

## Mail-order Sales of Aquatic Plants: A Pathway for ANS Introduction

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There has been a dramatic increase recently in mail-order sales of aquatic plants, fueled by interest in water gardening and lake and shoreline restorations. Sales in the aquatic gardening industry alone have reached approximately \$1 billion per year. The possibility of an aquatic nuisance plant invasion is greatly increased by the improper disposal of aquarium or water garden plants, or by lake/shoreline restorations conducted with undesirable plants or plants that have undesirable organisms attached to them. The large-scale distribution of aquatic plants through mail-order sales raises the prospect that this commercial activity may be a significant pathway for the introduction of nonindigenous aquatic nuisance species (ANS), posing serious ecological and economic risks. In order to help develop and implement effective prevention measures, it is important to better understand the pathway of nonindigenous aquatic plant introduction through mail-order sales.

To investigate the potential for aquatic plant sales to act as a vector of ANS introduction, Minnesota Sea Grant and the Minnesota Department of Natural Resources supported a study by the University of Minnesota that looked at aquatic plant vendors in three categories: water garden specialist, aquarium specialist, and general garden business. The study examined three issues: the intentional sale of illegal aquatic plants, the unintentional shipment of illegal plants, and the unintentional shipment of other organisms. As part of the study, 40 orders were placed with vendors across the United States for aquatic plants typical of those used by water garden hobbyists. To determine whether current regulations are effective in preventing the sale of aquatic nuisance plants, orders were submitted for particular plants classified as noxious weeds under federal law and prohibited exotic species under Minnesota law. Upon the arrival of the plant purchases, the contents were examined for the unintentional inclusion of other plants and organisms, particularly those classified as noxious weeds and prohibited species.

The 40 orders represented a total of 123 taxa and 681 individual plants, although many additional organisms were received. Upon closer examination, 93 percent of the orders contained additional plants, animals, fungi and algae. For instance, 75 percent of the orders had duckweed (*Lemna minor*) adhered to plants. While duckweed may not be considered an invasive species in northern regions, it is invasive in southern climates with potential problems posed by the increased movement of genetic material.

Other plants classified as aquatic nuisance species were unintentionally included in 10 percent of the orders: hydrilla (*Hydrilla verticillata*), giant salvinia (*Salvinia molesta*), purple loosestrife (*Lythrum salicaria*) and curly leaf pond weed (*Potamogeton crispus*). These four plants are causing problems all around the country and are some of the most destructive aquatic nuisance plants in the world.

In this study, to determine if communication between sellers and regulators was adequate to prevent the sale and distribution of ANS via mail-order, orders were submitted for federal noxious weeds and Minnesota-prohibited exotic species. It was found that 13 of the 14 orders submitted for aquatic nuisance plants were filled, reflecting a violation rate of 93 percent. These plants included East Indian hygrophylla and Sessile joyweed (plants illegal to move across state lines) and flowering rush, European frogbit, purple loosestrife and curly leaf pondweed (plants illegal to possess, import, purchase, transport or introduce in Minnesota).

To get a sense of the potential impact of aquatic plant sales, let us assume that there are approximately 10 million individual purchases of aquatic plants each year. If 10 percent of these purchases include an unintentional ANS introduction, there would be one million annual opportunities for an invasive aquatic plant to be introduced to an environment where it could become established as a reproducing population.

The findings of this study on mail-

order aquatic plant sales clearly indicate the need to raise awareness among riparian land owners, water gardeners, resource managers and policymakers regarding the risks associated with the sale and use of aquatic plants. Outreach efforts must also encourage practices needed to properly clean and dispose of plants, and how to keep informed on the availability of alternative native plants. Continued state programmatic evaluation is important to identify and resolve gaps associated with this pathway and prevent the introduction of aquatic invasive species.

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### Great Lakes Panel Update

The Great Lakes Panel's summer meeting was held July 22-23 in Ann Arbor, Mich. Updates were provided on a number of regional and federal issues, including the National Aquatic Invasive Species Act (NAISA), the national ANS Task Force, the National Invasive Species Council, and the U.S. Coast Guard's ballast water standards. Panel election results were announced, with Roger Eberhardt, Michigan Dept. of Environmental Quality, elected the new Panel chair and Marc Tuchman, U.S. EPA, Great Lakes National Program Office, elected vice-chair. Other issues included an update on the dispersal barrier project and associated rapid response planning for the Asian carp; a memorandum of agreement by the Midwest Natural Resources Group to meet the threat of invasive species; methodologies under development to predict nonindigenous fish invasions; and the status of ruffe expansion into Lake Michigan. The future direction of the Panel was also discussed. The Panel meeting preceded the workshop, "Rapid Response Plan for Great Lakes Aquatic Invasions" on July 23-24. **Contact:** Kathe Glassner-Shwayder, Great Lakes Commission, 734-971-9135, ext. 108, shwayder@glc.org.

