





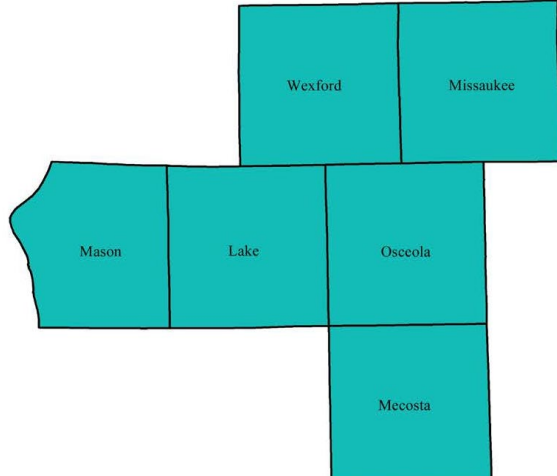
North Country Cooperative Invasive Species Management Area

CISMA

Fighting Invasives, Protecting Assets, Restoring Habitats

North Country Cooperative Invasive Species Management Area





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Speaker Background

- Zach Peklo, Program Coordinator for North Country Cooperative Invasive Species Management Area (NCCISMA)
- Bachelors of Science from Grand Valley State University in Natural Resource Management, with an Emphasis in Resource Analysis.
- 2015-2017 worked in Southeast Michigan for Oakland Twp. Parks and Recreation, conducting invasive species management and native species restoration
- Joined NCCISMA in 2018 as the Invasive Species Technician, assisting property owners with invasive management and facilitating grant funded projects.
- 2025 became the Program Coordinator
- Enjoy camping, fishing, off road trail riding, bird hunting



GRAND VALLEY
STATE UNIVERSITY



An **Invasive Species** is an organism that is not native to an area and whose presence is likely to cause damage to the economy, the environment, or human health.

Invasive species! Why care?

- **Negative impacts on native biodiversity and ecosystem productivity**
- **Alter ecosystems so invasive species spread even more**
- **Economic impacts - Invasive species may incur worldwide costs of more than 1 trillion dollars annually and in the United States alone, losses of more than 100 billion dollars per year have been estimated (Pimentel *et al.* 2005)**

Economic impacts

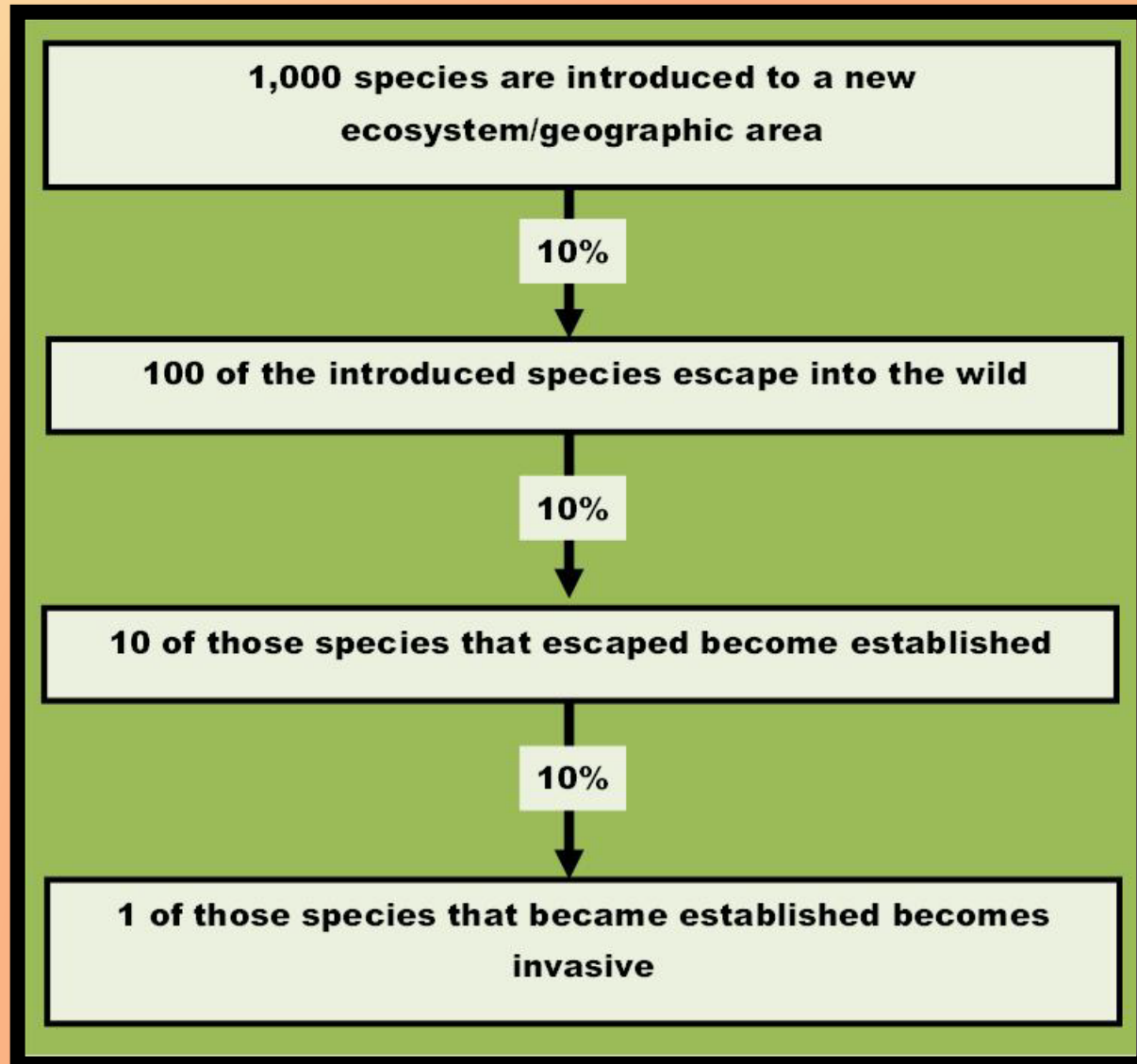
Compare those damage estimates to some Fiscal Year 2010 annual budgets....

