

GREAT LAKES INDICATORS TARGET AQUATIC INVASIVE SPECIES

Stacey Cherwaty and Harvey Shear, Environment Canada

The State of the Lakes Ecosystem Conference 2002 (SOLEC), held on Oct. 16-18, 2002, was the fifth biennial conference in which the governments of Canada and the United States assessed and reported on the condition of the Great Lakes basin ecosystem, and on progress toward reaching the goals of the Great Lakes Water Quality Agreement. To determine the health and state of the Great Lakes, a suite of ecosystem indicators was developed for use as a basis for status assessment, monitoring and future research. Indicator topics include non-native species, nutrients, biodiversity and wetlands, land and related use, and human health.

Assessments have been completed on two of the Great Lakes indicators related to aquatic invasive species - *Sea Lamprey* and *Non-Native Species*. The indicator assessment reports are prepared by subject experts. The Sea Lamprey indicator portrays changes in abundance of this non-native species, directly impacting the structure of the fish community and health of the aquatic ecosystem. The 2002 assessment for the Sea Lamprey indicator is *Mixed - Improving*, suggesting that this ecosystem component displays both good and degraded features with improvement of overall conditions moving toward an acceptable state. The abundance of spawning-phase sea lampreys has shown a decline in most of the Great Lakes for 2000-2001. Planned increases in lampricide treatments are predicted to reduce sea lamprey abundance to acceptable levels and meet the fish community objectives established under the aegis of the Great Lakes Fishery Commission.

The Non-Native Species indicator portrays the number of introductions of aquatic and terrestrial organisms not naturally occurring in the Great Lakes, and is used to assess the status of biotic communities in these freshwater and terrestrial basin ecosystems. Non-native species contribute to the deterioration and extirpation of native species, and to the destruction of habitat. Non-native species pose a singularly powerful impediment to

the restoration and maintenance of the biological integrity of the Great Lakes basin, thus jeopardizing "the capacity to support and maintain a balanced, integrated and adaptive biological system having the full range of elements and the processes expected in a region's natural habitat" (definition of biological integrity as used in the SOLEC process). The assessment given for the Non-Native Species indicator was *Poor* in the year 2000, indicating that the Great Lakes ecosystem is severely impacted by non-native species.

Since the 1800s, more than 160 aquatic non-native species have been introduced into the Great Lakes. While researchers are now developing tools to predict potential invaders to the region, it was noted at SOLEC 2002 that it will be difficult to accurately anticipate the *next* invader to the Great Lakes basin, and therefore difficult to predict and prepare for ecological damage that a particular species may cause. Three non-native species have been captured in the St. Lawrence River and Illinois River systems, connected by canals to the Great Lakes. The tench (*Tinca tinca*), a fish species native to Europe, has been captured in a tributary to the St. Lawrence River. Asian carp are now in the Illinois River with only the experimental dispersal barrier in the Chicago Sanitary and Ship Canal preventing migration into the Great Lakes. The Eurasian ruffe (*Gymnocephalus cernuus*), which previously invaded lakes Superior and Huron, was found in northern Lake Michigan in 2002.

The next State of the Great Lakes report will be released in the summer of 2003, providing assessments and information on more than 40 Great Lakes indicators. These assessments will assist state, tribal, provincial and federal agencies in making management decisions. The challenge for the Great Lakes Water Quality Agreement Parties (U.S. and Canada) is to prevent further introductions of non-native species into the Great Lakes basin, and to minimize the damage being caused by existing populations. Further information

about SOLEC is available online at www.binational.net. **Contacts:** Stacey Cherwaty (stacey.cherwaty@ec.gc.ca) and Harvey Shear (harvey.shear@ec.gc.ca), Environment Canada.

