

Speaking for Lakes Poster Descriptions & Presenter Information



2011 Wisconsin Lakes Convention

Wednesday, April 13, 2011

12:30 – 1:30p.m. - KI Convention Center
Exhibit Hall

TOPIC: AIS

Aquatic Invasive Species Monitoring in the Northwoods

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The campaign for public awareness and prevention of AIS is as great in the northwoods as any other part of the state. This poster session will illustrate the methods of detection, early response, and education that are used in the northwoods, as well as recognize the team players that work together to make it all possible.

Aquatic Invasive Species Prevention, Control, & Education in Iron County

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Iron County has had a thriving AIS program in recent years. This ambitious county has been involved in many AIS outreach and educational programs, including AIS-related research projects with students at the Mercer Environmental Tourism Charter School, partnerships with various agencies to fund an intern-based AIS monitoring program for aquatic plant surveys and monitoring at lakes and streams, a program about AIS appetizers, as well as successful radio and television commercials.

Control of Yellow Floating Heart in Wisconsin Ponds

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Wisconsin has had three cases of ponds infested with yellow floating heart (*Nymphoides peltata*). In two of the ponds, manual removal either did not work or was not an option, and chemical control was ineffective. As a result, both ponds were completely removed, and great care was taken to remove and contain all seeds in water and mud. The ponds were then rebuilt, and the control efforts appear to be effective so far. In the third pond, yellow floating heart still survives and is being

controlled via manual removal because it is not growing aggressively. This poster provides photos and highlights problems and resolutions from each of the ponds.

Effects of Common Carp on Wild Rice Survival and Growth in a Northern Wisconsin Lake

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In 2010, St. Croix Tribal Environmental Services and Freshwater Scientific Services, LLC designed a study to assess the impact of common carp on the survival and growth of northern wild rice in Upper Clam Lake in Burnett County. Before 2005, Upper Clam Lake supported 250 to 300 acres of wild rice, but between 2005 and 2009, these rice beds were reduced to less than 50 acres. The decrease in rice coincided with the appearance of a very strong year-class of carp in 2005. The results of the study indicate that carp dramatically reduced the establishment and growth of wild rice.

Great Lakes Restoration Initiative – Removal of Phragmites and Lyme Grass from WI Lake Michigan Shoreline

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This project will encompass Lake Michigan shoreline in Brown, Door, Manitowoc, Marinette, Oconto, and Sheboygan Counties. It will involve the removal of Phragmites (*Phragmites australis*) and Lyme Grass (*Leymus arenarius*) from 118 miles and 3,600 acres of Lake Michigan Shoreline. Work would be mostly done below the Lake Michigan ordinary high water mark along identified Conservation Opportunity Areas that include 25 State Natural Areas, 6 State Parks/Forests, 3 State Wildlife areas and adjacent private lands.

Science to Support Strategic Investment in Invasives Prevention and Management – Aquatic Plant Monitoring and Research

Ali Mikulyuk & Michelle Nault

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This research group enables informed cost-benefit discussions for managing aquatic plant communities and is interested in the strategic investment of Wisconsin's \$4 million Aquatic Invasives Grants Program. The Wisconsin Department of Natural Resources Watershed Bureau, regional lake coordinators, Wisconsin Lakes Partnership, and private lake consultants have developed a standardized aquatic plant sampling methodology appropriate for comparative studies, management assessment, and collecting baseline data.

Topic: Communications

How Do Towns Take Care of Their Lakes?

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The Delavan Lake Improvement Association (DLIA) asked the Town of Delavan to start a dedicated lake project fund so that when a lake maintenance project needs to be done, the fund could pay for it instead of creating a crisis for taxpayers. The Town asked the DLIA to find out how other similar lakes fund projects, so the DLIA began to research project funding methods used by other lake organizations. Convention-goers will be asked to share their own experiences with specific lake project funding.

Nanotechnology and Management of Surface Waters

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Nanotechnologies are among the fastest-growing areas of scientific research and technologies development worldwide. Because of the novel properties exhibited by nano-particles, nanotechnology has great potential to benefit the environment through applications of nano-materials to prevent, monitor, and remove pollutants in ground and surface waters. Some scientists are also concerned about potential environmental risks related to the nano-sized materials used in nanotechnologies.

Wisconsin's Fish Consumption Advice

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Wisconsin first issued fish consumption advisories in the 1970s when PCBs were found in Lake Michigan and Green Bay fish. The purpose of advisories is to recommend guidelines for safe fish consumption for adults and children to reduce exposure to contaminants while encouraging fish consumption for the nutritional benefits. These guidelines vary for men, women, and children and depend on the species, size, and location of the fish.

Topic: Native Plants & Animals

Bird City Wisconsin: Making Our Communities Healthy for Birds... and People

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Bird City Wisconsin, a new coalition of citizens, public officials, and organizations, led by the Milwaukee Audubon Society, the Wisconsin Bird Conservation Initiative, and the Wisconsin Society for Ornithology, wants to ensure that folks living in Wisconsin's communities maintain healthy

populations of birds and appreciate them. The program offers public recognition to communities that meet at least 7 of 22 criteria for creating and protecting bird habitat, fostering conservation education and taking steps to protect birds from a range of perils.

