



***Protecting, enhancing, and promoting  
northwest Michigan's natural communities  
through terrestrial invasive plant  
management and outreach.***

**[HabitatMatters.org](https://HabitatMatters.org)**



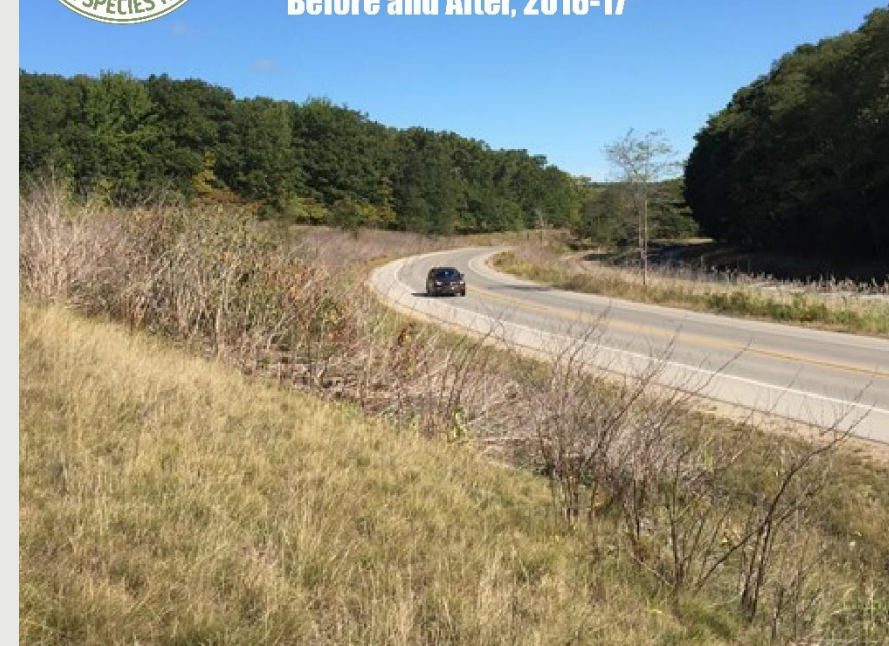


# ISN's History

- Founded 2005
  - NW MI CWMA
- GT Regional ISN: 2010
- Merged 2012!



**Veterans Drive, Manistee County  
Before and After, 2016-17**





# NORTHWEST MICHIGAN INVASIVE SPECIES NETWORK



- Garfield Township
- City of Frankfort
- Benzie Long Lake Assoc.
- Portage Lake Watershed Forever
- Friends of Betsie Bay
- The Nature Conservancy

## Major Partners:



**Grand Traverse  
Conservation District**



Michigan  
Natural  
Features  
Inventory



- Sleeping Bear Dunes NL
- Grand Traverse Band of Ottawa and Chippewa Indians
- Grand Traverse Audubon Club
- Little Traverse Bay Band of Odawa Indians



Funding provided by:  
Michigan Invasive Species  
Grant Program  
Gr Lks Restoration Initiative



# Mission

*Protecting, enhancing, and promoting northwest Michigan's natural communities through terrestrial invasive plant management and outreach.*

