

The 2017 In-Lake Water Quality Monitoring Program for Lake Hopatcong

Prepared by: Princeton Hydro, LLC

Prepared for: Lake Hopatcong Foundation

1. The 2017 in-lake water quality monitoring program was paid for by the Lake Hopatcong Foundation and the Lake Hopatcong Commission. Monitoring the lake assesses its overall health, identifies problem areas relative to weed or algae growth, documents improvements associated with in-lake and watershed management activities and is a requirement in order to secure grant funding from State and Federal sources to implement additional projects to improve upon and protect the lake's water quality.
2. Princeton Hydro conducted a total of five in-lake sampling events from early May to early October 2017. A total of eleven sampling stations are monitored for a variety of water quality parameters.
3. Overall water quality conditions were favorable throughout most of Lake Hopatcong, particularly in the deep, main basin of the lake. However, some areas do experience nuisance densities of submerged aquatic vegetation and/or large amounts of algal surface scums and mats. These areas are typically found in the River Styx / Crescent Cove and some of the northern (Woodport and the Canals) areas of the lake.
4. The areas of the lake that experience problematic water quality problems were associated with elevated concentrations of phosphorus, the primary nutrient that stimulates algal and plant growth. A substantial portion of the phosphorus in these areas of the lake originate from the watershed (stormwater, septic systems, etc.). Thus, the long-term goal is to implement activities in the watershed to reduce the phosphorus loads entering the lake.
5. An examination of temperature and dissolved oxygen data through Lake Hopatcong revealed that the lake had optimal brown trout habitat in May, June and October of 2017 and carry-over brown trout habitat in July and August 2017. Thus, the lake can sustain brown trout year-round.
6. Approximately 3,872 cubic yards of wet plant biomass was removed from the lake over the 2017 growing season, which was only 152 cubic yards less than what was removed in 2016. This was primarily due to a delay in initiating the harvesting program which managed by Hopatcong State Park; the harvesting program typically starts in May but in 2017 it started in June. The phosphorus removed with this harvested plant material is estimated to be 80 lbs, which had the potential to produce 88,000 lbs of additional wet, algae biomass.
7. In summary, overall water quality conditions were generally good in Lake Hopatcong with some problem areas relative to weed and algae growth, particularly in the River Styx / Crescent Cove and northern end of the lake.