



PERSISTENCE PAYS OFF IN AQUATIC PLANT ERADICATION

Craig McLane, FWP

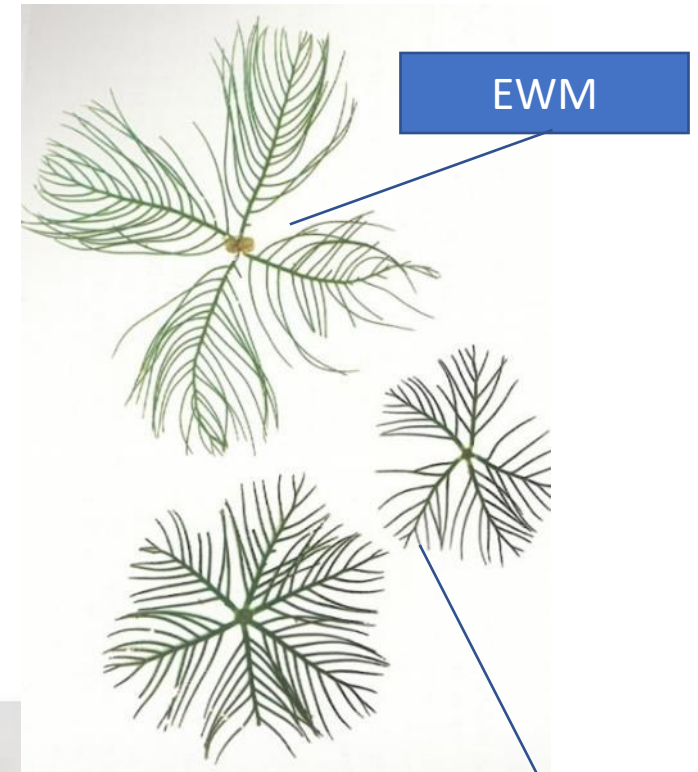
Persistence Pays Off – in Aquatic Plant Eradication



Craig McLane - AIS Early Detection and Monitoring Coordinator

Montana Fish, Wildlife & Parks - Helena, Montana

Eurasian Watermilfoil (*Myriophyllum spicatum*)



