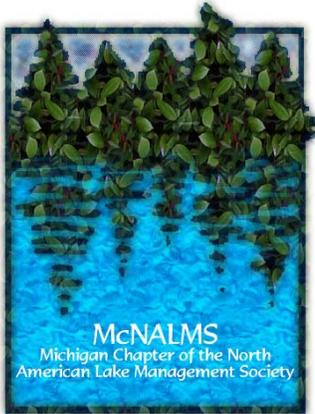


LAKE EFFECT

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Presidential Tidbits by Jane Herbert

What a summer it was for our Michigan inland lakes! Low water levels, high water temperatures, and overgrowths of aquatic plants created the 'perfect storm' in some lakes and the result was dangerously low dissolved oxygen levels and fish kills. Thankfully we're dealing with some fairly resilient ecosystems and, barring this kind of weather next year, most lakes will return to normal conditions. However, climate variability models for the Great Lakes region predict longer periods of high temperatures, shorter periods of ice cover,

increased evaporation and lower water levels. Precipitation events, although less frequent, may be more localized and more extreme -- resulting in localized flooding. Local governments, lake communities and lake management practitioners may do well to take these potential extremes into consideration as they plan for future uses and lakefront development. Our lakes have most likely experienced these kinds of changes in the past. It's the people who love them that may be unprepared unless we, Michigan's lake

professionals and practitioners, help them with realistic expectations of lake management strategies in the face of climate variability.



Notes from the Executive Director

Doing Good Better by Howard Wandell

I would like to take this opportunity to thank the Michigan Chapter of the North American Lake Management Society's Board of Directors for presenting me with a Lifetime Achievement Award. When a person receives a lifetime achievement award they can make two conclusions. First that after forty years they finally got something right and second they are now an elderly colleague.

I won't address the first of these conclusions, but let me say a few words about the second. Many years ago I read a book titled Doing Good Better by Edgar Stoesz and Chester Raber. The purpose of the book was to provide instruction on how to be an effective board member for a nonprofit organization. I really enjoyed the book and have placed it in the "classics" section of my home library. If you are a board member

of a nonprofit organization I highly recommend it.

The last chapter of Doing Good Better is titled "Leaving Right" and is about transitioning. At first I thought it was strange that a book about how to be a better board member would have a chapter instructing board members to leave. Eventually, I accepted the wisdom of leaving right. Eventually there is a time for those of us who have

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Invasive Species and Lake Research Highlight Conference

By Dr. Lois Wolfson, Michigan State University

Invasive, nuisance species and current lake research were major topics of discussion last month at the annual conference “Taking Charge: Aquatic Invasive Species and Other Current Lake Research.” The conference was sponsored by the Michigan Chapter of the North American Lake Management Society. Copies of the presentations are posted on the McNALMS web site at: www.mcnalms.org, and a brief summary of the presentations is presented below.

Although it was discovered in the St. Lawrence River in 1978 and then in the Lake St. Clair – Detroit River system in 1983, Starry Stonewort (*Nitellopsis obtuse*) wasn't positively identified in any Michigan inland lakes until 2006. By 2011, it had been reported in 119 water bodies representing 31 counties. Starry Stonewort is a macro-algae in the Charophyceae, the same class as native *Chara*. However, it grows at greater depths and to greater heights than *Chara*. It often forms dense mats that can completely cover the lake bottom. Starry Stonewort can be recognized by its longer internodal cells, by its irregular branching, and by its creamy white star-shaped bulbils, which are reproductive structures on the plant. It is also a lighter green than its native counterparts. Its dense stands can impact native plants, fish and their habitats and other aquatic organisms. The plant is sensitive to copper compounds and endothall-based herbicides, and may be more susceptible than native charophytes. Much more research is needed to determine its effects on and interactions with other species within the lake ecosystem.

The idea of better understanding lakes by considering them at broad spatial scales and through time was presented. To do this, the author has worked with collaborators to integrate the concepts of limnology with landscape ecology, called landscape limnology. Current research was presented about how lakes are influenced by local and regional landscape features. The studies presented included 479 lakes in Michigan and 2038 lakes from six US states. By quantifying variation among these lakes, the authors determined how lake factors such as nutrients are similar among regions; how landscape features such as watershed wetlands influence phosphorus transport to lakes; and how landscape factors such as regional agriculture affect the relationships between local wetlands and lake total phosphorus.

