

## AQUATIC NUISANCE SPECIES BARRIER ENERGIZED

Philip Moy, Ph.D., University of Wisconsin Sea Grant

The electric barrier in the Chicago Sanitary and Ship Canal was energized April 9th, almost six years after first authorized by the National Invasive Species Act of 1996 (NISA). The electric barrier is intended to deter up and down stream passage of invasive fishes in the canal connecting the Great Lakes and Mississippi River basins. Nearly 30 agencies were involved in discussion of the barrier, its site selection, design and construction.

Built in 1910, the Chicago Sanitary and Ship (San-Ship) Canal provides an open gateway for the spread of aquatic nuisance species (ANS) through the Midwest. Replacing the small, Illinois-Michigan Canal, the much larger and deeper San-Ship Canal allows gravity flow of water from Lake Michigan to the Des Plaines River. To prevent the spread of ANS, the U.S. Army Corps of Engineers Chicago District (ACE) was authorized through NISA to evaluate methods for creating an ANS dispersal barrier in the Canal. The advisory panel, assembled by the Chicago District to assist with project development, identified obstacles, constraints and potential barrier options. Through a series of meetings, panel members identified and ranked over a dozen barrier strategies. It was decided that an electric barrier would have the greatest chance for success in terms of technical feasibility, commercial availability, permit attainability in addition to posing the least level of safety concerns.

Given that the underlying objective of the dispersal barrier project is to prevent both up and down stream spread of ANS, it was deemed necessary that the barrier not stun the fish. A graded, micro-pulsed DC electric field forms a barrier for many fish species. Fishes approaching the barrier sense the field before becoming stunned, thus stimulating them to turn back. Laboratory and small-scale field tests found that gobies tend to dart, once they sense the electric field, not necessarily away from the stronger shock. Once in the stronger part of the field, the gobies become stunned and can be pushed by water flow downstream past the barrier. The solution recommended to

address this counterproductive scenario involves a suction trough on the bottom of the canal to catch stunned gobies.

The advisory panel originally envisioned two barrier arrays separated by several hundred yards to create a redundant system. Recommended features included railroad rails for electrodes, a back-up generator in case of power loss and egress ladders to provide an exit for anyone in the water. Estimated construction cost for a single barrier was \$4-5 million. As with many projects, budget shortfalls necessitated a reduction in the project scope. To meet the available \$1.25 million budget, the electrodes were changed to steel cables, the back-up generator and egress ladders were omitted. Since round gobies were found past the barrier in 1999, the benthic suction trough also was eliminated. Annual operating cost for the barrier is expected to be about \$200,000. Researchers from the Illinois Natural History Survey will monitor the performance of the barrier using fishes tagged with transponders. The University of Illinois Water Resources Institute is coordinating funding sources to support additional monitoring that includes to date, the Great Lakes Protection Fund, Chicago District ACE, U.S. Fish and Wildlife Service and the University of Illinois. Though the project, as constructed, falls short of the original vision, it still provides a site to study the effects of an electric barrier on silver and bighead carp as well as other fish species.

The electric barrier is a first innovative step in the development of a fully effective ANS barrier. Long term, consistent funding is vital to project development and success. Additional components such as acoustic or visual barriers will complement the effectiveness of the electric array. Though hydrologic separation of drainage basins may be the surest way to fully prevent range expansion of ANS, the dispersal barrier project in the San-Ship Canal can serve as a model for application in other locations where ANS spread is a concern and canal closure may not an option. Contact: Philip Moy, 920-683-4697, [pmoy@uwc.edu](mailto:pmoy@uwc.edu).

Note: The Great Lakes Commission supported the barrier project by advocating for Congressional support and serving in technical and financial capacities.

### Great Lakes Panel Update

The Panel will hold its spring meeting May 29-30, 2002 at Stone Laboratory located on Gibraltar Island, Lake Erie. Marking a decade of Panel accomplishments on ANS prevention and control, the meeting will offer resource-oriented activities (i.e., field trips, tours) along with the Panel's business agenda including discussion on the Panel's rapid response project. Great Lakes Panel staff helped organize a special session on building regional ANS policy at the 11<sup>th</sup> International Aquatic Invasive Species Conference in Alexandria, Va. in February. The Great Lakes Panel was recognized during the session for its decade of leadership in developing model ANS policy. Contact: Kathe Glassner-Shwayder, Great Lakes Commission, 734-665-9135, [shwayder@glc.org](mailto:shwayder@glc.org).

