Reducing NN Phragmites and Tall Manna Grass Threats to Your Waters!

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Phragmites australis in Wisconsin

(Common reed grass)

- Native Phrag grows statewide
- Non-native shows up ~1980(?) on:
- Lake Michigan shores (later Lake Superior) & Mine site
- Spreading inland, mostly along roads, then to waterways & wetlands

Phragmites Threatens Your Waters!

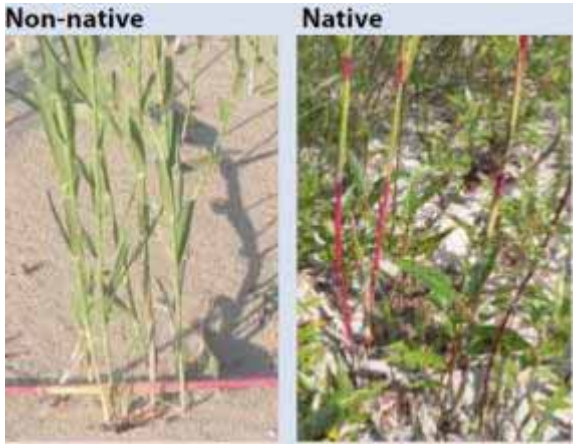
Tall, exotic perennial grass that:

- Reduces shoreline use
- Changes aesthetics
- Reduces plant & animal diversity
- Reduces recreational uses
- Reduces wetland ecosystem services
- Reduces land values

Native and Non-Native Phragmites

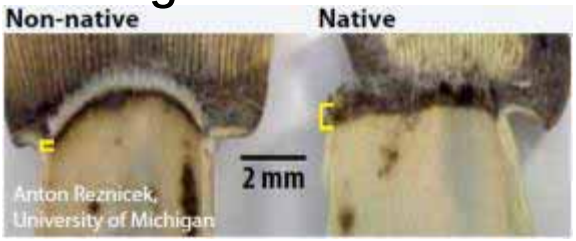
Phragmites australis, subsp. Americanus *Phragmites australis, subsp. australis*

- Stem color

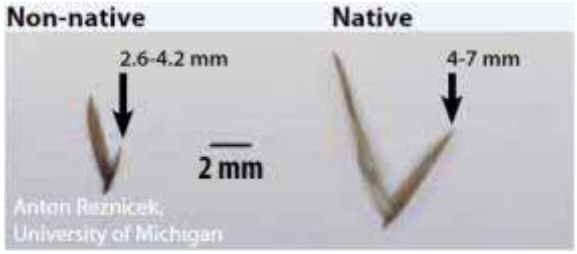


- Stem Texture
  - Native: Smooth & Shiny
  - N-N: Dull & Ridged
- Stem fungus
  - Native: circle dots
  - N-N: No circle dots

- Ligules



- Glumes



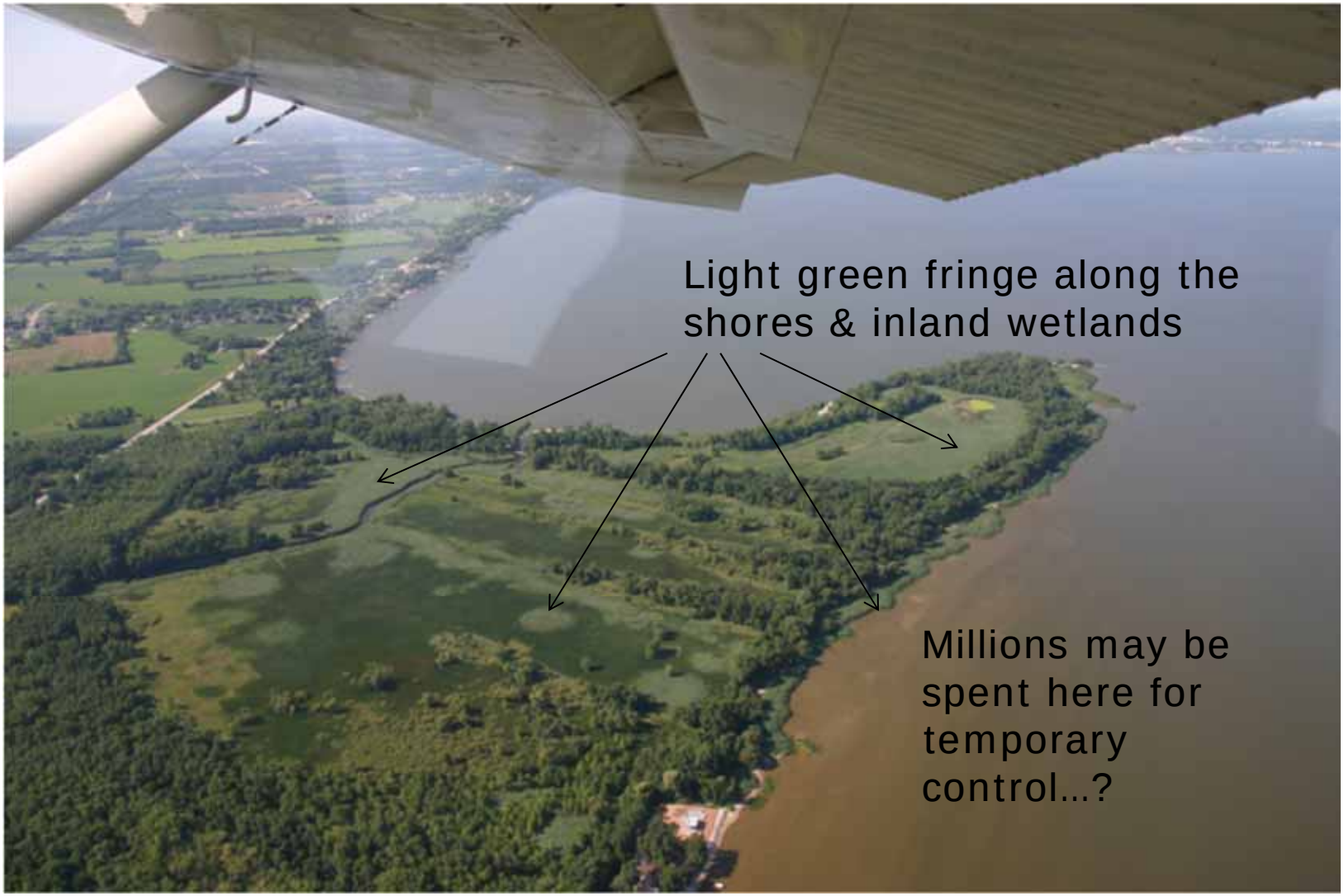
- Seed head

- Leaf color

- Other features
  - In winter “Naked is Native” and leaf sheaths absent or pull away easily
  - N-N: Leaf sheaths retained and hard to pull off.

