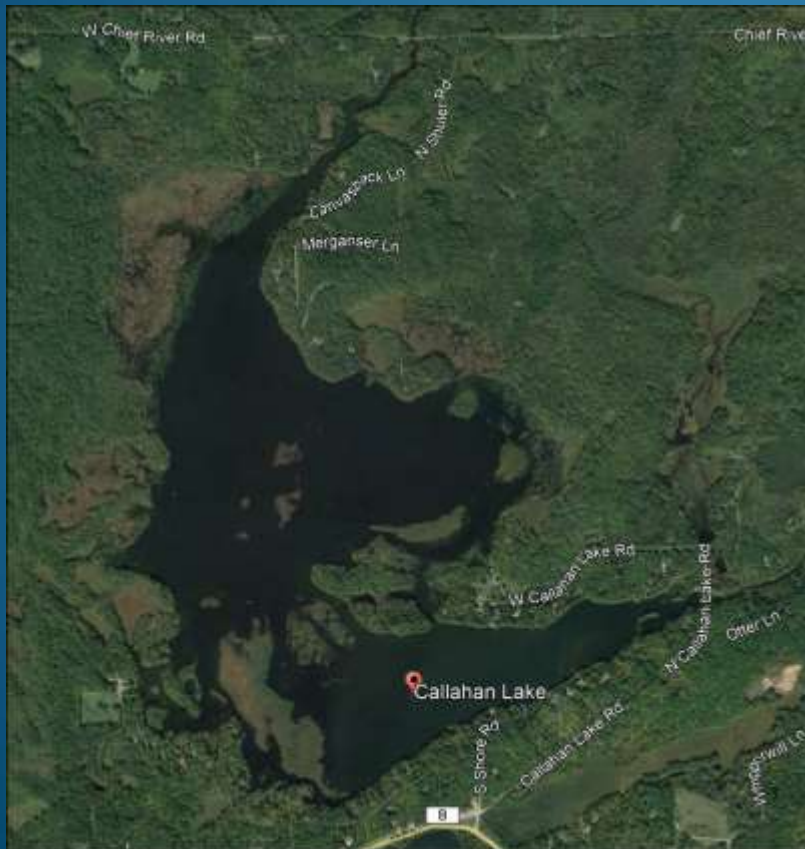


# Callahan and Mud Lakes 2020-21 EWM Management Planning Project



**Callahan Lakes Protection  
Association  
Saturday, May 29, 2021**

# 2020-21 AIS Education, Prevention, and Planning Grant-funded Project

## 2020 Tasks

- Whole-lake Plant Survey (done)
- Curly-leaf Pondweed Survey (2021)
- Water Quality Monitoring (done)
- AIS Education Materials (??)
- AIS ID Workshop (not done)
- Public Use Survey (done)
- AIS Signage Review and Repair (??)
- Clean Boats Clean Waters (done, data?)
- AIS Monitoring (done)
- Zebra Mussel Monitoring (??)
- EWM Management Planning (done)
- Pre-treatment Plant Survey (done)
- Fall EWM Bedmapping (done)
- Constituent Information Sharing (??)
- Project Administration (done)

## 2021 Tasks

- Curly-leaf Pondweed Survey (to do)
- Water Quality Monitoring (to do)
- AID Education Material (to do)
- AIS ID Workshop (to do)
- AIS Signage Review and Repair (?)
- Clean Boats Clean Waters (to do)
- Zebra Mussel Monitoring (to do)
- EWM Management Planning (done)
- Pre/post-treatment plant survey (pre is done)
- Fall EWM Bedmapping (to do)
- Update the Aquatic Plant Management Plan (to do)
- Constituent Information Sharing (?)
- Project Administration (to do)

# 2020 Callahan Lake Whole-lake PI Plant Survey Statistics

<b>SUMMARY STATS:</b>	
<b>Total number of sites visited</b>	<b>434</b>
<b>Total number of sites with vegetation</b>	<b>230</b>
<b>Total number of sites shallower than maximum depth of plants</b>	<b>301</b>
<b>Frequency of occurrence at sites shallower than maximum depth of plants</b>	<b>76.41</b>
<b>Simpson Diversity Index</b>	<b>0.89</b>
<b>Maximum depth of plants (ft)**</b>	<b>13.50</b>
<b>Number of sites sampled using rake on Rope (R)</b>	<b>0</b>
<b>Number of sites sampled using rake on Pole (P)</b>	<b>434</b>
<b>Average number of all species per site (shallower than max depth)</b>	<b>2.15</b>
<b>Average number of all species per site (veg. sites only)</b>	<b>2.82</b>
<b>Average number of native species per site (shallower than max depth)</b>	<b>2.10</b>
<b>Average number of native species per site (veg. sites only)</b>	<b>2.74</b>
<b>Species Richness</b>	<b>26</b>
<b>Species Richness (including visuals)</b>	<b>33</b>
<b>Species Richness (including visuals and boat survey)</b>	<b>36</b>
<b>Mean depth of plants (ft)</b>	<b>7.93</b>
<b>Median depth of plants (ft)</b>	<b>8.00</b>
<b>Mean rake fullness (veg. sites only)</b>	<b>2.10</b>

