

State of Locustville Pond 2021 Water Quality Summary

**LPIA annual meeting
May 28, 2023; 1-3 PM**

5 Camp Street, Hope Valley, RI

James S. Latimer, Ph.D.

President LPIA

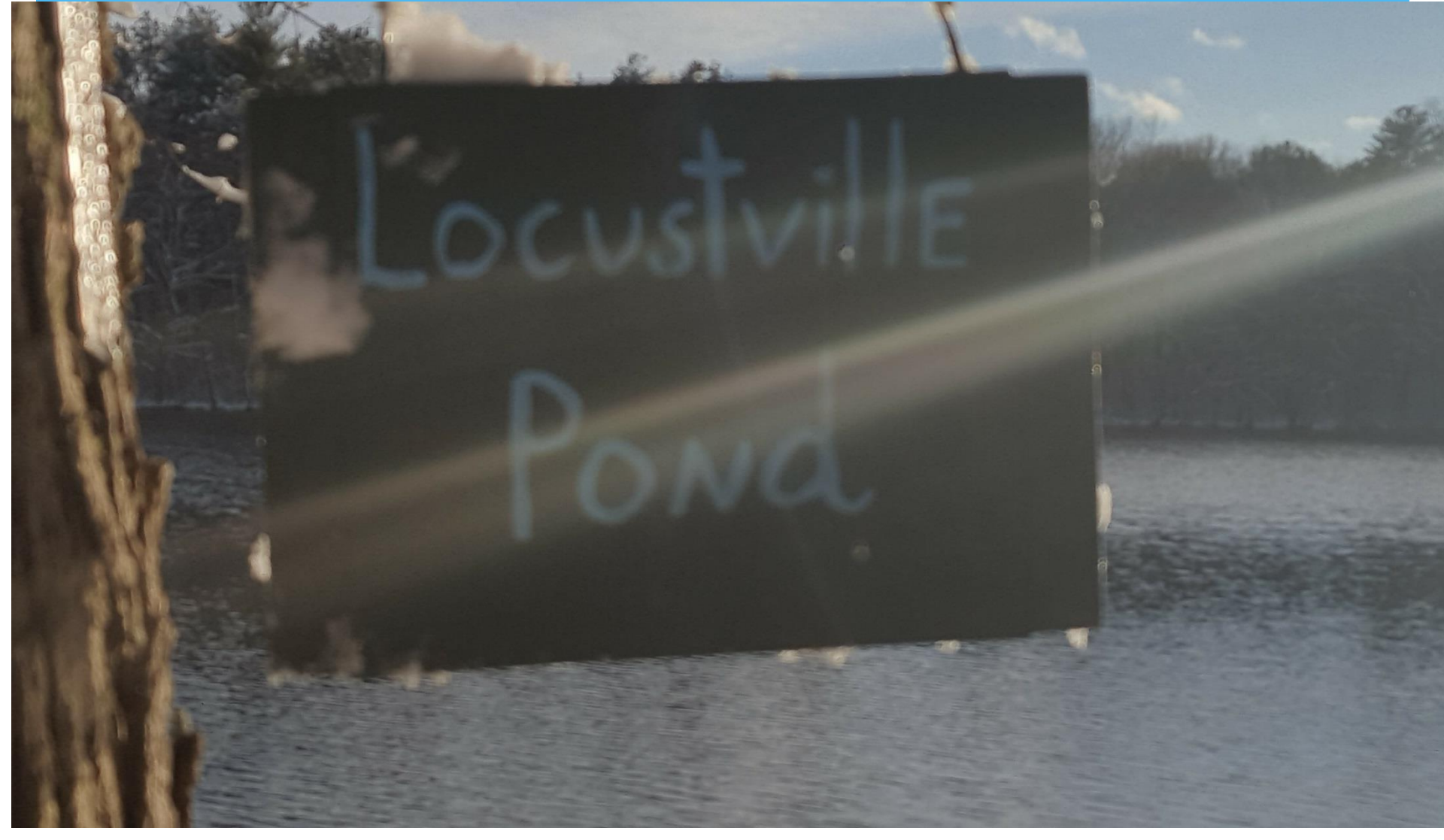
spesjsl@gmail.com

401-486-9749

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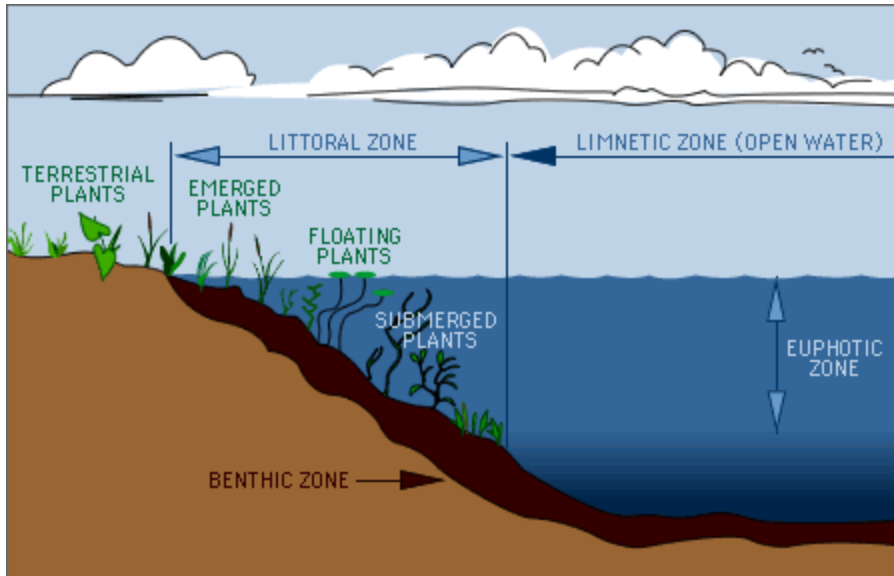
Water Quality Summary



Locustville
Pond

What do we look at?