Photo credits: Anton Reznieck, University of Michigan

DNR treatments began in 2011on extensive sites on Lake Michigan



Phragmites was Spreading Inland

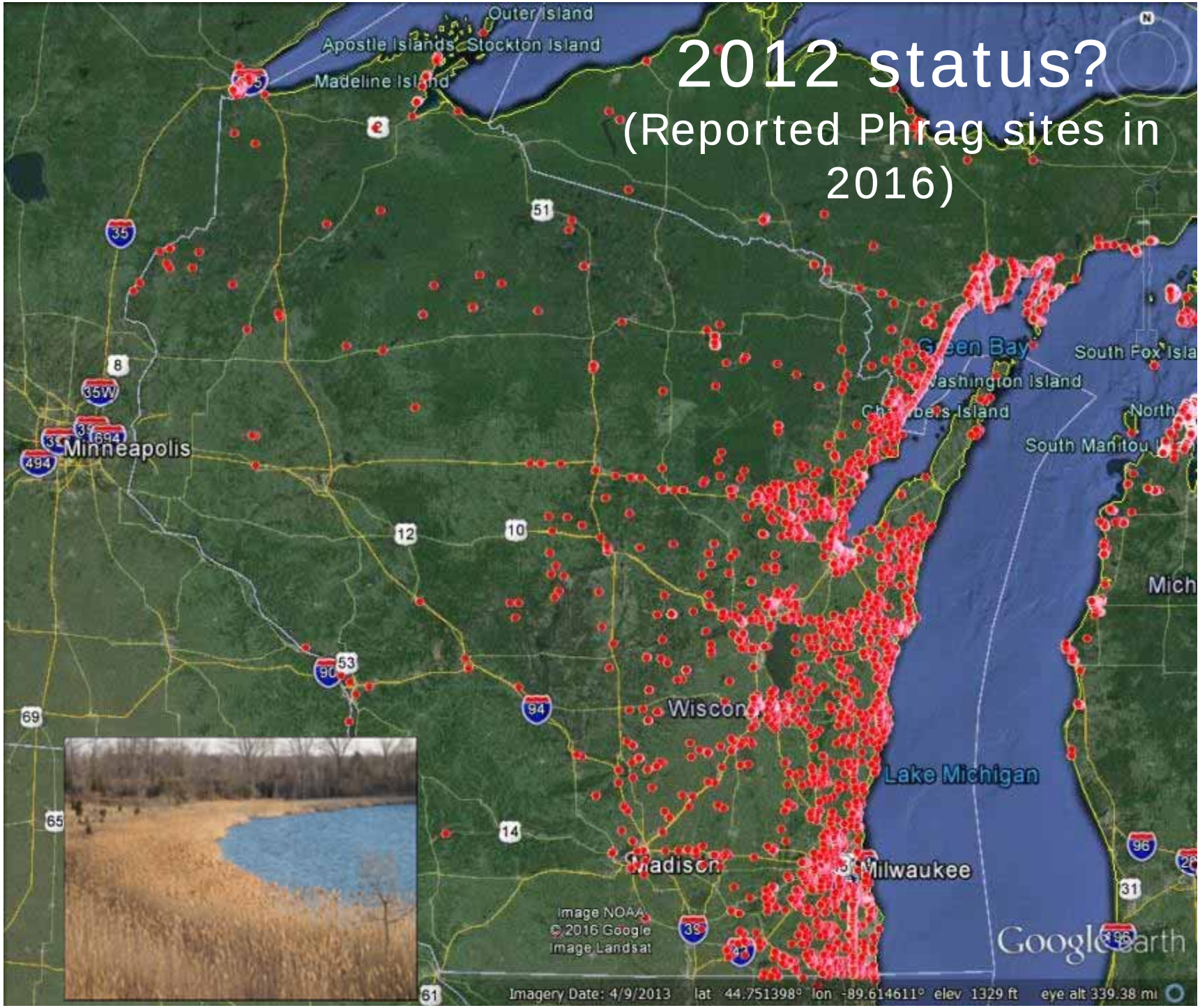
- Vehicles and mowers along roadways move seed & stem fragments
- Moving contaminated fill (with rhizomes)
- Human pursuits (WWTFs, gardening, landscaping, hunter blinds, etc.)
- Nature: birds, wind, flowing water, etc.

Phrag moving inland often starts as small road sites that grow…

Dispersal by seed, construction, mowing, etc.

…spread to new remote sites…

2012 status?
(Reported Phrag sites in 2016)

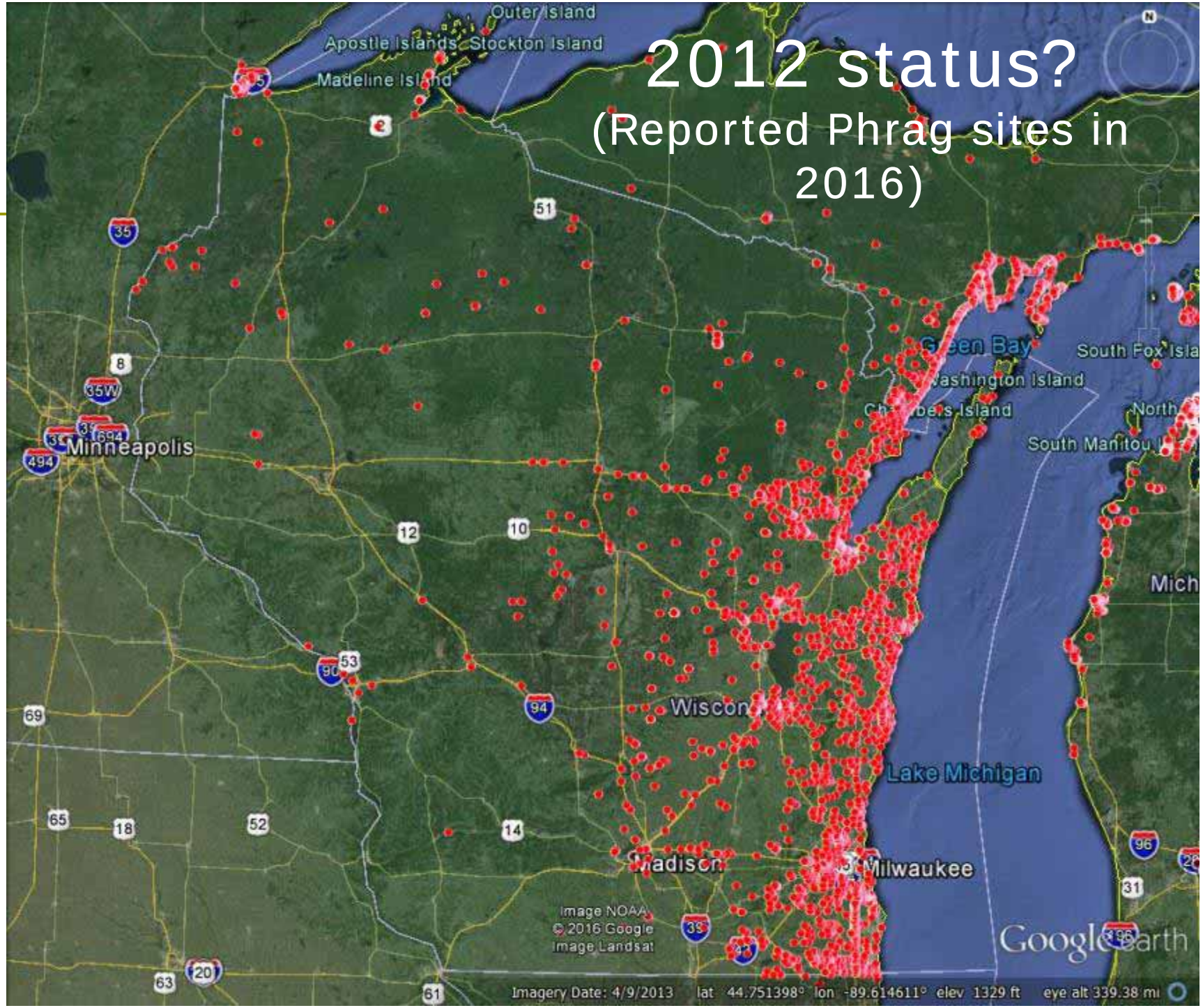


Statewide NN Phragmites Control/containment Strategy

- New DNR/UWEX project: Find/eliminate pioneer Phrag sites in GL basin counties (ED/RR)
- Find/eliminate all the few/tiny populations in western Wisconsin (ED/RR with partners)
- Control Jackson Co. 1980 mine site
- Devise containment of dense Phrag stands in eastern counties
- Continue Lk. Mich. shoreline efforts
- Outreach to statewide partners!

