Report to White Lake Town Board
November 2023

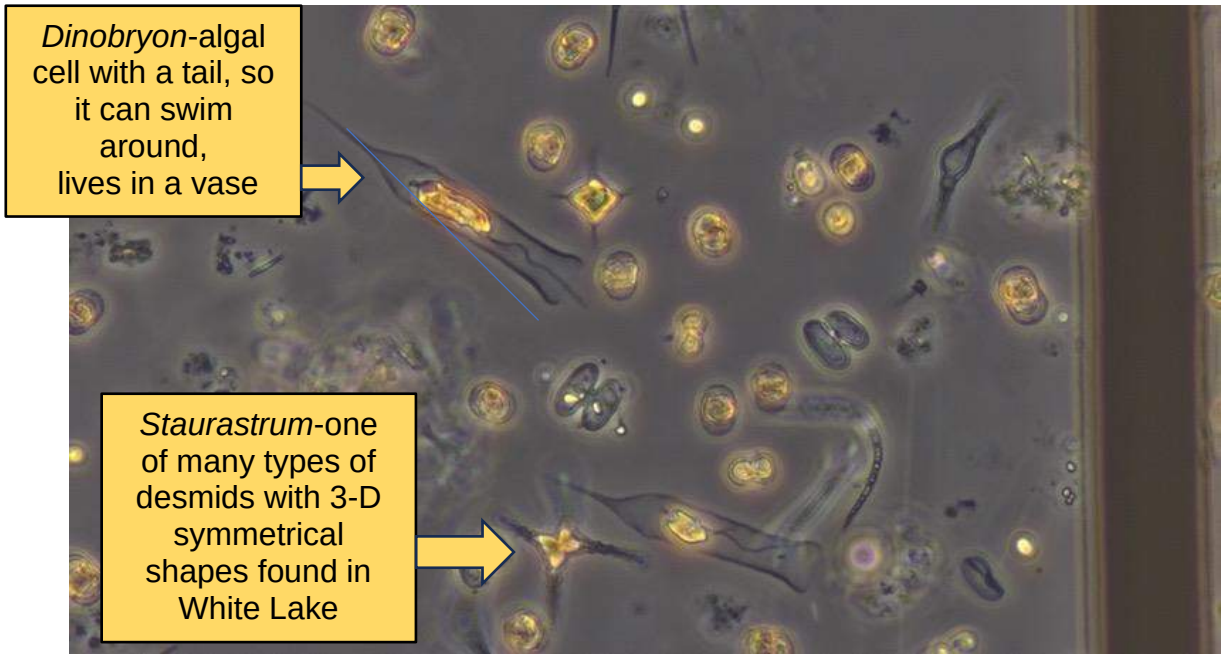
Diane Lauritsen, Ph.D.
LIMNOSCIENCES

1. A Closer Look at Those Floating Blobs

A sample was taken from a floating blob near the marina and sent off to the specialist who identifies the algae and cyanobacteria found in the lake. She determined that it is a species of cyanobacterium that has small cells embedded in a gelatinous matrix (reference photo of this species on the right above). This gelatinous material is what helps the blobs to float and coagulate, and to survive for long periods of time. The cyanobacterial blobs are not new to the lake (a State Parks staff person saw big blobs when swimming in the lake as a boy) and can be abundant in some areas of the lake bottom.

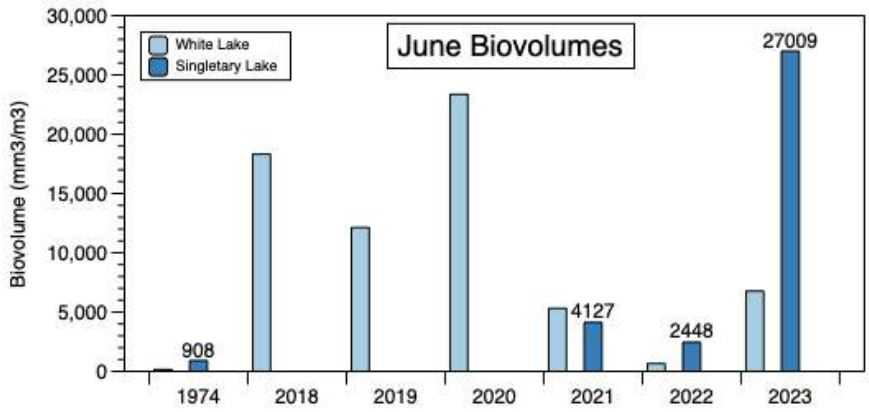
2. White Lake Phytoplankton Trends Over Time, and Comparisons with Singletary Lake (the following is taken from the white paper titled "The Value of Lake Monitoring Data", which has been posted to the White Lake Watch web site)

June Biovolume Comparisons Between White Lake and Singletary Lake: Biovolume is determined by measuring the sizes of algae and cyanobacteria, and applying these measurements to the counts that are done by Dr. Linda Ehrlich, the taxonomist who has been working on White Lake samples since 2018. It is tedious work that is done by using an inverted microscope and is the best way to truly understand phytoplankton communities in lakes and how they change over time. The photograph below shows the magnified view of a sample that has been concentrated (phytoplankton are not that dense in an unconcentrated sample unless there is a large bloom).



Photograph provided by Dr. Ehrlich

High phytoplankton biovolumes reduce lake clarity, although there are non-living constituents (like muddy sediments) that can also impact clarity. In June 2022, for example, phytoplankton biovolume in White Lake was very low, but measures of clarity (Secchi depth and turbidity) were similar to June 2020 levels when biovolume was relatively high.



There has been a long-standing opinion that White Lake was clear because it was acidic, and if it were acidic again, algae and cyanobacteria would disappear. ***Scientists collect data before making such statements.*** The data collected at acidic Singletary Lake does not support this opinion—quite the contrary, as was seen in June 2023, with Singletary having a biovolume peak that was higher than what has been seen at White Lake in June from 2018-2023. The phytoplankton species dominating the June 2023 biovolume at Singletary was a desmid (like the one in the photo above), and similar desmids are often dominant in summer months at White Lake. There are many more phytoplankton species found in White Lake compared to Singletary, and this diversity is beneficial.