# *Invasive Plants, Control Measures and Alternatives*

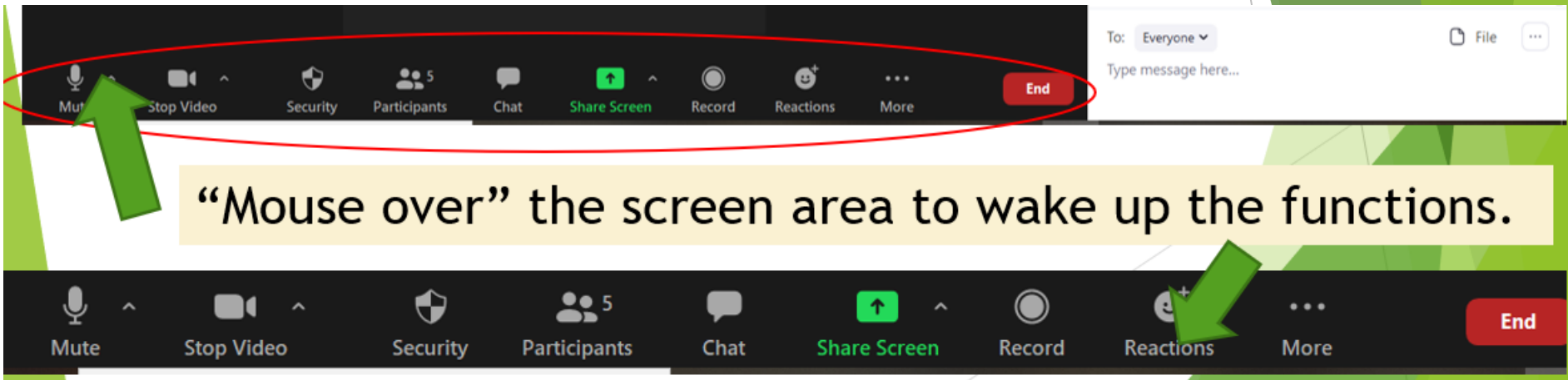
Prepared by:
Etobicoke Master Gardeners

Presented with:
Humber Arboretum

Etobicoke Master Gardeners
www.etobicokemastergardeners.ca

Humber Arboretum
Humber.ca/arboretum

# Zoom Tips & Tricks

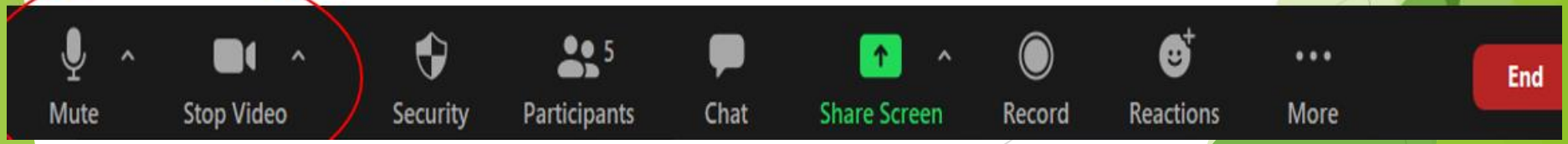


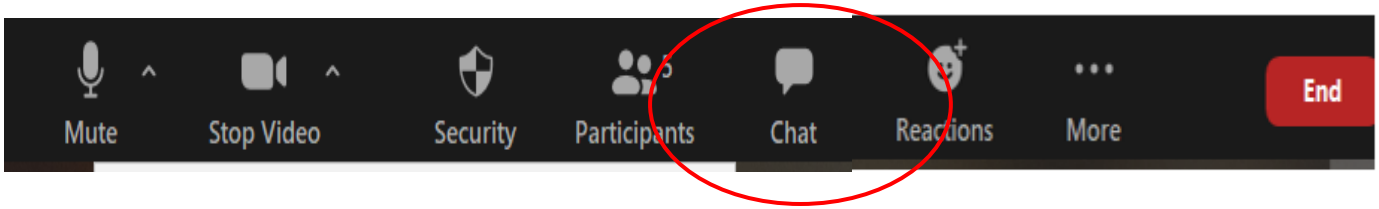

"Mouse over" the screen area to wake up the functions.





Mute yourself and turn off video unless you are the presenter.

