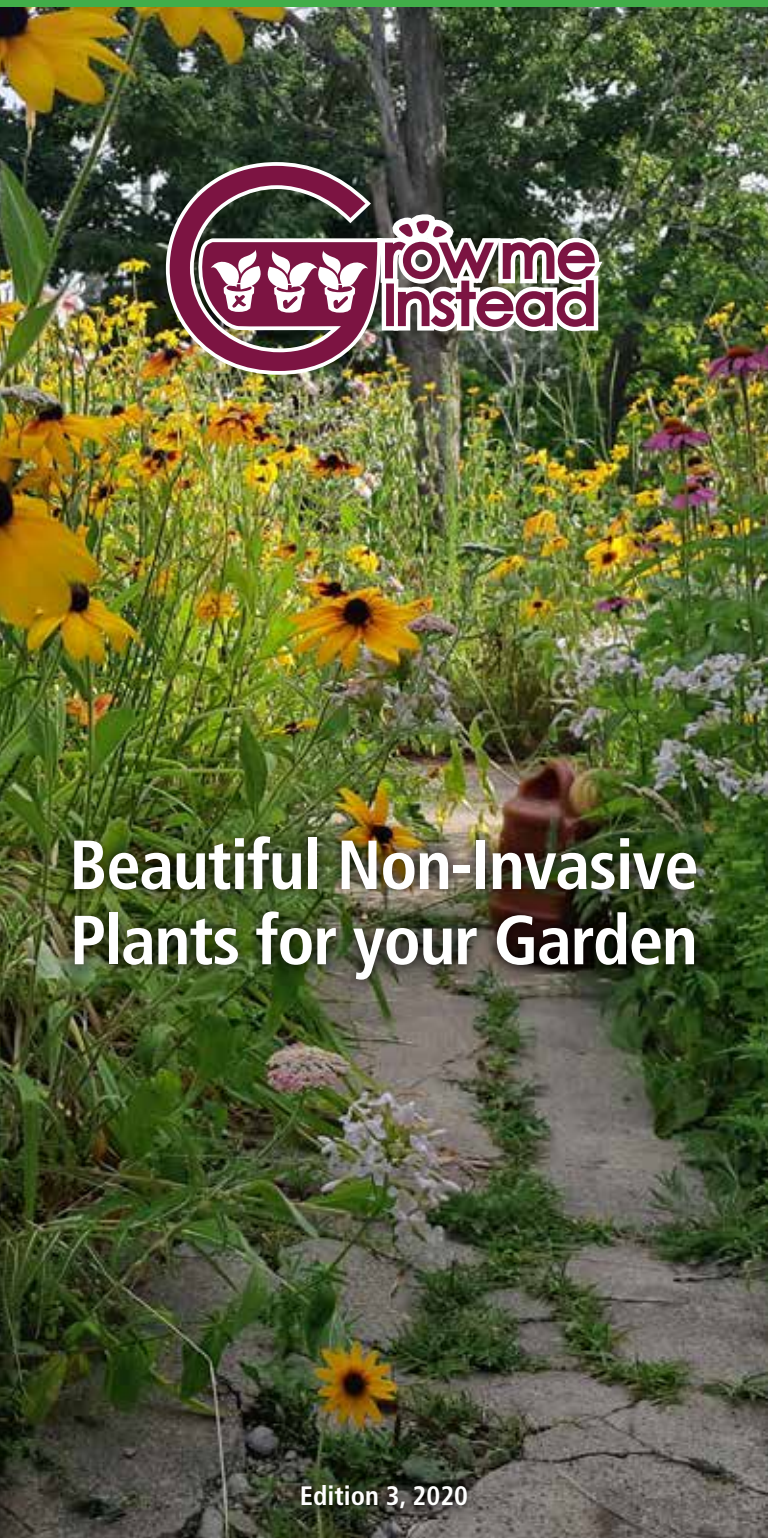
A Guide for Southern Ontario



Beautiful Non-Invasive Plants for your Garden

Edition 3, 2020

Foreword

Welcome to the third edition of Grow Me Instead. Whether you are a novice or a seasoned pro, a hobbyist or a professional, a designer or a builder, this guide is for you.

Back in 2009, a group of ecologists and horticulturalists gathered to discuss the issue of invasive garden plants. They formed the Horticulture Outreach Collaborative (HOC), which soon became a committee of the Ontario Invasive Plant Council (OIPC). Although HOC has worked on numerous projects, none has generated as much discussion and received as much praise as this little guide. And so it is with great pleasure that we introduce this third edition of Grow Me Instead (GMI) for Southern Ontario.

More than 70,000 people have picked-up earlier editions of GMI and countless more have referred to or downloaded them online. With updated plant profiles and photos as well as more information on plant availability and wildlife connections, we believe this third edition is the best yet.

The most successful projects are collaborative in nature, and GMI is no exception to the rule. We thank past and present OIPC staff members and HOC committee members as well as everyone who has picked-up a guide over the last eight years and let us know what they thought, good and bad.

Most especially, we would like to thank the Ontario Federation of Anglers and Hunters' Invading Species Awareness Program, Toronto Botanical Garden, and the Invasive Species Centre for driving this third edition home.

Yours in conservation,

Colin Cassin and Colleen Cirillo

HOC committee co-chairs

Brenda Van Ryswyk

Table of Contents

Grow Me Instead

Gardening is a popular activity in southern Ontario and around the world. When practiced in a thoughtful manner, it is part of society's wise response to climate change and biodiversity loss – two of our greatest global challenges. Invasive plants contribute greatly to the later and cost governments and land owners tremendously.

This practical and easy-to-use guide is part of that thoughtful approach. It informs gardeners about the invasive tendencies of common garden plants and suggests appropriate non-invasive alternatives. In addition, it provides tips for ecologically-sound gardening and a list of related resources.

Invasive plants

A non-native plant is a plant that is introduced into an area for horticultural or agricultural reasons, or by accident. Many non-native plants in southern Ontario are beneficial to society and non-threatening to native biodiversity, others are benign. Only a few are invasive.

An invasive plant is a non-native plant whose introduction negatively impacts native biodiversity, the economy and/or society, including human health. Second to habitat loss, invasive species have been identified by the International Union for Conservation of Nature as the most significant threat to biodiversity.

Invasive plants have far-reaching and long-lasting impacts. They reduce populations of native plants and the insects that depend on those plants, permanently altering communities and ecosystem functions, and costing economies millions of dollars each year.

Invasive plants impact a great number and diversity of citizens, regions and industries across southern Ontario, as detailed in the list below:

- Increased monitoring and maintenance costs (labour, plant replacement and chemical use) for public parks and gardens, land trusts and private land managers

Jessica Rose Powell

- Reduced forage quality and quantity on rangelands
- Increased competition for light, nutrients and water on tree seedling farms
- Additional tourism nuisances such as punctured tires, trail obstruction and degraded vistas
- Water quality and quantity degradation due to increased erosion and sedimentation

Invasive plant removal is extremely difficult, if not impossible, especially when well-established over large areas. Prevention of new invasions is of paramount importance.

Native plants

A native plant has existed in an area for millennia, and has evolved in the presence of native soils and climate, and in tandem with other native species of plants, animals, fungi and bacteria. This vegetation may also be referred to as indigenous. Native plants exist as part of naturally-forming communities and have important ecological roles to play. The native plants of southern Ontario are diverse, and beautiful.

While it is true that non-native plants can provide shelter, nesting opportunities and some food options for wildlife, native plants support a greater diversity and number of wildlife, including the bees, butterflies and birds we love to see in our gardens. The significant difference is the ability of native plants to support native insects.

It's a chemistry thing. Our plant-eating insects have evolved with native plants so that they can combat the defenses of some of them and avoid those for which they cannot. Many insects – at least in the larva stage – are specialized. This means that they feed on one specific plant or a small number of plants only. The monarch is the perfect specialization example as it only consumes milkweed in its larva form (caterpillar).

Non-native plants are brand new to native insects and not palatable. Our insects have not evolved with them and cannot combat their chemical defenses to consume them and derive nourishment. So when our gardens and parks are filled with non-native plants, we have fewer insects and fewer birds that rely on them for food. So add some native plants to your garden to best support our native wildlife at all stages of life, and transform your garden into a vibrant, dynamic space!

A list of native plant nurseries can be found in the Additional Resources section at the end of this guide.

Caring for your garden and nearby natural areas

- Learn what plants are in your garden. The website iNaturalist.org is a great free source of experts whom readily provide identification support.
- If an invasive is discovered, remove to prevent spread using techniques such as digging, flower head removal before seed set, or hiring a professional to apply herbicides.
- When removing invasive plants, do not place them in your backyard composter as the temperatures will not get high enough to kill the seeds or plant parts. Some compost programs at waste management facilities may reach a heat high enough to kill viable plant parts (ie. Seeds and roots). It is always good to call ahead first and inquire. Otherwise, a best practice is to place the material in black garbage bags and dispose of them with your household garbage. Some particularly hardy invasive plants may require prolonged solar heating within the garbage bags to ensure all plant material is thoroughly killed.
- Do not throw your garden or yard waste over your fence into natural areas. This is a proven way that invasive plants spread into natural areas.
- Do not dump any aquatic plants or animals into natural waterways or ponds.
- Do not remove vegetation from natural areas; they may be rare native plants or even invasive plants.
- Purchase non-invasive or native plants from reputable suppliers. A list of nurseries specializing in native plants can be found in the Additional Resources section at the end of this guide.
- Talk to growers and express the demand for native, non-invasive alternatives.
- Report invasive species sightings to the **Invading Species Awareness Program's hotline 1-800-563-7711 or Early Detection and Distribution Mapping System for Ontario (eddmaps.org/ontario)**.