2012 status?

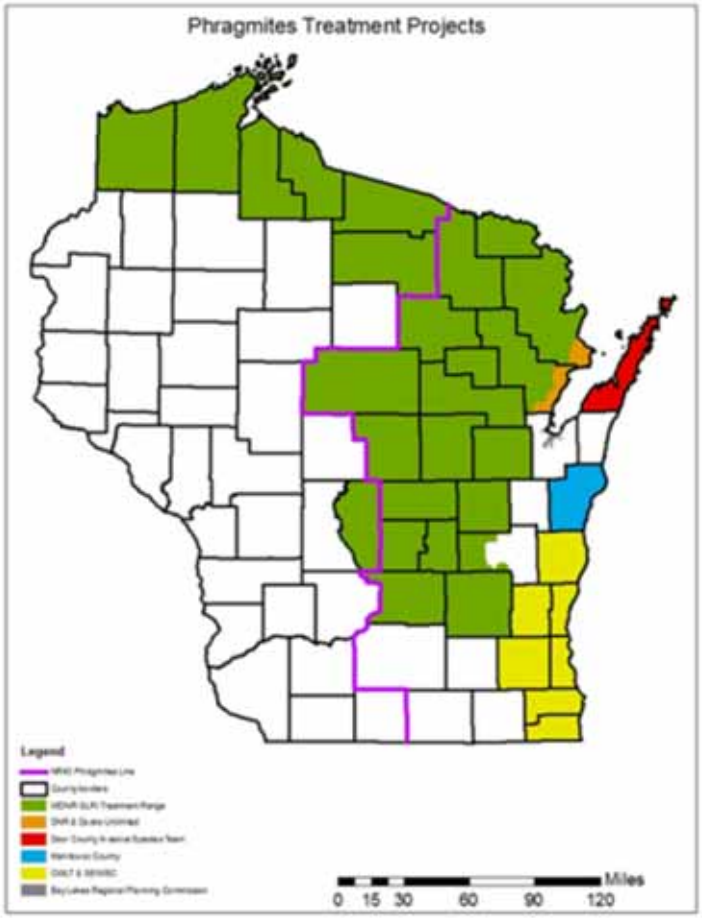
(Reported Phrag sites in 2016)



Plan for our 2013-2016 ED/RR Phrag Project ($220K GLRI)

- Find Phrag sites-field contacts, DB mining
- Site confirmation & areas
- Landowner contacts-ROWs & beyond
- Permits-NR 107, NHI, WDOT
- Select & oversee contractor(s): 280 sites treated in 2014, 1223 in 2015 w/ Lk.Sup.
- New 2016 sites: NEED MONITORING HELP
- Re-treat sites: NEED MONITORING HELP
- Prep for the future-outreach, training

DNR's ED/RR Phrag Project



Herbicide treatment details

- 1. Hired four Contractors used imazapyr (label rates) applied in by
  - Backpack sprayers
  - Boom mounted sprayers
  - Wick Applicators*

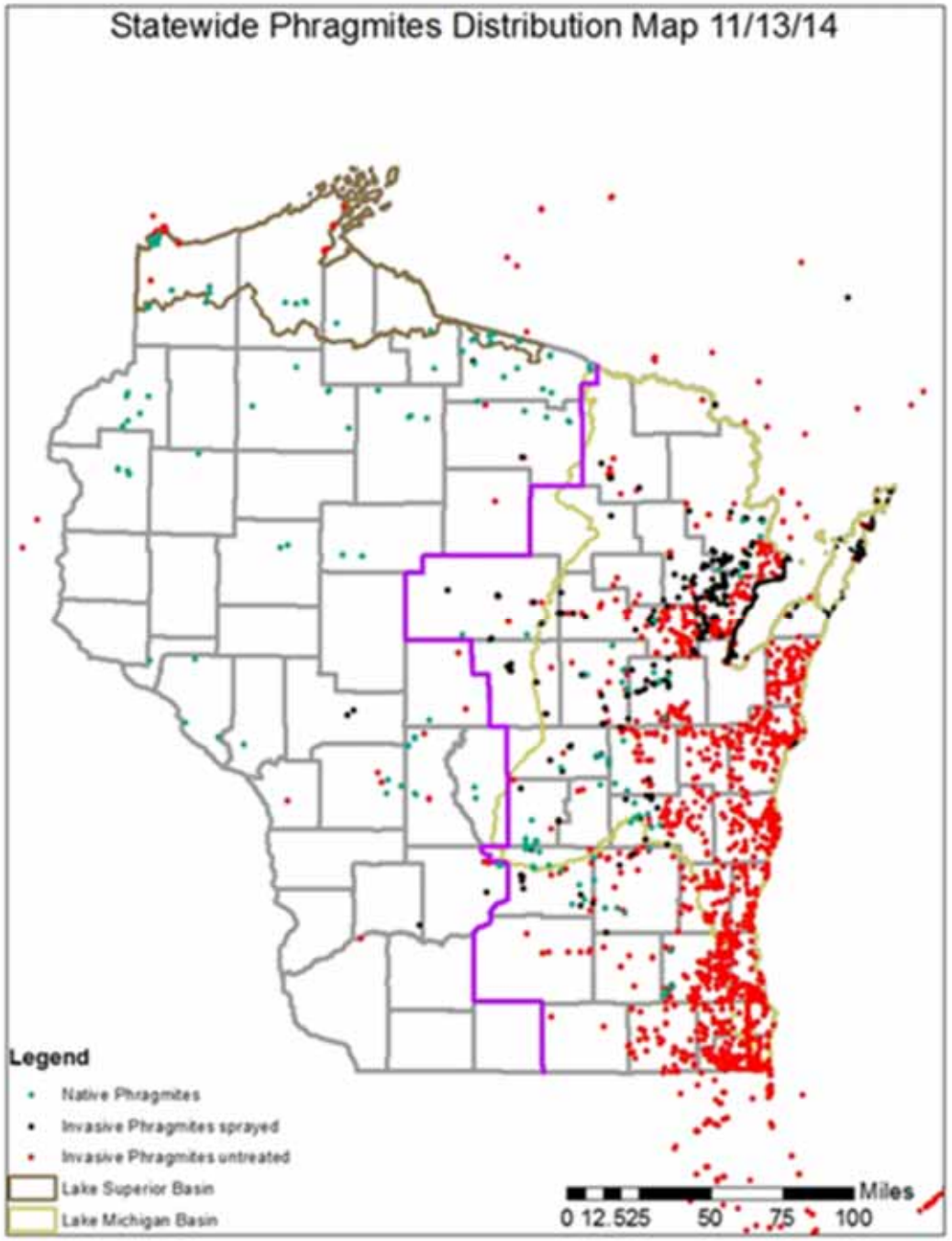
  (*method was to be used where sensitive vegetation)
- 2. One contractor did aerial spraying of two areas of high stand density in Fond du Lac Co.
- 3.Treatments done in late summer/fall
- 4. No cutting or burning thru 2015