# 2020 Mud Lake Whole-lake PI Plant Survey Results

<b>SUMMARY STATS:</b>	
<b>Total number of sites visited</b>	<b>501</b>
<b>Total number of sites with vegetation</b>	<b>484</b>
<b>Total number of sites shallower than maximum depth of plants</b>	<b>501</b>
<b>Frequency of occurrence at sites shallower than maximum depth of plants</b>	<b>96.61</b>
<b>Simpson Diversity Index</b>	<b>0.93</b>
<b>Maximum depth of plants (ft)**</b>	<b>14.00</b>
<b>Number of sites sampled using rake on Rope (R)</b>	<b>0</b>
<b>Number of sites sampled using rake on Pole (P)</b>	<b>485</b>
<b>Average number of all species per site (shallower than max depth)</b>	<b>3.84</b>
<b>Average number of all species per site (veg. sites only)</b>	<b>3.97</b>
<b>Average number of native species per site (shallower than max depth)</b>	<b>3.81</b>
<b>Average number of native species per site (veg. sites only)</b>	<b>3.95</b>
<b>Species Richness</b>	<b>55</b>
<b>Species Richness (including visuals)</b>	<b>58</b>
<b>Species Richness (including visuals and boat survey)</b>	
<b>Mean depth of plants (ft)</b>	<b>5.30</b>
<b>Median depth of plants (ft)</b>	<b>5.50</b>
<b>Mean rake fullness (veg. sites only)</b>	<b>2.40</b>

# Water Quality Monitoring

## (Thank You to Joe Lewandowski)

### • Callahan Lake (10 days)

- Mean Summer Secchi = 10.86-ft
  - Regional Average (RA)=10.1-ft
- Summer Chlorophyll = 2.9-ug/L
  - RA = 7.6-ug/L
- Summer Total Phosphorus = 21.1-ug/L
  - >30-ug/L may have algae blooms
- Trophic State Index (TSI)
  - 43 (low mesotrophic)

### • Mud Lake (12 days)

- Mean Summer Secchi = 11.06-ft
  - Regional Average (RA)=10.1-ft
- Summer Chlorophyll = 1.9-ug/L
  - RA = 7.6-ug/L
- Summer Total Phosphorus = 19.0-ug/L
  - >30-ug/L may have algae blooms
- Trophic State Index (TSI)
  - 39 (oligotrophic)

# Water Quality Monitoring

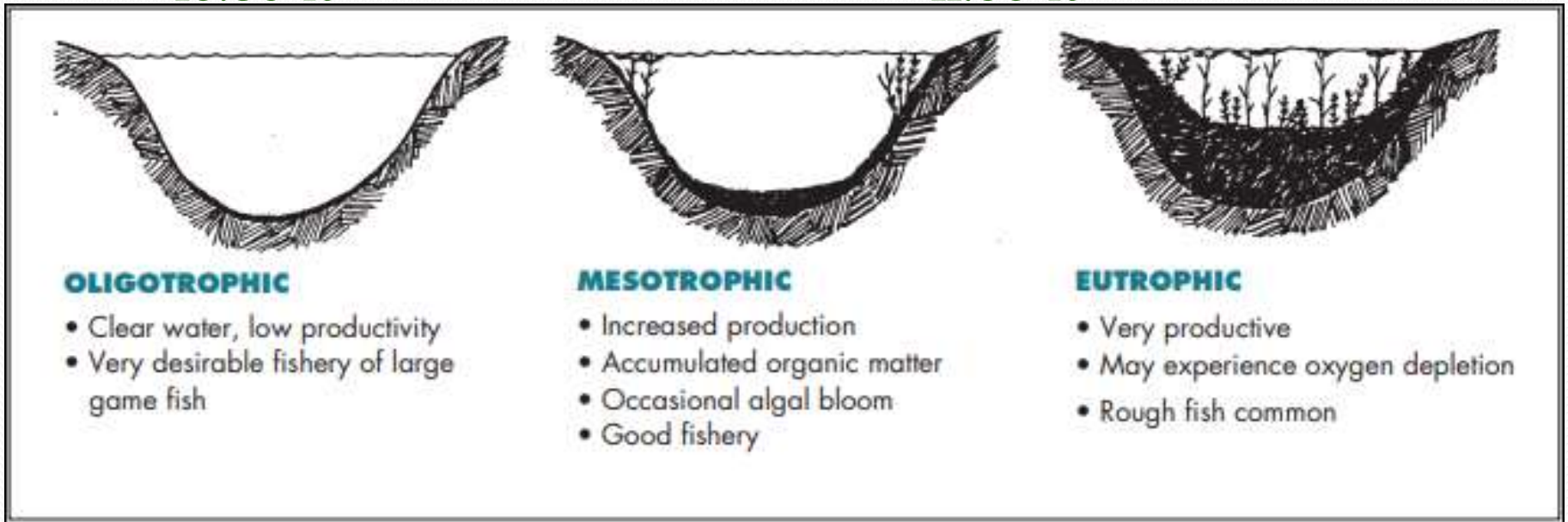
## (Thank You to Joe Lewandowski)

- Callahan Lake (10 days)

- Mean Summer Secchi = 10.86-ft

- Mud Lake (12 days)

- Mean Summer Secchi = 11.06-ft



- Trophic State Index (TSI)

- 43 (low mesotrophic)

- Trophic State Index (TSI)

- 39 (oligotrophic)

