

Early Detection, Response, Monitoring, and Surveying of Invasive Species



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Definitions

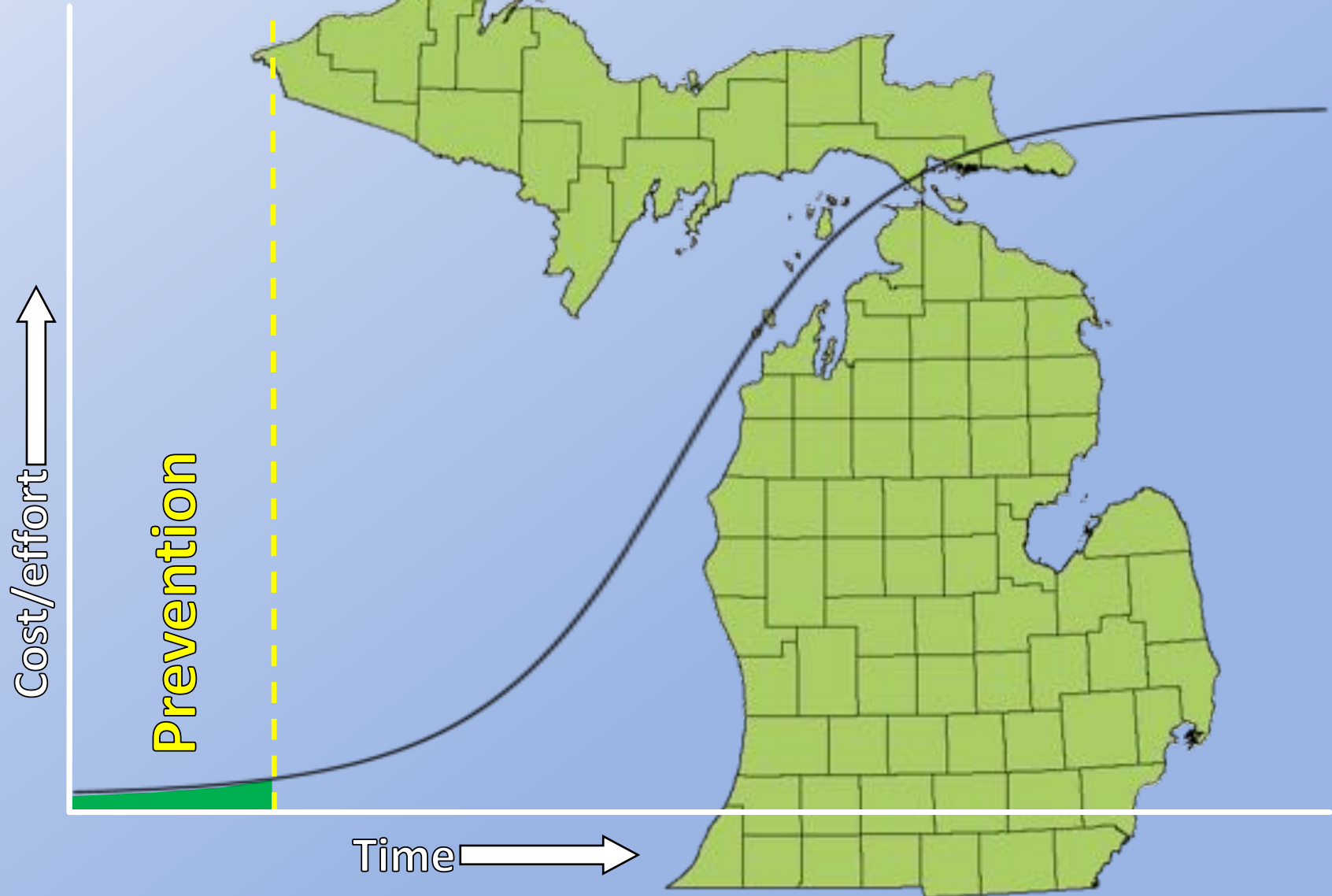
INVASIVE SPECIES

A species that is not native and whose introduction causes, or is likely to cause, economic or environmental harm or harm to human health

WATCH LIST SPECIES

Species identified as an immediate and significant threat to MI. It is either not confirmed in the wild in MI or has limited known distribution