Serving Benzie, Grand Traverse, Leelanau, and Manistee counties

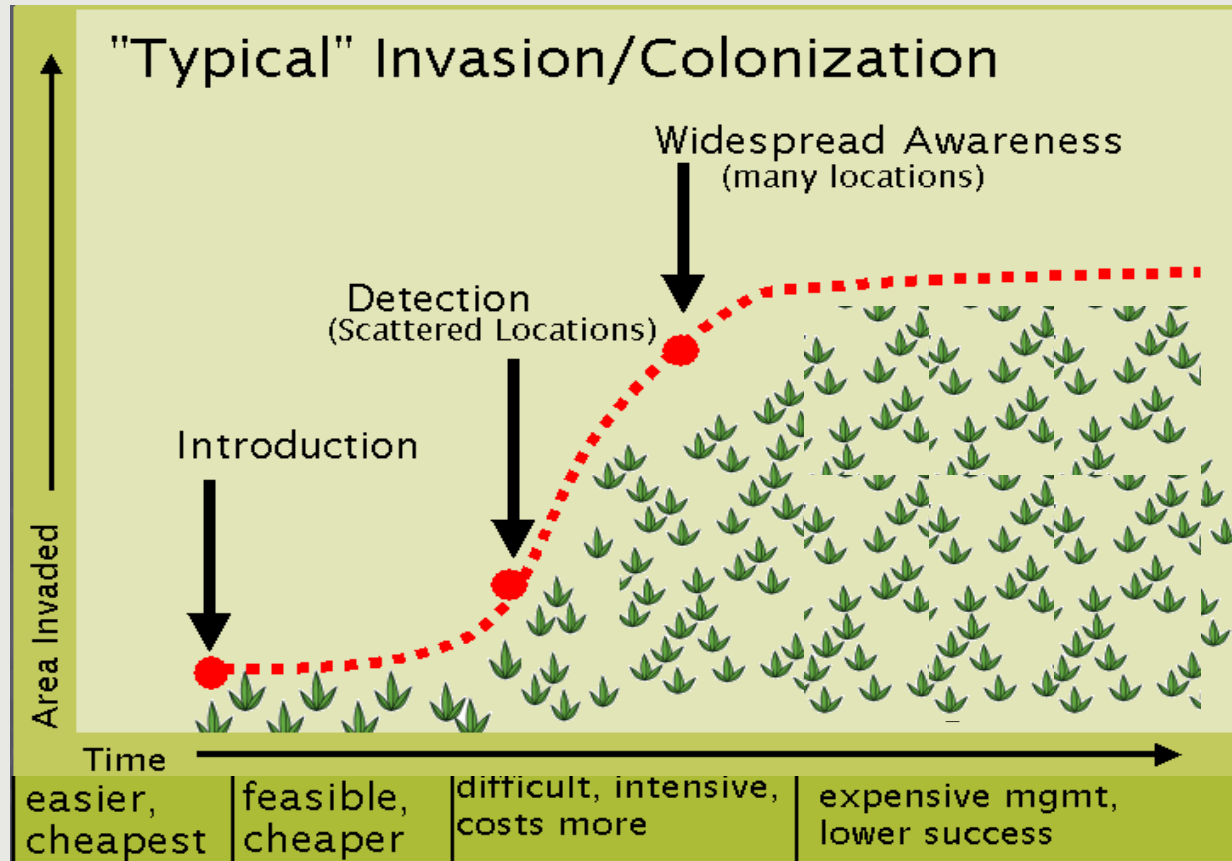


# ISN Goals

- 1) Raise awareness of high-priority invasive species in the region through education in order to cultivate long-term stewardship of our natural areas
- 2) Prevent introduction and spread of terrestrial invasive plants through outreach and collaboration with government officials and garden professionals
- 3) Survey region for high-priority terrestrial invasive plants to aid in effective prioritization and treatment strategies
- 4) Facilitate and assist with treatment of high-priority species on public and private land based on survey maps and prioritization strategies

# What's Invasive?

**Formal definition – a non-native species that harms people, the environment, or the economy.**



Source: Michigan Natural Features Inventory



**Environmental harm – a natural area consisting mostly of one or a combination of introduced plants that provide minimal habitat value.**

# Top 20 Least Wanted Species

- Developed by ISN Partners in October 2010
- Lists plants causing the most problems
- Half of the plants on the Top 20 still sold for landscape use

 NORTHWEST MICHIGAN  
INVASIVE SPECIES NETWORK

## TOP 20 LEAST WANTED

**SHRUBS:**

1. common buckthorn (*Rhamnus cathartica*)  
glossy buckthorn (*Frangula alnus*)  

2. honeysuckle(s)  
(*Lonicera* spp.)<sup>1</sup> can also be a vine  

3. Japanese barberry  
(*Berberis thunbergii*)  

4. multiflora rose  
(*Rosa multiflora*)  

5. Russian olive (*Elaeagnus angustifolia*)  
autumn olive (*Elaeagnus umbellata*)  


**HERBACEOUS PLANTS:**

7. baby's breath (*Gypsophila paniculata*)  

8. bull thistle (*Cirsium vulgare*)  