# AIS Education



# AIS ID Workshop and AIS Monitoring

2020 AIS Monitoring Volunteers - Callahan and Mud Lakes			
<b>May 5 people</b>		<b>July 21 people</b>	<b>August 14 people</b>
Paul Young		Denise Kohl	Gregg Hilker
Jenny Young		Gregg Hilker	Piere Boudreau
Tom DiGiorgio		Paul Young	Mike Bussen
Kristie DiGiorgio		Jenny Young	Sheryl Bussen
Karen Bronaugh		William Keller	Tom DiGiorgio
		Bruce Keller	Kristie DiGiorgio
<b>June 18 people</b>		Andrew Keller	Tom Gleason
Gregg Hilker		Mike Bussen	Pat Gleason
Carolyn Cutrone-Russell		Sheryl Bussen	Paul Hank
Mike Bussen		Tom DiGiorgio	Kris Hank
Sheryl Bussen		Kristie DiGiorgio	Tom Kersten
Tom DiGiorgio		Tom Gleason	Claudette Kersten
Kristie DiGiorgio		Pat Gleason	Karen Bronaugh
Tom Gleason		Karen Bronaugh	Denny Toll
Pat Gleason		Paul Hank	
Steve McIntosh		Kris Hank	<b>September 2 people</b>
Mary McIntosh		Tom Kersten	Tom Gleason
Karen Bronaugh		Claudette Kersten	Pat Gleason
Paul Hank		Jack Sjobeck	
Kris Hank		Elizabeth Sjobeck	
Tom Kersten		Denny Toll	
Claudette Kersten			
Jack Sjobeck			
Elizabeth Sjobeck			
Denny Toll			

**I would like to set up a designated training session for either LEAPS or perhaps the Sawyer County AIS Coordinator (Pat Brown) to provide official training to this group of people and others if interested!!**

**Thank You for what you did in 2020!**



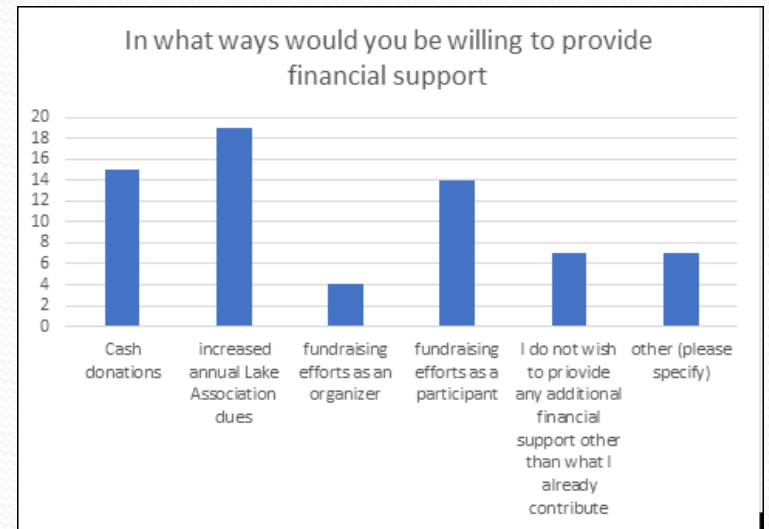
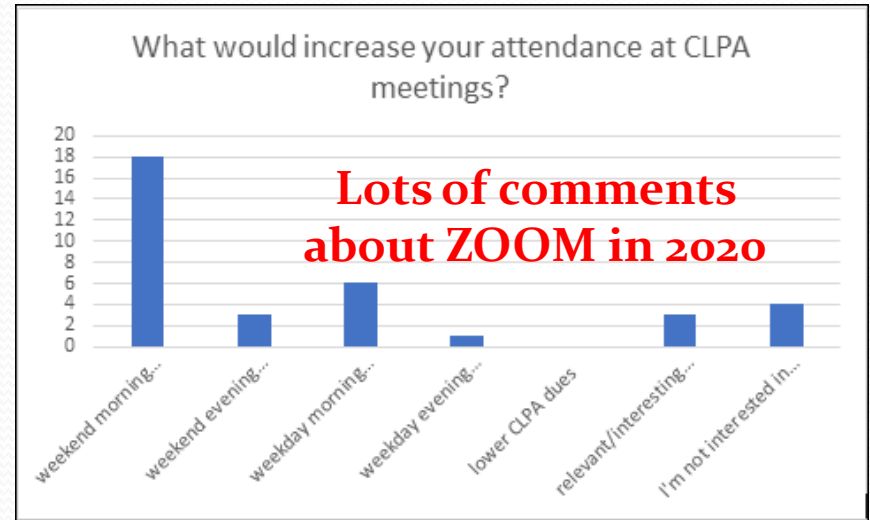
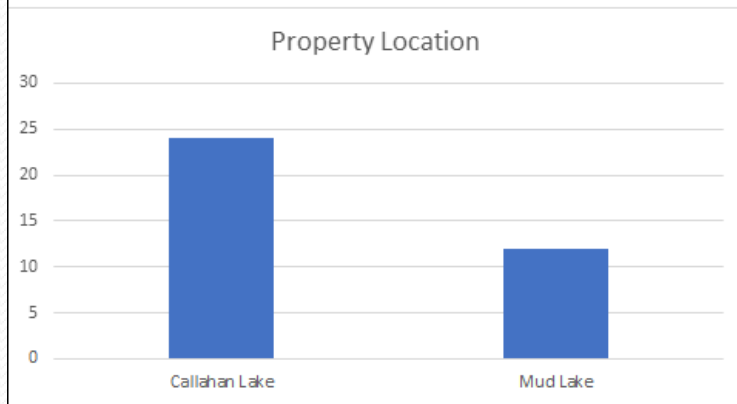
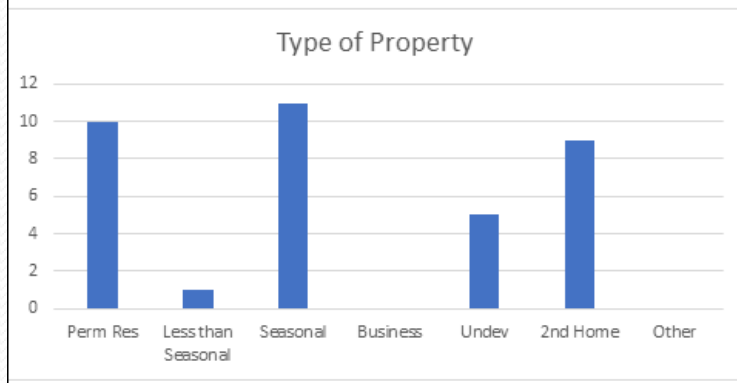
# Clean Boats Clean Waters (watercraft inspection)



