

# MNPhrag

*Responding to Invasive  
Phragmites in Minnesota*

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# MNPhrag Control Efforts and Research Initiatives

- Distribution of invasive *Phragmites*
- Statewide *Phragmites* control effort
- Wastewater treatment facility transition
- Evaluate native *Phragmites* for WWTF reed beds
- Performance of hybrid, invasive & native *Phragmites* with elevated N

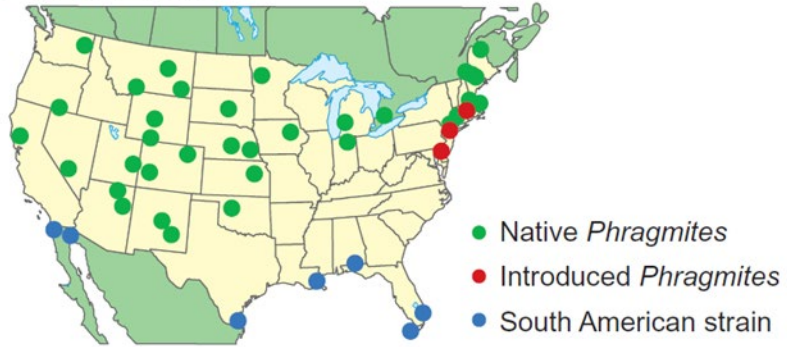


# Cryptic invader?

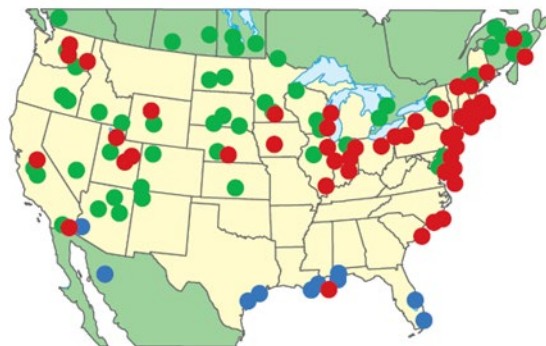