9. Canada thistle (*Cirsium arvense*)  

10. dame's rocket  
(*Hesperis matronalis*)  

11. European swamp thistle  
(*Cirsium palustre*)  

12. garlic mustard  
(*Alliaria petiolata*)  

13. Japanese knotweed (*Polygonum cuspidatum*)  
giant knotweed (*P. sachalinense*)  

14. leafy spurge (*Euphorbia esula*)  

15. lyme grass (*Leymus arenarius*)  

16. narrow-leaved cattail (*Typha angustifolia*)  

17. phragmites (*Phragmites australis*)  

18. purple loosestrife (*Lythrum salicaria*)  

19. reed canary grass (*Phalaris arundinacea*)  

20. wild parsnip (*Pastinaca sativa*)  


**WOODY VINE:**

6. oriental bittersweet (*Celastrus orbiculatus*)  




# Focus 4: Japanese knotweed

*Polygonum cuspidatum* (*Fallopia japonica*)



Buyabetterhome.co.uk

## Goals:

- Survey
- Develop effective regional treatment strategy
- Treat outlier populations

Traditional uses: food, medicine.

## Notes:

- Native to Asia
  - Colonizes areas after lava flow
- Introduced as ornamental
- **Illegal in Michigan**

## Problems:

- Displaces natives
- Difficult to control
  - Disposal problems
- Property damage



Randy Westrbooks, USGS

5331054



Bradley Kriekhaus, USFS



# Focus 4: Garlic Mustard

*Alliaria petiolata*

## Goals for ISN:

- Control in natural areas
- Educate public & encourage private land removal



## Notes:

- Native to Eurasia

## Problems:

- Displaces natives
- Competes with tree seedlings
- Unpalatable to most native herbivores

## Disposal Options:

- Find a use
- Trash
- Tarping

**Traditional uses:** food, papermaking, animal feed



# Focus 4: Invasive *Phragmites*

*Phragmites australis*

## Goals:

- Surveying
- Control populations
- Engage landowner groups & municipalities

### Traditional uses:

natural building, bioremediation

## Notes:

- Native to Europe

## Problems:

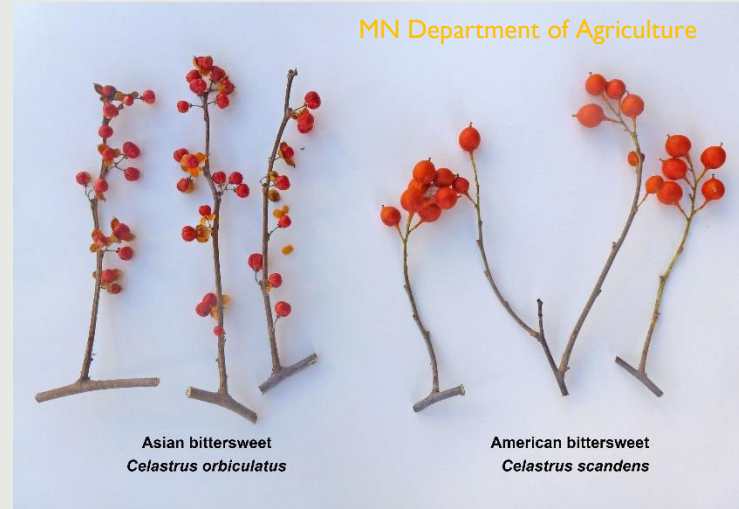
- Displaces native plants
- Decreased property values
- Increased fire risk





# Focus 4: Oriental bittersweet

*Celastrus orbiculatus*



## Goals:

- Survey
- Treat in natural areas

**Traditional uses:** native and introduced versions both used in fall crafts

## Notes:

- Native to Asia
- Brought as ornamental

## Problems:

- Out-competes native American bittersweet
- Shades out trees it climbs on





# Current Programs

- *Go Beyond Beauty*—a voluntary program to remove invasive ornamentals from local nurseries' and landscapers' inventories
- *Workbees*—focused on garlic mustard, baby's breath, shrubs
- *Control*—high-priority species in high-quality habitats
  - Japanese knotweed, Oriental bittersweet, garlic mustard, invasive Phragmites
  - Ornamental invasives
  - Early Detection species
- *Outreach*—presentations
  - Value of habitat, threat of invasives
  - Local governments, garden clubs, Road Commissions, sportsmen's clubs, schools, etc.

