small greenish-white flowers.

BUDS/STEM

- Large plant with a hollow, 'bamboo-like' stem.
- Stem light green maturing to tan colour, with reddish bands/joints.

HABITAT

- Moist to wet soils, prefers full sun but can tolerate partial to full shade.
- Often found in riparian areas of wetlands and watercourses, and along roadside ditches.

JAPANESE HEDGEPARSLEY

Torilis japonica

PLANT TYPE: HERBACEOUS ANNUAL

ARRANGEMENT

- Opposite.

LEAVES

- Parsley-like, pinnately compound, alternate, fern-like, triangular, slightly hairy, and 5-10 cm long.
- Leaflets clasp the stem.
- Rosette leaves are similar to stem leaves.

FLOWERS/SEEDS

- White flowers found in small, loose, flat-topped umbels.
- Each flower produces a pair of bristle-covered fruit that can attach to fur or clothing.
- Fruit change from pink or white-green to brown as they mature.
- Plants flower in the second year.

BUDS/STEM

- Mature plants are typically 0.5-1 m tall.

HABITAT

- Partial shade to full sun, preferring open areas such as roadsides, urban environments, and open to shaded woodlands.

LILY-OF-THE-VALLEY

Convallaria majalis

PLANT TYPE: HERBACEOUS PERENNIAL

ARRANGEMENT

» Basal.

LEAVES

» 1-2 oblong elliptic leaves, measuring 5-15 cm.

FLOWERS/SEEDS

» Flowering stems display 5-10 fragrant and small, drooping, and bell-shaped white flowers in spring/summer. In fall, may develop orange-red berries with 1-6 seeds.

BUDS/STEM

» Stems are 20-35 cm tall, green, and bearing 1-2 leaves.

HABITAT

» Often found in undisturbed woodlands, moist-fresh forest edges, spreading out extensively via rhizomes underground.

» Can tolerate partial to full shade, but can easily grow in sunny areas.

LOOKALIKE SPECIES

» False solomon's seal (*Maianthemum racemosum*), rose-twisted stalk (*Streptopus lanceolatus*), blue-bead lily (*Clintonia borealis*), and various other species native to Ontario from the *Orchidaceae* family.

PERIWINKLE

Vinca minor

PLANT TYPE: HERBACEOUS PERENNIAL

ARRANGEMENT

» Opposite.

LEAVES

» Small, lance-shaped, shiny, and evergreen.

FLOWERS/SEEDS

» Showy blue/purple flowers.

BUDS/STEM

» A creeping, trailing ground plant.

HABITAT

» Dry to fresh soils, preferring slightly moist conditions and tolerant of periodic drought.

» Prefers partial sun, but will tolerate a range of conditions from full sun to full shade.

» Found in woodlands and along riparian areas.

LOOKALIKE SPECIES

» Wintergreen (*Gaultheria procumbens*) native to Ontario, has similar leaves, but has an obvious minty smell when the leaf is crushed.

» Partridgeberry (*Mitchella repens*), also native to Ontario, has similar leaves but are more round to egg-shaped with prominent pale veins; flowers are white, followed by red berries.

PURPLE LOOSESTRIFE

Lythrum salicaria

PLANT TYPE: HERBACEOUS PERENNIAL

ARRANGEMENT

» Opposite, alternate, or whorled.

LEAVES

» 3-10 cm long, with smooth edges.

FLOWERS/SEEDS

» Individual flowers have 5-7 pink-purple petals about 10 mm long, arranged on long flower spikes at the top of stems.

BUDS/STEM

» One horizontal underground stem, known as a rhizome, can produce 30 to 50 erect stems.

» The stems are woody and square, and each one can form a plant up to 2.4 m high and 1.5 m wide.

HABITAT

» Prefers partial to full sun and tolerates a range of soil moisture conditions, preferring higher moisture such as that found in wetlands, roadsides, and disturbed areas.

LOOKALIKE SPECIES

» May be confused with native wetland plants including blue vervain (*Verbena hastata*) and fireweed (*Epilobium angustifolium*).

