MNPhrag

Help Document Invasive Phragmites in Minnesota

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What is Non-native *Phragmites*?

Cryptic Invader

Which is the invasive *Phragmites?*

Phragmites australis subsp. americanus

Phragmites australis subsp. australis i.e., non-native European genotype of Phragmites australis

What are the Impacts of Invasive Phragmites?

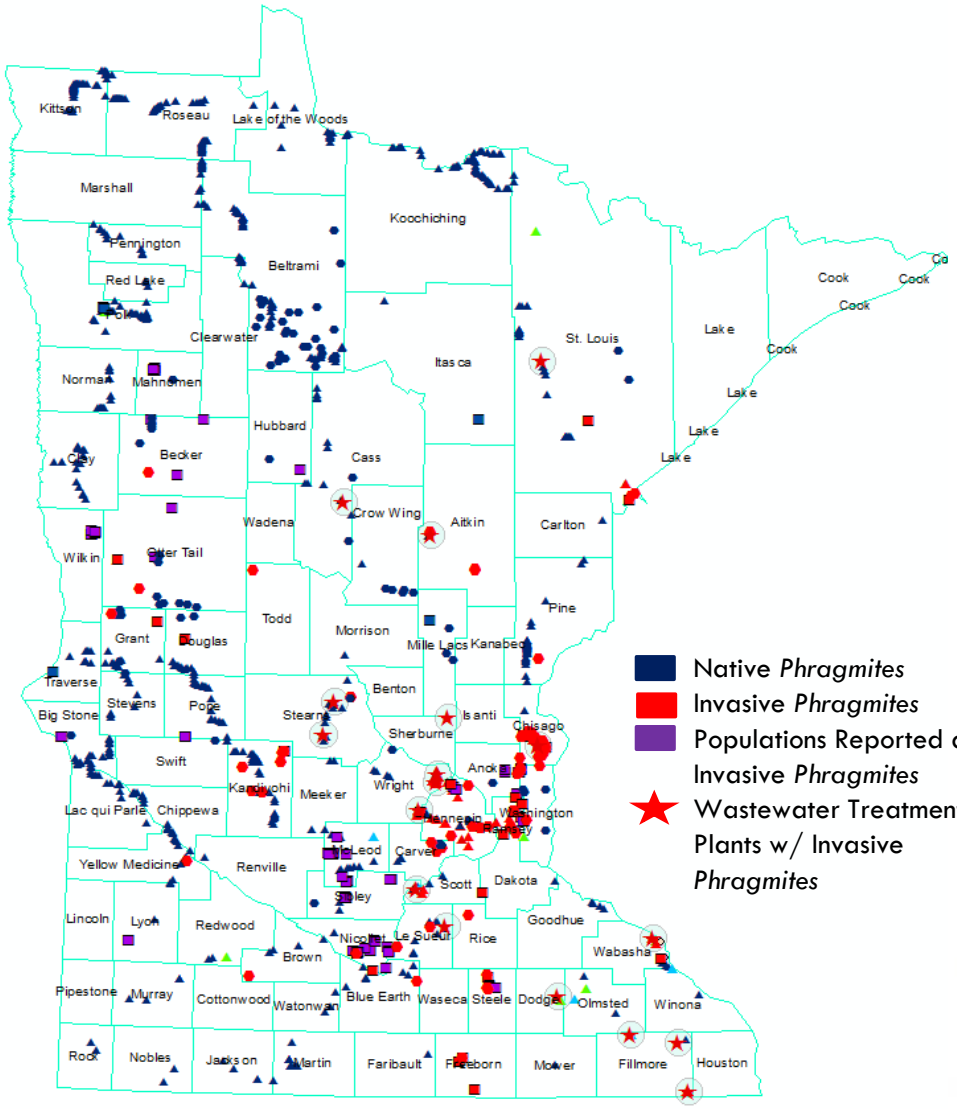
Reduce biodiversity
Degrade habitat for wildlife
Impact agricultural and transportation infrastructure
Impact recreational access to lakes, wetlands, rivers
Reduce property values

