



Water Resources Department



Inside this issue:

<i>Update from the Director</i>	1
<i>Hybrid Milfoil</i>	1
<i>Update on Laminar Flow Aeration Research</i>	2
<i>Non-Native Benthos</i>	2
<i>What Is It?</i>	2

Update from the Director

The 2011 lake management season was a huge success, with much progress on the treatment of invasive aquatic plant species such as Eurasian Watermilfoil, Curly-Leaf Pondweed, Purple Loosestrife, and Phragmites in many Michigan inland lakes.

These invasive plants are highly detrimental to the balance of lake ecosystems and frequently require aggressive management methods. We have been very active in our research on laminar flow aeration, with the 2 year study of Indian Lake, Cass County,

Michigan, being currently analyzed and written into a peer-reviewed article for publication in a professional water research journal.

I am now an officially certified Professional Watershed Manager. Long-term, I am hoping to establish a sound lake management infrastructure in Michigan so that all lakes have access to educational materials and financial resources (my PhD dissertation).

Finally, there is a new paradigm we are developing with lake management that includes a community

model component along with the tangible results of lake and watershed management. It takes an adequate amount of social capital within a community to assure that conservation of water resource systems (such as lakes) remains sustainable and prioritized.

We wish everyone a wonderful Holiday season full of great cheer, health, and learning.

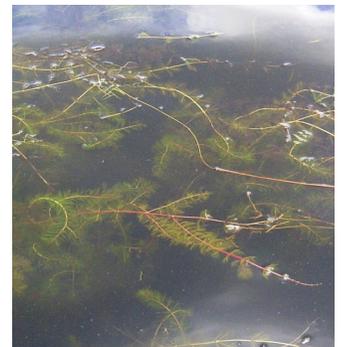
Sincerely,
Jennifer Jermalowicz-Jones
Water Resources Director



Hybrid Milfoil

Can you tell the difference between Eurasian Watermilfoil and Hybrid Watermilfoil? Hybrid Watermilfoil is a product of reproduction between Eurasian Watermilfoil and a native milfoil species. The result is a very hardy plant that tolerates heavy doses of

aquatic herbicides. Lakeshore scientists have been submitting samples of suspected hybrid milfoil to the lab at GVSU's Annis Water Resources Institute. Many of the samples from lakes across the state have been genetically confirmed as hybrid. →



Laminar Flow Aeration Studies



A picture of laminar flow diffuser action.

Currently, we are studying laminar flow aeration systems on Sherman Lake (Kalamazoo County), Maple Lake (Van Buren County), Chippewa Lake (Mecosta County), Keeler Lake (Van Buren County), Wing Lake (Oakland County), and Indian Lake (Cass County). Keeler Lake was the first in the state to have a “whole-lake” laminar flow system installed and we helped the

MDNRE (in 2010) establish baseline sampling parameters to evaluate these systems. The majority of the riparians that live on lakes with these systems appear to be satisfied with the overall benefits which include:

- Increased dissolved oxygen levels in the water column and in sediments
- Decreased blue-green algal growth
- Decreased dense green algae growth
- Decreased growth of Thin-Leaf Pondweed and Eurasian Watermilfoil
- Decreased organic matter in sediments

Non-Native Benthos

We all know that Zebra Mussels and Quagga Mussels have plagued the Great Lakes and now occur in many inland lakes. However, did you know that the Banded Mystery Snail is an invasive that has been around for a while (see Figure at right.)? In addition, the Asian Clam is exotic and has been spotted in a few lakes across the state in the past few years. Both of

these organisms compete with native clams and snails for resources and create strong odors when they produce a “bumper crop” and wash ashore and decay.

The Banded Mystery Snail:

Viviparus georgianus



“The Banded Mystery Snail is native to the Southeastern US and actually bears adult-like live young”

What is It?

Hint: It contains lake sediments collected for analysis of organic matter and nutrients.

Answer:
Ekman Dredge



IMPORTANT!
All 2011 Annual Progress Reports are due to be mailed soon and will be titled as: “State of the Lake”