

2024 Lake Treatment Proposal For Forest Lake

Prepared for:

Forest Lake Property Owners Association

Prepared by:

Savin Lake Services Inc.

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January 24, 2024

Forest Lake Property Owners Association
Attn: Mr. Ron Swagman
6180 Bobcat Trail
Alger, MI 48610



Subject: 2024 Lake Treatment Proposal for Forest Lake

Forest Lake Property Owners Association,

Savin Lake Services Inc. has a vested interest in becoming your lakes management partner for Forest Lake. Savin Lake Services is a licensed and insured fully integrated lakes management firm offering multiple mitigation solutions to improve the overall health, aesthetics and/or recreational use of lakes all throughout Michigan. We offer both mechanical and herbicide control methods to manage nuisance aquatic plants. In addition to aquatic plant management, we also offer multiple types of lake studies and consulting services, phosphorus mitigation solutions, lake aeration systems, lake dredging, and bacterial augmentation options for our customers. Currently, we are the only lake management company in Michigan utilizing drones equipped with GPS rate-controlled liquid and granular herbicide applications systems, mapping software, and obstacle avoidance features. With their versatility and integrated technologies features, drone technology is the future of aquatic and terrestrial plant management.

Savin Lake Services Inc. has been servicing Michigan’s lakes and ponds for over (25) years. We currently provide our services on over (80) lakes & (225) ponds in Michigan. The lakes that we currently have under contract range in size from 10 acres to 2,500 acres. Our solid reputation speaks for itself. We are known for an elevated level of quality service, and we have a strong commitment to customer satisfaction.

We are members of the Tawas Area and West Branch Chambers of Commerce and are an A+ Accredited Member of the Better Business Bureau of Michigan. We are also long-term members and sponsors of the Michigan Lakes & Streams Association, the Midwest Aquatic Plant Management Society, the Michigan Aquatic Managers Association, the Michigan Inland Lakes Partnership, and the Aquatic Ecosystem Restoration Foundation.

We are pleased to offer the following proposal, company profile, and references, for your consideration. If you have any questions regarding the following proposal, please feel free to contact us at any time.

Sincerely,

Eric Largent – Sales and Market Development Manager
Savin Lake Services Inc.



PROPOSED LAKES MANAGEMENT PLAN FOR FOREST LAKE

If selected as your lakes management services provider, Savin Lake Services will implement an integrated plant management plan to manage Forest Lake safely and effectively. We will continuously assess and study the ecology of the lake to prevent and identify any threats. Then evaluate which physical(mechanical), herbicide, and/or biological control method will be the most effective, economical, and feasible option to eliminate or reduce the threat and positively impact Forest Lake’s ecosystem.

MANAGEMENT STRATEGY FOR 2024

Prescription

Utilizing information gained in assessment phase to develop a plan and strategy

Adaptive Management

We recommend a process of continued monitoring, stakeholder input, to successfully achieve or sustain project goals

Stakeholder Input

Collaboration to create an understanding of the project, determine feasibility, and outline desired goals

