



# Webster Lake Aquatic Vegetation Management Plan Review & Update

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# LARE Review

- State funds received from fee on boat registration
- Administered by IDNR/Division Fish & Wildlife/Lake & River Enhancement Program (LARE)
- Funding for control of invasive aquatic species and plan updates
- LARE Grant History
  - 2005-\$26,000 (plan update, sampling, & treatment WLCA 20% match)
  - 2006-\$26,000 (plan update, sampling, & treatment WLCA 20% match)
  - 2007-\$25,400 (plan update, sampling, & treatment WLCA 20% match)
  - 2008-\$25,400 (treatment, sampling, & plan update WLCA 20% match)
  - 2009-\$25,400 (treatment, sampling, & plan update WLCA 20% match)
  - 2014-\$5,000 (treatment with WLCA 50% match)
  - 2015-\$5,000 (treatment with WLCA 50% match)
  - 2016-\$41,500 (treatment, sampling, & plan update WLCA 20% match)
  - 2017-\$36,000 (treatment, sampling, & plan update WLCA 20% match)

# Aquatic Plant Ecology Review

- Most aquatic plants occur naturally in lakes
  - Seed or fragment introduction
  - Sunlight
  - Proper Substrate
  - Nutrients
- Most aquatic plants are beneficial to your lake
  - Reduce erosion
  - Cover for fish and invertebrates
  - Improve water quality/clarity
  - Food for waterfowl
- Type of plants in a lake often determined by water quality/clarity
- Some species can lead to nuisance conditions or create ecological problems





Eurasian watermilfoil (EWM)  
*Myriophyllum spicatum*

- Invasive non-native submersed plant
- Competes with nuisance species for space and light
- Spreads through fragmentation
- Can be detrimental to lake ecosystem



# Curlyleaf pondweed (CLP)

*Potamogeton crispus*

- Invasive non-native submersed plant
- forms dense monocultures which can impede boating, fishing and limit native growth
- reaches maximum density in late spring and drops out in early summer



# Starry Stonewort (SSW)

## *Nitellopsis obtusa*

- Invasive non-native submersed algae
- forms dense monocultures which can impede boating, fishing, and limit native growth
- reaches maximum density in mid to late summer

