



Poster Descriptions & Presenter Information

Wednesday, April 11, 2012

10:30a.m. – 12:00p.m.

KI Convention Center - Exhibit Hall

TOPIC: Advocating for Lakes

Twenty-five Years of Improving and Protecting a Lake

Mark Blakeslee & Waldo Peterson, Mirror Lake Association

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The Mirror Lake Association was formed in 1986 with the purpose of promoting and improving the physical appearance of Mirror Lake and protecting its future. Our poster will feature our many accomplishments towards fulfilling that mission. The Mirror Lake Association has worked with the townships involved in creating a no-wake ordinance, and with the village of Lake Delton to stop the use of chemicals to control aquatic plants. The association has also created a lake management plan and completed the construction of a sediment trap.

Wisconsin Wetlands Association's Local Outreach Program: Integrating Lake and Wetland Conservation

Kyle Magyera, Wisconsin Wetlands Association

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The Wisconsin Wetlands Association (WWA) has a local outreach program intended to help educate local decision-makers about the public benefits of wetlands and to provide tools and resources that help local decision-makers address challenges and opportunities associated with administering land use and wetland conservation policies and programs. WWA recently received a Technical Service Provider Contract from the WDNR Lakes Program to continue and expand the delivery of education and outreach to local decision-makers and new audiences, including watershed groups and lake associations. Key goals of our work under this WDNR contract will be to 1) improve lake leaders' understanding about the connections between lakes and wetlands and help them communicate with their communities about wetland concerns; 2) increase interest in evaluating and addressing wetland concerns in lake planning, protection, restoration and management efforts; and to 3) increase Lake Grant applications for wetland projects that will benefit lake water quality and habitat. Ultimately, we hope to encourage more public and private investment in wetland protection and restoration as a means to improve water quality and recreational opportunities in and near Wisconsin's lakes and rivers. Please stop by to learn more about this project and share perspectives on the opportunities to meet these goals.

TOPIC: Aquatic Invasive Species

Approaching AIS in Relation to Oneida County

Michele Sadauskas, Oneida County Land & Water Department/UW-Extension
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On at least two occasions in Oneida County, the invasive Zebra Mussel has been found and stopped from entering a water body by a Clean Boats Clean Water (CBCW) volunteer. Local AIS staff consistently stresses the importance of keeping new AIS out of Oneida County's waterways and work hard on developing new educational outreach tools to maintain that mission. This mission is especially critical when 3 out-of-county lakes, all within 20 miles, are home to AIS that are not currently found in Oneida County. The need to develop a spatially and visually effective outreach tool to address this concern was of highest priority. The map Approaching AIS in Relation to Oneida County was developed to help citizens view how geographically close certain AIS populations are and to help show the patterns of AIS invasion.

Aquatic Invasive Species Never Rest

Angela Wenninger, Oneida County Land & Water Department/UW-Extension
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This poster will focus on ice angler outreach in Oneida County during the winter of 2012. A survey was given to 172 ice anglers during the month of February to better understand the ice angler population and to know what their beliefs are regarding AIS. Although the survey only represents a small proportion of ice anglers in Oneida County, some of the results have been astounding. According to the survey, 40% of Oneida County anglers have not been reached by a Clean Boats Clean Water (CBCW) volunteer, and 31% of the respondents believe that AIS are inactive in winter. This poster will show results from that survey and help us create and design a system to effectively educate this population in the years to come. So far, the survey has shown the huge importance and necessity of continuing AIS outreach, education, and management throughout the entire year.

Aquatic Invasive Species Transfer between the Great Lakes and Mississippi River Basins

Bob Wakeman, Wisconsin Department of Natural Resources
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Aquatic invasive species (AIS) are moving across our aquascape sometimes assisted by our own activities (boating, fishing), sometimes through the mail (organisms in trade) and sometimes through natural or artificial waterways (Chicago Sanitary and Shipping Canal). The US Army Corps of Engineers is evaluating the potential connections between the Great Lakes Basin and the Mississippi River Basin and the risk of AIS transfer at these locations. Wisconsin is blessed with high quality lakes and rivers but is also at risk of AIS transfer from our north (Lake Superior), east (Lake Michigan) and west (Mississippi River) coasts. AIS transfer from these sources in either direction (Great Lakes Basin to Mississippi River basin or visa versa) is a serious threat in Wisconsin. Potential connections are identified in this poster and the level of risk that each location represents. What this means to Wisconsin and our local waterways is presented in this poster.

