



## AIS Research Findings

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### **The Effects of the Invasive Spiny Water Flea (*Bythotrephes longimanus*) in a Northern Wisconsin Lake**

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A recent intruder has invaded three northern Wisconsin inland lakes and has been known to alter food webs and disrupt aquatic communities. This intruder, the spiny water flea, is one of the newest aquatic invasives to appear in Wisconsin lakes. Due to its large spine, the water flea can clog fishing lines and become a nuisance to fisherman. Stormy Lake in Vilas County was invaded in 2007. This study examined likely effects to this lake and potential impacts of the water flea spreading to other lakes in the vicinity.

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### **Round Goby Invade Inland Streams: A Look at the Current and Projected Distribution of this Species in WI Waters**

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At least 180 aquatic invasive species call the Laurentian (Superior, Michigan, Huron, Ontario) Great Lakes home. Of these, the round goby has been one of the most rapidly growing aquatic hitchhikers along the coastal Great Lakes in the past decade. This study finds that the round goby, typically known as a large lake species, are also dispersing into small stream and river systems.

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### **Practical, Large-scale Rearing Methods for Milfoil Weevils**

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Is your lake association looking for a chemical-free, long-term, potentially affordable solution to helping stop the spread of Eurasian water milfoil? The native milfoil weevil, which feeds exclusively on milfoil species may be your answer. This poster presentation provides the results of rearing weevils in three types of outdoor, predator-free chambers from June to August that can be implemented by lake associations.

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### **A Novel Application of Molecular Genetic Tools for Aquatic Invasive Species Surveillance**

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One of the essential elements to invasive species management is early detection and rapid response to the invasives presence. However, no effective rapid response is possible without early detection. It is necessary for invasives to be detected while they are still vulnerable to contamination, control, or eradication. This presentation focuses on new technology to detect aquatic invasive species through DNA samples collected from filtered water.

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### **Five County Aquatic Invasive Species Survey**

Anna Brady / Beaver Creek Reserve Citizen Science Center / S 1 County Hwy. K / Fall Creek, WI 54742 / 715-877-2212 / [anna@beavercreekreserve.org](mailto:anna@beavercreekreserve.org); and Sarah Braun / Beaver Creek Reserve Citizen Science Center / [sarah@beavercreekreserve.org](mailto:sarah@beavercreekreserve.org)

Is your lake association or organization interested in conducting a survey of aquatic invasive species? Are you interested in finding out what invasive species are present in the lakes of Barron, Dunn, Rusk, Eau Claire, or Chippewa counties? If so, make sure to stop by this poster presentation as it provides AIS statistical information from 125 lakes that have public boat launch access in this region.

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## **Citizen Perceptions and Reactions to AIS on Towns of Delta and Iron River lakes, Bayfield County, WI**

Patrick Goggin, Robert Korth, Tiffany Lyden / UW-Extension Lakes / 800 Reserve Street / Stevens Point, WI 54481 / 715-295-8903 / [pgoggin@uwsp.edu](mailto:pgoggin@uwsp.edu); Tim Kane / Community Natural Resources Agent / UW-Extension Bayfield County ; Mark Eiswerth / UW-Whitewater / Southern Center for Economic Development / UW-Extension; Julia Solomon / UW-Extension / WI Department of Natural Resources.

The lakes in this area of Bayfield County represent a valuable northern Wisconsin resource for residents and visitors alike, but these water bodies are under attack. Aquatic invasive species threaten the long term ecological and economic health of lakes in the region. This study examined several human dimensions of AIS, trying to identify citizen perceptions and reactions to species such as Eurasian water-milfoil, curly-leaf pondweed, rusty crayfish, and zebra mussels. Further, it underscores the potential economic impacts AIS can have on local lake communities.

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## **Distribution and Impacts of the Chinese Mystery Snail in Wisconsin Lakes**

Chris Solomon / University of Wisconsin-Madison / Center for Limnology / Madison, WI 53703 / 608-262-3014 / [ctsolomon@wisc.edu](mailto:ctsolomon@wisc.edu)

If the distribution and potential impacts of lesser known aquatic invasive species seem like a plot for a secretive whodunit case, then be sure to stop by this poster presentation, as it highlights the effects of the Chinese mystery snail. This snail has been found in water bodies across Wisconsin, and in ~50% of surveyed lakes in Vilas and Oneida counties. It has the possibility of reducing the growth of some native snail species, altering nutrient cycles, and impacting the biomass of algae.

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## **Lake Wingra Aquatic Invasive Demonstration Project**

David Liebl / University of Wisconsin College of Engineering and UW-Extension / 608-265-2360 / [liebl@epd.engr.wisc.edu](mailto:liebl@epd.engr.wisc.edu)

While chemical, mechanical, and hand-pulling methods of aquatic invasive species removal have been useful and popular, this poster presentation offers a glimpse of a more natural approach: the common carp. A study on the introduction of carp to Lake Wingra suggests that carp activity suppresses invasive and native aquatic plants, with the possibility of a native species resurgence following a suppression of carp activity.

