

FOR

2022



PLM
LAKE & LAND
MANAGEMENT CORP

October 21, 2021

Paw Paw Lake
Attn: Norma Somers
7021 N Maple Dr.
Coloma, MI 49038

PLM Lake & Land Management will provide a lake management program for the control of exotic weeds and/or algae in Paw Paw Lake for the 2022 season.

Aquatic Vegetation Control Plan for Paw Paw Lake – 2019 Treatment Summary and 2022 Recommendations.

The 2021 season was a successful year in regards to exotic plant control on Paw Paw Lake. Based on a high level and distribution of milfoil at the end of 2020, a whole lake Sonar A.S. application was recommended for 2021. Unlike previous Sonar treatments, the 2021 application was modified in order to use real time lake conditions for product calculations. Current EGLE rules require us to use a hypothetical ten-foot thermocline estimate to calculate dosage rates. Since the thermocline rarely sets up at ten feet, we requested the ability to sample the actual thermocline just prior to treatment and to use that data to determine the amount of product needed. The thermocline prior to treatment was 13 feet. Based on FasTests sampled after treatment, this protocol allowed us to get much closer to the 6 ppb target rate. Samples for past treatments (2013 and 2017) were significantly lower and caused delayed control and concerns of possible treatment failure.

Based on the September AVAS survey, the 2021 treatment was successful. No Eurasian watermilfoil could be found. A few small areas of Starry stonewort were discovered and addressed via spot treatment.

For 2022, we recommend the continuation of a monitoring and maintenance program. It is likely that some Eurasian watermilfoil will return from either remaining/viable root crowns, seed, or re-introduction. Management actions should focus on quickly identifying areas of Eurasian watermilfoil re-growth and addressing them through localized spot treatments. Systemic and selective herbicides such as Navigate, Sculpin, ProcellaCOR or Renovate (OTF or Max G) should be used to address re-growth. However, low dose contacts may also be appropriate depending on milfoil density, distribution, or if found with other exotic species (Curlyleaf pondweed). Historically the native species Thinleaf pondweed has been a nuisance in certain parts of the lake. Given the water clarity observed during the recent seasons, there has been a significant resurgence of native plant species. If they become a problem in 2022, treatments can be conducted pending discussions and board approval.

2022 Management Program using Conventional Herbicides:

Products to be applied: Navigate (granular 2,4-D), Renovate, ProcellaCOR, Renovate Max G, Sculpin, Aquathol K, Hydrothol 191, Reward, Flumioxazin and non-water restrictive products such as Nautique, Copper Sulfate, Cutrine-Plus, Cygnet Plus and shade as a tracer.

Products such as Navigate/ Sculpin (2,4-D), Renovate (trichlopyr), and Reward (diquat) can be used to control Eurasian watermilfoil. Navigate and Renovate are both selective for Eurasian watermilfoil and are systemic (able to control the root of the plant). Reward is a contact herbicide that only controls the portion of the plant above the sediment. Re-growth from Reward treated plants usually occurs 6-8 weeks after treatment. These options are best suited for localized Eurasian watermilfoil infestations where problems are only occurring in specific areas of a lake. Factors such as treatment size, location (offshore/near shore), well depths, water movement, time of year, and plant density need to be considered when selecting the appropriate herbicide for spot treatments. Spot treatment of milfoil may also use a combination of ProcellaCOR and diquat.

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Estimated Cost for 2022 using Conventional Herbicides:

Management using conventional herbicides for spot treatments is billed on a per acre basis using one or a combination of the herbicides below. You will only be billed for the number of acres treated at the unit cost per acre below. Herbicide selection will be based on an evaluation of site conditions. Algae growth can be treated on an as needed basis. Invoices will be sent after each treatment is completed.