❖ Water Clarity (as measured with a Secchi disk) weekly



Water clarity can be affected by

- floating algae (phytoplankton)*,
- suspended particles (dirt) and
- colored dissolved matter (from leaves)

*indicator is chlorophyll a

A cold day on the pond



What do we look at?*

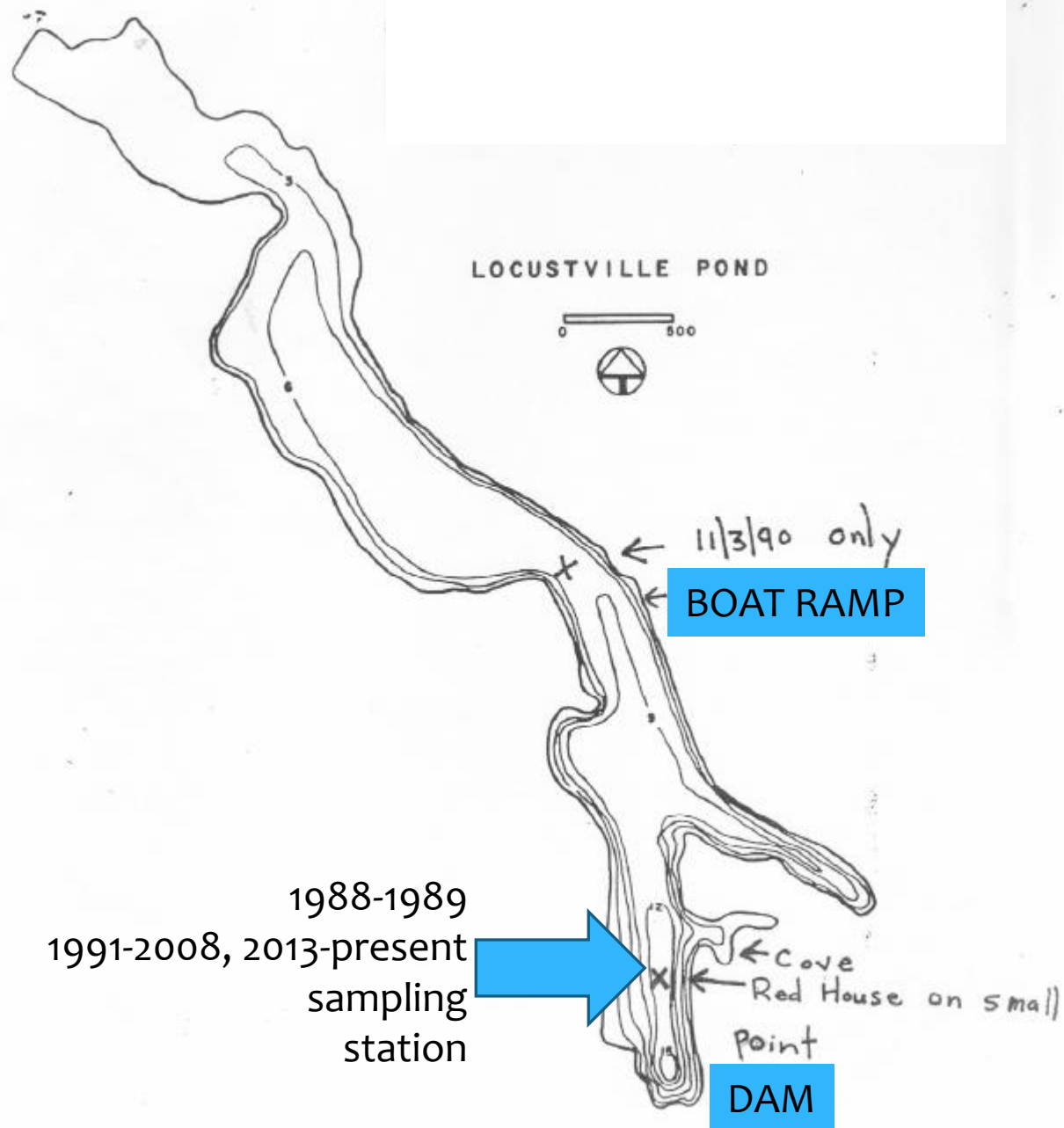
- ❖ Water Temperature (surface and 1 m depth) – weekly
- ❖ Secchi Depth - weekly
- ❖ Chlorophyll a (1 m depth) – bi-weekly (**sent to URI**)
- ❖ Nutrients (nitrogen and phosphorus)
(1 m depth) – 3 times per season (**sent to URI**)
- ❖ Chlorides, bacteria, pH, alkalinity
(1 m depth) – 3 times per season (**sent to URI**)

* Cost of supplies, training, analysis, and overhead at URI is ~\$650 per year .
Sampling is done as in-kind service by Jim, 2 hours per week for 6 months