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## **Management Control Strategies**

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### **Controlling Wisconsin's First Hydrilla Infestation in Marinette County, Wisconsin**

Marinette County Land and Water Conservation Department / Courthouse / 1926 Hall Avenue / Marinette, WI 54143 / 715-732-7783 / [gcleereman@marinettecounty.com](mailto:gcleereman@marinettecounty.com)

One of the most feared aquatic invasive species, hydrilla, was recently found in a private Marinette County area pond. With the combined efforts of state and federal agencies, as well as Marinette County and its landowners, hydrilla is hopefully eradicated from the site. This poster explores what was done at the site. It also provides a format for a discussion on what was learned from the effort and recommendations on how to prevent this kind of infestation from occurring in the future.

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### **2, 4-D Residual Monitoring Project - Lower Eagle River Chain of Lakes, Vilas County**

Brian Bailey / UW-Stevens Point and Unified Lower Eagle River Chain of Lakes Commission / 725 Prentice Street Apt. B / Stevens Point, WI 54481 / 608-547-2670 / [bbail804@uwsp.edu](mailto:bbail804@uwsp.edu)

A common method in managing and controlling Eurasian water milfoil and other aquatic invasive plant species is chemical herbicide treatment. However, the use of chemicals has initiated a growing concern over the potential overuse of chemicals in our waterways. This study measured the rate of chemical breakdown following a 2, 4-d treatment on the Lower Eagle River Chain of Lakes. The poster emphasizes results from water samples that were collected from these lakes at set intervals between 1 and 28 days post treatment.

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## Neighborhood Watch - Volunteer EWM Monitoring

Mary Jo Fleming / Lake Wissota Improvement and Protection Association / PO BOX 903 / Chippewa Falls WI 54729 / [bingnjo@charter.net](mailto:bingnjo@charter.net)

Citizen and neighborhood involvement in preventing the spread of aquatic invasive species is a helpful and beneficial program for lakes battling aquatic hitchhikers. A lake association for Lake Wissota in Chippewa County presents their own citizen involvement and volunteer program description, including what management techniques were used and the benefits of volunteer assistance.

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## Assessment of Whole-lake Herbicide Treatment as a Management Strategy for Controlling Curly-leaf Pondweed (*Potamogeton crispus*) in Minnesota Lakes

James Johnson / Department of Fisheries, Wildlife & Conservation Biology / University of Minnesota / 1980 Folwell Avenue / St. Paul, MN 55108 / 651-336-8696 / [joh3323@umn.edu](mailto:joh3323@umn.edu); and Raymond Newman / Department of Fisheries, Wildlife & Conservation Biology / University of Minnesota

Are you concerned about curly-leaf pondweed or are you experiencing an infestation of it in your lake? Visit this poster presentation to find out the results of a management strategy study for several Minnesota lakes. This study evaluates the use of early-season whole-lake herbicide treatments on six infected Minnesota water bodies.

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## Creating a Biological Control Program for Purple Loosestrife

Brock Woods / WDNR Science Operations Center / 2801 Progress Road / Madison, WI 53716 / 608-221-6349 / [brock.woods@ces.uwex.edu](mailto:brock.woods@ces.uwex.edu)

Wisconsin DNR began placing biocontrol insects on purple loosestrife stands around the state in 1994. The program started with releases at a few sites that were carefully monitored to ensure project safety and efficacy. Through the years, this biocontrol effort has blossomed into a statewide management effort via hundreds of volunteers and assorted citizen groups. They have raised and released biocontrol insects to their local loosestrife infestation areas. Millions of control insects have been released at over a thousand sites with great initial results. At this poster session, you can learn about the early research, the biocontrol process, and how citizens around Wisconsin have participated in the project to date.

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## Case Studies

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### The Legend Lake Eurasian Water-milfoil Adaptive Management Program: Lessons Learned from the Largest Milfoil Treatment in the State of Wisconsin

Chad Cason / Cason & Associates, LLC / PO Box 109 / Berlin, WI 54923 / 920-361-4088 / [chad@wisconsinlpr.com](mailto:chad@wisconsinlpr.com); and Peter Harris / Aecom / 1035 Kepler Drive / Green Bay, WI 54311 / 920-468-1978 / [peter.harris@aecom.com](mailto:peter.harris@aecom.com)

The Menominee Indian Reservation in northeast Wisconsin is home to the Legend Lake System, which is comprised of nine interconnected lake basins totaling over 1,200 acres. Eurasian water-milfoil was first found in the Legend Lake System in 2002 and by 2007, the plant had been found in over 800 acres. To control the spread of this invasive, the Legend Lake Eurasian water-milfoil Adaptive Management Program was initiated in 2005. This poster presentation will summarize the results of the project and cite associated studies. It will also identify the elements of a successful Eurasian water-milfoil management program.