Freyja Whitten

Ontario's Invasive Species Act

The *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.

Ontario has regulated several invasive species including plants under the ISA. The following is a list of plant species currently regulated under the ISA in Ontario.

Prohibited Invasive Species

It is illegal to import, possess, deposit, release, transport, breed/grow, buy, sell, lease or trade these prohibited invasive species in Ontario:

- Brazilian Elodea (also known as Brazilian Waterweed) *(Egeria densa)*
- European Water Chestnut *(Trapa natans)*
- Hydrilla *(Hydrilla verticillata)*
- Parrot Feather *(Myriophyllum aquaticum)*
- Water Soldier *(Stratiotes aloides)*

Restricted Invasive Species

It is illegal to import, deposit, release, breed/grow, buy, sell, lease or trade these four restricted invasive species:

- Dog-strangling Vine *(Vincetoxicum rossicum) (syn. Cynanchum rossicum)*
- Black Dog-strangling Vine *(Vincetoxicum louiseae) (syn. Cynanchum louiseae)*
- Japanese Knotweed *(Fallopia japonica var. japonica) (syn. Reynoutria japonica var. japonica)*
- Phragmites *(Phragmites australis subsp. australis)*

PERIWINKLE is native to Europe, but can now be found in gardens throughout North America. Its popularity is based on its ease of care, dense growth, and its ability to grow in dry shade, a difficult gardening situation.

Periwinkle grows to a height of 10 – 15 cm and is characterized by glossy evergreen foliage and long-lasting blue-violet flowers. It has few pests or diseases outside its native range, which contributes to its persistence. It spreads via its shallow root system and can survive in a range of soil conditions.

Garden use: groundcover for shady woodland garden

Growing conditions: sun to partial shade; dry to moderate; sand or clay

Size and shape: 30 – 60 cm tall; clump-forming

Flower and fruit: showy pink or magenta blooms in late-spring and early-summer

Leaves: loose mounds of deeply-lobed leaves

Additional info: nectar source for hummingbirds; often forms colonies

LILY-OF-THE-VALLEY is an herbaceous perennial native to Eurasia which has escaped cultivation in North America. This highly poisonous plant spreads rapidly via rhizomes, and tolerates a range of growing conditions, forming dense colonies in the landscape.

Lily-of-the-valley prefers shaded areas with filtered light and is found in urban parks and ravines, and more remote settings of natural woodlands of southern and central Ontario.

In these habitats, it out-competes many native woodland groundcovers.

Garden use: groundcover for shady woodland garden

Growing conditions: prefers partial shade and dry to moist and well-drained soils; adaptable

Size and shape: 25 – 50 cm tall

Flower and fruit: terminal clusters of white star-shaped flowers in spring followed by distinctive green-and-black striped berries, which turn deep red when ripe

Leaves: alternating/zigzag-like arrangement of lance-shaped leaves clasped on stem

Additional info: spreads by rhizomes and forms colonies

Groundcovers, Wildflowers and Grasses

GOUTWEED is native to Eurasia but can now be found in gardens throughout North America.

Also referred to as Bishop's weed and snow on the mountain, this perennial groundcover tolerates a wide range of soil conditions. It is highly shade-tolerant and competitive once established, reproducing by seed and spreading by underground stems called rhizomes. It is most commonly found around shrubs in old gardens.

Plants grow about 30 cm high with green leaves that are divided into three leaflets. Some cultivars have variegated leaflets that are green near the centre but whitish around their margins. Umbrella-like white flowers appear in mid-summer.

INVASIVE

Goutweed
(Aegopodium podagraria)

Garden use: groundcover for shade/partial light

Growing conditions: tolerant of wide light range, and dry to moist soils

Size and shape: 50 – 100 cm; forms large carpets

Flower and fruit: delicate flowers in white, violet or lavender; many flowers per plant

Leaves: heart-shaped large basal leaves (5 – 15 cm), with oval/lance-shaped gradually becoming smaller as they ascend the stem

Additional info: this aster is widespread in Ontario woodlands and edge habitats, and one of the first asters to bloom

ALTERNATIVE

Large-leaved Aster
(Eurybia macrophylla)

YELLOW ARCHANGEL is an invasive perennial ground cover from the native to Europe. This invasive groundcover is a member of the mint family and often escapes cultivation establishing in a range of conditions, from full shade to full sun, and from moist to dry soils. It has been known to survive extreme conditions such as periods of drought, and in soils with high pH, such as those found within cedar and hemlock dominant woodlands. Its ability to adapt to a broad spectrum of habitats and conditions make it very successful at out-competing native flora.

Yellow archangel reproduces via seed, root fragments, and through stolons, which produce roots and shoots at the leaf base near the ground, enabling it to form extensive ground cover from an individual plant.

INVASIVE

Yellow Archangel
(Lamiastrum galeobdolon)

Garden use: groundcover; woodland habitat garden

Growing conditions: tolerate a range of light conditions but prefer partial shade; dry to moist soil (adapted to dry conditions)

Size and shape: 50 – 80 cm tall; tends to grow in groups/clumps

Flower and fruit: golden yellow flowers bloom in late summer and early fall in pinnacles spread along the top of the stem

Leaves: coarsely toothed, point, oval-heart shaped leaves arranged along zigzag shaped stems

Additional info: flowers very nice addition for autumn colour

ALTERNATIVE

Zigzag Goldenrod
(Solidago flexicaulis)

Groundcovers, Wildflowers and Grasses

WINTERCREEPER is a woody, shade-tolerant evergreen trailing shrub or climbing vine native to Asia. Its attractive foliage and versatility for hedge, foundation, and erosion control plantings have made it a desirable ornamental.

Wintercreeper grows in urban and disturbed areas as well as a variety of forest types. Seeds are dispersed by birds into natural areas where they form dense and aggressive groundcovers.

Wintercreeper
(Euonymus fortunei)

Characterized by finely toothed, egg-shaped evergreen foliage and inconspicuous greenish-yellow flowers, wintercreeper can grow 1 m tall as a shrub and up to 22 m as a vine. With few pests and pathogens affecting its growth in Ontario, this ornamental is a persistent invader of native groundcover habitat.

Garden use: groundcover for shady woodland or rock garden

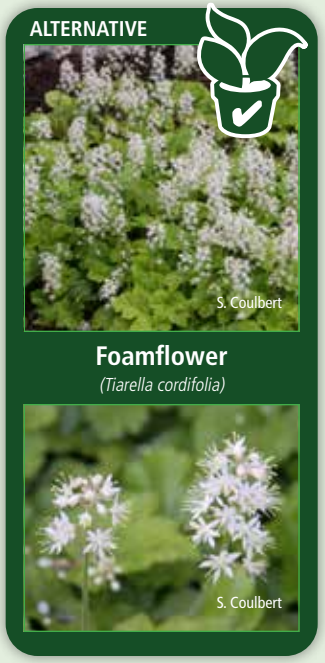
Growing conditions: partial to full shade; average to moist, humus rich loam soils

Size and shape: 13 – 25 cm tall

Flower and fruit: small white star-like flowers on spikes in spring and early-summer

Leaves: maple-like leaves turn red in fall and remain throughout winter

Additional info: spreads by runners



Foamflower
(Tiarella cordifolia)

Garden use: groundcover in shade

Growing conditions: partial shade; rich and moist; well-drained soil

Size and shape: low, trailing deciduous shrub up to 45 cm tall

Flower and fruit: red berries in the fall

Leaves: dense foliage turns scarlet in the fall

Additional info: native to eastern North America

Running Euonymus
(Euonymus obovatus)

Garden use: groundcover for shady location

Growing conditions: partial to full shade; moist conditions

Size and shape: 25 – 50 cm; low growing

Flower and fruit: white to light purple tubular flowers with protruding stamens

Leaves: broadly triangular leaves, lobed almost to the midrib; some specimens with a distinguishable spotted (or water droplet-like) appearance on the leaves

Additional info: attracts native bees and other pollinators

Virginia Waterleaf
(Hydrophyllum virginianum)

ENGLISH IVY is native to Europe, western Asia and northern Africa. It has been developed into hundreds of varieties and can now be found in gardens throughout North America.

Although technically a vine, this evergreen perennial is commonly used as a groundcover in dense shade. Whether in shade or sun, English ivy will persist and spread vegetatively through its long vines that root at the nodes in almost any soil type. It is easily identified by its dark green three-lobed leaves placed alternately on its flexible woody vine.