# Introduction of European common reed

a Before 1910



b After 1960



Saltonstall, 2002

# Impacts of Invasive Phragmites

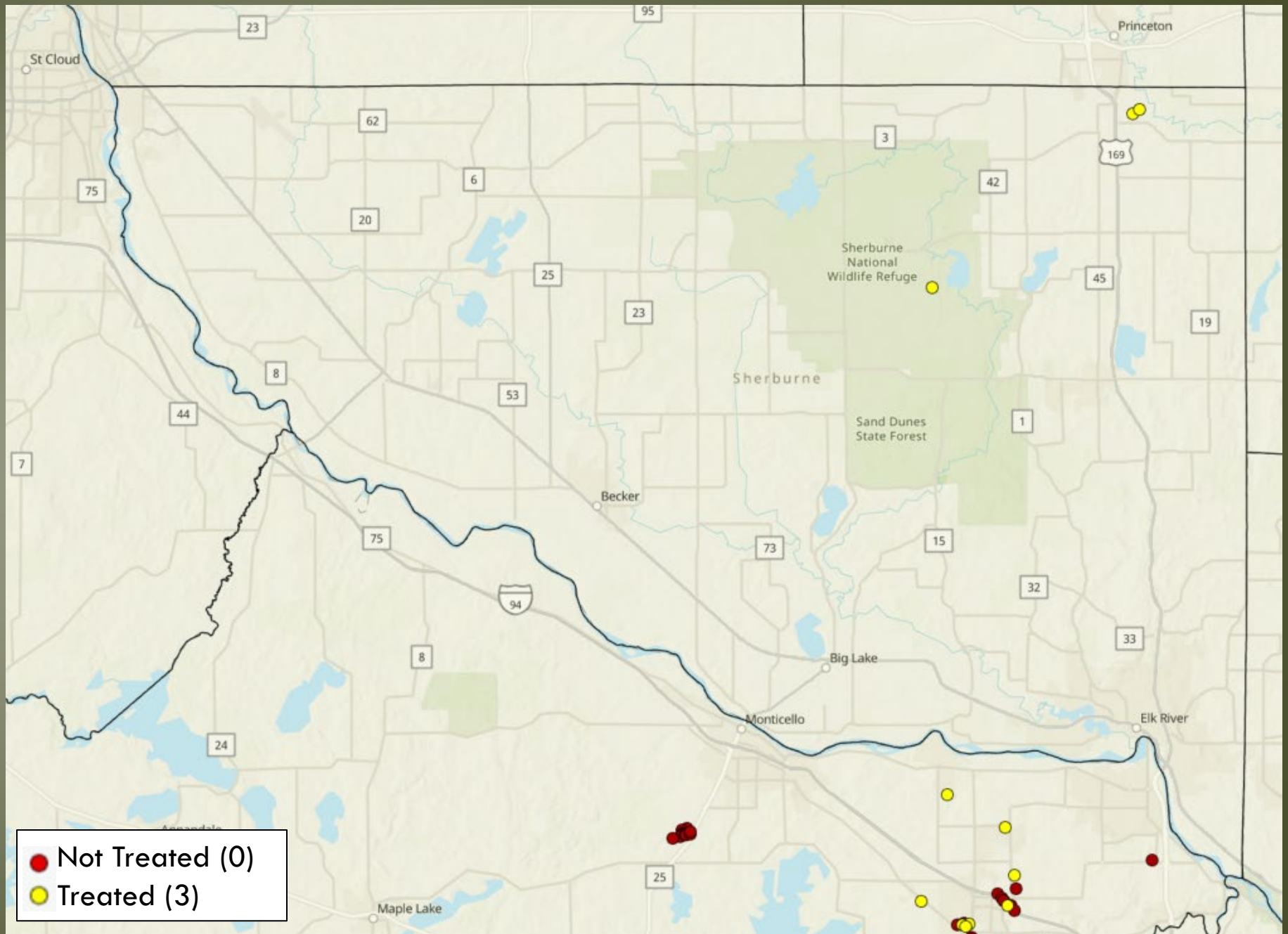
- Reduces plant community diversity – incl. potentially wild rice habitat
- Degrades wildlife habitat – nesting & breeding habitat
- Impacts transportation, stormwater, & agricultural infrastructure
- Impacts access to lakes, wetlands, rivers for recreational uses
- Reduce property values



