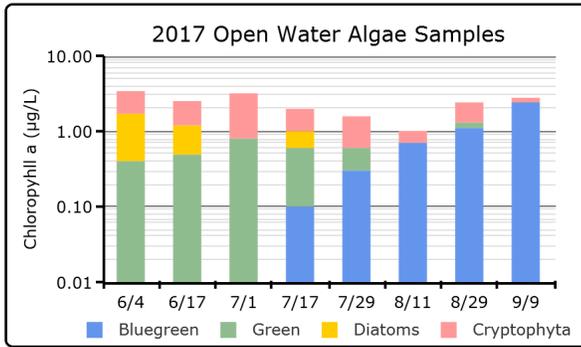
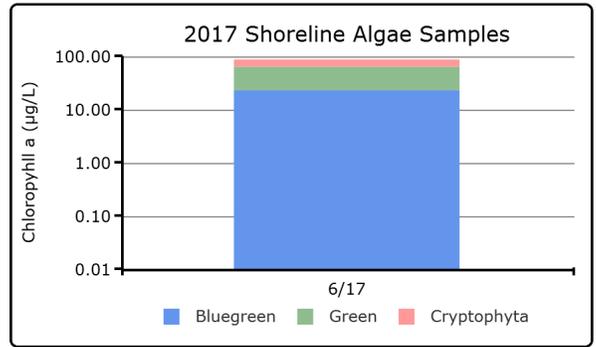