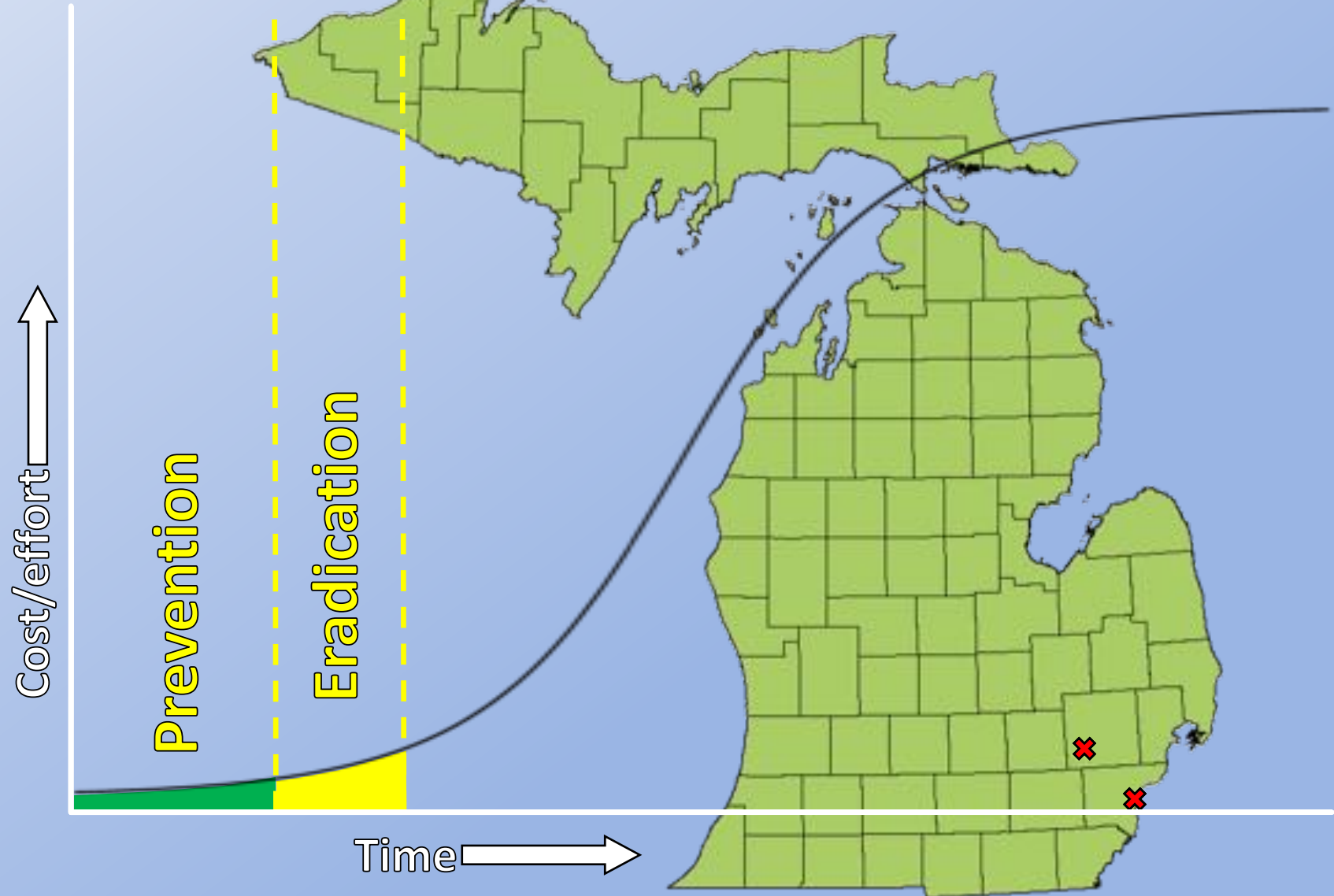
Invasion Curve



Invasion Curve



Invasion Curve



Invasion Curve

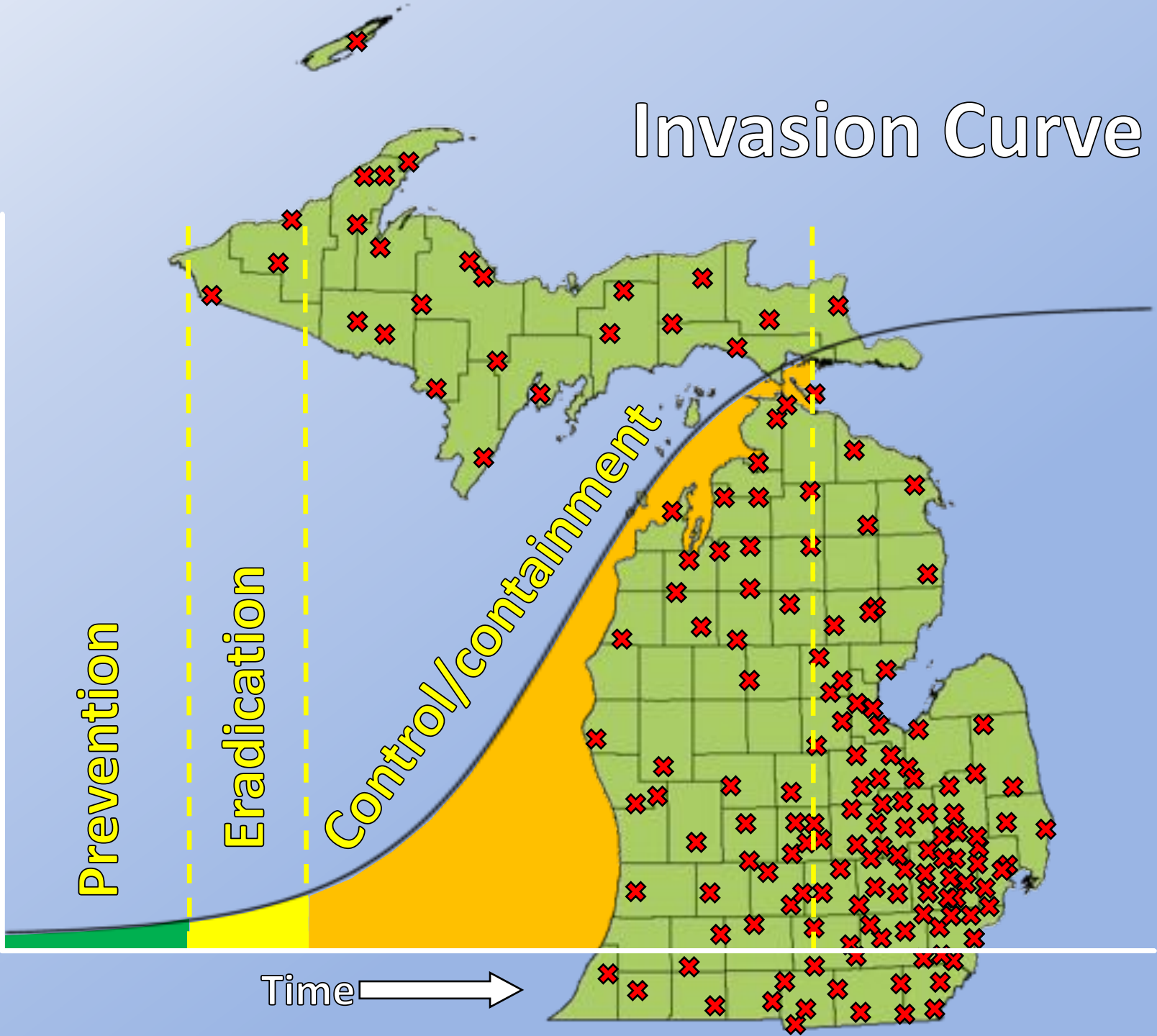
Cost/effort 

Prevention

Eradication

Control/containment

Time 



Invasion Curve

Cost/effort 

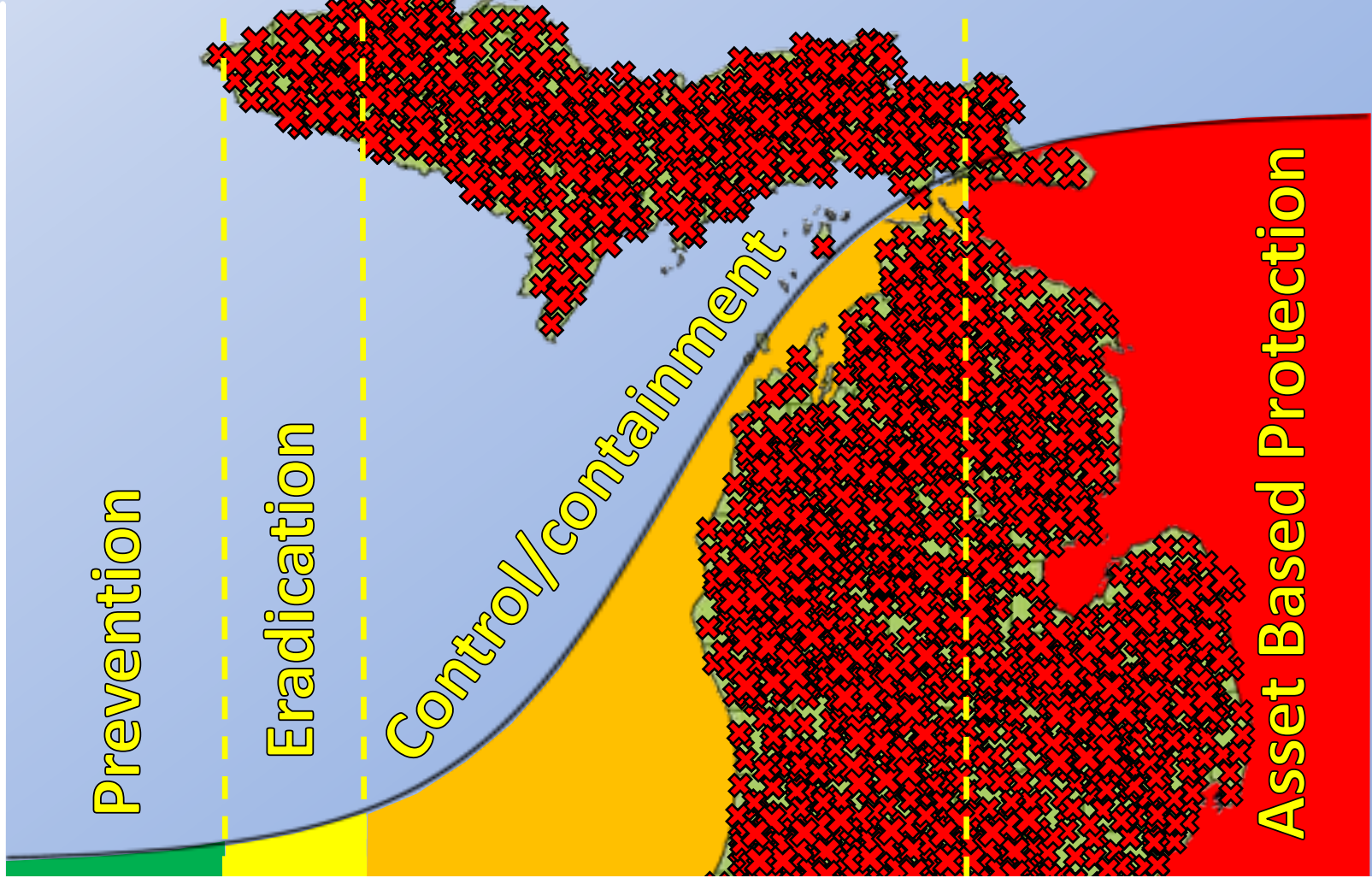
Prevention

Eradication

Control/containment

Asset Based Protection

Time 



MI Invasive Species Watch List



Michigan's Aquatic Invasive Plant Watch List

Aquatic invasive species on the watch list have been identified as being an immediate and significant threat to Michigan's natural resources. These species either have never been confirmed in the wild in Michigan or have a limited known distribution. Early detection and timely reporting are crucial for preventing establishment and limiting impacts. For more information on these plants, visit: www.michigan.msu.edu

Be on the lookout for these invasive plants!

Yellow Floating Heart
Nymphoides peltata



Water Chestnut
Trapa natans



Parrot Feather
Watermilfoil
Myriophyllum aquaticum



Water Soldier
Stratiotes aloides



Hydrilla
Hydrilla verticillata



Brazilian Elodea
Egeria densa



European Frogbit
Hydrocharis morsus-ranae



Water Lettuce
Pistia stratiotes



Water Hyacinth
Eichhornia crassipes



European Water Clover
Marjalea quadrifolia



These species are legal for sale and possession. Please contact the DEQ if these plants are observed outside of cultivation.

