

Spy Pond Aquatic Treatment Plan for 2021

Ponds and lakes naturally fill with sediments over time, and Spy Pond is no different. This process is called eutrophication, and when accelerated through human activities, it is called cultural eutrophication. The first signs are excessive nutrients and algae. Urban water bodies like Spy Pond, with years of cultural eutrophication, are likely to build sediments. Rooted plants grow when sunlight reaches the sediment. Rooted plants lift algae to the surface, further accelerating the growth of both. Each year, the sediment gets closer to the surface, increasing the available light and rate of growth.

The overall plan for 2021 is to apply multiple treatments of an herbicide when the plants are young. Early treatments should help native pondweeds recover for fish, while not growing so tall as to interfere with rowing, sailing, and other activities on Spy Pond. Timing is important; scheduling and permits should occur early in the season. Treatments can be postponed or cancelled if they are not needed.

The goal of this plan is to slow down the natural process of eutrophication. There are three subgoals: (1) reduce the yearly accumulation of sediment, (2) grow sufficient vegetation for fish, birds, ducks, turtles, muskrats, and other aquatic creatures, and (3) reduce the flow of nutrients into Spy Pond. Vegetation is particularly important in the spring when pickerel and yellow perch are spawning.

1) In March, promote the use of no-phosphorus fertilizer throughout Arlington. Phosphorus is seldom needed for established lawns. Stormwater carries phosphorus to the nearest water body. We will distribute an informational flyer on fertilizer by email to Arlington residents. We support the further development of watershed best-management-practices. For example, the Mystic River Watershed Association will work with Arlington to install infiltration trenches to capture the first flush of rainwater and allow it to soak into the ground.

2) In April or early May, treat curly-leaf pondweed with diquat. Diquat is a contact herbicide. It is particularly effective against curly-leaf pondweed, an invasive species. "Even a tiny dose of diquat in the water will wipe it all out." [Tom Flannery, DCR, 2/17/21]. Curly-leaf pondweed starts growing the previous fall. The treatment is best applied soon after curly-leaf resumes its growth in the spring. If a low dose is used, curly-leaf is controlled but native pondweeds should survive. Tom Flannery recommends not treating the shoreline, as this is better for native pondweeds. https://www.illinoiswildflowers.info/wetland/plants/curly_pondweed

3) In mid to late June, treat Spy Pond for pondweed. Treatment should occur before pondweed is two feet tall. The goal is to minimize the amount of decayed vegetation and the amount of nutrients released into the water. It reduces algae and the accumulation of sediment and organic muck, i.e., factors that contribute to eutrophication. Last year's Sonar treatment may limit the growth of pondweed this year. From Tom Flannery: "Ask SOLitude their experience with ProCellacor on Potamogeton sp." ProCellacor is a systemic herbicide that DCR uses on Eurasian watermilfoil.

4) In mid to late July, treat Spy Pond for spiny naiad. Treatment should occur when spiny naiad is a foot to two feet tall. Spiny naiad is an invasive species that releases millions of seeds from late summer into fall. <https://www.mass.gov/files/documents/2017/09/06/european-naiad.pdf>

5) In early September, hire an aquatic biologist for a site visit and report (e.g., Scott Fisher, SWCA, Westborough and Amherst). A biologist will spend a day on Spy Pond, identifying aquatic vegetation, collecting samples for water quality analysis and algae counts, and studying the overall health of the pond. He or she will issue a report of findings and recommendations for next year.

6) Throughout the summer, monitor Spy Pond for water chestnut and Eurasian watermilfoil. In 2019 and 2020, Eurasian watermilfoil was sparse on Spy Pond, and water chestnut did not appear. Both plants are highly invasive. Eurasian watermilfoil may be at the end of its natural cycle ["Milfoil does not last forever", *LakeLine*, May 1998].

Version 2/23/21

DRAFT