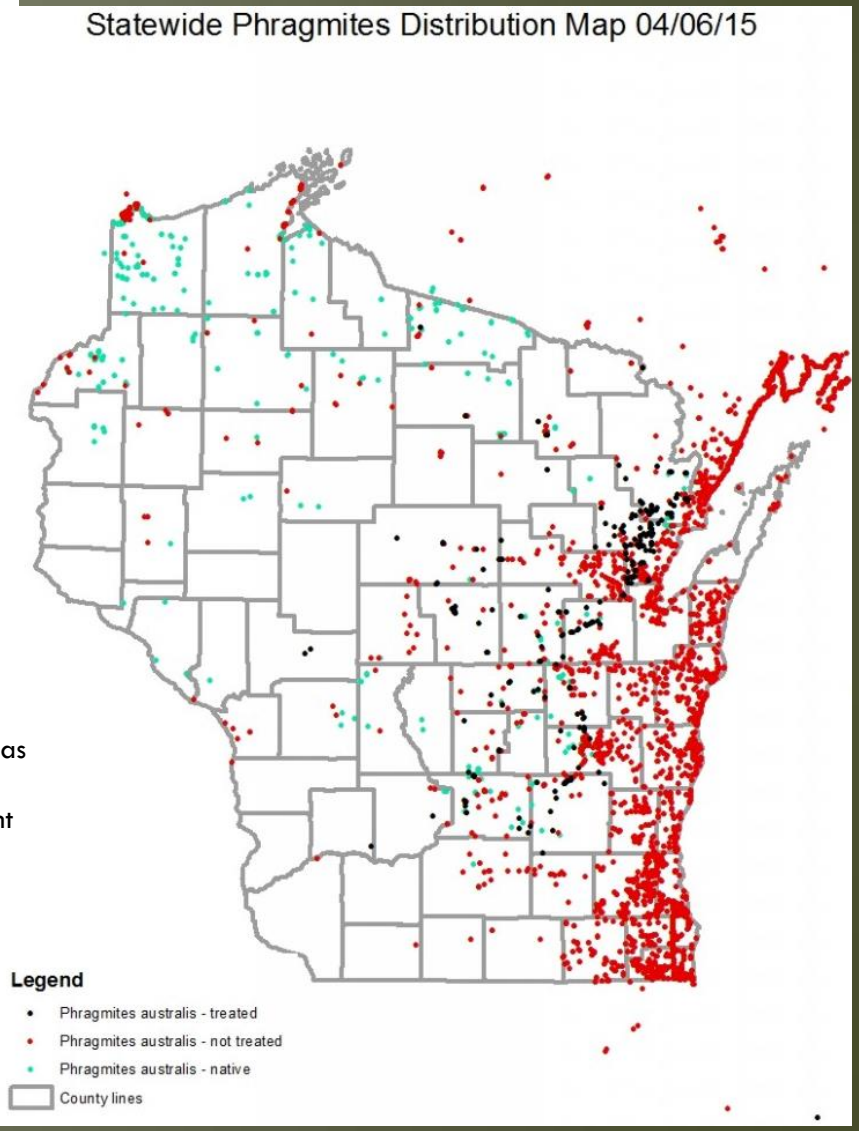
What Makes Non-native *Phragmites* Invasive?

2017-2019 Phragmites Research Project

- Document populations of invasive *Phragmites*
- Determine genetic diversity within populations
- Seed viability and seed germination assessment study
- Begin to facilitate a coordinated response to slow (reverse) spread

Where is it now?