Despite its pervasiveness in gardens and nearby natural areas, not a single North American animal uses English ivy for food. Indeed, this is one of the causes of its invasive nature, the other being its considerable adaptability.

Garden use: groundcover for sunny gardens

Growing conditions: sun; sand, loam or clay; dry to average soil

Size and shape: low-growing and spreading; 15 cm tall

Flower and fruit: small white flowers in late-spring; small edible red berries early-summer

Leaves: three-lobed and toothed

Additional info: spreads by runners and forms colonies

BUGLEWEED is a low-growing, perennial groundcover native to Europe, Africa and Asia. Its pleasant blue blossoms and ability to suppress weeds and cover shaded areas made it popular for filling in lawns, stabilizing slopes and covering areas under trees and shrubs.

Bugleweed spreads through stolons quickly taking over native groundcover and gardens. It is characterized by glossy, dark green-purple egg-shaped leaves with the narrow end towards the base and upright spikes of dense blueish-purple flowers.

Garden use: groundcover for shady location

Growing conditions: part sun to shade; average to moist, humus-rich soil

Size and shape: 15 – 20 cm tall; clump-forming

Flower and fruit: single maroon flower under leaves in late-spring

Leaves: soft green heart-shaped

Additional info: spreads slowly by roots to form attractive groundcover; drought-tolerant once established; deer-resistant; roots have a sweet ginger smell

CREEPING JENNY is an herbaceous perennial plant native to Eurasia. It is favored by gardeners for its low stature and ability to grow in wet areas in a wide range of light conditions.

Creeping Jenny grows 20 – 60 cm long and 5 – 10 cm high. The toothless, spade shaped leaves can vary from green to yellow in colour based on sunlight exposure. Flowers are yellow with dark red spots, though they rarely form. It spreads vegetatively, creating a dense leafy mat excluding other native herbaceous vegetation from establishing.

INVASIVE

Creeping Jenny
(Lysimachia nummularia)

Garden use: groundcover; native plant garden; roadside, prairie and meadow gardens

Growing conditions: adaptable to a variety of light and soil conditions, but does best in partial to full sun and moist soils

Size and shape: 30 – 60 cm tall

Flower and fruit: showy white flowers emerge from late May through the summer

Leaves: deeply lobed and toothed leaves

Additional info: great for pollinators with long blooming period

ALTERNATIVE

Canada Anemone
(Anemone canadensis)

Garden use: specimen planting, showy-addition

Growing conditions: partial sun/shade to full shade; moist, rich, organic soils

Size and shape: 10 – 15 cm tall; solitary plants; will colonize space over time in optimal conditions

Flower and fruit: bright white with 8 to 16 white petals, with green/yellow center

Leaves: blue-green leaves are oval with deep lobes and smooth texture

Additional info: ephemeral early spring blooms that benefit pollinators and ants will die back allowing for increased leaf growth

ALTERNATIVE

Bloodroot
(Sanguinaria canadensis)

Garden use: groundcover for shade; woodland garden

Growing conditions: part sun to deciduous shade (needs spring sun); average to most soil

Size and shape: up to 40 cm tall with one or two leaves

Flower and fruit: a single white flower under leaves in spring

Leaves: large, umbrella-like, deeply lobed leaves unravel in early spring

Additional info: one of the first wildflowers to emerge in spring; flowers attract bumblebees though the primary mechanism of pollination is still poorly understood; in part of its range, mayapple relies on box turtles for seed dispersal

ALTERNATIVE

Mayapple
(Podophyllum peltatum)

Groundcovers, Wildflowers and Grasses

DAYLILY is a perennial flowering plant introduced from Asia in the early 19th century. This popular garden plant was admired due to its beauty, hardiness, ability to spread and showy blooms. It is commonly found having escaped cultivation in urban environments, along roadsides, and encroaching into open meadows, woodland edges, and riparian (shoreline) areas.

Daylily
(Hemerocallis fulva)

Daylilies are tolerant of a variety of conditions, from full sun to partial shade, in dry to moist environments. These plants spread via seed and a network of tuberous roots, and can reproduce and proliferate from a small fragment left behind during removal.

Garden use: native plant garden; prairie and meadow gardens

Growing conditions: partial shade to full sun; moist soils (will tolerate a range of conditions)

Size and shape: 50 – 100 cm tall; can produce dense stands with cultivation

Flower and fruit: several flowers from one flower stalk; 6 petal-like deep red-orange tepals, spotted in brown, curve backwards deeply

Michigan Lily
(Lilium michiganense)

Leaves: blade-like and tapered (15 cm, becoming smaller as they ascend the stem); whorled around the round stem in groups of 5 to 9

Additional info: great attractant for swallowtail butterflies and ruby-throated hummingbirds

Garden use: groundcover; native plant garden; roadside, prairie and meadow gardens

Growing conditions: full sun; average to dry soil; drought tolerant

Size and shape: 90 – 120 cm tall; usually produces single stout stems that have coarse white hairs may produce multi-stemmed clumps in gardens

Pale Purple Coneflower
(Echinacea pallida)

Flower and fruit: flowers can be different shades of purple or white depending on cultivar; single flowers are produced on top of the stem; prominent centre cone surrounded by long, slender drooping florets; blooms in early summer

Leaves: most leaves occur at the plant base, some may alternate along the lower portion of the stem; lower surfaces of the leaves are covered with fine white hairs; leaves are sword-like, up to 25 cm long

Additional info: attracts butterflies and birds

Garden use: mass planting; tall groundcover; container; prairie and meadow gardens

Growing conditions: full sun to partial shade; well-drained/ loamy, sandy or clay soil; drought tolerant

Size and shape: rosette of leaves the first year and flowers in the second year; forms bushy, upright clumps that can reach 1m in height

Black-eyed Susan
(Rudbeckia hirta)

Flower and fruit: flowers bloom atop single stems; 8 to 20 golden orange petals with brown centres; blooms from July to October

Leaves: leaves are covered with bristly hairs; oval in shape and scattered

Additional info: attracts birds and butterflies

Miscanthus
(Miscanthus sinensis and M. sacchariflorus)

Miscanthus grasses are native to Africa and Asia, but many species are used in gardens in temperate regions around the world. Some common species include Chinese silver grass, zebra grass, amur silver grass, among others.

Miscanthus is a perennial plant that grows 2 m or more in height and forms dense clumps.

Flower heads change in colour from red to pink, before maturing to a silver colour. It spreads by rhizomes and seed.

Big Bluestem
(Andropogon gerardii)

Garden use: ornamental grass in border plantings; intermixed with wildflowers in prairie and meadow gardens as well as rooftop gardens

Growing conditions: full sun to partial shade; well-drained sand or loam

Size and shape: 1 – 2.5 m tall, clumping grass

Flower and fruit: blue-red "turkey's foot" flowers in summer

Leaves: elegant blades turn bronze in the fall

Additional info: extremely drought-tolerant and useful for erosion control; attracts birds and butterflies

Little Bluestem
(Schizachyrium scoparium)

Garden use: mid-sized ornamental grass important to prairie ecosystems

Growing conditions: full sun; adapted to soils ranging from sandy to clay-loam

Size and shape: 0.5 – 1 m tall, clumping bunchgrass

Flower and fruit: shining, white seed tufts mature in fall

Leaves: slender blue-green leaves in spring become vibrant red-tan in fall

Additional info: vibrant colour remains into early winter; seeds are valued food source to small birds throughout winter

Bottlebrush Grass
(Elymus hystrix)

Garden use: mid-sized ornamental grass with conspicuous flower

Growing conditions: partial sun to partial shade; slightly dry to moist, loamy soils

Size and shape: 1 – 2 m

Flower and fruit: together the green-brown, bristly spikelets resemble a bottlebrush

Leaves: leaves are alternate, grayish-green to dark green; up to 30 cm long and 1.5 cm wide

Additional info: this grass can be found in a range of habitats including deciduous woodlands, small meadows and partially shaded riverbanks

Groundcovers, Wildflowers and Grasses

Garden use: ornamental grass; dry garden

Growing conditions: full sun; sand to clay; dry to medium soils

Size and shape: 1 – 2 m tall; densely clumping

Flower and fruit: loosely clustered seed head

Leaves: coarse blue-green leaves

Additional info: easy to grow, slow-spreading and long-lived; consumed by wildlife and livestock

Switchgrass
(Panicum virgatum)

Garden use: ornamental grass in border plantings; intermixed with wildflowers in prairie and meadow gardens as well as rooftop gardens

Growing conditions: full sun to partial shade; dry to moist sand, loam and clay

Size and shape: 1 – 2.5 m tall

Flower and fruit: rich gold-purple sprays of flowers and seeds in the fall

Indian Grass
(Sorghastrum nutans)

Leaves: long, flat and narrow blades are dull to dark green

Additional info: drought and compaction-tolerant; consumed by wildlife and livestock

Garden use: low growing, clumping, grass-like perennial suitable as a groundcover or rain garden addition

Growing conditions: part shade to full shade; dry to moist soils

Size and shape: 15 – 30 cm tall; clumping

Flower and fruit: dark to purple-brown flowering spikes blooming in late spring

Pennsylvania Sedge
(Carex pensylvanica)

Leaves: pale green leaves turn to sandy-tan in fall; narrow leaves up to 30 cm in length

Additional info: turfgrass substitute under suitable conditions requiring little to no regular mowing; can be difficult to grow from seed

Garden use: low growing, clumping, grass-like perennial suitable as a groundcover

Growing conditions: part share to full shade; thrives in consistent, mid-moisture soils, but can tolerate drier or rocky soils

Size and shape: 15 – 30 cm tall; clumping

Flower and fruit: inconspicuous flowers; small, dark fruiting bodies forming later in summer

Ivory Sedge
(Carex eburnea)

Leaves: soft, thread-like, green leaves from a spherical clump

Additional info: great low-maintenance alternative for rock gardens or areas with thin soils; tolerates deer grazing and heavy shade

NORWAY MAPLE is prized for its dense crown and ability to tolerate difficult urban conditions.