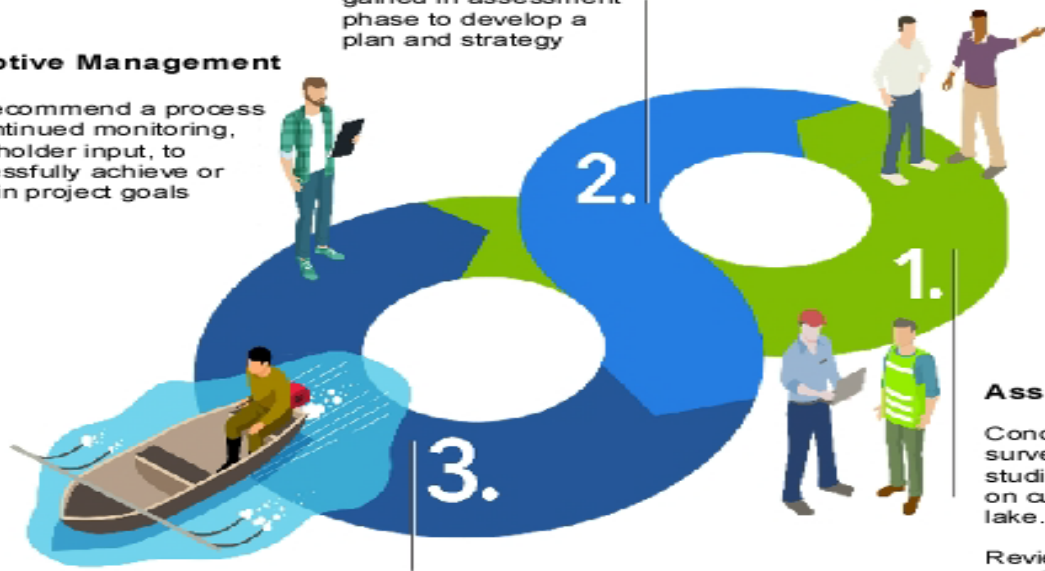
Assessment

Conduct lake studies, plant surveys, and water quality studies to provide information on current conditions of the lake.

Review historical information previously collected and compare for trending analysis

Implementation

Efficiently and effectively executing the prescription outlined





Routine monitoring - Savin Lake Services Inc. will closely monitor the lake by conducting routine vegetation surveys. Conducting routine surveys and studies will result in early detection of potential threats to the lake. Early detection of a potential threat gives us the ability to be proactive instead of reactive in our management approach.

Invasive Plant Management - Invasive plant communities are a threat to the ecology of a lake. Invasive plants outcompete the desired native plants and impact fisheries habitat and spawning areas, which results in reduced aquatic plant and animal diversity. Invasive plant presence in a lake can also reduce property values and restrict fishing, boating, and other recreational opportunities if they are not effectively managed. Early detection and rapid response are key to preventing the negative ecological and economic impacts these plant species can cause to a lake and its surrounding riparian's.

- During our previous experience on Forest Lake, the aquatic invasive plant species detected were Curly Leaf Pondweed, and Eurasian/Hybrid Watermilfoil. These species are well established throughout several areas of the littoral zone of the lake and will require management to keep them under control. Currently, these plants pose the greatest threat to Forest Lake. Savin Lake Services will aggressively attack the invasive plant communities that exist in Forest Lake with aquatic herbicides. Herbicide management is currently the most efficient and cost-effective way to manage invasive plant communities.
- Utilization of selective systemic herbicides – Targeted invasive plant communities will be managed utilizing selective and systemic herbicides whenever possible.
 - By utilizing these types of herbicides, we can treat the entire plant of an undesirable targeted invasive species and leave the non-targeted indigenous species unharmed. Plants treated systemically will not regrow, and by utilizing selective herbicides, desired indigenous plants are given the opportunity to thrive and outcompete the invasive plants. This method will reduce densities or areas invasive plants can exist and reduces the risk of new infestations or re-infestations of invasive plants.

Indigenous (Native) Plant Management – Indigenous plants play a key role in having a healthy and diverse aquatic ecosystem. These plants produce oxygen and provide food sources for other aquatic life, provide suitable fish habitat for fisheries to thrive and cover for prey fish. They also absorb nutrients, stabilize bottom sediments, clarify the water column, and aid in reducing shoreline soil erosion. Due to all the beneficial contributions they provide to the lake, treatment of these type plants should always be kept to a minimum and only managed if they reach a nuisance level that is detrimentally impacting the recreational use of the lake.

- Savin Lake Services Inc. will utilize herbicides/algaecides to control nuisance indigenous plant and alga communities where they are directly impeding recreation use in the near shore developed areas of the lake.



RECOMMENDED LAKE SURVEYS AND STUDIES

Spring Visual Survey – This survey is to assess plant and algae growth, locate areas containing early season invasive plant communities (Curly Leaf Pondweed & Hybrid/Eurasian Watermilfoil), delineate treatment areas, and determine resources required and ideal timeframe for initial treatment.

Fall Visual Survey – This survey is to assess plant and algae growth, identify plant diversity/species richness, determine if any areas of the lake contain any new infestations or regrowth of non-native plant communities, and determine if any additional treatment/management is required for the season. We also inspect the vegetation growth in all previous treatment areas and evaluate if any changes are required in our management approach.

RECOMMENDED MANAGEMENT TIMELINE

Winter / Spring – Savin Lake Services will apply for the required annual EGLE permit.

May – A spring visual plant survey of the lake will be completed to determine areas containing invasive and nuisance natives that require treatment.