# How Does Non-native *Phragmites* Spread?

- Rhizomes
- Stolons
- Stem Fragments
- Seeds



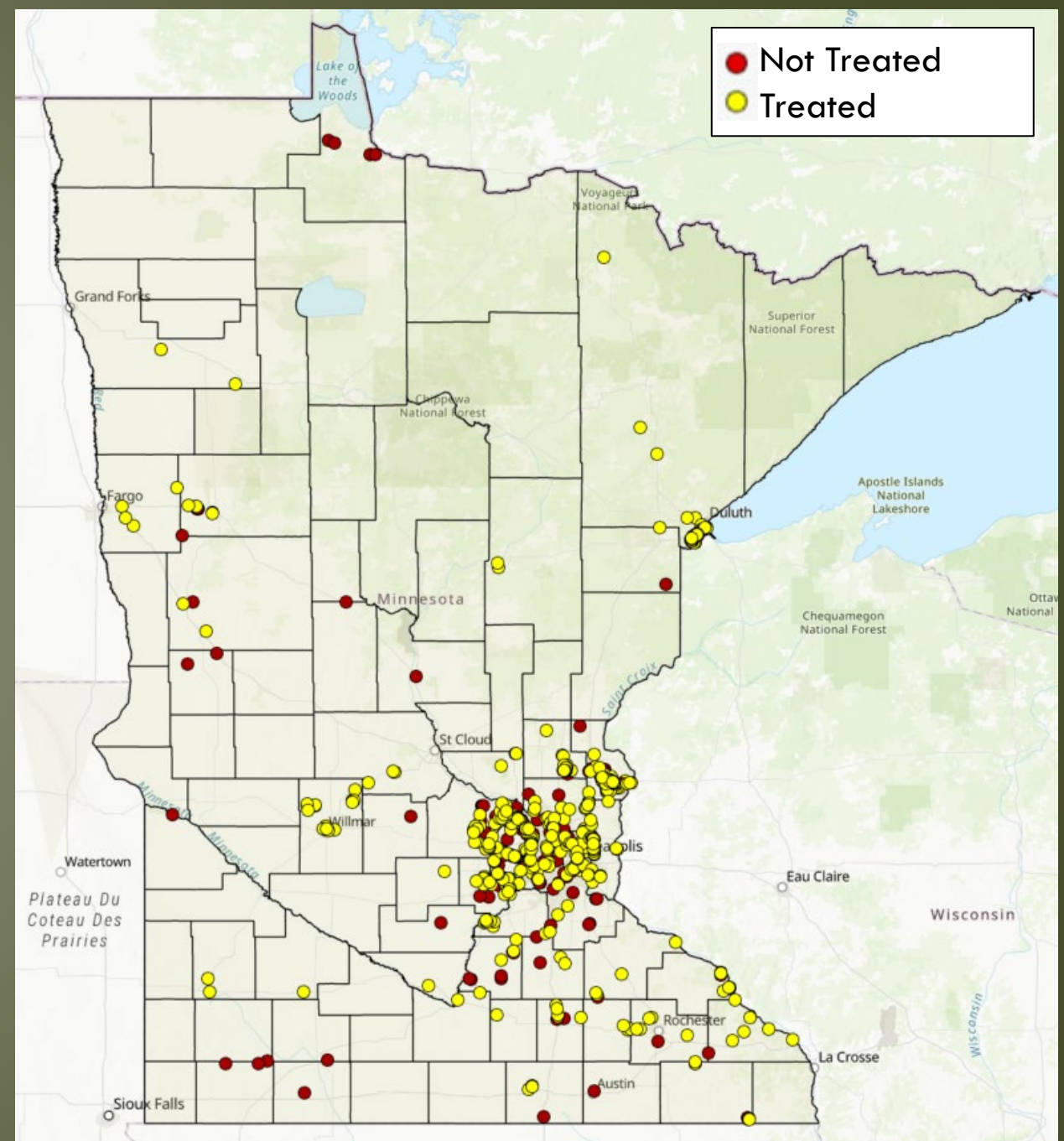


# Invasive Phragmites: Current Distribution in MN

975 documented populations  
(Sept 2019 - 435 verified populations)

- ~75% of populations were treated in 2021 or previously
- Some populations determined to be “eliminated”
- “Eliminated” populations will be monitored for 3-5 years

See a similar map at [www.mnphrag.org](http://www.mnphrag.org)





# Where is Invasive *Phragmites* Found in the Landscape?

Habitat	%
Roadside	37
Wetland	23
Lakeshore/River	22
Stormwater Pond	7
Developed/Industrial	6
Railroad Corridor/Roadside	3
Other	3
Total	100



