

**Invasive Species Action Center, Portage Lake Watershed Forever, Onekama, Michigan**  
**Frequently Asked Questions – Concerning Invasive Species**  
**Phragmites and Eurasian Watermilfoil (EWM)**

1. How Much EWM Is Necessary Before Control Is Needed?

DEQ considers 15% is very serious, needing whole lake treatment.

2. How Much EWM Is Present in Portage Lake?

It is estimated at 10.5% of the plant cover (area in which plants are growing) - not 10.5% of the Lake or of the Littoral Zone.

It is presently growing at depths between 5-18 ft. and up to about 15 in. of the surface, so you don't see it yet. It usually goes unnoticed (below the surface) until it becomes a serious problem. We are fortunate to catch it early while still fairly early to get control.

3. How Sure Are We about EWM Identification – and Not Being Mistaken for Native Milfoil?

In spite of the difficulty of identifying the two species, PLM (who did the survey) is quite confident of their results.

Further surveys will be done – Spring and Fall – before treatment would be done. This would be to confirm the initial result and to note any change in the EWM population. Also, an expert observer will be allowed onboard the next survey to verify the identification.

4. How Good Is the AVAS Plant Survey?

There are two basic methods for doing a plant map of the lake:

AVAS (Aquatic Vegetation Assessment Site) Survey is quick, cheap and sufficiently accurate for most purposes, and it is the approved method by the DEQ.

Grid Survey – is sometimes better but is much more expensive and is best suited for lakes that are mostly shallow (large littoral zone).

5. What Are the Problems with EWM?

It crowds out (shades out) all native plants, becoming a monoculture (monospecific population).

It eventually forms a complete mat on the surface which is a serious problem for boats and impossible for swimmers/skiers even to the point of entangling them.

It becomes very unsightly.

It greatly decreases property values.

It causes fish populations to become stunted (mostly small fish) by decreasing predator-prey relationships.

It may change fish species compositions.

It causes massive biomass production which can fill in shallow areas more rapidly by speeding up the nutrient cycles.

6. What Are the Problems with Phragmites?

It crowds out all native plant species around the shoreline becoming a monoculture.

It blocks the view of the lake.

It decreases property values significantly.

It traps and accumulates sediment causing the shoreline to move out steadily.

It interferes with wildlife nesting and utilization – ducks and marsh birds have difficulty nesting and muskrats don't use it.

7. What Is the Specific Problem of EWM in Portage Lake?

Portage Lake has a lot of deep water which is no problem with EWM. Certain wave-swept shorelines or shorelines with inshore drop-offs are less problems with EWM. But other areas such as

the whole East end of the lake and some large shelf areas can become the serious problem. The East end makes up roughly ¼ of the lake and the shelf areas are extensive in certain parts of the lake.

8. Can EWM Be Eradicated?

No, it will always be present, but it can be controlled, requiring continuous monitoring and periodic treatment. Several consecutive annual treatments are necessary to get it under control initially, and then periodic spot treatments will be done.

The goal is to take a long term proactive approach to protect our lake and our native plants with a management plan for invasive plant species.

9. What Are the Potential Methods of Control for EWM?

Biological, using and introduced weevil.

Herbicides

10. Why Not Use Mechanical Harvesting of EWM?

Mechanical harvesting breaks up the plants and scatters lots of fragments and with EWM, every fragment becomes a new plant by sending out adventitious roots; thus, it quickly spreads EWM and is never an approved method for treatment.

11. What Is the Recommended Control Method for Portage Lake?

Herbicides.

Nobody wants to use toxic chemicals unless absolutely necessary and we (the committee) certainly feel that way with Portage Lake. At the same time nobody wants a lake destroyed by an exotic plant forming solid mats of EWM on the surface. Herbicides seem to be the only consistent good choice of control for this invader and have been successful as a control method whenever used correctly. This suggests the necessity of a well-qualified and experienced applicator.

12. Why Not Use Weevils (Biological Control) for EWM?

Results are highly variable where they have been used, depending on many variables and every lake is different.

Success is not guaranteed.

They are expensive.

They need dense areas of EWM to feed on and multiply.

Sunfish predation is a big problem (Minn. Studies by Newman).

They only reduce plants down from the top and do not kill them, thus the plants continue to spread but not form mats (if successful).

EWM can quickly spread while weevils are becoming established and reproducing.

13. How Many Weevils Are Needed to Treat EWM?

To do two small areas, e.g. in the East end of the lake, it would require stocking up to 16 units (1 unit = 1000 weevils).

The cost would be \$1200.00/unit, or up to \$22,567.50 (including application fee) for the two areas.

Supplemental applications over the next 2-3 years are usually needed as well.

14. What about an Integrated Treatment for EWM?

An integrated approach (weevils + chemicals) is sometimes used, e.g. applying weevils to two small areas in the shallow, East end of the lake. However, this is not recommended for our situation for several reasons:

You need a buffer of 1000 ft. without chemicals all around the weevils, so as not to impact them. That means EWM can grow and spread rapidly in the buffer area adding to the seriousness of the problem.

The shallow nature of the East end is subject to boat propeller disturbance of substrate and plants, destroying much of the stocked weevils and would require restricted boat traffic through the area. They are best suited for small lakes with very low boat traffic.