A Regional Approach to Watercraft Inspection and AIS Education in West Central WI

Anna Mares & Jeanette Kelly, Beaver Creek Reserve

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Beaver Creek Reserve has just finished a three year watercraft inspection campaign in the West Central region of Wisconsin and will now begin another two year. This project takes a regional approach, focusing on lakes that are most highly frequented and most heavily infested with aquatic invasive species in the five county region. The counties included: St. Croix, Dunn, Eau Claire, Chippewa and Clark. Four paid watercraft inspectors rotate between 19 waterbodies doing watercraft inspection, attending educational events and conducting surveys on current AIS populations in the lakes. This has become a successful partnership between Beaver Creek Reserve and the lake groups that we work with to educate the public on the dangers of invasive species. The Reserve also assists with aquatic plant surveys and purple loosestrife beetle rearing for groups other than those involved with regional watercraft inspection.

Ballast Water Invaders: A Regulatory Challenge

Susan Eichelkraut & Cordell Manz, Wisconsin Department of Natural Resources

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Our poster will show:

- Description and depiction of what ballast water is;
- Aquatic invasive species introduced to the Great Lakes through ballast water;
- Description of what vessels can do to prevent AIS introduction;
- WDNR Ballast Water Discharge General Permit program description;
- Status of national regulations, challenges and future of BW regulation

Hand Removal of Eurasian Watermilfoil

Chris Hamerla, Lumberjack Resource Conservation & Development

& Paul Skawinski, Golden Sands Resource Conservation & Development

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This poster will detail the practice of manually removing exotic plants to maintain healthy native ecosystems in waterbodies and prevent the spread of introduced species. The primary focus will be on Eurasian water milfoil removal. The process will be covered from start to finish including determining what situations warrant hand removal to follow up once the removal is complete. Pictures with captions will present the steps, coordination of people, techniques, and items used.

Initial Observations on Zebra Mussels (*Dreissena polymorpha*) in two lakes in the Menominee River watershed, Wisconsin/Michigan

Maureen Ferry, WI Cooperative Fishery Research Unit, University of Wisconsin – Stevens Point & Dr. Kyle Herrman, University of Wisconsin – Stevens Point
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Zebra mussels (*Dreissena polymorpha*) are being moved incidentally by boaters and other recreationists from the Great Lakes to inland lakes in upper Midwest. Eight inland lakes near the Menominee River, Wisconsin/Michigan are known to harbor zebra mussels. Keyes Lake (Florence, Wisconsin) is the most recently discovered population and provides an opportunity to compare zebra mussel habitat preference during initial stages of colonization with an established population in Lake Antoine (Iron Mountain, Michigan). Water depth, percentage of substrate coverage and macrophytes presence were sampled using quadrats along transects at regular intervals in each lake. Zebra mussel abundance, type of substrate attached to, and orientation on substrate were also quantified. Preliminary results indicate that there may be a difference between the habitats zebra mussels colonize in Keyes Lakes compared to Lake Antoine. With limited zebra mussel management options, there is a need to contain the spread through education and early detection monitoring.

Oneida County's AIS Program: Putting AIS on Ice for All Seasons

Michele Sadauskas, Oneida County Land & Water Department/UW-Extension
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Resource management and AIS strategic plans give structure and direction to a County AIS program, but each County's AIS specialist and team will lend the program personality, vibrancy, and originality. Follow Oneida County's AIS team in their journey to create a program filled with creativity, hard work, and success. It is hoped we can Put AIS on Ice for 2012!

Removal Methods for Japanese Knotweed (*Polygonum cuspidatum*)

Kaycie Stushek, Golden Sands Resource Conservation & Development
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Japanese knotweed (*Polygonum cuspidatum*), is an invasive species, listed as restricted under NR 40. It is fast growing, creating a wall of bamboo-like stems as it spreads quickly through wetland corridors. Because of its naturally strong, complex underground network of rhizomes, hand removal is not recommended. Multiple herbicide treatments are usually successful, if applied correctly. Herbicide is usually inserted into the hollow stem of the plant, near the base. This is difficult in the small chambers of seedlings. To remedy this problem, a foam method of herbicide application is being tested at Big Silver Lake in Waushara County. The foam is applied to the cambium, which is exposed by scraping off the stems outer layer. The foam stays in place on any sized plant, and the herbicide is transported to the roots of the plant. The effectiveness of this small scale trial will be observed in the spring.

Slowing the Spread of Invasive Species

Margie Yadro, Wild Rivers Invasive Species Coalition

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Display the positive effects of the regional approach to invasive species management in a 5-county region that includes Florence, Forest and Marinette Counties of Wisconsin, and Dickinson and Iron Counties in Michigan. Activities featured on the poster would include public education activities, invasive species projects, and demonstrations that the Wild Rivers Invasive Species Coalition partners have been engaged in over this past year, including recognition as a 2011 Invader Crusader award recipient.