SPOTTED KNAPWEED

Centaurea maculosa

PLANT TYPE: HERBACEOUS BIENNIAL OR SHORT-LIVED PERENNIAL

ARRANGEMENT

» Alternate.

LEAVES

» The first year rosette of deeply lobed leaves are borne on short stems.

» The mature flowering stems have alternate leaves. Leaves become smaller as they advance up the stem.

FLOWERS/SEEDS

» Closed flower heads are egg-shaped and surrounded by green bracts, marked with fine vertical streaks, and tipped with a dark comb-like fringe.

» The bracts give a "spotted" appearance to the flower head. The flower colour is pink-purple, but can be a light purple or white.

» Seeds have a tuft of bristles.

BUDS/STEM

» Up to 1.5 m tall, with several branching upright stems growing from a stout taproot.

HABITAT

» Partial to full sun; can tolerate a range of soil moisture types and conditions, including drought.

LOOKALIKE SPECIES

» Pitcher's thistle (*Cirsium pitcher*), a federally listed endangered species and provincially listed threatened species.

» Pitcher's thistle does not have dark bracts, lacking the spotted appearance.

WILD CHERVIL

Anthriscus sylvestris

PLANT TYPE: ANNUAL, BIENNIAL, OR SHORT-LIVED HERBACEOUS PERENNIAL

ARRANGEMENT

» Alternate.

LEAVES

» Leaves are 2 or 3 times compound, 30-45 cm long, and wide and triangular in outline.

» Leaflets are up to 5 cm long, divided and fern-like, dark green and somewhat shiny on the upper surface, and short hairs are present on the lower surface.

» Basal and lower leaves are largest and long-stalked, becoming smaller, less divided, and stalk-less as they ascend the stem.

FLOWERS/SEEDS

» Flat clusters of 3-6 cm umbels, consisting of 4-15 smaller clusters (umbellets), each of those bearing ~ 20 white flowers that are 2-4 mm.

» Each flower produces two shiny and long brown seeds that are joined.

BUDS/STEM

» Stems are hollow with soft hairs. Sheath-like where the stalk joins the stem and the sheath is ribbed and hairy.

» Multiple stems are multiple from the base, branched, ribbed, and have short hairs, especially on the lower plant.

HABITAT

» Tolerates partial shade to full sun and wet to moist soils, but prefers open habitats such as roadsides, open woodlands, riparian areas, and fields.

WILD PARSNIP

Pastinaca sativa

PLANT TYPE: HERBACEOUS PERENNIAL

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.

ARRANGEMENT

- Opposite, and whorled around stem.

LEAVES

- Compound leaves are arranged in pairs, each with 2-5 pairs of sharply toothed mitten-shaped leaflets.

FLOWERS/SEEDS

- Yellow (sometimes greenish) flowers form umbel-shaped clusters that are 10-20 cm across.
- Seeds are flat and round.

BUDS/STEM

- Deeply-grooved, 2-5 cm thick, and smooth with few hairs.

HABITAT

- Partial sun to full sun and can tolerate a variety of soil types.
- Often found growing in open meadow habitats, open woodlands, roadsides, agriculture, and riparian areas.

LOOKALIKE SPECIES

- Cow parsnip (*Heracleum maximum*) is similar but has large white umbel-shaped flowers and the stem is covered with many fine hairs giving it a fuzzy appearance.
- Angelica (*Angelica spp.*) looks similar as well, but the stems are smooth and hairless and the flowers, while variable in colour, are distinctly globe-shaped.

Vines

RESTRICTED INVASIVE SPECIES (ISA)

DOG-STRANGLING VINE

Cynanchum rossicum & C. louiseae

PLANT TYPE: HERBACEOUS TWINING VINE

ARRANGEMENT

» Opposite.

LEAVES

» Lance-shaped with smooth margins.

FLOWERS/SEEDS

» Bean-shaped seed pod with seeds attached to downy 'umbrellas'. Flowers are pink (*C. rossicum*) or purple (*C. louiseae*) with five petals.

BUDS/STEM

» Twining vine.

HABITAT

» Dry to moist soils; growing readily in full sun to partial shade.