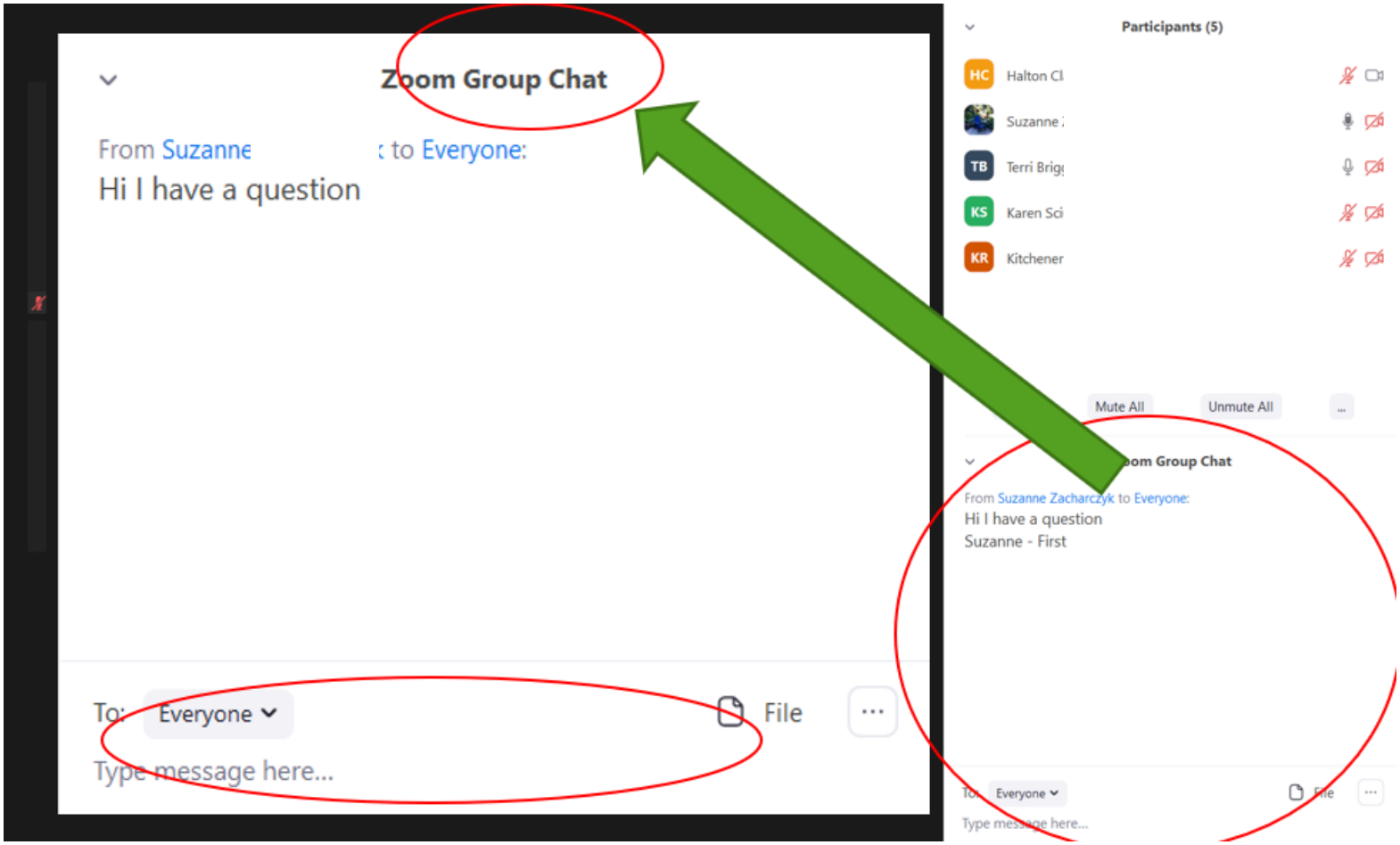




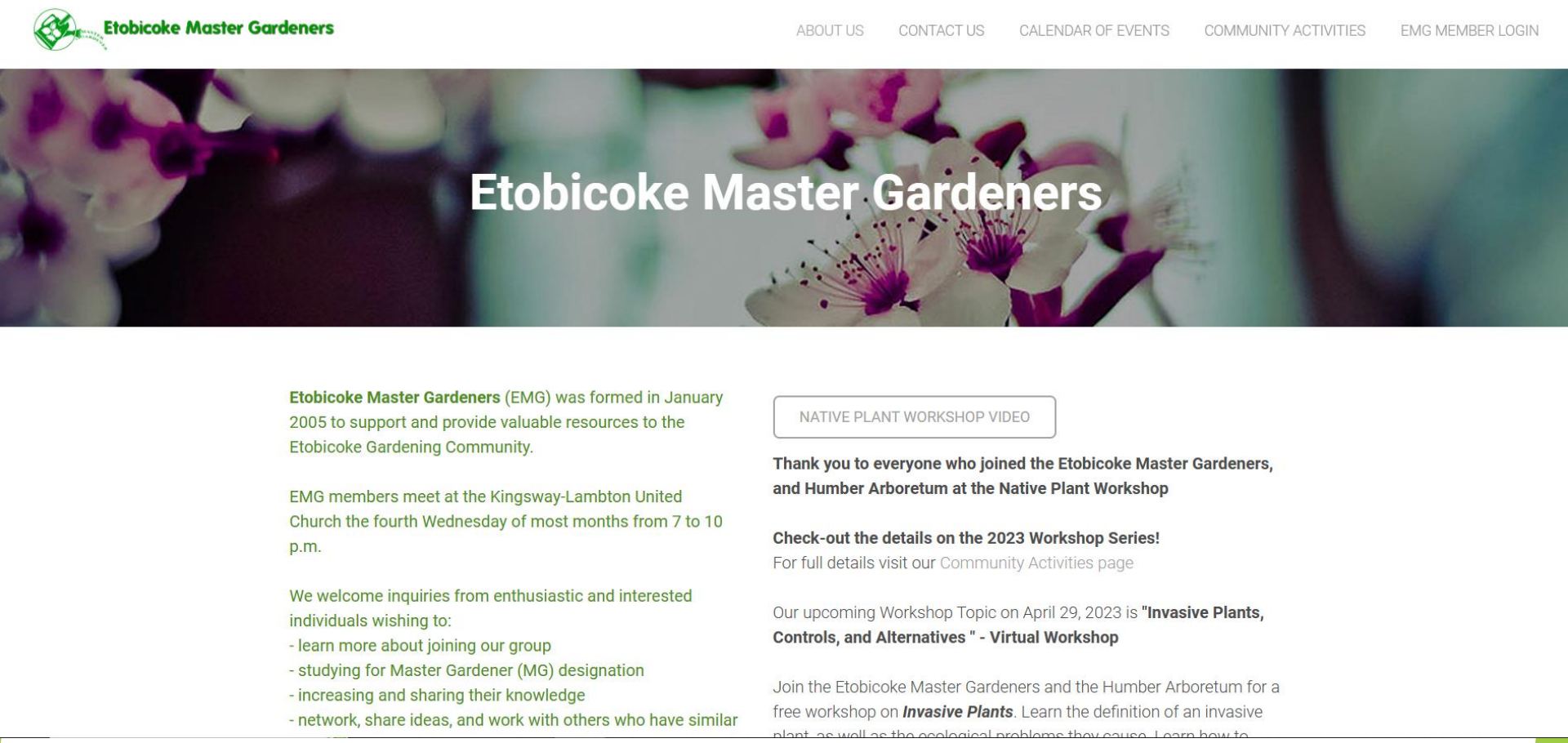

**How to ask a question:**

✓ Click on “Chat” in the functions

✓ Type in your question. A moderator will read it.