Native

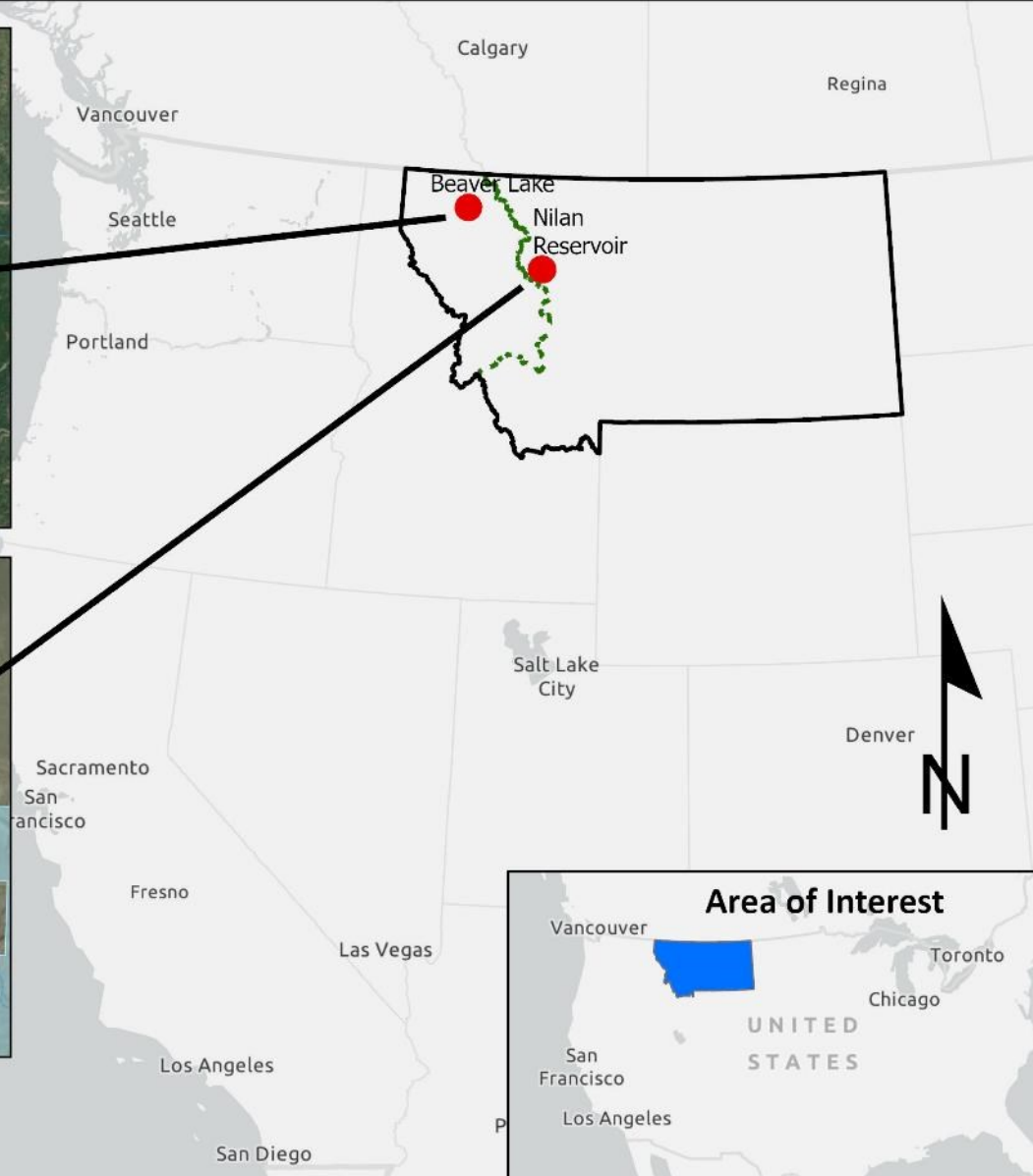
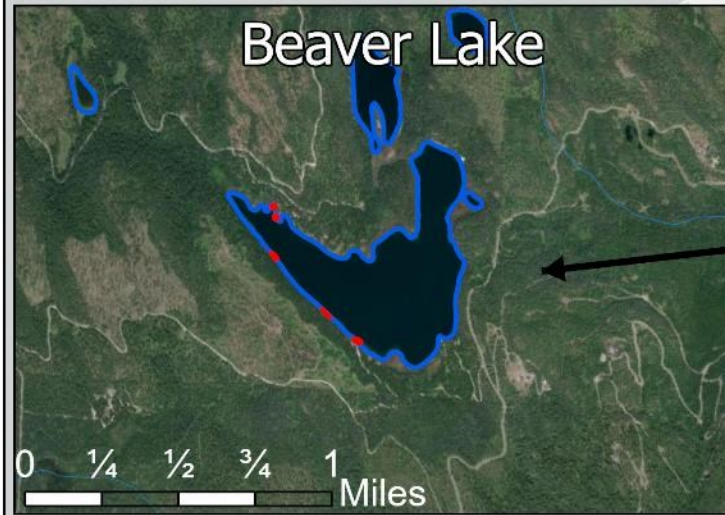


History of Eurasian watermilfoil populations in Montana

- Noxon Rapids/Cabinet Gorge Reservoir –2009
- Jefferson River/Slough/lower Madison River –in 2010/2011
- Fort Peck Reservoir – 2010
- Beaver Lake – 2011
- Nilan Reservoir – 2021
- Pablo Reservoir – 2022



Two Eurasian Watermilfoil Populations a Continental Divide Apart



Beaver Lake

- W. of continental divide
- 144 acres
- 100' max depth
- Oligotrophic
- Narrow littoral zone



Eurasian watermilfoil in Beaver Lake

- EWM discovered in 2011
- 130 miles from nearest EWM population
- Eradication effort began in 2011
 - Bottom barriers
 - Diver Assisted Suction Harvesting (DASH)
 - SCUBA/snorkel hand pull
- Well on way to eradication in 2013



