Early Detection and Response to New Aquatic Invasive Plants

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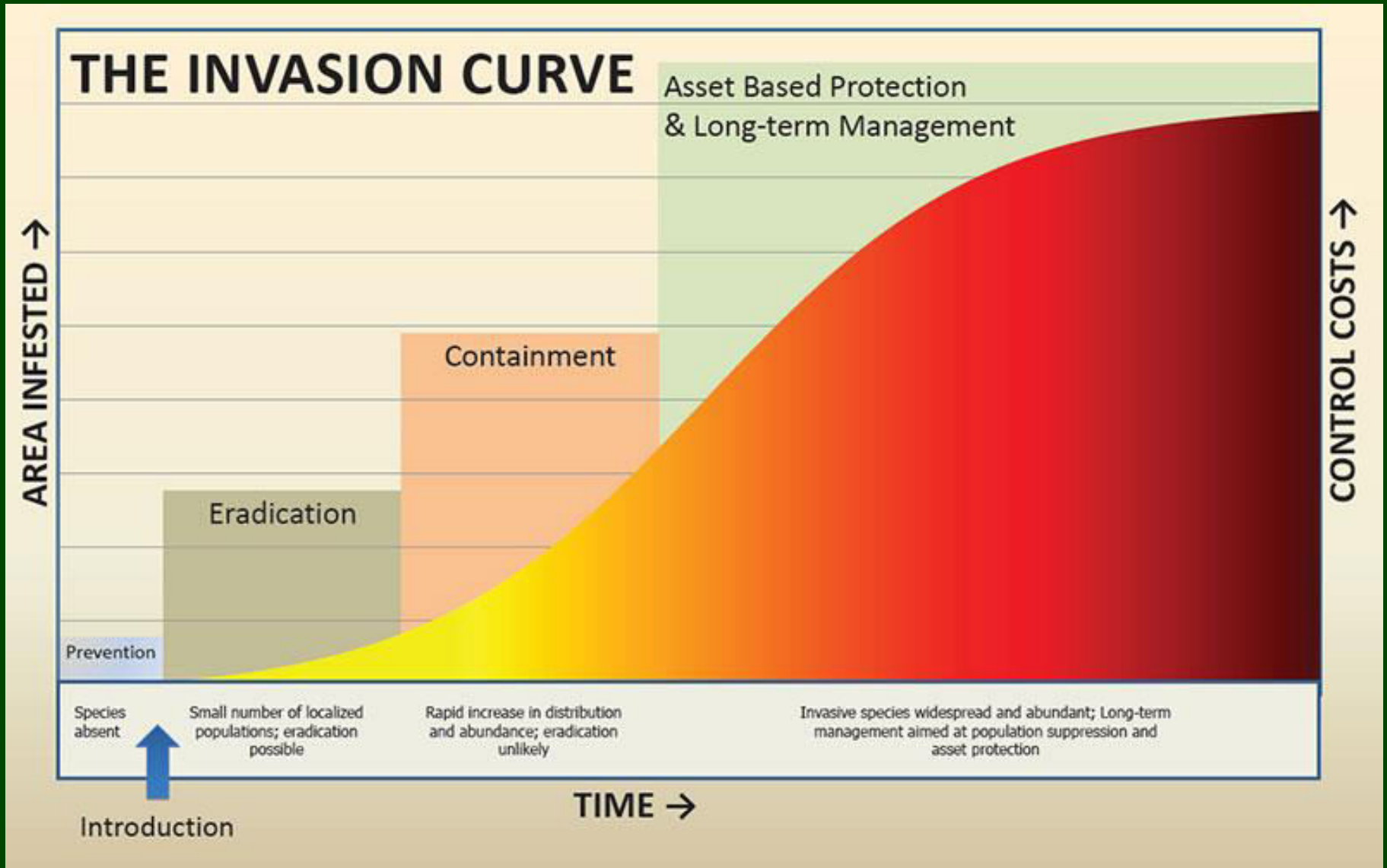
Michigan Department of Natural Resources

The EDR Goal

Prevent or detect invasive species early



Why is EDR important?

- Invasive species can have enormous negative impacts on natural resources once established

Why is EDR important?