HAB Status

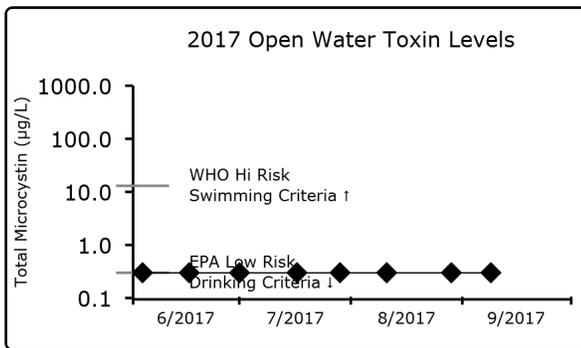
2017 Open Water Algae Samples



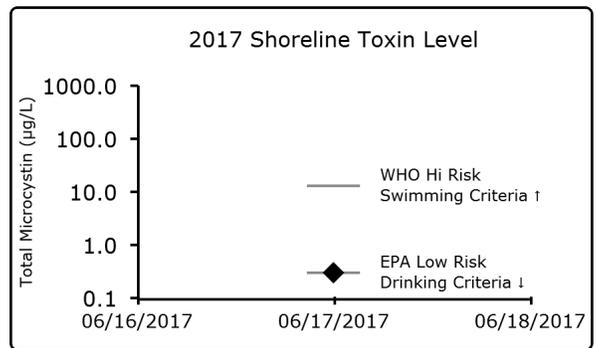
2017 Shoreline Algae Samples



2017 Open Water Toxin Levels

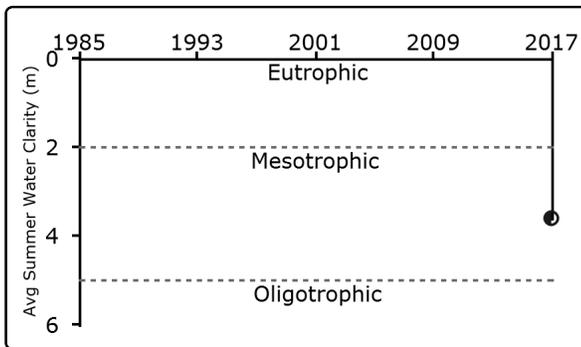


2017 Shoreline Toxin Levels

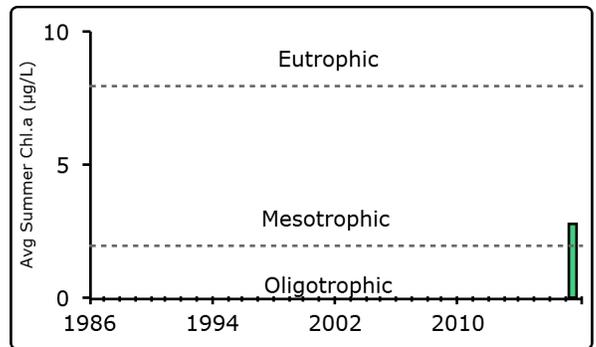


Glass Lake Long Term Trend Analysis

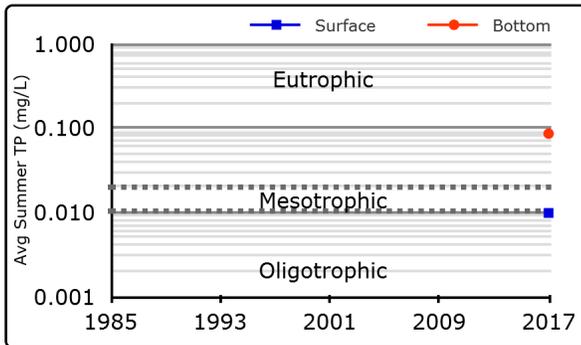
Clarity



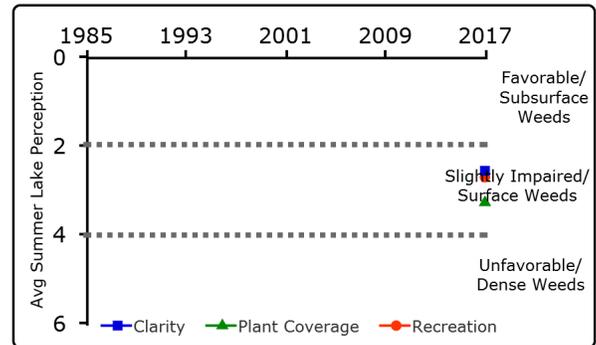
Chlorophyll a



Surface and Deep Phosphorus

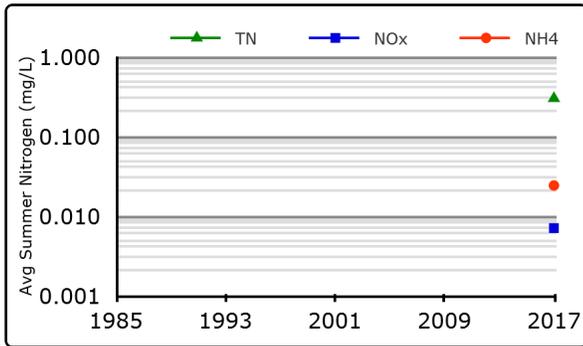


Lake Perception

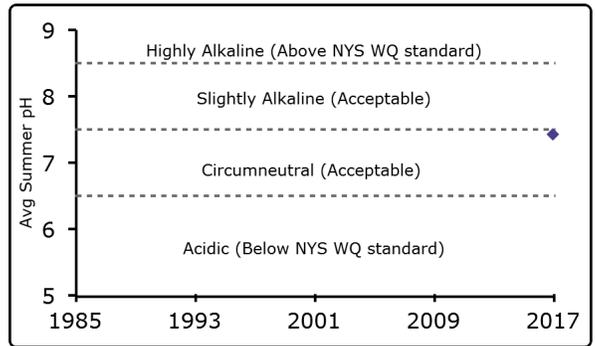


Glass Lake Long Term Trend Analysis

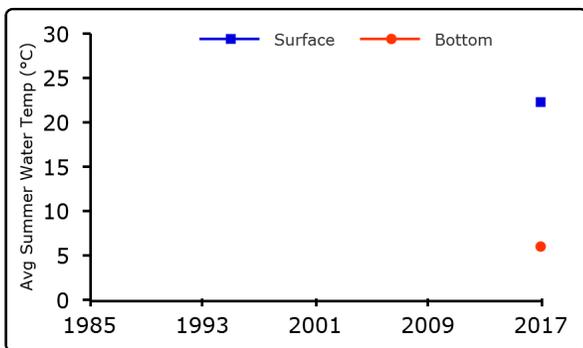
Nitrogen



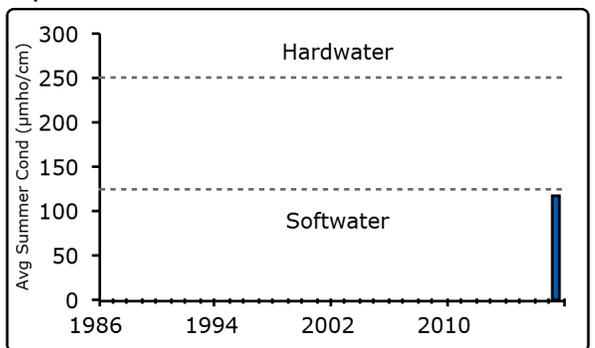
pH



Temperature

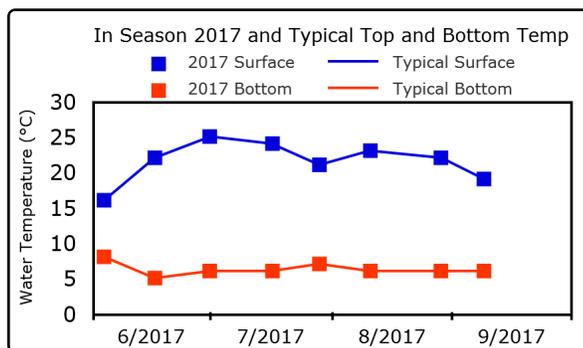


Specific Conductance

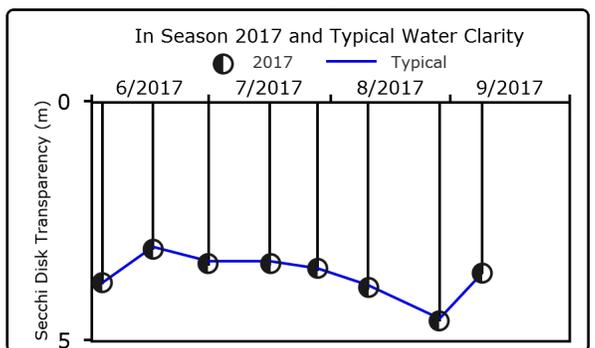


Glass Lake In-Season Analysis

In Season Temperature



In Season Water Clarity



Scorecard

Lake Use

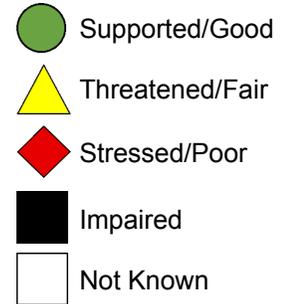
Potable Water				Not applicable
Swimming				No impacts
Recreation				No impacts
Aquatic Life				Bottom oxygen
Aesthetics				Poor perception
Habitat				Invasive plants
Fish Consumption				Not applicable

PWL

Average
Year

2017

Primary Issue



Summary

2017 compared to prior years: Glass Lake was sampled for the first time through CSLAP in 2017, so the 2017 results cannot be compared to the results from previous years. The 2017 data suggest that Glass Lake is a *mesotrophic*, or moderately productive, lake, with intermediate to low nutrient and algae levels and intermediate to high water clarity. The lake has moderately soft water, neutral pH, and strong thermal stratification with elevated deepwater nutrient levels. Aquatic plants frequently grow to the surface, but overall recreational assessments are similar to those in other lakes due to favorable water quality.