Early June – Mid-June – Herbicide application will be completed. Initial herbicide application dates will vary from early to mid-June depending on the weed growth and water temperature.

- Initial herbicide application will target the invasive/exotic plant species that are present throughout the lake.
 - If any Invasive Milfoil populations exist, they will be treated utilizing systemic herbicides and any Curly Leaf Pondweed that exists will be treated utilizing contact herbicides.
- Nuisance native vegetation and algae may require treatment at this time also.
 - If native vegetation treatment is necessary, we will target the native plant and algae species in the near shore developed areas where they are impeding recreational use of the lake utilizing contact herbicides/algaecides.

September – A fall visual plant survey will take place to identify any areas of the lake that contain any new infestations or regrowth of non-native plant communities, we will also survey all previous treatment areas for efficacy and evaluate if any changes in our management approach are required.



RECOMMENDED HERBICIDES TO BE UTILIZED

Savin Lake Services anticipates utilizing the following aquatic herbicides on Forest Lake:

1. ProcellaCOR EC – An aquatically labeled herbicide for systemic management of invasive Watermilfoils.
2. 2, 4 – D Ester (Navigate) – An aquatically labeled herbicide in a granular formulation for systemic management of invasive Watermilfoils.
3. Diquat Dibromide – An aquatically labeled broad spectrum contact herbicide for management of various milfoils & pondweeds.
4. Aquathol K – An aquatically labeled broad spectrum contact herbicide for management of various milfoils & pondweeds.
5. Hydrothol 191 – An aquatically labeled contact herbicide/algicide that provides for management of various pondweeds and Macroalgae like Starry Stonewort.
6. Citrine Plus – An aquatically labeled algicide in a Chelated Copper formulation for management of algae and macroalgae.
7. Copper Sulfate – An aquatically labeled algicide for management of algae and macroalgae.
8. Cygnat Plus – An additive that promotes efficacy of treatments.



PROPOSED FEES:

The below pricing is based on the indicated application rate for each product listed. The customer agrees that the unit prices named will be utilized for billing. Unit price adjustments shall be proportional to the unit adjustments in dosage (for example if 2,4-D Ester is utilized at 150 lbs. per acre then the billed rate will be 50% higher than the below quoted unit price). Prices for treatment and or harvesting of aquatic vegetation on Forest Lake will be as follows:

<u>Systemic Herbicides</u>	
1. 2, 4-D Ester @ 100 lbs./acre for systemic milfoil control	\$ 650.00 per acre
2. Triclopyr Granular @ 120 lbs. / acre	\$ 695.00 per acre
3. Triclopyr Liquid - (like Renovate 3) @ 2.5 gals / acre	\$ 425.00 per acre
4. Triclopyr Liquid & Aquathol K – (like Renovate 3)	\$ 575.00 per acre
5. ProcellaCOR EC	\$ 95.00 per PDU
6. ProcellaCOR EC @ 6 PDU/acre + Diquat Dibromide @ 1 gal./acre	\$ 695.00 per acre
<u>Contact Herbicides</u>	
7. Diquat Dibromide - Non-native plants @ 1 gal / acre	\$ 185.00 per acre
8. Diquat Dibromide - Native plants @ 2 gal / acre	\$ 285.00 per acre
9. Diquat Dibromide & Aquathol K combo @ 1 gal / acre	\$ 295.00 per acre
10. Aquathol K / Hydrothol 191 @ 1 gal / acre	\$ 195.00 per acre
11. Endothall's @ 2 gals / acre	\$ 305.00 per acre
12. Flumioxazin - Clipper (200 ppb)	\$ 315.00 per acre
13. Flumioxazin - Clipper- (100 ppb) + Diquat	\$ 355.00 per acre
14. Nautique for Wild Celery @ 7.5 gal / Acre	\$ 475.00 per acre
15. Harpoon Granular @ 160 lbs. / acre - Wild Celery	\$ 775.00 per acre
<u>Algaecides</u>	
16. Algae – Chelated Copper (like Captain / Cutrine Plus) 1 gal / acre	\$ 75.00 per acre
17. Algae – Max Copper Sulfate Rates for Chara or SSW 4.4 lbs./acre ft.	\$ 90.00 per acre
18. Copper Sulfate/Chelated Copper + Hydrothol 191 combo	\$ 235.00 per acre
<u>Emergent Plant Control</u>	
19. Lily pads, Cattails, Purple Loosestrife Control	\$ 75.00 per 40'x40'
<u>Bacterial Augmentation</u>	
20. Mukk Busster® Biological/Enzyme Muck Control	\$ 275.00 per acre
<u>Vegetation Harvesting</u>	
21. Mechanical Harvesting of Nuisance Natives (minimum 20 acres)	\$ 625.00 per acre
22. Mechanical Harvesting of Starry Stonewort (minimum 20 acres)	\$ 775.00 per acre
<u>Water Quality and Survey Studies</u>	
23. All Studies Included with Lake Management Proposal (LMP)	Included with LMP
<u>Miscellaneous</u>	
24. Yearly Michigan EGLE Permit fee	\$ 225.00 per report