- National Park Service, ~\$2.78 billion*
- U.S. Forest Service, ~\$5.31 billion*
- U.S. Fish and Wildlife Service, ~\$1.65 billion*
- Bureau of Land Management, ~1.16 billion*
- State of Indiana, ~26.9 billion†

*<http://www.gpoaccess.gov/usbudget/fy12/pdf/budget.pdf>

†http://www.in.gov/sba/files/ap_2009_all.pdf

Are all non-native species invasive?



Why do invasive species succeed?



“Novel weapons”
chemical harm to
other plants

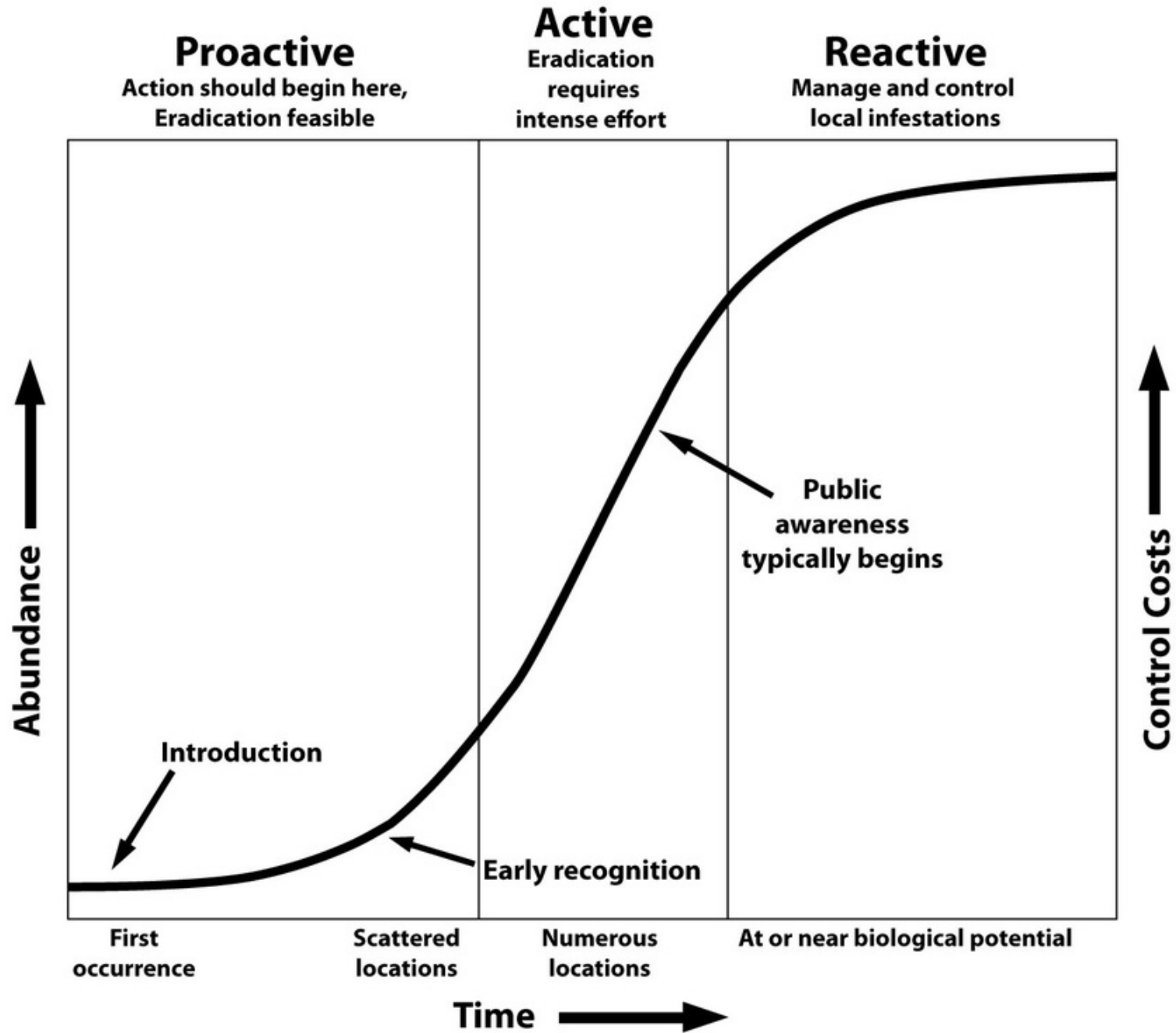


“Enemy Release”
no natural enemies
in new area



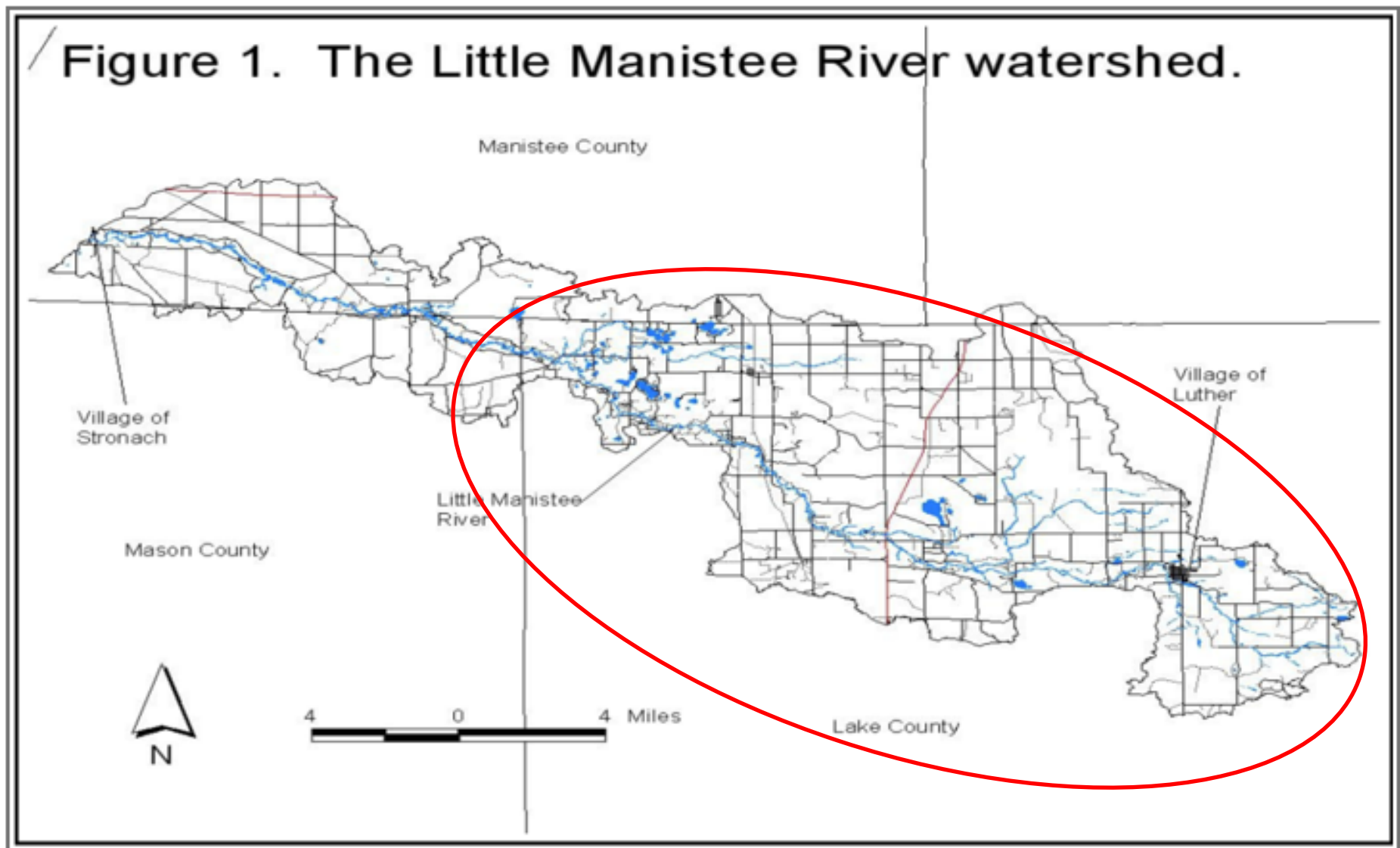
Aggressive growth
or behavior

- **When a species is introduced to a new area, native plants and animals are not ready for the change**
- **THERE IS USUALLY A LAG TIME (SOMETIMES DECADES) BEFORE AN INTRODUCED SPECIES BECOMES “INVASIVE”**



Phases of Invasive Species Invasion and Control

Collaboration with LMWCC





2021	Bear Track to Skocelas Bridge				
	Knotweed	Phragmites	bittersweet	garlic mustard	total
Private	3	0	0	0	3
USFS	0	0	0	0	0
MI DNR	0	0	0	0	0
2022	Old Grade to Skocelas Bridge				
	Knotweed	Phragmites	bittersweet	garlic mustard	total
Private	2	1	0	0	3
USFS	0	0	0	0	0
MI DNR	0	0	0	0	0
2024	Luther Headwaters to OldGrade (By foot/waders)				