# Master Gardeners of Ontario




Etobicoke Master Gardeners

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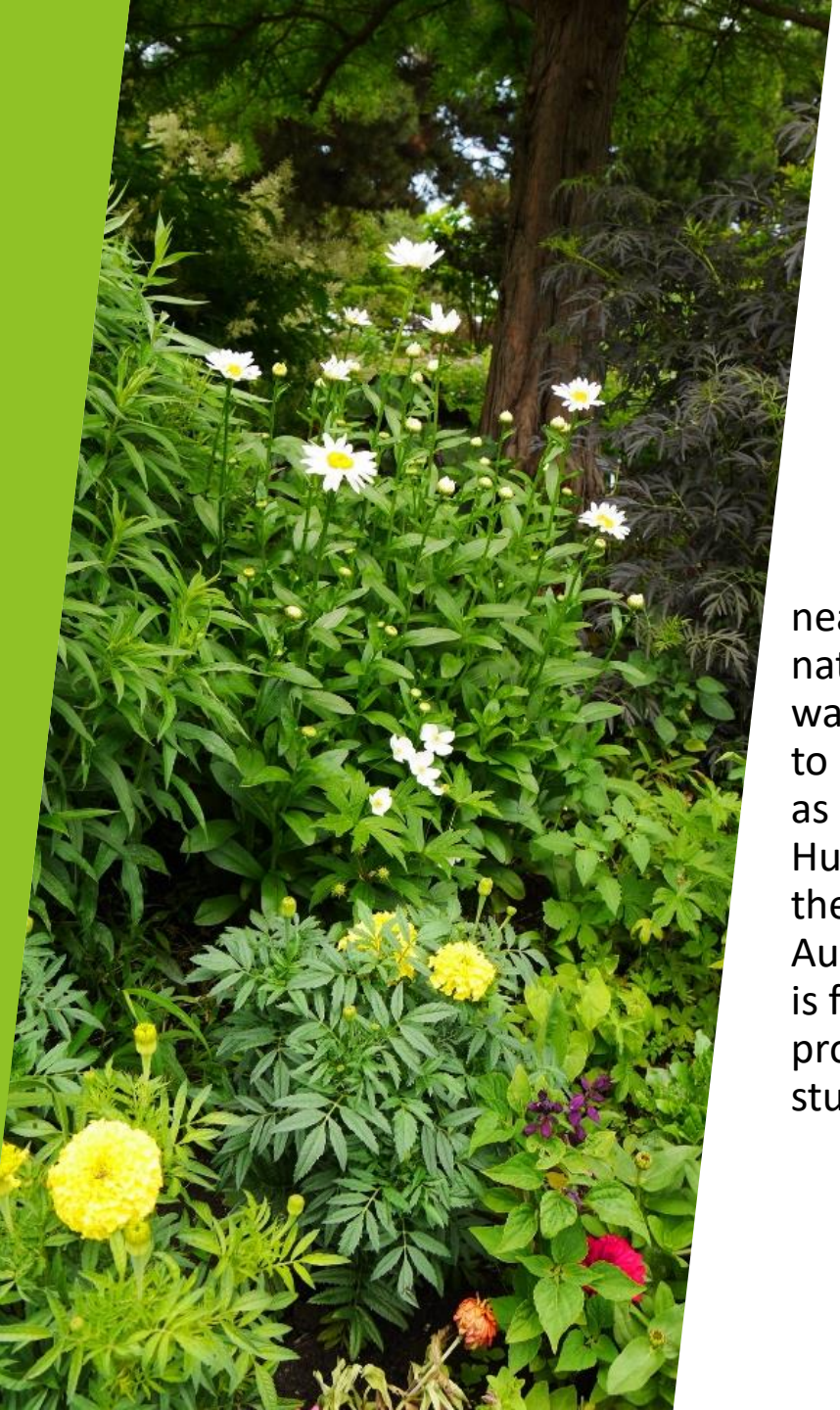


HUMBER
ARBORETUM
+ CENTRE FOR URBAN ECOLOGY

The Humber Arboretum consists of nearly 250 acres of public gardens and natural areas located in the Humber River watershed in North Etobicoke. Connected to Humber College North Campus, it exists as a unique tri-partnership between Humber College, the City of Toronto, and the Toronto and Region Conservation Authority (TRCA). The Humber Arboretum is free to visit and offers a variety of programming to both Humber College students and the public.

# LAND ACKNOWLEDGEMENT

Humber Arboretum and Humber College are located within the traditional and treaty lands of the Mississaugas of the Credit.

Known as Adoobiigok [A-doe-bee-goke], the "Place of the Alders" in Michi Saagiig [Mi-Chee Saw-Geeg] language, the region is uniquely situated along the Humber River Watershed, which historically provided an integral connection for Anishinaabe [Ah-nish-nah-bay], Haudenosaunee [Hoeden-no-shownee], and Wendat [Wine-Dot] peoples between the Ontario Lakeshore and the Lake Simcoe/Georgian Bay regions.

Now home to people of numerous nations, Adoobiigok continues to provide a vital source of interconnection for all.

HUMBER ARBORETUM

# Session Topics

- ✓ What are Invasive Plants
- ✓ Ecological challenges caused by invasives
- ✓ Common Invasives
- ✓ Control and Prevention
- ✓ Grow Me Instead
- ✓ Wrap Up

# Poll Question

How many of you are winning the battle against invasive plants?

1. Yes
2. No
3. Not sure, as I don't know which are the invasive plants

Photo : Humber Arboretum

# What are Invasives?

# Did you know?

- ✓ Approximately 500 invasive plants in Canada
- ✓ Over 440 of them in Ontario
- ✓ Invasive plants cause negative impacts to…
  - ✓ biodiversity
  - ✓ natural ecosystems
  - ✓ mental and physical health
  - ✓ the economy


# What is an invasive?

- ✓ An aggressively growing non-native plant
- ✓ Is particularly harmful when it moves into the natural environment
- ✓ Invasive species have ‘displacement capacity’

*Native wildflowers Deciduous woodland*
*EMG Photo Janet*

*Invasive monoculture Woodland Floor,*
*Source: www.invadingspecies.com*

# Invasive vs Prolific?

Invasive vs. Prolific

# Are all weeds invasive?

- ✓ Invasives and Weeds have Similar Growing Characteristics
  - ✓ Opportunistic
  - ✓ Competitive
- ✓ Some weeds are designated “Noxious”
  - ✓ Harmful to public health, recreation, agriculture
- ✓ **But Invasive plants also alter natural ecosystems**

# Common Weeds

Purslane

Dandelion

N – Common Ragweed

Burdock

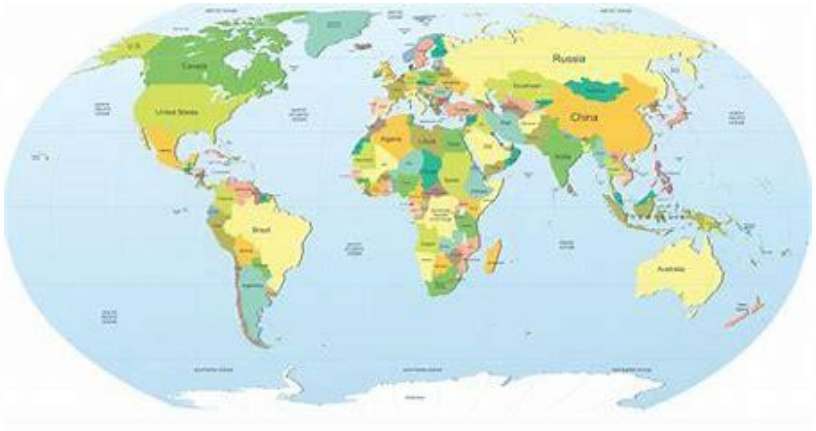
Crabgrass

I, N - Canada Thistle

I – Garlic Mustard

I = Invasive
N = Noxious

# Where did invasives  come from?




- Similar growing areas
  - Western Europe
  - China/Japan
- Many species intentionally brought in
  - Immigrants bringing familiar plants,
  - Horticultural imports
- Invasives not apparent initially
  - Initially contained but then escaped …..
  - New non-native species can be a threat

# Ecological challenges caused by invasives

# Ecological Challenges Posed by Invasives

Threat to biodiversity by damaging the balance of native plant communities

- ✓ Competition for resources such as light, water and minerals, which crowds out native plants
  - ✓ High levels of seed production
  - ✓ Tolerance to a wide range of growing conditions

# Ecological Challenges Posed by Invasives

- ✓ Ability to spread by roots or runners


- ✓ Changes to the chemical composition of soil, inhibiting the germination of native seeds and micro-organisms (allelopathy)

# Ecological Challenges Posed by Invasives

- ✓ Quick recovery when disturbed by pulling, cutting, or fire
- ✓ A lack of natural predators to keep their population under control in their new environment

John Pogacnik, Ohio Birds and Biodiversity.

