

SSLA Clean Water Report

ANNUAL MEETING 2023

I'm Terry Klaves, David Lester and I report to your Board on the Clean Water Committee. We have three primary objectives: weed control, water clarity and reduction of muck and sediment.

Weed Control:

We have three invasive weed species in our lake, Eurasian Water Milfoil, Curly Leaf Pondweed and Watershield, (small lily pads late summer in Butterfly Bay) plus noninvasive Illinois Pondweed, (easily mistaken for Curly Leaf Pondweed), and an algae called Chara which is the green, prickly mat that covers the bottom in some areas. We contracted with Cason to chemically treat the invasive weeds in the spring before they spread, and the infected areas of these weeds have been on the decline for the past three years running. We chemically treat the Illinois pondweed mid-summer to keep the navigation lanes open and it has been a growing concern the last two years, but we have been staying on top of it. The Watershield must be pulled by hand but has not reached nuisance levels, so we have left it alone. The Chara has been spreading and typically has 1-2 inches of black muck beneath it, so the Board is looking at addressing the Chara which, again, is a form of algae and requires different treatment. Weeds must be treated in a narrow window to be effective, while they are growing and before they drop seeds or turions. The chemical treatments result in lawn watering and swimming restrictions for pets and children for a few days after treatment. We do our best to schedule treatments away from weekends and Holidays, but sometimes, the weather, availability of materials and weeds don't cooperate, and we are competing with 50 other Cason customers who need their services. We appreciate your cooperation and understanding in scheduling weed treatments.

Water Clarity:

Our natural lake has nutrients coming in from runoff, springs, leaves, and goose poop. The weeds, algae, fish and micro-organisms feed on these nutrients. When we treat or cut the weeds, the algae have more nutrients to feed on, so it blooms, turning the water brown, cloudy with either blue/green algae or brown algae floating on the surface or Chara growing on the bottom. NO GOOD DEED SHALL GO UNPUNISHED! Please refrain from fertilizing your lawns up to the shoreline, the fertilizer high in phosphorus and nitrogen nutrients runs off into the lake when it rains, once in the lake we cannot get it out. I did a deep-water nutrient cycling survey two years ago and the water analysis from UWSP was inconclusive, our phosphorus and nitrogen levels were recently measured at .03mg/L or less and are acceptable but subject to change if we aren't diligent. Since 2011 most residential lawn fertilizers have almost zero phosphorus now. Exceptions are starter fertilizers and organic fertilizers like Milorganite.

Muck and Sediment:

We had Aquatic Biologists do a muck survey in 2016 and had them come back last month to repeat the muck survey. Lakes eventually turn into bogs which eventually turn into land, fortunately this process takes thousands of years, and our lake has existed for only about 60 years. The lake is aging, it is not as clean as it was 60 years ago and never will be. The recent muck survey found heavy sediment at the inlet and 13 out of

45 locations with 2-4 inches of muck that may not have been there back in 2016. I suspect that these new areas are consistent with the spread of the Chara algae mentioned earlier based on my experience at lot 203. The recent survey also verified that we have excellent Dissolved Oxygen levels in the water column with reduced oxygen at the bottom to assist in the decomposition of biomass, but we do not have anoxic conditions. The Board is considering several options to reduce the growth of muck, sediment, and biomass on the lake bottom:

Increased Aeration: Aeration circulates the water column and would, overtime, bring the DO in the water column down to the bottom to assist in the decay of biomass. A very expensive proposition with upfront costs for a system and yearly maintenance costs with up to 10 years to be effective in reducing biomass.

Commercial Dredging: We considered commercial dredging, but our landing will not support dredging equipment, if we got the equipment into the lake, we may not be able to get it out. Then there is the issue of disposing of the dredged material.

Commercial hydraulic muck dredging involves no lake driven machine. A hydraulic pump is wheeled to and operates from the edge of the lake. Divers using hydraulic hoses can reach several hundred feet out into the lake. Dewatering bags would hold wet sediments on land for a few months while they dry out. The dry soils will need be respread somewhere else. A swimming pool like dewatering basin is another option. Hydraulic dredging is most cost effective on concentrated areas and efforts can be spread over years. There are smaller scale do-it-yourself options available to us.

Weed Cutting/Harvesting: We tried this as an alternative to chemical treatment, the weeds grew back within a month with a vengeance.

Diver Assisted Suction Harvesting: A diver goes around with a suction device and sucks up weeds and muck. This works on small ponds and isolated areas, our 100-acre lake is too big for this process.

Use of Muck Pellets: Aquatic Biologists analyzed our muck to see if it is organic and if muck pellets would be effective and found it to be 39% organic making muck pellets effective if there is sufficient oxygen on the lake bottom for them to work.

We can all help improve our lake:

Hand raking or use of a Backhoe: This is demanding work, the Chara comes out easily, but the muck beneath the Chara is nasty and difficult to remove. If you rake the Chara from your beach areas, then drop in the muck pellets, some residents say that the Chara and muck do not return the following year. Several resident neighbors have pooled their resources, rented a backhoe, and dredged their shorelines. If the muck is spread out on the beach, the sunlight changes it back into sand after a few weeks as the bacteria dies off.

Do not blow your leaves in fall into the lake, leaves contain tannic acid and take forever to decay, pick them up and dispose of them.

The Board is considering several options and will take some action to reduce/remove sediment and biomass in the next few months.

Terry Klaves – Clean Water Committee