Compared to nearby lakes: Glass Lake has similar water clarity and lower nutrient and algae levels than other nearby (mid Hudson region) lakes. Aquatic plant coverage is more extensive than in many other nearby lakes, leading to recreational assessments that are slightly less favorable than in nearby lakes. Chloride levels are in the 50th to 75th percentile of New York state lakes, indicating the potential for aquatic life impacts if these levels rise (at present, no aquatic life impacts have been reported).

Trends: Long-term trends can't be evaluated with only a single year of CSLAP data. The lake was sampled by the DEC in 1982, 1989, and 1996; a comparison of results from these years indicated water clarity that was higher in 2017 than in 1996, but lower than in 1982 or 1989. Nutrient and algae levels were lower in 2017 than in these previous years.. Any trends will become more apparent with future CSLAP data.

Algal blooms and HABS: Glass Lake does not appear to be susceptible to cyanobacteria (harmful algal) blooms; the single shoreline sample collected in 2017 was composed primarily of green algae and other forms that do not result in health impacts.

Aquatic invasive species: Glass Lake has several AIS species, including Eurasian watermilfoil and virile crayfish. The lake appears to be vulnerable to other AIS, given the proximity of the lake to other nearby lakes with AIS and despite the lack of public access.

Indicated Actions: Individual stewardship activities such as pumping your septic system, growing a buffer of native plants next to the water bodies, and reducing erosion from shoreline properties and runoff into the lake will help to improve lake health by reducing nutrient and sediment loading to the lake. Visiting boats should be inspected to reduce the risk of new invasive species, since nearby lakes harbor several invasive plants not presently found in this lake. Continued monitoring for invasive species is warranted. Continued algae bloom education and monitoring for HABS is recommended, particularly given the periodic bloom reports on nearby lakes.

How to Read the Report

This guide provides a description of the CSLAP report by section and a glossary. The sampling site is indicated in the header for lakes with more than one routine sampling site.

Physical Characteristics influence lake quality:

- Surface area is the lake's surface in acres and hectares.
- Max depth is the water depth measured at the deepest part of the lake in feet and meters.
- Mean depth is either known from lake bathymetry or is 0.46 of the maximum depth.
- Retention time is the time it takes for water to pass through a lake in years. This indicates the influence of the watershed on lake conditions.
- Lake classification describes the "best uses" for this lake. Class AA, AAspec, and A lakes may be used as sources of potable water. Class B lakes are suitable for contact recreational activities, like swimming. Class C lakes are suitable for non-contact recreational activities, including fishing, although they may still support swimming. The addition of a T or TS to any of these classes indicates the ability of a lake to support trout populations and/or trout spawning.
- Dam classification defines the hazard class of a dam. Class A, B, C, and D dams are defined as low, intermediate, high, or negligible/no hazard dams in that order. "0" indicates that no class has been assigned to a particular dam, or that no dam exists.

Watershed characteristics influence lake water quality:

- Watershed area in acres and hectares
- Land use data come from the most recent (2011) US Geological Survey National Land Use Cover dataset

CSLAP Participation lists the sampling years and the current year volunteers.

Key lake status indicators summarize lake conditions:

- Trophic state of a lake refers to its nutrient loading and productivity, measured by phosphorus, algae, and clarity. An oligotrophic lake has low nutrient and algae levels (low productivity) and high clarity while a eutrophic lake has high nutrient and algae levels (high productivity) and low clarity. Mesotrophic lakes fall in the middle.
- Harmful algal bloom susceptibility summarizes the available historical HAB data and indicates the potential for future HAB events.
- Invasive vulnerability indicates whether aquatic invasive species are found in this lake or in nearby lakes, indicating the potential for further introductions.
- Priority waterbody list (PWL) assessment is based on the assessment of use categories and summarized as fully supported, threatened, stressed,

impaired, or precluded. Aesthetics and habitat are evaluated as good, fair, or poor. The cited PWL assessment reflects the “worst” assessment for the lake. The full PWL assessment can be found at <http://www.dec.ny.gov/chemical/36730.html#WIPWL>.