Credit: MT FWP



Everyone involved, until they're not...finally FWP gets more involved in 2019

Whitefish Lake Institute

City of Whitefish

Flathead Lakers

Flathead County Weed District

Flathead County Sheriff's Department

Flathead Basin Commission

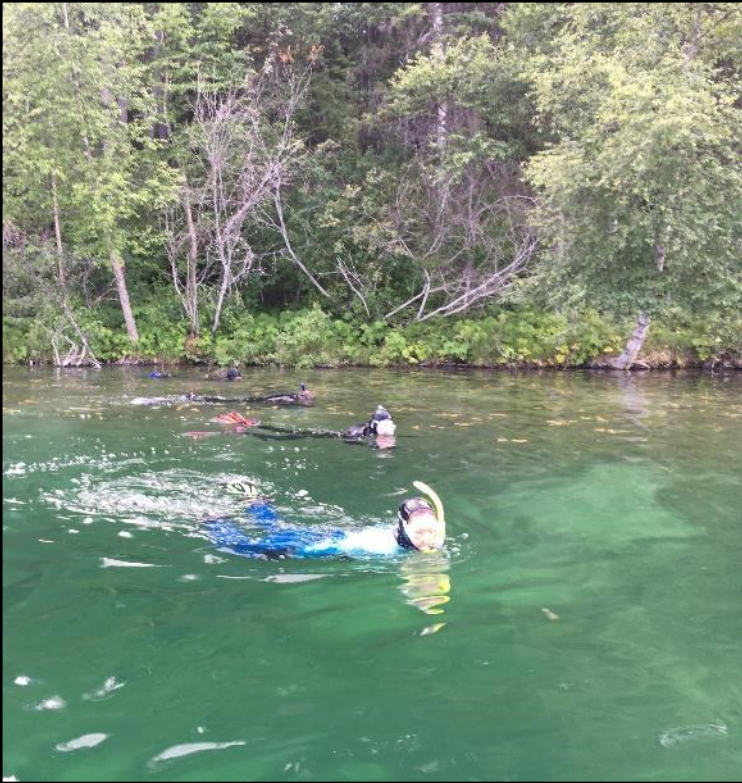
Montana Department of Natural Resources and Conservation

Montana Department of Agriculture

Montana Fish, Wildlife & Parks

- 2011: Every agency/group is involved
- 2012-2018: City of Whitefish/Whitefish Lake Institute (WLI) is lead on efforts
 - More or less take it on alone
 - Contracted efforts
- 2019 – Present: MT FWP takes lead in coordination with WLI