- Resort Landing and at the Chief River Landing
- Need datasheets to be completed while doing inspections
- Doesn't take much time
- Training with Resort personnel (and others) likely to be set up in the very near future

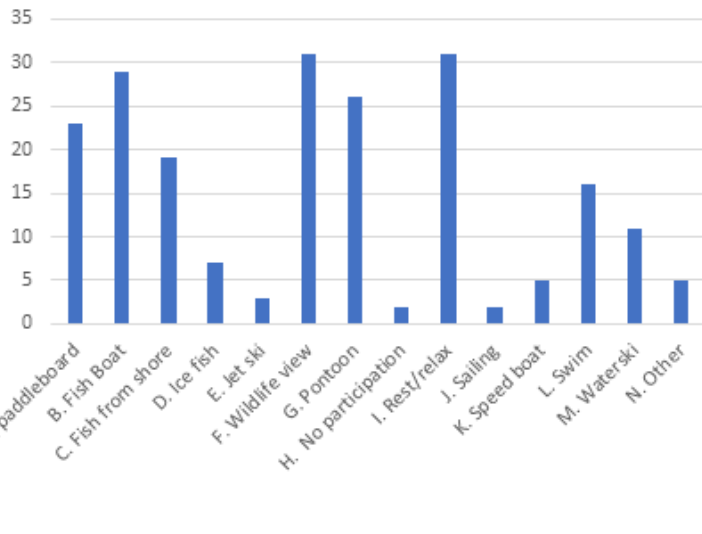
# Public Use Survey Results

(approximately 107 sent out, 49 returned)



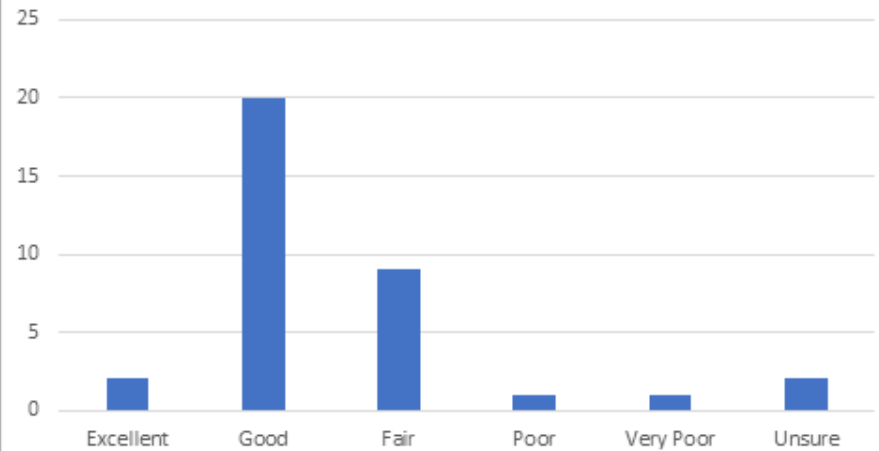
**There is still some support for a Lake District.**

Check activities that you/your family/guests participate in:

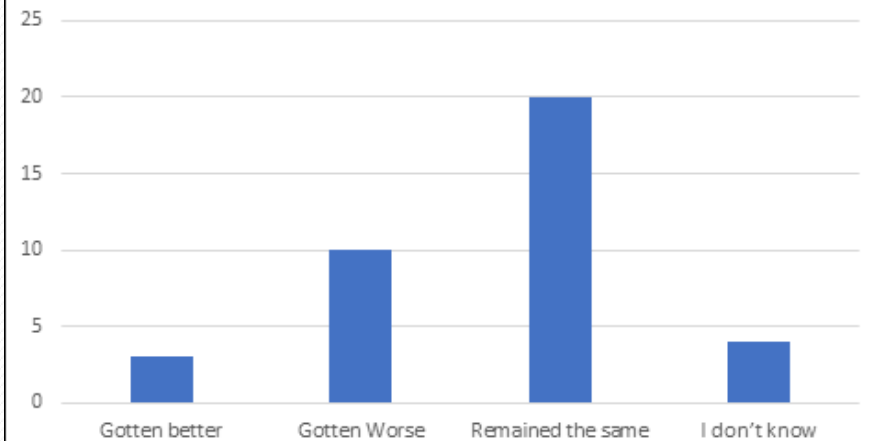


**Waterfowl hunting, photography, snowmobiling, star-gazing**

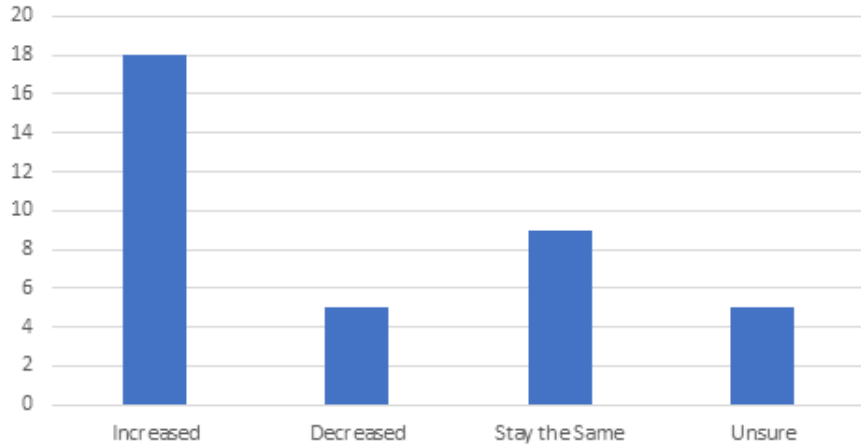
The water quality is:



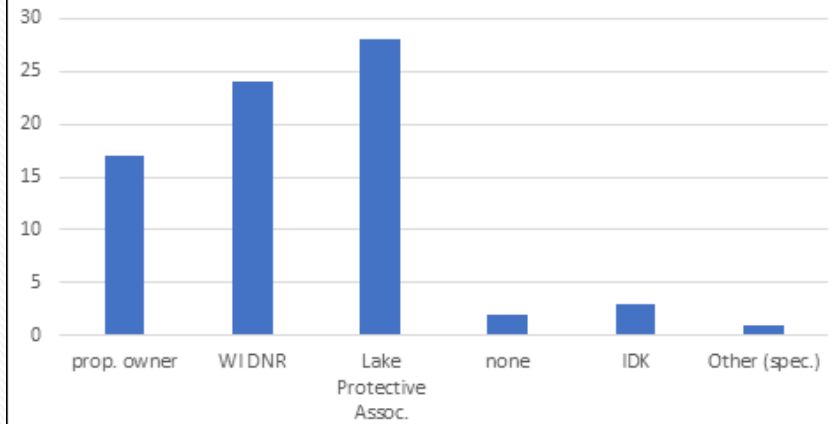
Lake quality has:



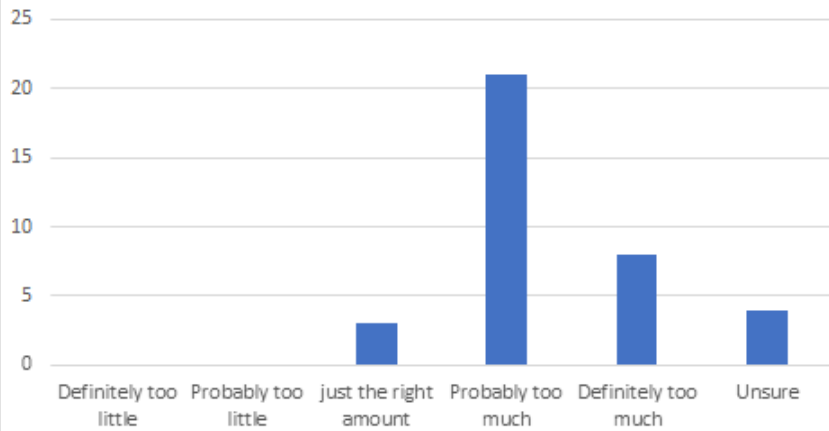
Amount of aquatic plant growth has:



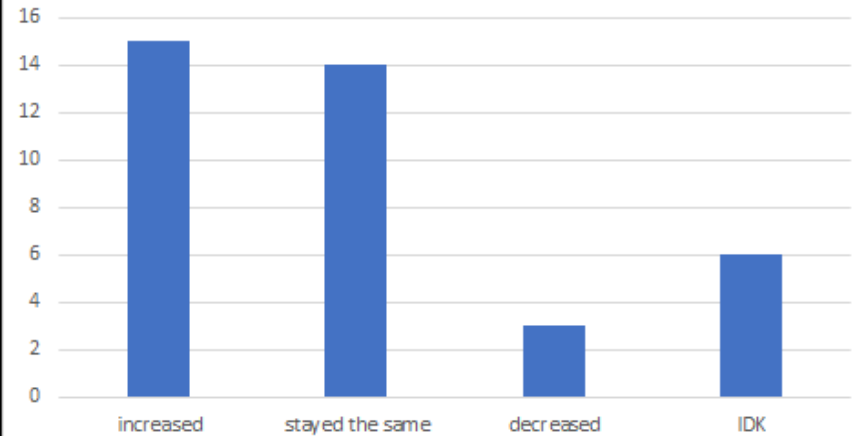
Who do you feel should be responsible to managing aquatic plant growth?



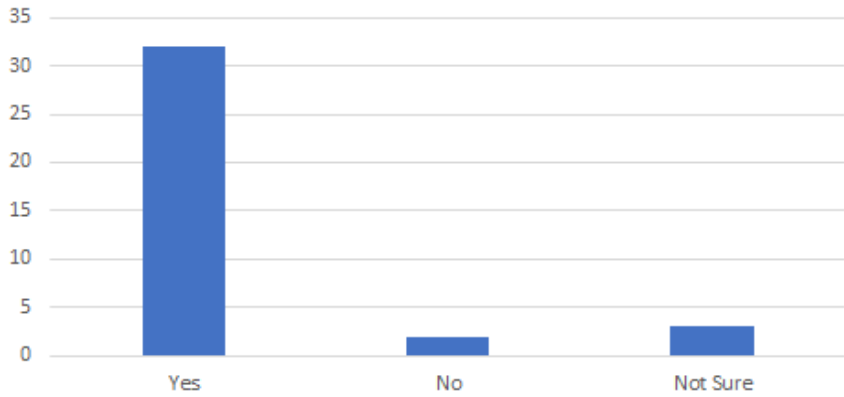
How would you describe the amount of plant growth in the lake?