Lakeshores



Stormwater  
Ponds

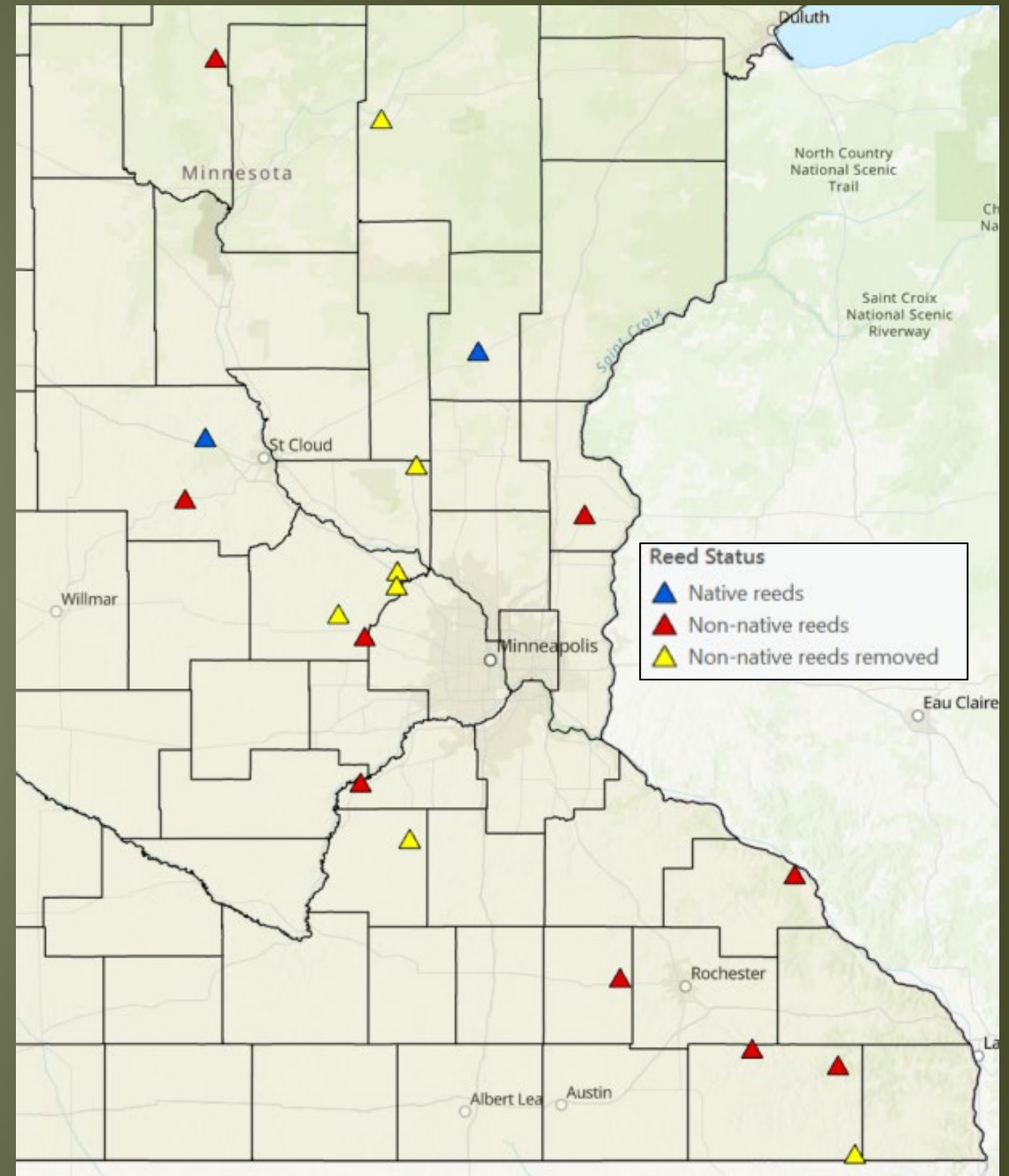
# Invasive Phragmites in WWTFs

## A Green Technology

### WWTF Reed Bed Status

- 2 operating with native *Phragmites*
- 8 killed/killing off invasive *Phragmites*
- 8 operating with invasive *Phragmites*
- Facilities that removed reeds will operate using reed beds as drying beds
- Facilities continuing to use invasive *Phragmites* - waiting for an alternative species before transitioning
- GLRI funds to treat reed beds

[www.mnphrag.org](http://www.mnphrag.org)



# Wastewater Treatment Facility Transition

- Assess cost-effective strategies for eliminating non-native *Phragmites* from reed beds
- Develop best practices for transitioning
- Operate as drying beds or use native wetland species



# Wastewater Treatment Facility Transition

- Screen robust native populations as reed bed alternative
  - ✓ stomatal density
  - ✓ transpiration rates



# Wastewater Treatment Facility Transition

- Methods for propagation/establishment of native reeds
- Experiment with other wetland species



# MDA Regulatory Status

2021 - A Prohibited  
Noxious Weed – Control List

Efforts must be made to prevent the spread, maturation, dispersal of any propagating parts, thereby reducing established populations & preventing reproduction and spread



# Report Invasive *Phragmites*

← Add a mapping

NEW  
European common reed  
*Phragmites australis* ssp. *australis*

Images

Observation Date  
04/19/2021

Private?

