

August 2025 Lake Preservation Committee (LPC) Report

Preface: A word from the Silver Springs Lake Association

- To minimize continuing shoreline erosion, please observe our no-wake boating policy. Consider using speeds between 'Idle' and 5 MPH.
- For general safety consideration, navigate the lake in a counter-clockwise direction and never allow passengers to ride on the bow while navigating.
- To improve your boating experience, weeds in the Navigation Lane, located approximately 20 feet out from our boat docks, are cut down to levels below prop level, twice a year. Use this path around the 5-mile perimeter of our lake to reduce the incidence rate for prop fouling.
- Please ask your contractors and delivery drivers to observe our 25 MPH speed limit
- For fall boat removal, the Association boat launch is and will remain 'open' until Mid-October.
- The boat launch will be open from early May to Memorial Day for launching in 2026

The Lake Preservation Program Overview:

Our shallow man-made lake has more gently sloped shoreline contours than a typical lake. This feature favors widespread weed growth and rapid lake aging. Weed growth, Chara Algae growth, and muck accumulation are all signs of this.

The goal of having a Lake Preservation Program is to preserve our lake's recreational value for future generations. The plan is to limit weed and algae growth and reduce muck accumulation by removing more nutrients from the lake than mother nature (and man) put into it. This will slow, stop, and possibly reverse the natural lake aging process.

The most fish-friendly, non-intrusive, affordable, and cost-effective means to achieve this goal is mechanical weed harvesting. The community boat launch and pier were replaced in the spring of 2024 to enable the launch and retrieval of large (right-sized) weed harvesting equipment. We are still learning about program effectiveness. For 2024 and 2025 we hired Aquatic Plant Management (APM; Minocqua, WI) for three (3) 40-hour weed harvesting service campaigns. They were conducted in May-June, July-August, and September-October.

Beyond biomass removal, the first priority for the first two (2) harvesting campaigns is to cut and remove propeller-fouling weeds from the Navigation Lane. The third harvesting campaign de-emphasizes the Navigation Lane and focuses on harvesting the largest and thickest weed and Chara algae beds. To maximize harvest yields, before each campaign begins, the LPC provides hand drawn weed bed maps to APM's operators.

APM (2024-2025) Weed Harvesting Program Performance:

LPC Members are still learning about the effectiveness of the ILH-250 weed harvesting equipment. Our experience to date has shown that the ILH-250 Harvester used by APM will cut and remove one acre of weeds from the lake for every three hours of operation.

This means that 13 acres of weeds can be harvested in a 40-hour harvesting campaign. Our Navigation Lane alone is 10 acres. After (and while) clearing the Navigation Lane, APM can harvest an additional 3-5 acres of weeds.

APM reported that limited snow cover on lake ice this past winter and many warm sunny days through the late spring and early summer have resulted in widespread weed growth. Weeds on our lake are both more widespread and notably thinner (less densely packed) than in 2024. This has contributed to significantly lower biomass yields for the first two APM weed harvesting campaigns.

This reduction is both visible (weeds are still present) and measurable (less biomass is being removed during each campaign.) The LPC, our Lake Board Members, and our boating and fishing residents are concerned with APM's lower over-all weed cutting effectiveness and biomass removal / harvest yields in 2025.

The LPC and Board have responded by increasing the service period for the second and third APM Weed Harvesting Campaigns. Budgeted Lake Preservation Program funding was reallocated, to increase the duration of the 2nd APM campaign from 40 to 48 hours, and from 40 to 56 hours for the 3rd harvest.

The final (3rd) APM campaign is scheduled for the week of September 29th. To further improve APM's harvesting performance the LPC is utilizing Google Earth Pro software to GPS-map up-to 20 acres of weed beds and Chara algae bogs for APM to harvest during the week of September 29th. The GPS-mapped beds will be prioritized (thickest to thinnest) for APM, and they have been asked to cut weeds to a depth of 6 inches from the lake bottom to maximum total biomass removal.

LPC Recommendations for the 2026 Lake Preservation Program:

The weed growth pattern on our lake is changing. The 2025 yield is likely to be less than 2024. This year weed growth is more widespread and weed beds are 'thinner' than in 2024. On the presumption that this trend will continue, more weed harvesting service time will be needed to increase harvest yields. The LPC wants the 2026 APM weed harvesting yield to be greater than the 2024 yield.

LPC Recommendations for the 2026 Lake Preservation Program: (continued)

The LPC is recommending a 50% increase in harvesting service time for 2026, from 40 hours to 60 hours per campaign. This will increase ILH-250 lake surface area coverage from 13 to 20 acres (54%).

- We are proposing increased funding (and contracting with APM) for three (3) 60-hour weed harvesting campaigns, to be conducted in May, July, and September
- For the first two harvesting campaigns, after clearing the Navigation Lane (30 hours), APM Operators will use prioritized GPS maps to precisely locate and harvest up-to 10 additional acres lake weeds and Chara algae beds
- For the final (3rd) campaign, APM Operators will utilize the entire 60-hour service period to harvest 20 acres of GPS-mapped and prioritized weed and Chara beds

Diver Assisted Suction Harvesting (DASH) is an expensive manual weed pulling technique, used to remove beds of fast spreading invasive weed species. Based on Onterra's (early season) 2026 Invasive Weed Species (growth mapping) Survey, the LPC may recommend APM-DASH services for 2026. This would be one year ahead of our service projection, which is already budgeted for 2027. This may not be affordable.