Some cultivars have columnar crowns; others like Crimson King have deep red leaves.

The prolific seed production of most cultivars, coupled with the species' ability to grow in dense shade, make Norway maple especially invasive and threatening to natural habitats.

Many urban ravines and parks exhibit nearly pure stands of this species. The dense shade in these stands prevents sunlight from reaching the ground, making it difficult for groundcovers and shrubs to grow. Wildlife habitat is compromised and bare soil becomes susceptible to erosion.

To easily distinguish between Norway maple and native maples, break-off a leaf stem and look for the tell-tale milky sap of the Norway maple.

Garden use: shade tree; specimen planting

Growing conditions: full sun to partial shade; moist soils for silver and Freeman maples; deep, rich soils for sugar maple

Size and shape: 30 – 35 m tall; upright to rounded crown

Flower and fruit: small, yellow to red flowers emerge before leaf-out; paired, winged maple "keys" developing in spring (silver and Freeman), and spring to fall (sugar maples)

Leaves: medium to light green deeply lobed leaves; fall colours from brilliant yellows to reds

Additional info: native maple trees are well-adapted to the climate usually requiring less maintenance than non-native options, while providing benefits to wildlife; be sure to understand species-suitability for the growing site

AMUR MAPLE has escaped cultivation into many natural areas across southern Ontario. Although some sterile varieties may be available, a track record of invasiveness has resulted in neighbouring jurisdictions regulating the sale of the species to mitigate its impact on the environment.

One of the reasons for concern with this species is its ability to produce remarkably high volumes of viable seed. Mature individuals can produce thousands of seeds annually that can be controlled in manicured environments though regular mowing. Unfortunately, many seeds find their way to natural areas where their growth is not restricted, creating dense stands of invasive trees/shrubs.

Garden use: rounded form used in specimen or roadside plantings

Growing conditions: prefers full sun but will tolerate partial shade; prefers well-drained soils but will tolerate average to dry locations; displays some salt and heat tolerance

Size and shape: 6 – 10 m

Flower and fruit: both flowers and fruit of this tree offer limited aesthetic/wildlife benefits

Leaves: small leaflets in an attractive purple/maroon/red colour

Additional info: native range expanding as far north as Pennsylvania; offers acclaimed foliage colour

First introduced in North America in the mid to late 1800's, **WINGED EUONYMUS** quickly gained popularity for its attractive growth form, unique winged stems and vibrant fall foliage. The vibrant berries of this invasive shrub are produced in high volume and can be consumed and deposited away from maintained plantings, enabling this shrub to naturalize outside intended areas.

INVASIVE

Winged Euonymus
(Euonymus alatus)

Although it does not grow at the same rate as some of its invasive shrub counterparts, this species maintains the ability to outcompete many native shrubs. It also typically seen as an inferior source of food and habitat compared with similar sized native shrubs.

Garden use: specimen planting; edible ornamental; screen; naturalized area

Growing conditions: full sun to part shade; moist to semi-dry soils; tolerant of a wide range of soil conditions

Size and shape: 5 – 8 m tall with round, open crown

Flower and fruit: white flower clusters at branch tips in spring; edible fruit ripen in early summer

Leaves: emerging leaves purplish-bronze on *A. laevis* only; both species rich green in summer, turning to yellow, orange and deep red in fall

Additional info: highly prized by gardeners and birds for delicious fruit

ALTERNATIVE

Downy, Smooth and Canada Serviceberry
(Amelanchier arborea, A. laevis and A. canadensis)

Garden use: shrub border; garden ornamental; native plant gardens, pollinator gardens

Growing conditions: full shade to full sun; dry to moist soil

Size and shape: 2 – 4 m in height

Flower and fruit: white to yellow flowers bloom in an interesting spherical growth pattern in early spring followed by red glossy fruits

Leaves: emerald green, glossy leaves on slender, light-green branches turn yellow in autumn

Additional info: attracts birds, butterflies and other pollinators; larval host of the Eastern tiger swallowtail and spicebush swallowtail butterflies

ALTERNATIVE

Northern Spicebush
(Lindera benzoin)

Garden use: border, low hedge;

Growing conditions: hot, dry conditions in full sun to part shade; adaptable to various soil conditions

Size and shape: 0.5 – 2 m in height; 2 – 3 m wide

Flower and fruit: small yellow flowers on male plants in early spring; red hairy clusters of fruit on female plants in late summer

ALTERNATIVE

Fragrant Sumac
(Rhus aromatica)

Leaves: fragrant blue-green leaves with a glossy upper surface; vibrant orange, red or purple in autumn

Additional info: good shrub for naturalized areas; may grow quite thick and intertwined; important cover and food crop for birds

RUSSIAN OLIVE and **AUTUMN OLIVE** originated in Asia, but are now common in southwestern Ontario where they thrive on nutrient-poor soil and spreads via root suckers.

These shrubs can reach between 3 – 4 m in height in a short period of time and are generally multi-stemmed.

Autumn olive has deep green leaves with silvery undersides, deep red to purple fruit, and a shrubbier appearance than Russian olive, with silver-white flowers producing a strong fragrance in May. Russian olive's upper surfaces of the leaves are light green and covered with silvery star-shaped hairs, with yellow clustered flowers.

Russian and Autumn Olive
(Elaeagnus angustifolia & E. umbellata)

Garden use: screen; mass planting; wildlife planting

Growing conditions: part to full sun; moist to dry soils

Size and shape: 1 – 3 m in height

Flower and fruit: small fragrant yellow flowers in spring followed by silver berry later in summer

Leaves: narrow leaves covered in fine, white hairs giving a silvery appearance

Additional info: this shrub will sucker with little effort to form groves

Silverberry
(Elaeagnus commutata)

Garden use: stand alone shrub ideal for shady areas; planted for its fall colour and fall blooming effect

Growing conditions: full sun to partial shade; prefers cool, moist acidic soils; somewhat pollution tolerant

Size and shape: 4 – 8 m tall; multi-stemmed and wide-spreading

Flower and fruit: showy yellow flowers with spicy scent in fall; seedpods persist through winter and can eject seeds when touched

Leaves: bright to dark green; vibrant yellow colour in fall compliments late blooms

Additional info: the only Canadian tree or shrub to bloom in fall; the flowers (ie. nectar and pollen), foliage, and sap of this shrub benefit a surprising diversity of pollinators including several species of wasps, bees, flies, weevils, beetles and moths

Witch Hazel
(Hamamelas virginiana)

Garden use: Fast-growing decorative shrub, screen or hedge

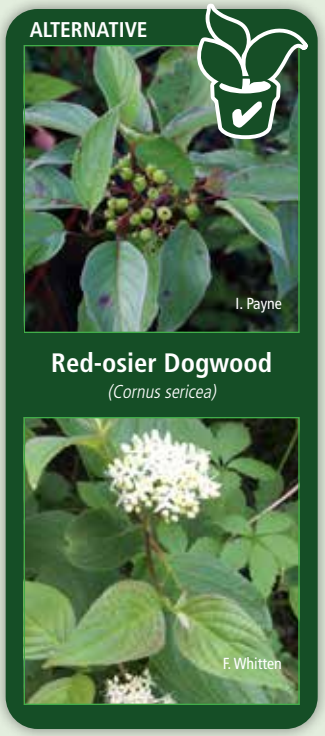
Growing conditions: tolerates a range from sun to shade; grows best in wet to moist soils

Size and shape: 1.5 – 4 m tall and 1.5 m wide

Flower and fruit: clusters of small white flowers blooming in early summer; white berries attract birds and other wildlife

Leaves: dark green foliage turns red to purple in the fall; stems retain vibrant red colour

Additional info: showy red twigs are a favourite for centrepieces and other decorative displays; historic uses of this plant include cordage, basketry and dye making; commonly used for shoreline stablization; can spread quickly



Red-osier Dogwood
(Cornus sericea)

JAPANESE BARBERRY has been introduced for garden use, as well as incline stabilization and erosion control.

This 1 – 1.5 m tall bush grows in a rounded form and has thorns along its many branches. Barberries are prolific seed producers and have germination rates as high as ninety percent.