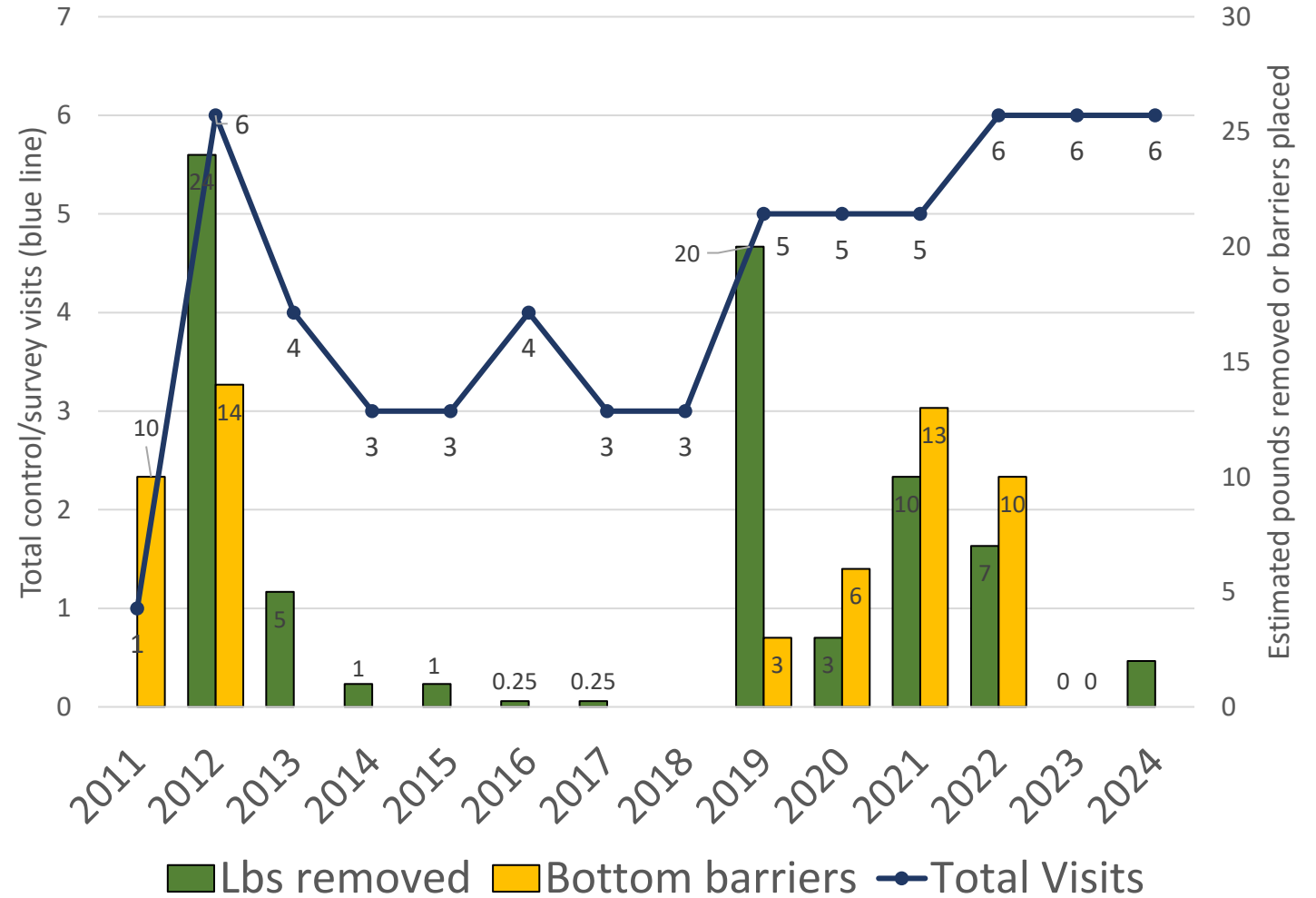




Control Efforts on Beaver Lake

- Snorkel/shoreline surveys vs SCUBA
 - times of year visibility drops to about 8-10 feet (miss the deeper beds)
- Seem to be on similar cycle after initial control
- Maintain similar survey visit amount and intensity
 - May ensure eradication

Control/Survey Visits and Estimated Watermilfoil Lbs. Removed or Barriers Placed





Nilan Reservoir

Nilan Reservoir

- 520 acres
- East of continental divide
- Along Rocky Mountain Front
- Large summer drawdowns for irrigation
 - Two dams feed two canals
- Healthy plant beds in protected bays



Eurasian Watermilfoil in Nilan Reservoir

- EWM discovered by FWP - 2021
- 115 miles from nearest EWM population
- Fluridone treatments - 2021 & 2022
- Hand removal of satellite populations
- Stars aligned for eradication efforts