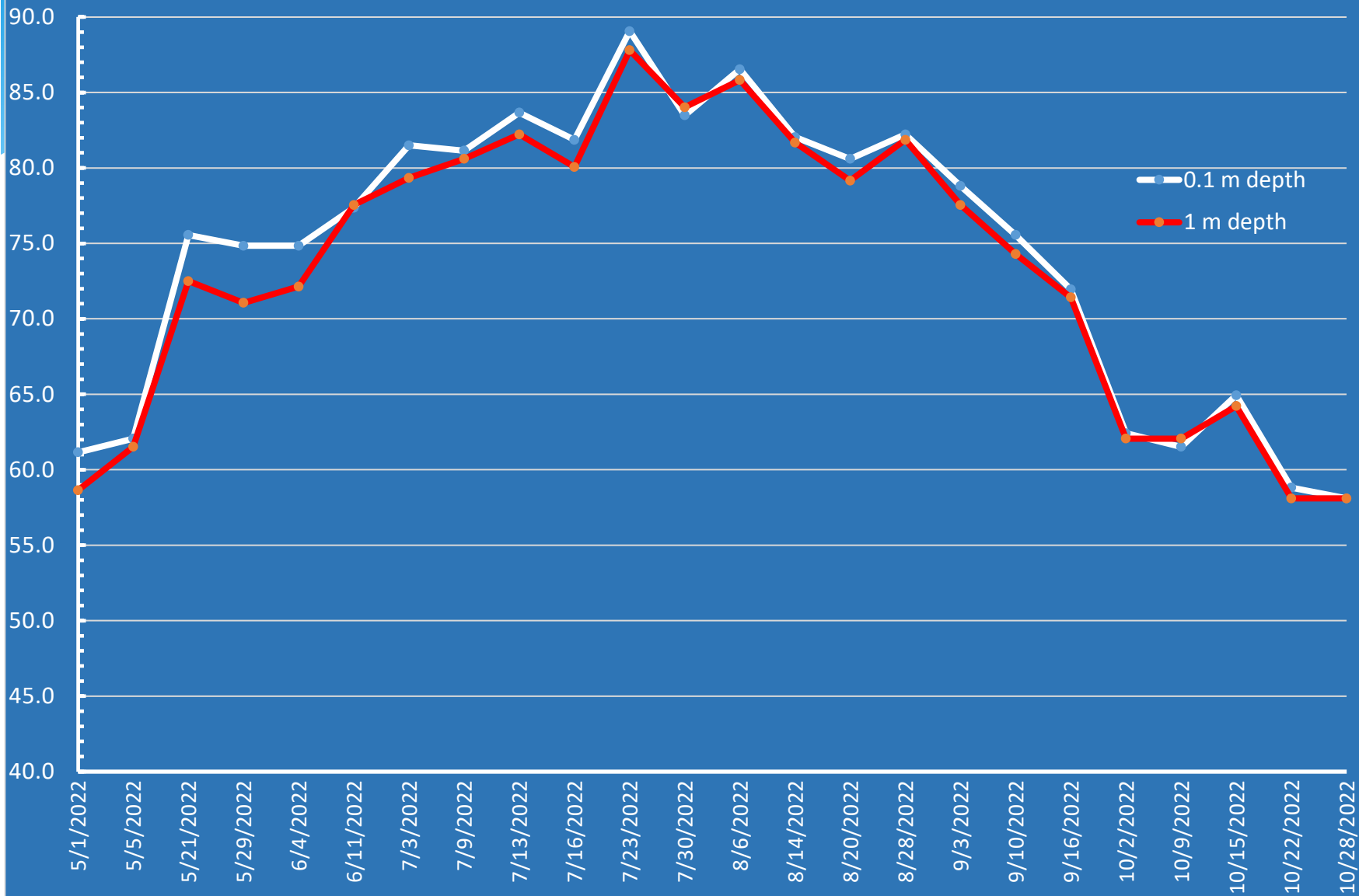


Where do we sample?



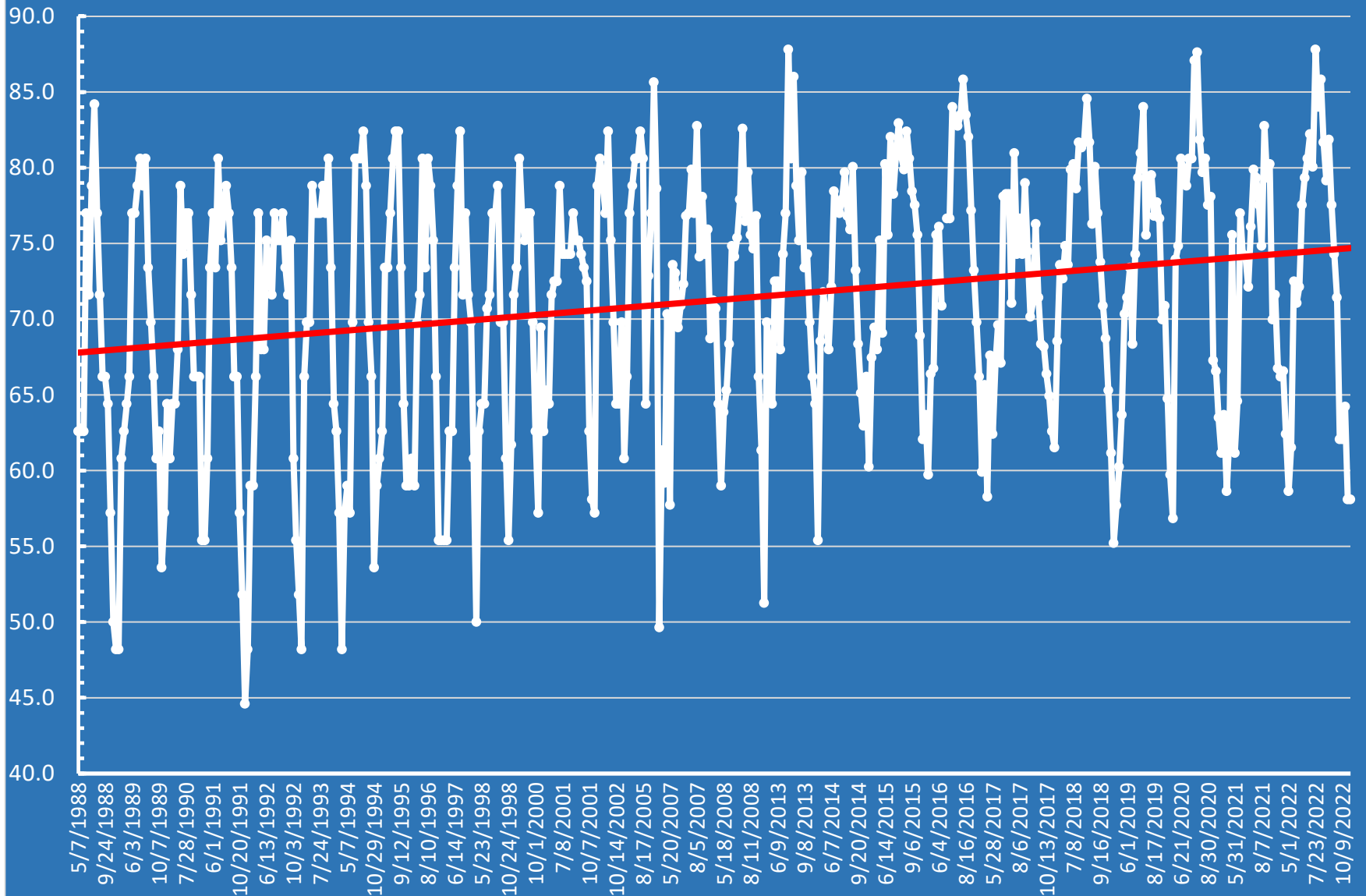


Water Temperature (2022) weekly (°F)





Water Temperature Seasonally by Year @ 1m (1988-2022) (°F)