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## Washington Watch

On June 17<sup>th</sup>, the Senate Environment and Public Works Subcommittee on Fisheries, Wildlife, and Water held a legislative hearing on S. 525, the *National Aquatic Invasive Species Act of 2003*. Testimony may be found at [http://epw.senate.gov/stm1\\_108.htm#06-17-03](http://epw.senate.gov/stm1_108.htm#06-17-03). The legislation will reauthorize and strengthen the National Invasive Species Act. Additional information on the bill may be found at <http://www.nemw.org/biopollute.htm#laws>. In early June, the House Science Committee marked up H.R. 1081, the *Aquatic Invasive Species Research Act*, aimed at addressing the growing problems of aquatic invasive species and harmful algal blooms. On April 29<sup>th</sup>, the House Resources Committee's Subcommittees on Fisheries Conservation, Wildlife and Oceans, and National Parks, Recreation, and Public Lands held a joint oversight hearing on the growing problem of terrestrial and aquatic invasive species. Additional information may be found at <http://resourcescommittee.house.gov/108cong/fish/2003apr29/agenda.htm>. **Contact:** Joy Mulinex, Senate Great Lakes Task Force, Northeast-Midwest Institute, 202-224-1211, [joy\\_mulinex@levin.senate.gov](mailto:joy_mulinex@levin.senate.gov)

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## Around the Basin

**ILLINOIS:** A bighead carp was caught in McKinley Lagoon in Chicago in June. DNR fisheries staff electro-fished the lagoon the following week and found no other bigheads. Illinois-Indiana Sea Grant is producing a bighead and silver carp WATCH ID card that will be available by fall. Illinois-Indiana Sea Grant and the Illinois DNR, with USFWS funding, sponsored six ANS workshops for state conservation police officers. These workshops included an overview of the ANS issue and Illinois ANS laws, as well as a hands-on identification session. The City of Chicago, U.S. EPA and the U.S. Fish and Wildlife Service hosted an invasive species barrier summit in mid-May in Chicago to provide ideas for an ultimate species barrier between the Great Lakes and Mississippi River basins. **Contact:** Pat Charlebois, IL-IN Sea Grant, 847-872-0140, [charlebo@uiuc.edu](mailto:charlebo@uiuc.edu).

**INDIANA:** In February, the Indiana DNR Division of Fish and Wildlife contracted with project facilitators D.J. Case & Associates to develop a state Aquatic Nuisance Species (ANS) Management Plan. Since the first public meeting in April, more than 120 stakeholders have been contacted to obtain opinions on priority ANS topics. The draft plan is currently in development. State agencies also are conducting a comprehensive review of regulatory authorities that address ANS. Information has been posted to a new statewide web site [www.invasivespecies.in.gov](http://www.invasivespecies.in.gov). **Contact:** Gwen White, D.J. Case & Associates, 317-931-0908, [gwen@djcase.com](mailto:gwen@djcase.com).

**MICHIGAN:** Governor Granholm proclaimed May 31-June 7 as Aquatic Nuisance Species Awareness Week in an effort to protect against potential ANS invasion and spread throughout the state. Tip of the Mitt Watershed Council's Great Lakes Aquatic Habitat Network and Fund awarded nine grants totaling \$13,000 to various grassroots groups throughout the state to raise ANS awareness. **Contact:** Emily Finnell, MDEQ, 517-241-7927, [finnelle@michigan.gov](mailto:finnelle@michigan.gov).

**MINNESOTA:** Led by Minnesota Sea Grant, two multistate aquatic nuisance outreach projects totaling \$286,200 were awarded by the National Sea Grant College Program. One project, *Preventing New Introductions of Invasive Aquatic Plants from Water Gardening and Shoreline Restoration*, will develop an educational campaign model to prevent the spread of invasive aquatic plants. The other, *A National Aquatic Nuisance Species (ANS) Outreach Campaign for the Aquarium Industry and Hobbyist Consumers*, will develop a strategic national campaign designed to change attitudes and behaviors within the aquarium industry and among hobbyists in order to prevent the accidental spread of aquarium plants and animals. **Contact:** Doug Jensen, MN Sea Grant, 218-726-8712, [djensen1@d.umn.edu](mailto:djensen1@d.umn.edu).