### Washington Watch

Members of Congress are in the process of submitting lists of priority programs to colleagues in the leadership of appropriations subcommittees. The Northeast-Midwest Institute's NISA reauthorization proposal (based on a series of national focus group discussions and regional panel positions) is nearing the stage where introduction and multi-regional leadership in the House and Senate is being lined up. This round, the bill is far more comprehensive than past authorizations, and must be regarded as a starting point with much to be resolved after introduction. A fundamental question to be resolved upon the bill's introduction is whether the bill should be reauthorized at all, or whether the U.S. Coast Guard's (USCG) rulemaking process and other existing authorities should be left in place and better tapped. If the process is to proceed effectively, it will be

important for advocates of reauthorization to make their interest clear to the committees, the relevant federal agencies and the maritime industry. To be placed on an email notification lists regarding NISA reauthorization, please email Nicole Mays ([nmays@nemw.org](mailto:nmays@nemw.org)) at the Institute with your name, affiliation and any issues in which you are interested. Contact: Allegra Cangelosi, Northeast-Midwest Institute, 202-544-5200, [acangelo@nemw.org](mailto:acangelo@nemw.org).

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## Around the Basin:

**NEW YORK:** A draft conceptual framework and outline has been completed in the revision of the state's ANS management plan, based on comments received from public meetings. A large portion of the existing management plan will be integrated into the revised plan with the implementation tables providing detail on individual ANS species. Reported findings on outbreaks of avian botulism in eastern Lake Erie, presented at a Sea Grant sponsored symposium, suggest round gobies and quagga mussels play a role in the outbreak of avian botulism in recent years. Contact: Timothy Sinnott, NYSDEC, 518-402-8970, [txsinnott@gw.dec.state.ny.us](mailto:txsinnott@gw.dec.state.ny.us).

**MICHIGAN:** The Office of the Great Lakes has begun fulfilling ballast water reporting program requirements for 2002 (1994 PA 451, 2001 PA 114) which require the DEQ to determine: 1) compliance of oceangoing ships operating on the Great Lakes and the St. Lawrence waterway with ballast water management practices as provided by the Shipping Federation of Canada to DEQ on June 7, 2001; and 2) compliance of non-oceangoing ships operating on the Great Lakes and the St. Lawrence waterway with ballast water management practices as provided by the Lake Carriers' Association and the Canadian Shipowners' Association to the DEQ on Jan. 26, 2001. To date, more than 160 ships have submitted compliance reports. The state ballast water workgroup will meet this spring to discuss the results of Michigan's ballast water demonstration project. Contact: Emily Finnell, MI DEQ, 517-241-7927, [finnelle@michigan.gov](mailto:finnelle@michigan.gov).

**MINNESOTA:** A new committee has been formed in Minnesota to coordinate, cooperate and communicate on various invasive species issues. The Minnesota Invasive Species Advisory Committee will be co-chaired by the Minnesota departments of Agriculture and Natural Resources. Other committee members include the Department of Transportation, federal agencies, The Nature Conservancy, Leech Lake Band of the Ojibwe, Minnesota Nursery and Landscape Association, Bailey's Nursery, Minnesota Crop Improvement Association, University of Minnesota, The Native Plant Society, Minnesota Sea Grant Program as well as interested individuals. Contact: Jay Rendall, MN DNR, 651-297-1464, [jay.rendall@dnr.state.mn.us](mailto:jay.rendall@dnr.state.mn.us).

**OHIO:** With the support of federal funds matched by state dollars, Ohio is in the fifth year of implementation of its ANS state management plan. Current activities include purple loosestrife control, stream monitoring for non-native species and the development of a new educational program for middle schools. The new ANS display at the state fair attracted a large number of people. Other efforts include the development of a zebra mussel alert card and ANS signs for boat ramps at lakes and streams infested with zebra mussels. Contact: Randy Sanders, OH DNR, 614-265-6344, [randy.sanders@dnr.state.oh.us](mailto:randy.sanders@dnr.state.oh.us).

**ONTARIO:** Panel representation from Ontario's Ministry of Natural Resources has been changed to Beth MacKay, formerly of the Ontario Federation of Anglers and Hunters (OFAH). Bev Ritchie will remain as Ontario's alternate. Contact: Beth MacKay, OMNR, 705-755-1950, [beth.mackay@mnr.gov.on.ca](mailto:beth.mackay@mnr.gov.on.ca).