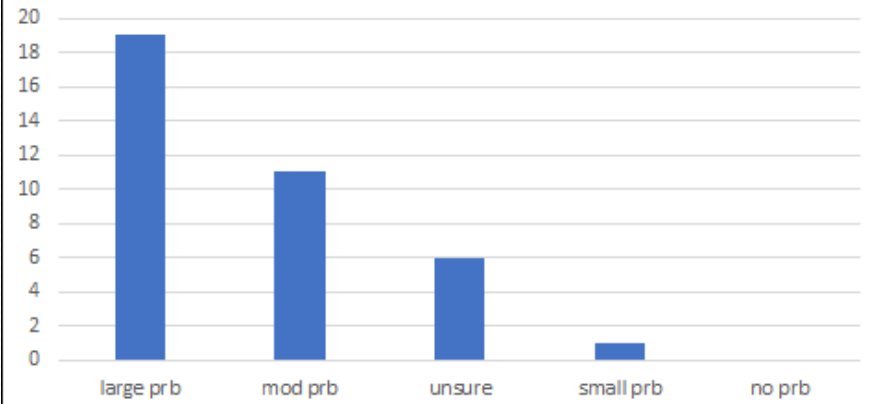
The amount of algae has:



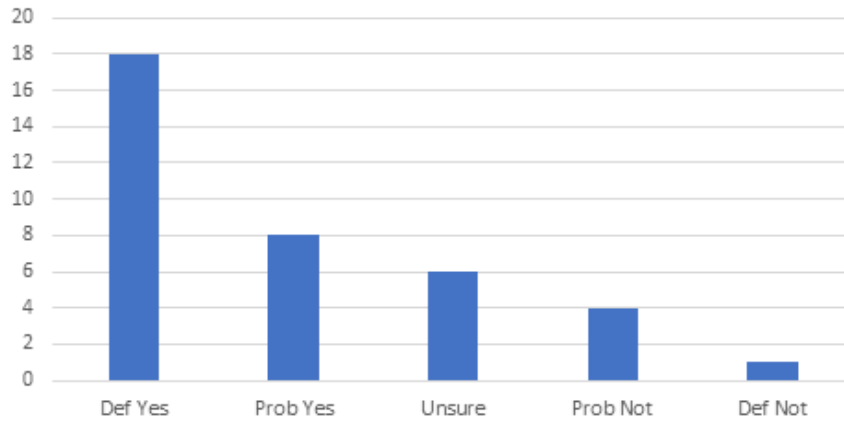
### Did you know Eurasian Water Milfoil was present?



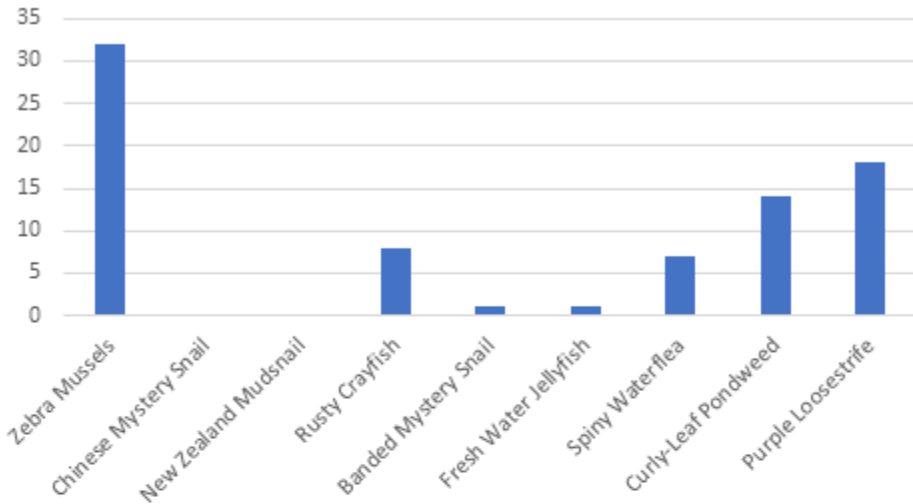
### How much of a problem do you consider Eurasian Water Milfoil?



### Would you recognize Eurasian Water Milfoil if you saw it?



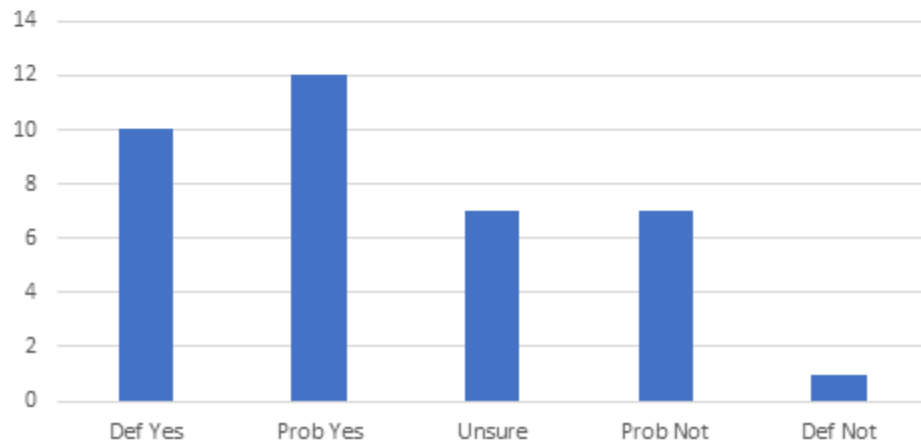
### Which of the following aquatic invasive species have you heard of before?