Where is Invasive *Phragmites* Found in the Landscape

Habitat	INV	%
Roadside	65	35
Wetland	45	24
Lakeshore	26	14
Stormwater Pond	10	5
River/Streambank	5	3
Combination	25	13
Other	8	4
No Response	4	2
Total	188	


North Center Lake, Chisago County


Highway/Railroad Corridors


Minnesota River, Sibley County

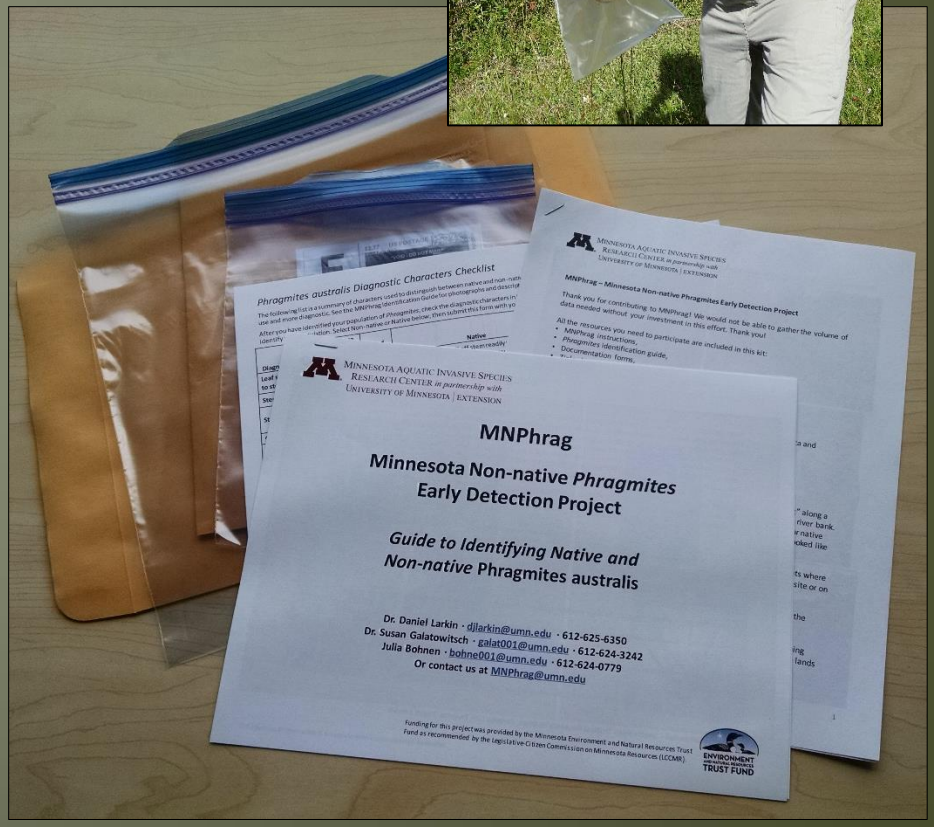
How Big is the Problem?

Area (sq ft)	#	%
≤1800	89	47
1801-7200	20	10
7201-43559	7	4
≥43560	13	7
No Response	62	32
Total	191	

For reference, a volleyball court is 1,800 sq ft

How Can I Help?

