The Lake Hopatcong Foundation Assesses the Effectiveness of Various Ways to Control Nuisance Aquatic Plants

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1. During the spring and summer of 2017, the Lake Hopatcong Foundation hired Princeton Hydro to conduct a study to determine the relative effectiveness of various techniques to reduce nuisance densities of submerged aquatic vegetation (SAV). The three plant reduction techniques included: herbicide applications, herbicide application followed by harvesting and hydroraking.

2. Princeton Hydro collected above sediment (plants) and below sediment (roots) samples at test locations before and after each plant control technique was conducted. The dominant plants at Lake Hopatcong throughout most of the growing season continue to be Eurasian watermilfoil (an invasive species) and tapegrass (a native species). However, it should be noted that early in the growing season (late March) the invasive species Curly-leaved pondweed was the dominant species.

3. The use of aquatic herbicides resulted in reductions in plant biomass of 76 to 94%.

4. The use of aquatic herbicides, followed by mechanical weed harvesting, resulted in reductions in plant biomass of 96 to 97%.

5. Hydroraking resulted in plant reductions of 42 to 79%; however, hydroraking focuses primarily on plants with a large amount of below sediment biomass (tubers), like water lilies. Thus, unlike aquatic herbicides or mechanical weed harvesting, in 2018 there should continue to be a substantial reduction in the biomass of water lilies in areas that were hydroraked in 2017.

6. Test locations were no plant control activities were conducted saw a decline in biomass of only 1%. Thus, all plant control activities exerted a substantial reduction in the resident plant biomass at Lake Hopatcong.

7. Princeton Hydro will conduct a follow up to this study in 2018, where areas that are mechanically harvested first and then treated with aquatic herbicides will be evaluated for reductions in plant biomass.

8. In conclusion, aquatic herbicides and mechanical weed harvesting both result in substantial declines in plant biomass in Lake Hopatcong from nuisance to acceptable conditions.