



PLM NEWS

PLM Lake & Land Management Corp.
Great Lakes Division

What a Difference a Year Makes!!

March, 2013; Inches of snow on the ground and highs in the 20's! All the lake and ponds still have significant ice and there is no warm weather in sight. A big difference from 2012, when it was 80 degrees and the ice was completely off the lakes! What does this mean to start the 2013 season? Without speculating too much since Michigan weather can change overnight, it appears that we could have a late start to the treatment season. Before treatments can begin, plants need to be actively growing and water temperatures should be at least 55 degrees. Once the treatment season is upon us we will have to act fast to ensure that we get your water body in good shape for the early summer recreational activities. Remember to get your treatment **Notice** sent out to all your residents in a timely manner. As always, our management team will be in contact with your appointed lake liaison to discuss treatment options the week prior to actual treatments taking place. Be prepared to efficiently communicate with our team and your lake residents to ensure everyone is on the same page. We look forward to another interesting Michigan summer and meeting your water bodies' ecological, recreational and aesthetic needs. Remember, whenever you have questions or concerns, do not hesitate to contact your PLM representative. In an effort to expand communication options for 2013 and the future, PLM has expanded our staffing to further support you! Listed below is a Michigan map breaking down our regional management teams throughout Michigan. Please review and save this contact information for future reference.

CONTACT US:

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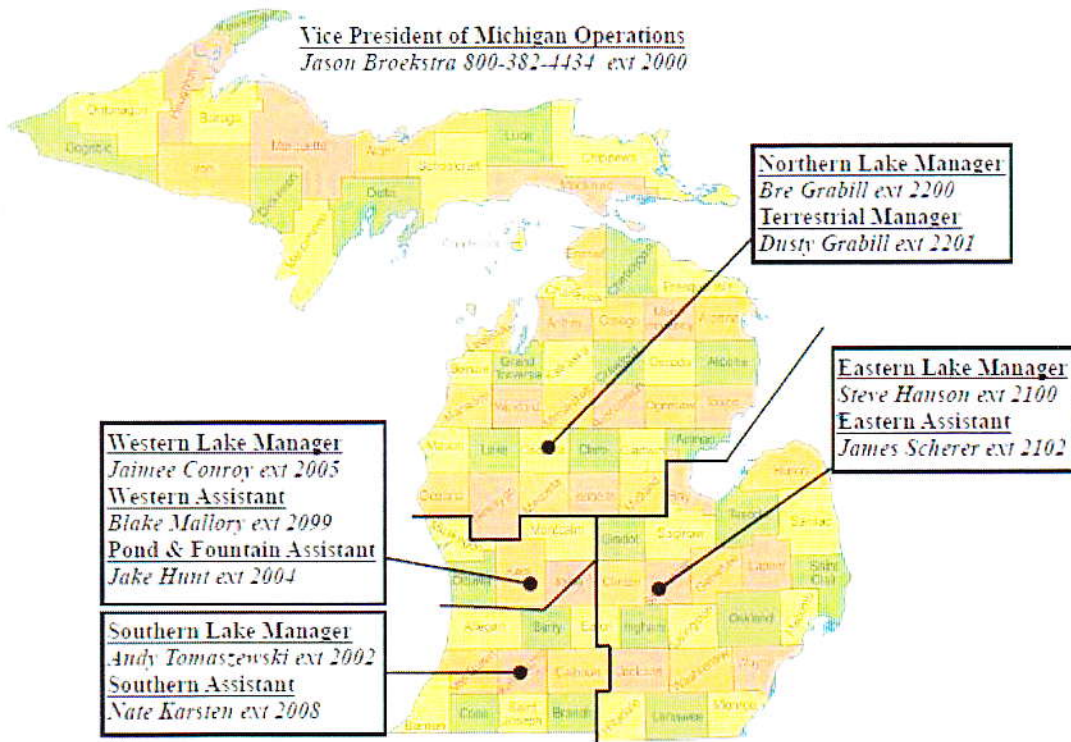
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...Thirty years of invasive plant management



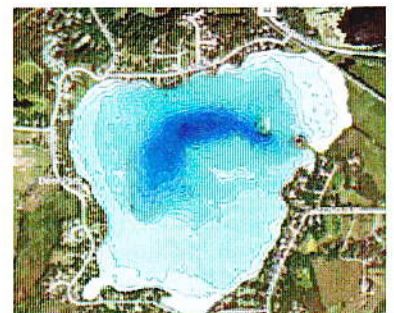
PLM Happenings...

We are pleased to announce that **Jason Broekstra**, VP of MI Operations, has been appointed to the Board of the Michigan Chapter, North American Lake Management Society. Jason has many years of experience in the Aquatics Industry and will be a valuable member to the organization. Congratulations!

Founder and PLM Past President, **Dr. Gregory Cheek** was bestowed the Honorary Member award at the recent Midwest Aquatic Plant Management Society annual meeting. Dr. Cheek joins an elite group of professionals who have advanced the Aquatics Industry over the last 30+ years.