» Found in mixed woodlands, pine plantations, woodland edges, riparian areas, and meadows.

LOOKALIKE SPECIES

» Swamp milkweed (*Asclepias incarnata*), native to Ontario, is an upright plant, typically found in wetland habitats.

ORIENTAL BITTERSWEET

Celastrus orbiculatus

PLANT TYPE: HERBACEOUS PERENNIAL VINE

ARRANGEMENT

- Alternate.

LEAVES

- Highly variable glossy leaves (from round or egg-shaped to oblong or elliptical), smooth with wavy, slightly toothed margins, and tips that taper to a point.

FLOWERS/SEEDS

- From May to June it produces yellow-green five-petaled flowers at the leaf axils.
- Female plants produce round leathery seed pods containing red fruit and 3-6 seeds, which turn from green in spring to bright yellow-orange in the fall, persisting through winter.

BUDS/STEM

- Has light brown stems with lenticels and white piths. Roots have a distinctive orange hue.

HABITAT

- Most productive in sunlight but shade tolerant.
- Found in woodlands, woodland edges, old fields, meadows, and roadsides.
- Does not grow well in wet habitats.

LOOKALIKE SPECIES

- American bittersweet (*C. scandens*) is a native species and a close botanical relative to invasive oriental bittersweet.
- There is evidence that the two species can hybridize, threatening the native bittersweet species.

KUDZU

Pueraria montana

PLANT TYPE: HERBACEOUS PERENNIAL CLIMBING VINE

ARRANGEMENT

» Alternate.

LEAVES

» Three broad leaflets per leaf, each 7-25 cm long.

FLOWERS/SEEDS

» Flowers are purple, grow in long hanging clusters, and are highly fragrant.

» Brown flattened seed pods are 5-10 cm long grow in clusters.

BUDS/STEM

» Young stems are yellow-green.

» Mature, dark brown, and woody stems with white pits in the bark can reach up to 10 cm in diameter and 10-30 m in length.

HABITAT

» Preferred habitats are sunny and include woodland edges, open woodlands, old fields, meadows, roadsides, and disturbed areas.

» Also known as "the vine that ate the south."

LOOKALIKE SPECIES

» Resembles the native species hog-peanut (*Amphicarpea bracteata*), but hog-peanut only grows to 1.5 m and has paler violet or white flowers.

» Kudzu may also be mistaken for riverbank grape (*Vitis riparia*), a native species that is able to climb trees but has shredded bark and coarsely toothed leaves with no leaflets.

Trees and Shrubs

AUTUMN OLIVE

Elaeagnus umbellata

PLANT TYPE: SHRUB

ARRANGEMENT

» Alternate.

LEAVES

» Elliptical with a slightly wavy margin lacking teeth, and distinguished from other similar shrubs by the silvery scales found on the lower leaf surface.

BARK

» As shrub matures, the bark becomes light gray to gray-brown.

FLOWERS/SEEDS

» Clusters of bell-shaped, cream to pale yellow flowers, which bloom in early spring, followed by pink to red berries dotted with scales.

BUDS/STEM

» Young twigs are silvery or golden brown, speckled, and often with thorns 3-5 cm long.

HABITAT

» Moderately shade tolerant and tolerant of a variety of soil types.

» Typically found along woodland edges, open woodlands, fields, riparian areas, roadsides, and disturbed areas.

LOOKALIKE SPECIES

» May be mistaken with one of many native willow (*Salix spp.*) species.

BLACK LOCUST

Robinia pseudoacacia

PLANT TYPE: TREE

ARRANGEMENT

» Alternate.

LEAVES

» Pinnately (odd) compound leaflets with 7-21 oval smooth-edged leaflets (terminal leaflet present). Leaflets are 30-50 mm long on a stalk that is 20-30 cm long, giving it a fern-like appearance.

BARK

» Seedlings and young sprouts have paired 1.3 cm long stipular spines (resembling stubby thorns) at the base of their leaves.

FLOWERS/SEEDS

» Smooth, flat, and dark red-brown seed pods (key identification feature) are 7-12 cm long. Pods form in fall and persist through winter. Fragrant clusters of 10-25 pea-like white flowers.