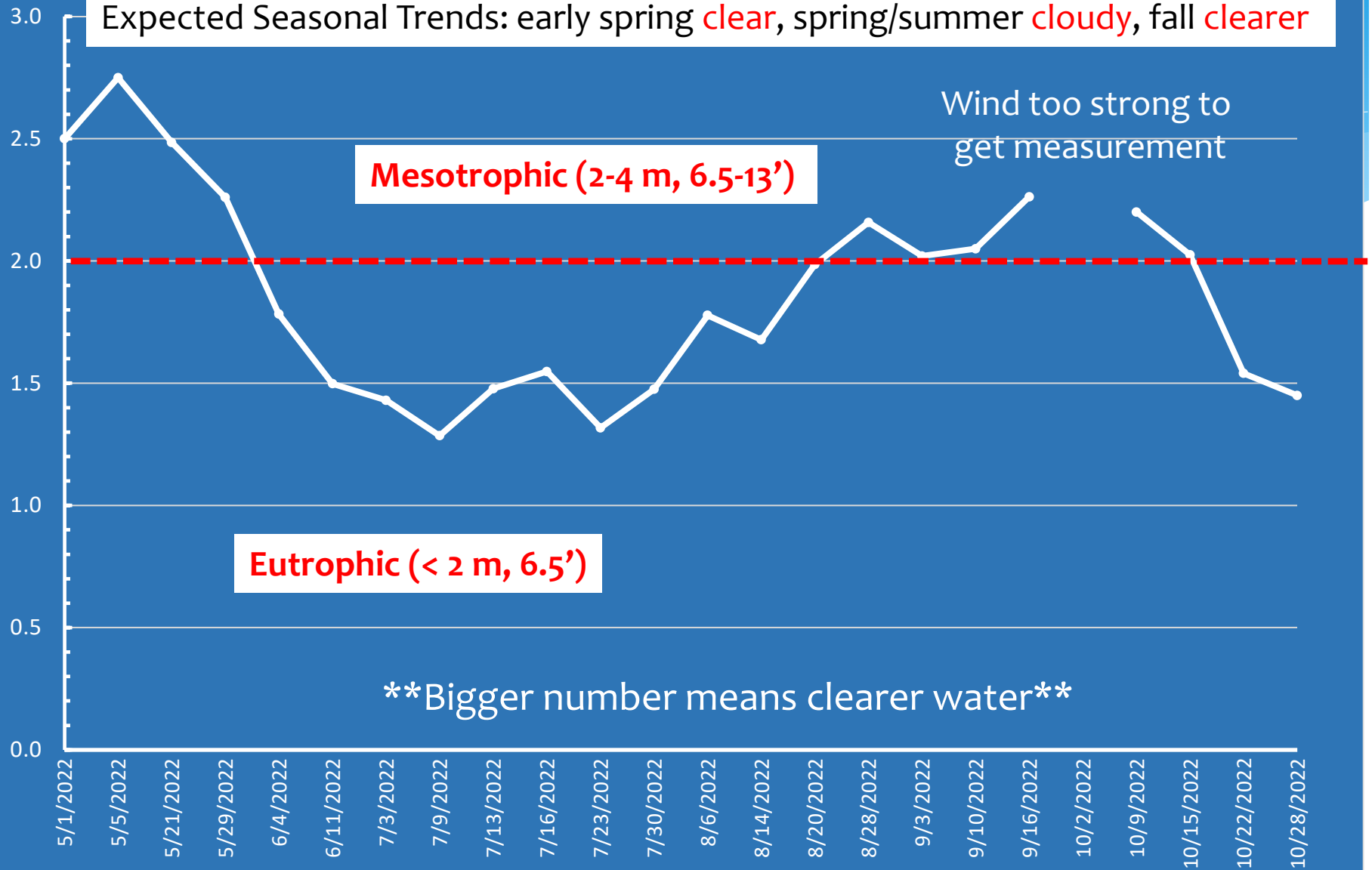






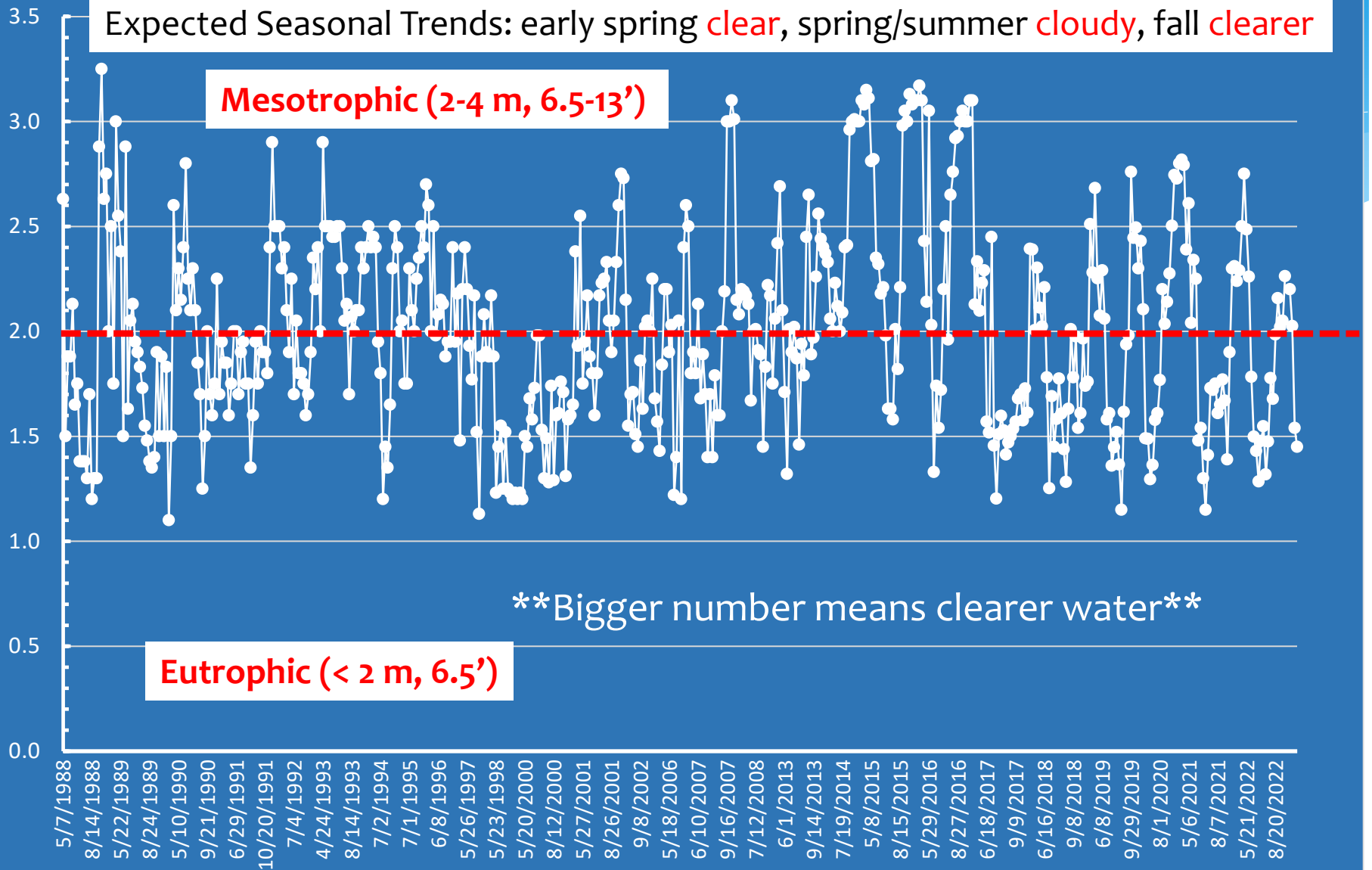
Secchi Depth (m) Water Clarity (2022) Weekly