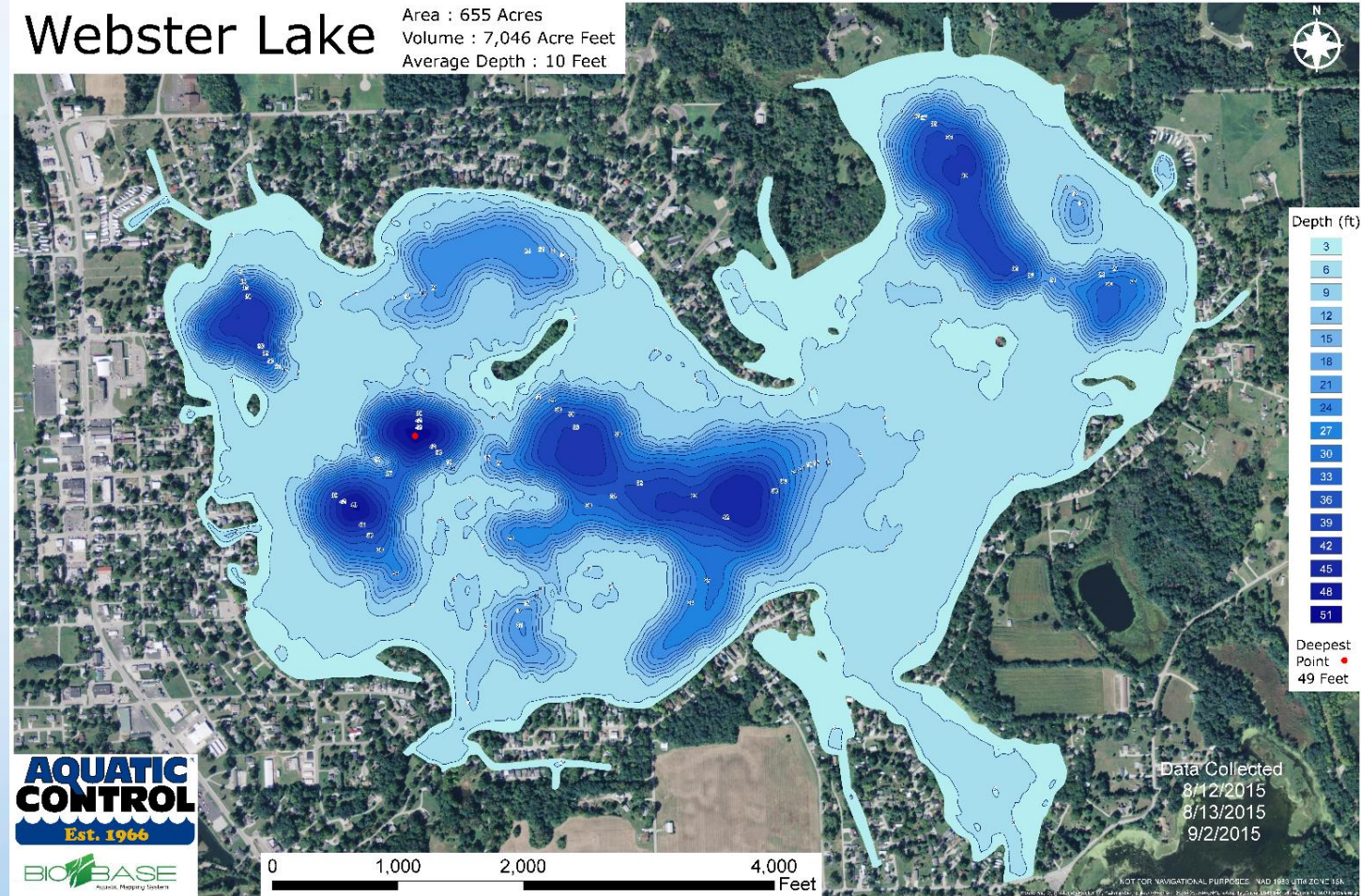


Starry stonewort

Photo by Scott Brown

# Webster Lake

- Impounded Tippecanoe River and flooded several smaller lakes
- 655 acres
- 10 ft avg depth
- Heavy boating, fishing, and residential use
- Public ramp in Backwater
- Nutrient rich
- History of invasive plant problems