**SOUTHERN BLUE FLAG IRIS**  
*(Iris virginica)*

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**Key Features:**

**Mass Effect**  
Although dramatic in the landscape, may be challenging to maintain optimum wet conditions.

**Foliage**  
Sword-like leaves add kinetic interest. Iris is used to make dyes and perfumes.

**Visitors to Explore**  
Hosts the caterpillar of this agreeable tiger moth, as well as those of the beautiful Virginia ctenucha moth.

Is southern blue flag iris right for your garden?

☀️ 💧/💧💧 1-3 ft tall June 📱 🗺️  
1-3 ft wide

To learn more about how you can help protect our wild places, visit [HabitatMatters.org](http://HabitatMatters.org)



**PLAN BEFORE YOU PLANT:**  
Native Alternatives to Invasive Ornamentals

Northwest Michigan Invasive Species Network

# Steering Committee Updates





# MISIN

[www.misin.msu.edu](http://www.misin.msu.edu)

- Data Submission
- Identification resources
  - I pg (Species Information)
  - Training modules (Tools>>Training Modules)
- Treatment Tracking





# GPS Unit Calibration



# Grants Update

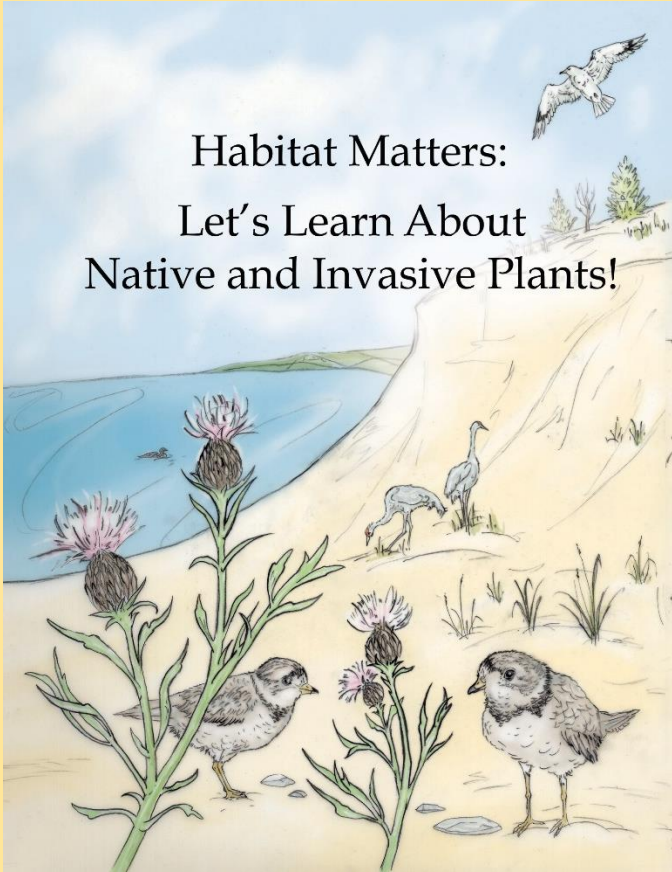
- Fully funded through October
  - EPA GLRI 2016
  - USFS GLRI 2016 & 2018
  - USFS GLRI Outreach 2017
  - MISGP 2017
  - (GTB subgrant)
  - (TNC subgrant)
- Upcoming Grants
  - Rotary
  - MISGP 2018
  - **USFS Restoration? *Discuss***
- Strategic Plan (final stages)
- Funding Plan! (draft)