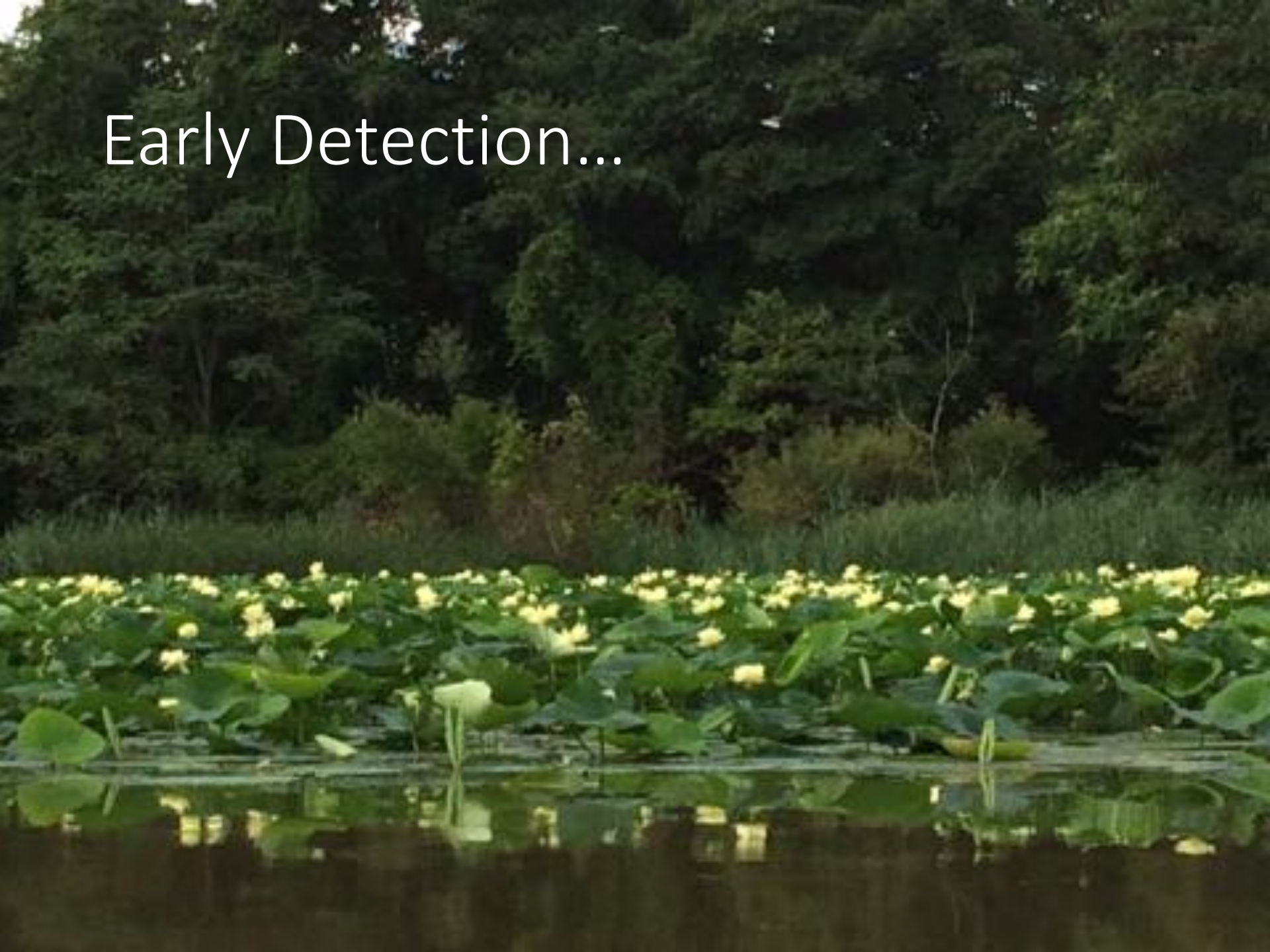


If you have seen any of these aquatic invaders, note their location and contact:
Michigan DEQ Water Resources Division
Phone: 517-284-5593
www.mi.gov/invasivespecies



Questions about other aquatic invasive plants? Contact the DEQ Aquatic Nuisance Control Program at 517-284-5593, www.mi.gov/ano

Early Detection...



Early Detection...