# Ecological Challenges Posed by Invasives

## Impacts on other organisms

Invasives:

- ✓ Can displace native plants which provide food for specialized eaters such as monarchs
- ✓ Can change habitat , reducing breeding success of bird species

# Ecological Challenges Posed by Invasives

## Impacts on other organisms

Invasives:

- ✓ Can reduce or eliminate submerged habitat structure for aquatic organisms
- ✓ May hybridize and genetically swamp native species.

https://www.ontarioinvasiveplants.ca/invasive-plants/species/eurasian-water-milfoil/

# Economic Costs Posed by Invasives

- Direct economic impacts:
  - Lower crop yields, management costs, research and monitoring programs, job losses, damage to infrastructure
- Indirect economic impacts:
  - Reduced biodiversity, reduced resource production, tourism and recreation, reduced property values
- Ontario spends over $50M annually on management of invasive species (plants, insects, aquatics)

www.invasivespeciescentre.ca

https://extension.entm.purdue.edu/

# Common Invasives

Source of photos Ontario Invasive Plant Council

# Common Invasives Perennials

highparknature.org

# Burdock *(Arctium minus)*


Photo : Ontario.ca


Photo : Source: Friends of Sam Smith Park


Photo : Ontario.ca

# Dog Strangling Vine *(Cynanchum rossicum)*



# Garlic Mustard (*Alliaria petiolata)*



# Giant Hogweed *(Heracleum mantegazzianum)*


# Japanese Knotweed *(Reynoutria japonica)*


# Purple Loosestrife *(Lythrum salicaria L.)*



# Phragmites *(Phragmites australis)*

Photo : Humber Arboretum

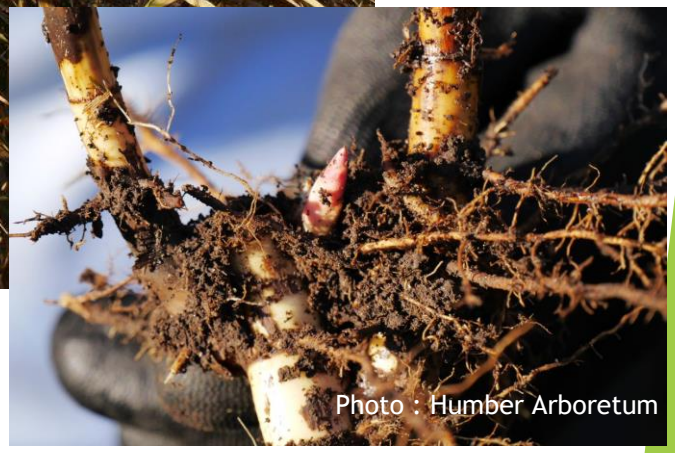


Photo : Humber Arboretum

# Common Invasives Trees and Shrubs

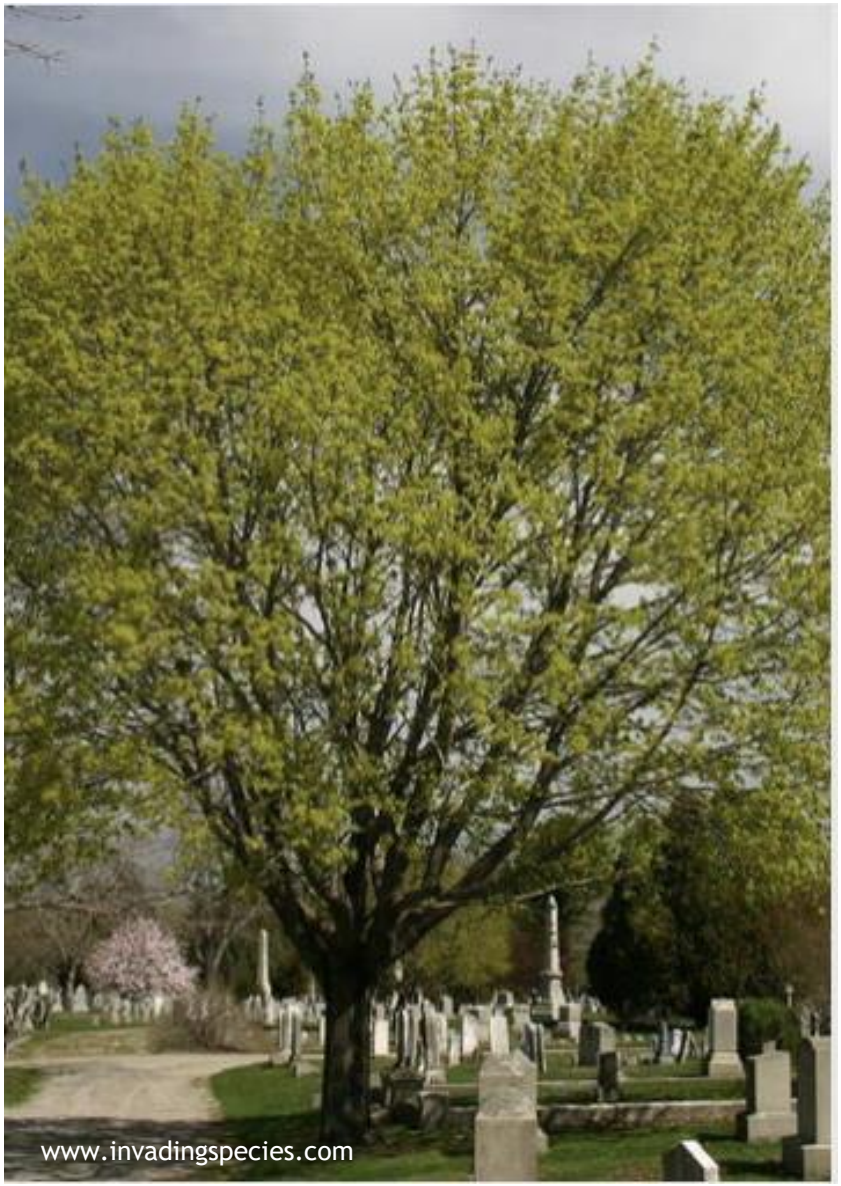
highparknature.org

www.invadingspecies.com

# Buckthorn *(Rhamnus cathartica)*



# Norway Maple *(Acer platanoides)*






# Manitoba Maple *(Acer negundo )*

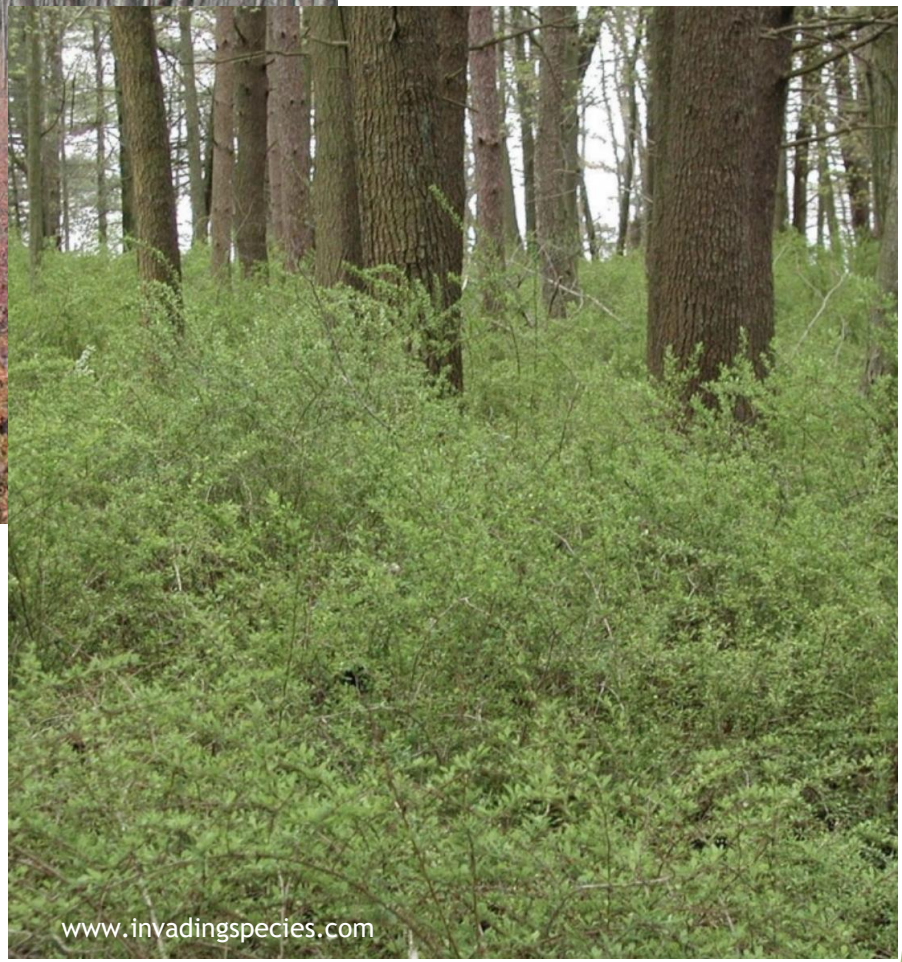

Photo (USDA)


