Non-Native Phragmites

By Kevin Ousdigian May 6, 2014

Credits to: Keegan Lund (MN DNR), Stacy Schumacher (WI DNR), Heather Braun (GLPC)

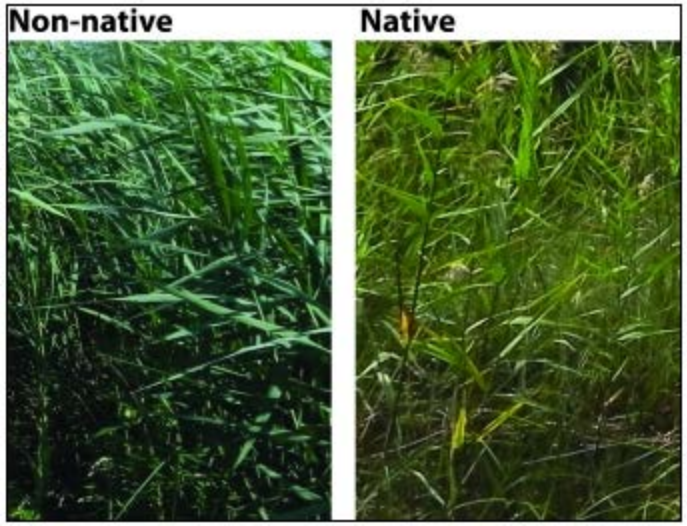
Photo 2: Dense, monotypic Phragmites stand. Plant height was measured on select plants was over 10 feet in length. Photo - Keegan Lund, MNDNR.

Summary of Non-Native Phragmites

1. **Negatively** impacts the ecosystem, wildlife, and recreational use
2. **Spreads** via intense rhizomes (roots), stolens, or seeds
3. Europe → US east coast, issue in MI & WI, now **on Turtle Lake**
4. **Challenging to differentiate** from native phragmites for novice
5. Control programs
   - Any control requires a **permit** from MN DNR
   - **Herbicide** treatment is recommended as primary control method
   - Herbicides can result in **significant reduction if treated earlier**
6. Options for control on Turtle Lake will be discussed at end

Native Phragmites

- Native Phragmites exists and is a valuable wetland plant
- Much less dense
- Allows other plants to co-exist
- Many detailed characteristics used to distinguish from non-native but look similar to the novice, especially during summer.

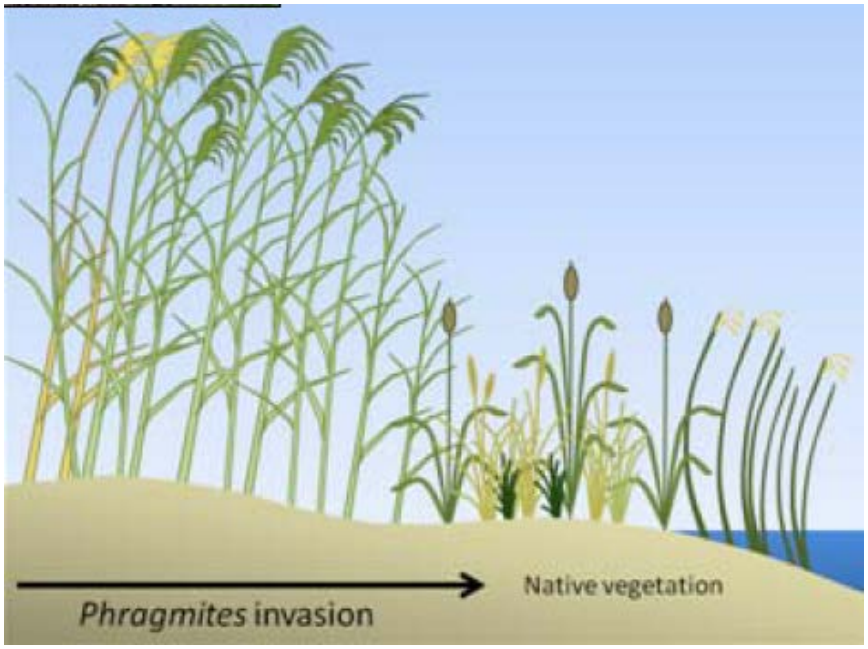


Names:

- Native: Phragmites Australis, subsp Americanus
- Non-Native: Phragmites Australis, subsp Australis
  aka: common reed, Giant reed

Why is Non-native Phragmites a Problem?

