



October 19, 2017

Mendon Township
136 W. Main
Mendon, MI 49072

Portage Lake Association
Attn: Mark Parks
21030 M60
Mendon, MI 49072

The following information is for your review regarding the aquatic management program for **Portage Lake for the 2018 season.**

The 2017 was a challenging year in regards to aquatic plant management on Portage Lake. Initially, the program was set up to control Eurasian watermilfoil, Cabomba, and Curlyleaf pondweed as well as thinning of native vegetation in developed shoreline areas. Fortunately, milfoil and Cabomba have not expanded and appear to be well under control. Curlyleaf pondweed is present each spring to varying levels and is spot treated as needed. More recently, the exotic macro algae Starry stonewort was introduced to the lake and is now one of the primary management targets. Unfortunately, Starry stonewort is not something that can be reduced over time and is a species that requires constant management to keep it under control. Most of the treatments conducted in 2017 focused on this species.

For 2018, we foresee a similar management program with Starry stonewort as a main target species. If milfoil, Curlyleaf or Cabomba is found, it will be treated as needed. Native plant thinning will also be conducted and timed appropriately with the onset of native plant growth (late June/early July). We may possibly try to incorporate a Nautique treatment mid-summer for Eelgrass. Eelgrass cannot be killed but can be stunted/knocked down for a 3-4-week period. Since Nautique is a copper based herbicide, it may also have impacts on Starry stonewort and we saw some success on other lakes treated with Nautique in 2017. Water quality and an AVAS survey will continue in 2018 as well.

Management Program for 2018

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

2018 Unit cost per acre.

Systemic Herbicides

Navigate:	\$450.00
Renovate 3:	\$400.00
Renovate OTF:	\$495.00
Renovate Max G:	\$440.00
Sculpin:	\$390.00

PO Box 132 · Caledonia, Michigan 49316
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Contact Herbicides

Diquat(exotics):	\$210.00
Diquat (natives):	\$265.00
Clipper (200 ppb):	\$750.00
Clipper (100 ppb)/Diquat/Algae:	\$470.00
Aquathol K/Hydrothol 191(exotics)	\$205.00
Aquathol K/Hydrothol 191(natives)	\$310.00
Algaecides	\$47.00
Algaecide/Hydrothol:	\$140.00
Nautique	\$385.00

Other Services

AVAS Survey:	\$420.00
Water Quality Program:	\$630.00

Estimated Total Cost of Management 2018: \$32,670.00

Note: The above estimate is based on treating ~ 30 acres of the developed shoreline. Management at the north end is based on treating ~30 acres. Additional fees include MDEQ permit fee (\$800.00) and optional services (AVAS and Water Quality). These are "estimated" budgets only based on the possibility of exotic plant expansion. Actual treatment cost will be based on the amount of treatment performed at the unit cost per acre prices provided. Treatment recommendations will be based on a pretreatment survey and provided to the Friends of Portage Lake for approval.

Water Quality Program:

The water quality program consists of two samples, occurring in the spring, and late summer each season. Parameter such as secchi disc, pH, D.O., conductivity, alkalinity and nutrient sampling of total nitrogen and total phosphorus give us the ability to monitor lake trends more efficiently. This information will enable us to include the trophic status of your lake. The program also tests your water for Fecal bacteria (E. Coli), in mid-summer which can determine the condition of your lake and if the water is safe for swimming. Reports will be issued annually in the fall.

AVAS Survey:

Performing spring and fall AVAS surveys of the lake will allow for all vegetation within the lake, native and exotic, to be recorded along with density. This data is detrimental in determining management plans and treatment areas. A full understanding of the vegetation growing within the lake can indicate problems within an aquatic environment. AVAS surveys are also a requirement from the MDEQ prior to a Sonar treatment.

I look forward to the challenge of controlling the algae and weed growth in **Portage Lake** and working with you next summer.

Information regarding proposed treatment dates will be mailed in early spring of 2018.

Sincerely,



Andy Tomaszewski, Ecologist
Southern Regional Manager
PLM Lake & Land Management Corp