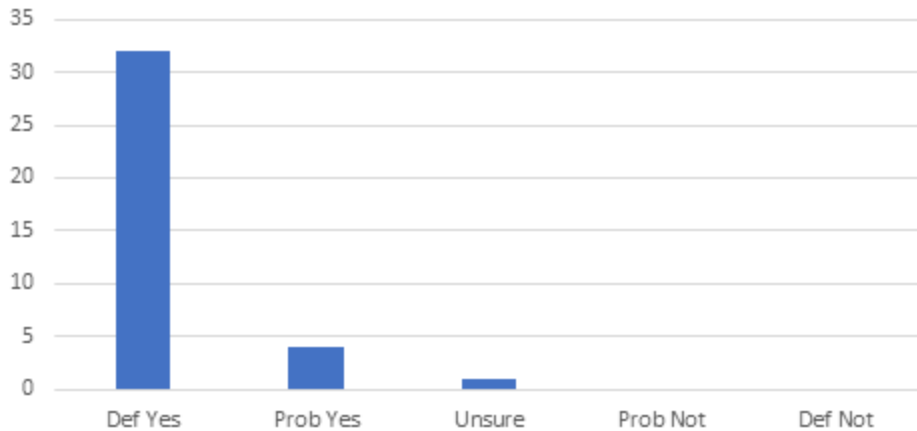
#### Notes:

“!?” to fresh water jellyfish

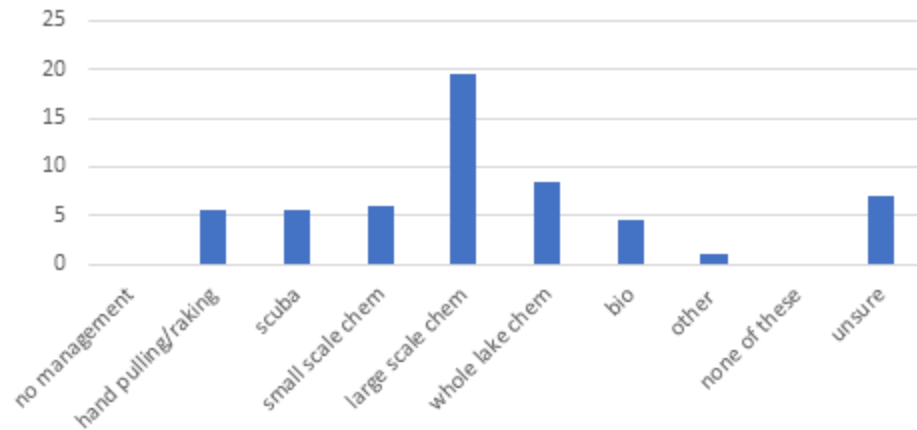
### Would you be willing to take part in an Aquatic Invasive Species workshop?



Do you feel Eurasian Water Milfoil management is necessary?

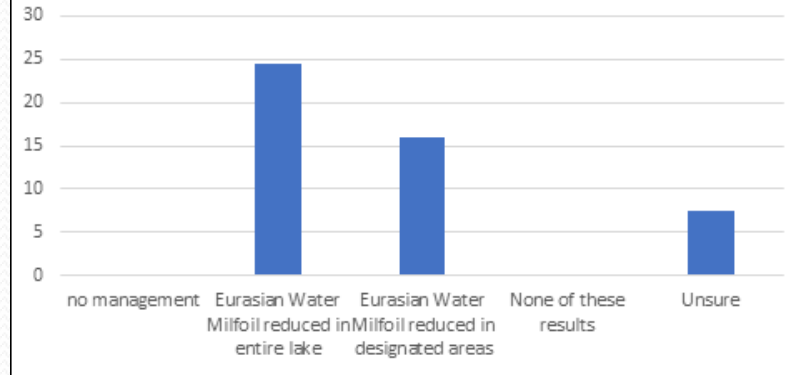


Select the methods that you would find most acceptable for aquatic plant control



# EWM Management

Select the results that you would find most acceptable for aquatic plant control.



# 2020 Eurasian Watermilfoil (EWM) Fall Bedmapping Survey



## Callahan Lake

18 EWM beds

3.26 acres

2.36% of lake surface area

Mud Lake 28 beds, 11.06 acres,  
2.38% of the lake surface area





# 2019, 2020, and 2021 EWM Management – Callahan Lake



2019 - 9 beds, 9.7 acres

2020- 3 beds, 10.57 acres



2021- 2 beds, 12.69 acres

Treated on May 26<sup>th</sup>, 2021

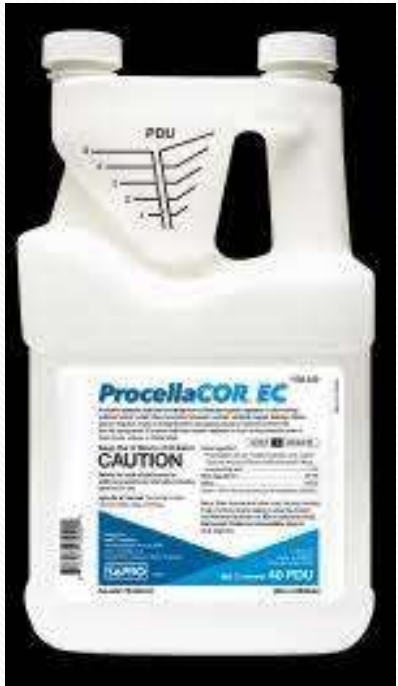
# Aquatic Herbicides used for Management of EWM