Phragmites in Wisconsin-2014

Site data are mostly reports from mining a variety of on-line spatial data bases (veracity of most unconfirmed)

Red & black sites = NN (reported)
Green sites = Native

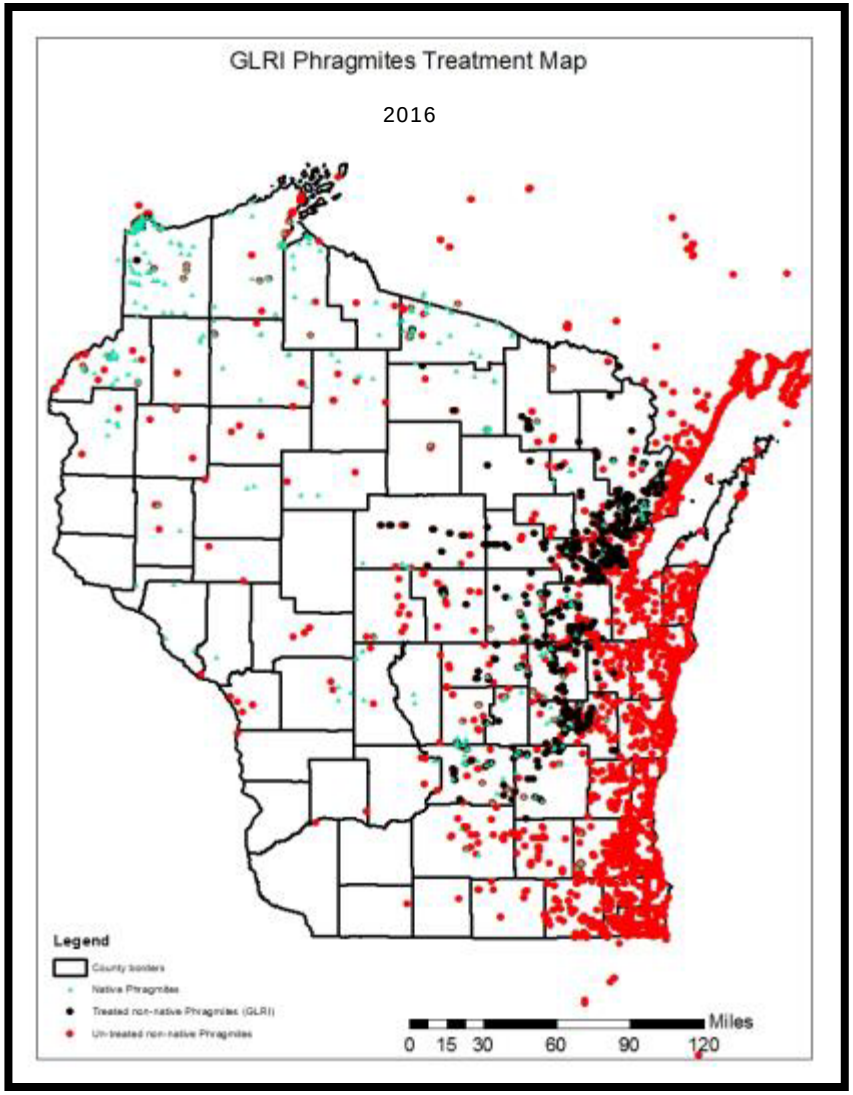
Purple line= NR-40 Split-listing
Circuitous olive & yellow lines = GL basins



Current reported Phragmites sites in Wisconsin (& nearby)

Red and black sites = Non-native (reported) (most red sites in western Wis. are likely native)

Green sites = native (most confirmed)



Tall Manna Grass in Wisconsin

- *Glyceria maxima*
- Native to Europe
- Only on E. & W. Coasts and in Wisconsin/IL!
- First reported in Racine Co. in 1975
- Wood Co. 1997, Door Co. 2003, Oneida Co. 2007
- Concentrated (we think) in SE Wis. (w/outliers)

Small late summer stand

Large early winter stand

Threatens both streams & wetlands

Robust, tall, perennial grass that can:

- Reduce native species diversity & associated recreation
- Restrict stream access
- Impede water flow
- Cause local flooding
- Accelerate siltation
- encourage mosquitoes
- Reduce land values

Stream flows are reduced

Unimpeded stream

Stream flow reduced

Flow eliminated!

A new problem for lakes?

- Susceptible shorelines…
- Lake depth?

Glyceria maxima identification & distribution

Jason E. Granberg Wisconsin Department of Natural Resources
Email: Jason.Granberg@Wisconsin.Gov Phone: 608.267.9868

Glyceria maxima (Reed mannagrass) is a perennial rhizomatous grass. It is known to invade wetlands, including swamps, lakes, ponds, slow-moving rivers, creeks, ditches, and wet pastures, where it forms monospecific stands that are capable of crowding out native vegetation.

NR 40 Classification

It currently has a split classification under NR40, being restricted (orange) in SE Wisconsin, and prohibited elsewhere (red). Nationally, *G. maxima*'s distribution is limited to Wisconsin, Illinois, Connecticut, Massachusetts and Washington. Since it is limited in WI, it is possible to contain it and prevent its spread further west.

WDNR Project: Identify and control populations

The Wisconsin DNR has received a grant to identify and control *G. maxima* populations and it needs your help to find them! Most populations are found in Southeast Wisconsin, between Milwaukee and Madison. With some found in Calumet, Wood, Door, and Oneida Counties.

Control efforts are planned for 2016, and may use several combined strategies including herbicide and perhaps mechanical removal.

Glyceria Identification

The *Glyceria* genus is typically distinguished by having closed leaf sheaths, angular blades, upper glumes with 1 vein, conspicuous veins on lemmas, and leaves end in boat shaped tips.

Glyceria maxima* vs. *Glyceria grandis:

These two species are commonly confused with each other. Three characters can be used to distinguish these species.

Characteristic	*Glyceria maxima*	*Glyceria grandis*
Leaf blade width	8-18 mm	6–12 mm
Leaf sheath edge texture	Scaberulous*	Smooth
Upper glume length	3-4 mm	1.5-2.5 mm

A common name for Glyceria maxima is "Rough mannagrass". It feels like sharkskin.

Common visual characteristics of *G. maxima*

Wide spanning seed head

Angular bend in leaf sheaths

Glyceria maxima in the landscape

Glyceria maxima creates large monotypic populations in wetlands. G. maxima grows and collapses, smothering other plants.

Glyceria maxima can also be found growing in streams year-round.

It can also detach and float downstream!

If you suspect this species, let WDNR know. Email: Jason.Granberg@Wisconsin.Gov Brock.Woods@Wisconsin.Gov

Tell *Glyceria maxima* from *G. grandis*!