One invasive that is rapidly colonizing shorelines and wetlands is the non-native *Phragmites*, also known as reed grass. The heaviest infestations are mainly located in southern Michigan. Younger infestations are being found in northern Michigan. *Phragmites* grows rapidly, takes over entire areas, and becomes a monoculture. It has a very extensive root system, composed of roots and rhizomes (underground stems) that can spread horizontally as much as 60 feet in one growing season. However, wide dispersal occurs through seed which is spread by wind and water. The impacts to wildlife are not entirely known, however, *Phragmites* has an impact on how wildlife use wetlands, particularly during their nesting and rearing seasons. Because of the height it grows, *Phragmites* also can affect human safety when car drivers' views of oncoming traffic are obstructed by dense stands. Control efforts of the plant are difficult since it is spread so widely and in areas difficult to gain access, maintenance is expensive, and funding is limited. Control measures include an integrated pest management approach that might include burning, cutting and mowing, herbicide application, and even hand pulling. Killing the rhizomes is the goal for reducing the plant.



Sue Tangora highlights the invasive plant *Phragmites*. Moderator Mike Solomon listens

While not widely spread across the state, another invasive, *Cabomba*, was studied, and results were presented. In 2007, over 80% of a 60 acre lake was covered with *Cabomba*. Neither herbicide treatments with contact herbicides nor mechanical harvesting were successful. After applying for and getting a permit to use Sonar, a protocol for its use with bump-up treatments was developed. By 2009, not only did the native plants that had been observed come back, but native species that had not been previously seen also appeared. Plant diversity increased, and *Cabomba* represented about 4% of the plant population. By 2010, it had disappeared from the lake.

Not all nuisance species are non-native invasive species. Two talks focused on species that sometimes can be nuisances. This included Cyanobacteria formerly referred to as the blue-green algae, and the common Canada goose.

Invasive Species and Lake Research Highlight Conference—continued from page 2

By Dr. Lois Wolfson, Michigan State University

Although native, certain Cyanobacteria can cause harmful algal blooms by producing toxins which can be fatal to wildlife, livestock, pets, and even humans. They also can cause low to zero oxygen conditions, odor problems, aesthetic problems, and interfere with recreational activities. These harmful algal blooms, referred to as HABs in general, but CHABs when they focus on the Cyanobacteria, produce several types of toxins that attack the liver, skin, or cause neurological problems. The World Health Organization provides standards that when exceeded can be hazardous. Greater than 100,000 cells per milliliter or toxin production greater than 20 parts per billion indicate a high health risk in recreational waters. Of the 57 Michigan lakes tested during the 2007 National Lakes Assessment, 20 were found to have positive detection of microcystin, one of the toxins produced, and this might be an underestimate based on where and when the samples were taken. Much is still unknown about the environmental triggers for the production of these toxins as well as the impact on humans and other animals.

Canada geese are native, but were in a massive decline in the 1940s. Due to management and restoration programs, the geese made a successful comeback by the 1950s. One author noted, “The management of Canada geese is a recognized success story, in some cases perhaps, too successful.” While the value of recreational goose hunting has been estimated at \$185 million in 2006, many people are bothered by their presence due to their droppings, odor, noise, crop damage, property damage or being attacked. Studies have been ongoing to assess and resolve local conflict by both lethal and non-lethal methods. Increased hunting, relocation, or hazing geese are options that managers consider to address the Canada goose populations.



Ryan Thum discusses the hybrid plant watermilfoil.

The conference concluded with a focus on another plant. Hybrid watermilfoil is a cross between the native Northern watermilfoil (*Myriophyllum sibiricum*) and the invasive Eurasian watermilfoil (*M. spicatum*). Identification is difficult, and the only reliable method is through genetic identification. Of lakes sampled for watermilfoil, genetic analysis showed that 25-50% had the hybrid type present. However, results from genetic analysis indicate that it is not just one hybrid type that exists, but rather several types. The hybrid appears to grow faster on average than Eurasian watermilfoil (EWM), which suggests that it has the ability to rapidly take over an area. It also has reduced sensitivity to low doses of the herbicide, 2,4-D, and thus may be better able to recolonize treated areas compared with EWM. In one lake it was also shown to be resistant to fluridone, a herbicide used to treat EWM; but not all hybrids have shown this resistance.

Conference presenters included Lisa Huberty, Michigan Department of Environmental Quality; Kendra Cheruvelil, Michigan State University; David Luukkonen, Department of Natural Resources (DNR); Ann St. Amand, PhycoTech; Sue Tangora, DNR; Jason Broesktra, PLM Lake & Land Management Corp, and Ryan Thum, Grand Valley State University.

During the conference, the McNALMS Lifetime Achievement Award was presented to Howard Wandell, Executive Director of McNALMS for his continuous work in the protection and management of Michigan lakes (see page 5).

The conference was co-sponsored by Michigan Lake and Stream Associations, Inc., Institute of Water Research, Michigan State University, Wexford County Drain Commission, Michigan Natural Shoreline Partnership, and endorsed by the Michigan Inland Lakes Partnership.

