



On-Site Lake Evaluation Record

Lake Name: Ann Lake

County: Benzie

Evaluated by: Bre Grabill

Reviewed by: Bre Grabill

Date: 13 August 2019

Purpose of Evaluation: Aquatic Vegetation Survey, Review

Evaluations Performed

Aquatic Vegetation Evaluation

- Aquatic vegetation survey
- Aquatic vegetation brief check

Water quality sampling

- On-site (Temperature, DO, Secchi disk)
- Water samples collected for
_____TP, TN_____ analysis

Vegetation evaluation methods

- Visual evaluation
- Sample collection with rake
- Sonar profiling
- GPS-mapped sample locations

GPS data collection

- Depth survey
- Shoreline mapping
- Reference point location

Other _____

Overall Condition of Lake

- excellent (no problems or developing problems noted)
- very good (no immediate action required)
- fair (management required soon)
- poor (management needed as soon as possible)
- very poor (management action past due—IMMEDIATE response required)

Problems Noted

- Growth of exotic plants (mark locations on map)
 - Eurasian watermilfoil
 - curlyleaf pondweed
 - other _____
- Some areas of native plant growth congestion
- Excessive filamentous algae growth
- Poor water clarity
- Blue-green algal blooms



RECOMMENDATIONS

- x Monitoring Program: Continue Program Next Season
Need for monitoring next season: urgent, serious, moderate, slight
- Herbicide application: Continue Program Next Season
Need for herbicide treatments next season: urgent, serious, moderate, slight
- Algaecide application: Continue Program Next Season
Need for algae treatments next season: urgent, serious, moderate, slight
- Harvesting: Continue Program Next Season
Need for harvesting next season: urgent, serious, moderate, slight

NOTES

Ann Lake was surveyed on 13 August 2019. Weather conditions included a mild breeze as the day continued, 72 degrees and sunshine. The purpose of this survey was to identify and track plants in Ann Lake.

The survey on Ann Lake found 23 native submersed or floating leaf plants throughout the lake. Additionally, numerous emergent plants were documented as well, including Phragmites. The Phragmites found during the survey did not appear to be invasive, as the coloring of the plants, height of plants and general appearance didn't present as invasive. These areas should be monitored into the future and/or sampled for additional identification purposes.

The diversity of native plants in Ann Lake was outstanding. Numerous different pondweed species were found as well as Elodea, Bladderwort, Naiad, Northern watermilfoil and Chara to name a few. Chara formed a nice mat on the bottom of most of the lake, providing excellent habitat for invertebrates and the healthy fishery witnessed during the survey. A formal fish study was not performed, but numerous fish species of various sizes were witnessed during the survey, indicating a balanced and healthy ecosystem. A few areas were growing native plants in high densities. In certain areas, I would not be a surprised if lake residents had some navigational impacts from the dense native plant populations. Native plants typically do not cause recreational issues and normally will balance each other out. However, pending on their annual growth cycles, nutrient levels and the weather, native plants can cause recreational impacts. If there is a concern over this, raking is recommended for breach areas, while promoting healthy native plant beds in the rest of the lake.

Future AVAS surveys will allow plant trends to be determined, so plant graphs are not available at this time.

It is important to keep an eye on the milfoil population in the lake. None of the plants sampled showed any indication of being non-native. However, with a public access site in addition to waterfowl, non-native milfoil could be found and with a dense native milfoil population, could mix quickly and make early detection more difficult. Continue to monitor the bays near the access site as well as the shorelines of the most common prevailing wind side, as those are most likely to be initial locations of exotic species infestation.

It is recommended to monitor Ann Lake annually for changes in this plant community and identification of new species. Please contact me with questions or concerns.

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