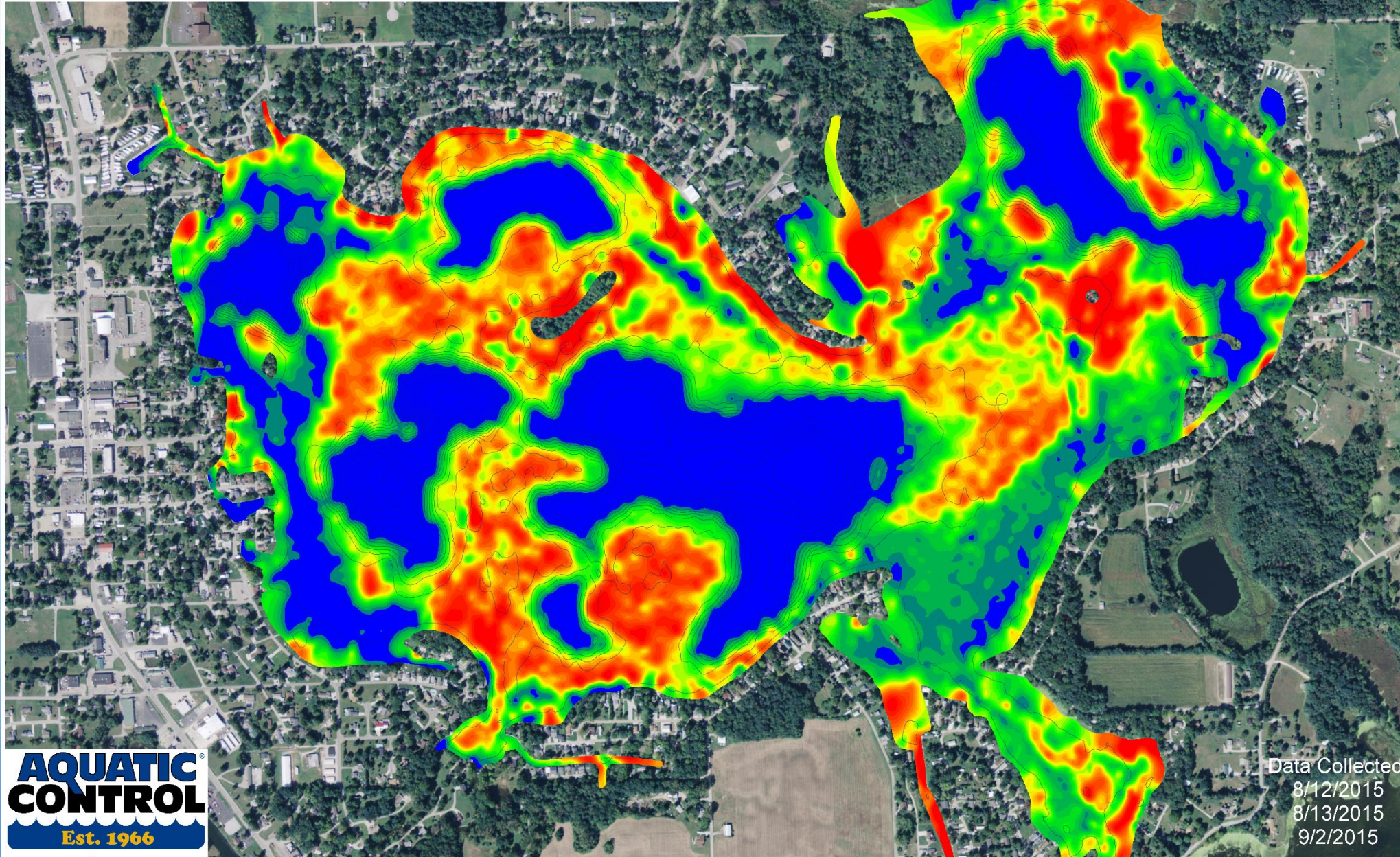


The Solutions for Lake Problems

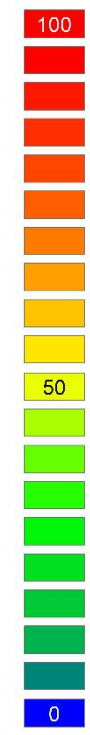


# Webster Lake

Area : 655 Acres  
Volume : 7,046 Acre Feet  
Average Depth : 10 Feet



BV%



**AQUATIC CONTROL**  
Est. 1966

**BIOBASE**  
Aquatic Mapping System



Data Collected  
8/12/2015  
8/13/2015  
9/2/2015

NOT FOR NAVIGATIONAL PURPOSES. NAD 1983 UTM ZONE 18N



# Webster Lake Vegetation Management History 1984-2010

- 1984-1998
  - Primarily near-shore contact herbicide treatment
  - 60-90 acres
  - Very little invasive milfoil treatments off shore
- 1999 & 2002
  - Whole lake Sonar herbicide treatment
  - systemic herbicide
  - milfoil very susceptible
- 2003-2009
  - Attempt to stop milfoil from overtaking lake requiring future Sonar treatments
  - IDNR reluctant to approve future Sonar treatments due to native plant reductions following applications
  - Held off 7 years between Sonar treatments
- 2010
  - 160 acres of milfoil in spring
  - Sonar application delayed and then approved by late April
  - Maintained very low levels of fluridone
  - Still saw reduction in native abundance likely due to clarity reduction



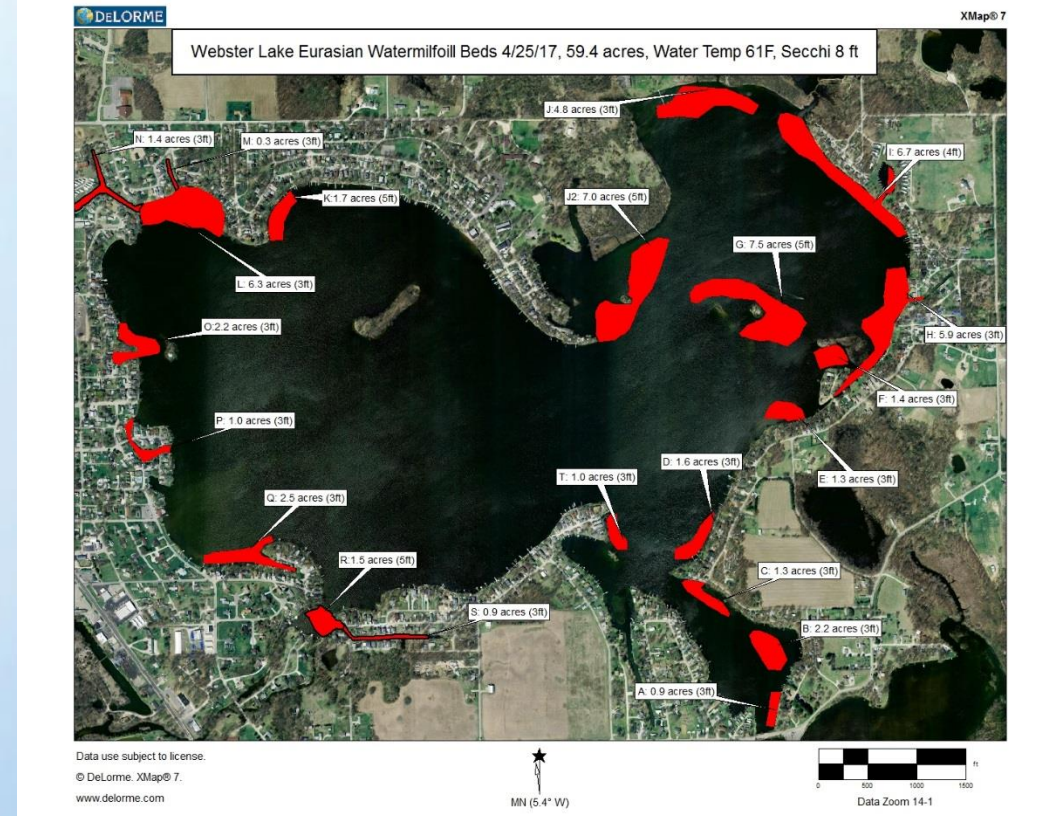
# Webster Lake Management History 2011-2016