MNPhrag –
Early Detection Effort

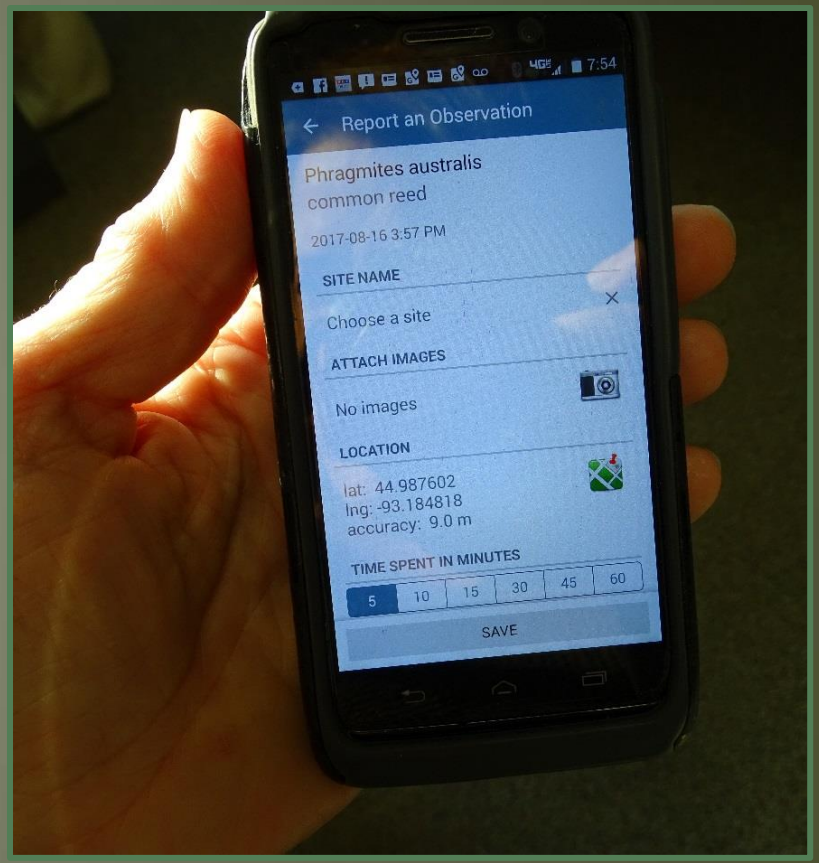


Observer Steps –

- Spot suspicious overly tall grass in your travels
- Use MNPhrag ID guide to determine if it is invasive *Phragmites*
- Report invasive *Phragmites* in EDDMapS
- Collect and submit voucher to the UofM for morphological ID

MNPhrag Results 2017 –

- Kits requested by 157 individuals
- 64 observers submitted 305 reports/vouchers
- 182 unique reports of invasive *Phragmites*



Quiz – What are Three Ways Invasive Phragmites can Spread in the Landscape?

Seed

Rhizomes

Stolons

MNPhrag Identification Guide

What to look for to ID invasive Phragmites

- Its height and fluffy seed heads will stand out

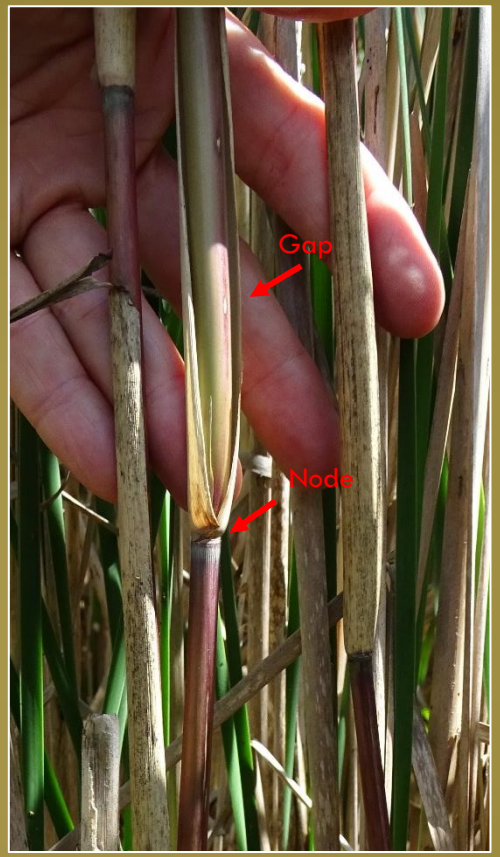
Inflorescences

Native
Emerging inflorescences are green to purplish-green; may be more sparse compared to the invasive form; persist through winter at lower density.

Non-native
Emerging inflorescences are green to purplish-green; may be more dense compared to the native form persist through winter at higher density.

Leaf Sheaths

Leaf Sheaths on Current Year's Stems



Native
Sheaths loosely attached and gap away from the stem; some may be open down to their attachment at the node.

Non-native
Sheaths closely attached to the stem with no gaps.

Stem Color and Stem Texture

Native
Stem glossy and feels smooth to the touch; typically chestnut-red in lower part of plant.

Non-native
Stem feels rough due to ridges in the stem; typically green, but may be red on the lower stem.