- Early detection increases chance of successful eradication
- EDR is the most cost effective method to manage invasive species

Funding

- Great Lakes Restoration Initiative (GLRI) grants
- Used to implement Michigan's AIS State Management Plan
- Work completed by DNR, DARD, and DEQ
- AIS EDR program funded since 2011

Focus Species

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.misin.msu.edu*

Be on the lookout for these invasive species!

Yellow Floating Heart
Nymphoides peltata

Water-chestnut
Trapa natans

Parrot Feather Water-milfoil
Myriophyllum aquaticum

Water Soldier
Stratiotes aloides

Hydrilla
Hydrilla verticillata

Brazilian Water-weed
Egeria densa

European Frog-bit
Hydrocharis morsus-ranae

Water Lettuce
Pistia stratiotes

Water Hyacinth
Eichhornia crassipes

European Water-clover
Marsilea quadrifolia

These species are currently allowable for sale and possession. Please contact the DNR if these plants are observed outside of cultivation.

If you have seen any of these aquatic invaders, note their location and contact:

Michigan DNR Wildlife Division
Phone: (517) 641- 4903 ext. 260
www.mi.gov/invasivespecies

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

Revised: June 2015

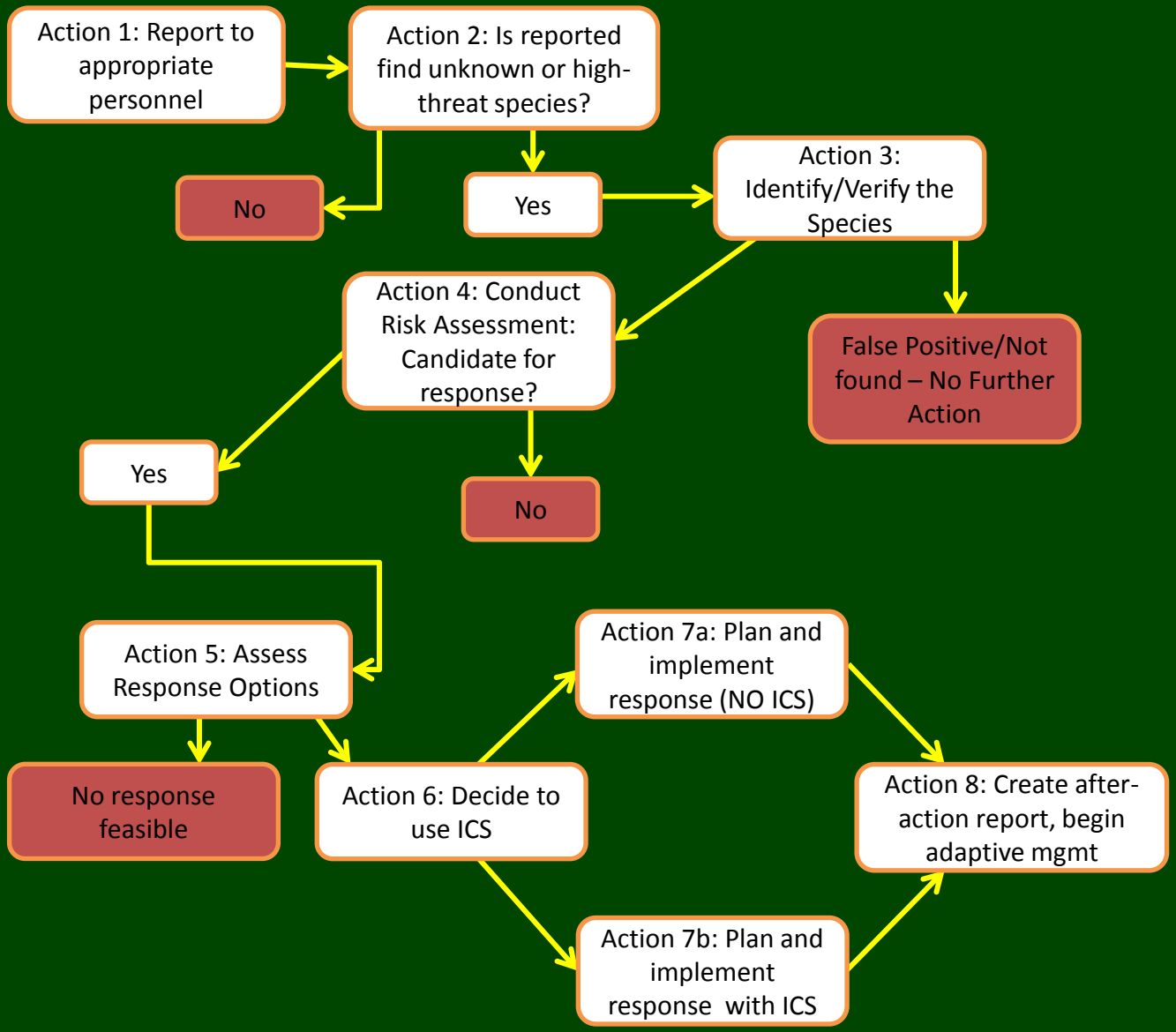
Focus Species

- Surveyed for and mapped AIS Watch List species
- Species list evaluated annually to incorporate emerging threats

EDR Efforts in 2015

- Responded to reports of watch list species
- Conducted surveys, treatments, and monitored treatments and previous infestation sites

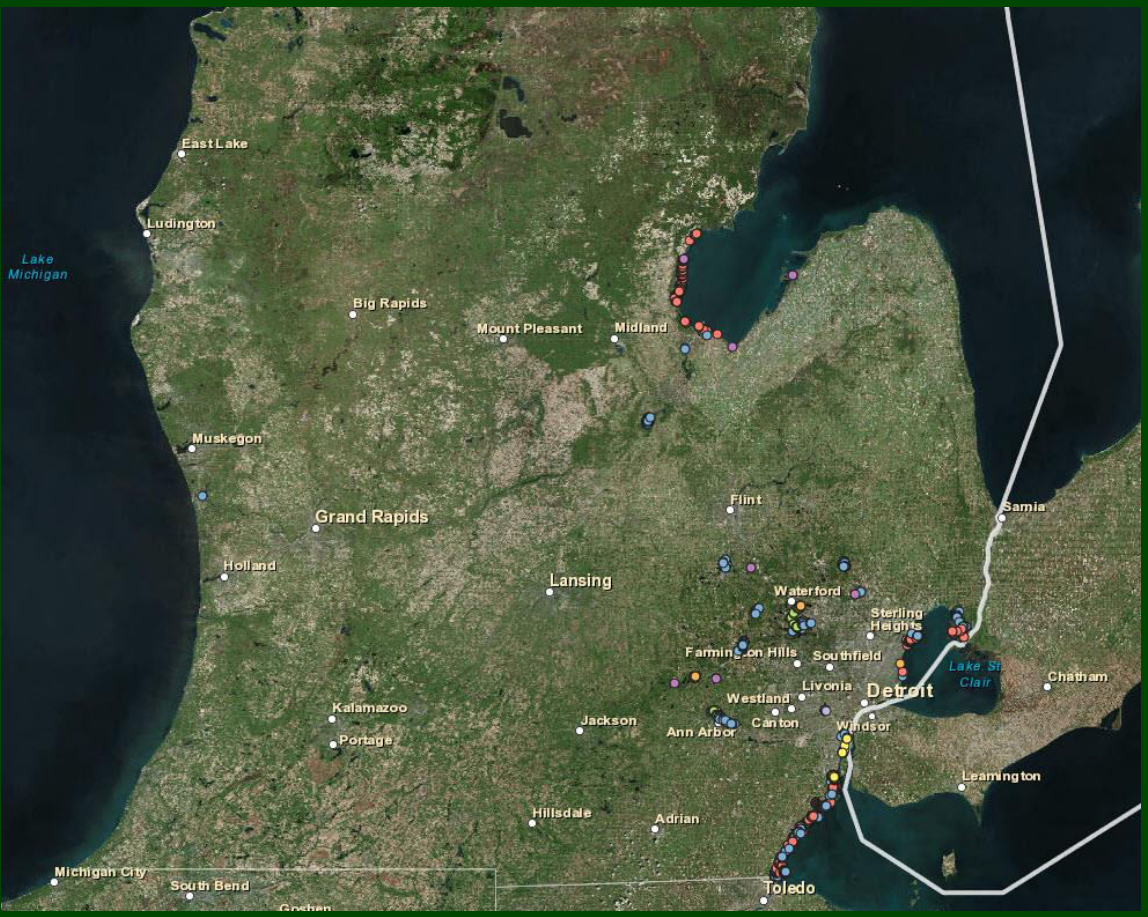
Response Protocol



Surveys

- Goal: Detection and mapping of watch list species
- EDR Team conducted surveys of both Great Lakes coastline and inland water bodies