Expected Seasonal Trends: early spring **clear**, spring/summer **cloudy**, fall **clearer**





Secchi Depth (m) Water Clarity Seasonally by Year (1988-2022)



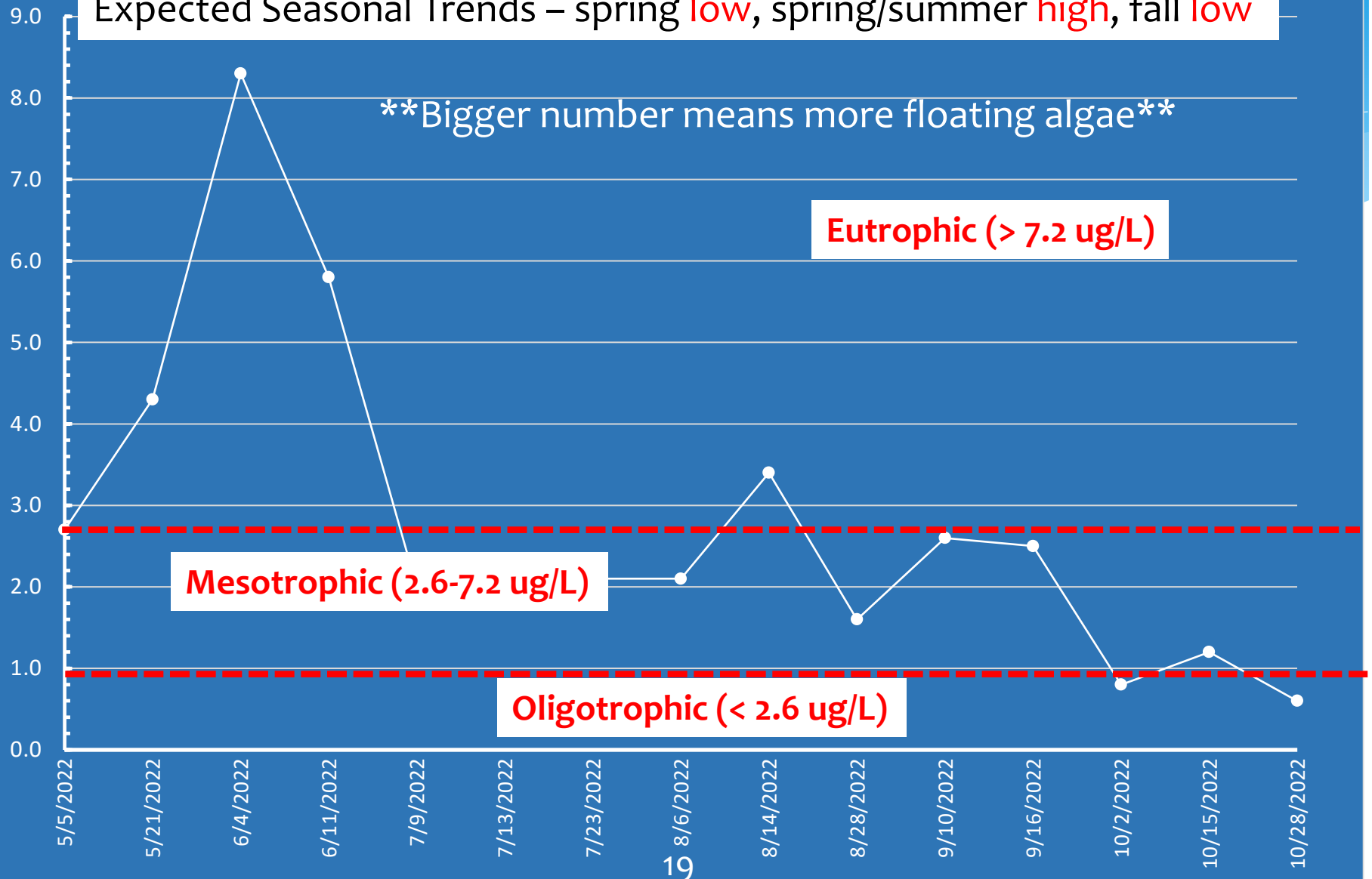




Chlorophyll a (2022)

