



## New Website Launched

The lake commission has recently launched a new website at [www.wvlakelore.com](http://www.wvlakelore.com). Check out the site for information on a wide range of topics related to the maintenance and improvement of our lake, including:

- Lake Management Planning and Strategic Imperatives
- Nitrogen & Phosphorous Nutrient Pollution
- Dredging Process
- Watershed Impact
- Wetland Function
- Homeowner Action Items
- Aquatic Invaders
- Woodchip Bioreactors
- Fish Species
- Fishing Limits & Best Practices
- Teaching Kids to Fish

The site will be continually updated as new content becomes available, including boat/kayak/canoe and ice fishing sticker registration requirements.



## Lake Water Nutrient Source Sampling 1 Completed

As part of a new study, the first lake water nutrient source sampling was completed on January 23, 2023. The purpose of the study samplings is to help identify levels and sources of undesirable nutrient loads in our lake. The resulting data will help us create a sustainable pathway for lake water improvement.

While a low level of nutrients are required to support growth of aquatic plants, such as coontail, that are desirable for healthy fish habitats, excessive amounts of nitrogen and phosphorous also accelerate growth of undesirable invasive plants, including curly-leaf pondweed and milfoil.

High levels of nitrogen and phosphorous also promote undesirable surface algae blooms.



### The expansive watershed area that feeds into our lake

Over 6,100 acres of land drains into our lake from three directions. This vast area is comprised of approx. 1,000 acres from the Westlake Village community development (including the golf course) together with approx. 5,000 acres of surrounding agricultural land. Unfortunately, much of this watershed acreage has high levels of nitrogen and phosphorous fertilizers applied annually.

### The Westlake wetlands (silting lagoons)

The primary purpose of the wetlands is to reduce the amount of nutrient-laden silt that enters the lake from Cooledge Creek. The well-designed system captures the silt as it settles in the lagoons, including the fountain lagoon on the North side of Smith Rd. Various areas of the creek and lagoons need to be dredged every 5 years to remove the high levels of silt buildup.



# Lake Water Nutrient Source Sampling 1 Completed Cont.

## The sampling/testing process

On January 23, 2023, water samples were taken at 7 different locations around the lake and the wetlands as shown in Figure 1. These sampling sites were selected based on the “suspected” locations with the highest levels of nutrient ingress.

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.

Water samples were driven directly to a test lab in Peoria by a commission member.

## Interpreting the data

NOTE: DATA FROM THIS INITIAL WINTER SAMPLING ESTABLISHES A BASELINE ONLY.

Future test samplings scheduled for the spring, summer and fall will undoubtedly show much higher nutrient load levels as farmers and residents apply fertilizers on their fields and yards.

Nitrogen levels shown in Figure 2 reveal three locations that already exceed the EPA limit. Figure 3 shows only one location with a relatively high phosphorous level. Potassium levels shown in Figure 4 appear to be within the acceptable range.