2,4-D Based



Both 2,4-D and Triclopyr based



Diquat Based

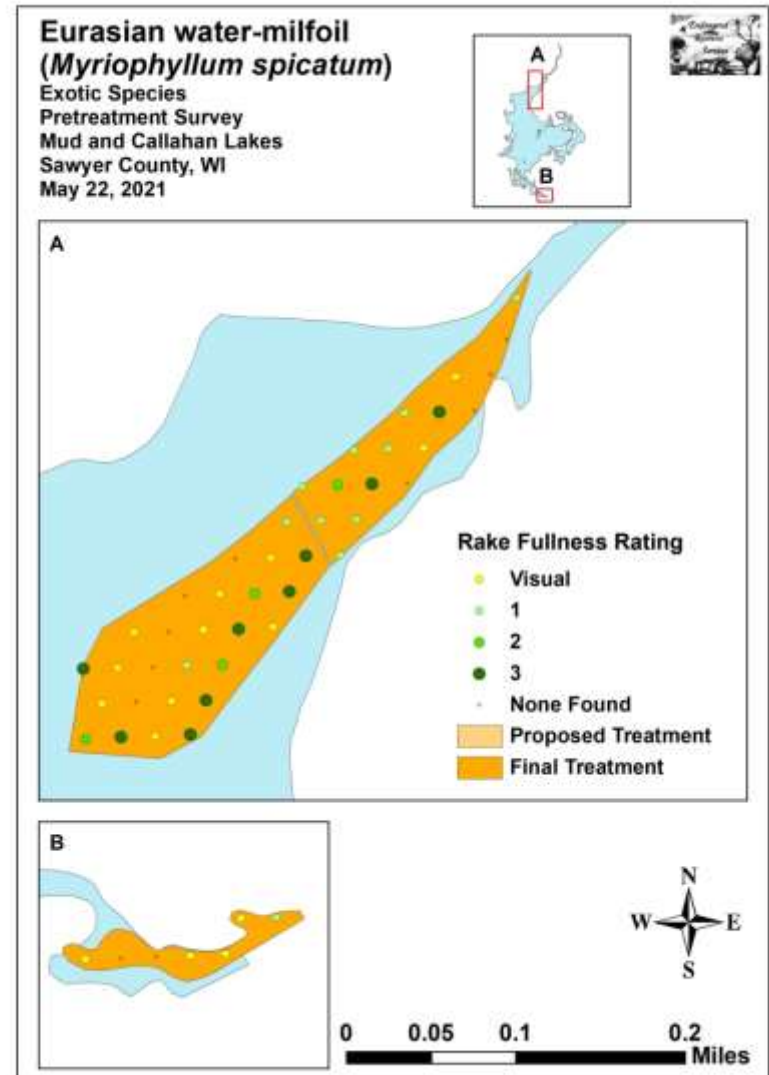
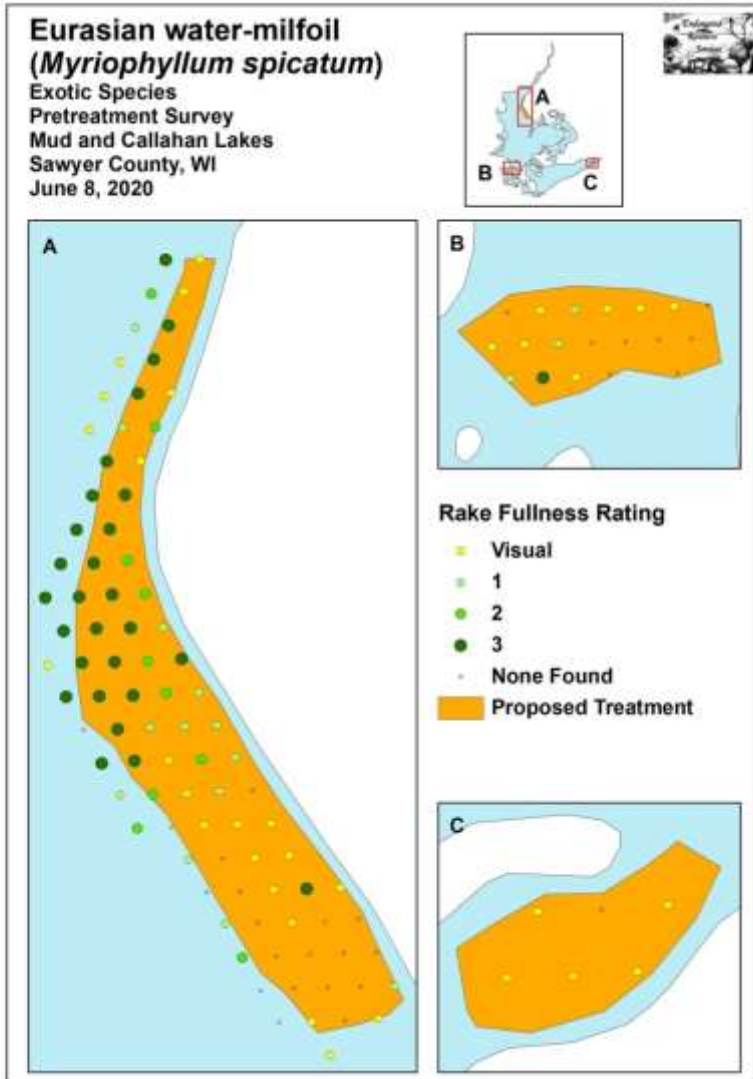


Endothall Based



triclopyr Based

# Pre and Post-treatment Plant Survey



# Updating the Aquatic Plant Management Plan for both lakes

- Original APM Plan – 2009
  - Kristi Maki, Sawyer County
  - Officially good for 5-years
  - No longer considered valid for grants, and for annual management permitting
- New APM Plan – 2021 (2022-2026)
  - Expected to be ready mid summer
  - Opens potential for grant funding for management if approved by the WDNR
  - Review past management, update data, review new/alternative management actions
  - Sets management criteria and goals for AIS (EWM)
  - Will touch on water quality, shoreland stewardship, etc.
  - Must be approved by the CLPA, before being sent to the WDNR



QUESTIONS?