2022 Unit cost per acre.

Navigate:	\$425.00
Renovate 3:	\$385.00
Renovate OTF:	\$570.00
Renovate Max G:	\$475.00
Sculpin G:	\$445.00
Diquat:	\$215.00
Diquat/Hydrothol 191:	\$265.00
Aquathol K/Hydrothol 191:	\$220.00
Flumioxazin (200 ppb):	\$400.00
Procellacore:	\$155.00/pdu
ProcellaCOR + Diquat:	\$580.00
Komeen Crystals:	\$550.00
Copper Sulfate/Hydrothol:	\$125.00
Algaecides:	\$47.00

2022 DEQ Permit Fee – Paw Paw Lake:	\$1,600.00
2022 DEQ Permit Fee – Mud Lake:	\$450.00
AVAS Survey (August/September 2022):	\$865.00
2022 Treatments (May-August 2022):	~\$48,500.00
Estimated Total Cost for 2022:	\$51,415.00

Contract Terms:

Contract Period:

One Year Treatment Program: Pricing is based on the type and the amount of vegetation or algae present at the time of treatment, as well as, the products applied. Unlike the multiple year program, an agreeable price structure is not contracted into a one-year program. Therefore, an increase in the cost of products, labor, or changes made by the DEQ or other regulatory agencies may have an effect on the pricing for following years.

Permit Fee:

PLM Lake & Land Management is responsible for completing and submitting aquatic nuisance permit applications. PLM Lake & Land Management will send an invoice or statement for the yearly DEQ permit application fee. It is your responsibility to send a check made out to the "State of Michigan" to our office. We must include this check with the DEQ permit application.

Posting of Treatment Areas:

Posting of shoreline treatment areas is the responsibility of PLM Lake & Land Management and will be conducted according to MIDEQ regulations. Signs will be attached to thick barked trees, posts or other suitable fixtures already on site. If homeowners wish to have signs posted in designated areas or on specific fixtures they must notify PLM Lake & Land Management, providing lake address, location of property, and where the signs are to be posted. Pictures are the most informative way to relay this information. Notification of alternate posting must be made at least 14 days prior to treatment and additional fees may apply. The removal of posting signs after the restrictions have expired is the responsibility of the homeowner.

Notification of Treatments:

It is your responsibility to notify each resident within **100 feet** of the treatment area **at least seven days** in advance, **but no more than forty-five days** prior to the first treatment date, that products will be applied to the lake. This notification requirement **must** be administered to each and every property owner within 100 feet of any treatment area. PLM Lake & Land Management will provide a tentative treatment schedule and the **Notice** of proposed products to be used during the spring of each year. We will also notify resident within 100 feet of the treatment areas on the day of treatment.

Electronic Treatment Notification:

In addition to the above-required notification procedures, the Department of Agriculture allows for electronic notification i.e. email with the contracting entity. Therefore, if the contracting entity is a township, lake board, or municipality, you will also receive the same information that is being distributed to each resident (Posting Sign) prior to the treatment. By signing this agreement with PLM Lake & Land Management Corp and providing us the contracting entity email address, we can legally implement the electronic notification procedure.

Non-Target Species:

Please be aware that we only control weeds and algae present at time of treatment. Emergent vegetation (cattails, bulrush, purple loosestrife), lily pads, eel grass and sago pondweed require separate programs for control and are not addressed unless specifically mentioned in the management program. We have no control over future weed or algae growth based on the current chemicals registered for aquatic use in Michigan.

Invoicing and Payments:

PLM Lake & Land Management will submit an invoice following treatment that will include the following information; lake and/or pond(s) treated, date of treatment and type of treatment or acres treated. Monies will be due net sixty (60) days after each treatment. Interest of 1.25% will be added to your bill for each additional ninety (90) days that payment is not received. Payment terms are negotiable.

Liability Issues:

We are responsible for workman's compensation and liability insurance for the duration of the contracted period. PLM Lake & Land Management is not responsible for fish loss due to low oxygen levels caused during warm water conditions.

Sincerely,



Andy Tomaszewski
Southern Regional Manager
PLM Lake & Land Management

For Paw Paw Lake:
One-Year Program _____

NORMA SOMERS 1-18-22
Print Name Date

Norma Somers
Signature

(at the direction of
Columbia & Waterwheel
township boards)