Early Detection

- How do you find initial invasions?
 - Reports
 - Surveying



Response

- Examples include
 - Chemical treatment
 - Physical removal
 - No action



Monitoring

- Pre and post treatment
 - GPS location
 - Habitat
 - AIS
 - Relative density
 - Area of infestation
 - Photo(s)
 - Native plants

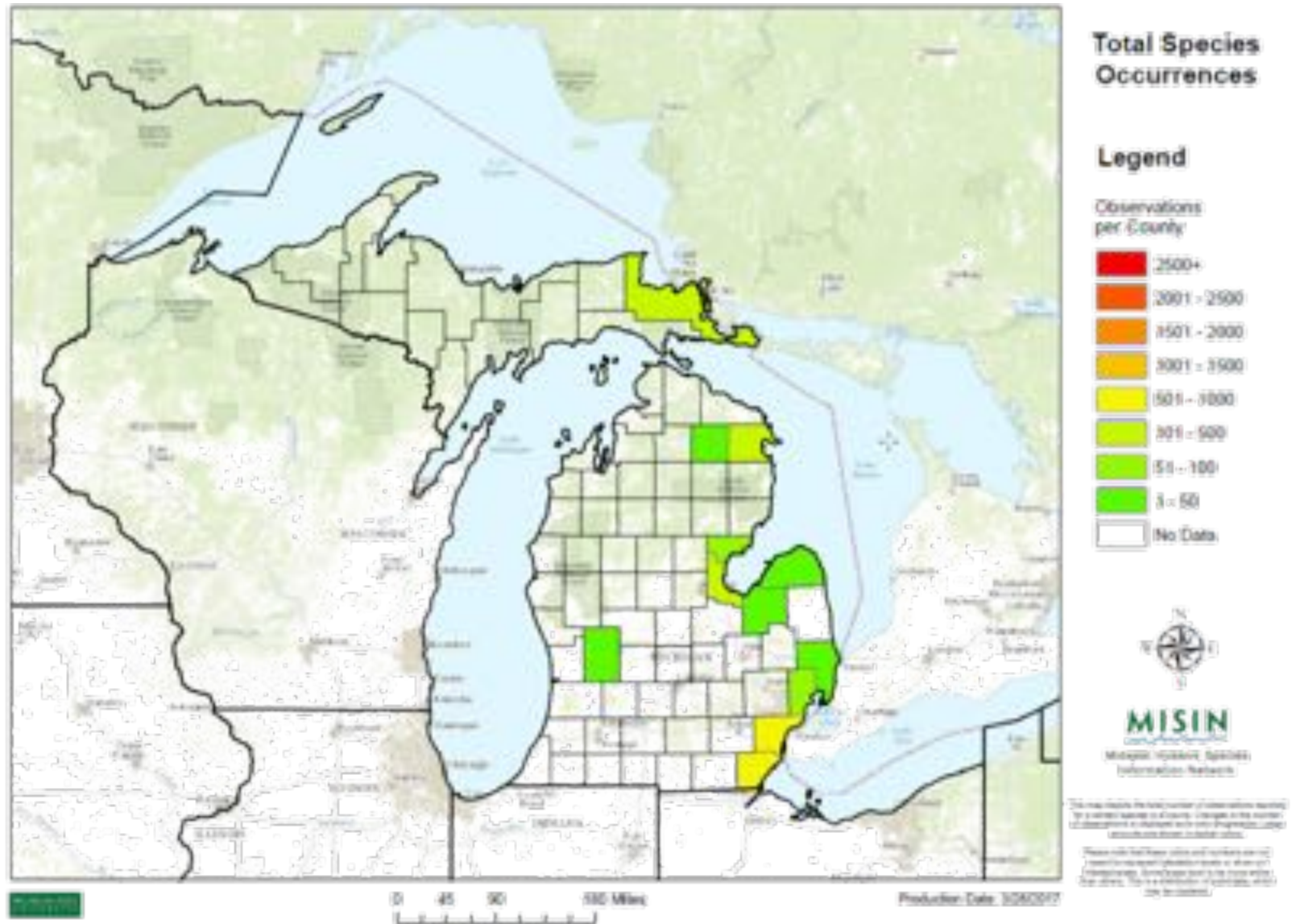


Case Study: European Frog-bit



07.11.2013 16:00

Outlier population: Kent County



Frog-bit: Fisk / Reeds Lake



2016 Detection

Aug 25

- Reported
- Confirmed (photos)