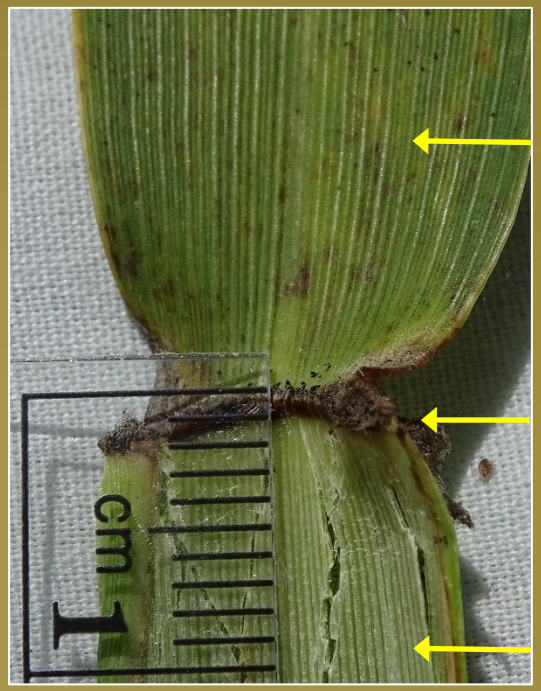
Note: For color and texture, be sure to assess the stem and not the sheath which covers the stem.

Winter Stem Texture

Native
Sheaths loosely attached; most readily fall off stem when leaf blades die, leaving smooth bare stems the following season.
"Naked = Native"

Non-native
Sheaths closely attached; more likely to persist on stems the following season.

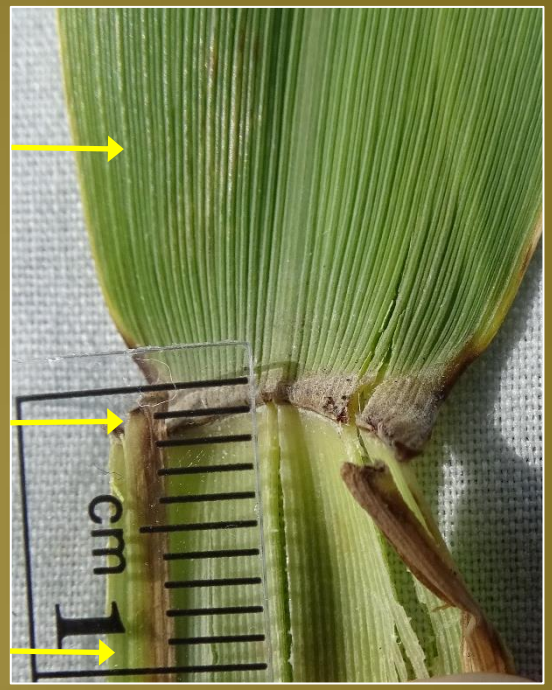
Ligule



Leaf Blade

Ligule

Sheath



Native
Thick smudgy line
>1 mm (1.0-1.7 mm)

Non-native
Thin, discrete brown line
<1 mm (0.4-0.9 mm)

To find the ligule, hold the leaf blade in one hand and the culm in the other, pull the leaf blade away from the culm to expose the ligule. Measure the height of the ligule as indicated by the red marker. Include the membranous tissue and the short, stiff fringe of hairs in the measurement. Do not include any longer thread-like hairs. A hand lens is helpful to determine the area to measure.

Helpful Hint: The ligule in the native type is described as a thick smudged line as if drawn with a lead pencil, while the ligule in the non-native type is described as a discrete thin brown line as if drawn by a fine point marker.

Quiz – Native or Invasive?

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Thank You!

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ENVIRONMENT AND NATURAL RESOURCES TRUST FUND

Questions?

