Lake Evaluation Summary

Lake Name: Green Lake **County:** Grand Traverse

Evaluated by: Sal Adams **Reviewed by:** Bre Grabill **Date:** Sept. 1, 2022

Purpose of evaluation: End of Season AVAS Survey

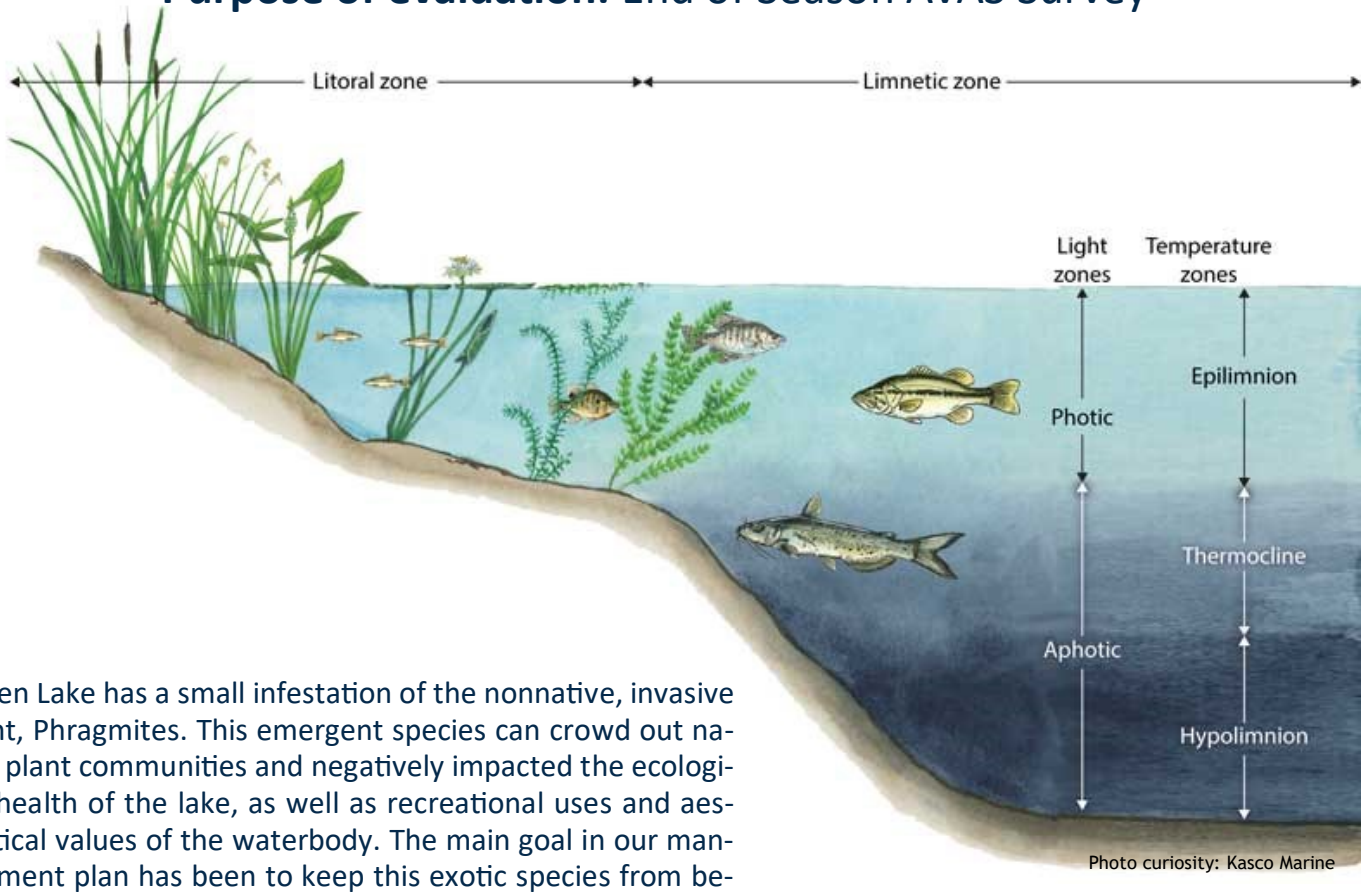
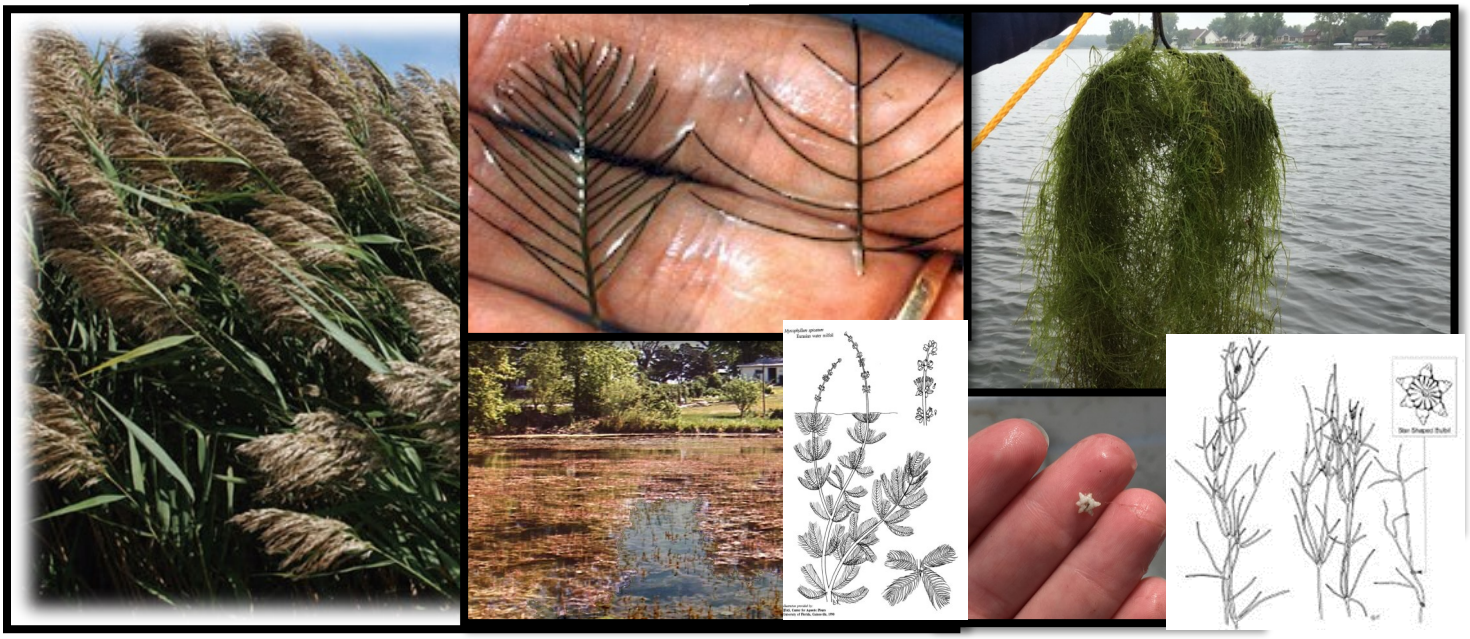