Expected Seasonal Trends – spring **low**, spring/summer **high**, fall **low**

****Bigger number means more floating algae****

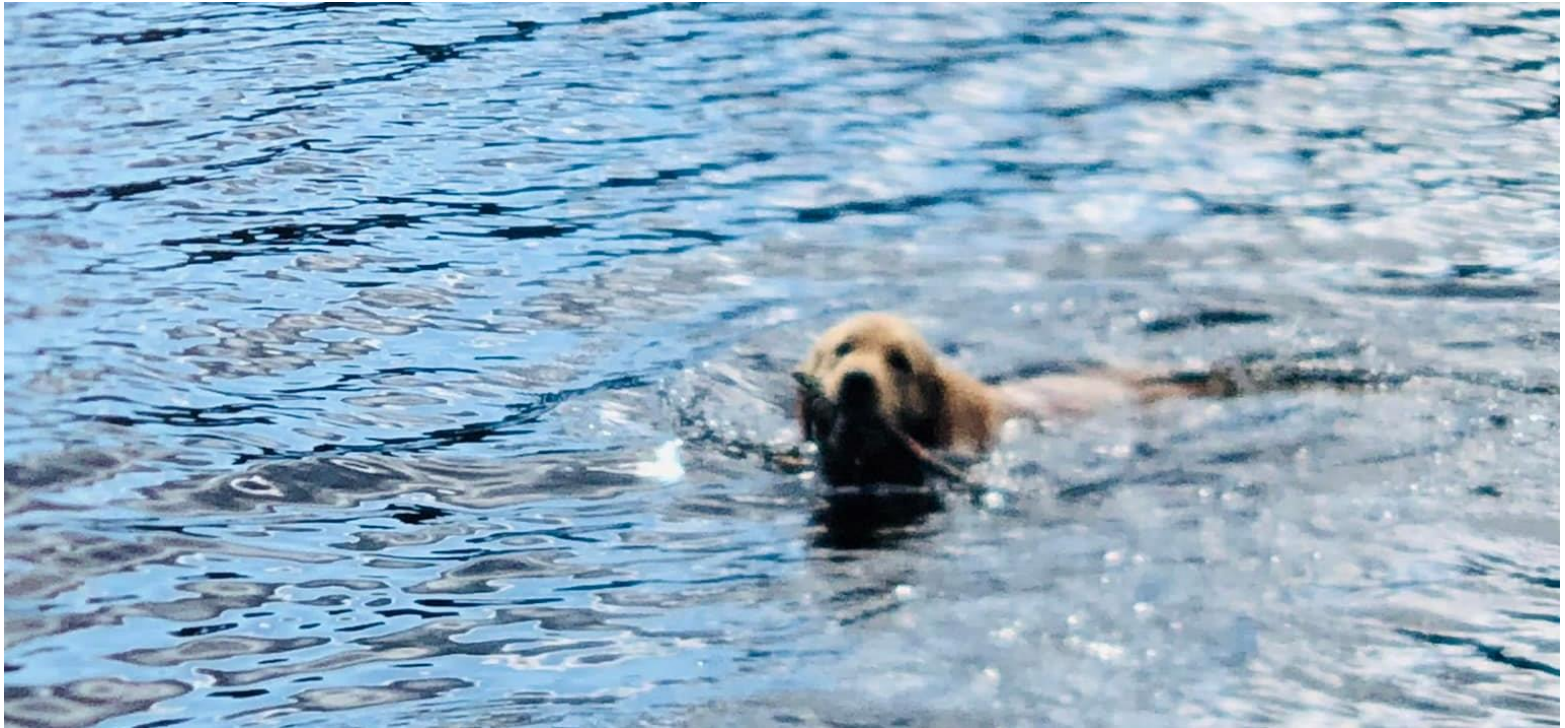


Eutrophic (> 7.2 ug/L)

Mesotrophic (2.6-7.2 ug/L)

Oligotrophic (< 2.6 ug/L)

A morning dip



Chlorophyll a by Year (1988-2022)