Great Lakes Panel Update

The Great Lakes Panel's fall meeting was held Dec. 10-11, 2002, in Ann Arbor, Mich. The meeting provided the opportunity for updates on a number of regional and national activities, including the National Aquatic Invasive Species Act (NAISA), U.S. Coast Guard's standards for ballast water discharge, and the General Accounting Office's Report on Invasive Species. Other issues covered include the Asian carp threat, the ANS dispersal barrier project in the Chicago Sanitary and Ship Canal and the Council of Great Lakes Governors' Ballast Water Initiative. The development of the Panel's model rapid response plan continues, and work has just begun on a monitoring and early detection pilot project for invasive species in the Lake Michigan basin. **Contact:** Kathe Glassner-Shwayder, Great Lakes Commission, 734-971-9135, shwayder@glc.org

Washington Watch

The House and Senate Great Lakes task forces wrote to the U.S. Fish and Wildlife Service Director in October, urging the listing of three species of Asian carp under the Lacey Act. Such a designation would prohibit anyone from importing these fish or moving them via interstate commerce.

In October, the House Subcommittee on Department Operations, Oversight, Nutrition, and Forestry (Agriculture Committee) held an oversight hearing on the issue of invasive species. Testimony is available at <http://agriculture.house.gov/hearings/testimony.htm>. A second joint hearing between the House Subcommittee

on Fisheries Conservation, Wildlife and Oceans (Resources Committee) and the House Subcommittee on Environment, Technology and Standards (Science Committee) was held on the National Aquatic Invasive Species Act (H.R. 5396) and the National Aquatic Research Act (H.R. 5395) in November. The hearing was chaired by Reps. Wayne Gilchrest (MD) and Vernon Ehlers (MD), the lead sponsors of this legislation. Rep. Judy Biggert (IL) made statements concerning the invasive threat of Asian carp to the Great Lakes. Additional information is available at <http://resourcescommittee.house.gov/107congress/fisheries/2002nov14/agenda.htm>. **Contact:** Joy Mulinex, Senate Great Lakes Task Force, Northeast-Midwest Institute, 202-224-1211, joy_mulinex@levin.senate.gov.

Around the Basin:

ILLINOIS: Illinois implemented an emergency rule banning the possession of snakehead fish. On the first day of enactment, USFWS agents confiscated a shipment of 50 snakeheads at O'Hare Airport. Meanwhile, a permanent administrative rule for snakehead and other injurious species has been listed for public comment. IL-IN Sea Grant hosted an ANS-HACCP workshop for USFWS Region 4, which provided information for federal hatchery managers on ways to prevent the introduction and spread of exotic species via hatchery activities. IL-IN Sea Grant will staff a display at the Chicagoland Outdoors Show highlighting how ANS are spread via recreational water users. **Contact:** Pat Charlebois, IL-IN Sea Grant, 847-872-0140, charlebo@uiuc.edu.

INDIANA: The Indiana DNR modified its list of fish species that are illegal to import, possess or release into public waters without a permit. The list includes black carp, bighead carp, silver carp, white perch and 28 species of snakeheads. Anglers who catch one of these fish do not violate the regulation if the fish is killed immediately. An aquaculture permit could be acquired for legitimate medical, educational or scientific research purposes; qualified zoological displays are exempt. The emergency rule became effective Dec. 1, 2002, with the intent of adopting permanent rules in the next year. **Contact:** Gwen White, IN DNR, 317-232-4093, gwhite@dnr.state.in.us.

MICHIGAN: In November, Gov. Engler signed an Executive Order establishing Michigan's Aquatic Nuisance Species Council. The council is created within the Office of the Great Lakes (OGL) as an advisory body to the Office of the Great Lakes and the departments of Environmental Quality, Natural Resources, Agriculture, and Transportation. Chaired by the OGL director, the council will include designees from each mentioned department as well as four public at-large members appointed by

the governor. The charge of the council is to provide advice to the state on implementation of Michigan's *ANS State Management Plan Update* and state efforts to advance ANS prevention and control. The OGL will appoint a coordinator for the council. **Contact:** Emily Finnell, MI DEQ, 517-241-7927, finnelle@michigan.gov.

MINNESOTA: MN Sea Grant is leading efforts to print ANS WATCH cards. Design of two new cards (European Frog-Bit, spiny/fishhook waterfleas) is underway, as well as production of a rusty crayfish card. Card orders will be accepted until early January. MN Sea Grant is hosting a monthly speaker series about Lake Superior, focusing in part on ANS, at the U.S. EPA Laboratory in Duluth. Access to the series is available via live Webcast at www.seagrant.umn.edu/speakerseries/index.html. **Contact:** Doug Jensen, MN Sea Grant, 218-726-8712, djensen1@d.umn.edu.