PLM to Introduce Advanced Mapping Software

PLM has recently upgraded our GPS technology to bring our customers a revolutionary new mapping software for your lake or pond. This new software, combined with state of the art GPS/Depth Finder Units, has the ability to quickly collect precise bathymetry (depths) and aquatic vegetation of any given water body. The data can then be used to create accurate bathymetric, vegetation biovolume or treatment maps in record time. The new mapping software will be an excellent management tool and a great affordable avenue for lake associations to update old, inaccurate lake maps. PLM will also be using this software when working with the DEQ to bring our customers the best possible lake management options available. We will continue to keep you updated as we learn more about all the software's capabilities.



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

Spring 2013

Each year we have the good fortune to introduce new tools to improve our ability to manage your water body. During our Fall PLM Newsletter we introduced a new product called **SeClear**. **SeClear** is an innovative product that not only controls algae but, it also reduces the phosphorous in the water column by binding it with the sediment. Phosphorous is the primary fuel for algae growth. The proactive capability of using **SeClear** gives PLM the ability to reduce the severity or frequency of future algae blooms. Some of the potential benefits when using this new technology are; reduced copper use over time, reduced treatment frequency, improved aesthetics, longer control and cost savings. When using **SeClear**, there will be a higher cost per acre compared to traditional copper treatments but hopefully with longer lasting results and a proactive approach by addressing the root cause of most algae blooms – excess nutrients.

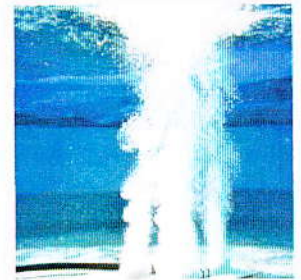


GreenClean

PLM will also be expanding our use of oxidizing compounds in 2013. Over the last several years we have been experimenting with the use of **GreenClean** products. **GreenClean** oxidizing compounds have no residual build up in the environment. It has been our goal to get a better understanding of how these products can be used effectively, at a reasonable cost and benefit to the environment. During the 2013 season your lake manager may provide you an alternative approach to control algae using **GreenClean**, at a similar cost as past seasons.

Elevated levels of the bacteria, E.Coli in residential and/or swimming areas are a concern for anyone who uses their water body for recreational purposes. Although E.Coli is present in all water bodies it can become elevated due to failing septic systems, run off, waterfowl feces, etc. If elevated levels are documented and swimming restrictions are put in place, PLM now has the ability to immediately control the contamination using a new product called **Alonglife**. **Alonglife** is an algaeicide and bactericide that can be used safely and effectively in these conditions.

Aeration technology has been around for years as a way to improve oxygen levels and overall stability of a water body. PLM has recently implemented new aeration technology that offers ease of installation, sound reduction and affordability to even the individual homeowner. PLM is now offering **Airmax Eco Systems** aeration throughout Michigan. If your lake or pond is experiencing significant internal loading of phosphorous, algae blooms or fish kills please contact your regional manager for an on-site evaluation regarding how an aeration system can benefit your water body.



Airmax Aerator

Are Aquatic Plants Becoming Resistant to Herbicides?

At a recent meeting involving area applicators, state regulators and industry professionals, Dr. William Haller of the University of Florida, Center for Aquatic and Invasive Plants addressed this issue. Many lake management companies, including us at PLM Lake & Land Management, have noticed changes in the response of certain aquatic plants to herbicide treatment. Specifically, Eurasian watermilfoil appears to be less responsive to certain herbicides than it has been in the past. Our assumption has been that hybridization with native milfoil has given the hybrid greater resistance to herbicides, a trait attributed to the native species. Genetics testing has validated many lakes in Michigan contain hybrid milfoil. However, hybridization cannot completely explain all of the field observations.

Is the Eurasian watermilfoil becoming resistant to commonly used herbicides? To answer this question we need to define resistance. Resistance is different than tolerance as a tolerant species to a specific herbicide has the inherent ability to live and reproduce after exposure to the herbicide. For example, when we apply herbicides to dandelions in our lawn we can kill the dandelions without killing the surrounding grass. The dandelion is susceptible to the herbicide but the grass is tolerant. If the dandelions no longer die as a result of repeated treatments, they have developed a resistance. Resistance is the ability of a few individuals, or biotypes, within a population to survive treatment and reproduce. Eventually, the post treatment population will comprise more and more of the resistant biotype until the population as a whole appears to be nonresponsive to treatment.

The agricultural industry has experienced resistance problems with herbicides for decades, but it is a relatively new phenomenon in the aquatic industry. Recent research in Florida indicates that the exotic aquatic plant, hydrilla, has developed resistance to some herbicides causing a change in the state's approach to management. Given the recent finding in Florida, our field observations in Michigan, and the accumulated information of resistance in the agricultural industry we have to reexamine our management approaches to minimize the likelihood of resistance in our aquatic plant communities.

What can be done to reduce resistance in the aquatic industry? The most obvious answer is to use multiple active ingredients or herbicide types over time. This approach will not allow the resistant biotypes to become the dominant species in a water body, as it is not likely any biotype would be resistant to multiple active ingredients. In addition, using maximum rates of the selected herbicides will kill the vast majority of the target species, even the moderately resistant biotypes. Finally, it is important that the industry develop new active ingredients and chemistries that show the same type of selectivity to nuisance species as existing herbicides while providing another tool for aquatic managers to use.

Undoubtedly, resistance issues will be the focus of many upcoming conversations and industry research. We will be communicating with all of our customers any adjustments to management programs and new information as it is collected.