BUDS/STEM

» Smooth bark; brown to green in young trees, tan to gray-brown, deeply furrowed ridges in older trees, and orange inner bark. Often form colonies with many suckers at margins.

HABITAT

» Range of soil types including very poor, dry soils, but not those with a high water table. Generally intolerant of shade, thriving in areas such as meadows, woodlands, and riparian areas.

LOOKALIKE SPECIES

» Similar looking to honey locust (*Gleditsia triacanthos*), which is native to Ontario.

CHINESE PRIVET

Ligustrum sinense Lour.

PLANT TYPE: SHRUB/SMALL TREE

ARRANGEMENT

- Opposite.

LEAVES

- Oblong 2.5-6 cm long and 0.5-1.5 cm wide. Pairs arranged approximately 2.5 cm apart along the stem.
- Hairs occur along the midvein and sometimes on branch veins of the lower surfaces.

FLOWERS/SEEDS

- Panicles of white to cream flowers bloom in spring (April to June).
- Fleshy-blue fruits develop later; approximately 0.5 cm in diameter and each containing a hard seed.

BUDS/STEM

- Produces suckers. When immature, twigs are densely hairy.
- Tan-coloured lenticels are also present on the twig's surface.

HABITAT

- Found in dense shade to full sun and damp or drought conditions.
- Often found in full fields, fencerows, meadows, roadsides, woodlands, and riparian areas.

EUROPEAN & GLOSSY BUCKTHORN

Rhamnus cathartica & R. frangula

PLANT TYPE: SHRUB/SMALL TREE

ARRANGEMENT

» European buckthorn are sub-opposite (almost opposite). Glossy buckthorn are alternate.

LEAVES

» The European buckthorn leaf is egg-shaped, the edge of the leaf is "pebbled" (small rounded teeth). Veins converging toward leaf top. The glossy buckthorn leaf is more slender (teardrop-shaped) and smooth margined.

BARK

» Smooth, young bark with prominent raised patches or lenticels; rough texture and peeling bark when mature. Removing outer bark will reveal orange heartwood.

FLOWERS/SEEDS

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

BUDS/STEM

» European buckthorn has thorn-like tip on many twigs. Glossy buckthorn buds have no bud scales and lack thorny tips on twigs.

HABITAT

» Various: forest, thickets, and meadows, with dry to moist soils.

LOOKALIKE SPECIES

» Native dogwoods lack the thorny "tip" and are are truly opposite in their arrangement of twigs, and only alternate-leaved (*pagoda*) dogwood (*Cornus alternifolia*) have alternate branching.

EUROPEAN (OR BLACK) ALDER

Alnus glutinosa

PLANT TYPE: SHRUB/SMALL TREE

ARRANGEMENT

- Alternate.

LEAVES

- Oblong-shaped leaf with blunt tip, slightly wedge-shaped base, and wavy serrated margin.
- Glossy dark-green upper surface and paler underside with rusty-brown hairs.

BARK

- Grayish dark-brown with obvious, silver lenticels.

FLOWERS/SEEDS

- Pine cone type fruit on European alder is large (about 2 cm) and on a long stalk (> 1 cm).

BUDS/STEM

- Buds are light and bulb-shaped.

HABITAT

- Moist and wet soils, often establishing in riparian areas.

LOOKALIKE SPECIES

- Speckled alder (*Alnus incana spp. rugosa*) leaves are wedge-shaped and come to a point.
- Seed cone is short stalked (stems are ≤ 50 mm).
- The speckled alder is a multi-stemmed tall shrub, while European alder grows more like a tree from a single stem.

JAPANESE BARBERRY

Berberis thunbergii

PLANT TYPE: SHRUB

ARRANGEMENT

» Alternate.

LEAVES

» Smooth-edged and ovate; clustered at the branch.

» Often one of the first to leaf-out in spring.

BARK

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

FLOWERS/SEEDS

» Yellow and bloom in May. Fruits are bright red, and found singly or in clusters attached by a long slender stalk.

» Fruit mature in mid-summer and persist through the winter.