The seeds ripen in fall, persist on the shrub through winter, are carried long distanced by birds, and take root in natural areas.

Japanese Barberry
(Berberis thunbergii)

Barberries are adapted to all soil types, can survive in full sun or full shade, and have shown an ability to acidify soil thereby affecting native habitats.

Garden use: shrub border; small flowering tree; garden ornamental; native plant gardens, pollinator gardens

Growing conditions: full sun to full shade; moist soils

Size and shape: generally, 2 – 4 m in height

Flower and fruit: flat-topped clusters of white, lacey flowers followed by berries which change from red to blue

Native Viburnums
(Viburnum lentago, V. lantanoides and others)

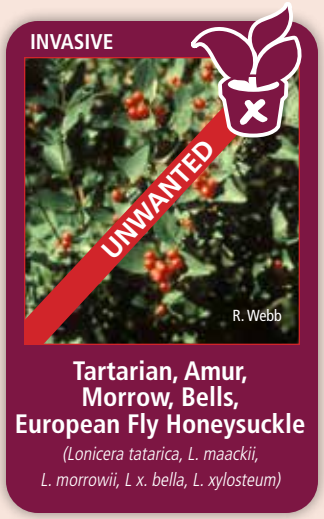
Leaves: green during growing season followed by yellow-bronze display in fall

Additional info: attractant of gamebirds, songbirds and mammals which eat the fruit and browsers which eat twigs and leaves; host to the spring azure butterfly

THESE NON-NATIVE HONEYSUCKLES are originally range from central Asia through the mountains of Europe.

They have all shown an invasive tendency, with rapid growth and high reproduction ,taking over large natural areas.

These multi-stemmed plants range from 2 – 5 m tall and wide at maturity, and have simple leaves that remain green through the fall. Summer leaf colour is fairly similar among these four ranging from a blue-green to dark green. The flowers range in colour from white to pink to crimson.



Tartarian, Amur, Morrow, Bells, European Fly Honeysuckle
(Lonicera tatarica, L. maackii, L. morrowii, L x. bella, L. xylosteum)

Garden use: specimen planting; single shrub or hedge

Growing conditions: full sun to part shade; best in well-drained, slightly acidic soils

Size and shape: up to 1 m tall and 2 m wide

Flower and fruit: small, bell-shaped flowers that start as yellow-green and can turn to purple-red throughout the summer; flowers attract bumblebees and other pollinators

Native Bush Honeysuckles
(Diervilla lonicera)

Leaves: dark green leaves turning yellow to red in the fall

Additional info: attracts and provides shelter for a diverse wildlife community including hummingbirds, grouse and other wildlife; drought tolerant

MULTIFLORA ROSE is usually formed as a fountain-shaped shrub, or as a scrambling shrub climbing over other plants to a height of 3 – 5 m.

Originally from Japan it was introduced to North America as a soil conservation measure due to its adaptability to different soil conditions, salt tolerance, and ease of transplanting.

Multiflora rose is distinguished from native North American roses by its fragrant white flowers that are arranged in clusters of more than ten flowers, whereas native roses rarely exceed three per cluster.

Multiflora rose is spread by birds and is a prolific seed producer. It can re-sprout roots from stems that come in contact with soil. It readily invades open areas and forms dense thickets, replacing native vegetation.

Garden use: specimen planting; edible ornamental

Growing conditions: sun to partial shade; wide moisture and soil tolerance

Size and shape: 30 – 150 cm tall shrub

Flower and fruit: showy cream to pink flowers in spring and early summer; orange to red "rose hips"

Leaves: medium green leaves growing from small-thorned branches

Additional info: edible rosehips commonly used to make tea

Garden use: border shrub; screening or hedgerow

Growing conditions: sun to shade; average to moist soil

Size and shape: 1 – 2 m tall

Flower and fruit: small whitish flowers, with a slight bell-shape, in spring, and fruit in late summer

Leaves: foliage is green throughout the season

Additional info: berries are nutritious (high in Vitamins A and C), and an important food source for birds

Garden use: garden ornamental, native plant garden, pollinator garden, and rain gardens

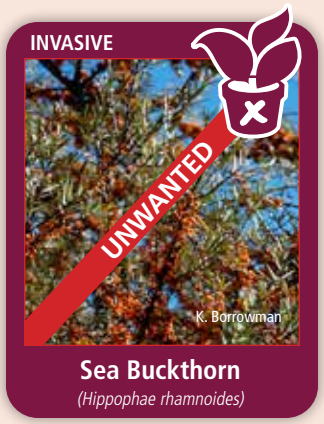
Growing conditions: partial to full sun; moist to wet soil

Size and shape: multi-stemmed shrub reaching 2 – 4 m in height

Flower and fruit: sweet-scented white globes (~ 3 cm wide) lend this plant its name

Leaves: paper-green texture with glossy appearance arranged in whorls of three

Additional info: great attractant to pollinators as flowers contain an abundance of nectar and pollen



Despite the fact that **SEA BUCKTHORN** is used as a niche agricultural crop in Ontario, there are numerous unplanted populations that demonstrate clear invasive tendencies. Outside of cultivation, this fast-growing shrub quickly forms dense impenetrable thickets that choke out native plants and wildlife.

Its large 2 – 3 inches thorns are able to pierce protective clothing, making management of this invasive shrub slow and costly. Although the berries are heralded for their high nutrient density, there is no credible documentation that suggests sea buckthorn provides as much wildlife value as preferable native berry producing shrubs. Some populations in Ontario can be traced back to nearby sea buckthorn cultivation, or intentional plantings for ornamental purposes. Left uncontrolled this species demonstrates a credible risk to spread beyond intended planting areas and should be avoided.

Garden use: shrub borders, small flowering tree, hedges

Growing conditions: full sun to shade; moist to dry sites

Size and shape: 4 – 5 m tall; irregular to rounded form with upright branching

Flower and fruit: dense, showy cream-white flower clusters 5 – 10 cm wide in spring; hanging clusters of edible 1 cm long fruit change from green through yellow, pink, rose and finally blue-black

Leaves: light green maturing to dark, glossy green; deep maroon to red in fall

Additional info: a very versatile species capable of growing in full shade or open sites; grows as a shrub or small tree if pruned; fruit are used by birds and wildlife and can be eaten off the branch

Garden use: border shrub; screening or hedgerow

Growing conditions: full sun to partial shade; normal to moist soil; drought tolerant; salt tolerant; tolerant of compacted soils

Size and shape: 1 – 3 m tall; multi-stemmed, suckering shrub

Flower and fruit: white to whitish pink flowers produced in clusters in early spring; bluish-black berries produced in early fall, staying on the plant through the winter

Leaves: glossy, bright green leaves; alternate and simple; beautiful fall foliage ranges in colour from crimson to apricot

Additional info: the name "chokeberry" is derived from the edible but bitter tasting berries

Garden use: border shrub; screening or hedgerow

Growing conditions: full sun to partial shade; dry to wet soil; drought tolerant; salt tolerant

Size and shape: 1.5 – 3 m tall; rounded shrub

Flower and fruit: small yellowish catkins appear in spring; waxy, bluish-white berries with strong aromatic scent ripen in summer and persist on the branches

Leaves: leaves are dark green, waxy and fragrant with yellow resin dots on the underside; deciduous to semi-evergreen; alternate

Additional info: the berries were used as a source of wax for early settlers; the scent is still used in candle making

Garden use: small specimen planting with edible fruit for birds and people

Growing conditions: full sun to part shade; prefers disturbed soils

Size and shape: 4 – 10 m tall; multi-stemmed small tree or large shrub with 3 – 5 m wide crown

Flower and fruit: cylindrical clusters of small white aromatic flowers in spring; small, red-purple cherries in late summer

ALTERNATIVE

Chokecherry
(Prunus virginiana)

Leaves: glossy dark green in summer; yellow in fall

Additional info: important commercial food crop used in jellies, juices, preserves and syrup; chokecherry is used in many land reclamation projects and on erosion-prone and riparian areas due to its extensive root mass

Garden use: fast-growing specimen planting; screen or hedge; edible ornamental

Growing conditions: full sun; moist soils

Size and shape: 2 – 4 m tall with rounded crown; multi-stemmed with open branching

Flower and fruit: large (18 – 26 cm wide) clusters of cream-white flowers in early summer; purple-black edible fruit in late summer

ALTERNATIVE

Common Elderberry
(Sambucus canadensis)

Leaves: bright green leaves with seven leaflets

Additional info: transplants easily; suitable for rough sections of garden; some have used fruit in jams, juice, jelly and wine

Garden use: stand alone shrub, screen or hedge

Growing conditions: full sun to partial shade; adaptable to various soil types

Size and shape: 2 – 3 m tall and wide; dense and rounded with age

Flower and fruit: white to pink domed flower clusters in sping; dry red-brown pods in fall

Leaves: medium-green; vibrant yellow-bronze in fall

Additional info: very hardy and adaptable shrub, offering winter appeal with exfoliating bark; numerous colour variations are available commercially across Ontario

ALTERNATIVE

Ninebark
(Physocarpus opulifolius)

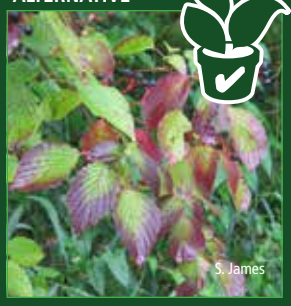
Garden use: specimen planting; naturalized areas; screen or hedge

Growing conditions: partial shade with moist soil; full sun acceptable if site is cool and moist

Size and shape: 5 – 6 m tall; prominently tiered branching with loose crown

Flower and fruit: small, fragrant white flowers in flat clusters in spring; small fruit changing from green to red to blue-black in summer; fruit stalks persistent through winter with bright coral red colour

ALTERNATIVE



Alternate-Leaf Dogwood
(Cornus alternifolia)

Leaves: prominently veined, alternate, deep green leaves typically in whorled clusters at branch tips

Additional info: desirable for its tiered branch structure, lending to its other common name "Pagoda dogwood"

JAPANESE HONEYSUCKLE VINE is native to Japan and Korea, and was introduced as a horticultural species.