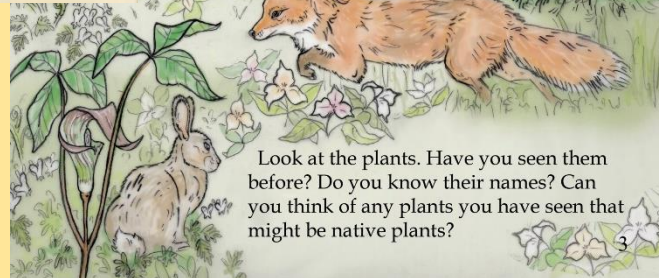
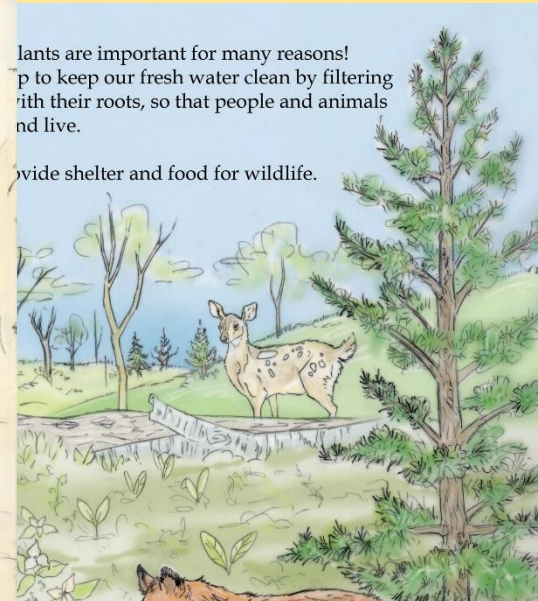
# New Resources Available! (or soon to be)

## Habitat Matters: Let's Learn About Native and Invasive Plants!



Plants are important for many reasons!  
They help to keep our fresh water clean by filtering  
nutrients with their roots, so that people and animals  
can live.

They also provide shelter and food for wildlife.



Look at the plants. Have you seen them  
before? Do you know their names? Can  
you think of any plants you have seen that  
might be native plants?



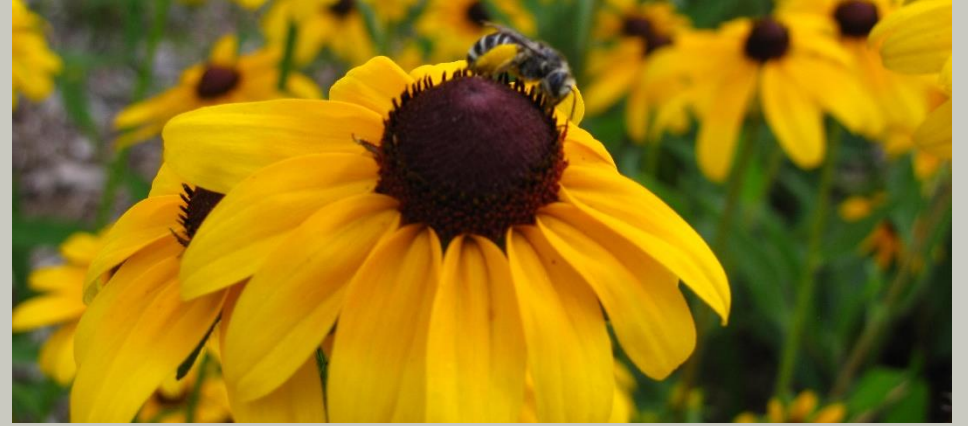
for the birds!

## Michigan Native Garden Design





# Go Beyond Beauty



- Program expansion a success
  - 8 nurseries
  - 15 landscapers
  - 17 “other” participants
- Spring Meeting – Wednesday, April 25 – 6-8 pm
  - Overview of program
  - Expansion details (options for businesses and homeowners)
  - Presentation: Tom Ford – “Creating a Wildlife Friendly Backyard”
- Trade-up/ “Dumpster Day”
  - Friday, June 15, 10:00am-2:00pm – Manistee Conservation District
  - Saturday, June 16, 10:00am-2:00pm – Boardman River Nature Center
  - Japanese barberry disposal event
  - Landowners bring plants to ISN and in exchange, receive a discount
  - Registration now open on website

# GO BEYOND BEAUTY



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INVASIVE SPECIES NETWORK  
HabitatMatters.org

GO BEYOND BEAUTY – PARTICIPATING NURSERIES

Many invasive plants arrive in our area by way of gardens.  
*Go Beyond Beauty* by purchasing from nurseries that have committed not to use  
or sell high-threat invasive plants, such as the following:

**Cyman Gardens**   
(231) 533-8960 | [cymangardens.com](http://cymangardens.com)

**Garden Goods**   
(231) 933-4769 | [gardengoodstc.com](http://gardengoodstc.com)

**Green Lake Gardens & Goods**  
(231) 276-6775

**Greystone Gardens**   
(231) 326-5855

**Lakeshore Native Gardens LLC**  
(248) 631-8816

**Misty Ridge Greenhouse**   
(231) 885-2290

**Northwoods Nursery**  
(231) 946-7378

**Pine Hill**  
(231) 941-1808 | [pinehill-nursery.com](http://pinehill-nursery.com)

**KEY:**  20+ NATIVE PLANTS AVAILABLE

# GO BEYOND BEAUTY



NORTHWEST MICHIGAN  
INVASIVE SPECIES NETWORK  
HabitatMatters.org

Many invasive plants arrive in our area by way of gardens.  
*Go Beyond Beauty* by hiring landscapers that have committed not to use  
or sell high-threat invasive plants, such as the following:

## Cre Woodard Garden Design

(231) 735-5300 | crewoodard.com

## Cyman Gardens

(231) 533-8960 | cymangardens.com

## Designs in Bloom

(231) 352-6962 | designsinbloom.biz

## Grand Traverse Organic Landscapes

(231) 938-2626 | gtorganiclandscapes.com

## Heritage Landscape Design

(231) 492-4128 | heritagelandscapedesigntc.com

## Inhabitect, LLC

(231) 943-1434 | www.inhabitect.com

## Laurel Voran, LLC

(231) 632-3211

## The Mossy Tree, LLC

(231) 499-5369 | mossytreegardens.com

## Northwoods Landscaping

(231) 946-7378

## Old Mission Associates

(231) 223-9222 | oldmissionlandscapes.com

## Pine Hill Landscaping

(231) 941-1808 | pinehill-nursery.com

## Silverman & Company

(231) 932-1925 | michiganlandscapearchitect.com

## Sustainable Landscape Design, LLC

(231) 735-6972 | sustainable-landscape-design.com

## TruNorth Landscaping

(231) 922-0087 | trunorthlandscaping.com

## Wildlife & Wetland Solutions

(231) 360-1203 | wildlifewetlands.com

KEY:  MICHIGAN NATURAL  
SHORELINE PARTNER



CERTIFIED GREEN  
INDUSTRY PROFESSIONAL



# Expansion Details:

- An effort to make *Go Beyond Beauty* more self-sufficient
- Provides more opportunity for program growth and offerings

## NURSERIES AND LANDSCAPERS

- New, in-depth employee trainings
- ISN assurance via site visit or audit
- Phase out of 2<sup>nd</sup> tier invasives

## OTHER PARTICIPANTS

- Yard/garden surveys
- Invasive species identification
- Native planting suggestions





# Go Beyond Beauty - Membership Program

## BUSINESS OPTIONS - NURSERY/LANDSCAPER

\*The program as it currently exists will remain in place.

### Silver Membership

- Participate in half-day Basic Invasive Species Employee Training
  - Can be held at business location OR Boardman River Nature Center (BRNC)
  - Single cost, regardless of how many employees participate
  - \$150.00 per business, when held at BRNC
  - \$300.00 per business, when held at their location
  - Fees are annual when training seasonal employees
- Receives silver recognition on outreach materials
- Signs include "silver member" label

### Gold Membership

- Participate in full-day Intensive Invasive Species Employee Training
  - Can be held at business location OR Boardman River Nature Center (BRNC)
  - Single cost, regardless of how many employees participate
  - \$200.00 per business, when held at BRNC
  - \$400.00 per business, when held at their location
  - Fees are annual when training seasonal employees
- Receives gold recognition on outreach materials
- Signs include "gold member" label

### Premier Membership

- Cost: \$200.00, annually
- ISN provides an assurance that your business does not sell/use invasive species within the 1<sup>st</sup> tier
- Nurseries will receive an annual site visit (or audit, if they prefer)
- Landscapers will receive an audit of orders
- Additional recognition will be placed on signage and outreach materials for those who have gone through the process to reach premier-level membership.

## OTHER PARTICIPANTS

(Homeowner, garden club, other business, etc.)