Squash Lake Association: Pulling Together to Get to the Root of the Problem

Stephanie Boismenu, Squash Lake Association

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Eurasian water milfoil (EWM) was discovered in Squash Lake in 2009. After consulting with the lakes management contractor, Onterra, and carefully studying the treatment options, the Squash Lake Association voted to hire a team of scuba divers to hand harvest it. During the summer 2010 and 2011, the Scuba divers worked diligently at harvesting each plant by its root mass. Volunteers were busy monitoring the lake, assisting divers, educating lake users, raising funds, and harvesting as well. Onterra's fall 2011 survey results have proven that hand harvesting was successful at significantly reducing the volume of EWM from the lake and it was done without a single chemical! Squash Lake Association's team of scuba divers and volunteers will continue to pull together and remain at the root of the problem. This project was sponsored by the Squash Lake Association and the WDNR's Early Detection and Response grant.

Washburn County Purple Loosestrife Beetle Control

Lisa Burns, Washburn County Land & Water Conservation Department

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Washburn County has many areas growing with the aquatic invasive species purple loosestrife (the Yellow River being the largest stand). The Land and Water Conservation Department began raising and releasing beetles in 2006 to help control the loosestrife population. With the help of citizens and schools, over-run loosestrife sites are beginning to propagate beetles on their own, leading to a decrease in stand size.

What's in YOUR Water? Herbicides and Milfoil in the Northwoods

Carol Warden, University of WI – Trout Lake

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This poster will illustrate the efficacy and possible side effects of chemical herbicide treatments on Eurasian water milfoil on lakes in the Northwoods. It will show milfoil acreage before and after treatment on an annual basis. It will also depict how many pounds of chemicals are going into the lakes every year. The data will cover a six-county region including Vilas, Oneida, Forest, Florence, Lincoln and Langlade counties. The poster will also outline the hazards of each chemical being used (i.e. Do not use water for irrigation for at least fourteen days).

TOPIC: Land & Water Research Conservation

Effective Tools for Building Lake District Capacity

Paul Dearlove, Lake Ripley Management District
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Finding ways to leverage limited assets is key to building capacity and implementing watershed-scale solutions. In these times of ever-tightening budgets, even tax-supported lake districts struggle to come up with the dollars and human capital needed to sustain meaningful change. More than ever, such groups must rely on innovative partnerships to tap into the necessary expertise, labor and financial resources that most larger-scale initiatives demand. These partnerships can come in many forms, but they are all based on achieving mutually beneficial outcomes. Whatever the goal (lake monitoring/research, critical area protection, wetland and shoreland restoration, local ordinance adoption, community outreach, etc.), there is a partnership opportunity just waiting to be discovered.

Examining Causes for Blue-Green Algae Blooms in a Minimally Developed Lake in Forest County, Wisconsin

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A health advisory was posted for Bear Lake in Forest County, Wisconsin by the USFS for blue-green algae, which exceeded the World Health Organizations health standards. The lake is located within a National Forest and a relatively undeveloped watershed; therefore, the causes of the blue-green algal growth were initially unclear. Since 2006, lake surface water has had high concentrations of phosphorus, which likely contributed to the excess blue-green algal growth in Bear Lake.

During a two-year study, biological, physical, and chemical properties were evaluated in the groundwater, inflow/outflow streams, and the lake. Elevated concentrations of phosphorus were measured; however, anthropogenic influences do not appear to be the primary source. One possible contributor is minimal aquatic macrophyte biomass, likely due to an aquatic invasive species of rusty crayfish, *Orconectes rusticus*. This study explores the potential sources and contributing factors of the elevated phosphorus levels, and discusses possible solutions to the blue-green algae problems in Bear Lake.

TOPIC: Management Challenges

A Citizen Science Program for Monitoring Lake Stages in Northern Wisconsin

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Historical data indicate that surface water levels in northern Wisconsin are fluctuating more now than in the recent past. In the northern highland lake district of Vilas County, concern about record low lake levels in 2008 spurred local citizens and lake associations to form a lake level monitoring network comprising of citizen scientists which is the first of its kind in Wisconsin. The network is administered by the North Lakeland Discovery Center (NLDC) and is supported by a grant from the Citizen Science Monitoring Program of the Wisconsin Department of Natural Resources (WDNR). With technical guidance from limnologists at UW-Madison Trout

Lake Research Station, citizen scientists installed geographic benchmarks and staff gauges. The retention rate for volunteers has been 100% and the program has expanded from 4 lakes to 26 lakes. The NLDC is collaborating with WDNR to develop data entry screens in the Wisconsin Surface Water Integrated Monitoring System (SWIMS).