**ONTARIO:** Ontario continues to work with other provincial, territorial and federal government agencies to develop a National Alien Invasive Species Strategy to address both terrestrial and aquatic invading species. Thematic working groups have been established and stakeholders will be consulted as the plan is drafted over the next year, with implementation expected in FY04/05. With funding made available to the province through the Canada-Ontario Agreement, Ontario is enhancing existing public awareness, and monitoring and research programs related to aquatic invading species over the next 3-4 years. **Contact:** Beth MacKay, OMNR, 705-755-1950, [beth.mackay@mnr.gov.on.ca](mailto:beth.mackay@mnr.gov.on.ca).

**PENNSYLVANIA:** Biologists with the Erie County Department of Health and the Pennsylvania Department of Environmental Protection recently documented an apparent range expansion of the rudd (*Scardinius erythrophthalmus*) into Lake Erie. Four adult rudd were collected from trap nets set in Presque Isle Bay, Lake Erie, in May. At the 3rd Binational Conference on Botulism in Lake Erie, scientists presented strong evidence that quagga mussels are acting as a vector for botulism transmission to round gobies and waterfowl. Pennsylvania DEP and Sea Grant held the workshop "Lake Erie Aquatic Exotics Squad" in May to train volunteers to monitor local lakes and streams for aquatic invasive species. The Pennsylvania Fish and Boat Commission has proposed a rule to prohibit possession, introduction, importation, and transport of live snakeheads; black, bighead, and silver carp; zebra and quagga mussels; and round and tubenose gobies. **Contact:** Kirsten

Wakefield, PA Coastal Zone Management Program, 717-783-6395, [c-kwakefie@state.pa.us](mailto:c-kwakefie@state.pa.us).

**WISCONSIN:** The DNR has developed a bait poster, *Help prevent the spread of invasive animals and plants*, for distribution to bait dealers statewide. The poster highlights invasive species not to be contained in bait minnow tanks. The poster also alerts bait dealers, their employees, and anglers about how they can help prevent the spread of harmful aquatic exotic plants and animals. In the 2003-05 biennial state budget, funding for the baseline state programs would approximately double for each year of the biennium. In addition, new funding would be available for local communities, to be administered by DNR, for aquatic invasive species efforts. A final draft of the state comprehensive plan for Wisconsin will be submitted to the ANS Task Force for approval this fall. **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 spring meeting of the Aquatic Nuisance Species Task Force was held May 13-14, in New Orleans, La. Topics included ballast water, regional panel reports, and reports from its various committees and working groups as well as a discussion on coordination of ANS rapid response efforts. A special session included discussions on the Gulf of Mexico ballast water workshops, information management in the Gulf Region, and specific species including: nutria, salvinia molesta, Nile tilapia, Rio Grande cichlid and water hyacinth. The minutes of last fall's meeting in Hawaii will soon be available at [www.anstaskforce.gov/](http://www.anstaskforce.gov/). **Contact:** Sharon Gross, ANS Task Force, 703-358-2308, [sharon\\_gross@fws.gov](mailto:sharon_gross@fws.gov).

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## Upcoming Events

- ♦ *Ballast Water Workshop*, October 27-28, 2003, Halifax Nova Scotia. **Contact:** Gayle Sherman, [gsherman@mit.edu](mailto:gsherman@mit.edu).
- ♦ *Joint Meeting of the National Invasive Species Council and Invasive Species Advisory Committee*, October 29-30, 2003, Washington D.C. **Contact:** Lori Williams, National Invasive Species Council, 202-513-7243, [Lori\\_Williams@ios.doi.gov](mailto:Lori_Williams@ios.doi.gov).

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## On The Bookshelf

- ♦ *Attention BWCAW Visitors: Stop Invasive Hitchhikers!* A poster designed for access to Boundary Waters Canoe Area Wilderness (BWCAW), featuring pictures of eight terrestrial and aquatic invasive species of concern and how to prevent their spread. **Contact:** Jack Greenlee, U.S. Forest Service, 218-229-8800, [jackgreenlee@fs.fed.us](mailto:jackgreenlee@fs.fed.us).