2015 Surveys by the numbers

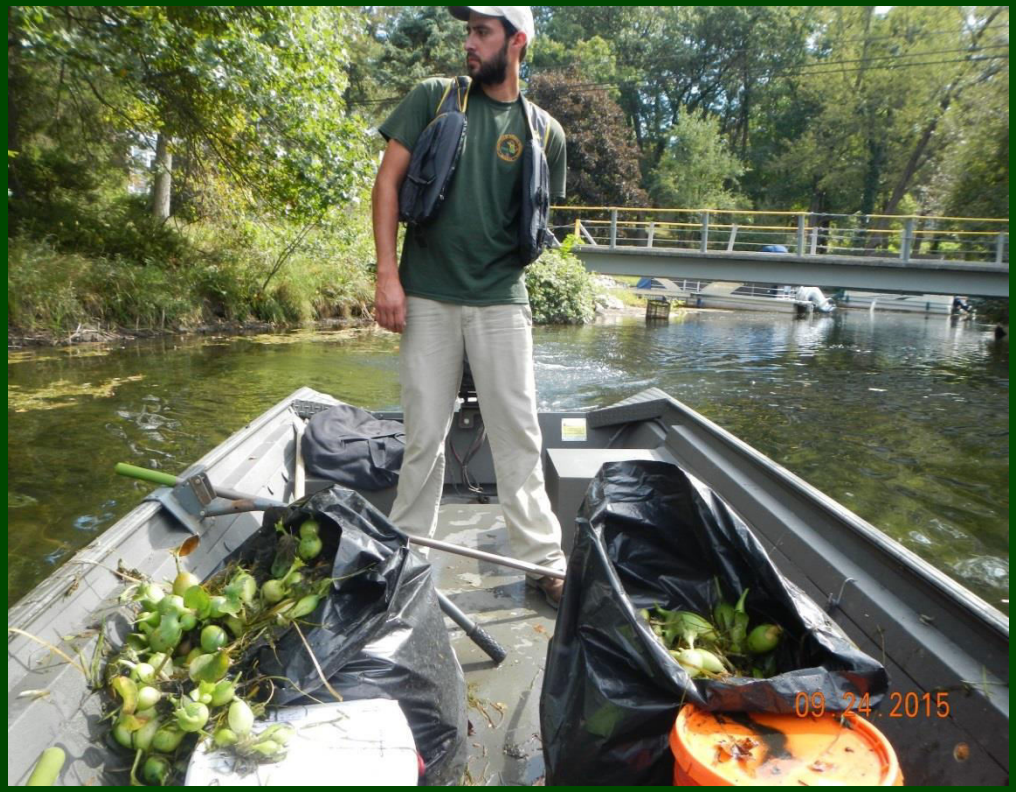


- 238 coastline miles
  - Saginaw Bay, Lake Erie, Lake St. Clair, Detroit River
- 54 Inland lakes/rivers
- 801 Detection points

FB
FR
WC
YI
WH
WL
FH

2015 Responses

- Target species
  - European Frog-bit
  - Yellow Floating Heart
  - Water Lettuce
  - Water Hyacinth
  - European Waterclover
- 29 response actions



Treatments

- Mechanical and chemical
- Determine effectiveness of treatment method

Treatments

- Treatments by DNR staff and contractors

Monitoring

- Treatments monitored to determine effectiveness; monitor previous infestation sites

Yellow Floating Heart

- Received a report of YFH located on the campus of U of M Dearborn through Midwest Invasive Species Information Network (MISIN)

Yellow Floating Heart

- Responded with a survey of the area
- Confirmed report, YFH was positively identified

Yellow Floating Heart

- Reviewed treatment options and input from U of M Dearborn staff
- Selected manual removal
- Submitted pressed specimens to U of M and MSU herbariums