Aug 29 & 30

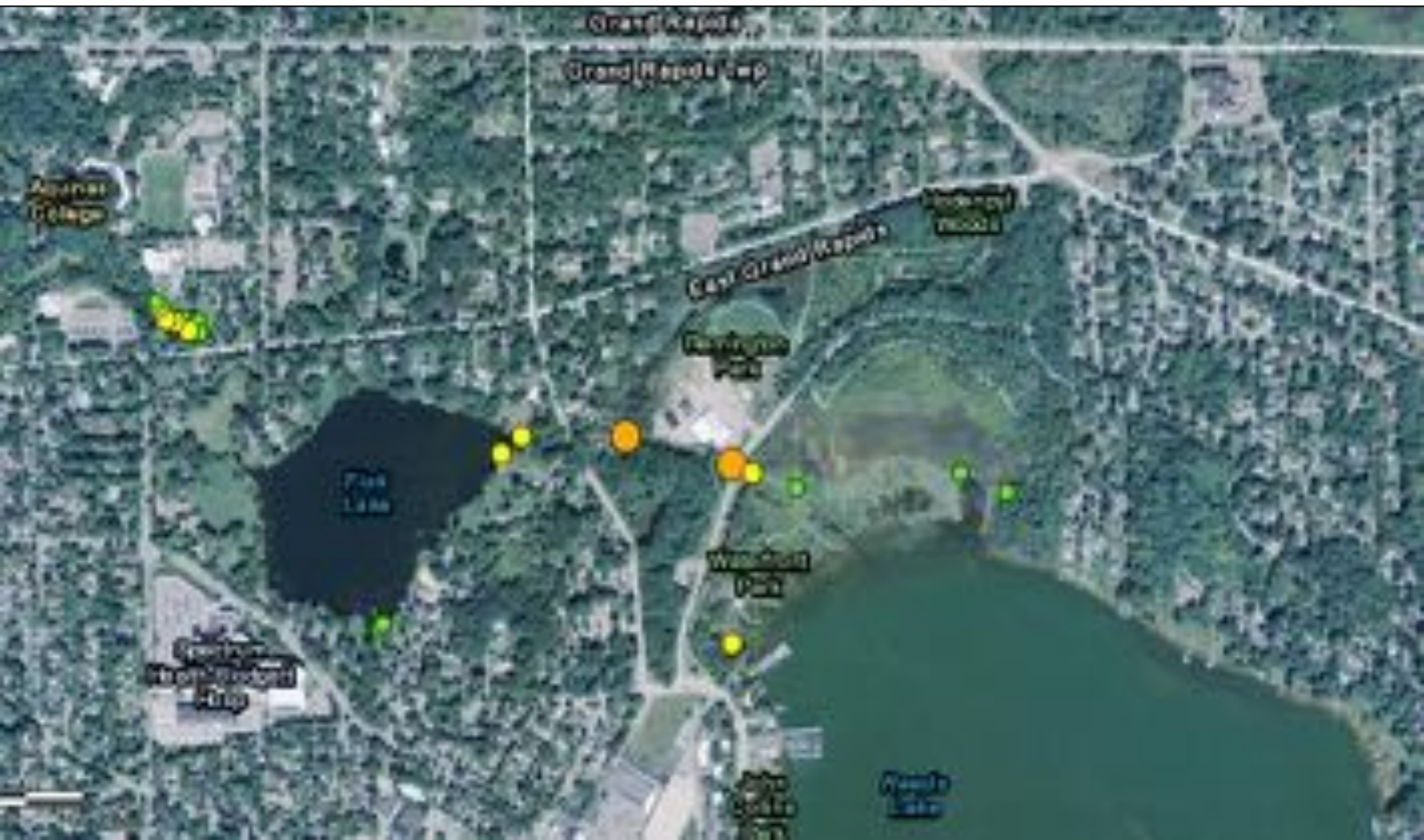
- Survey by WM CISMA
- Voucher collection

Sept 13

- Additional reports in area
- Confirmed by WM CISMA



2016 Frog-bit Distribution



2016 Response

Risk Assessment (SOM)

- Existing literature
- Firsthand Experience

Response Plan

- Meet with Partners
- Outreach & Education
- DNR Press Release

Treatment

- Herbicide (Contractor)



2017 Efforts

July 7

- Site visit

Aug 8 & 22

- Post monitoring data collection



2017 Frog-bit Distribution



Thank you!



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