- Decreases quality of wetland habitat
- Decreases native plant biodiversity

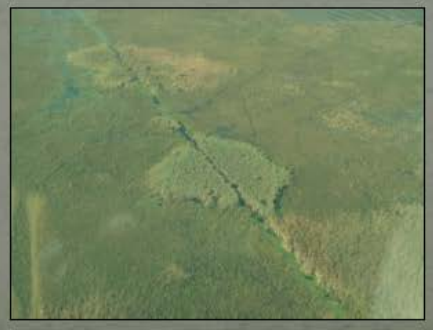


- Reduces beach and shoreline use
- Alters the structure and function of marsh systems by changing species composition, nutrient cycles and hydrological regimes.

Slide adapted from Stacy Schumacher, WI DNR
Wetland Invasive Species Program

Impacts on people and ecosystems

- Ecosystems
  - Biodiversity
  - Wildlife habitat
  - Nutrient dynamics
  - Hydrology
- People
  - Impedes recreation
  - Aesthetics
  - Fire

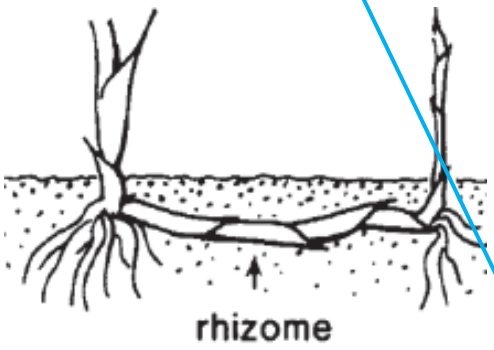


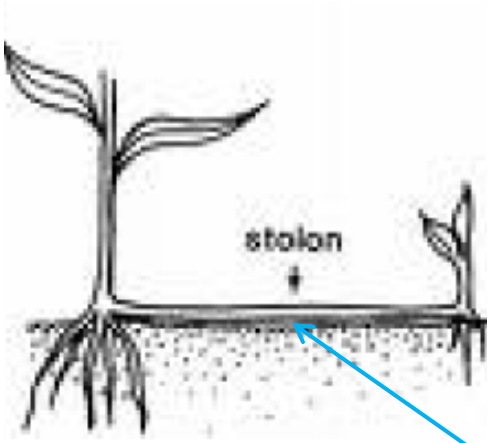
Slide from Heather Braun,
Great Lakes Phragmites Commission

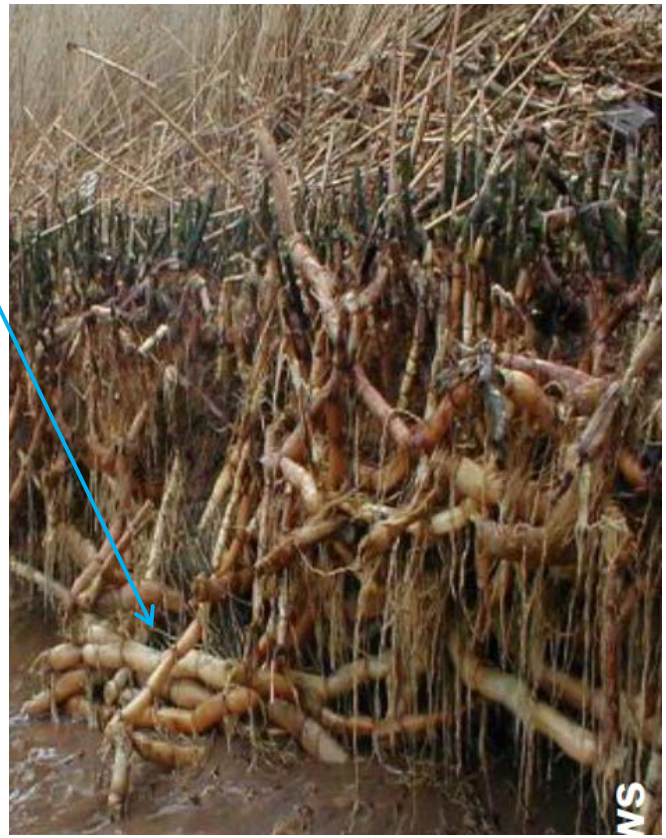
How is Non-Native Phragmites Spread?