Current year sampling results

- Results for each of the sampling sessions in the year are in tabular form. The seasonal change graphically shows the current year results. Red shading indicates eutrophic readings.
- HAB notification periods on the DEC website, updated weekly <http://www.dec.ny.gov/chemical/83310.html>
- Shoreline HAB sample dates and results. Samples are collected from the area that appears to have the worst bloom. Red shading indicates a confirmed HAB.
- HAB sample algae analysis. Algae types typically change during the season. These charts show the amount of the different types of algae found in each mid-lake or shoreline sample. Samples with high levels of BGA are HABs. The second set of charts show the level of toxins found in open water and shoreline samples compared to the World Health Organization (WHO) guidelines.
- If there are more than ten shoreline bloom samples collected in a year, bloom sample information is instead summarized by month (May-Oct.) as minimum, average, and maximum values for blue-green algae and microcystin.

Long Term Trend Analysis puts the current year findings in context. Summer averages (mid-June thru mid-September) for each of the CSLAP years show trends in key water quality indicators. The graphs include relevant criteria (trophic categories, water quality standards, etc.) and boundaries separating these criteria.

In-Season Analysis shows water temperature and water clarity during the sampling season. These indicate seasonal changes and show the sample year results compared to the typical historical readings for those dates.

The Lake Use Scorecard presents the results of the existing Priority Waterbody List assessment for this lake in a graphical form and compares it to information from the current year and average values from CSLAP data and other lake information. Primary issues that could impact specific use categories are identified, although more issues could also affect each designated use.

The Lake Summary reviews and encapsulates the data in the lake report, and provides suggested actions for lake management.

Glossary of water quality and HAB indicators

Clarity (m): The depth to which a Secchi disk lowered into the water is visible, measured in meters. Water clarity is one of the trophic indicators for each lake.

TP (mg/L): Total phosphorus, measured in milligrams per liter at the lake surface (1.5 meters below the surface). TP includes all dissolved and particulate forms of phosphorus.

Deep TP: Total phosphorus measured in milligrams per liter at depth (1-2 meters above the lake bottom at the deepest part of the lake)

TN: Total nitrogen, measured in milligrams per liter at the lake surface. TN includes all forms of nitrogen, including **NO_x** (nitrite and nitrate) and **NH₄** (ammonia).

N:P Ratio: The ratio of total nitrogen to total phosphorus, unitless (mass ratio). This ratio helps determine if a lake is phosphorous or nitrogen limited.

Chl.a (µg/L): Chlorophyll a, measured in micrograms per liter. Indicates the amount of algae in the water column.

pH: A range from 0 to 14, with 0 being the most acidic and 14 being the most basic or alkaline. A healthy lake generally ranges between 6.5 and 8.5.

Cond (µmho/cm): Specific conductance is a measure of the conductivity of water. A higher value indicates the presence of more dissolved ions. High ion concentrations indicate hardwater, and low show softwater.

Upper Temp (°C): Surface temperature, measured in degrees Celsius

Deep Temp (°C): Bottom temperature, measured in degrees Celsius

BG Chl.a (µg/L): Chlorophyll a from blue-green algae, measured in micrograms per liter

HABs: Harmful Algal Blooms. Algal blooms that have the appearance of cyanobacteria (BGA)

BGA: Blue-green algae, also known as cyanobacteria

Microcystin (µg/L): The most common HAB liver toxin; total microcystin above 20 micrograms per liter indicates a “high toxin” bloom. However, ALL BGA blooms should be avoided, even if toxin levels are low.

Anatoxin-a (µg/L): A toxin that may be produced in a HAB which targets the central nervous system. Neither EPA nor NYS has developed a risk threshold for anatoxin-a, although readings above 4 micrograms per liter are believed to represent an elevated risk.