November 2021



August 2022

- EA in 1 month
- Installed barrier to contain herbicide

Fluridone treatment

- 11/21- 90 ppb; about 1ac
- Removed barrier 3/22



Fluridone treatment

- 8/22 - 45 ppb; about 2.25ac

Survey efforts

- 6/22 - another bay with watermilfoil



Fluridone treatment

10/22 – 15ppb bump
back to 45ppb – about 1
ac

10/22 – 2 quarts/ac bare
ground application
around initial population

Survey efforts

Points found along
shores – hand pulled

Extreme drought
drawdown leaves
reservoir low all winter



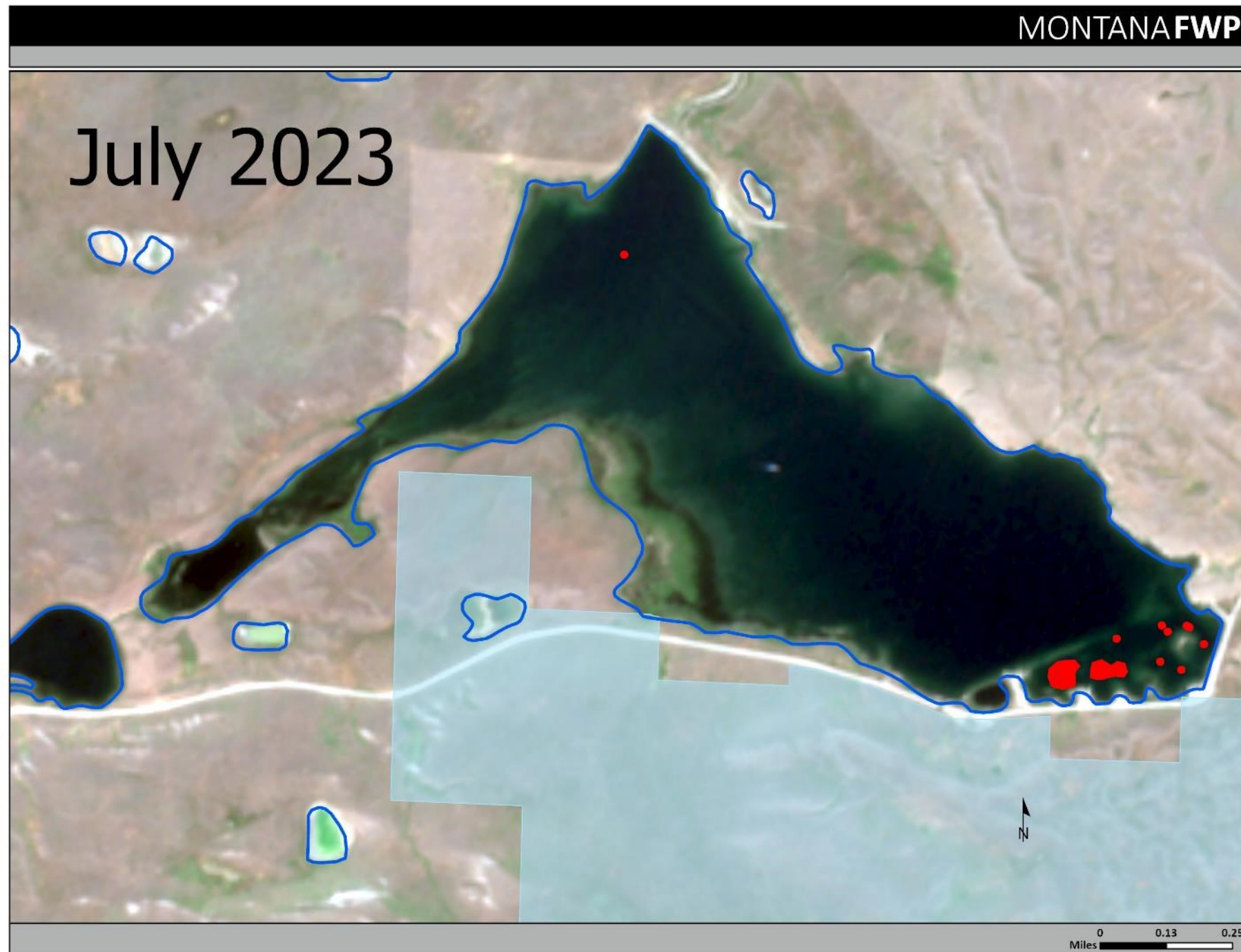
Survey 5/3 – Some plants still dying

April 2023



7/23 - SCUBA surveys
at all points – No
Eurasian watermilfoil

10/23 – SCUBA survey
on bays – No Eurasian
watermilfoil



November 2024



- Sept 2024 SCUBA survey
- Single plant (star)
 - 8' water south of treatment area
 - Area would have been dry in all of 2022 but not in 2023 (fragment established in 2023?)
- Population suppressed and working towards eradication



Comparison of efforts

Beaver Lake

- Lower cooperation/capacity
- Jumped on it then fizzled (kudos to WLI for sticking with it)
- Working on eradication for 13 years
- About \$90-\$110K spent since 2011
- Successful control and on its way to eradicated
 - Handful of plants in 2024

Nilan Lake

- Quick coordination and ample capacity
- Working on eradication for 3 years
- About \$10-15k spent since 2021
- Successful control and on its way to eradicated
 - Single plant in 2024



Capacity Building

- Find ways to build capacity/help others build
 - Beaver lake - struggled because it was all new
 - Nilan Reservoir - effective because agency was ready to do something if/when we found it

Persistence

- Increased visits = increased control
- Increased \$ = Increased control
- Increased cooperation = Increased control
- Don't assume because you can't find it that it is gone.



Adaptation

- Adjust control with changing environmental conditions
 - Nilan Reservoir – Bay dropped too fast in 2022 = Dry ground application
- Take advantage of environmental conditions when they show themselves
 - Seasonal drawdowns and droughts
- Change control efforts based on success or failures

Beaver lake – increase surveys per year

Optimism

- Don't throw in the towel at 1st failure
- Maybe these will work!