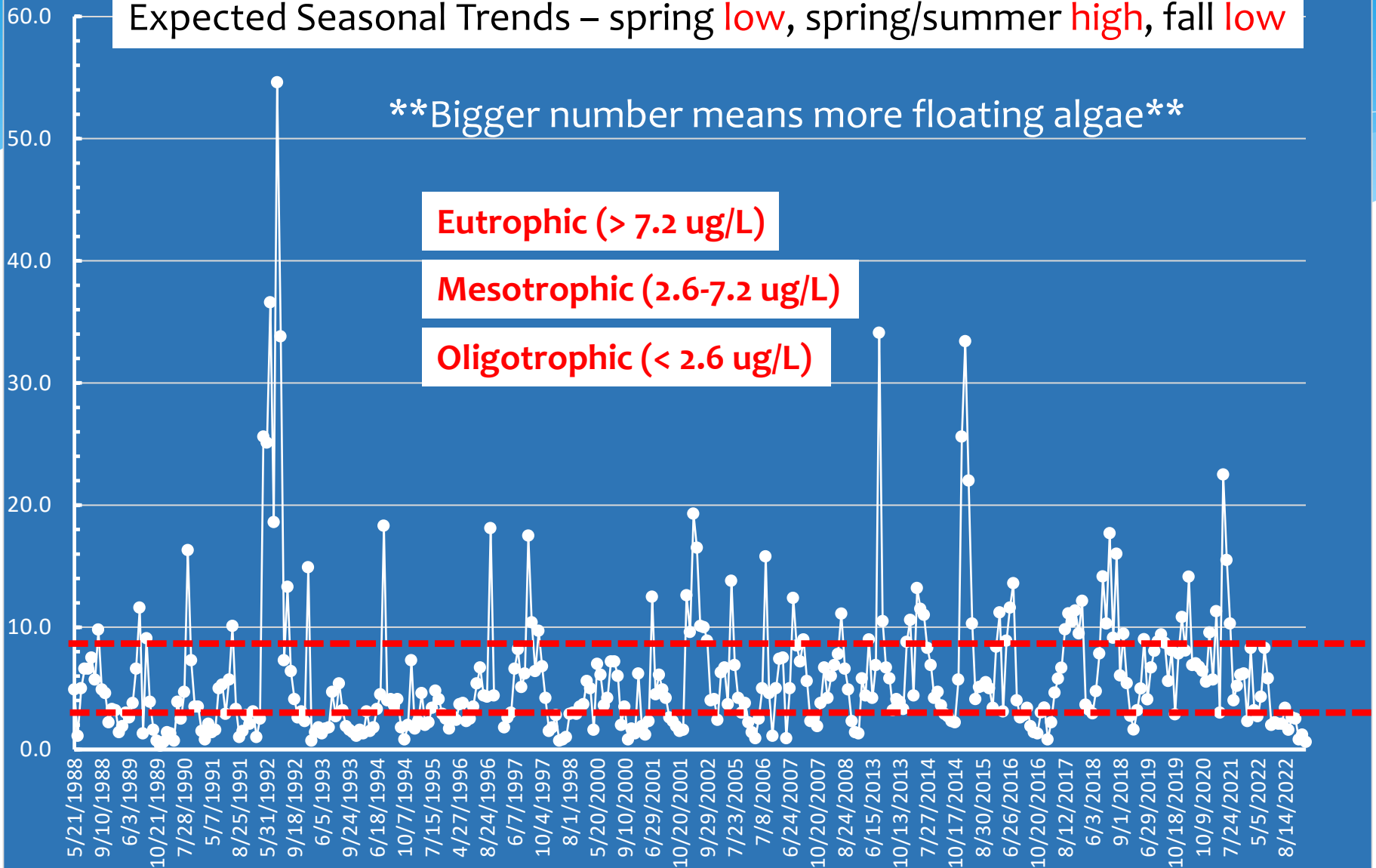
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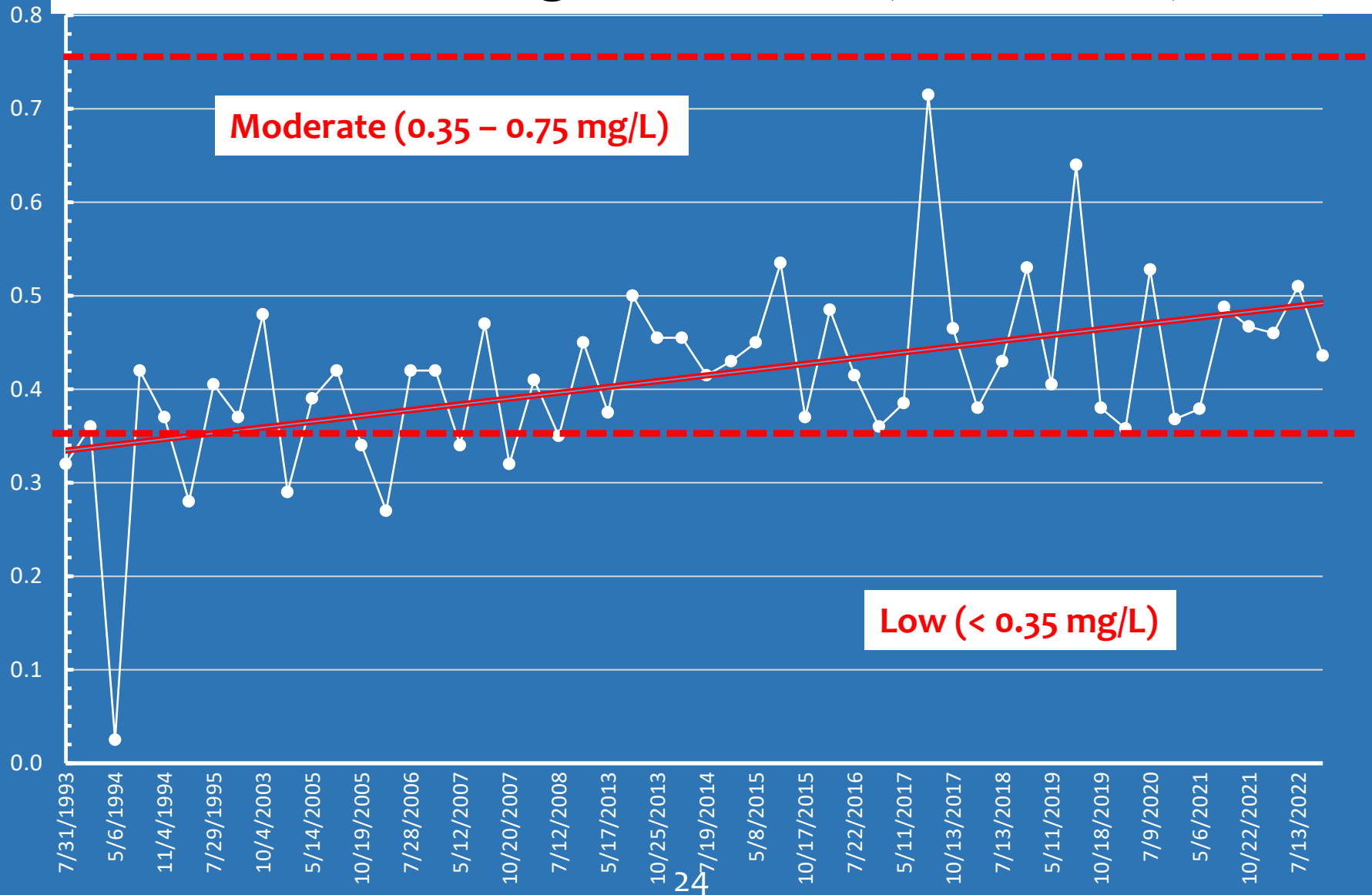
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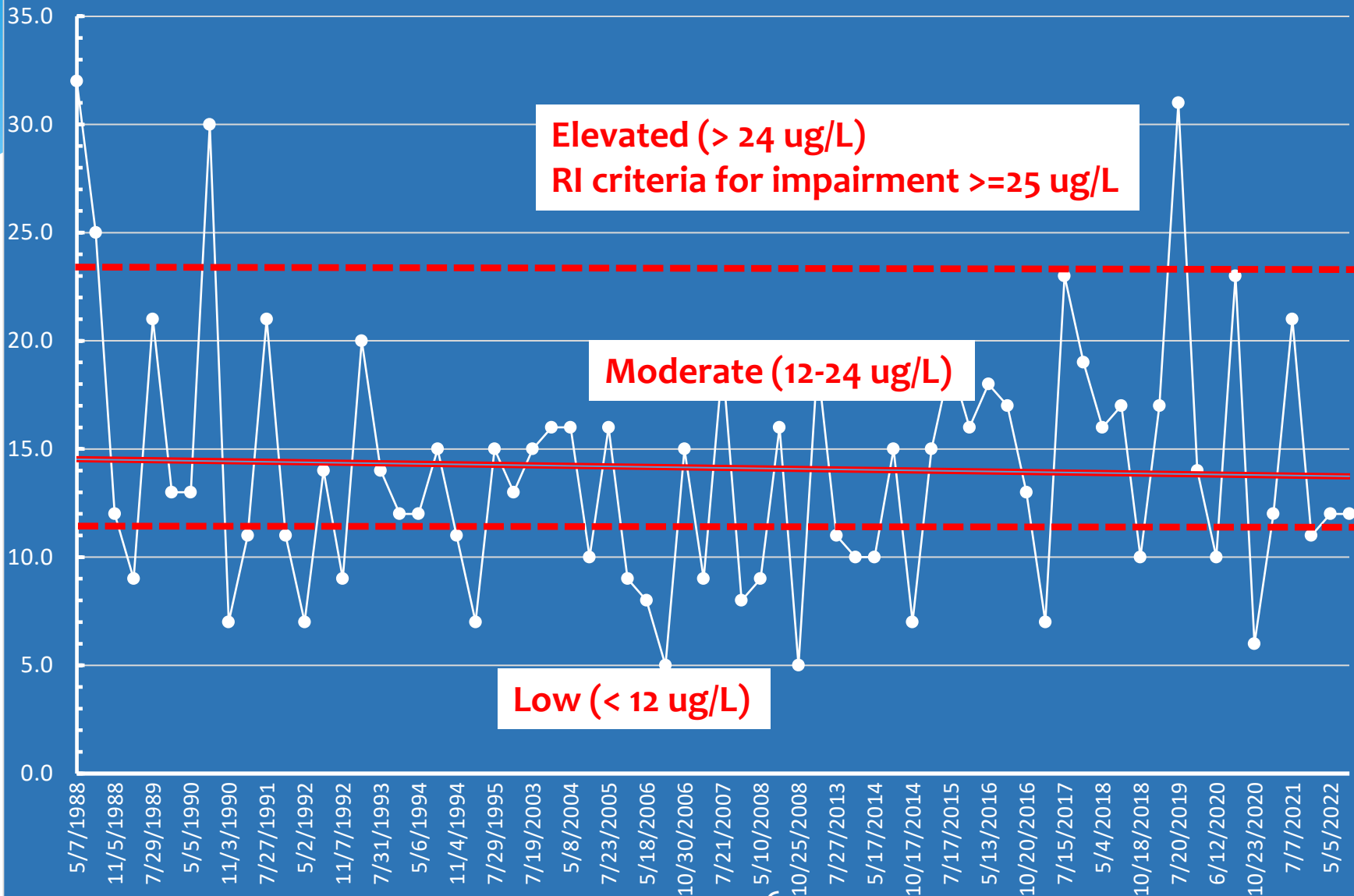


