

WEEDS AND WEED CONTROL IN PAW PAW LAKE – OCTOBER 2019

There are aquatic plants in Paw Paw Lake, they have always been and always will be in the lake. Plants provide oxygen for water quality, food for wildlife, habitats for fish and other aquatic animals and stabilize sediments. However, plants which become overly abundant can be a detriment to enjoying the lake. These plants are what we refer to as “weeds.”

Professional Lakes & Land Management (PLM), the weed control contractor for the lake, has identified more than 30 weeds, almost all of them native weeds. The non-native invasive weeds are Eurasian watermilfoil and curly leaf pondweed, which are the focus of the lake’s weed control efforts.

In this document, we will try to address questions and issues that have been raised by lake property owners and others. If we do not address a concern or question of yours contact us via the lake project website – pawpawlakerestoration.com – and we will respond.

Why are weeds treated at all?

The invasive weeds, eurasian watermilfoil and curly leaf pondweed, grow rapidly and spread extensively. They will choke out native weeds, which is harmful to the lake environment and become so dense that they impede navigation, swimming and other enjoyment of the lake. These are the weeds that are not welcome and are the focus of the treatment program.

How long have these weeds been treated?

Eurasian watermilfoil was first noticed in Paw Paw Lake in the late 1970’s or early 1980’s. During the 80’s the Paw Paw Lake Association sponsored and managed a voluntary treatment program to control the milfoil. Individual property owners would sign up to have milfoil in their riparian area treated, and they would pay for the treatment. The lake association worked with the weed control contractor in identifying the areas to be treated and scheduling the treatment. There was one treatment each year with a booster treatment at specified locations as needed. During this program, approximately 50% of the milfoil was treated each year. This program continued each year through 2011.

In 2011, Coloma Township and Watervliet Township approved a Special Assessment District for the purpose of controlling invasive weeds and other efforts to improve the quality of the lake. Beginning in 2012, the weed control program expanded in focus. In 2012, the entire lake was treated to reduce Eurasian watermilfoil with a product called Sonar. This is a unique whole lake application that provides systemic (root killing) and selective control for Eurasian watermilfoil. A second whole lake treatment was done in 2017. In the years following each of the Sonar treatments, monitoring and maintenance “spot treatments” were conducted where re-growth was found.

How does the treatment program work?

PLM inspects the lake beginning in mid- May and visually identifies the weeds that need treatment. After each inspection PLM prepares a map of the lake, showing the locations and the area covered for each weed that may need to be treated and presents a treatment plan, including the product(s) that will be used. The map is reviewed by the Lake Project Committee who have been authorized by the townships to decide to either treat or not treat.

When a treatment is approved, PLM must notify the state Environment, Great Lake and Energy(EGLE) of the treatment and when it will be done. This usually takes a couple days. PLM then notifies the Lake Committee of when the treatment is scheduled. If weather is cooperative, the treatment is usually done within a week of the inspection. On the treatment day signs are posted on properties where treatment is being applied and adjacent properties within 100 feet of the properties treated. The signs include the treatment date, the products used and any restrictions on water use that may apply.

This process is then repeated every 4 to 6 weeks throughout the summer.

How long does it take for a treatment to be effective?

Results of a treatment are not instantaneous. In most instances it will be a week or so for the herbicide to be absorbed into the weeds.

When Sonar is used, the product is put in as early in the season as possible. It often takes 8-10 weeks to achieve control/

What herbicides are used?

Different weeds are best treated with a herbicide or combination of herbicides that is specifically developed to be effective in controlling that weed. Therefore, when PLM applies for their annual permit, they request approval for a wide range of herbicides so they are prepared to match each weed to its most effective herbicide. In reality, only a small group of herbicides have been used in Paw Paw Lake. The most often used are Renovate OTF, Tribune, Clipper and Aquathol K/Hydrothol. Only products that have been approved by EGLE, the current name for the Michigan Department of Environmental Quality, are used.

Why aren't the weeds treated more often?

The weed control program is set up to treat only when there is enough growth to pose problems in navigation and the ability of people to enjoy the lake. The reason for this is to get the maximum benefit of treatment with the least amount of herbicides being applied to the lake.

Are native weeds treated and, if so, why?

EGLE permits native weeds to be treated when they are considered to be a sufficient nuisance to recreation and navigation. Treatment is restricted to shallow areas near shore. Thinleaf pondweed is a native weed that is in Paw Paw Lake and has, on occasion, become a significant nuisance, the week of July 4, 2019 for example. On these occasions it has been treated in compliance with EGLE's requirements.

Why does it seem that there are more weeds in the lake now than there have been in the past?

It is true that there are a greater variety of weeds than there were several years ago. PLM, in their annual vegetation survey of the lake, has seen an increase

in the number of native weeds over the past several years, but no increase is in exotics/non-native weeds.