Rhizomes and stolons

Seeds



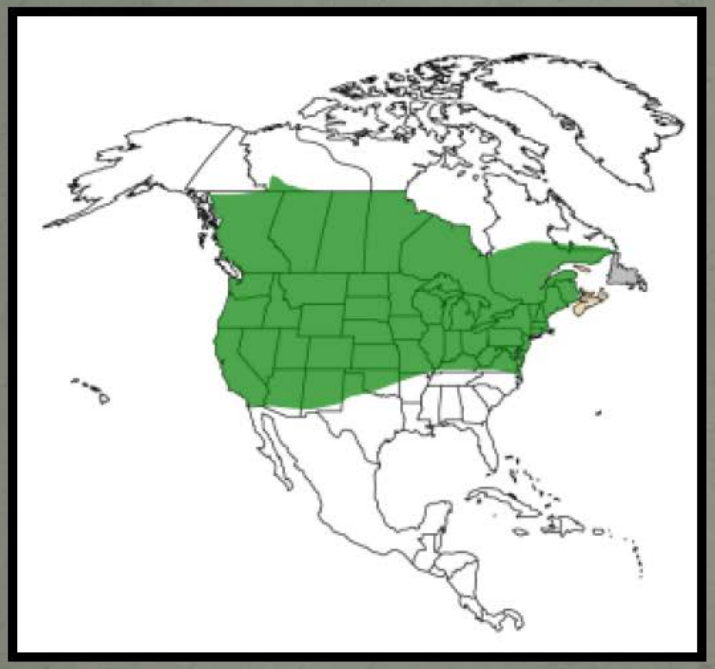




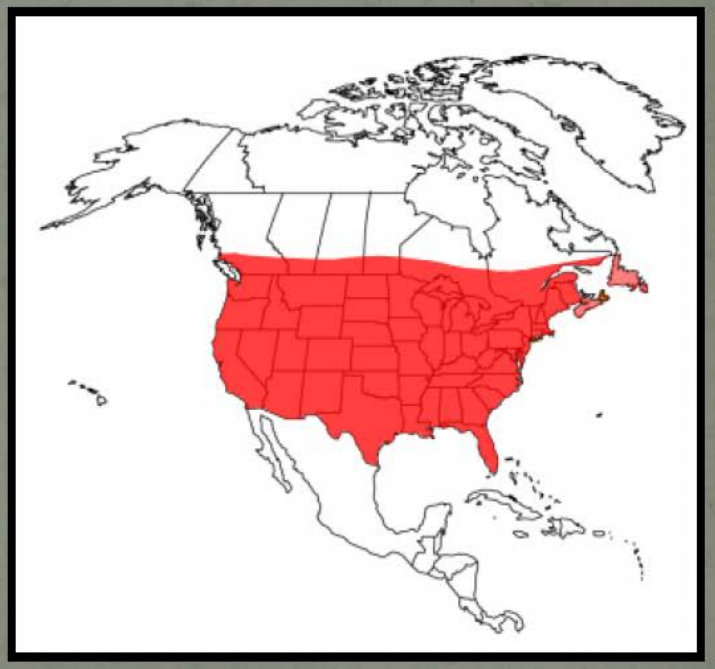
In low water conditions, phragmites can also expand via horizontal above-ground stems, called stolons or “runners.”

