

2022 Annual Summary Report Aquatic Management Program Witches Woods Lake Woodstock, CT

Report Prepared by: Mike Tartaglia
SOLitude Lake Management
590 Lake Street
Shrewsbury, MA 01545



Report Prepared for: Mr. John Barber

Solitude Lake Management performed a comprehensive management plan for Witches Woods Lake in Woodstock, CT throughout the 2022 season. During this program, An early season survey of Witches Woods Lake was performed, as well as an herbicide treatment, and post-treatment survey. The early season survey was conducted on May 25th, and found a diverse assemblage of native plants. The most common plants found were: Bladderwort (*Utricularia spp.*), Coontail (*Ceratophyllum demersum*), Naiad (*Najas sp.*), and Thinleaf pondweed (*Potamogeton spp.*), white water lilies (*Nymphaea odorata*), and yellow water lilies (*Nuphar lutea*). All plants were found growing in sparse to moderate densities. The most dense areas were the southern shorelines, and the northern cove.

To assure plant growth did not increase to nuisance levels, a treatment was performed on July 28th. The herbicide Nautique was used because of its lack of water use restrictions, making it suitable for the busy lake. The treatment focused on the areas with the most plant growth at the southern shoreline, and northern cove. The diluted herbicide was dispersed to the treatment areas subsurface from a jon boat equipped with a calibrated pump system. Lake water was used to dilute the herbicide.

A late season survey was performed on October 26th to assess the situation of the lake post treatment. From the assessment, the treatment was deemed successful. The southern shoreline and the northern cove were again the areas with the most plant growth, but the plant distribution was diminished from the herbicide treatment. The southern shoreline was mainly composed of trace amounts of Naiad (*Najas sp.*), and the northern cove was mainly composed of sparse amounts of bladderwort (*Utricularia spp.*). Some stands of cattails were observed in scattered patches around the shoreline as well. With the reduction of these nuisance species, the plant distribution became indicative of a healthy ecosystem. This also resulted in better water conditions for recreational activity. Some small patches of blue-green algae (cyanobacteria) were seen floating throughout the water column, especially on the wind-blown side of the lake. This will continue to be monitored, as cyanobacteria can have adverse effects on the health of the lake, as well as the residents who use the lake recreationally. If larger populations are observed, an algae treatment should be conducted. An aluminum sulfate treatment may also be beneficial. Aluminum sulfate treatments consist of the entire lake, and focus on removing excess phosphorus from the water body. Phosphorus is the main nutrient associated with algae blooms, so targeting higher nutrient levels in the lake will act as a preventative measure that will effectively deal with the algae populations.

Witches Woods Lake continues to be in good health, and the management strategy continues to be successful. In 2023, the management and monitoring program should be conducted in a similar manner to assure that a healthy plant composition is present. If the algae populations continue to increase, a management plan should be incorporated for that as well. This season we unfortunately received word that a resident of witches woods lake

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experienced a fish kill in their koi pond. Nautique is toxic to koi, and any personal pond that is fed by the lake should be blocked from any inflow until the herbicide has worked its way out of the system. This will hopefully prevent any further incidents from occurring in the future. If you have any questions about the lake or management plan, please do not hesitate to reach out. We thank you for a successful 2022 season, and look forward to continuing our work at witches woods in 2023.