**PENNSYLVANIA:** For the second consecutive year, water levels in Edinboro Lake were lowered by five feet for zebra mussel control. The previous drawdown (December 2000) was associated with a 41 percent reduction in the lake's zebra mussel population, but heavy ice and snow pack may have reduced the efficacy of the control strategy below its full potential. Air temperatures were significantly warmer during the present drawdown (November 2001), and no snow or ice covered the lake. Preliminary results suggest that zebra mussel mortality from the present drawdown is likely to greatly exceed that of the previous attempt. DEP will conduct a formal follow-up population survey in spring 2002. Contact: Kelly Burch, PA DEP, [kburch@state.pa.us](mailto:kburch@state.pa.us), 814-332-6816.

**WISCONSIN:** As part of the 2001-03 biennial budget, the DNR received \$300,000 annually to fund ANS programs, including monitoring, biocontrol for purple loosestrife, sign postings at boat landings, public service announcements and printing of information/education materials. The monies will also be used to fund new initiatives, including a watercraft inspection program at public access sites and informing boaters (and enforcement) of new state regulations which prohibit the launching of boats or trailers in navigable waters if fouled by aquatic plants or zebra mussels. A final report of the Governor's Task Force on Invasive Species is available on the web at [www.lt.gov.state.wi.us](http://www.lt.gov.state.wi.us). Contact: Ron Martin, WI DNR, 608-266-9270, [martir@dnr.state.wi.us](mailto:martir@dnr.state.wi.us).

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## National ANS Task Force

The Task Force met in Alexandria, Va., on Feb. 28 and March 1 in conjunction with the 11<sup>th</sup> International Conference on Aquatic Invasive Species. During a half day special session, the four regional panels of the Task Force presented perspectives on how to address the issue of

developing consensus for regional ANS policy. The session concluded with open discussion identifying common priorities between regional panels and NISA reauthorization. The Task Force convened after the special session, officially adopting a strategic plan and approving a new structure for committees to better implement plan objectives. Approved were the *Caulerpa taxifolia* Prevention Plan and the Chinese Mitten Crab Management Plan to be released for public review. The Task Force's Ballast Water and Shipping Committee presented a report titled "Recommended Ballast Water Research Priorities" that was approved with the recommendation to distribute to agencies involved in funding ballast water research. Also covered was the "Stop Aquatic Hitchhikers" public awareness campaign ([www.protectyourwaters.net](http://www.protectyourwaters.net)), the Green Crab Control Plan, APHIS's Noxious Weed Plan, a draft screening protocol developed by the Risk Assessment and Management Committee, an overview of the proposed introduction of the non-native Asian oyster to the Chesapeake Bay, and other efforts. Please note that USFWS is back online and meeting minutes will be available in the future on the web site: [www.anstaskforce.gov](http://www.anstaskforce.gov). Contact: Sharon Gross, USFWS, 703-358-2308, [sharon.gross@fws.gov](mailto:sharon.gross@fws.gov).

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## Upcoming Events:

- *Meeting of the Great Lakes Panel on Aquatic Nuisance Species.* Stone Laboratory, Gibraltar Island, Lake Erie; May 29-30, 2002. Contact: Kathe Glassner-Shwayder, Great Lakes Commission, 734-665-9135, [shwayder@glc.org](mailto:shwayder@glc.org).
- *2002 Conference: International Association of Great Lakes Research;* Winnipeg, Manitoba, Canada; June 2-5, 2002. Contact: Frank Lichtkoppler, OH Sea Grant, 430-350-2582, [lichtkoppler.1@osu.edu](mailto:lichtkoppler.1@osu.edu).
- *22<sup>nd</sup> International Symposium of the North American Lake Management Society; A New Frontier: Staking Our Claim in the Management of Our Lakes and Reservoirs,* Anchorage, Ala.; Oct. 30-Nov. 1, 2002. Contact: NALMS office, 608-233-2836, [www.nalms.org](http://www.nalms.org).

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## On The Bookshelf:

- *From Net to Sale: Controlling Aquatic Nuisance Species with the HACCP Approach for Baitfish and Aquaculture Industries* videotape (companion to *ANS-HACCP Training Curriculum*). Contact: Doug Jensen, MN Sea Grant, 218-726-8712, [djensen1@d.umn.edu](mailto:djensen1@d.umn.edu), or your states' Sea Grant office.
- *Exotic Aquatics on the Move Lesson Plans.* CD for teachers (produced by Washington Sea Grant). Contact: Doug Jensen, MN Sea Grant, 218-726-8712, [djensen1@d.umn.edu](mailto:djensen1@d.umn.edu); or Val Eichman, IL-IN Sea Grant, 217-244-8809, [eichman@uiuc.edu](mailto:eichman@uiuc.edu).