Location

Bloomington

44.488160, -93.266543

Time spent

5 10 15 30 45 60

SAVE

Document new populations with the EDDMapS Pro app

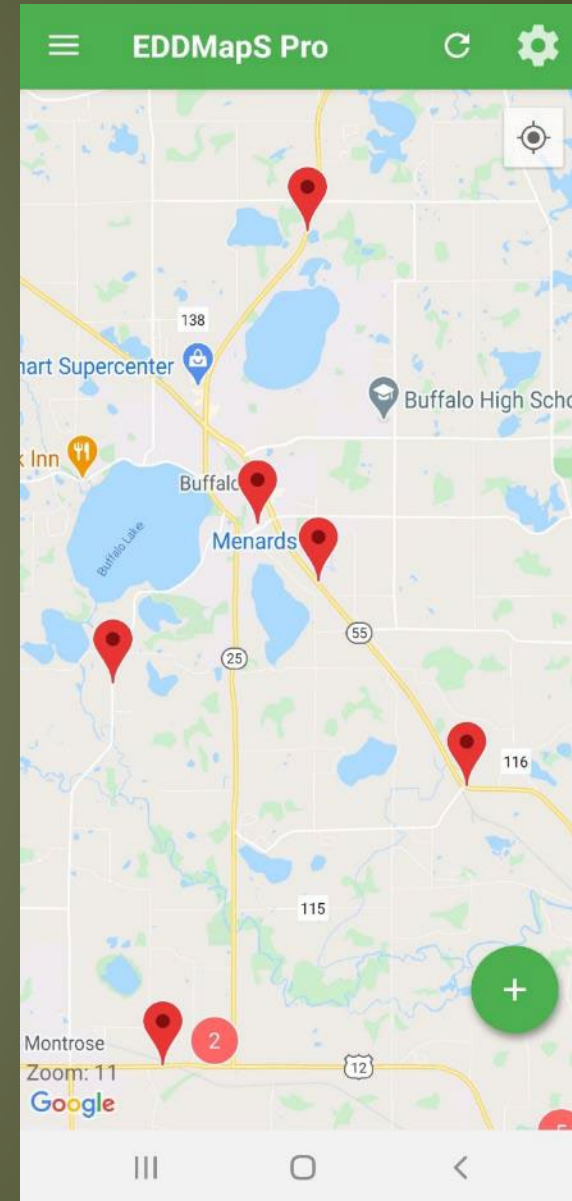
- coordinates
- images
- habitat
- size of population
- cover/density

ID questions: contact Julia at [bohne001@umn.edu](mailto:bohne001@umn.edu)

# EDDMapS Pro

Use the app to determine if a population has already been documented.

Must download the data set.





# Best Management Practices

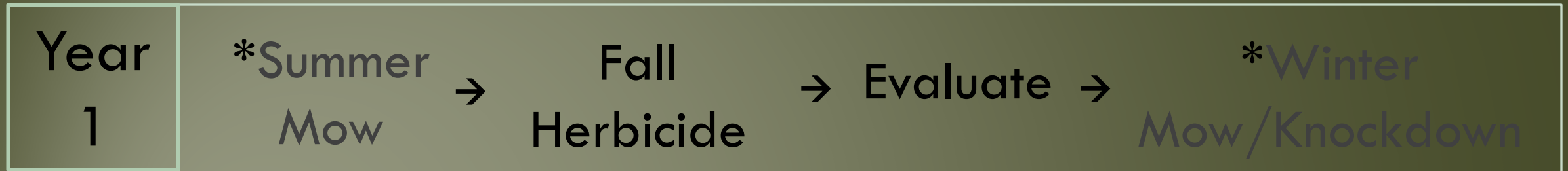
- Confirm ID
- Licensed applicators
- Prevent further spread
- Herbicide treatment
- Monitor/Evaluate
- Follow-up herbicide treatment
- Revegetation