- 2011
  - No milfoil detected in Webster Lake
  - Reduction in native plant growth, primarily coontail
- 2012
  - 15 acres of milfoil detected and treated in Webster treated with 2,4-D herbicide
  - 8 acres of shoreline treatment for control of nuisance native growth
- 2013
  - 107 acres of milfoil detected Webster Lake in spring
  - IDNR limited treatment to 53 acres
  - \$5,000 LARE funding/50% match
  - Shoreline treatment permitted for 26 acres of mixed species
- 2014
  - 193 acres of milfoil in spring
  - IDNR limited treatment to 26.2, but allowed treatment of 69.5 acres of shoreline with contact herbicides
  - \$5,000 LARE funding/50% match
- 2015
  - 181 acres of milfoil in spring
  - IDNR limited to 26 acres treated allowed 69.5 acres of natives, treated early and came back and hit additional spots in summer
  - \$5,000 LARE funding/50% match
  - Starry stonewort detected and treated with IDNR Great Lake Restoration Initiative Funding
- 2016
  - 155.4 acres of milfoil in spring and treated with selective systemic herbicide
  - IDNR LARE grant of \$41,000/20% match for invasive control
  - Shoreline treatment of 69.5 acres with contact herbicides
  - Same 4.5 acre area treated for Starry Stonewort