Photo TreeCanada.ca


Photo Natural Resources Canada, Canadian Forest Service

# Japanese Barberry (*Berberis thunbergii*)





# Common Invasives Ground Covers

highparknature.org

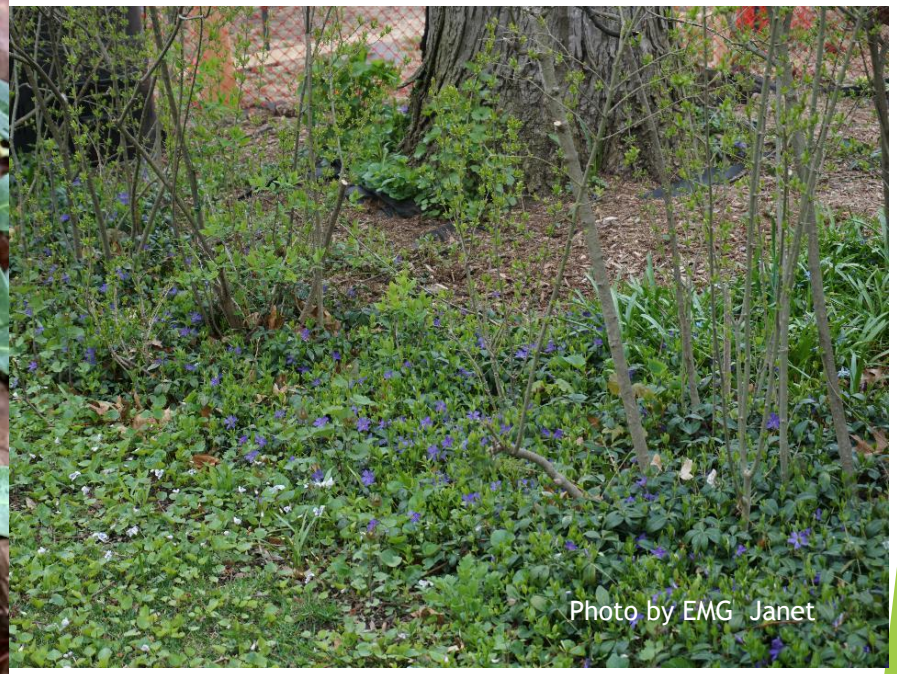
Photo : EMG Janet

# English Ivy *( Hedera helix)*

# Goutweed *(Aegopodium podagraria)*


# Lily-Of-The Valley (*Convallaria majalis)*


# Periwinkle *( Vinca minor)*

# White Sweet Clover *(Melilotus albus)*


# Control and Prevention

Photo : Humber Arboretum

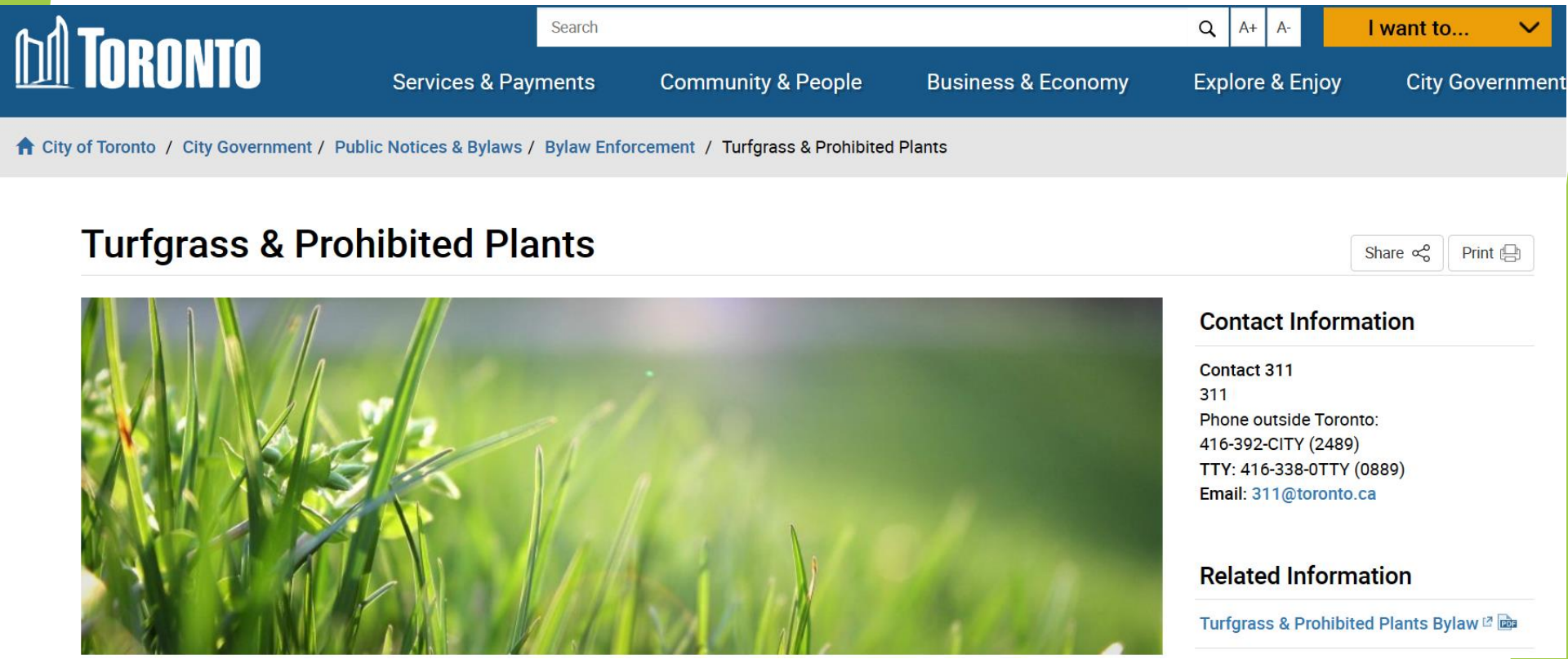
# The Invasive Species Act (ISA)

- ✓ The goal: support the prevention, early detection, response to and eradication of invasive species in Ontario
- ✓ Key elements include:
  - ✓ Providing tools
  - ✓ Banning specific activities
  - ✓ Enabling response actions
  - ✓ Promote compliance

www.invasivespeciescentre.ca

# Turfgrass & Prohibited Plants Bylaw

- ✓ Requires property owners / occupants to maintain their properties
- ✓ Keep properties free of prohibited plants listed under the Toronto Bylaw



# What can I do about Invasive plants?

- ✓ Prevention
  - ✓ of initial entry into Canada or Ontario
  - ✓ of the spread of a species
- ✓ Select non-invasive or native plants
- ✓ Report Invasives to the Invasives Species Awareness Program

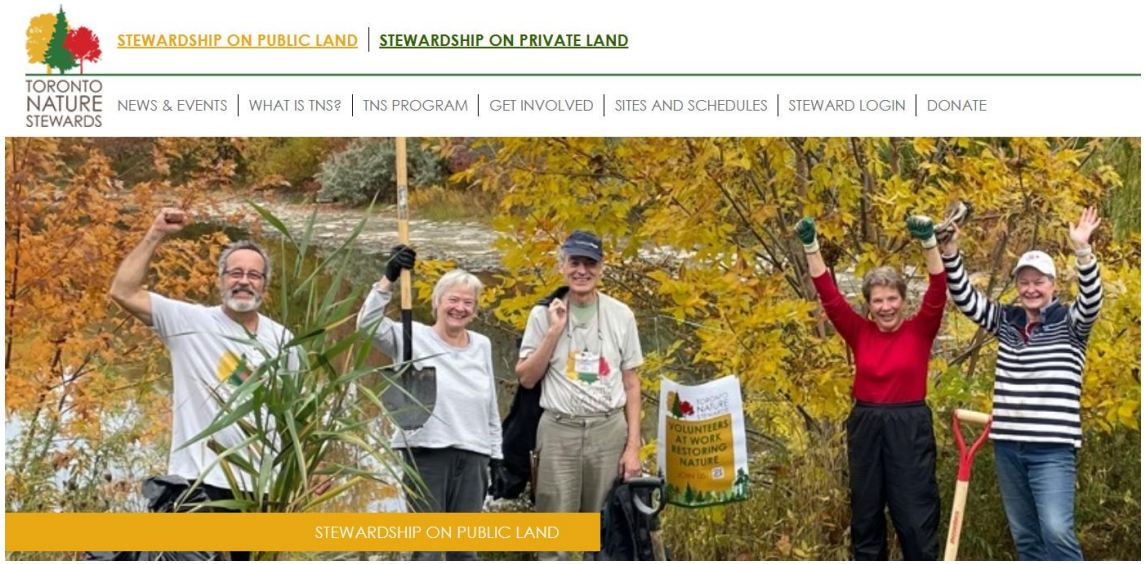
Gardeners action plan

# What can I do about Invasive plants?

- ✓ Early detection
  - ✓ Learn to identify and manage invasive plants on your property
- ✓ Rapid Response & control
  - ✓ Best Management Practice varies by species
  - ✓ Biological control

