

Water Quality Monitoring on Cayuga Lake, in the Great Lakes Watershed

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Cayuga Lake Environmental Action Now (CLEAN) is a research and advocacy group that is collaborating with similar organizations to protect Cayuga Lake. Our approach at CLEAN is multidisciplinary, drawing on expertise in fields such as limnology, geology, hydrogeology and environmental law. While working to hold industry polluters accountable, we also seek to raise public awareness, to train interns, and to collaborate with the NYS Department of Environmental Conservation in protecting a resource that belongs to all of us: *Cayuga Lake - from the wind-driven waves up above to the ancient salt beds and saline aquifer deep beneath the lake.*

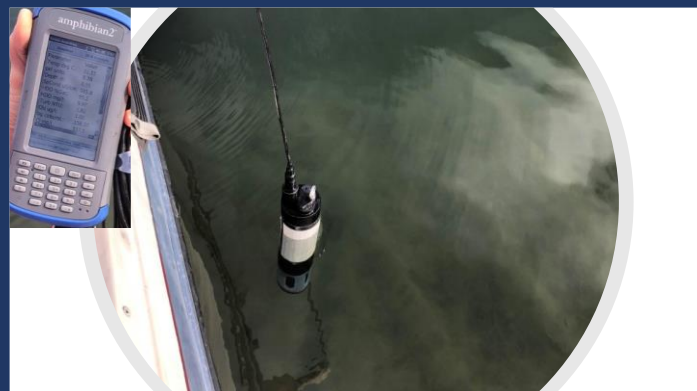
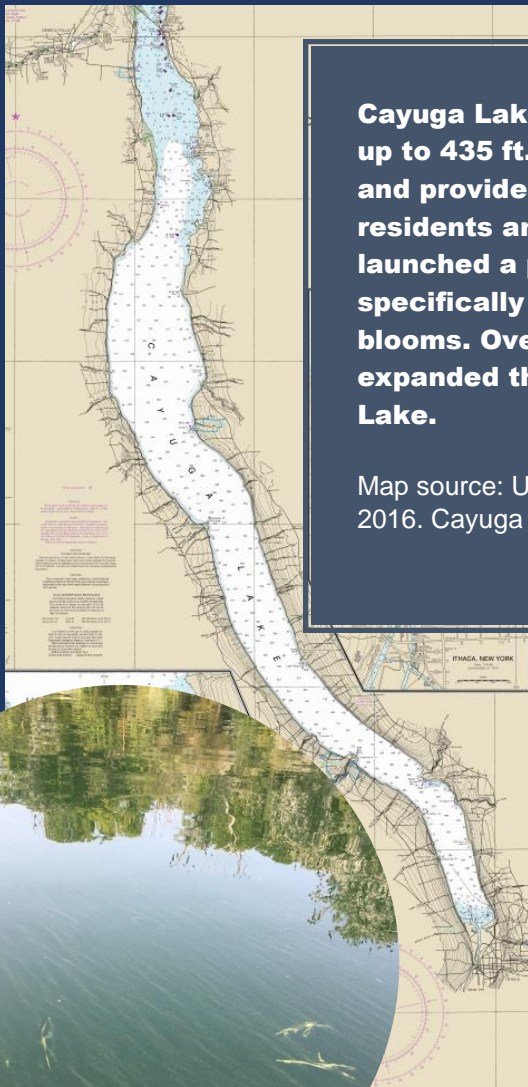


**Cayuga Lake
Environmental
Action Now**

Water Quality Monitoring

Cayuga Lake in upstate New York is the longest of the Finger Lakes and is up to 435 ft. deep. The lake is a prominent aspect of the region's economy and provides drinking water and recreational opportunities for nearby residents and tourists. During the summer of 2019, CLEAN researchers launched a pilot project to monitor water quality on Cayuga Lake, focusing specifically on water quality prior to and during harmful cyanobacteria blooms. Over the course of the 2020 monitoring season, CLEAN researchers expanded the program to monitor a total of 25 locations throughout Cayuga Lake.

Map source: US Department of Commerce, National Oceanic and Atmospheric Administration, 2016. Cayuga and Seneca Lakes; NOAA navigational chart 14791, 19th edition.