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### Trends in Boater Behaviors from 2004-2008 Watercraft Inspection Data

Erin Henegar / UW-Extension Lakes / 800 Reserve Street / Stevens Point, WI 54481 / 715-346-4978 / [ehenegar@uwsp.edu](mailto:ehenegar@uwsp.edu)

Since 2004, more than 1,100 volunteers have been trained at Clean Boats, Clean Waters workshops to conduct watercraft inspections at boat landings throughout Wisconsin. These volunteers, along with paid staff, collect data concerning the actions of boaters and anglers. They share with lake users' information about how to help prevent the spread of aquatic invasive species. If you are interested in the trends and behaviors of citizens who are using Wisconsin's boat landings, check out this poster presentation!

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## **Biomaniipulation and Paleolimnology as Management and Assessment Techniques for Shallow Lakes**

Dwight Osmon / Hey and Associates Inc. / 240 Regency Court Suite 301 / Brookfield, WI 53045 / 262-366-4754 / [dosmon@heyassoc.com](mailto:dosmon@heyassoc.com) and Jeremy Williamson / Polk County Land and Water Resources Department / 100 Polk County Plaza, Suite 120 / Balsam Lake, WI 54810 / 715-485-8639 / [jeremyw@co.polk.wi.us](mailto:jeremyw@co.polk.wi.us)

An emerging science in Wisconsin is the assessment and management of shallow lakes (I.E., maximum depth < 20 feet). Case studies have been done on lakes in Dodge and Polk Counties to illustrate shallow lake ecology and two important assessment and management techniques for shallow lakes. This presentation will give you an informative look at a budding scientific field.

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## **The Hydraulic Conveyor System: Assisting with the Hand Removal of EWM on Tomahawk Lake, Oneida County**

Radley Watkins / Northern Environmental / 330 S. 4th Avenue / Park Falls, WI 54552 / 715-762-1544 / [radley.watkins@northernenvironmental.com](mailto:radley.watkins@northernenvironmental.com) and Ned Greedy / TLPOA, Inc. / 7286 McCoy Rd. / Minocqua, WI 54548 / 715-358-7896 / [egreedy@peoplepc.com](mailto:egreedy@peoplepc.com)

In 2008, the Tomahawk Lake Association received a WI DNR AIS Control Grant to fund a research and demonstration project focusing on the control of Eurasian water-milfoil. This poster presentation focuses on the implementation of a mechanical system that was used to aid in hand removal of the water-milfoil. It also outlines potential applications for future use of this mechanical system.

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## **Fighting Eurasian Water-milfoil on Legend Lake**

Wayne Towne / Legend Lake Protection and Rehabilitation District / Post Office Box 95 / Keshena, WI 54135 / 715-799-4551 / [raeway@ezwebtech.com](mailto:raeway@ezwebtech.com) / [www.legendlake.info](http://www.legendlake.info)

For several years, the property owners and lake district have been waging a battle against the spread of Eurasian water-milfoil on Legend Lake. This poster presentation demonstrates EWM management results from both chemical treatment and aquatic plant harvesting.

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## **Volunteer Monitors Patrol River Corridors for Invasive Species**

Laura MacFarland / River Alliance of Wisconsin / 306 E. Wilson Street, Ste 2W / Madison, WI 53711 / 608-257-2424 x110 / [lmacfarland@wisconsinrivers.org](mailto:lmacfarland@wisconsinrivers.org)

With lakes getting so much attention, it's important to also remember the rivers of Wisconsin. Stop by this poster presentation to see how the River Alliance is working to raise awareness about the impacts of invasive species on our rivers and streams. Learn how they are helping to develop monitoring protocols for river volunteers. The pilot project focuses mainly on training canoeists and kayakers to assist in the early detection of four invasive species along riverbanks throughout southern Wisconsin.

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## **County/Local Strategies**

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### **Tanker trucks: a potential AIS vector**

Jennifer Holman / Oneida County Land and Water Conservation Department / One Courthouse Square / Rhinelander, WI 54501 / 715-369-7836 / [jholman@co.oneida.wi.us](mailto:jholman@co.oneida.wi.us)

Aquatic invasive species will go to any lengths to spread their presence to more lakes, even hitching a ride with tanker trucks. Visit this poster to find out what Oneida County has done to prevent the vehicular spread of AIS.

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### **Vilas County AIS Partnership - Town Lakes Committees**

Ted Ritter / Vilas County Land and Water Conservation Department / 330 Court Street / Eagle River, WI 54521 / 715-479-3738 / [teritt@co.vilas.wi.us](mailto:teritt@co.vilas.wi.us)

The Vilas County AIS Partnership has been successful since its conception four years ago thanks to its organizational structure, widespread public support and the creation of the Town Lakes Committees. Unique to Vilas County, these committees could be beneficial to other areas of the state. If you're interested in knowing more about the Vilas County Town Lakes Committees and some of their accomplishments, stop by this poster presentation.

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**The WI Lakes Partnership sincerely thanks all of our poster session presenters for their participation!**