Photo curiosity: Kasco Marine

Green Lake has a small infestation of the nonnative, invasive plant, Phragmites. This emergent species can crowd out native plant communities and negatively impacted the ecological health of the lake, as well as recreational uses and aesthetical values of the waterbody. The main goal in our management plan has been to keep this exotic species from being as dominate around the lake and from spreading and hurting the native plant community. As part of this program, Green Lake is surveyed and managed, including an end of year AVAS Survey. Recommendations for management were provided for spot treatment of the Phragmites. Green Lake is managed under the Green and Duck Lakes Association and individual permissions are granted for treatments.

2022 Service Timeline:

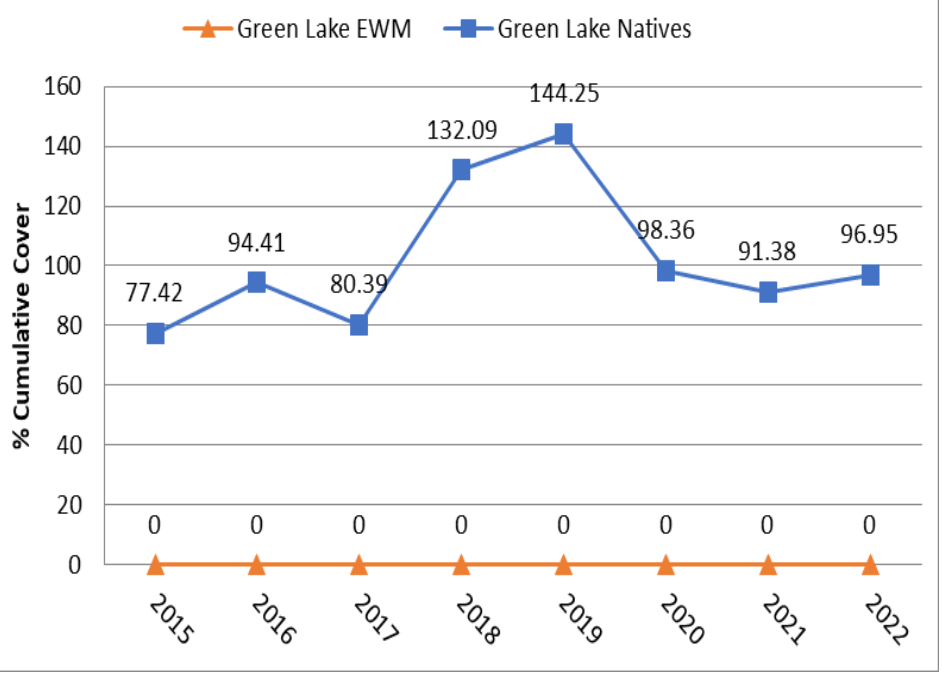
Service	Date
AVAS Survey	9/1
Phrag Treatment	9/1



Exotic Plant Species (above left to right: Phragmites, Eurasian watermilfoil and Starry stonewort) cause most of the serious weed problems in Michigan's lakes. Exotic plants (or nonnative) are plants that are not native to this geographical area, which have been brought to the region inadvertently. Because they often have few natural enemies (their pests, pathogens, etc. may not have come over with them) therefore, they grow out of control. When exotic aquatic plants such Eurasian watermilfoil, Starry stonewort or Phragmites invade a lake, they often form extensive dense populations, crowd out native species, negatively impact fisheries, reducing the quality of habitat for other organisms and impacting the entire lake ecosystem.

The graph to the right shows the last eight seasons of plant growth in Green Lake. In 2019 and 2020, plant density decreased, however the last few years have shown more consistent growth and a solid trend line. Seasonal variance is expected and can be impacted by many factors including weather patter changes, natural plant biological tendencies, surveyor and/ to name a few. The goal of tracking plants long term is to be able to 1) identify plants for early detection and rapid response 2) review long term trends for lake health. The more dominate species in Green Lake is Chara, which is a number 1 species to have within a waterbody, followed by numerous pondweeds, Variable leaf milfoil, Naiad and Wild Celery. Chara is a natural filter to help clean the water and provides excellent habitat as well as stabilizing the sediments. As this is a great plant to have, it poses no concern unless it starts impacting recreational uses of the lake.

Continuing to survey the lake in 2023 and future years is recommended to track all plants in the lake and see seasonal and long term changes within the plant community. Over time, plant trends can help determine the overall health of a plant community in more depth than just a single survey.



Final Recommendations

- A spring vegetation survey (to evaluate conditions in the lake and direct management efforts)
- Herbicide treatments for nonnative plants, (i.e. Phrag)
- Mid summer surveys for monitoring
- Water Quality monitoring
- End of summer AVAS Survey