SAVIN LAKE SERVICES RECOMMENDED MANAGEMENT QUOTE:

Savin Lake Services recommends a 2024 budget of \$36,575.00 - \$58,575.00 for the management of invasive species in Forest Lake.

Please keep in mind that these are approximate numbers based 2023 fall survey information. There are many variables in a lakes ecosystem that can change from year to year that make it hard to give an exact number. These recommendations are provided to assist in establishing an annual budget for the lake’s management. It is important to note that Savin Lake Services is willing to work within any budget provided. We will only recommend and manage what we feel is in the best interest of the overall health of the lake and make it more desirable for use for the riparian owners. Our goal is to keep the invasive plant communities in check throughout the entire lake, manage nuisance natives only where necessary to make riparian owner’s docks and swim areas more desirable for use, and to evaluate additional mitigation options to improve the overall health, water quality, and recreational use of the lake.

Estimated herbicide treatment cost analysis:

Permit Application: \$ 875.00

30-50 acres of Eurasian watermilfoil Control Utilizing ProcellaCOR EC \$ 32,000.00 - \$54,000.00

20 acres Curly Leaf Pondweed and other Eurasian watermilfoil treatment \$ 3,700.00

Total Estimated 2024 Lake Treatment Cost \$ 36,575.00 - \$ 58,575.00



AGREEMENT TERMS:

MECHANICAL HARVESTING:

- Savin Lake Services will provide all necessary labor and materials to provide aquatic vegetation harvesting services utilizing our own vegetation harvesters.
- Proposed Price is based on a minimum of 20 acres being cut. If minimum acreage requirement is not met a \$2,500.00 setup and mobilization fee will be added to the total cost of actual acreage cut.
- Price includes removal and transportation of aquatic vegetation to a location within (5) miles of Lake.
- Savin Lake Services will harvest to a maximum depth of 5 ft where practical. Harvesting cannot be performed in areas with less than 18" of water depth. Savin Lake Services will make all reasonable efforts to harvest as needed between docks, and as close as possible to shorelines. For safety reasons, our harvesting crews will not harvest within (10) ft of any boat / dock / raft etc.
- Please note that a suitable launch is necessary to launch and remove our vegetation harvesters from your waterbody. Our harvester / trailer combinations weigh between 12,000 and 18,000 lbs. Savin Lake Services will make every reasonable effort to remove our harvesters from your water body without additional charges. However, any additional costs associated for towing or removal of our vegetation harvesters due to poor launch conditions will be the responsibility of the customer.
- Savin Lake Services will ensure that the launch area is kept clean and raked at the end of each day. All Savin Lake Services harvesters utilize marine grade hydraulic oil for safety. The MSDS sheets for this hydraulic oil will be kept on site during any harvesting operations.
- All Savin Lake Services harvesters are equipped with GPS guidance systems so that we can ensure that we do not miss areas of harvesting on your lake. We will provide you with a report at the end of each harvest which will indicate the exact area that we have harvested, and the total acres harvested.
- Savin Lake Services harvesters will pick up and collect most of the cut vegetation, however, it is important to note that some "cut and drift" vegetation will normally wash to shore during harvesting operations. We will work hard to minimize the amount of cut vegetation that washes to shore; however, it will be the responsibility of the property owners to collect and dispose of any vegetation that cannot be captured by our vegetation harvesters.



BACTERIAL AUGMENTATION (Muck Reduction) Treatments:

Bacterial Augmentation treatments are completed by applying microbial pellets that contain colony forming beneficial bacteria and enzymes capable of digesting up to 4 – 6 inches of organic sediment (muck) a year. These treatments will also reduce odors and improve water clarity.