*Phragmites* management guidance:

<https://www.maisrc.umn.edu/phrag-management>

# Management Recommendations



*\*Optional practice depending on stand age, size, & access*

Phragmites management guidance: <https://www.maisrc.umn.edu/phrag-management>

# Effective Herbicides

## Imazapyr (Habitat, etc.)

- non-selective
- higher cost
- high rate of translocation
- longer residual activity, more rhizome impact
- use with caution in high quality areas
- must wait before revegetation efforts

## Glyphosate (RoundUp Custom, etc.)

- non-selective
- aquatic approved non-ionic surfactant
- shorter persistence
- shows results faster
- can implement revegetation sooner



# Cryptic Invader - Which is the invasive *Phragmites*?



*Phragmites australis* subsp.  
*Americanus*  
(native genotype)



*Phragmites australis* subsp.  
*australis*  
(non-native European genotype)

# MNPhrag ID Guide

## Inflorescence

Native – sparse,  
strongly flagging

Invasive – dense,  
somewhat flagging  
to upright conical

\*A variable feature\*



**Native**



**Invasive**

# MNPhrag ID Guide

## Stems

### *Native* –

- chestnut red
- glossy & smooth

### *Invasive* –

- dull green
- ridged like corduroy



Native



Invasive

ID Guide: <https://www.maisrc.umn.edu/identifying-phragmites>

# MNPhrag ID Guide

## Leaf Sheath

### *Native* –

- loose, gaps away from stem
- most do not overlap
- fall off in winter - naked

### *Invasive* –

- tight, adhere closely to stem
- overlap, hiding the stem
- remain intact in winter

## Leaf Sheaths on Current Year's Stems



Native

Invasive

# MNPhrag ID Guide

## Ligule

### *Native* –

- smudgy, red-brown/graphite-colored tissue
- ragged flap with fringe of short hairs on edge
- shallow crescent-shaped
- > 1 mm tall

### *Invasive* –

- thin discrete brown/graphite-colored line
- fringe of short hairs
- often inverted U or V-shaped
- < 1 mm tall