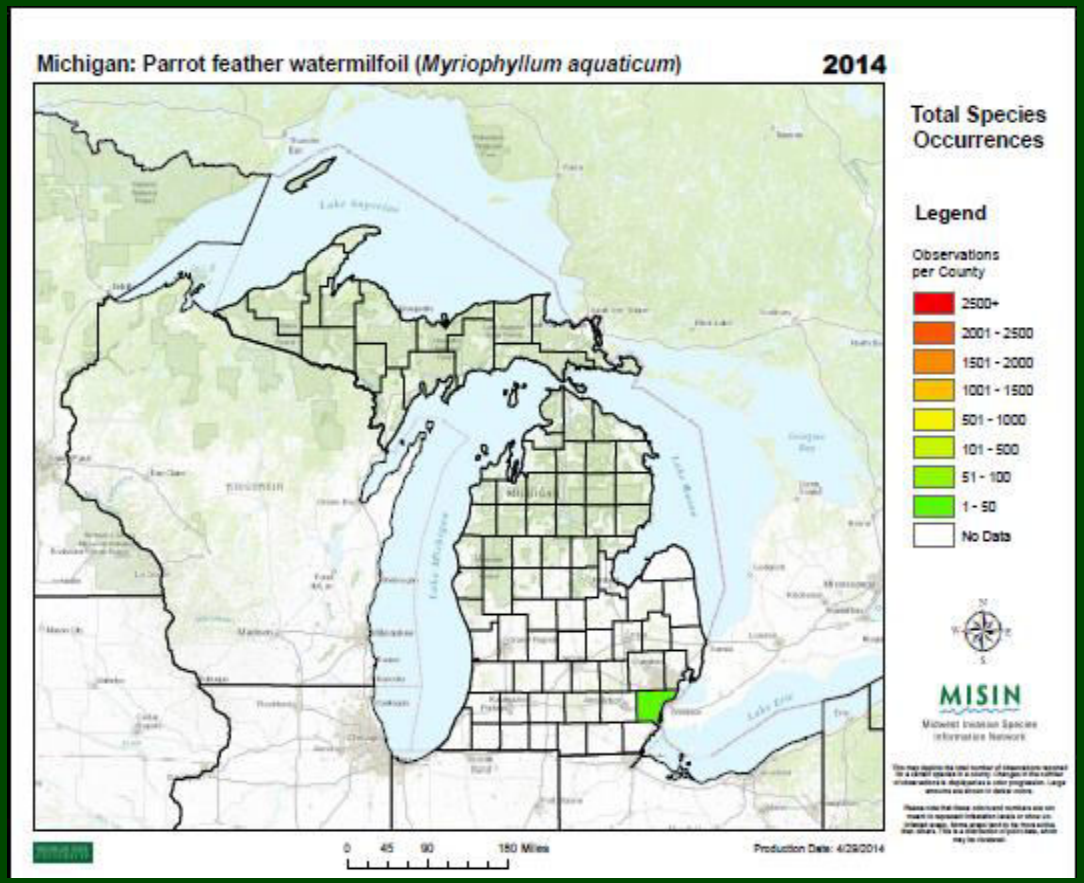
Yellow Floating Heart

- All visible YFH biomass was removed, totaling 1,050 lbs.
- Plant material buried to minimize possibility of spread

Yellow Floating Heart

- Follow-up monitoring revealed no re-growth
- Monitoring and treatment will continue until YFH is eradicated

