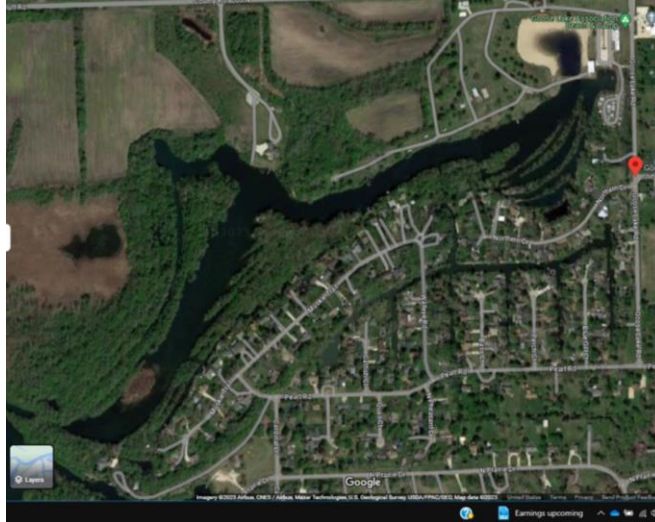
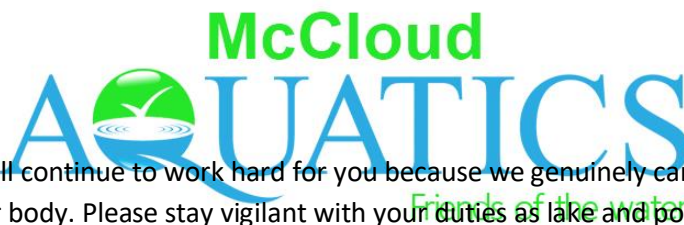


Goose Lake End of 2023 Season Report



McCloud Aquatics Lake and Pond Management for 2023 is in the books. While it wasn't the hottest season this year, we had streaks of hot weather that brought along large temperature swings in the waterbodies. The overall season was a drought in comparison to the previous seasons of record-breaking rainfall. Many ponds and lakes experienced a significant decrease in depth, some losing all of their water completely for a brief time. Shallow waters will hinder how we manage your pond. Not to mention, the increased chance for vegetation growth. This is because with hotter temperatures, nutrient release from pond sediments is increased; with increased rates of nutrient release, the pond will experience higher rates of nuisance growth. This paired with shallow conditions will allow for UV light to quickly penetrate through the water column and accelerate the process of photosynthesis. When the rain finally did come, it created runoff and in combination with shallow depths, many ponds experienced Duckweed/Watermeal issues and planktonic algae blooms this season - some of them containing cyanotoxins. Blooms like these are why we always stress the importance of nutrient management. Reducing nutrients helps reduce unwanted vegetation growth. Please help us manage nutrients in your pond or lake. Below are some of the ways that nutrient runoff can be minimized.

- Remove landscaping debris – Plant matter like grass clippings, fallen leaves, and downed sticks can create algae blooms as they decompose, and sticks and logs act as an anchor point for algae.
- Plant a buffer zone or create a “no mow” zone – Buffer zones around the water create a natural filter for your pond or lake. These areas consume nutrients before they reach your water. These can be native plants like tall grasses or wildflowers.



McCloud Aquatics will continue to work hard for you because we genuinely care for the health and beauty of your water body. Please stay vigilant with your duties as lake and pond owners too. Please fertilize responsibly, utilize natural buffers, and be open to proactive recommendations from your LMS. Our goal is to help you create a more sustainable lake/pond. Therefore, we look to have a balanced ecosystem containing the RIGHT weeds and a small amount of additional vegetation. We have started to use a new nutrient management tool and we are proud to say that we are having impressive results! Please reach out to us with any questions regarding aeration equipment, nutrient management, bathymetry mapping, boat ramps, dredging, cattail/phragmite work, fish habitats and fish stocking. These services are scheduled on a first come-first serve basis and we tend to fill up fast in the off season.

Below, you will see some personalized recommendations from your Lake Management Specialist. Thank you for your continued trust in McCloud Aquatics.

Specifically for Goose Lake, majority of the season saw pretty clear water in all of the open areas with slight growth issues within the shallower areas of the lake. This is to be expected due to the increased rate of photosynthesis in shallow waters as the sunlight has a larger potential to hit the sediments driving to growth of vegetation. Deeper waters will experience much less vegetative growth due to the lack of sunlight and lower amount of nutrients that are readily available in the anoxic water.

I am going to break the lake down into a few different areas since the behavior across the lake was different based on each section. The first section is Musky trail and the boot area (most southwest portion of the lake). There were three species of vegetation that were present in this area that required attention on a regular basis, Chara, Filamentous Algae, and Eurasian Watermilfoil. Chara and algae were both mainly present in Musky trail with a little spillover of algae into the boot. The algae formed in the boot mostly following the submerged weed applications for the milfoil. Due to the shallowness of Musky trail this does not surprise me, while also being coupled with the drought conditions dropping the water level of the lake by at least 12 inches. There was a small amount of milfoil seen in the trail but after one service it was not seen again. The milfoil in the boot area was a little more troublesome as there were two bigger waves of growth that occurred and went up in to the larger channel on the west side of the lake. We have plans to combat the submerged weed growth for next season and to keep it at bay with an application earlier in the season.

The next area is the slips or the area that is roughly 9 acres where most of the homes are concentrated on the lake with all the boats in the channels. This area started off quite rough with a very early season infestation of algae on the surface in each one of the channels. However, after two services within the channels the algae dropped and it was at least a month or six weeks before another algae service needed to be completed in the area. Towards the end of the season this changed drastically due to the drop in the water level of the lake. The shallower water increased the algae growth and dropped the accessibility to certain portions of the slips. This area would highly benefit from Nutrient Management at a moderate or high dosage for the acreage. And, as we have all spoken about before, dredging the



area would be the biggest benefit. Finding the best way to move the material the length that it needs to is going to be the most challenging portion of completing the job.

Another area that experienced a good amount of growth was the area just south of the boat launch (switchback area). Mainly the filamentous algae was the culprit for the applications in this portion of the lake. The southern most section of the switchback experienced the most amount of growth due to the concentration of leaves and cottonwoods that accumulated in the area. The breakdown of the excessive organic material released phosphorus into the water column which was readily available for the algae to use as food to increase biomass within the area. This would be a great area again for nutrient management applications to reduce the level of phosphorus in the water column thus decreasing the rate of growth and number of algae seen over the course of the season. The other species of vegetation seen in the area was Eurasian watermilfoil and Curlyleaf Pondweed. Only two applications were required for the weeds to keep them under control. Towards the end of the season there was a small concentration of planktonic algae that was present within the water column and into the boat launch area. Planktonic algae were seen for roughly three weeks until it was eradicated from the area using copper treatments and adding complimentary bacteria.

Regarding the larger channels and deeper portions of the lake, little to no growth was witnessed throughout the entirety of the season. Minimal algae growth was witness and lightly serviced once on the north area of the lake along the shoreline by the camping site. Due to the increased depth chemical applications were not necessary. The added turbidity of the lake this year due to the low water level helped in this case to block the sun penetration to the deeper water keeping vegetative growth at a minimum.

Overall, the lake experienced low amounts of growth in the main areas, with algae growth and weed growth in the above-mentioned portions of the lake. We will be implementing some different methods for servicing the lakes to better control the weeds that were present in the lake at two or three different times throughout the season. The nutrient management will be a great tool heading into next season to help control the algae growth and it could help to slow the rate of growth of the weeds as well. We look forward to next year and hope you have a nice off season.