- **G. maxima**: grows up to 8.5 ft. tall; unbranched stems
- Variegated form has distinctive green and creamy white stripes
- Leaves stiff, shallowly grooved, with prominent midribs
- Leaf blades flat, up to 16 inches long, about 1/2 to 3/4 inch wide
- Leaf margins rough with short stiff hairs
- Leaf sheaths rough in texture
- Stems often reddish on lower portion
- Inflorescence (flower stem) is open and branched (a panicle), up to 18 inches tall, made up of many yellow to green or purple-tinged narrow spikelets

- **G. grandis:** is shorter (up to 5 feet tall), has drooping infloresence branches, and smooth sheaths at the base of the infloresence brances

Smaller sites have more flowering

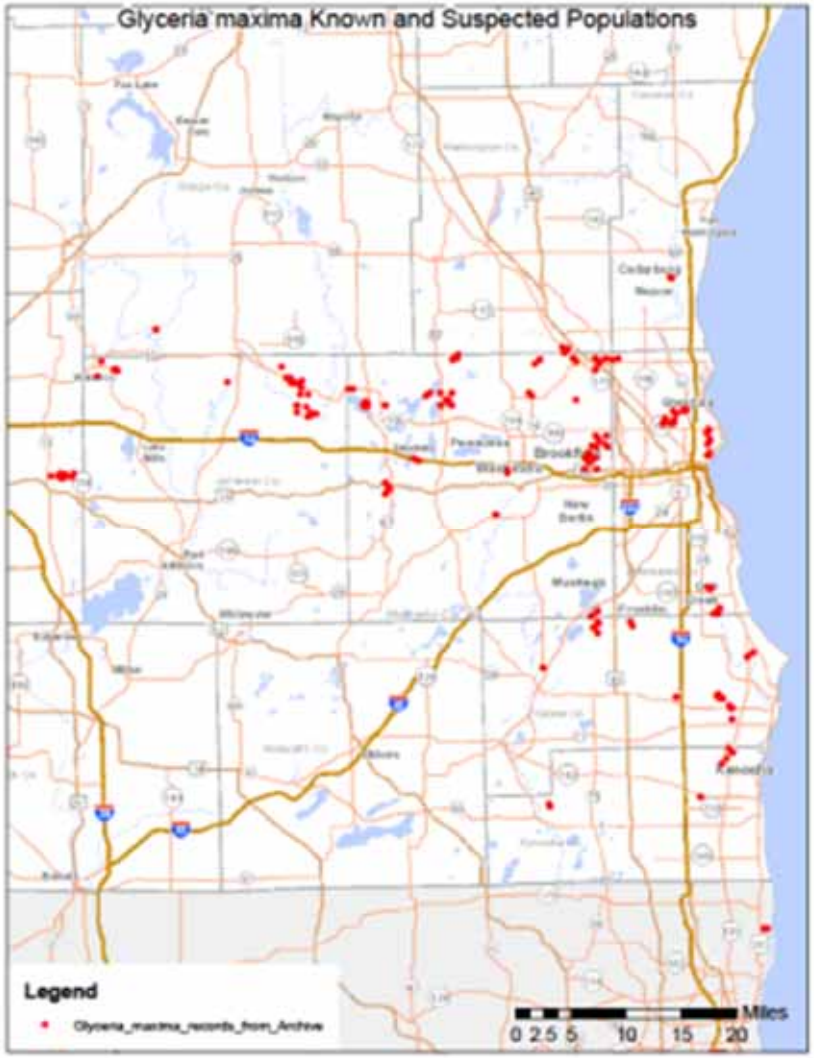
Summer view

Larger sites fill up vegetatively:

Stands are concentrated in SE Wisconsin

-Initial reports suggested all Midwest stands were in the Lake Michigan basin

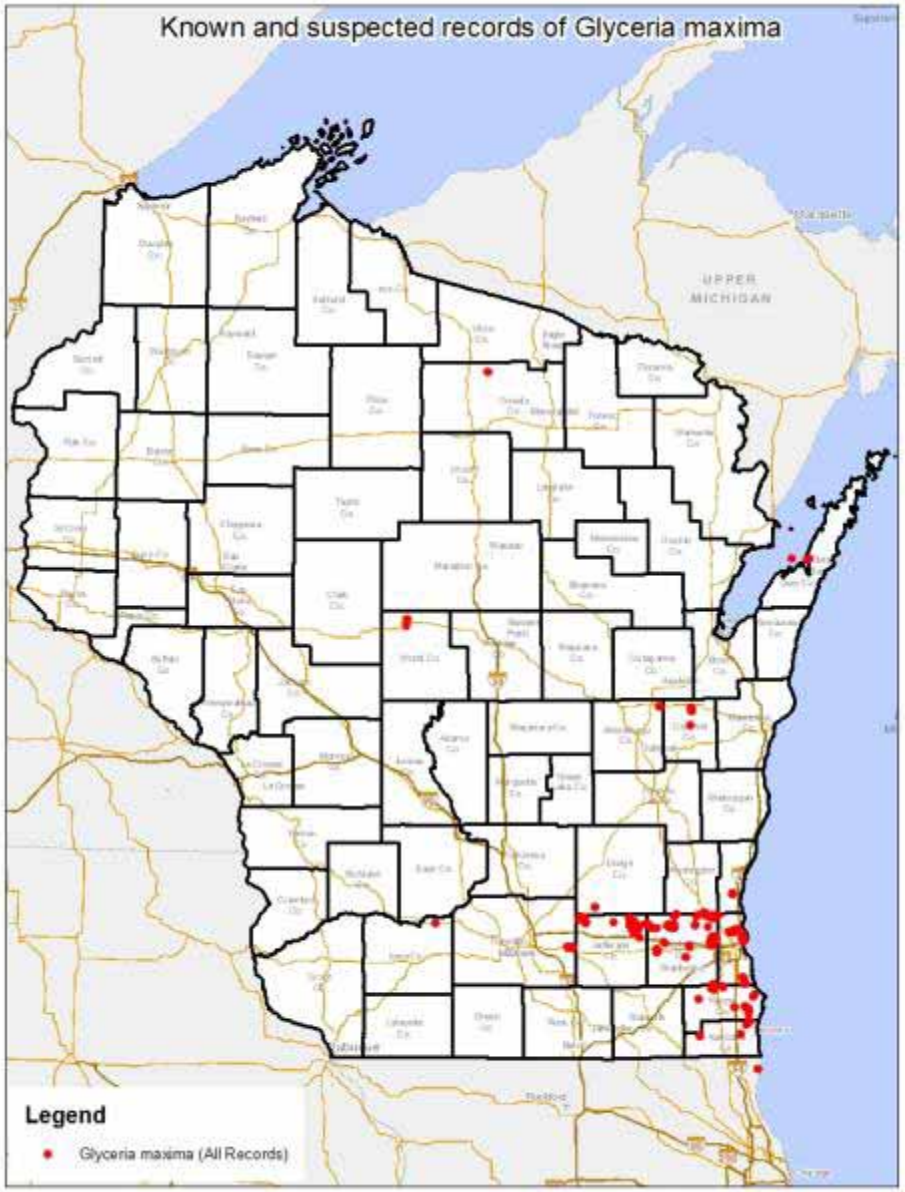
-Federal funding became available for this priority species to limit dispersal



But the species has already moved to another drainage:

Current reports:

- -From SEWRPC, data mining, remote sensing, field monitoring
- -9 SE counties: includes wetlands and stream banks/ beds
- -Calumet: large site
- -Wood Co. sites @ Marshfield
- -Oneida Co. site is variegated version
- -Door Co. island & mainland