Total Nitrogen by Year (1993-2022)





Total Phosphorus by Year (1988-2022)





How to protect Water Quality of Your Pond

- Minimize use of fertilizer on your property
- Avoid applying fertilizer to hard surfaces
- Maintain your septic system
(regular pumping is required by law)
- Don't allow animal waste to enter pond
 - Livestock
 - Minimize geese invasion of your property
- Keep a buffer of shrubs and trees near the pond
(DEM will assess fines for removal of trees too close)
- Never dump raked leaves in the pond
- Never dump cut grass in the pond



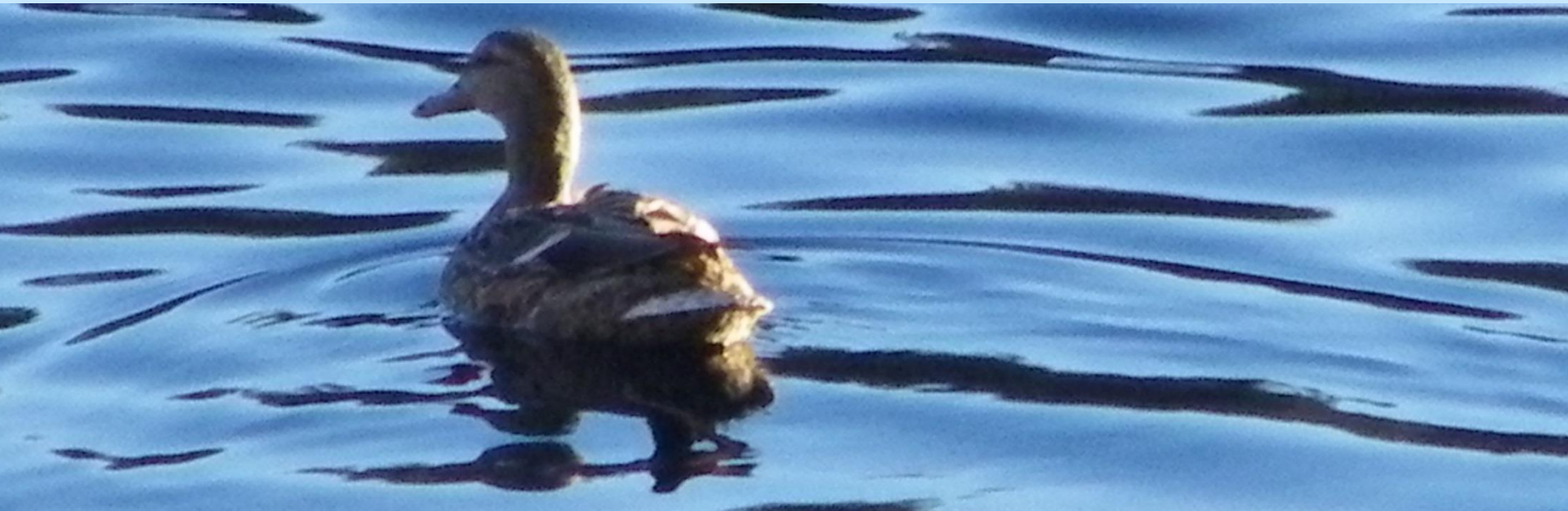
How to be good Aquatic Neighbors on Your Pond

- Respect personal watercraft (kayaks, canoes, paddle boards, etc.) **Slow down power boats near personal watercraft**
- Respect swimmers and fishers (give them wide berth)
- There is a 10 hp limit to boats entering pond at boat ramp (**DEM/Police will assess fines**)



2022 was a good year for us,
our milfoil problem has been reduced due to the new herbicide

Let's hope 2023 is another great year!



If you have any concerns or questions contact me at
401-486-9749 or spesjsl@gmail.com

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