BUDS/STEM

» Multi-stemmed with additional stems arising from rhizomes.

» Stems have spines.

» Young stems are reddish; older stems are gray.

HABITAT

» Prefers partial to full sun, intolerant of drought or prolonged wet conditions.

LOOKALIKE SPECIES

» Native dogwoods lack the thorny "tip" and are are truly opposite in their arrangement of twigs, and only alternate-leaved (*pagoda*) dogwood (*Cornus alternifolia*) have alternate branching.

MANITOBA MAPLE

Acer negundo

PLANT TYPE: TREE

ARRANGEMENT

- Opposite.

LEAVES

- Compound leaf, 3-7 leaflets, and irregularly lobed.

BARK

- Greyish-brown bark. Mature bark with narrow firm ridges.

FLOWERS/SEEDS

- Winged seeds joined at a < 45° angle.

BUDS/STEM

- Egg-shaped buds are covered in fine white hairs.
- Young twigs are shiny green-purple with a white waxy coating that rubs off.
- Often forms an irregular crown and is relatively short-lived due to its predisposition to damage.

HABITAT

- Dry, but mostly fresh soils in various habitats, but often in floodplains.

LOOKALIKE 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.

NON-NATIVE BUSH HONEYSUCKLES

Lonicera spp.

PLANT TYPE: SHRUB

ARRANGEMENT

» Opposite.

LEAVES

» All invasive non-native bush honeysuckles have leaves with smooth margins; leaf can be hairy or smooth.

BARK

» Generally papery.

FLOWERS/SEEDS

» Showy flowers (various colours: white, pink, yellow, or orange)

» Fruit typically two bright red berries fused together.

BUDS/STEM

» Brittle stems; growth form tends to be messy and tangled, reaching heights 1.5-4 m tall. Older stems have hollow piths.

HABITAT

» Various; dry to fresh soils in forest and successional areas.

LOOKALIKE SPECIES

» Ontario native honeysuckles: Bush honeysuckle (*Diervilla lonicera*) is < 1 m in height, fly honeysuckle (*L. canadensis*) is < 1.5 m in height, Glaucous honeysuckle (*L. dioica*) and hairy (*L. hirsuta*) honeysuckle are both vines.

NORWAY MAPLE

Acer platanoides

PLANT TYPE: TREE

ARRANGEMENT

- Opposite.

LEAVES

- 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.

FLOWERS/SEEDS

- Winged seed; typical of maples.
- Joined at a 180º angle.

BUDS/STEM

- Terminal bud is plump and blunt-tipped stem buds are round, soft, and reddish brown.
- Twigs are shiny and reddish brown.

HABITAT

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

LOOKALIKE 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.

RUSSIAN OLIVE

Elaeagnus angustifolia

PLANT TYPE: SHRUB/SMALL TREE

ARRANGEMENT

» Alternate.

LEAVES

» Narrow, oblong leaves 4-8 cm long, dull green on the upper surface, and silvery scales beneath.

BARK

» Usually multiple trunks with thorns present on the trunk or branches.

FLOWERS/SEEDS

» Small and yellow on the inside, silvery on the outside, and very fragrant.

» Leaves are in small clusters in the leaf axils near the base of new shoots.

» Fruits are olive-like, but dry, silvery, and about 2 cm long.

BUDS/STEM

» Buds are small, egg-shaped, with several bud scales.

» Twigs are silvery-scaly and of three kinds: normal twigs with terminal bud; weak slender twigs that rarely survive winter; and short stunted twigs.

HABITAT

» Grows well in full sun and is tolerant of a range of soils.

LOOKALIKE SPECIES

» May be mistaken with one of many native willow (*Salix spp.*) species.

TREE-OF-HEAVEN

Ailanthus altissima

PLANT TYPE: TREE

ARRANGEMENT

» Alternate.

LEAVES

» Pinnately compound with 11-41 leaflets on a central stalk that are 25-75 cm long.

» Leaflets are 5-15 cm, pointed, and widest at the base. A basal lobe is present with a water gland underneath.

» Will omit an unpleasant odor when bruised.

