PLM NEWS

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Great Lakes Division

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...Thirty years of invasive plant management

Weather Made for a Challenging Year for Weed and Algae Control

The lack of winter, a quick spring warm up, and a summer of extreme heat and little rain did not make weed and algae control easy in 2012. This winter was the fourth warmest on record. Some species, specifically Eurasian watermilfoil, will remain active and continue to grow when conditions are mild. By early March, many lakes had heavy, active milfoil growth with some lakes having milfoil already at the surface. March continued to be warm and was actually the warmest March ever! Curlyleaf pondweed and native plant growth were several weeks earlier that normal. As this trend continued into the summer months, plant and algae growth did not slow down. Many lakes had water temperatures into the 90's in July and experienced significant drops in water levels due to evaporation and lack of rain. In late summer, species such as Eelgrass and Naiad became abundant on many lakes and seemed to be much heavier than normal. Based on the continued warm weather, plants will persist well into the fall. Hopefully Michigan will experience a typical cold snowy winter, improving water levels and conditions for the 2013 season.

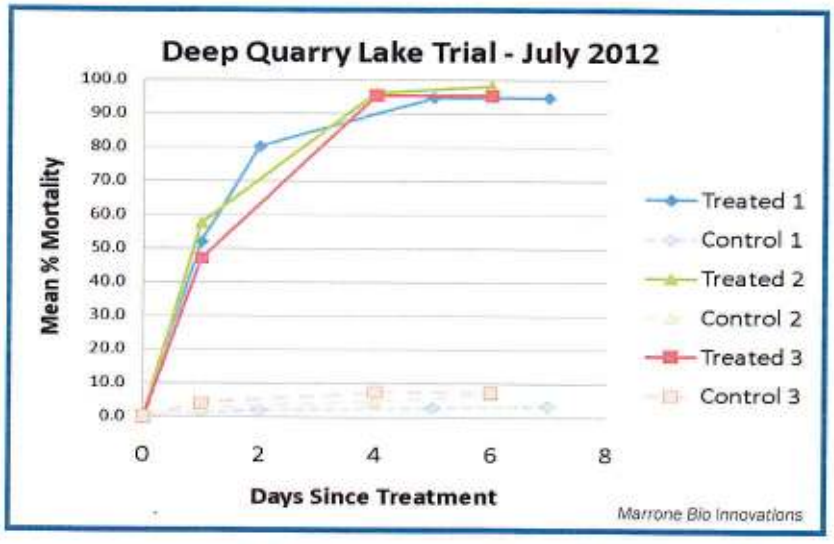
PLM Conducts FIRST Zebra Mussel Treatment in the Nation!

Cluster of Zebra Mussels

PLM had the opportunity this summer to participate in the first zebra mussel treatment to ever take place in a natural environment. The treatment took place in Deep Quarry Lake, Illinois during the month of July. Zequanox, developed by Marrone Bio Innovations, is a "highly effective, environmentally compatible solution for controlling both invasive zebra and quagga mussels (*Dreissena* species), with measured mortality rates greater than 90% in targeted colonies. Zequanox is derived from a naturally occurring microbe (*Pseudomonas fluorescens*), that can selectively control the mussels, without harming humans, infrastructure, non-target species, or the environment. The product, composed of dead cells, is recognized by the mussels as a nonthreatening food source and is readily consumed. Once ingested, Zequanox destroys the mussel's digestive system." (Marrone Bio Innovations) PLM treated 3 sites within the lake that were curtained off to keep the product within each designated section of water. There were also 3 control sites located near the test sites for comparison. The product was applied to the deeper water to target the areas where zebra mussels inhabit. As you can see in the graph below, zebra mussels quickly began to die and the overall morality of the three sites was over 95%. This treatment, although preliminary, was a complete success. PLM will continue to work with Marrone Bio Innovations to further the advancement of this product. PLM is hopeful that we will be able to bring Zequanox to Michigan lakes in the near future. We will continue to keep you updated on this exciting new scientific breakthrough!

Did you know?

In Michigan you are never more than 6 miles from an inland lake or stream and never more than 85 miles from a Great Lake!!



Curtained off treatment areas—Deep Quarry Lake

Our Customers are our Number ONE Priority... Thank you for your business!

Fall 2012

Phosphorus Reduction—New Tools Available!