Ligule

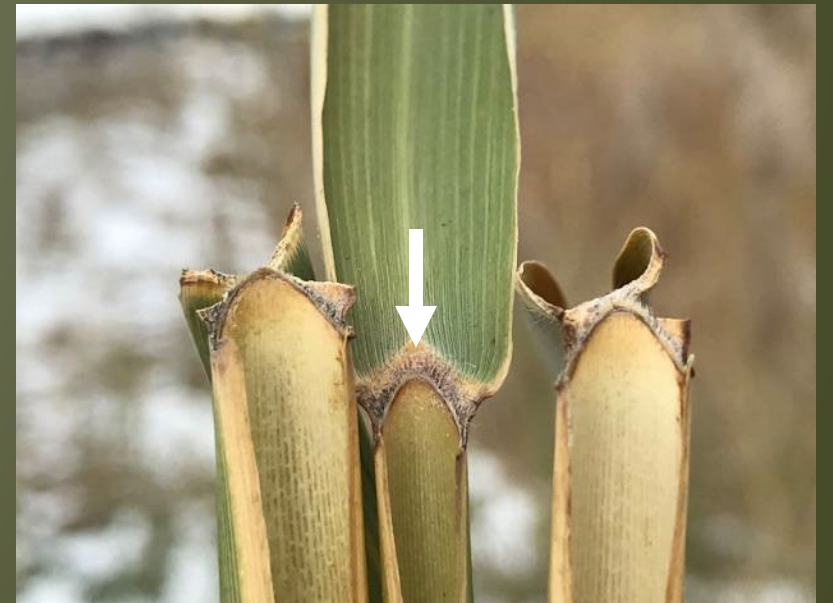




# How to find the ligule

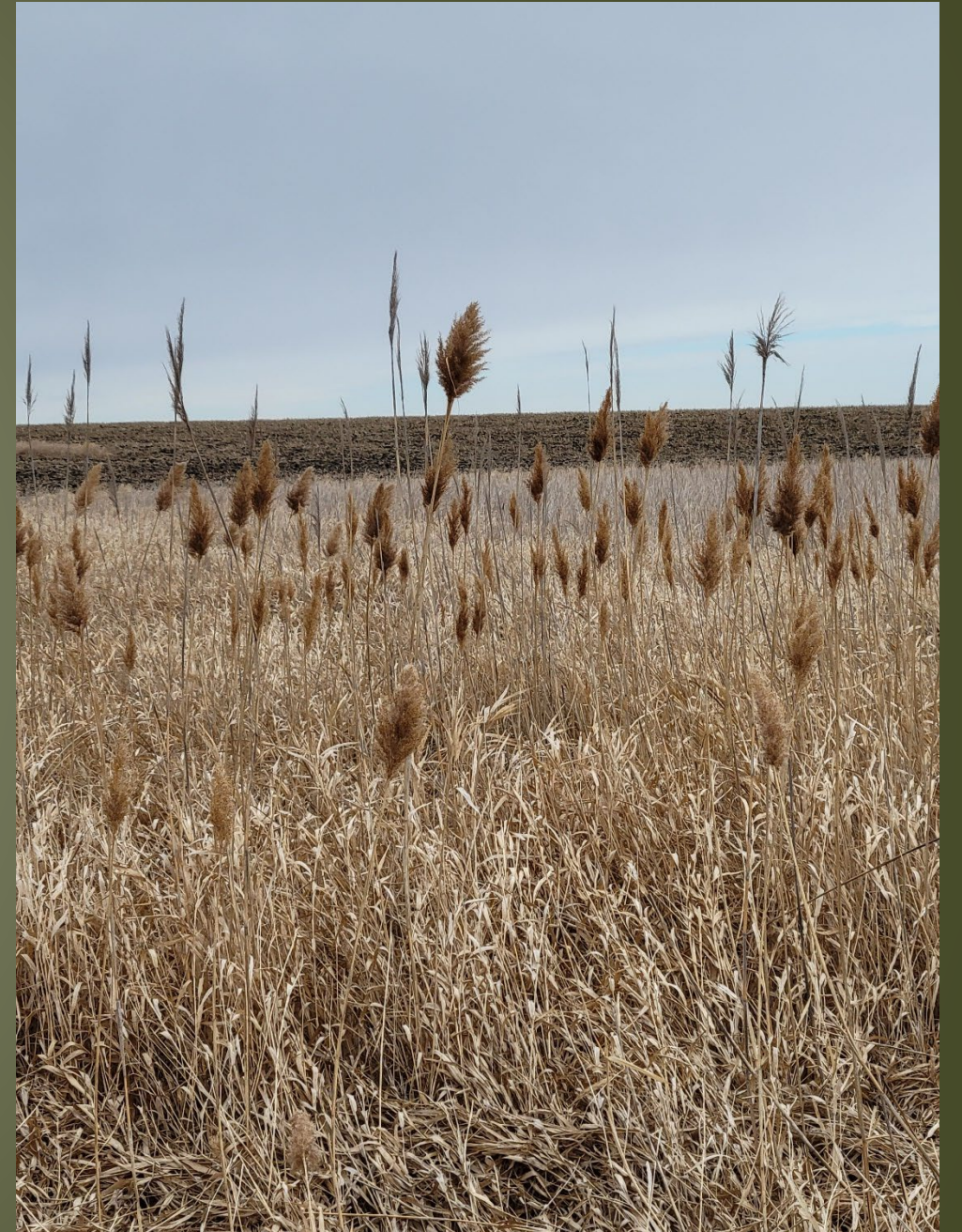


Submit a photo like this:



# How You Can Help

- Conduct surveillance
- Report new populations
- Prevent further spread
- Herbicide treatments
- Monitor/Evaluate
- Revegetation



# Questions?

*Contact us:*

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*More information at: [www.mnphrag.org](http://www.mnphrag.org)*



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