BARK

» Thin, firm, and greenish-gray with irregular pale vertical lines with age.

FLOWERS/SEEDS

» Small, yellowish-green flowers in large clusters at tips of shoots. Seeds contained in a reddish or yellowish-brown long twisted wing.

BUDS/STEM

» Rounded, small, brownish, and hairy with 2-4 scales; no terminal bud present.

HABITAT

» Tolerant of a range of conditions from partial shade to full sun, however, intolerant of full shade.

» Found along woodland edges, old fields, and roadsides.

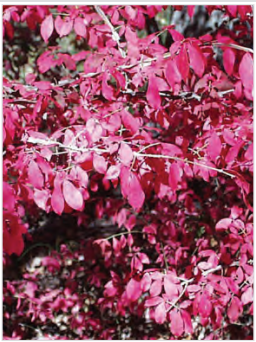
LOOKALIKE SPECIES

» Sumac species (*Rhus spp.*).

WINGED EUONYMUS

Euonymus alatus

PLANT TYPE: SHRUB/SMALL TREE



ARRANGEMENT

» Opposite in arrangement.

LEAVES

» Finely toothed, teardrop-shaped leaf that is widest at the middle.

BARK

» Young bark has prominent raised ridges.

» Rough texture and peeling bark when mature.

FLOWERS/SEEDS

» European spindletree has a four-parted fruit with yellowish flowers in small clusters.

» Winged euonymus has a two-parted fruit, with yellow/green flowers.

BUDS/STEM

» Prominent winged stems.

HABITAT

» Dry to fresh soils in woodland edges.

LOOKALIKE SPECIES

» Native strawberry bush (*E. obovatus*) is a ground hugging vine; leaf wider at the tip, not the middle.

GLOSSARY OF PLANT TERMS

Basal
leaves attached to stem in groups of three or more at the same level, generally with symmetrical orientation.

Biennial
having a life cycle (from seed to maturity to seed) of 2 years.

Climbing vine
vines which climb using tendrils or suckers.

Forest succession
the process of change in the species structure of an ecological community over time.

Herptile
a reptile or amphibian.

Lenticel
a raised, cork-like marking or spot on young bark.

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.

Margin
the boundary area extending along the edge of the leaf.

Panicle
a loose branching cluster of flowers.

Perennial
growing for 3 or more years, usually flowering and producing fruit each year.

Pith
the soft, spongy tissue at the centre of some stems and branches.

Rhizome
a horizontal underground stem, distinguished from a root by the presence of nodes, buds and/or scale-like leaves.

Riparian
adjacent to a river or stream, including shores and floodplains.

Stamen
the pollen-bearing organ of a flower.

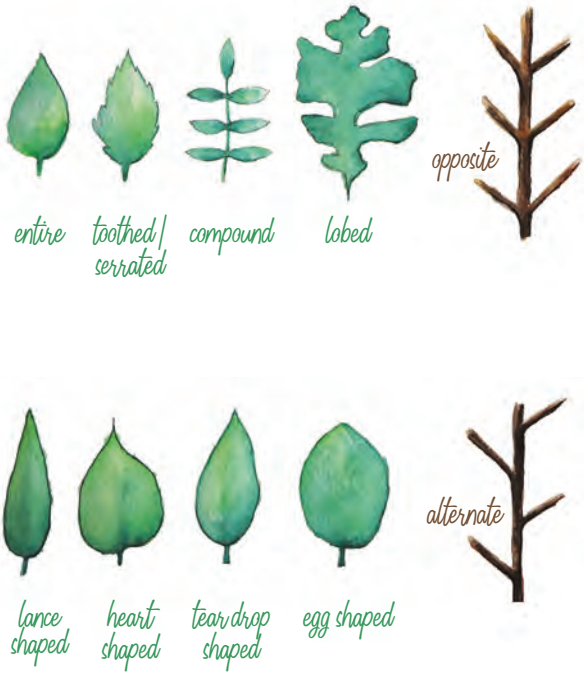
Stipule
a small, leaf-like growth at the base of a leafstalk.