Phosphorus enriched. Nutrient loading. Increase production. Weed growth. Algae Blooms. These are all common associations when one hears Phosphorus and a lake's water quality. Thankfully the State of Michigan has finally moved forward banning Phosphorus fertilizer in an effort to decrease nutrient loading in our watersheds. Unfortunately, many of our lakes and ponds are already nutrient rich with excess levels of Phosphorus which led to increase rates of eutrophication. In addition to the environmental factors that increased weed and algae growth (sun light, warm temperatures, ice coverage, etc), nutrient loading is directly related to algae blooms, increased plant growth and a depletion of oxygen in lakes and ponds. Phosphorus abatement programs have been underway in many watersheds using best management practices to protect our waterways. However, most of our lakes are nutrient rich with almost no way of removing the Phosphorus already present.

Phoslock, available through SePRO Corporation, permanently binds Free Active Phosphorus from the water column. After it removes the Phosphorus from the water column, it then acts as a barrier on the lake bottom, limiting the introduction of Phosphorus from internal loading. PLM did an evaluation application with Phoslock in July 2012 to remove Phosphorus and control noxious Algae Blooms on Wixom Lake, Gladwin/Midland Counties, Michigan. Wixom Lake has many man-made canals and bays from when the Tittabawasee was damned decades ago. As part of their lake management program, algae blooms are an ongoing battle. Phoslock was used in two separate channels to reduce the amount of Phosphorus available. The application rates were based on the amount of Phosphorus predetermined. Water and Sediment samples were taken pre and post treatment to evaluate the reduction in Phosphorus. Reports show that the amount of Phosphorus available dramatically declined post treatment, evidence that the Phoslock worked to reduce the amount of Phosphorus available. Dramatic shifts in the species diversity of algae occurred as well, as the nutrient levels changed. The goal of this treatment was to reduce the overall amount of Phosphorus lessening the need for algae treatments. The evaluation of this application is on going and we will continue to keep you updated on its progress.

SeClear, also available through SePRO Corporation, is the first algaecide and water quality enhancer in one designed to replace routine algaecide programs. SeClear provides effective control of a broad-range of algae species while reducing in-water phosphorus levels with each application. SeClear uses nutrient locking technology to bind phosphorus in the water, thus removing it from the water column. Once bound, it is unavailable for algae growth. It can therefore treat the symptoms and the root cause of algae growth. SeClear was approved for use during the latter part of the season and PLM had the opportunity to use it on a few ponds and lakes. The desired results were longer lasting algae control, improved water quality and aesthetics with potential reduced maintenance over time. Overall, SeClear effectively controlled nuisance algae and improved water clarity on the smaller lakes and ponds. The preliminary results are promising and PLM plans to incorporate this exciting new water enhancer/algaecide into more programs for the 2013 season. PLM is hopeful that a full season of using SeClear will truly demonstrate the products long term capabilities.

If you have a Phosphorus enriched system and feel Phoslock or SeClear may be appropriate for your lake or pond, please contact your lake/pond manager.

PLM Employee Update

Terrestrial Manager, Dusty Grabill received his certification as a Natural Shoreline Professional (CNSP) this summer. The intent of the CNSP training and certification program is to promote the use of green landscaping technologies and bioengineered erosion control for the protection of Michigan inland lakes. This program is designed to equip professionals with the tools to better design, implement and maintain natural shoreline landscapes and bioengineered erosion control on inland lakes. If your waterbody is in need of shoreline improvements and want a professional evaluation or recommendations, please don't hesitate to contact your lake/pond manager for further details.

Governmental Update 2012/2013, *Jason Broekstra, VP MI Operations*

Is no news always good news? Not necessarily! If you have been following past PLM Newsletters regarding 2012 federally mandated NPDES permits, the only good news would be that the law was revoked, overturned or someone in Washington realized that this requirement is simply unnecessary. With that thought in mind, no news is unfortunately bad news regarding NPDES permits. Although efforts are still being made to remove the NPDES requirements, none have yet to be successful. Therefore, during the 2012 season PLM created a "paper monster" (treatment maps & information) to be sent to the State Of Michigan this fall per NPDES guidelines. It is unclear when or even **if** this information will be reviewed or if it will be put on a shelf to collect dust. Despite our frustration, NPDES permits may be here to stay! However, we are very thankful that the State of Michigan has been extremely supportive and helpful throughout the NPDES implementation process.

Although the federal government has put unnecessary burdens on the Aquatic Plant Management (APM) Industry over the past few years, there has been a positive change in Lansing. The Department of Environmental Quality (DEQ) has informed us that it is their intention to develop a multiple year permit for smaller water bodies that fall within the Certificate of Coverage (COC) classification. Once every three years a permit would be obtained, which would reduce all parties' time, cost and efforts while still accomplishing the same goals of protecting our natural resources. Positive changes like these will allow for future efficiencies and improved communication within the professional/scientific APM Industry. Thank you DEQ!