LILY PAD CONTROL:

This is an optional program for the treatment of lily pads in the lake. Lily pad treatments are included in the quoted price. This service is optional. Per the EGLE (State of Michigan) regulations, an area of 40ft X 40ft can only be treated at each residence. Boat lanes to open water can be considered for treatment also.

NON - TARGET SPECIES

Please be aware that we can only control weeds and algae that is present at the time of treatment. Emergent vegetation (cattails, bulrush, purple loosestrife), and lily pads require separate programs for control and are not treated unless specifically desired by the customer. We have no power over future weed and algae growth based on the current aquatic herbicides registered for aquatic use in Michigan.

POSTING OF TREATMENT AREAS

Posting signs will be placed every 80-100 ft. along the lake shore in developed areas and undeveloped areas where we intend to treat. All launches and access sites will be posted. We will use brightly colored signs and the colors will be different for each treatment. Please do not remove these signs until the last restriction date has passed. We will try to post the signs the day before treatment occurs, however there are some occasions that signs do get posted the morning of.

LIABILITY ISSUES

Dead and dying fish are an ugly sight. The truth is that most species of fish are relatively short-lived and have a high rate of mortality. Even large fish, too large to be eaten by predators such as bass and pike, experience a death rate of approximately 50% per year. Fortunately, the deaths are usually spread-out over the year and are rarely observed or become a problem except when concentrated as a fish kill. Only a fraction of the dead fish will ever be observed because many decompose on the bottom or are eaten by scavengers such as turtles and crayfish.

Most of the time, fish kills are due to natural causes over which we have no control, such as weather. Natural fish kills are of three basic seasonal types: winterkill, which occurs in late winter but may not be seen until early spring; spring kill, which is occurs in late May to early June; and summer kill, which occurs on the hottest days of mid-summer. Savin Lake Services cannot be held responsible for fish kills, as most fish kills are natural fish kills.

The above information was taken from the DNR website. For more information regarding fish kills please go here:

http://www.michigan.gov/dnr/0,4570,7-153-10364_52259-119822--,00.html



PROPOSAL TERMS:

- Any unforeseen change in State Regulatory Agency requirements concerning the implementation of any part of this agreement shall nullify this agreement.
- Documentable aquatic management cost increases or decreases more than 3% per year may cause this contract to be re-evaluated in conjunction with the Forest Lake Property Owners Association.
- Savin Lake Services will not charge for telephone conversations, meeting attendance, or an hourly rate for our staff. Those items are part of our standard operating philosophies.

TERM AND TERMINATION:

- The term of this Professional Services Agreement shall commence on the signature date and shall continue for a period ending on December 31, 2024.
- Agreement term extensions beyond calendar year 2024 at the amount of proposed price plus 3% are contingent upon the discretion of the Forest Lake Property Owners Association.
- If either party hereto fails to comply with a provision of this agreement, then the other party shall have the right to terminate this agreement by giving written notice of the default to the defaulting party and the defaulting party fails to cure the default within fifteen (15) days of receipt of said notice.

PAYMENT TERMS:

- An invoice for the permit fee will be billed in the winter of the previous year (ex: Treatments for 2024 will have the permit fee billed in winter of 2023). Checks will be paid directly to Savin Lake Services. Savin Lake Services will apply for the EGLE permit through the State of Michigan once the permit fee is received.
- Following each treatment or service provided an invoice will be mailed or emailed. The invoice will show the date of treatment/service, acres treated, type of treatment/service, price per acre and total monies due. Invoice payment will be due in full net thirty (30) days after the service rendered date.
- Any changes in the permit fee imposed by the State of Michigan will be the responsibility of the Forest Lake Property Owners Association.



AGREEMENT ACCEPTANCE

If the above proposal meets your needs, please sign below indicating your acceptance, and return it to us at your earliest convenience. If you have any questions – please feel free to contact us at any time.

We look forward to working in collaboration with the Forest Lake Property Owners Association on the Forest Lake management project for the 2024 management season.

Sincerely,

Eric Largent – Sales and Market Development Manager
Savin Lake Services, Inc.

Mr. Ron Swagman- Aquatic Weed Control Association
Forest Lake Property Owners Association

Date