	Knotweed	Phragmites	bittersweet	garlic mustard	total
Private	3	2	2	4	11
USFS	0	0	0	0	0
MI DNR	0	2	4	2	8

Japanese knotweed



Tom Heutte, USDA Forest Service, Bugwood.org

UGA1196112

P. Rusted, Bugwood.org

Michigan Prohibited Species: Japanese knotweed

Japanese knotweed in Mason County



- Alters soil chemistry and nutrient cycling
- Can grow through cement and asphalt causing structural/property damage
- Grows to 12' tall – blocking views & reducing site distance on roads
- Mowing causes spread



How to Remove/Control Knotweed

- Rent injection tool from Conservation District Office
 - Injection should be 6" above ground and just below a node
- Or cut stems and squirt herbicide into each stem
 - Cut plants should be bagged and disposed of in landfill
 - Put off ground to allow to dry – once dry can be burned or disposed of as other yard waste
- Undiluted glyphosate – maximum amount of 7.5 quarts per acre
- Larger infestations may foliar spray with **Aminopyralid (Milestone)** –
drawbacks to using these products



Phragmites



- Reduces property values due to blocked access and restricted views
- Impacts site distance on roads
- Lowers water table where it grows
- Poses fire hazard in residential areas
- Outcompetes all native vegetation and greatly reduces wildlife land value
- Known to spread 6 feet per year from perimeter of infestation

How to Remove/Control Invasive Phragmites

- Herbicides are required to remove Phragmites
- Foliar application of glyphosate/imazapyr in late summer/fall
- EGLE permit required to apply herbicides in wet environments
- Recommended to remove dead vegetation following chemical treatment
- Follow-up spot treatments required for several years



Oriental Bittersweet

- Vine with alternate leaves
- Red berries with yellow outer skin
- Girdles/overtops native trees
- Can be confused with native variety - American bittersweet
- Oriental bittersweet has fruits/flowers in leaf axils



Garlic Mustard



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

Steven Katovich, USDA Forest Service, Bugwood.org

5492758

5451809

What to know about garlic mustard

- Plant parts smell of garlic when crushed
- Height can be 2 inches to 3 feet
- Blooms late April through early June
- Roots secrete toxin that kills all other plants
- Produces monocultures



Autumn Olive



- Historically had been recommended for conservation planting before its invasive nature was known
- Deer do not eat the foliage
- 30 lb. fruit/8 lb. seed per plant per year