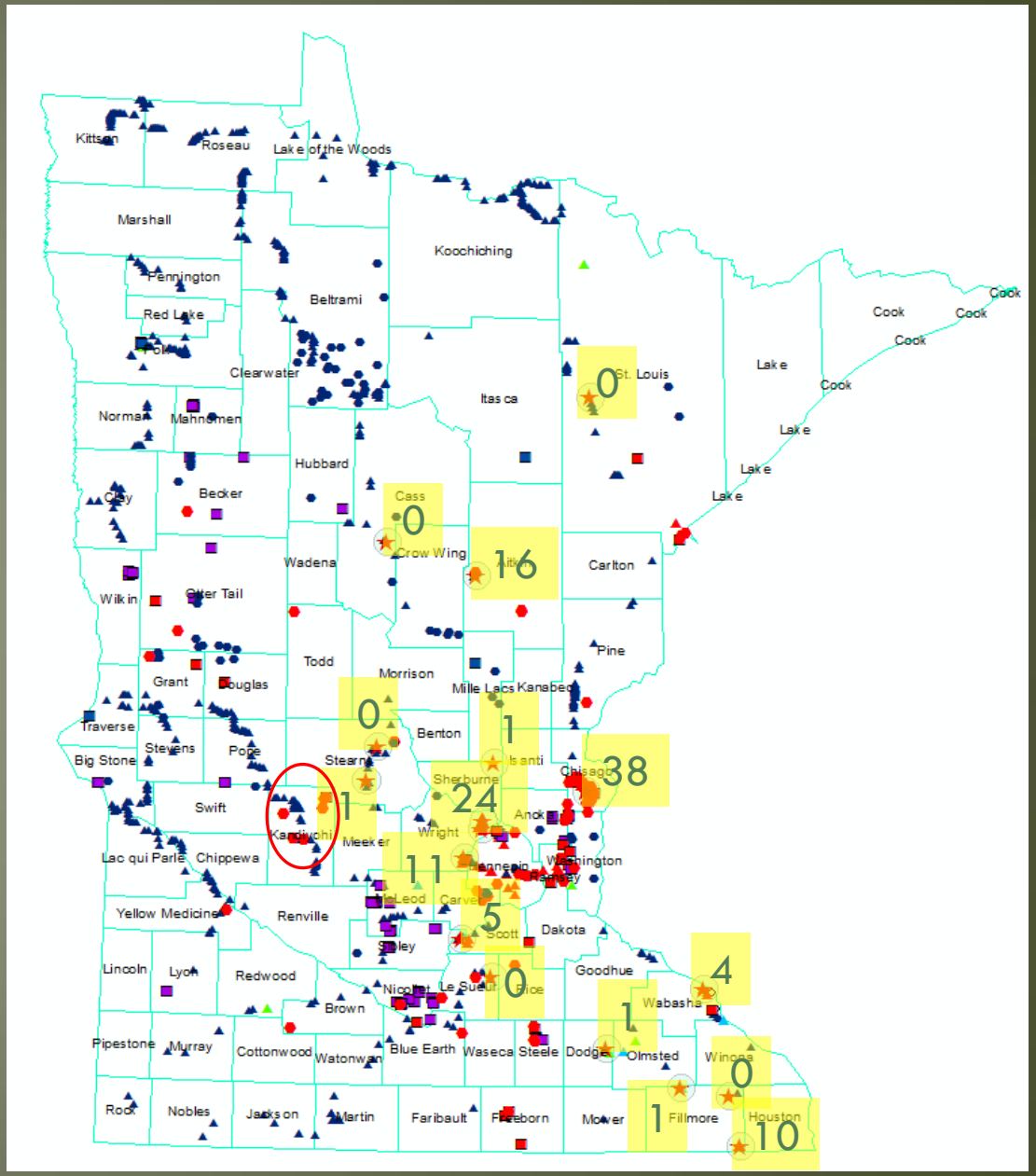
Role of Wastewater Treatment Plants

17 Wastewater Treatment Plants are permitted to use invasive *Phragmites* as a part of their dewatering systems.

Wastewater Treatment Plants as a source of invasive *Phragmites* spread.

Number of populations within 5 miles of each wastewater treatment plant.

And an introduction in a wetland revegetation project in Kandiyohi County.



Reproductive Potential

What we know:

- More genetic diversity = increased likelihood of viable seed development
- Viable seed does develop in at least the southern 2/3rds of MN