Variable dispersal mechanisms

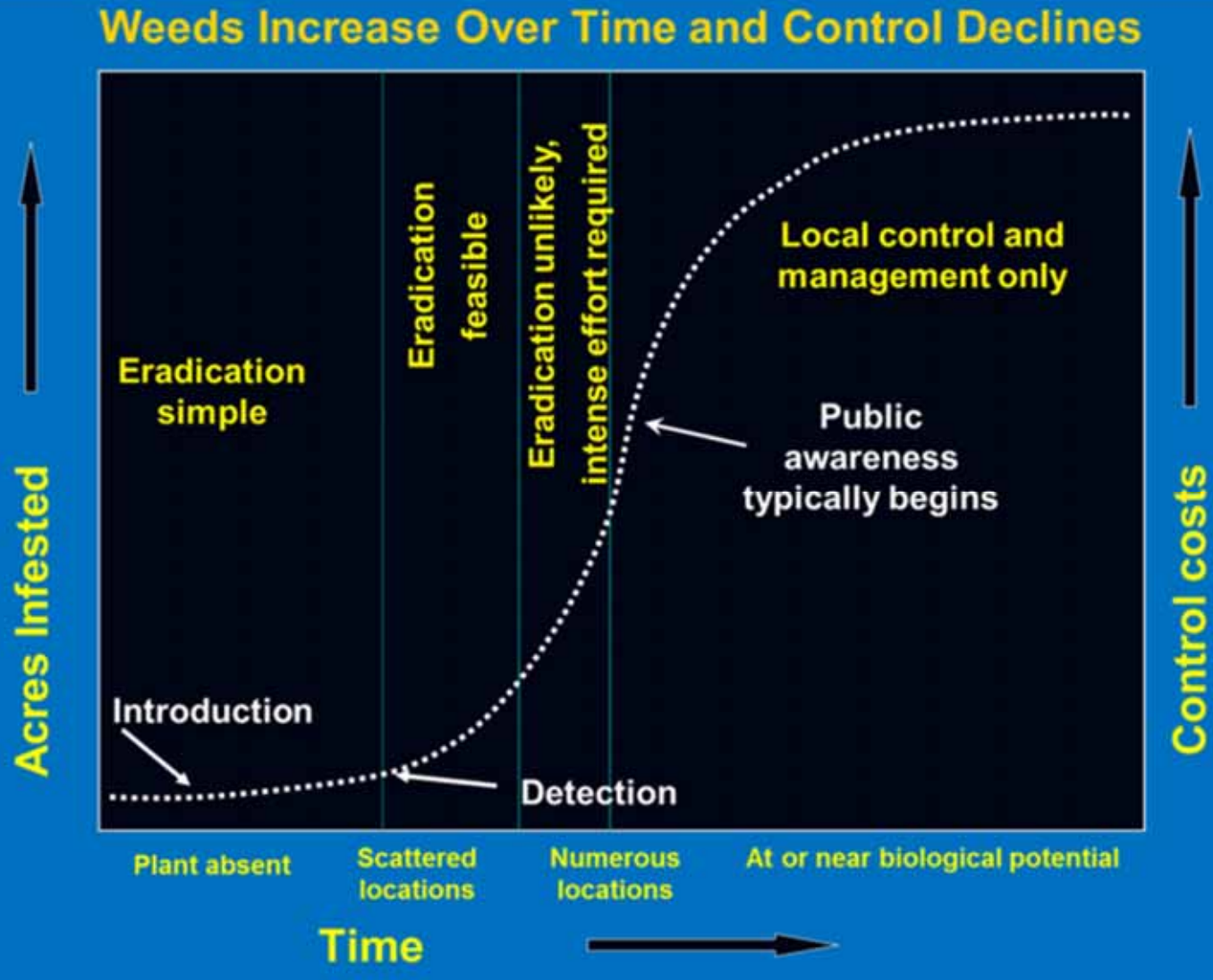
- Seeds in large numbers (yg. sites)
- Most seeds short lived; some several to many years
- Water transport downstream
- Fragments re-sprout!
- Mud on footwear, vehicles, animals

Forms found free-floating

WDNR has secured funding for outreach & site ID and control

- 2015 funding: began identifying sites
- Many sites still need exact location coordinates, verification and stand information — you can help monitor!
- 2016-17 funding: continue site monitoring & begin control efforts
- Control to be experimental at first, but expand to many sites AQAP
- First efforts: reduce spread (control at margins & stream sites)

How to stop these species' spread? Work must recognize opportunities!



Prevention is easiest!

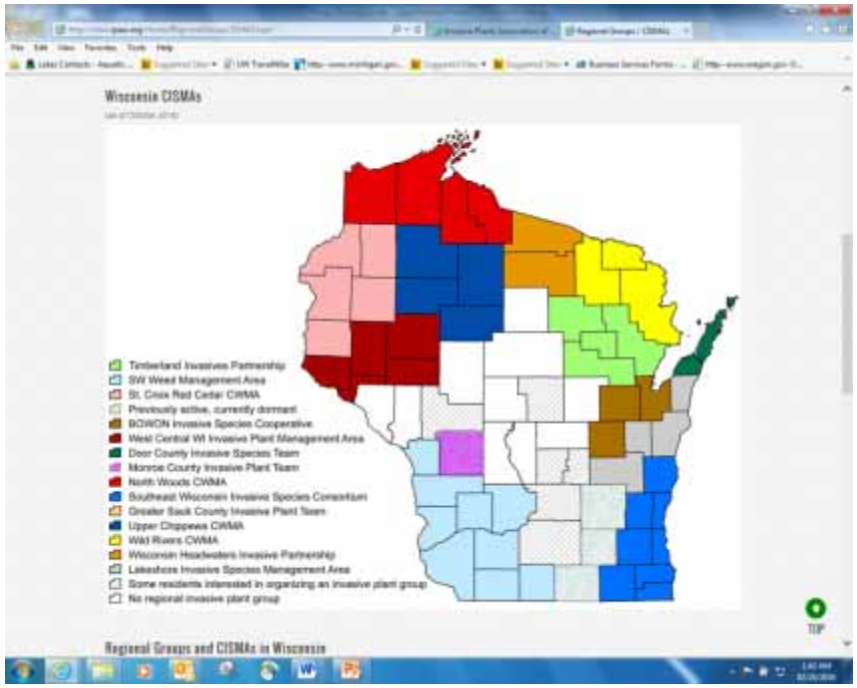
Get yourself & organization involved!

- Organize and plan!
- Educate!
- Take prevention steps!
- ID & report!

- Control (usually chemicals!!)
- Long-term monitoring/management
- RESEARCH for the long-term!

Need local Partners?