\*The program as it currently exists will remain in place.

### Silver Membership

- Receive a site-visit from an ISN employee to determine invasive species on site
  - Approximately 30 minutes for average yard size
- Receive a one-page explanation of plant species identified
- \$50.00 participation fee
- Garden sign with "silver member" label
- Website recognition with "silver member" listing
- Outreach materials at no cost

### Gold Membership

- Receive a site-visit from an ISN employee to determine invasive species on site
  - Approximately 30-45 minutes for average yard size
- Receive a 2+ page explanation of plant species identified
- AND native planting recommendations based on site conditions
- \$100.00 participation fee
- Garden sign with "gold member" label
- Website recognition with "gold member" listing
- Outreach materials at no cost

### Champions of Go Beyond Beauty

- Businesses that are not selling/are beginning to phase out 2<sup>nd</sup> tier invasive species will receive additional recognition in the form of separate listings on outreach material and their own slide during public presentations.



For more information:  
[www.HabitatMatters.org](http://www.HabitatMatters.org)



# Bootbrushes

- ~\$300 each (printing & materials, not installation)
  - Some customization available
- Cost-share!
  - <\$150 (for ready-printed signs & stations)



**Clean Boots,  
Vibrant Trails,  
More Wildlife.**

It is not the mud, but tiny seeds that cause concern. Seeds of invasive plants often travel in the treads and laces of footwear, pant cuffs, hiking gear, and on pet fur. Invasive plants displace native plants that are critical to wildlife, especially to butterflies and birds. Once established, they are costly to remove.

**Clean your boots, pants, packs, and pets before hitting the trail. Help keep natural areas vibrant for future discovery.** To learn more, visit [HabitatMatters.org](http://HabitatMatters.org).

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## Native Plants are Habitat

Wildlife like birds and butterflies need the right plants. Most songbirds feed insects to their nestlings, and those insects in turn depend on specific host plants. A healthy diversity of native plants means more to discover while out exploring on the trail.



Northern spicebush is one of just a few host plants for the caterpillar of the spicebush swallowtail butterfly.



More native plants mean more of the insects that songbirds need to thrive.



# Native Plant Signs Spring Order

- **Orders Due April 30!**
- 7x5” printed on aluminum w/ UV coating & 30” stake
- <\$10 each
  
- OR ask for the species you want & we’ll send you PDFs for free to print on your own



**MONKEY FLOWER**  
(*Mimulus ringens*)

Ellen Falsbøck



**Key Features:**

- Unique Flowers:** Flowers are reminiscent of snapdragons, attracting native pollinators.  Steven S. Price
- Rain Garden:** Beautiful addition to any rain garden. Rain gardens help keep run-off and pollution out of natural areas.  G.T. Conservation District
- Visitors to Explore:** Hosts caterpillars of butterflies like this Baltimore checkerspot, as well as the common buckeye butterfly and chalcodony midget moth.  Stylarus

Is monkey flower right for your garden?  
1-3 ft tall  
3/4-1 ft wide  
June-Aug.

To learn more about how you can help protect our wild places, visit [HabitatMatters.org](http://HabitatMatters.org)



**BREAK!**

10 minutes

**Get your shirts!!**

# Municipality Outreach

- **Continued work with municipalities**
- Presentations & Invasive Species Ordinance Requests
  - Bingham Township
  - Suttons Bay Township
  - Benzonia Township
  - Leelanau Township



## Garlic Mustard Dumpsters Participants

- Benzie Lake Township
- Manistee Conservation District
- Leelanau Conservancy
- City of Frankfort





# Municipality Outreach

## Goals for 2018

- Continue contacting & presenting to municipalities in all 4 counties
  - Getting ordinances approved
- Contacting & presenting to other municipalities
  - lake associations, etc.



# Restoration Goals for 2018

## Available Funding for Restoration Proposals

- Areas of previous treatment OR areas at high risk of invasion a “plus”
  - Preferably generally high-quality, just needs “help”
  - Contract work & species purchase eligible
  
- More than 20 Acres Slated for 2018
  - 10 Restoration Proposals Submitted & Funded
  - Variety of Planting Projects which Include Native Trees, Shrubs, Forbs & Grasses
  - Email Fields with ideas. Funds still Available!