Parrot feather



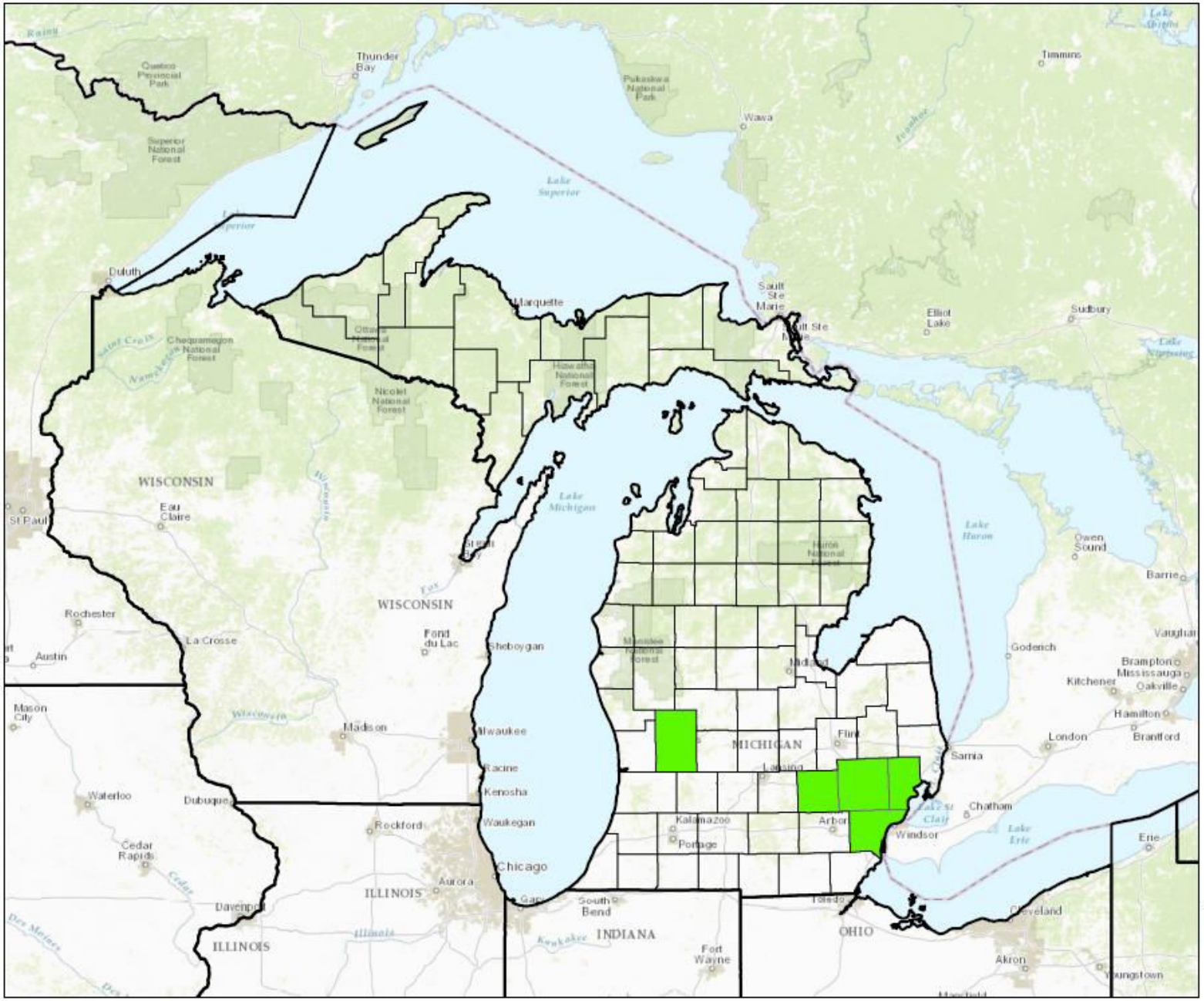
Parrot-feather

Detected in subdivision detention pond in SE MI

Parrot feather

- Goal – Prevent spread and eradicate
- 2013 – late treatment with Triclopyr
- 2014 – 2 treatments of Fluridone and 1 treatment of Triclopyr
- Continued monitoring and surveillance in area

Michigan: Water hyacinth (*Eichhornia crassipes*) 2016



Total Species Occurrences

Legend

Observations per County

- 2500+
- 2001 - 2500
- 1501 - 2000
- 1001 - 1500
- 501 - 1000
- 101 - 500
- 51 - 100
- 1 - 50
- No Data

N W E S

MISIN

Midwest Invasive Species Information Network

This map depicts the total number of observations reported for a certain species in a county. Changes in the number of observations is displayed as a color progression. Large amounts are shown in darker colors.

Please note that these colors and numbers are not meant to represent infestation levels or show un-infested areas. Some areas tend to be more active than others. This is a distribution of point data, which may be clustered.

