June 2023

Controlling Lake Weed Growth & Algae Blooms

Many areas of the lake have experienced aggressive weed growth this Spring. This is due primarily to the mild winter we had. Very little snow fall allowed the sun to shine through the lake ice and promote weed growth thru the winter. Once the ice melted, the lake water clarity was very good which allowed the sun to reach deep causing even more accelerated weed growth.

As mentioned in a previous newsletter, the Lake Commission, in partnership with the WLV Board, have begun to take the following incremental actions that will improve the lake over time.

Chemical Weed Killer Applications
The lake was mapped to determine the most weed infested areas, including the beach/community center and all inlets. A chemical treatment was applied during the week of May 22. This treatment has been used every year and has proven to be very effective at controlling Curly Leaf weed growth. One or two additional treatments will be scheduled as needed throughout the season.

Mechanical Weed Harvesting
To supplement the chemical weed killer application(s), a company that uses a specialized aquatic weed harvesting machine to cut and remove all weeds, including Coontail, was hired to remove weeds at a depth of 18" to 24" from the most infested areas in the South end of the lake. The first harvest date is June 22 & 23. A second harvest is scheduled for July 20 & 21.

NOTE: The boat ramp will have limited availability during mechanical weed harvesting days since trucks will use the ramp to load and haul away the harvested weeds.

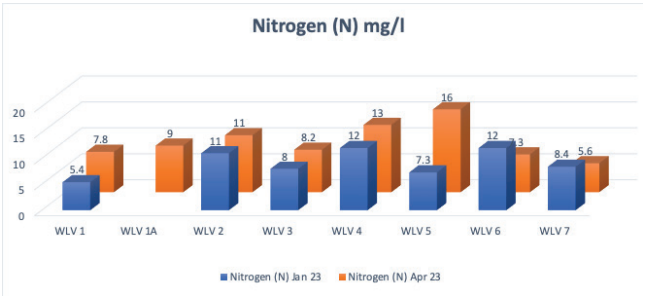
Multiple Bioreactor Installations
Based on nitrogen and phosphorus levels from test sample data, the lake commission will determine where the best strategic locations will be to install 2-3 properly-sized wood chip bioreactors this summer (See "Recommended Bioreactors" below). As the drainage water passes through the sub-surface reactor bed, the wood chips, combined with carbon-eating bacteria, eliminate 50% - 90% of nutrients.

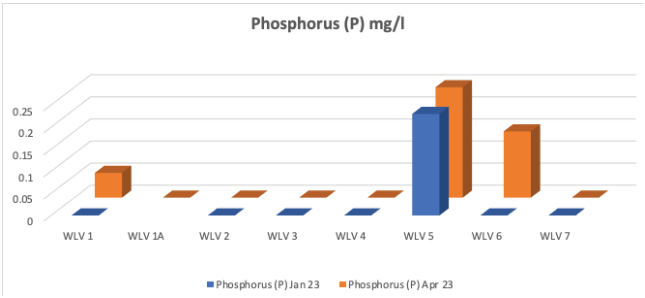
Dredging
Frentress Lake Marine is currently dredging the nutrient-laden silt from the bottom of the fountain lagoon as well as various areas of the lagoons and creek in the wetlands. This work should take 6-8 weeks. Silt levels were discovered to be deeper than estimated in certain areas since dredging had not been done for many years. In one area, the silt level was so high that the dredge pump boat could not be put in the water until a bucket excavator removed several feet of silt.

A consistent multi-faceted, comprehensive lake plan will begin to improve lake quality. Patience and commitment by everyone is necessary to improve the lake.

Lake Water Nutrient Source Sampling 2 Completed

A second set of water samples was taken in late April. The two graphs below show the comparison of nitrogen and phosphorous levels from the first January test samples and the 2nd April test samples. Both sets of samples were taken at the same 7 locations around the lake and the wetlands. See next page for details.



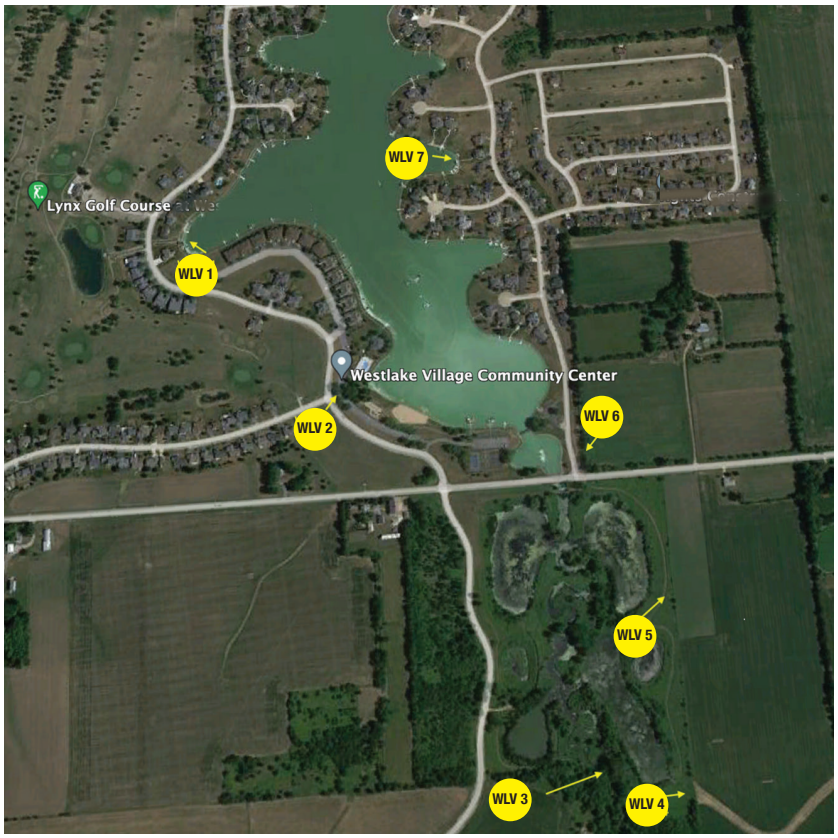


Lake Water Nutrient Source Sampling 2 Completed Cont.

Test sampling location WLV 1 is fed by resident lots and the Lynx golf course. It is thought that much of the golf course fertilizer nutrients are captured in the course's drainage pond. WLV 2 is fed by resident lots all along Springhill Dr. WLV 3 is fed from the Cooledge Creek upstream. WLV 4, 5 & 6 are fed by surrounding farm fields. WLV 4 & 5 are two of several manholes around the wetlands that are fed directly by buried drain tile lines from the farms. WLV 7 is fed by the large section of residential lots on the East side of the lake.

Bioreactor Recommendations
Test results show WLV 5 has the highest levels of nitrogen and phosphorous that exits the last lagoon directly to the lake.

Given this data, we should include WLV 5 and WLV 2 sub-surface reactors along with two proposed surface water ditch bioreactors in the West lagoon area as the best candidates for installation in 2023.



Sampling locations