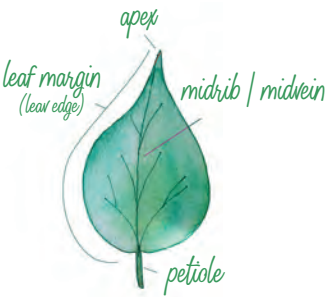
Suckers
an adventitious shoot arising from a root.

Senescence
the process of aging of biological organisms, signifying a stop of cell division. Leaf senescence in winter deciduous species signals the transition from the active to the dormant stage.

Twining vine
a climbing plant that climbs by its shoots growing in a helix.

PLANT RECOGNITION TERMS




apex
leaf margin
(leaf edge)
midrib | midvein
petiole


terminal leaflet
sessile
stocked


terminal bud
lateral bud


ligule
found at inner base of leaf, between where the leaf attaches to the main stem and the stem itself. Commonly forms a traducent membrane or fringe of hairs
stem sheath
portion of the leaf that wraps around and joins leaf to stem

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Chris Evans, University of Illinois, Bugwood.org; Chris Evans, University of Illinois, Bugwood.org; Britt Slattery, US Fish and Wildlife Service, Bugwood.org

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Jerry A. Payne, USDA Agricultural Research Service, Bugwood.org

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Gil Wojciech, Polish Forest Research Institute, Bugwood.org; Hayley Anderson

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Ohio State Weed Lab, The Ohio State University, Bugwood.org; John Cardina, The Ohio State University, Bugwood.org; Ohio State Weed Lab, The Ohio State University, Bugwood.org

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Andrea Hicks; Alison Morris; Greg Bales

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Chris Evans, Bugwood.org

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Nancy Loewenstein, Auburn University, Bugwood.org; James H. Miller, USDA Forest Service, Bugwood.org; David J. Moorhead, University of Georgia, Bugwood.org

Manitoba maple bark
Bill Cook, Michigan State University, Bugwood.org

Autumn Olive
Nancy Loewenstein, Auburn University, Bugwood.org; Chris Evans, Bugwood.org

Black Locust
Robert Vidéki, Doronicum Kft, Bugwood.org; Jan Samanek, Phytosanitary Administration, Bugwood.org; Chris Evans, University of Illinois, Bugwood.org

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Chris Evans, University of Illinois, Bugwood.org; David J. Moorhead, University of Georgia, Bugwood.org

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Paul Wray, Iowa State University, Bugwood.org; Leslie J. Mehrhoff, University of Connecticut, Bugwood.org; Chris Evans, University of Illinois, Bugwood.org

European or Black Alder
Paul Wray, Iowa State University, Bugwood.org; Piero Amorati, ICCroce-Casalecchio di Reno, Bugwood.org

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Robert Videki, bugwood.org; Jan Samanek, Phytosanitary Administration, Bugwood.org; Paul Wray, Iowa State University, Bugwood.org; chris evans, bugwood.org

Japanese Barberry
Leslie J. Mehrhoff, University of Connecticut, Bugwood.org

Manitoba Maple
Paul Wray, Iowa State University, Bugwood.org; Jan Samanek, Phytosanitary Administration, Bugwood.org; Bill Cook, Michigan State University, Bugwood.org

Non-native Bush Honeysuckles
Richard Gardner, UMES, Bugwood.org; John M. Randall, The Nature Conservancy, Bugwood.org; Rob Routledge, Sault College, Bugwood.org

Norway Maple
Leslie J. Mehrhoff, University of Connecticut, Bugwood.org; Jan Samanek, Phytosanitary Administration, Bugwood.org; Keith Kanoti, Maine Forest Service, Bugwood.org

Russian Olive
John M. Randall, The Nature Conservancy, Bugwood.org; Patrick Breen, Oregon State University, Bugwood.org; Chris Evans, University of Illinois, Bugwood.org

Tree of Heaven
Annemarie Smith, ODNR Division of Forestry, Bugwood.org; Chris Evans, University of Illinois, Bugwood.org; Chuck Bargeron, University of Georgia, Bugwood.org; Jan Samanek, Phytosanitary Administration, Bugwood.org

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