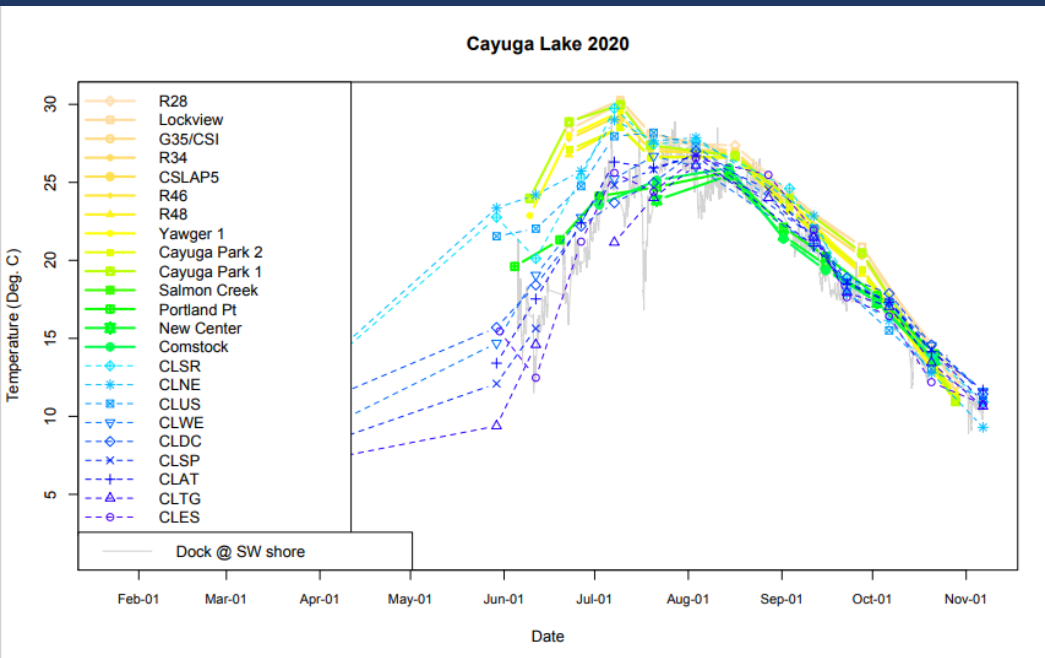
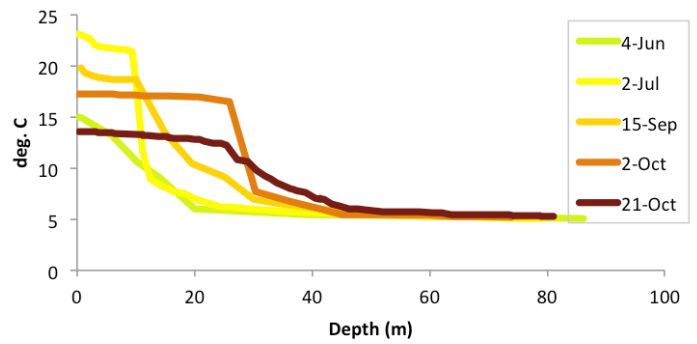
pH
 Temperature
 Specific Conductivity
 Chloride
 Sodium
 Dissolved Oxygen
 Cyanobacteria
 Chlorophyll a
 Depth
 Turbidity

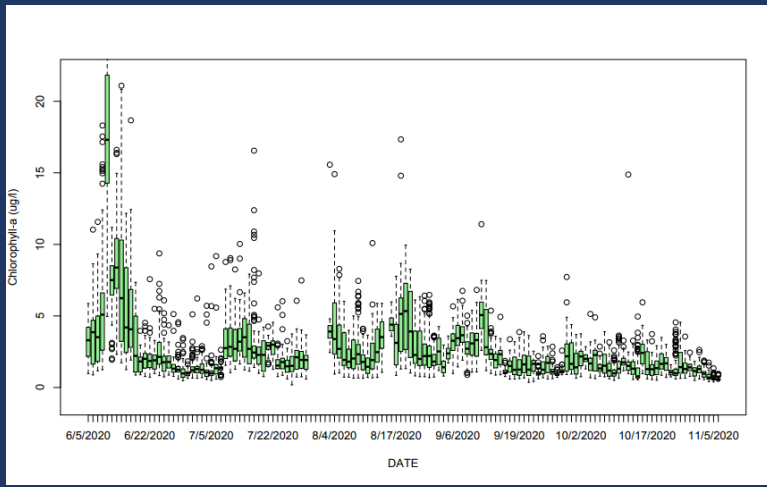
CLEAN researchers monitor various aspects of water quality and chemistry throughout the year to monitor conditions around the lake. **CLEAN** relies on Eureka Water Probes Manta 2 and Manta+35 to collect data for water temperature, pH, chlorophyll-a, cyanobacteria, dissolved oxygen, chloride, sodium, turbidity, and specific conductance. A secchi disk is also used to measure water clarity.