# Webster Lake Vegetation Management 2017

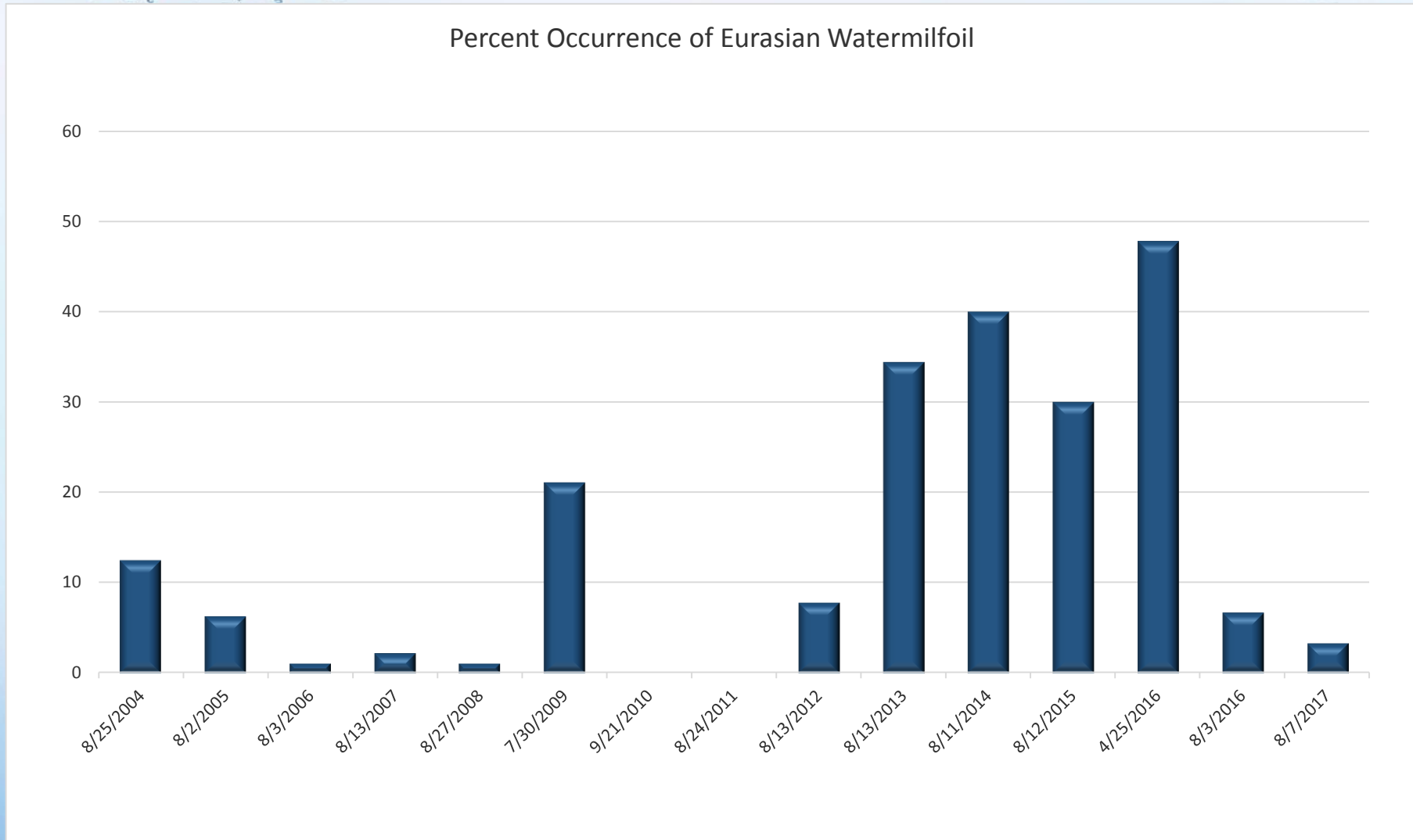
- LARE/IDNR
  - IDNR LARE grant of \$36,000 for surveying and treatment
  - IDNR to allow for treatment of all EWM with 2,4-D herbicide
  - Shoreline treatment still permitted
  - Starry stonewort maintenance (50% match)
- Spring invasive survey (April 25)
  - 59.4 acres of EWM (155.4 in 2016)
  - 71.4 acres of curlyleaf pondweed (36.9 in 2016)
  - No starry stonewort detected yet
- Early spring treatment
  - All EWM areas treated on May 10
  - 16 acres of curlyleaf pondweed also treated on west shore with low dose of Aquathol K