Is Fanwort (*Cabomba caroliniana*) a new invasive threat to Michigan lakes?

By: Angela De Palma-Dow

Cabomba caroliniana (A. Grey), a non-native aquatic plant, is commonly referred to as fanwort due to its green, oppositely arranged 'fan-shaped' leaves. Fanwort originated from South America and has naturalized in the southeastern United States. Even though the earliest botanical record of fanwort was recorded in 1936, locations were limited and populations were small. Recently, fanwort's range has expanded across southwest Michigan to include several new lakes and counties. Most likely introduced into Michigan as an escaped or deliberately released aquarium plant, fanwort has weed-like tendencies and has become a nuisance in many lake systems outside of its native range. For example, in Ontario, Canada, fanwort has dominated Kasshabog Lake, out-competing native species, obstructing propellers, clogging waterways, tangling fishing lines and in general, its abundance has reduced the recreational enjoyment of the lake. Because fanwort can regrow from a small portion of vegetative tissue, many efforts of mechanically controlling fanwort in Kasshabog Lake have failed. Here in Michigan, establishment and invasion risk is high because of the increased likelihood of fanwort being unknowingly transported among lakes by personal watercraft. Small portions of fanwort can hide in trailer wells, boat bilges and between moving parts of propellers. In addition, there are currently no regulations on the sale or transport of fanwort in Michigan.

How do I recognize fanwort? This nuisance species can sometimes be confused with other aquatic plants, especially many species of milfoil (*Myriophyllum spp.*). Fanwort can grow up to two meters long, leaf and stem coloring can be any shade of light to dark green and it is most likely to be found in shallow and quiet water lake zones. During mid to late summer, fanwort can produce small, whitish flowers that sit on green tufts of leaves that sit level with the surface of the water.

How can I help stop the spread of fanwort? If you move your watercraft among lakes, always be sure to thoroughly clean the outside of the watercraft and trailer, paying close attention to trailer wells, boat bilges and propellers. Also, do not dispose of unwanted aquarium or water garden plants in any waterway, outlet or septic system.

For more information, please contact **Angela De Palma-Dow**, who is currently an MS graduate student in the Department of Fisheries and Wildlife at Michigan State University (depalmad@msu.edu or 517-353-3234).

Corporate Members Corner

PhycoTech, Inc. — Raising the Standard in Aquatic Analyses

PhycoTech is the only commercial lab in North America to utilize a unique proprietary permanent mounting technique for archiving and preparing water samples for enumeration. Our president and algal taxonomist, Dr. Ann St. Amand, has over 26 years of experience and has processed over 29,000 samples from both freshwater and marine systems from all over North America. We have processed several state wide surveys in the Mid-West and Florida. PhycoTech also consults with Federal and State Agencies, including the Environmental Protection Agency; The United States Geological Survey, and the Corps of Engineers on experimental design and quality analysis/quality control issues. We process samples for general water

quality, as well as for exotic, toxic and taste/odor producing algae.

PhycoTech is now utilizing its proprietary, custom written data management software, ASA (Aquatic Sample Analysis system). This unique, powerful program tracks samples from receipt to data delivery within the same software program. With ASA, we are able to provide the most complete data available commercially.

We have a strong commitment to educational outreach and maintain two educational saltwater reef tanks at Upton Middle School and Brown Elementary School. We are also partnering with Upton Middle School sixth grade teachers on the UpStream

Project, a hands-on stream ecology program with in-class and field modules and a 7th - 8th grade after-school club. We also set-up two Salmon-in-the-Classroom tanks at Upton Middle School.



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Special Assessment District News and Views

Fall is often the time for lake boards to compile data that was collected over the previous year into a report. After all, why bother collecting data if it's just going to sit on a shelf? Data collection, analysis, and reporting is an important part of managing a lake. But before you launch your boat, take some time to carefully consider all aspects of data collection and to plan the process from start to finish.

Why is it important to collect data? It's helpful—sometimes critical—to collect data in order for a lake board to make informed decisions. Reliable data is important for being able to document, not just speculate, on conditions in a lake or watershed.

What data is gathered? Lake boards usually collect data that is relevant to the activities that the board undertakes. For example, lake boards may survey aquatic plants to assess the effectiveness of a nuisance plant control program. Or, they may collect water samples to measure pollutant levels in the lake. There are a myriad of physical, chemical and biological measurements to make on any given lake. Before

making any measurements, however, lake boards should be sure they know what questions they are trying to answer, and whether the data being collected will answer those questions. Proper planning is important.

What is data integrity? Some data is usually better than none, but bad data can be misleading and uninformative. Data should be collected properly using widely accepted standard methods. Records should be maintained in a neat and orderly manner using an appropriate level of security to ensure the data remains intact as it is passed from one user to the next.