Not to be confused with the similarly named invasive shrub, this climbing vine is evergreen to semi-evergreen; the vines reach lengths of 24 m and grow either by climbing over other vegetation or trailing along the ground.

Pairs of fragrant, tubular flowers can range in colour from white to yellow and are found at leaf axils along the stem.

This vine can cover and kill trees either by toppling them from the weight of the vines, or by blocking out sunlight.

It spreads rapidly through runners and by long-range seed dispersal by birds and other animals. It out-competes native species for habitat, sunlight, and nutrients.

Garden use: climbing vine, groundcover or screen

Growing conditions: sun to full shade; moist soil, but can be grown in drier conditions

Size and shape: dense, woody, multi-stemmed, climbing vine; can reach over 12 m in length

Flower and fruit: white flowers bloom in late spring/ early summer; dark bright blue fruit is produced in the early fall

Leaves: leaves composed of five leaflets, arranged palmately (like fingers spread out from the palm of your hand); leaves vibrant red in fall

Additional info: this native vine can be an aggressive spreader, but regular pruning will keep it in check; handling this plant may cause skin irritation for some people

Garden use: climbing vine; groundcover; can also be trained as a shrub

Growing conditions: partial to full shade; moist to well-drained soil

Size and shape: grows 9 – 12 m in length, 1 m tall when trained as a shrub; climbs by clinging with aerial roots; prominent lateral branches spread from the support structure

Flower and fruit: large flat-topped clusters of fragrant white flowers; blooms early spring until late summer

Leaves: dark green glossy leaves; heart-shaped and serrated; persist until late fall

Additional info: attractive to birds, wildlife, and bees; new plants may take a few years to establish, but grows quickly afterwards and gets large with age

Garden use: climbing vine; can be trained into shrub form

Growing conditions: full sun to partial shade; moist soil

Size and shape: 4 – 6 m in length; climbs by twining stems

Flower and fruit: fragrant tubular pink-purple flowers with yellow centres; grow in terminal whorls; blooms throughout much of the growing season from late spring until early fall

Leaves: pairs of round, blue-green leaves

Additional info: attractive to hummingbirds and butterflies

ORIENTAL BITTERSWEET is native to Asia and was introduced in the 1860s as a garden ornamental.

This brown, woody vine can grow up to 18 m in length and climbs by twining around supports.

The fruits turn from green to yellow and split open in the fall to reveal very attractive bright red-orange seeds, the twigs with berries are used in flower arrangements.

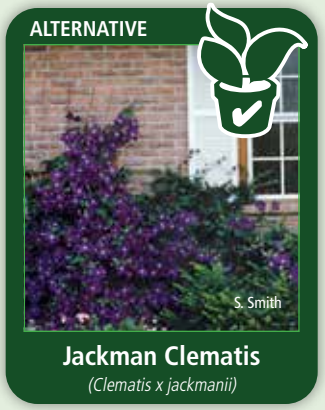
However, when it escapes from gardens, oriental bittersweet may directly compete with the rare American bittersweet *(C. scandens)* for light and space, or may hybridize with it, jeopardizing the genetic purity of the native species. This vine can kill trees, smothering them and blocking sunlight.

Garden use: climbing vine; ground cover

Growing conditions: full sun, roots require mulch or shaded area; light loam; moist soil

Size and shape: twining vine; 3 – 4 m in length

Flower and fruit: large velvety dark purple flowers; bloom late summer to early fall; other cultivars of jackman clematis may have red, white, pink or lavender flowers



Leaves: dense foliage with bright to dark green leaves 5 – 10 cm in length

Additional info: lightly fragrant flowers

Garden use: climbing vine; screen

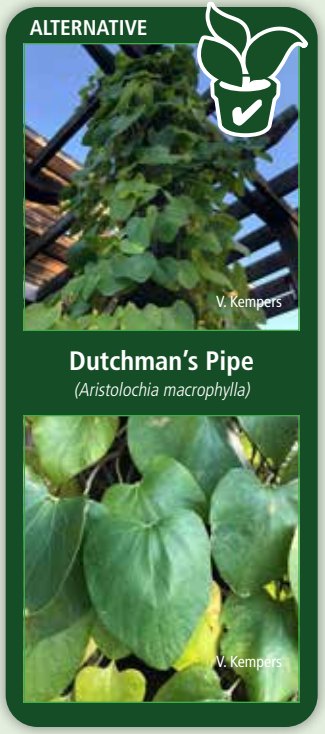
Growing conditions: full sun to partial shade; moist, well-drained soil; tolerant of urban conditions

Size and shape: perennial twining vine, growing 6 – 9 m in length

Flower and fruit: unique pipe-shaped yellowish flowers; bloom late spring to early summer

Leaves: dark green heart-shaped leaves

Additional info: rapid growth once established; fragrant flowers; attractive to bees, butterflies and birds



Garden use: climbing vine

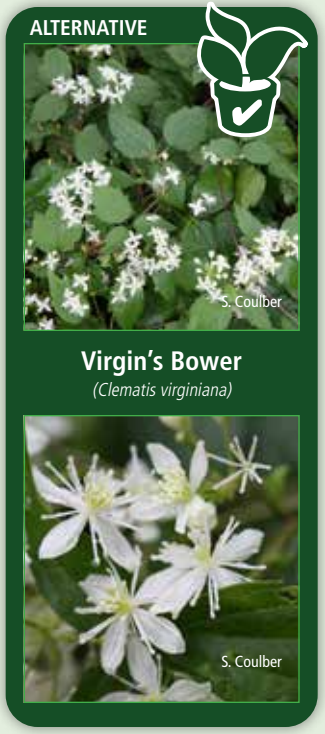
Growing conditions: full sun to partial shade; average to moist soil

Size and shape: twining vine; grows up to 5 m in length

Flower and fruit: white four-petaled flowers; bloom late summer to early fall; distinctive fluffy white seeds remain on the plant through winter

Leaves: leaves divided into three leaflets with toothed edges

Additional info: fragrant flowers attract hummingbirds, bees, and butterflies; self-sows and will root where the vine touches the ground

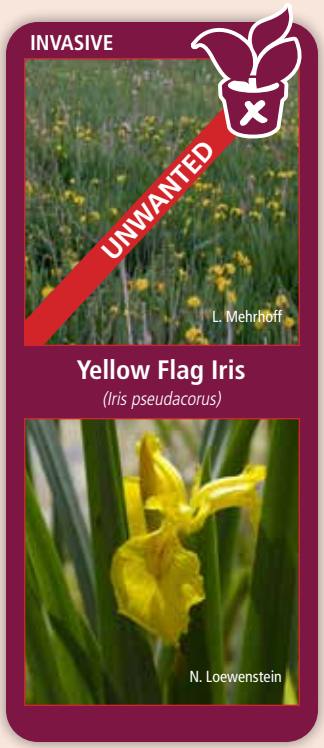


YELLOW IRIS is native to Eurasia but can now be found throughout southern Ontario.

Occurring in shallow water along streams, rivers, ponds and lakes, it was likely introduced as an ornamental garden plant in ponds and outdoor water gardens.

This riparian perennial has erect leaves and brightly coloured showy flowers.

Once established, yellow iris can form a dense stand which displaces native shoreline vegetation and converts wet habitat to drier environments. Plant sap may cause skin blistering.