# Webster Lake Vegetation Management 2017

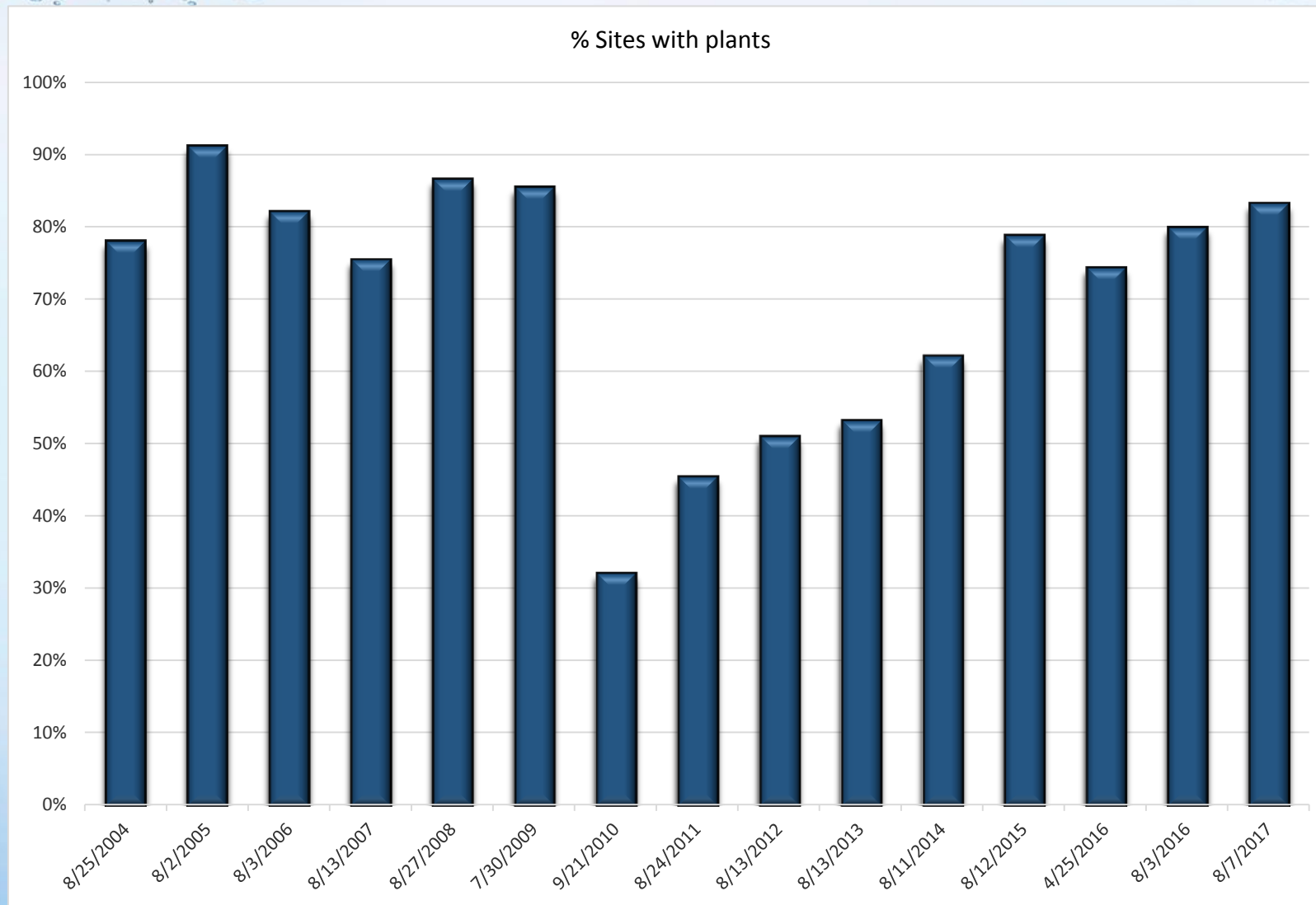
- Late spring inspection
  - Milfoil controlled
  - No starry stonewort detected!
  - Native coontail and pondweeds doing well
- Shoreline treatment
  - 60.8 acres treated on June 22 near shore
  - Delayed as long as possible to get later growing vegetation
  - Possible to delay due to early invasive treatments
- Summer Survey
  - Few small spots of scattered EWM around lake 1.5 acres
  - No starry stonewort detected!?!?
  - EWM only at 3.3 % of sites, down from 6.7% summer 2016, 48% spring 2016, 30% in summer 2015 and 40% in summer 2014
  - Dense coontail beds in deeper water and more abundant native pondweed
  - Increased clarity