Alternative Programs for Lake Preservation / Lake Nutrient Removal:

- **Full Lake Dredging:** With unlimited resources we could drain and dredge the lake to remove all nutrient sources. The lake aging clock would be completely re-set. Physically removing plant biomass and muck this way would cost millions of dollars and take several years to accomplish. A firm sand bottom there-after would abound. Swimming and boating would be great. Aerators would be reintroduced to oxygenate the water and promote fish growth. State (EPA & DNR) approvals would be needed and their attention could result in the termination of our fish farm licensing program. This seems to be an unaffordable and undesirable program option.
- **Localized Dredging:** Hydraulic Dredging rapidly removes many tons of muck and silt from the lake bottom. It is feasible (affordable and effective) to dredge smaller 'problem' areas, without disrupting lake recreation. Local boat navigation, water clarity, and noise levels are affected during dredging operations. Fish populations and oxygen levels throughout the lake would not be affected. Our first target would be a 1-2 acre area, near the lake inlet stream. Nearby de-watering fields or settling ponds will be needed for silt and muck deposition. Program costs are likely to exceed \$100,000.00. (This cost is lower than our initial \$250,000.00 ball-park-estimate for removing 12-18 inches of silt from a one-acre section of lake bottom.) State (EPA & DNR) approvals are needed, along with land leases for the lakeside dewatering areas.

Alternative Programs for Lake Preservation / Lake Nutrient Removal: (continued)

- The LPC is talking to regional lake dredging service providers, and the Lake Board will work on long-term budgeting (funding) for this program. The soonest timing for a (lake inlet area) dredging program in Silver Springs Lake is likely to be after 2030.
- **Nutrient Sequestering:** Another way to stop weed and algae growth is to sequester Phosphate nutrients with Aluminum Sulfate-enriched bentonite clay 'Alum'. This method is used primarily to clarify murky lakes, which are loaded with unicellular algae. Weeds are then chemically treated and harvested to eliminate them. An extensive study of lake dynamics is performed before treating a lake with many tens of tons of Alum. This program would also cost hundreds of thousands of dollars. State (EPA & DNR) approvals would be needed and their attention could result in the termination of our fish farm licensing program. This nutrient reduction method is considered for lakes that experience Algae blooms, oxygen depletion, and fish kills. This is not an appropriate nutrient reduction method for our lake.

New (private) Shoreline Maintenance Service Provider Options for 2026:

The LPC is encouraging APM (Minocqua, WI) and Silvermist (Waupaca, WI) to offer new 'tailored' Shoreline Maintenance Services for groups of residents to consider for 2026. The Association will provide information about these services to residents, but will not be involved with contracting or scheduling.

APM (Minocqua, WI) 2026 Weed Cutting and Raking Service Offer:

APM has no 'mechanical solution' for removing shoreline weeds, algae and muck. Weed cutting heads and bearings are worn and damaged by sand and debris. Although they offer Diver Assisted Weed Harvesting (DASH), service for the elimination of invasive weeds, **manual weed pulling** is cost prohibitive for individual property owners.

Offering a small work crew for several days of **manual weed cutting** and swim area muck raking is feasible. APM has agreed to put together and offer this service for groups of lake residents to consider for 2026. Service program details and pricing are not available at this time.

Silvermist (Waupaca, WI) 2026 Mechanical Weed Pulling Service:

LPC members are talking to Silvermist about offering a near-shore to Navigation Lane weed pulling service utilizing their ECO-Harvester. This machine is smaller than APM's large weed cutters. It has a rotary drum weed pulling head that can go right to the bottom and remove weeds from gently-sloped, obstruction-free, muck and sand lake bottoms in near-shore areas.

Silvermist 2026 Mechanical Weed Pulling Service: (continued)

Margins from the shoreline out to a (1-2 Ft.) serviceable water depth, and spaces under and several feet to the sides of docks and water intakes are not accessible and therefore would not be touched. After clearing weeds, algae, and muck using an Eco-harvester service, lot owners will still need to rake their swim areas if they want a weed-free and firm sand bottom. Program details and pricing for multi-day Silvermist ECO-Harvester services are not available at this time.

Silvermist will re-visit Silver Springs Lake on October 1st, 2025 to refamiliarize themselves with our lake and shorelines. They need to determine how many lots (or feet of shoreline) it can guarantee to be 'cleared' of weeds during defined multi-day service periods. To enable their total program cost calculation, we will also show Silvermist our weed disposal location... the Henke farm.

Water Thrusters - A New Best Practice for Shoreline Maintenance Consideration:

Several residents have grouped together to purchase, customize, and use a (portable) Water Thruster to effectively clear muck, weeds, and Chara algae from their swimming areas (Shoreline to Navigation Lane). After manually clearing the area with a weed cutter and raking, a Water Thruster can be used to re-establish a firm sand lake bottom in swimming areas and under docks. Water Thrusters simply blow residual muck and weed detritus out and into the Navigation Lane boundary area. The blown material settles within an hour. On a windy day it may migrate and settle in your neighbor's near-shore area. (This should be avoided, and a complimentary clean-up treatment for their swimming area might be in order.) A video of water thruster(s) in operation will be prepared for posting to the Association Website.

Concluding Statements:

It may take a decade to see that our perennial weed harvesting program-approach has been working. Research says that over time, weed harvesting will result in progressively lighter weed bed growth and the lessening of muck-accumulations. Year-to-year visual evidence of this reversal in the lake-aging process will be nearly impossible to see. We simply must trust in the fact that weeds and algae require nutrients to grow. Reducing nutrient availability will lead to reduced weed growth.

The LPC will continue to use new observations (facts) to improve the Lake Preservation Program. We will research and recommend more aggressive yet affordable methods to remove nutrient biomass, i.e. targeted dredging, and provide multi-year budget-expensing forecasts to the Association Lake Board for funding approval.

Respectfully,

Terry Klaves, David Lester, and Tony Mainiero
The Silver Springs Lake Preservation Committee