Toward the Development of a Fish Habitat Index for Nearshore Littoral Zones of Wisconsin Lakes

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The complexity and diversity of structural habitats in nearshore littoral zones are highly variable and serve as important spawning, foraging, and nursery sites for many fish species. A five-year study was completed to measure lake depth, macrophyte structure, substrate, and coarse woody structure. Additional data was collected in riparian zones, including slope, basal area, canopy coverage, and human development. Fish habitat metrics were then developed to compare and identify habitat management strategies.

Wisconsin Bat Monitoring Program

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The Wisconsin Bat Monitoring Program is dedicated to bat conservation and education while actively engaging the public with two citizen-based monitoring projects. The first is the Acoustic Bat Monitoring Project, which allows volunteers to collect data about bat species and abundance in an area. The second project is the Bat Roost Monitoring Project, where volunteers conduct bat counts as the bats leave a roost in the evening.

Topic: Success Stories

LittLine is a Targeted Application System for the control of Aquatic Nuisance Species that Significantly Reduces Pesticide Usage and Increases Efficacy

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LittLine is a patent-pending littoral zone treatment technology that was developed to more effectively conduct aquatic pesticide applications to control aquatic nuisance species. The system targets only the specific portion of the water column where the weeds are growing. The system's computer controls the exact placement and rate of aquatic pesticides and the system enhances post-application reporting as the computer collects data related to the date and time of application, weather conditions, rate of pesticide delivery, and total amount of product used.

Mapping Your Lake's Water Depth and the Accumulate Sediment Depth

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The water depth and sediment depth of a lake are important in the aging and eutrophication of a lake. Collecting water depth and sediment depth data can be easily accomplished through the ice during the winter using GPS surveying technology. This was done in two north-central Wisconsin reservoir lakes in the winter of 2010 and the mapping can be used where recreational watercraft navigation is a concern, as well as in situations where lake restoration planning is the goal.

Topic: Water Quality

Climate Change and Wisconsin's Water Resources

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The Wisconsin Initiative Climate Change Impacts (WICCI) recently released its first climate change adaptation strategy report- *Wisconsin's Changing Climate: Impacts and Adaptation*. The report was the combined effort of the University of Wisconsin, Wisconsin DNR, and other agencies and institutions. Climate scientists analyzed historic temperature, precipitation, ice cover, lake level, groundwater, and stream baseflow data. Future projections of temperature and precipitation resulted in the identification of six probable impacts of climate change on our water resources that should be addressed: increased flooding; increased blue-green algae glooms; increased demand for groundwater extraction and demand for water; changes in seepage lake levels; increased sediment and nutrient loading; and increased spread of aquatic invasive species.

Developing a Model for Epilimnion and Hypolimnion Phosphorus Concentrations

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Lakes are invaluable resources for Wisconsin. However, many of the states lake are in desperate need of improvement. Increased algal growth, a symptom of eutrophication, occurs when excess nutrients, particularly phosphorus and nitrogen, are present. A lake model can be an effective management tool. Models consider the variables that can increase or decrease a lakes nutrient content. An overly simplified model may not account for key factors. Conversely, a model that includes numerous coefficients has more uncertainty associated with each modification. A model with a moderate amount of complexity will more accurately predict lake levels of phosphorus to determine the best, most cost-effective, management practices. Previous models have looked at lakes as completely mixed; however, a lake that stratifies could have a significantly different level of phosphorus in its epilimnion compared to its hypolimnion. This proposed model considers the effects of a stratified lake. Squaw Lake in St. Croix County is the initial lake to be considered in developing a model.

How Does Public Perception of Lake Condition Correspond with Measured Water Quality Data?

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Establishing targets for measurable water quality indicators like phosphorus and chlorophyll levels requires an understanding of how lake users perceive water quality and recreation potential. Volunteer lake monitors collected data that strongly correlates between perceptions and total phosphorus, chlorophyll a, and Secchi depth. These results can help define water quality standards that will support recreational and aesthetic uses of lakes in Wisconsin.

Water Clarity Monitoring of Wisconsin Lakes via Remote Sensing

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The thousands of lakes in Wisconsin are important in supporting the state's recreation economy as well as a diverse aquatic ecological community. Increased costs for lake monitoring along with staff shortages have forced the state to seek alternative methods to monitor these numerous water bodies. The state has successfully developed a "Lakes from Space" program, using Landsat 5 and 7 images to generate water clarity measurements for approximately 8000 lakes. The multi-year continuity of this program is now providing the ability to examine inter-annual variability and trends in trophic status and their relationship to geophysical differences. Proposed future work will delineate relationships between environmental drivers such as climatic conditions and land use with subsequent changes in lake water quality.

Topic: Other

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

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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.