Percent Occurrence of Eurasian Watermilfoil



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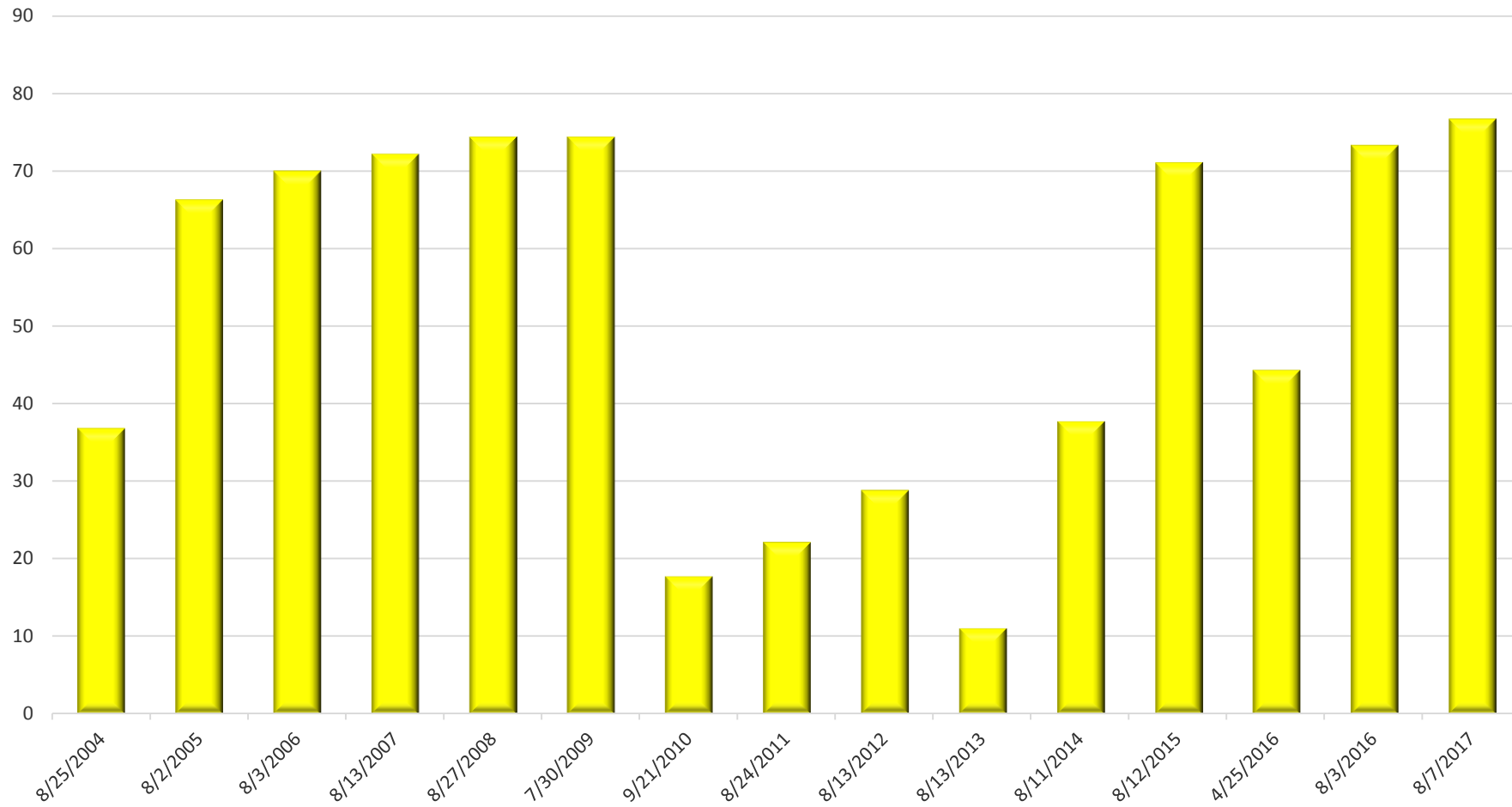




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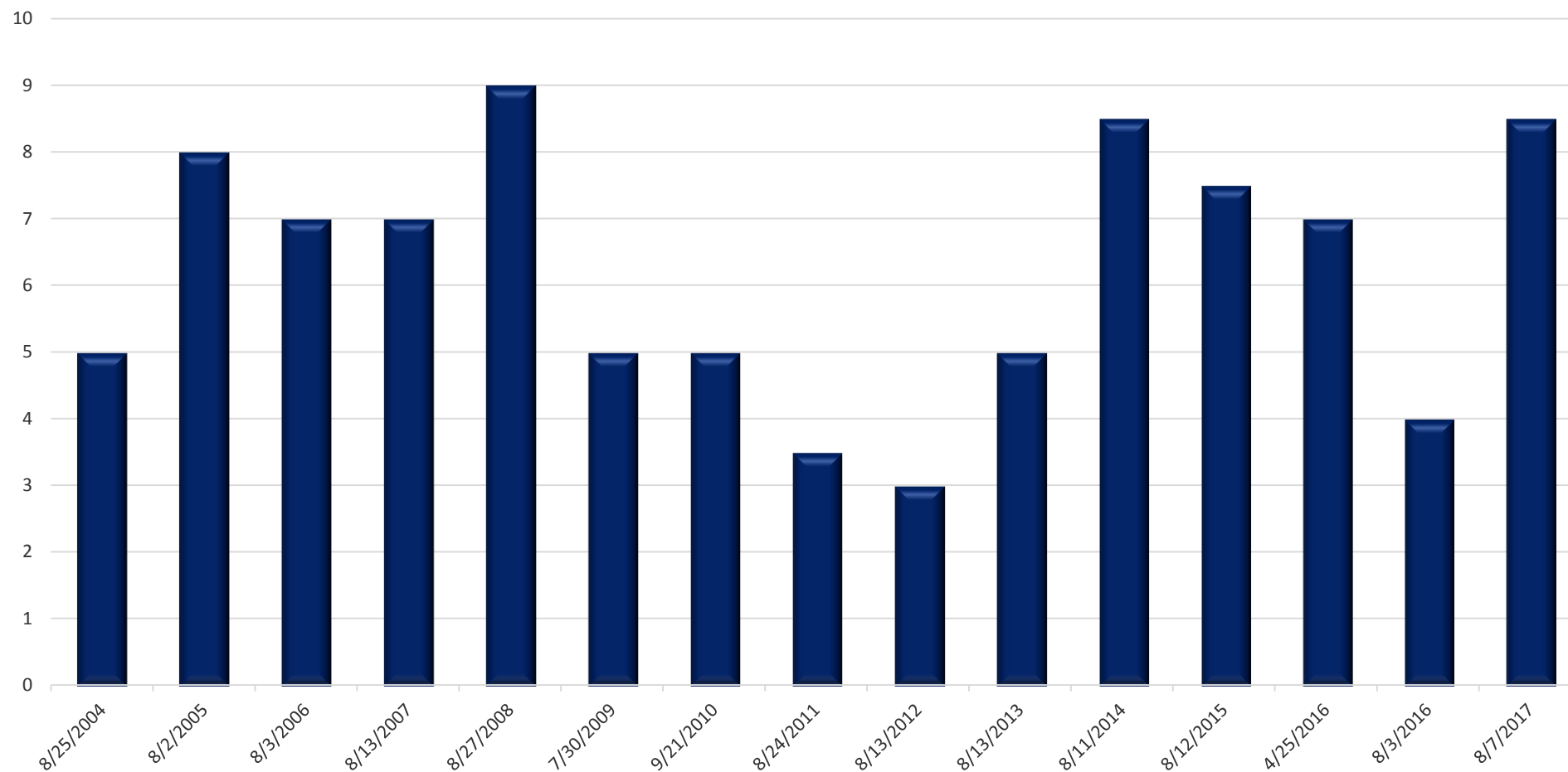
Percent Occurrence of Coontail