Why bother writing a report? Data should be compiled in a report for posterity. Often, issues are re-visited over and over again when problems recur periodically, or when new people are involved in a lake project. If an issue has been examined already, it is useful to refer to a report that documents that examination. By doing so, lake boards can avoid further expense and re-hashing of old issues.

Reports should be clear, concise, and correct. The type and amount of data gathered could be small and

simple or vast and complex, but in either case, the report should be understandable and informative to the intended audience. Jargon should be avoided when possible.

Reports should document the purpose and the methods of the data-gathering. It should tabulate or graph results in a manner that helps the reader to easily understand the information presented. The report should include an analysis of the data and should interpret the significance of the results. If appropriate, the report may also include recommendations for additional monitoring, management recommendations, or other actions.

By collecting reliable data, lake boards can have useful information on which to base management decisions. By properly documenting the data, future lake board members can benefit as well.

Continued from page 1

been here forever to diminish our involvement so that new individuals with fresh ideas can reenergize the organization.

Don't get your hopes up. I'm not leaving, but I am considering how I can do less so new leaders can do more. I am looking forward to working with new board members and individuals who have a desire to promote lake management in Michigan. I hope some of you are considering taking on a leadership role.



Howard Wandell receives the 2012 McNALMS Lifetime Achievement Award from McNALMS president, Jane Herbert

MICHIGAN WATERFRONT ALLIANCE

The Michigan Waterfront Alliance (MWA) is a nonprofit corporation formed to protect, preserve and promote the wise use of inland waters of the State of Michigan. This mission will be accomplished by active participation in the legislative process, court cases and/or involvement with related agencies or departments. This membership corporation has the ability to influence legislation through lobbying.

These are some of the issues Michigan Waterfront Alliance is involved with: Environmental Law, Riparian Doctrine, Water Rights, DNR Property Acquisitions, Marine Safety, Environmental Protection and Unreasonable Resource Use.

In 2012 MWA has helped get SB 778 passed, (the Road End bill). MWA has taken the same stand as MLSA, McNALMS, DEQ and Michigan Inland Lakes Partnership in opposing HB 5690, the bill that encourages unregulated Diver Assisted Suction Harvesting and Unregulated Beach Sanding. MWA became a reciprocal member of MLSA and McNALMS and a member of Michigan Inland Lakes Partnership to better inform others of issues and to keep up with issues others are watching.

Your Support Does Make a Difference! It's an investment that pays off! Lobbyists are NOT FREE, but individual membership in MWA is VERY AFFORDABLE. Dues are \$50 per year for an individual membership, \$100 per year for a Lake Association membership and \$200 for a Corporation membership.

ONLY THROUGH YOUR ACTIVE INVOLVEMENT IS YOUR LAKE PROTECTED

For more information and/or a membership application, please visit www.mwai.org or e-mail

skibones@mwai.org - our address is- **MICHIGAN WATERFRONT ALLIANCE**

P.O. Box 369, Fenton, Michigan 48430

Upcoming Events

Enrollment is now open for the 2013 Cooperative Lakes Monitoring Program - This citizen monitoring program allows citizens to work with the Michigan Department of Environmental Quality and several nonprofit agencies to collect water quality data on Michigan's inland lakes. There are two ways to enroll: 1) Enroll on the MiCorps web page www.micorps.net/lakeoverview.html, 2) Call Ms. Jean Roth at Michigan Lake and Stream Associations to request a paper application (989-257-3715).

March 3 - 6, 2013 - The Midwest Aquatic Plant Management Society conference will include presentations on the ecology and biology of aquatic plants, control of plants utilizing chemicals, mechanical or biological techniques, plus regulatory updates. The Conference will be held at Marriott Cleveland Downtown at Key Center, Ohio. More information will be available at www.mapms.org.

March 6, 2013 - The Michigan Natural Shoreline Partnership (MNSP) and its partners will be hosting a conference to promote using native shorelines to reduce surface water runoff, stabilize eroding soils, deter geese, improve fish and wildlife habitat and revitalize the lakeshore. The third Shoreline and Shallows Conference will be held at the Kellogg Center in East Lansing, MI. More information will become available soon on the Partnership's website www.mishorelinepartnership.org.

April 26 and 27, 2013 - Michigan Lake and Stream Associations, Inc. 52nd Annual Conference will provide information and training on many lake management issues. This conference is the largest lake management conference held in Michigan. The Conference will be held at the Double Tree by Hilton in Bay City, Michigan. More information will be available at the Associations' web site www.mymlsa.org.

Thank you to our Corporate Members for helping support McNALMS

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