The reasons are:

1. With the reduction and control of the exotic species, native weeds have the opportunity to emerge without being crowded out by the exotics.
2. With the improvement in water clarity, the weeds get more sunlight which promotes growth.

The bottom line is that there will be more native weeds growing in the lake, which is beneficial to the health of the lake. Apart from an occasional severe nuisance problem there is no plan to treat native weeds. Some native weeds species are difficult or impossible to control with herbicides.

Are the herbicides used harmful to fish?

The concentrations of herbicides approved by EGLE are low enough that there is no harm to fish in the lake. To provide even more protection to the fish, EGLE does not permit the use of certain herbicides during the spawning period. In addition, all permits issued require herbicide applicators to maintain certain distances from areas of active spawning.

What harm do the herbicides do to the lake water quality?

After a treatment, the herbicides are absorbed into the plants. Any remaining herbicide is diluted into the water so much that there is no residual effect on water quality. Many herbicides rapidly break down by microbes or direct sunlight. Some are bound to the sediments so tightly that they are biologically unavailable. The water use restrictions posted at the time of treatment are a precaution to allow time for the herbicide to be absorbed and diluted. There is no health danger to people or animals for any of the herbicides used in the weed control program.

Chelated copper is one of the products on the list. I've heard that copper is harmful to the lake. Why is this on the list?

EGLE does permit use of copper-based products, but with tight restrictions on concentrations used. The amount of copper in the EGLE approved concentration for use in Paw Paw Lake does not pose any hazard to people or pets.

Copper does not remain in the water, but it does become part of the lake bottom sediment. It is not part of the normal treatment program and will not be used except under extraordinary conditions when no other remedy is known

Having said this, since the inception of the Special Assessment District, copper-based products have not been used for weed treatment. Copper is not even used for weed control and is strictly used to treat algae. The only time copper sulfate has been used is for a 2018 treatment of starry stonewort, which is an aggressive fast growing invasive form of macro algae. The only known method to eliminate or control it at this time is copper sulfate. The total areas treated was less than one acre. There was only one-acre treatment for starry stonewort in 2019.

What about other methods of weed control, such as harvesting?

There are a number of aquatic plant control methods available, including dredging, mechanical(harvesting), and biological in addition to chemical.

Dredging will remove the bottom sediment where nutrients that feed weed growth are stored. However dredging is very costly which has made it impractical for a lake the size of Paw Paw Lake.

Several years ago, the Paw Paw Lake Foundation piloted seeding an area of the lake with a particular weevil (a biological method) that feeds on Eurasian watermilfoil. There was no evidence that the test was effective at controlling the weed. Since then, the company that produced the weevils no longer does so.

As part of the aeration pilot in the north lobe of the lake, microorganisms were placed in the lake. The organisms fed on the nutrients in the sediment. Again, there was no indication that they had any effect on controlling weed growth.

Harvesting is a mechanical method for controlling weeds that is used in a number of lakes. Harvesting does not eliminate or suppress weed growth, but rather cuts the weeds so they are not visible and do not interfere with navigation.

Successful harvesting depends on prompt and complete removal of all the cut weeds. Partial removal can increase the weed problem, since each unremoved plant fragment has the potential to form a new weed. In addition, cut plants left in the water will decay and release nutrients that will stimulate future weed growth. Harvesting is appropriate for native plant control but is not recommended for exotic species given their high growth rates and spread by fragmentation

The lake project committee and its consultants are looking for new methods that will control invasive weed growth without the use of herbicides.

The best way to control weed invasive weed growth is prevention. That is to not allow exotic species to be introduced into the lake. Although it is late to do this for existing invasive weeds, it is not too late to keep other invasive species from getting into the lake. The best way to do this is to make sure that boats entering the lake have no weeds on the boat hull, the trailer, the vehicle towing the boat, the boat's bilge or anywhere that would enable a weed to be brought into the lake.

Can I treat the weeds at my property on my own?

Yes, with some requirements. Weeds can be cut or uprooted by hand or with a rake or some kind of weed removal device. There are a number of devices on the market that can be found on the internet by googling lake weed removal.

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Many of the weeds in Paw Paw Lake can be uprooted by hand. Generally, removing the whole plant is better than cutting because some plants can reproduce from cuttings. So if you do cut or uproot weeds please completely remove them from the lake.

Chemicals and herbicides may also be used by property owners for weed control, but use requires a permit from EGLE. Information about permitting is available on the EGLE website.

**PREPARED BY THE SPECIAL LAKE ASSESSMENT PROJECT ADVISORY COMMITTEE
AND PROFESSIONAL LAKES & LAND MANAGEMENT**