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### Secchi Depth



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# Assessment of 2017

- We can control EWM without harming native abundance
- IDNR is willing to compromise thanks to WLCA's patience, persistence, and willingness to independently monitor and collect data while working with IDNR
- Native vegetation will reach nuisance levels and may require control in some areas
- EWM control is not as thorough with spot treatments as whole lake Sonar treatments, but less off target damage on this lake
- There are many other factors impacting plant abundance besides herbicide treatments
- Patience is required in June if only doing a single shoreline treatment
- Good balance achieved, goal is to keep this going in future

# Future Plant Control Options to Consider

- Do nothing
- Just treat shoreline with contact herbicides
- Whole lake Sonar treatment
- Combination of early season systemic spot treatment of EWM and late spring/early summer shoreline contact herbicide treatment combined with efforts to improve watershed/shoreline and continuous monitoring of plant population. Continue to monitor and control SSW as needed
  - LARE funding likely available
  - Results will likely be similar to 2017
  - Systemic herbicide rotation is recommended to avoid resistant strains of milfoil

# Recommended Future Actions

- Continue with surveys
  - Invasive survey spring & summer (potentially LARE funded)
  - Tier 2 late summer (potentially LARE funded)
  - Biobase survey
- Spring invasive treatment similar to 2017 (Potentially LARE funded)
  - How much EWM will return?
  - Timing of treatment?
  - Herbicide rotation?
- Early summer shoreline treatment-patience needed in June
- Starry stonewort monitoring and control as needed
  - SSW can't be eradicated?
  - Typically can't even keep from spreading (Wawasee, Tippecanoe, Etc)
- Shoreline and watershed improvements (Potentially LARE funded)
- Public meetings & plan updates (Potentially LARE funded)

# 2017 Budget for Recommended Action Plan

Plant Management Action	Estimated Cost
Invasive surveys (2), Tier 2 survey (Aug) and Plan Update (Dec)	\$5,500.00*
150 acre Eurasian watermilfoil treatment with 2.0ppm 2,4-D (April)	\$40,000.00*
60.5 acre Shoreline Treatment with contact herbicides (June)	\$25,000.00
Starry stonewort	\$5,000.00**
<b>Total:</b>	<b>\$75,000.00/\$39,100 WLCA*</b>

\*LARE covered 80% of expense in 2017

\*\*LARE would have covered 50% of expense in 2017

# Remaining LARE Program Steps

- Permit Meeting Oct. 4<sup>th</sup> Columbia City
- Draft Aquatic Vegetation Management Plan due Nov. 15
- Submit grant application by Jan 15
- Submit permit application by Feb. 1
- LARE awards grants in late Feb/early March
- Send out bid requests in March
- Decide on contractor by late March/early April

# Questions?



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