NEW YORK: There is significant concern in the state regarding the ongoing outbreak of avian botulism in Lake Erie. Ward Stone, New York State's Wildlife Pathologist and his staff have picked up more than 5,500 dead birds along Lake Erie. The report of dead zones in Lake Erie's central basin lends credence to the speculation that the avian botulism outbreak might be linked to zebra/quagga mussels and round gobies. On another note, New York's attorney general has joined with Minnesota, Illinois and Michigan in filing briefs with the U.S. Court of Appeals for the Ninth Circuit regarding EPA's exemption of ballast water discharges from regulation as point source discharges under the Clean Water Act. **Contact:** Timothy Sinnott, NYSDEC, 518-402-8970, txsinnott@gw.dec.state.ny.us.

OHIO: Through administrative rules, it is now unlawful for any person to possess, import or sell live snakeheads (*Channa spp.*, *Parachanna spp.*) in Ohio except for research, or in zoos, public aquariums and public displays with permission from the wildlife chief. Thirteen additional fish species are similarly listed. Legislative support is being pursued for the reauthorization of NISA. **Contact:** Randy Sanders, OH DNR, 614-265-6344, randy.sanders@dnr.state.oh.us.

ONTARIO: The Ontario MNR will host the *12th International Conference on Aquatic Invasive Species* in Windsor, June 9-12, 2003 (www.aquatic-invasive-species-conference.org). In September, the Canadian Council of Fisheries and Aquaculture Ministers approved the formation of a task force to draft a national framework addressing the threat of aquatic invasive species. The task group is co-chaired by Fisheries and Oceans Canada and the Ontario Ministry of Natural Resources. A number of ANS range extensions were reported this summer including the round goby and zebra mussels. The first recorded sighting of water hyacinth occurred in central Ontario,

underscoring the need to better educate water garden hobbyists. **Contact:** Beth MacKay, OMNR, 705-755-1950, beth.mackay@mnr.gov.on.ca.

WISCONSIN: Wisconsin has just completed its first season of watercraft inspections. Eleven watercraft inspectors around the state made thousands of contacts at the boat landings this summer. In addition, they spoke at fishing tournaments and other events and posted signs at launching sites. This summer, four new lakes were added to the list of inland lakes with confirmed zebra mussels. **Contact:** Ron Martin, WI DNR, 608-266-9270, martir@dnr.state.wi.us.

National ANS Task Force

The fall meeting of the ANS Task Force was held on Nov. 13-15, in Honolulu, Hawaii. In addition to the usual Task Force topics of ballast water, regional panel reports and reports from its various committees and working groups, the meeting also covered NISA reauthorization, *Caulerpa taxifolia* activities, the suminoe oyster (*Crassostea ariakensis*) invasion, sanitary and ship canal activities, and the Injurious Wildlife list. The Task Force approved ANS state management plans for Alaska, Maine, Massachusetts and Montana and approved the formation of a Mississippi River Basin Regional Panel.

The meeting focused on Hawaiian invasive species issues and featured a special panel on the brown tree snake. During two field trips, meeting participants visited Kaneohe Bay to see coral reefs impacted by alien algae, and traveled to Hanauma Bay to see a well-preserved reef exhibiting a high level of species diversity. The next Task Force meeting will be scheduled for the spring. **Contact:** Sharon Gross, U.S. Fish and Wildlife Service, 703-358-2308, sharon_gross@fws.gov, or Joe Starinchak, U.S. Fish and Wildlife Service, 703-358-2018, joe_starinchak@fws.gov.

Upcoming Events:

- *12th International Conference on Aquatic Invasive Species*, Windsor, Ontario, June 9-12, 2003. For more information visit www.aquatic-invasive-species-conference.org

On The Bookshelf:

- *An Evaluation of the National Invasive Species Act To Support Its Reauthorization: Proceedings Document of the Symposium Looking Forward, Looking Back: Assessing Aquatic Nuisance Species Prevention and Control*. Great Lakes Panel on Aquatic Nuisance Species (Sarah Whitney, primary author). Nov. 2002. **Contact:** Sarah Whitney, Great Lakes Commission, 734-971-9135, swhitney@glc.org.