Volunteers at Chippewa Run Natural Area, Empire



Protected oak at North Point Park, Onkama



# Treatment & Survey Goals for 2018

## Treatment: 500 Acres

- Invasive Ornamentals (medium to large scale populations)
- Prevention-based Control
- Treatment of Phragmites & Other High Priority Species
- 25 Sites of Roadside Knotweed & Phragmites
- Early Detection & Response Treatments
- ISN Crew Available for Check Out!!!

## Survey & Monitor: 1,950 Acres

- Assessing & Monitoring Treatment Sites
- Surveying New Areas for Invasive Species
- 15 Site Visits to Private Properties
- Early Detection & Response
- HWA Surveys
- Contact Audrey with Survey Ideas!

# Field Season—Crew

- “Check-out” Crew
  - We’re back!
    - “Check out” procedures will come out on the GoogleGroup in late April/early May
    - Focus on high-priority and ornamental invasive species
  - Surveys for raindays
    - Email Audrey with suggestions: [ameninga@gtcd.org](mailto:ameninga@gtcd.org)





# 2018 Workbees and Other Events

- **Garlic Mustard**
  - Benzie – May 11<sup>th</sup> at Tank Hill (Frankfort)
  - Grand Traverse – May 12<sup>th</sup> at Boardman River Nature Center (TC)
  - Manistee – May 18<sup>th</sup> at Magoon Creek Natural Area (Manistee)
  - Leelanau – May 19<sup>th</sup> at Clay Cliffs Natural Area (Leland)
- **Jane Kramer Exhibit & Garlic Mustard Papermaking** – June 1 & 2 at Boardman River Nature Center
- **GPS & ID Training Day** – June 7 all day; open to partners & volunteers
  - Please RSVP to Katie
- **Baby's Breath**
  - May 25<sup>th</sup>
  - June 1<sup>st</sup>
  - June 17<sup>th</sup>
  - July 6<sup>th</sup>
  - July 15<sup>th</sup>
  - August 3rd
- **Japanese Knotweed Community Trainings**
  - June 9<sup>th</sup>, Manistee County
  - June 13<sup>th</sup>, Leelanau County

Visit [www.HabitatMatters.org/eventsworkbees](http://www.HabitatMatters.org/eventsworkbees) for more!

# Garlic Mustard and Cyanide

- Cyanide production in garlic mustard can reach 100 ppm—acutely toxic to vertebrates (like humans)
  - Some samples 20-85 ppm (moderately toxic to vertebrates)
  - Highest in young plants/leaves—3 wk old (leaf) is the threshold
- Cyanide breaks down with heat (cooking)—but how much?
  - Since we haven't all died yet, hopefully it's a lot of breakdown
- **ISN is halting using garlic mustard in food until we know more (but will still provide lunch to volunteers)**

Cipollini, D. and B. Gruner. 2007. Cyanide in the chemical arsenal of garlic mustard, *Alliaria petiolata*. Journal of Chemical Ecology, 33: 85-94. <https://www.ncbi.nlm.nih.gov/pubmed/17146719>



# Michigan Invasive Species Coalition Updates

- Core Team meeting 3/12
  - Full-state CISMA coverage!
  - Creating rack cards to advertise ALL CISMAS
- MISIN Treatment Tracking
- Forum! [Forum.MichiganInvasives.org](http://Forum.MichiganInvasives.org)



# Play Clean Go Updates

- Exploring alternative funding structure!
- Summit at UMISC 2018



# Partner Updates!

2 minutes each, please





# Grand Traverse County Millage

- Grand Traverse Conservation District (GTCD) is pursuing a millage in the August 7, 2018 primary
  - GTCD is an unfunded government entity (federal mandate)
  - Asking for 0.1 mil
    - \$0.10 per \$1,000 of taxable value
- GTCD is ISN's fiduciary agent
- Other GTCD programs:
  - Boardman River Nature Center
    - Summer Camp
    - Pre-school programs (Peepers, Knee-High Naturalists)
  - MAEAP
  - Boardman River and its watershed
  - Parkland Management

# Hemlock Woolly Adelgid