North American Distribution

Native



Invasive



Images from Saltonstall et al 2004

Slide from Heather Braun,
Great Lakes Phragmites Commission

Non-Native Phragmites in Michigan

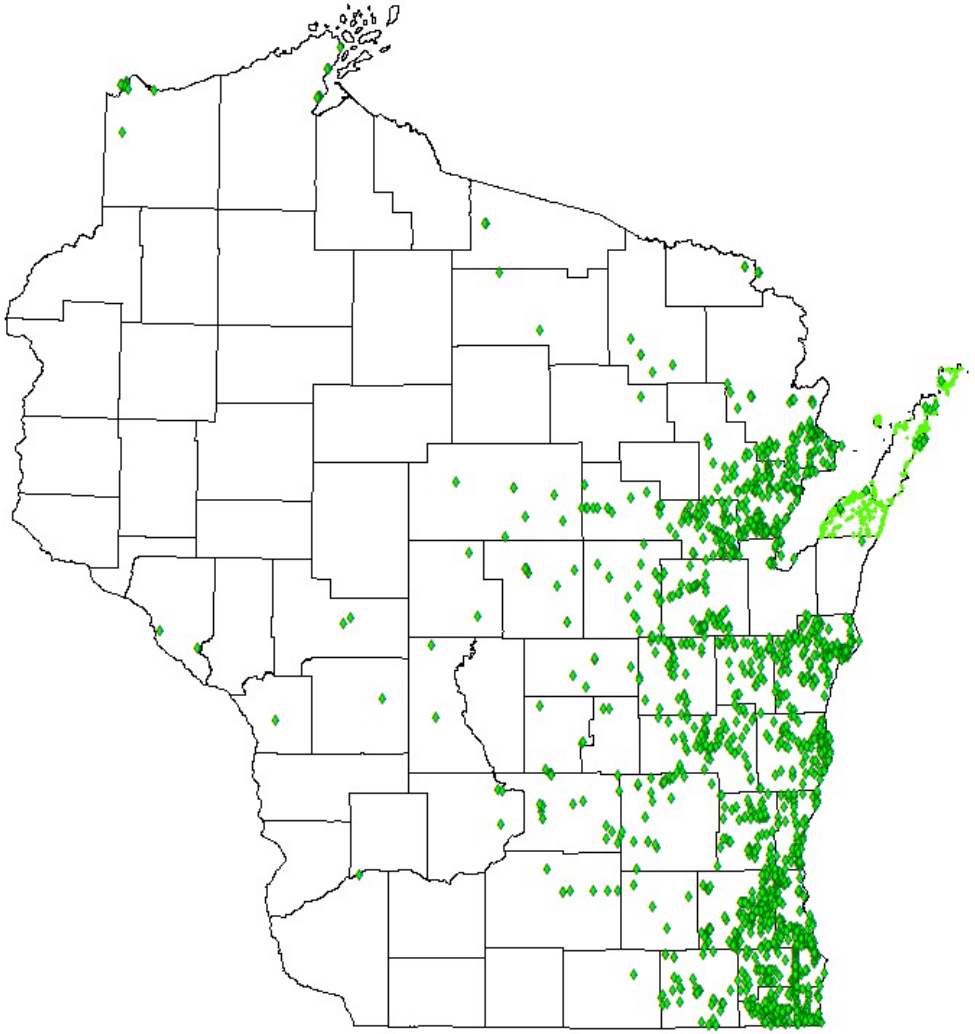
Map of invasive *Phragmites* infestations found during 2008-09 surveys.

Recently, non-native phragmites has been spreading into high quality coastal wetlands. It is a particular scourge in southern Michigan, where it now dominates coastal marshes and wet prairie in Saginaw Bay and the St. Clair Delta.

Efforts are underway to map and treat the invasive non-native phragmites in northern Michigan, to slow further spread. Michigan's coastlines are home to numerous globally rare and vulnerable species and diverse natural communities, and non-native phragmites poses an enormous threat to their survival.

Non-Native Phragmites in Wisconsin

- Treating 3600 acres along 118 miles of Lake Michigan
- Spent over $1.2 million dollars



Non-Native Phragmites in MN

Keegan Lund, MN DNR Report December 16, 2013

- “The plant has been observed in isolated wetlands across the Minneapolis/St. Paul metro area but has not been documented along the shores of many Minnesota lakes.”

www.dnr.state.mn.us/invasives/aquaticplants/phragmites/index.html

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- Invasive aquatic animals
- Invasive aquatic plants
- Invasive terrestrial animals
- Invasive terrestrial plants
- Fish diseases