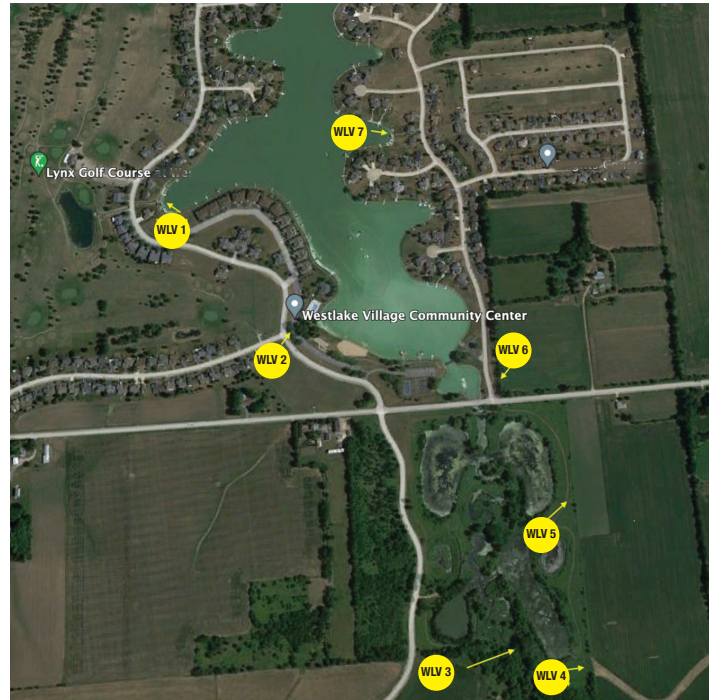


Figure 1: Sampling locations

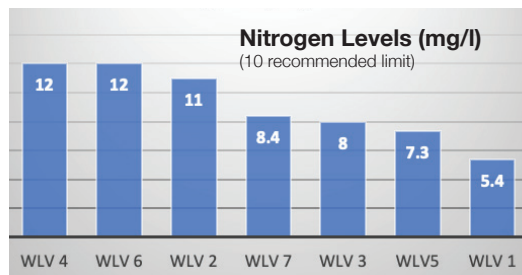


Figure 2: Nitrogen Levels

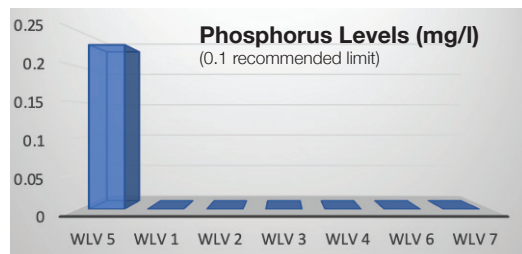


Figure 3: Phosphorous Levels

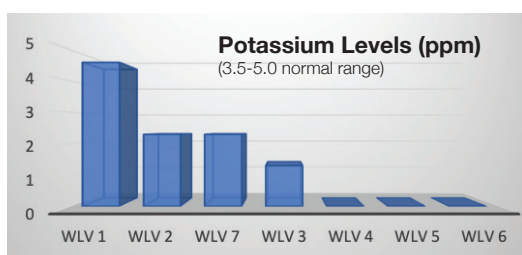


Figure 4: Potassium Levels

## What steps can we take to reduce undesirable weed growth and algae blooms?

**1) Reduce fertilizers.** All of us can choose fertilizers with lower levels of nitrogen and phosphorus. We can also reduce the number of fertilizer applications per season. If you use a lawn service, ask them for recommendations.

**2) Install bio reactors.** Once we have a least one more test sample data set, the lake commission will determine where the best strategic locations will be to install 2-3 properly-sized wood chip bio reactors. As the drainage water passes through the reactor bed, the wood chips, combined with carbon-eating bacteria, eliminate 50% - 90% of nutrients.

**3) Apply weed killer.** The lake will be treated with a weed killer in late spring when the weeds begin to grow aggressively.

**4) Mechanically harvest weeds.** This summer, to supplement the weed killer application, a company that uses a specialized aquatic weed harvesting machine to cut and remove weeds will be hired to remove weeds from the most infested area of the lake. Ideally, this work can be done in mid-July depending on contractor availability.

**5) Dredging.** Frenress Lake Marine, Inc. will dredge the nutrient-laden silt from the fountain lagoon as well as various areas of the lagoons and creek in the wetlands. This work should take 6-8 weeks and be completed by the end of May.

NOTE: THIS MUCH NEEDED DREDGING OPERATION WILL STIR UP SILT WHICH WILL UNDOUBTEDLY IMPACT THE CLARITY OF THE LAKE WATER FOR A PERIOD UNTIL NATURAL SETTLING OCCURS.

**6) Floating Islands.** The lake commission is investigating the feasibility of installing several small floating islands that feature nutrient-eating plants positioned on charcoal mats. These would be installed in high nutrient areas of the lake.