Garden use: ornamental, native plant garden, pollinator garden

Growing conditions: partial to full shade; rich, moist soils (will tolerate standing water)

Size and shape: 1 – 2 m tall; upright groups with spreading habit of growth

Flower and fruit: showy spikes of scarlet flowers (excellent for cuttings) bloom July to September

Leaves: pointy, lance-shaped leaves along entire stem until reaching flower

Additional info: flowers attract many pollinators, including hummingbirds

Garden use: ornamental in ponds and water gardens, used for shoreline enhancement

Growing conditions: along shores and in marshes, swamps, wet meadows and occasionally fens; in water up to 2 m deep

Size and shape: stems 20 – 80 cm tall, growing in small colonies

Flower and fruit: showy, blue-purple flowers with yellowish veins separated into 3 petals; fruit capsules 2 – 3 cm long with flat seeds stacked inside, turning brown in autumn

Leaves: elongated, with parallel veins, up to 3 cm wide

Additional info: root stocks are poisonous; flowers are pollinated by bees; muskrats, beavers and birds feed on flower nectar

Garden use: garden accent, container planting, native plant garden, rain garden, groundcover

Growing conditions: part to full sun; moist to wet soil

Size and shape: 0.5 – 1 m in height

Flower and fruit: inconspicuous small green/ brown flowers

Leaves: medium green, slender radiating from central base

Additional info: spreads slowly via rhizomes, and the leaves have a light, sweet scent when crushed

Native to Eurasia, **FLOWERING RUSH** can now be found in Ontario throughout Lakes Erie, St. Clair, Ontario, and Superior, as well as in the western St. Lawrence River, Severn River and Winnipeg River systems.

This perennial aquatic rush may grow submerged or emerge above the surface, with triangular leaves and multiple pink flowers on the end of a stalk.

Flowering Rush
(Butomus umbellatus)

Flowering rush can grow in lakes, rivers, marshes, ponds and wet ditches. It is used as an ornamental plant for ponds and outdoor water gardens, or intentionally planted along shorelines where it may escape and invade new areas.

Once established, flowering rush can displace native shoreline vegetation and hinder recreational use.

Garden use: habitat and shoreline enhancement of ponds and water gardens

Growing conditions: prefers medium to moist soils, found in moist fields and meadows; once established can be found in drier garden soils

Size and shape: ranging from 30 – 180 cm tall with square, grooved stem

Blue Vervain
(Verbena hastata)

Flower and fruit: blue-violet flowers, blooming from summer to fall

Leaves: oppositely arranged, 5 – 15 cm long lance-shaped leaves, narrowed at base

Additional info: useful for shoreline restoration or in a rain garden; attractive to birds, butterflies and pollinating bees; young plants are often confused with mint

Garden use: native wildflower used in wet meadows and pond edges

Growing conditions: moist to wet soils; sun to partial shade

Size and shape: 30 – 90 cm in height

White Turtlehead
(Chelone glabra)

Flower and fruit: showy, pink flowers resemble a turtles head, blooming through end of summer; seedcapsules remain on stalks throughout winter

Leaves: long, narrow leaves

Additional info: pollinator friendly plant; preferred host plant for the Baltimore butterfly; rarely grazed

Garden use: great for pollinator gardens (well-suited to edges or toward rear of landscape designs

Growing conditions: full sun to partial shade, rich and moist soil (great choice for riparian plantings)

Size and shape: 1 – 2 m tall; flower clusters atop individual plants

Joe-pye Weed
(Eupatorium maculatum)

Flower and fruit: showy fragrant mauve/pink flowers bloom from July to September

Leaves: 3 – 4 light-green leaves whorled in groups along stem

Additional info: great attractant for butterflies and other pollinators

Swamp Rose-mallow
(Hibiscus moscheutos)

Garden use: low-maintenance choice for garden ornamental (showy blooms), native plant garden, pollinator garden, and rain gardens

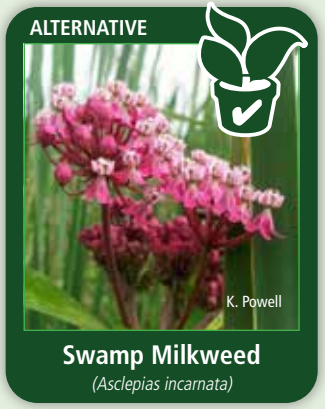
Growing conditions: partial to full sun; wet to moist soils

Size and shape: 1 – 2 m tall

Flower and fruit: large white to pink flowers with darker centre bloom from July to September

Leaves: grey-green leaves

Additional Info: pollinated by native long-tongued bees including the specialist Rose Mallow Bee; blooms also provide nectar to ruby-throated hummingbirds and a variety of insects. The swamp rose-mallow is a species at risk in Ontario, and classified as "Special Concern"



Swamp Milkweed
(Asclepias incarnata)

Garden use: native wildflower found in wet meadows and pond edges

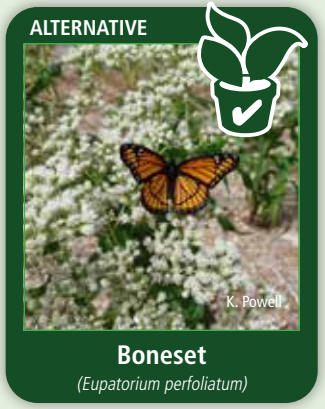
Growing conditions: moist to wet soils; clay to loamy soils; full sun to partial shade

Size and shape: 0.5 to 1.5 m in height

Flower and fruit: large flower heads comprised of many smaller pink to rose-purple flowers; blooming mid-summer through early fall

Leaves: narrow, lance-shaped leaves

Additional info: this species offers ample educational opportunities for youth, being one of the few host species for caterpillars of the native monarch butterfly



Boneset
(Eupatorium perfoliatum)

Garden use: native plant gardens; pollinator gardens

Growing conditions: partial to full sun; wet to moist conditions

Size and shape: 50 – 100 cm tall; grows in clumps and bunches through rhizome network

Flower and fruit: clusters of tiny, cream-white fuzzy flowers are arranged at the tops of flower stocks, with branching flowering side stems, bloom late summer to early fall

Leaves: lanceolate with long narrow tips and toothed margins; stem appears to emerge through the clasped leaves

Additional info: great butterfly attractant (ie. painted lady butterfly)

Marsh Marigold
(Caltha palustris)

Garden use: perennial water loving wildflower

Growing conditions: moist to wet soils

Size and shape: up to 0.5 m tall

Flower and fruit: brilliant yellow flower bloom in early spring, April to June

Leaves: long stalked, toothed, kidney shaped basal leaves

Additional info: early blooming flowers are a sure sign of spring; attracts pollinators

WATER LETTUCE is an aquatic plant known to be problematic in central America and Southern US states such as Florida. Although many believed this plant is unable to successfully overwinter in Ontario, there is evidence this may no longer be true. Repeated annual detections in Lake St. Clair may suggest the species is able to overwinter and form low-density stands in at least some regions of Ontario. These findings, plus the considerable impacts inflicted by the species in its invasive range make it a species to avoid.

Garden use: ornamental in ponds and water gardens, used for shoreline enhancement

Growing conditions: shallow water (rarely more than 1 m deep) along muddy or sandy shores of lakes, ponds, marshes, rivers and streams

Size and shape: stems erect, stout, 30 – 60 cm tall growing from thick spreading root system often forming dense colonies in still waters

Flower and fruit: flowers violet-blue with 2 yellow dots on upper lip, funnel-like, about 8 mm long; 1 – seeded bladder-like fruit with 1 seed

Leaves: lance to egg shaped, heart shaped at base, 5 – 25 cm long, 2 – 5 cm wide

Additional info: young stems and leaves of pickerelweed can be eaten in salads or boiled and served with butter; seeds can also be eaten raw; pollinated by bees and butterflies

WATER SOLDIER is an aquatic plant once commonly sold in the water garden industry. Water soldier is now regulated as a Prohibited invasive species under Ontario's *Invasive Species Act*. (see regulation details on page 6). This plant is native to Europe and Central Asia. Currently the only two known wild populations of water soldier are located near Lake Simcoe and in the Trent River.

Water soldier, also known as water aloe, looks very similar to an aloe vera plant, or the top of a pineapple plant.

Water soldier grows underwater on the river bottom most of the year, and emerges in late spring and summer.

The leaves that grow once it has surfaced have air pockets enabling the plant to float. Water soldier forms dense populations with large masses of plants which out-compete other aquatic plant species.

A notable concern is that each leaf is lined with small serrated spines that can easily cut swimmers.

Garden use: oxygenation, habitat enhancement for ponds and water gardens

Growing conditions: submerged or above surface, aquatic found in lakes, ponds, marshes, streams and rivers, sometimes on peat in fens; muddy substrate; prefers non-acidic conditions

Size and shape: stems thick, soft, erect, 10 – 50 cm tall, from spongy roots

Flower and fruit: Flower: very small, lacking sepals and petals in axils of upper leaves, rare and occur in the summer; Fruit: nutlet, ellipsoidal, 1.7 – 2.5mm long occurring mid-to late summer.

Leaves: when breaking water surface, 1 – 2 cm long thick, firm and spiky whorls of 6 – 12; when submerged, 1 – 3 cm long thin and weakly attached, dropping when removed from water

Additional info: marsh birds occasionally feed on the leaves and stems of common mare's tail; *Hippuris* means horse's tail

EUROPEAN FROG-BIT is native to Eurasia but can now be found from the St. Lawrence River to Lake Ontario, throughout the Kawartha Lakes, the Rideau and Ottawa River systems and along Lakes Erie and St. Clair.

It is also spreading northward at scattered sites throughout the Canadian Shield, and has been found as far north as Dryden, Ontario.