Invasive aquatic plants

- Main page
- Curly-leaf pondweed
- Brazilian elodea
- Brittle naiad
- Eurasian watermilfoil
- Flowering rush
- Purple loosestrife
- Reed canary grass
- Yellow iris

Invasive aquatic plants

- MNDNR Designation of Infested Waters list PDF
- Early detection of aquatic invasive plants
- Aquatic invasive plant management
- Minnesota Invasive Non-native Terrestrial Plants - an identification guide available for purchase from Minnesota's Bookstore


Brazilian elodea


Brittle naiad


Curly-leaf pondweed


Eurasian watermilfoil


Flowering rush


Non-native phragmites


Non-native waterlilies


Purple loosestrife


Reed canary grass


Yellow iris

www.dnr.state.mn.us/invasives/aquaticplants/phragmites/index.html

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Non-native subspecies of Phragmites (Common Reed) (*Phragmites australis* subsp. *australis*)

Non-native Phragmites subspecies on the left, native Phragmites subspecies on the right. Photo by Mary Meyer, U of MN.

Stand of non-native Phragmites. Photo by S. Kelly Kearns.

Description:

Appearance: *Phragmites australis* subsp. *australis* is a non-native subspecies of common reed. The native common reed is *Phragmites australis* subsp. *americanus*. Both subspecies are perennial wetland grasses and both are present in Minnesota. The invasive subspecies can grow over 12 feet high in dense stands.

Leaf blades: Stems of native subspecies are smooth, stems of invasive subspecies are ribbed. Leaf sheath of the native is easy to remove or falls off; invasive is difficult to remove.

Flowers: Flower head of native species is sparse, flower head of invasive subspecies is dense.

Roots: Deep and dense network of roots and rhizomes.

For help distinguishing native vs invasive Phragmites see: **Mistaken Identity - Invasive Plants and their Native Look-Alikes** PDF or **Cornell University**.

Ecological Threat:

- Invades lake shores, wetlands, rivers, and roadsides.
- Mixed wetland communities are replaced by near monocultures of invasive Phragmites/common reed causing changes in ecosystem processes (hydrology, nutrient cycles) and negative impacts on native plants and wildlife.
- The non-native subspecies of common reed is a MDA **Restricted Noxious Weed** in Minnesota. Importation, transportation, and sale of the non-native subspecies of common reed is prohibited.

www.dnr.state.mn.us/invasives/aquaticplants/phragmites/index.html

Minnesota Department of Natural Resources

Permits for Management of Invasive Aquatic Plants

Table 1. Estimated numbers of Invasive Aquatic Plant Management (IAPM) permits issued in 2012 to allow control of various species.

Species	Estimated Number of Permits
Curly-leaf pondweed	110
Eurasian watermilfoil	70
Curly-leaf pondweed and Eurasian watermilfoil	20
Flowering rush	6
Purple loosestrife	2

No Treatment Permits by MN DNR for Non-native Phragmites

Non-native Phragmites on Turtle Lake

* ONLY east central side surveyed Dec 2, 2013

Complete study pending.