Petenwell-Castle Rock Blue-Green Algae Project: Year Two

Reesa Evans, Adams County Land & Water Conservation Department
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In Year Two, citizen volunteers continue to take regular in-lake samples at 15 sites on Petenwell and Castle Rock Lakes to determine the presence of 5 species of potentially-toxic blue-green algae. This year four land-based sampling sites were added that were sampled weekly. Besides identifying the targeted species, samples are also rated for presence, commonality, abundance and bloom. 88 samples were taken at the land-based sites, with 65% having at least one of the targeted cyanobacteria. 179 in-lakes samples were taken, with 51% of the Petenwell samples having one of the targeted species, and 55% of the Castle Rock samples containing one of the targeted species.

Wisconsin Fish Consumption Advisories

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Wisconsin provides recommendations on eating fish due to several pollutants found in Wisconsin waters. Safe-eating guidelines apply to all inland waters (non-Great Lakes) and exceptions are provided for some species from waters where higher concentrations of mercury or other pollutants are found. Recommendations for meal frequency range from unlimited to do not eat and are based on the contaminant levels in the fish that may vary by species, size and location. Advice is updated as new contaminant data is collected throughout Wisconsin. Recent studies suggest that mercury concentrations in some predator fish have declined overall in northern Wisconsin and the greater Great Lakes area. Wisconsin's mercury-based fish consumption advice will be presented, including information on the trends in mercury concentrations and where work is underway to reduce PCBs in fish.

What's in the Green Jelly Ball? A Pictorial Guide to Macroscopic Algae and Other Organisms in Wisconsin Lakes

Gina LaLiberte, Wisconsin Department of Natural Resources
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Whether they're floating on the surface, attached to submerged logs, or rolling around on the bottom, gelatinous green balls are eye-catching members of lake ecosystems. Sometimes they are so prominent or so numerous that they become a cause for concern to lake homeowners. Organisms which form macroscopic green colonies are usually blue-green algae, but protozoa and some specialized animals can also form large colonies. A pictorial guide to "green jelly balls" commonly encountered in Wisconsin lakes will be presented, and include information about the organisms' ecology and distribution. The intent of this guide is to serve as an identification resource for citizen lake monitors, as well as assist lake homeowners in making informed management decisions for their lake.

TOPIC: Native Plants and Animals

Citizens Monitoring Native Aquatic Plant Communities

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Citizens monitor water quality in area lakes by measuring water clarity and water chemistry. But scores of volunteers also monitor water quality by looking at the native aquatic plant community over time. Citizens can map aquatic plant beds and monitor these over time or collect, press and identify plants on their lake to create a lasting herbarium. Learning about native aquatic macrophytes builds an awareness and appreciation of the role that the plant community plays in aquatic ecosystems as well as providing a way to track water quality over time.

The Relationship between Carnivore Distribution and Landscape Features in the Northern Highlands Ecological Landscape of Wisconsin

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Residential development has been associated with habitat fragmentation and loss and declining diversity of indigenous species, especially when development occurs in ecologically sensitive environments such as wetlands and/or riparian zones. In recent decades, the upper mid-west region of the United States has experienced a dramatic increase in residential development along lakeshores. In northern Wisconsin, recent studies have documented negative effects of such development on local flora and certain fauna (avian and amphibian communities) but less is known about how mammal communities, especially carnivores, respond to housing development. To quantify the influence of lakeshore development on these taxa, we conducted snow track surveys on ten pairs of low-and high-development lakes and deployed remote cameras at four lakes in Vilas County, Wisconsin in 2008. Our results suggest that a higher diversity of carnivores ($P = 0.006$) were present on low-development lakes. Coyotes (*Canis latrans*) were detected most frequently ($n = 34$) especially on low-development lakes.

Managing Wisconsin's Largemouth Bass Populations

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The availability and quality of food available to age-0 fish affects their survival and growth. Largemouth bass *Micropterus salmoides* advance through a series of dietary shifts during early life, eventually switching to piscivory. The onset of piscivory is important to the survival and growth of age-0 largemouth bass and affects the number of fish that will eventually recruit to the fishery. Recent increases in largemouth bass abundance in Wisconsin lakes have prompted renewed interest in the factors regulating largemouth bass recruitment. The onset of piscivory has been poorly studied in largemouth bass populations at the northern edge of their native range. A better understanding of the prevalence and onset of piscivory in Wisconsin largemouth bass populations would allow fishery managers to better understand increases in largemouth bass population dynamics.