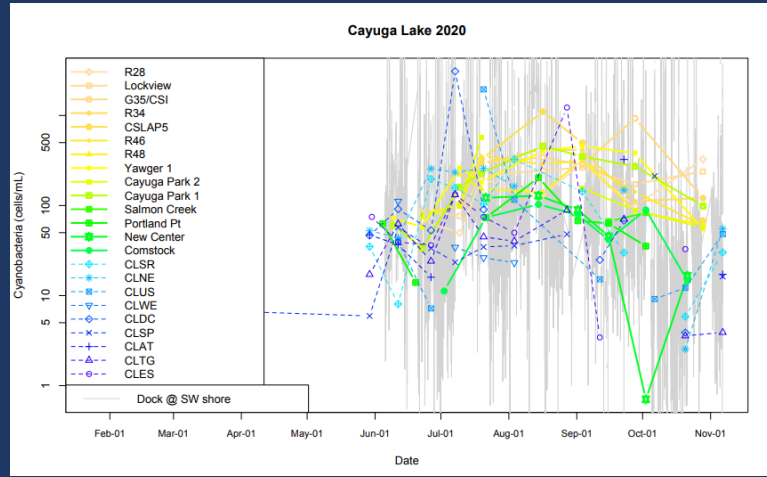
Water temperature is an important driver of biological, chemical, and physical processes in the lake. The water temperature of Cayuga Lake varies by location, depth, and time of year, and can provide insights into the ecology of various lake environments.

Cayuga Lake profile: temperature

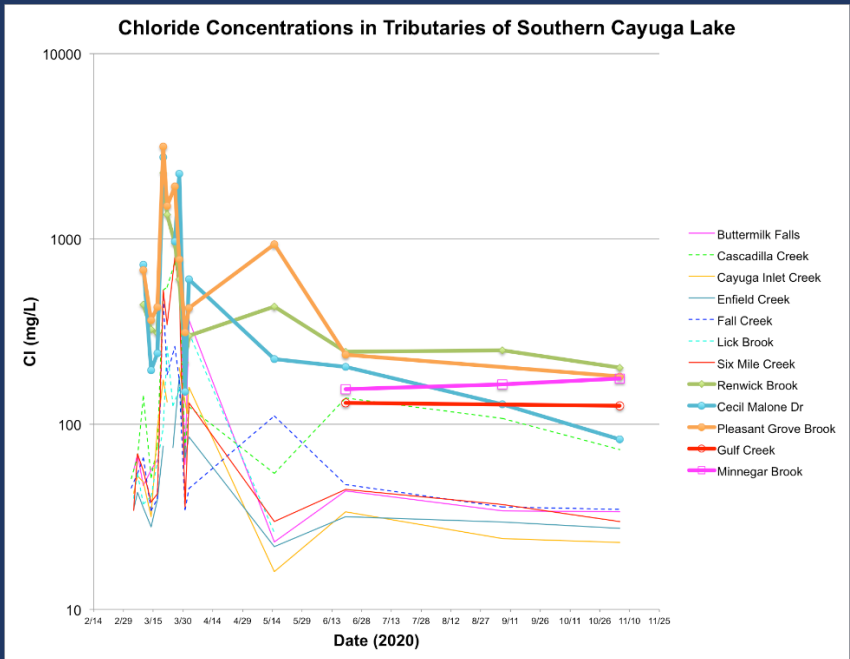




Chlorophyll-a is a compound found in phytoplankton that enables photosynthesis. Cyanobacteria are naturally occurring phytoplankton and normally present in many aquatic environments, but can sometimes produce toxic blooms that pose health risks to humans and wildlife. In the field, CLEAN researchers measure the relative concentrations of cyanobacteria and chlorophyll-a using fluorometric sensors on the Manta+35.



Salinization of Cayuga Lake due to the Cargill Salt Mine and use of road salt is a concern. CLEAN monitors the concentration of chloride in tributaries that drain into Cayuga Lake, as well as the lake water and effluent in the vicinity of the salt mine located on the lake shore.



<http://cleancayugalake.org/>

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