- 90% seed germination rate!
- Good News! Seeds do not persist in the soil bank
- Critters love the berries! Seeds dispersed by birds and mammals.
- Nearby infestations are a source for re-infestation on managed lands



Autumn Olive Identification

- Glistening scales on stems, leaves, and fruit
- Brown finely speckled stems
- Very fragrant blooms April – June
- Leaf out in March & hold leaves late into fall



Methods of control

- Can herbicides be avoided?
- Would prescribed fire be possible or effective?
- Pulling by hand and/or repeated clipping
- For certain species, hand pulling is effective with extremely low densities but least effective at high densities



Control of Autumn Olive

Mechanical Options

- Mechanical control can include chaining & pulling, using a weed wrench, or bio control (goats/sheep)

Chemical Options

- Foliar glyphosate/**triclopyr** or a mix of both in the spring
- Basal bark in fall. 20% **Triclopyr** for basal bark. Mix with penetrating oil (e.g., MSO)
- Cut stump in fall. Undiluted glyphosate for cut stump



General Herbiciding Considerations

- Anyone applying herbicides as part of their employment needs to have a Pesticide Herbicide Applicator Certification from MDARD
- EGLE permit required for applying herbicides in wet environments
- Read and follow the label! The label is the law!



New Zealand Mudsnail



A single female can produce a population of millions in a single year

Do not provide proper nutrition for fish



Rock snot



"Rock snot," or *Didymosphenia geminata*, is a microscopic, invasive freshwater diatom (a type of algae) that forms thick mats on hard surfaces



Decontamination

- clean and disinfect all gear (waders, fishing poles etc), either with a 2% bleach solution, Formula 409 Antibacterial, or Virkon Aquatic
- or dry gear thoroughly for at least 48



Ornamental invasive species

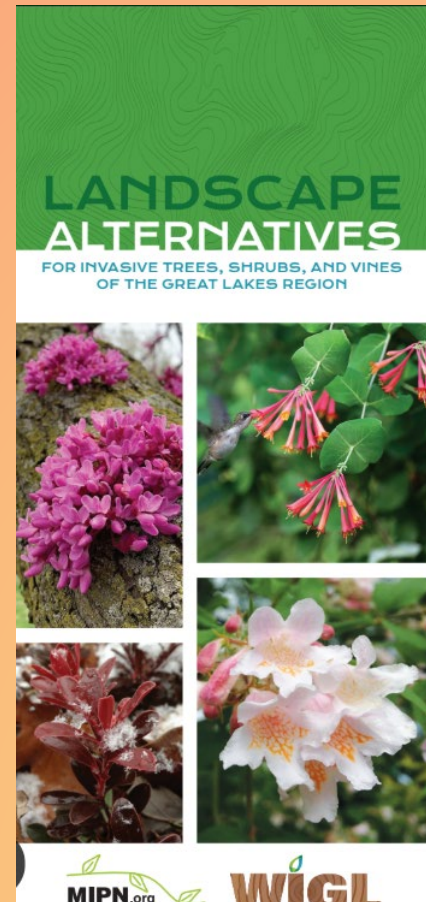


Resources for Planting Native

County Conservation Districts (CD's) are great resources for native trees, shrubs, wildflowers, grasses, and seed mixes

- Mason-Lake CD
- Osceola-Lake CD
- Manistee CD

Avoid big box stores – shop and support local



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The Midwest Invasive Species Information Network (MISIN) is a regional effort to develop and provide an early detection and rapid response (EDRR) resource for invasive species.

The goal of this regional resource is to assist both experts and citizen scientists in the detection and identification of invasive species in support of the successful management of invasive species.

This effort is being led by researchers with Michigan State University's [Applied Spatial Ecology and Technical Services Laboratory](#) in conjunction with a growing consortium of [Supporting Partners](#).

Report Sightings



Report invasive species in your area. Your sightings are an important part of any successful control effort.

MISIN Alerts



Create custom email alerts for new observations in your area of interest.

Species Distribution



Browse the distribution of reported invasive species. Search by common name and geography.



**North Country
Cooperative
Invasive
Species
Management
Area**

Fighting Invasives, Protecting Assets, Restoring Habitats

Services we provide:

- Invasive species identification
- At-cost treatment of regional high priority invasive species
- Demonstrations and instruction on invasive species control techniques
- Help with obtaining permits for treatment
- Licensed pesticide applicator contact list

Thank you for listening!

To learn more visit NorthCountryInvasives.org

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