The cost is very high and the results are not guaranteed.

With the integrated program to start with, you ultimately have to choose one or the other approaches (chemical or weevil), and in most all experiences they have had to go with chemical eventually – so you might better start off with the chemical approach.

The area is a continuous dense stand of EWM and would not facilitate a high rate of weevil reproduction and spread, thus, they would slowly disappear.

Other reasons are discussed above (see Question 12), concerns about the use of weevil in general.

15. What Is the Urgency of Control for EWM?

The sooner the better – requiring less chemical and less area treated – and bringing the lake back to normal conditions before it becomes a serious problem.

Also, the cost goes up significantly as the area of treatment increases and the time required for the lake to get back to normal increases.

Once it gets to the serious mat forming condition then it requires lake-wide treatment with the most toxic herbicide.

Also, once it gets to the serious stage, native plants may not come back for a long time after treatment.

EWM grows and spreads rapidly, thus, can quickly becoming much more serious.

16. What Is the Best Time to Treat with Herbicides?

Phragmites – Fall.

EWM – Spring is recommended but Fall is acceptable; Fall has the advantage of avoiding damage to native species, which die down in the fall; it also eliminates the problem of irrigation restriction.

17. What Are the Recommended Herbicides?

Phragmites:

Rodeo or AquaPro (**Glyphosate**) and Habitat (**Imazapyr**) – both systemic herbicides.

EWM:

Systemic Herbicides (Recommended)

Navigate (**2,4-D**) – used in deeper parts of lake; granular

Renovate OTF (**Triclopyr**) – used in shallower areas; liquid or granular

Sonar (**Fluridone**) – most selective in only ppb conc.; liquid or granular

Contact Herbicides (Not recommended but cheaper – ½ the cost – and quicker results, but short term results, killing only the shoots and not the roots, thus regrowing rapidly.)

Reward (**Diquat Bromide**) – liquid

18. What Are the Restrictions for the Herbicides?

1-day restriction for boating and swimming in the treatment areas – only to keep people out of the way.

120-day restriction for irrigation use – but the water can be tested and usually is safe after 10 days.

2,4-D has drinking water restrictions – thus is limited to deep water treatment only (250 ft. from shore).

19. How Safe Are the Recommended Herbicides for Fish and Humans?

Years of testing indicates no affect on fish and no affect on humans.  
They are very site specific for activity – only sites in plants.  
2,4-D has been reregistered and approved 10 times, attesting to its safety.

We have evaluated all very extensive Herbicide MSD (Material Safety Data) Sheets and found the recommended herbicides to be acceptable.

20. How Selective Are the Herbicides?

Quite selective, depending on concentration – with little or no impact on most native plants when the concentration is right. Good water quality testing is necessary to determine appropriate concentration application. Native plants show rapid re-growth after treatment.

21. How Much of the Lake Will Be Treated for EWM?

It is not a whole lake treatment, nor a whole littoral zone (shallow water) treatment – but treatment only where specific plots of EWM are found and mapped on GPS during a Pre-Treatment Survey, (perhaps done the same time as the Fall Survey).

EWM is presently estimated to occupy about 135-150 acres of the lake (2,165 acre lake).

22. What Determines the Effectiveness of Herbicide Application?

The effectiveness is the result of the concentration (dose) used and the length of time the herbicide is in contact with the plant (exposure time). Thus, any movement of water (e.g., by wind) impacts concentration/exposure time.

Triclopyr and 2,4-D require only hrs. of exposure.

Fluridone requires weeks of exposure and usually needs a booster application after a few days.

23. What Is the Guarantee of Success?

With chemical treatment – it is guaranteed by the applicator.

With biological treatment (weevils) – it is not guaranteed.

24. Who Would Be the Applicator?

We have spent a great amount of time in communication with applicator and management companies and checking out references and previous job performances. When we decide to control EWM, contracts for both Management and Applicators will be put out on bids, which will be taken into consideration along with the information that we have accumulated in deciding on whom to go with.

25. Is It Good to Have a Separate Management Company and a Applicator Co?

Generally this is best and will probably our recommendation.

The Management Co, as well as the Applicator Co., will be put out on bids.

26. What Is the Best Funding Option for Us?

There are two main options:

1.) P.A. 188 – forming a SAD (Special Assessment District) appears to be the best procedure for Portage Lake, being totally within one Township and is a simpler process. The applicator contracted would help us through the process.

2.) Part 309 of PA 451 is the other option – forming a Lake Board.

A 5 yr budgeted plan is needed.

27. What about Permits?

The DEQ Permit would be obtained by the contracted applicator.

Cost is \$1500.00.

The permit would be applicable to both Phragmites and EWM.

28. What Is the Permit Deadline for Fall Treatment?

August 14<sup>th</sup>.

29. What about Prevention?

In addition to bringing EWM under control a program to prevent further introduction of EWM and other exotics into the lake is absolutely necessary.

Recommended prevention includes e.g: Signs posted at boat launches, marinas, and Portage Pt. Inn warning people of the problems of exotic introductions and the precautions, informational materials provided, participating in the Clean Boat-Clean Water Program as well as the Clean Marina Act, and charging of a fee for boat launching.