Photo from Keegan Lund, MN DNR Report December 16, 2013,

Non-native Phragmites on Turtle Lake

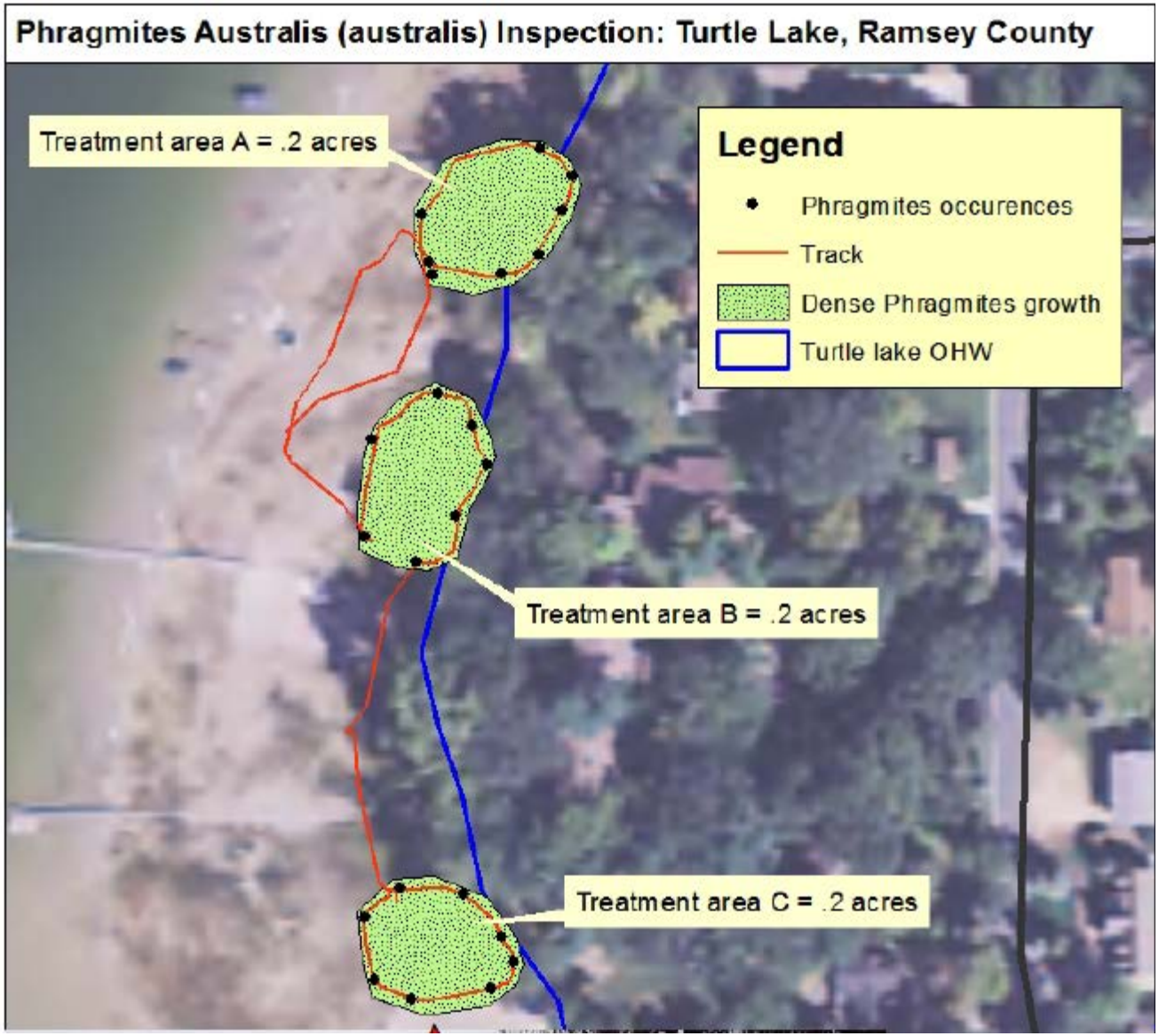


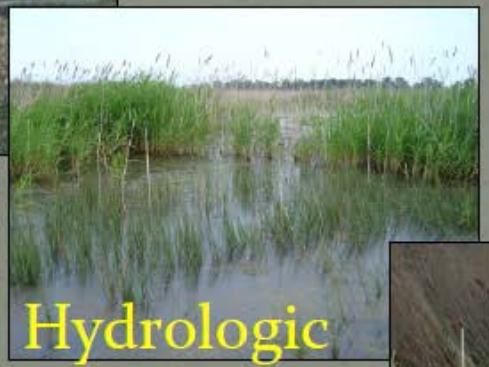
Photo from Keegan Lund,
MN DNR Report
December 16, 2013,

Non-native Phragmites on Turtle Lake

Photo 5 & 6: Comparison of May 2010 photo (upper) versus Dec. 2013 photo (lower). Non-native phragmites does appear to be spreading and was documented at low distribution near the water's edge. Photo - Keegan Lund & Sean Sisler, MNDNR.