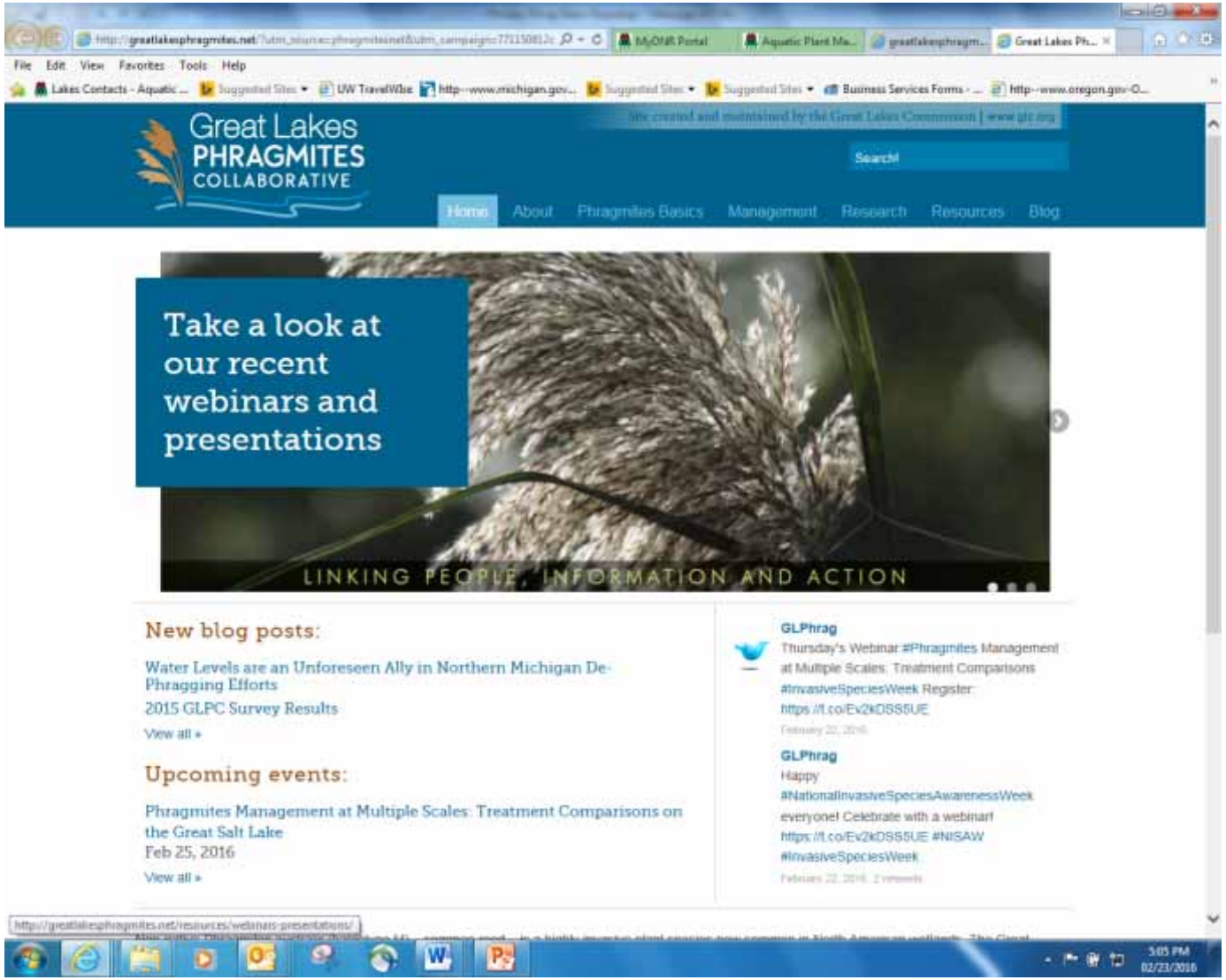
NGOs: CISMAs, Lake Associations



Citizens!

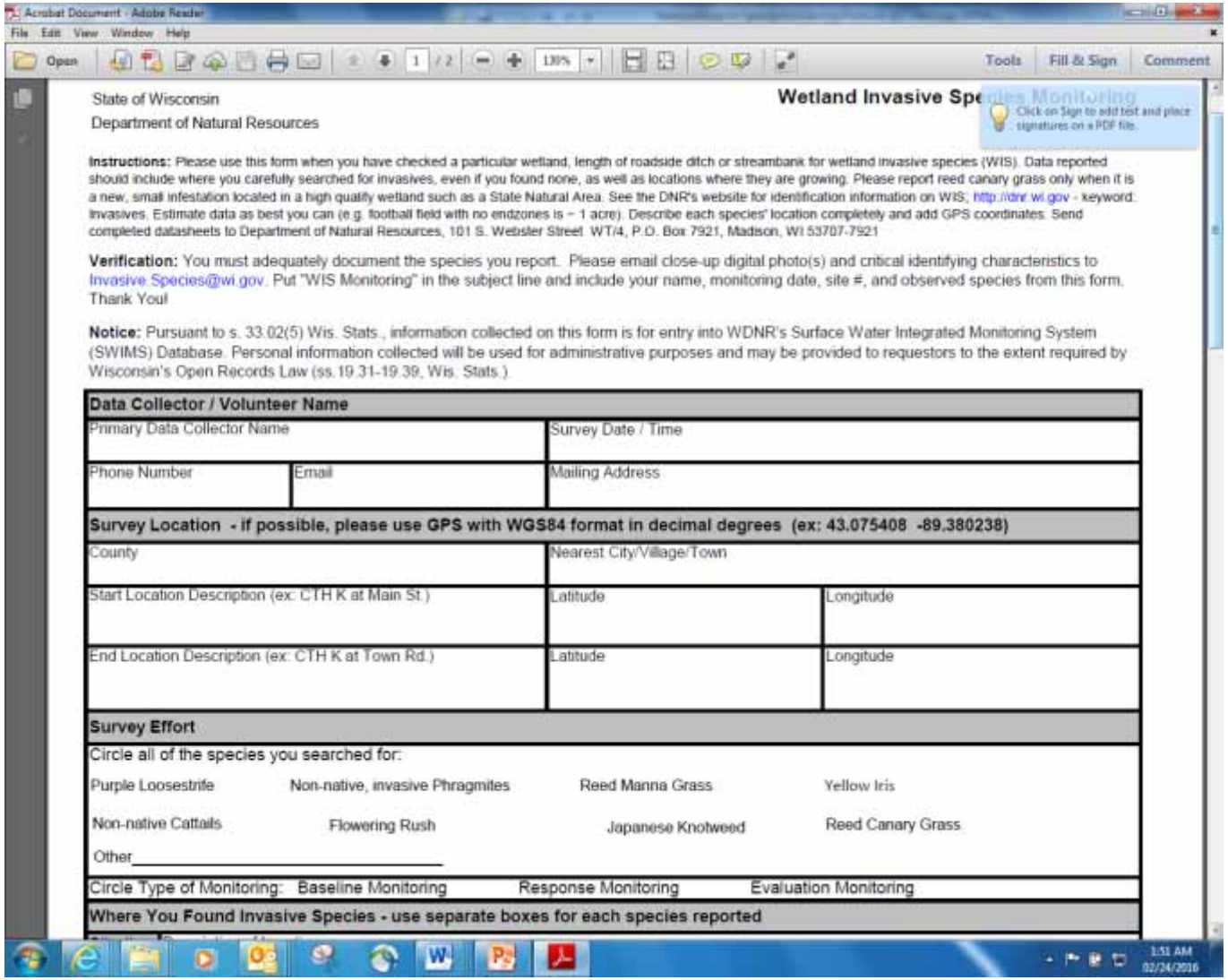
- Federal/state agencies
- County Conservationists
- County Highway Depts
- Towns
- Municipalities
- Businesses (e.g., railroads
- Others??

www.greatlakesphragmites.net



Easiest step is monitoring & reporting!

(Here is the DNR's WIP Monitoring Form!)



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Open | 1 / 2 | 130% | Tools | Fill & Sign | Comment

State of Wisconsin
Department of Natural Resources

Wetland Invasive Species Monitoring

Click on Sign to add text and place signatures on a PDF file.