Photo : Humber Arboretum

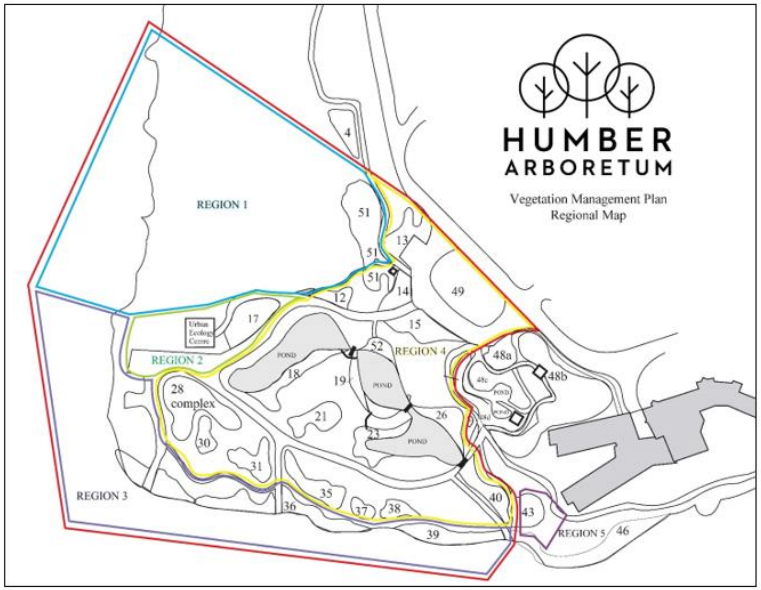
# What can I do about Invasive plants? Some activities…





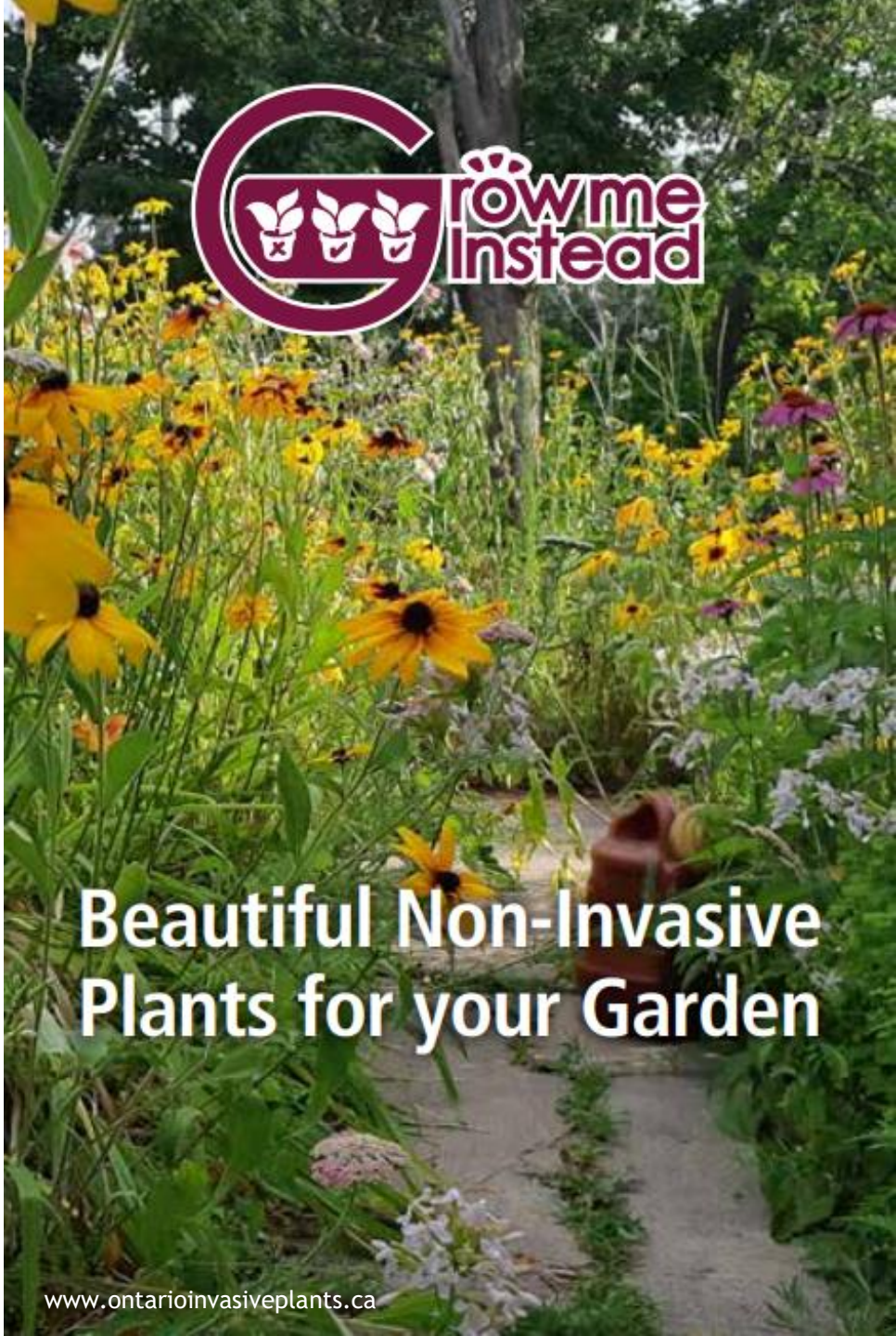
# Humber Arboretum Activities

- ✓ Control strategies
- ✓ Removal
- ✓ Species removal reports
- ✓ Garlic mustard pulls
- ✓ Phragmites removal techniques video
  https://www.youtube.com/watch?v=0Q94xCSIbBw



## The Grow Me Instead

- ✓ identifies potentially invasive garden plants
- ✓ promote suitable alternatives
- ✓ http://www.ontarioinvasiveplants.ca/index.php/gardenersandhorticulturalists



# Grow me instead! Trees

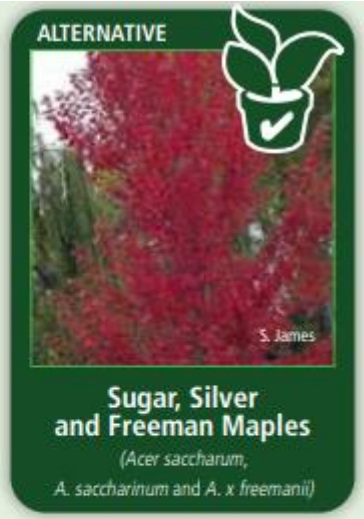
| Invasive Plants | Non-Invasive Plant alternatives |
|---|---|
| Norway Maple | Sugar Maple (*Acer saccharum*)<br>Silver Maple (*A. saccharinum)*<br>Freeman Maple (*A. x freemanii*) |
| Japanese Barberry | Nannyberry (*Viburnum lentago*)<br>Hobblebush (*V. Latanoides*) |

**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

**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


**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

# Grow me instead! Groundcovers

| Invasive Plants | Non-Invasive Plant alternatives |
|---|---|
| English Ivy | Wild Strawberry (*Fragaria virginiana*) |
| Periwinkle | Wild Geranium (*Geranium maculatum*) |
| Goutweed | Large-Leaved Aster (*Eurybia macrophylla*) |
| Lily of the Valley | Starry False Solomon's Seal (*Maianthemum stellatum*) |