MN DNR Report
December 16, 2013,

Current management strategies



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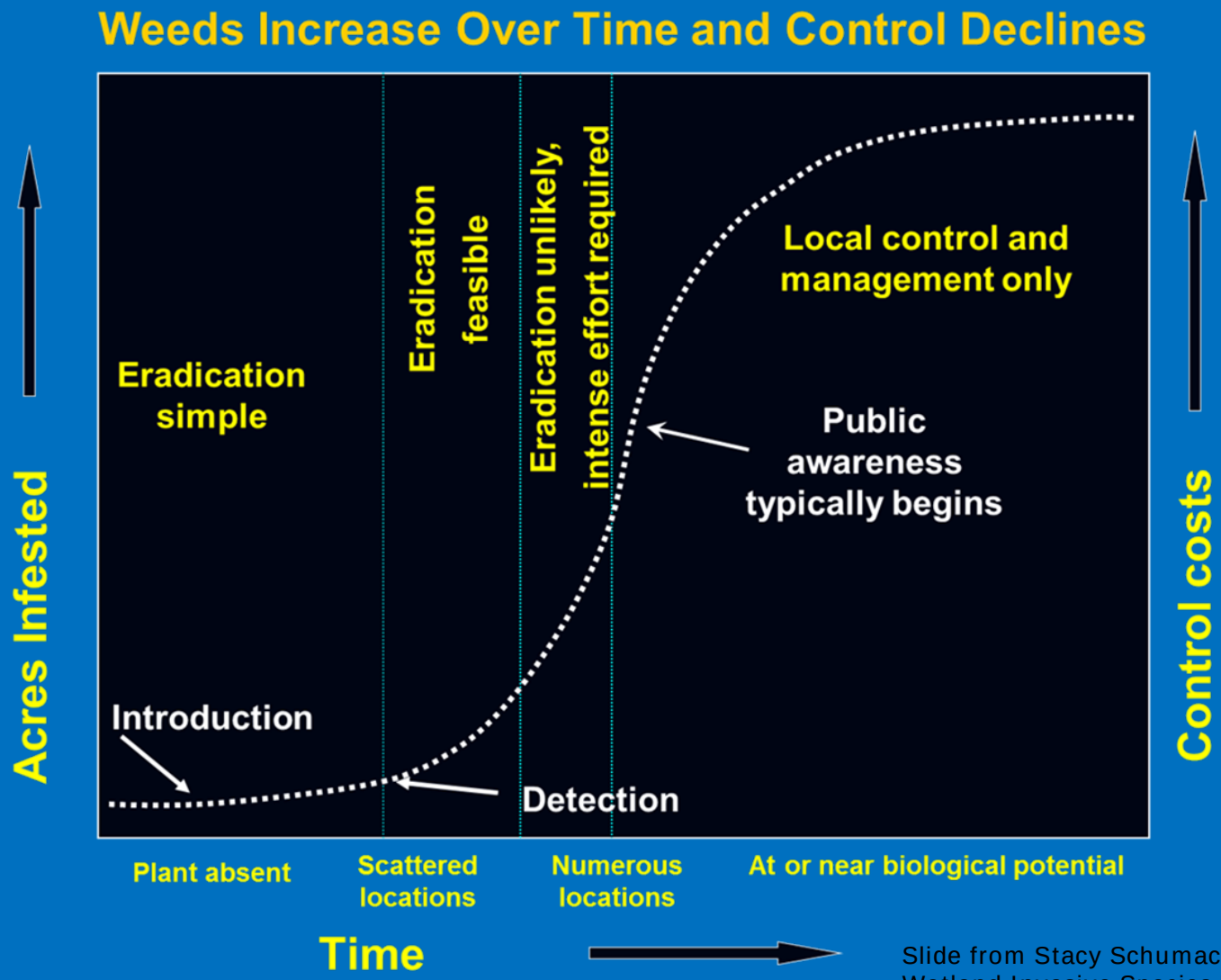
Great Lakes Phragmites Commission

Typical expansion



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Options for TLHA to address Non-Native Phragmites

A) Do nothing

B) Encourage homeowners with non-native Phragmites to control it with appropriate DNR permits.

C) TLHA work with MN DNR: fund a licensed applicator to treat non-native Phragmites in all areas identified by MN DNR on Turtle Lake.

- Systematic and targeted application
- Optimal herbicide