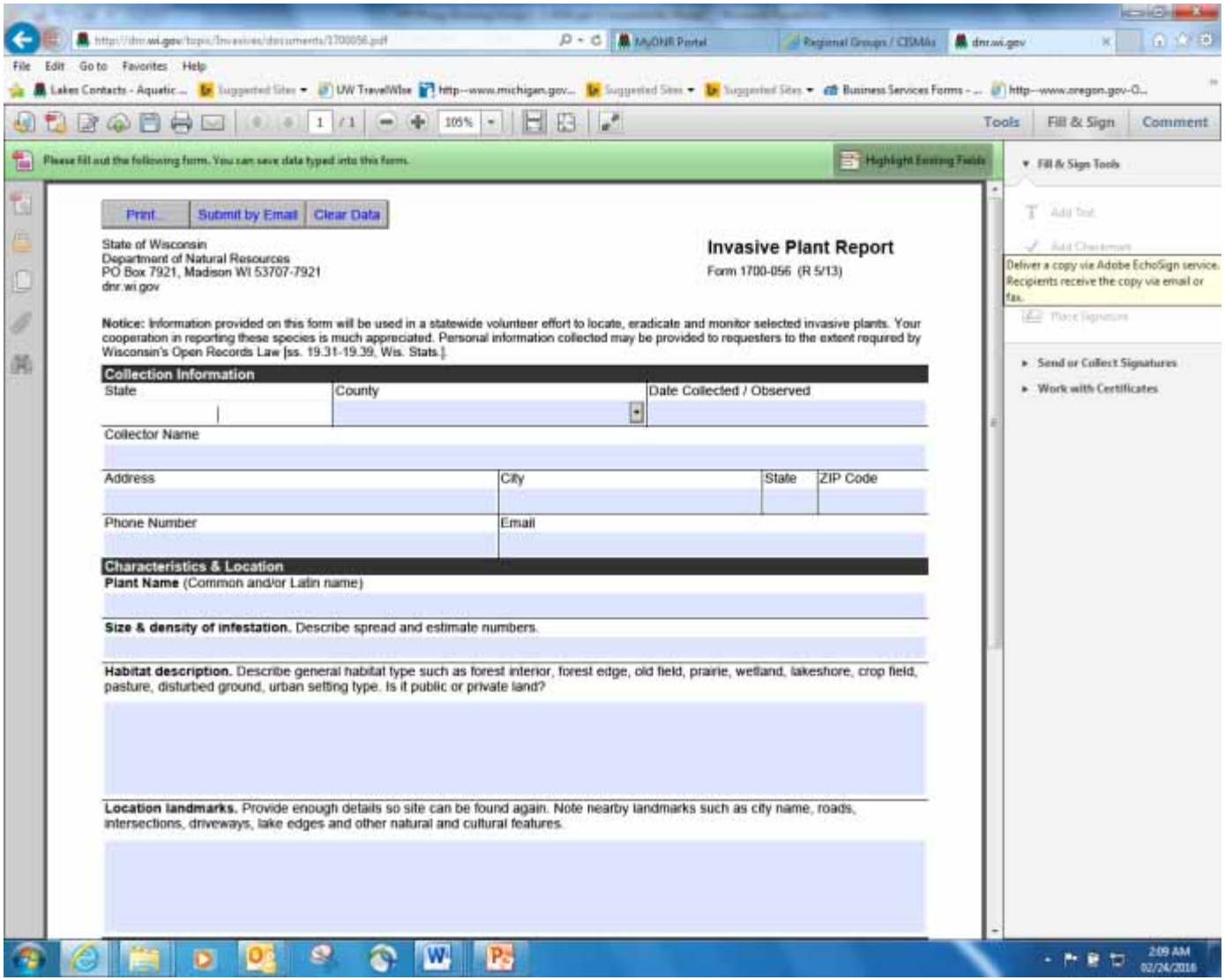
Instructions: Please use this form when you have checked a particular wetland, length of roadside ditch or streambank for wetland invasive species (WIS). Data reported should include where you carefully searched for invasives, even if you found none, as well as locations where they are growing. Please report reed canary grass only when it is a new, small infestation located in a high quality wetland such as a State Natural Area. See the DNR's website for identification information on WIS; http://dnr.wi.gov - keyword: Invasives. Estimate data as best you can (e.g. football field with no endzones is ~ 1 acre). Describe each species' location completely and add GPS coordinates. Send completed datasheets to Department of Natural Resources, 101 S. Webster Street WT/4, P.O. Box 7921, Madison, WI 53707-7921

Verification: You must adequately document the species you report. Please email close-up digital photo(s) and critical identifying characteristics to Invasive.Species@wi.gov. Put "WIS Monitoring" in the subject line and include your name, monitoring date, site #, and observed species from this form. Thank You!

Notice: Pursuant to s. 33.02(5) Wis. Stats., information collected on this form is for entry into WDNR's Surface Water Integrated Monitoring System (SWIMS) Database. Personal information collected will be used for administrative purposes and may be provided to requestors to the extent required by Wisconsin's Open Records Law (ss.19.31-19.39, Wis. Stats.)

Data Collector / Volunteer Name			
Primary Data Collector Name		Survey Date / Time	
Phone Number	Email	Mailing Address	
Survey Location - if possible, please use GPS with WGS84 format in decimal degrees (ex: 43.075408 -89.380238)			
County		Nearest City/Village/Town	
Start Location Description (ex: CTH K at Main St.)		Latitude	Longitude
End Location Description (ex: CTH K at Town Rd.)		Latitude	Longitude
Survey Effort			
Circle all of the species you searched for:			
Purple Loosestrife	Non-native, invasive Phragmites	Reed Manna Grass	Yellow Iris
Non-native Cattails	Flowering Rush	Japanese Knotweed	Reed Canary Grass
Other_____			
Circle Type of Monitoring: Baseline Monitoring	Response Monitoring	Evaluation Monitoring	
Where You Found Invasive Species - use separate boxes for each species reported			

Even easier is the WDNR's web report form: email it!



Print... Submit by Email Clear Data

State of Wisconsin
Department of Natural Resources
PO Box 7921, Madison WI 53707-7921
dnr.wi.gov

Invasive Plant Report
Form 1700-056 (R 5/13)

Notice: Information provided on this form will be used in a statewide volunteer effort to locate, eradicate and monitor selected invasive plants. Your cooperation in reporting these species is much appreciated. Personal information collected may be provided to requesters to the extent required by Wisconsin's Open Records Law [ss. 19.31-19.39, Wis. Stats.].

Collection Information

State | County | Date Collected / Observed

Collector Name

Address | City | State | ZIP Code

Phone Number | Email

Characteristics & Location

Plant Name (Common and/or Latin name)

Size & density of infestation. Describe spread and estimate numbers.

Habitat description. Describe general habitat type such as forest interior, forest edge, old field, prairie, wetland, lakeshore, crop field, pasture, disturbed ground, urban setting type. Is it public or private land?

Location landmarks. Provide enough details so site can be found again. Note nearby landmarks such as city name, roads, intersections, driveways, lake edges and other natural and cultural features.

But please report your sightings to whatever data base is easiest for YOU!
(We now monitor them all!)

Summary: You can help!

Keep our wetlands & shores native and diverse:

By reporting pioneer sites:

To prevent stands too big to control:

Everyone must help!

Invasives RESEARCH is critical!!

- Most invasive plant control work is a holding action!
- Elimination is tough!
- Some form of natural, non-herbicide control is necessary for the long-term
- If you agree, let your elected representatives know they must fund this kind of research!

brock.woods@wisconsin.gov; 608-266-2554