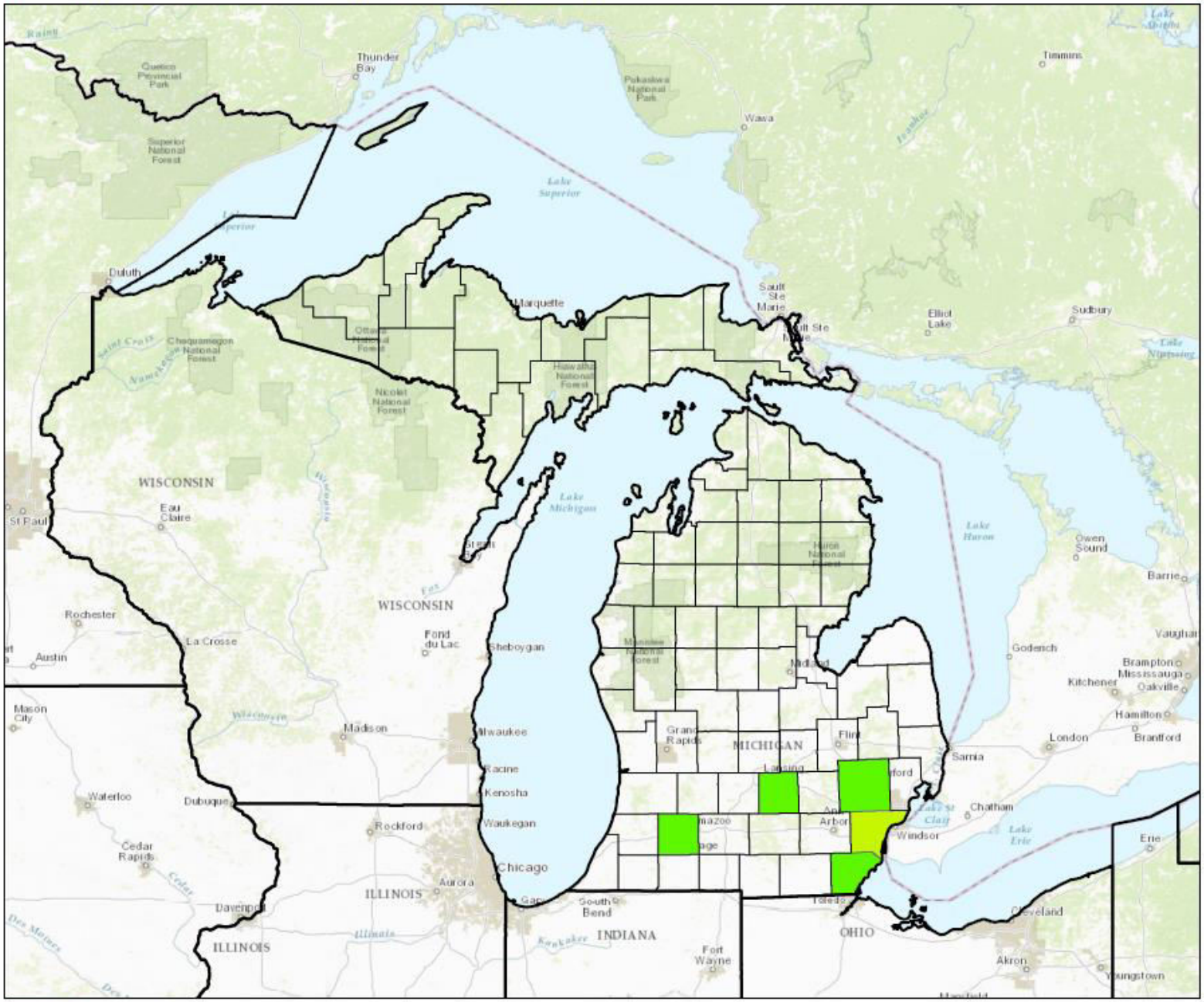
MICHIGAN STATE

0 45 90 180 Miles

Production Date: 10/16/2016

Michigan: Water lettuce (*Pistia stratiotes*)

2016



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MICHIGAN STATE UNIVERSITY

0 45 90 180 Miles

Production Date: 10/16/2016

Water Lettuce & Water Hyacinth

Water Lettuce & Water Hyacinth

- Several to few buckets in southern Michigan – inland lakes and coastal areas
- October 2014 found several acres in drain flowing into W. Lake Erie
- Detected earlier in 2015 and 2016




Questions?

www.michigan.gov/invasivespecies