**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


**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

# Grow me instead! More Examples

**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

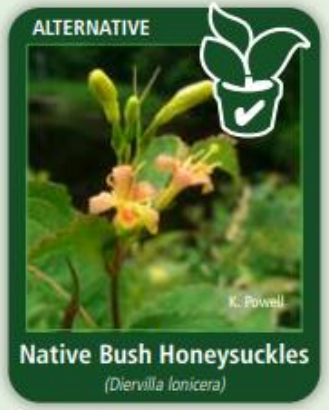
**Additional info:** easy to grow, slow-spreading and long-lived; consumed by wildlife and livestock


**Garden use:** specimen planting; single shrub or hedge

**Growing conditions:** full sun to partial 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




**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;

**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


**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

# Research into biological controls

- ✓ Scientists at U of T work with Agriculture Canada and international bio-control labs to identify natural predators for our worst invasive species
- ✓ Solutions must not have unintended consequences on native plants
  - ✓ Dog Strangling Vine moth (*Hypena opulenta*) and Knotweed Psyllid approved 2014; Phragmites moth and Garlic Mustard weevil approved in 2019

Hypena opulenta adult (photo: Jim Des Rivieres)

https://dogstranglingvine.weebly.com/biological-control.html

# Wrap Up

Photo : Humber Arboretum

# Etobicoke Master Gardeners Annual SPRING PLANT SALE

Saturday, May 27

8:30 am-12:30 pm

**6 Kingsway Crescent**

Advice Clinic, Perennials, Shrubs, Herbs & Tomatoes & more!

Native plants for native pollinators

**etobicokemastergardeners.ca**

# Resources

- Etobicoke Master Gardeners www.etobicokemastergardeners.ca
  - A copy of this presentation is available under Community Activities, Humber Arboretum Workshop Materials
- Master Gardeners www.mgoi.ca
- Humber Arboretum (humber.ca)

Ontario Invasive species home page:

- https://www.ontario.ca/page/invasive-species-ontario

Ontario Invasive Plant Council (Invasive plants page):

- https://www.ontarioinvasiveplants.ca/invasive-plants/species/

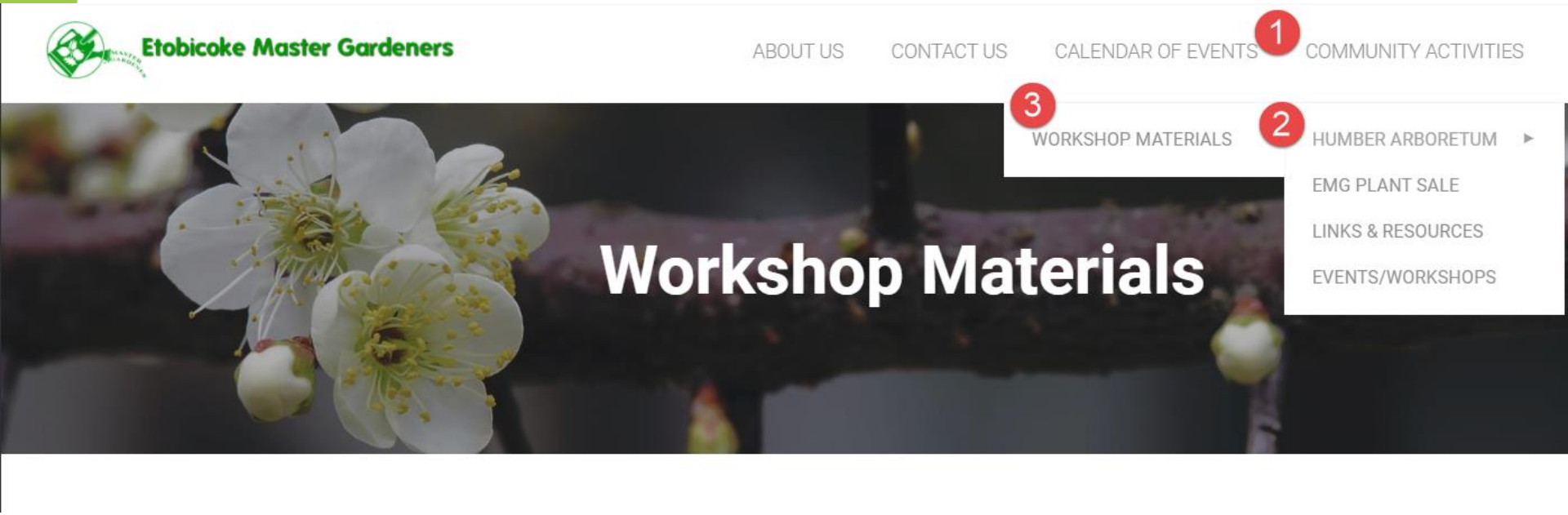
Ontario Invasive Plant Council – Grow Me Instead

- https://www.ontarioinvasiveplants.ca/resources/grow-me-instead/

# Resources

- Etobicoke Master Gardeners
- Invasive Species Centre (plants page):
  - https://www.invasivespeciescentre.ca/invasive-species/meet-the-species/invasive-plants/
- Toronto prohibited weeds:
  - https://www.toronto.ca/city-government/public-notices-bylaws/bylaw-enforcement/turfgrass-prohibited-plants/
- Phragmites removal techniques video (Lynn Short):
  - https://www.youtube.com/watch?v=0Q94xCSIbBw
- Toronto Nature Stewards:
  - https://torontonaturestewards.org/

# You can find a copy of the presentation




***Native Plant Gardening*** (April 23, 2022)

**native_plant_gardening_april_23_2022.pdf**
Download File

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Etobicoke Master Gardeners

HUMBER ARBORETUM

# 2023 Eco-Garden Community Workshop Series

Saturdays 10:00 AM to Noon

## Virtual Sessions via Zoom

February 25: Plant Identification

March 4: Growing Your Own Food

April 15: Native Plants

April 29: Invasive Plants, Control, and Alternatives

June 10: Pollinator Friendly Gardening

October 14: Pruning

November 18: Indoor Plants

## In-Person at the Humber Arboretum

February 4: Winterwood: Winter Tree Identification Tour

May 6: First-hand Look at Invasive Plants, Control, and Alternatives Tour

October 21: Pruning Workshop

**Free, but space is limited & registration is required:**

**Humber.ca/arboretum/emg**

# Poll Question
# How did you hear about the event?

1. Humber Arboretum
2. Etobicoke Master Gardeners
3. Facebook
4. Twitter
5. Etobicoke Guardian
6. Toronto Gardeners
7. Lakeshore Environmental Gardening Society
8. Etobicoke Horticultural Society
9. Other

# Etobicoke Master Gardeners

# Thank you!

## Questions

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