It grows free-floating or as a rooted mat in shallow waters. Roots can grow up to 50 cm long with numerous root hairs.

Leaves are floating and form a rosette; white-pink flowers emerge in summer.

Garden use: ornamental in ponds and water gardens; great for shoreline enhancement

Growing conditions: prefers shallow water or very wet soil along muddy shores of lakes, and marshes; grows best in full sun

Size and shape: attains heights of 30 – 120 cm above water; emergent leaves are arrowhead shaped

Flower and fruit: three-petaled white flowers with yellow centre are found in whorls of three and bloom from July to September; leaves and flowers are found on separate stalks; fruit is a head of beaked seeds, dark brown in colour

Leaves: most noted for its arrowhead-shaped leaves, they can be quite variable in size; emergent leaves grow up to 30 cm and submerged leaves are much smaller and narrower

Additional info: sometimes known as duck potato, referring to its enlarged, rounded tubers that form at the end of the plants runners, they float to the surface when dislodged and can be boiled or baked and eaten like a potato; great food source for wildlife and helps stabilize shorelines

Native to Southern Europe and Asia, **YELLOW FLOATING HEART** was originally thought to only occur in ponds connecting to the Rideau Canal in Ottawa, but more recently an established population has been found near the Credit River in Mississauga.

This floating plant with heart-shaped leaves and bright yellow flowers is a rooted perennial that prefers slow moving rivers and lakes, ponds and canals.

It can establish in mud and in water up to 4 m deep. When it grows in thick floating mats, it can create stagnant water with low oxygen levels, thus degrading fish habitat and limiting recreational activities.

Garden use: ornamental in ponds and water gardens; provides shade for fish

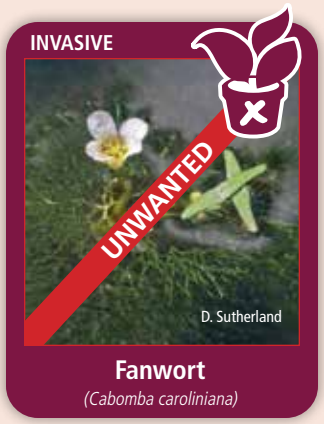
Growing conditions: lakes, ponds, slow rivers and marshes; variety of sediment types

Size and shape: round stems rise toward water surface from fleshy rhizome buried in the sediment; grows in water depths up to 2 m

Flower and fruit: white, showy, fragrant flowers 7 – 20 cm wide, open only from mid-morning to early afternoon throughout summer; flower produced on separate flower stalks growing directly from the rhizome; cultivars may also have pale pink flowers; leathery berries with many seeds ripening underwater in mid to late summer

Leaves: floating, round lily-pad with narrow V-shaped split; underside of leaf is reddish purple

Additional info: waterfowl eat fruit and seeds; roots are eaten by mammals



FANWORT, also called *Cabomba*, is native to the sub-tropic and temperate regions of South America.This submerged perennial plant is very popular in the aquarium industry and is widely available through pet stores across Ontario.

The first report of an established population of fanwort in Ontario was in Kasshabog Lake in 1991. It is currently found in a number of small nearby, landlocked lakes.

Fanwort has finely dissected, fan-shaped submerged leaves and small inconspicuous linear or rounded floating leaves. The flowers are small, white to pale yellow and have three petals. Rooted in substrate, this plant flourishes in slow flowing waters in streams, small rivers, ponds and lakes. Fanwort is extremely persistent once established and can form dense stands, displacing native vegetation, and impeding drainage in canals and streams.

HYDRILLA, also called water thyme, water weed, and Florida elodea is native to Asia and can be found in rivers, lakes, ponds, streams and wet ditches. Hydrilla is now regulated as a Prohibited invasive species under Ontario's *Invasive Species Act* (see regulation details on page 6).

This invasive plant resembles Ontario's native waterweeds (*Elodea canadensis* and *E. nuttallii*) but can be distinguished by the presence of prickles on lower leaf surfaces.

Although there are no documented populations of hydrilla in Ontario, it presents a significant threat to aquatic ecosystems and navigation.

Garden use: oxygenation, habitat enhancement for ponds and water gardens

Growing conditions: submerged aquatic found in lakes, ponds, streams, marshes and quiet rivers; overwinters as an evergreen under ice; tolerant to low light and cool water

Size and shape: coarse, branching stems and no roots; may drift and become loosely anchored in sediment

Flower and fruit: very small, stalk-less solitary flowers on submerged leaves; fruit is dark olive green, elliptic

Leaves: split into 2 equal, thread-like segments; sharply toothed; in whorls of 5 to 12; leaves get denser at the end of the stem and look like a raccoon's tail

Additional info: provides food and shelter for invertebrates; can become abundant in shallow ponds and form large beds; also known as hornwort; reproduces through fragmentation

Garden use: oxygenation, habitat enhancement for ponds and water gardens

Growing conditions: submerged perennial plant, common in still and fast-flowing waters; grows from underground runners

Size and shape: large, often forms tall underwater "meadows"; upper leaf parts are sometimes found floating across the water surface

Flower and fruit: produces small, white flowers on very long stalks and mature flowers can reach the surface of the water; fruit is a banana-like capsule having many tiny seeds

Leaves: 2.5 cm wide and can be several m long; definite raised veins with some cross veins; rounded tips

Additional info: consumed by various animals and provides habitat for many species; can assist with stabilizing sediment and shorelines and improving water quality

Additional Non-Invasive Alternatives

Red Oak
(Quercus rubra)

Bergamont
(Monarda)

Canada Waterweed
(Elodea canadensis)

Common Arrowhead
(Sagittaria latifolia)

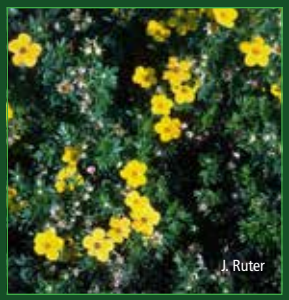
Golden Alexander
(Zizia aurea)

Great Blue Lobelia
(Lobelia siphilitica)

Lady Fern
(Athyrium filix-femina)

Dense Blazing Star
(Liatris spicata)

Maidenhair Fern
(Adiantum aethiopicum)



Shrubby Cinquefoil
(Dasiphora fruticose)

Prairie Smoke
(Geum triflorum)

Dwarf Hairgrass
(Eleocharis acicularis)

Watch List

The following species are additional horticulture plants to be on alert for in Ontario. Gardeners should be aware that these species can be invasive in natural areas:

Pachysandra *(Pachysandra terminalis)*
Japanese Lilac *(Syringa reticulata)*
Mint spp. *(Lamium spp.)*
American Wisteria *(Wisteria frutescens)*
Guelder Rose/ European Cranberry *(Viburnum opulus)*
Sycamore Maple *(Acer pseudoplatanus)*
Callery Pear *(Pyrus calleryana)*
Winter Aconite *(Eranthis hyemalis)*
Jetbead *(Rhodotypos scandens)*
Chocolate Vine *(Akebia quinata)*
Japanese Hedge Parsley *(Torilis japonica)*
Spreading Hedge Parsley *(Torilis arvenis)*
Giant Knotweed *(Reynoutria sachalinensis)*
Bohemian Knotweed *(Reynoutria × bohemica)*
Common and Chinese Privet *(Ligustrum vulgare, L. sinense)*
Japanese Knotweed *(Reynoutria japonica)*
Kudzu *(Pueraria montana)*
Reed Canarygrass *(Phalaris arundinacea var. picta)*
Parrot Feather *(Myriophyllum aquaticum)*
Saltcedar/Tamarisk *(Tamarix ramoisissima)*
Siberian Peashrub *(Caragana arborescens)*
Tree-of-Heaven *(Ailanthus altissima)*
Water Chestnut *(Trapa natans)*
White Mulberry *(Morus alba)*
Water Hyacinth *(Eichhornia crassipes)*
Phragmites *(Phragmites australis subs. australis)*
Dog-strangling Vine *(black and pale swallowwort)*
(C. louiseae and C. rossicum)
Brazilian Elodea *(Egeria densa)*
Water Soldier *(Stratiotes aloides)*
Hydrilla *(Hydrilla verticillata)*

Additional Resources

Bringing Nature Home
bringingnaturehome.net

In The Zone Gardens
inthezonegardens.ca

Canadian Wildlife Federation
wildaboutgardening.org

North American Native Plant Society
nanps.org

OFAH / Invading Species Awareness Program
invadingspecies.com
Invading Species Hotline: 1-800-563-7711

Ontario Invasive Plant Council
ontarioinvasiveplants.ca

Ontario Ministry of Natural Resources and Forestry
ontario.ca/invasivespecies

Invasive Species Centre
invasivespeciescentre.ca

Pollinators of Native Plants
pollinatorsnativeplants.com

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Notes

ONTARIO INVASIVE PLANT COUNCIL

ONTARIO'S INVADING SPECIES AWARENESS PROGRAM

ONTARIO FEDERATION OF ANGLERS AND HUNTERS

Invasive Species Centre

TORONTO BOTANICAL GARDEN