GLP Member Updates - Spring 2011

The following updates were provided for the May 17-18, 2011 meeting of the Great Lakes Panel in Milwaukee, Wisc.

Federal

U.S. Fish and Wildlife Service

[insert update here]

Contact:

U.S. Geological Survey

[insert update here]

Contact:

U.S. Environmental Protection Agency

[insert update here]

Contact:

U.S. Coast Guard

The Department of Homeland Security, through the U.S. Coast Guard, is authorized by Congress to develop a national regulatory program to prevent the introduction and spread of aquatic nonindigenous species (NIS) into U.S. waters via ballast water discharges from vessels. By direction of the Nonindigenous Aquatic Nuisance Prevention and Control Act of 1990 (NANPCA) and the National Invasive Species Act of 1996 (NISA), the Coast Guard has promulgated several regulations and continues to develop future regulations to address this issue.

The current ballast water management requirements in the Great Lakes and the St. Lawrence Seaway system are among the most stringent in the

world. Mandatory ballast water regulations that include saltwater flushing, detailed documentation requirements, increased inspections, and civil penalties provide a comprehensive regulatory enforcement regime to protect the Great Lakes. U.S. and Canadian regulations now require all ships destined for Seaway and Great Lakes ports from beyond the exclusive economic zone to exchange all their ballast tanks at sea or flush their residuals.

In 2010, 100% of vessels bound for the Great Lakes Seaway from outside the Exclusive Economic Zone (EEZ) received ballast tank exams on each Seaway transit. All 7754 ballast tanks, during 415 vessel transits, were assessed. Vessels that did not exchange their ballast water or flush their ballast tanks were required to either retain the ballast water and residuals on board, treat the ballast water in an environmentally sound and approved manner, or return to sea to conduct a ballast water exchange. Vessels that were unable to exchange their ballast water/residuals and that were required to retain them onboard, received a verification boarding during their outbound transit prior to exiting the Seaway. In addition, 100% of ballast water reporting forms were screened to assess ballast water history, compliance, voyage information and proposed discharge location. The BWWG anticipates continued high vessel compliance rates for the 2011 navigation season. Independent research by the Fisheries and Oceans Canada (Science) indicates that the risk of a ballast water mediated introduction of aquatic invasive species into the Great Lakes has been mitigated to extremely low levels.

In addition to the current regulations and policies, the Coast Guard is engaged in a rulemaking that would set a performance standard for the quality of ballast water discharged in U.S. waters. This rulemaking is being carried out under NANPCA and NISA, which authorize the Coast Guard to approve alternative ballast water management systems (BWMS) that are found to be at least as effective as mid-ocean ballast water exchange (BWE) in preventing NIS introductions. The rulemaking is entitled "Standards for Living Organisms in Ships' Ballast Water Discharged in U.S. Waters," and documents and public comments relating to the rulemaking can be found at http://dms.dot.gov under docket number USCG-2001-10486. The Final Rule was scheduled to be published in April of 2011. A revised publication date should be forthcoming.

Additional information on Coast Guard involvement with ballast water enforcement/regulation can be found at District Nine Public Affairs (http://www.d9publicaffairs.com/go/doctype/443/31154/) and the Coast Guard Headquarters Environmental Standards Division (http://www.uscg.mil/hq/cg5/cg522/cg5224/).

Contact: Mr. Lorne Thomas, Governmental Affairs Officer, Ninth CG District (216) 902-6022, Lorne.W.Thomas@uscg.mil

U.S. Army Corps of Engineers

[insert update here]

Contact: Jim Galloway, 313-226-6760, Jim.E.Galloway@usace.army.mil

National Oceanic and Atmospheric Administration

GLANSIS - The [Great Lakes Aquatic Nonindigenous Species Information System|http://www.glerl.noaa.gov/res/Programs/glansis/glansis.html] is a NOAA-funded project to compile and provide access to information on all established nonindigenous species in the Great Lakes. GLANSIS functions as a Great Lakes specific node of the USGS NAS national database. The GLANSIS project has received funding under the Great Lakes Restoration initiative for several improvements in support of early detection and rapid response. These Include:

- Addition of 'range expansion' species - those native to one portion of the Great Lakes but which are considered invasive to other portions of the basin.
- Addition of high priority 'watchlist' species - those which have been identified in the literature as high risk for invading and becoming established in the Great Lakes.
- Updated and consistent 'impact' information, especially potential impacts, better able to risk assessment
- Addition of management information — regulations, best management practices and control methodologies - for all the species in the database.
- Enhanced bibliographic information.
- Addition of non-technical fact sheets for priority species of public interest.

The list of range expansion species is currently out for review. A draft will be available at the Panel meeting. The watchlist of 53 high-risk species was published to the GLANSIS site earlier this spring. Fact sheets for both the range expansion and watchlist species are in progress with the suite anticipated to be available by the fall panel meeting. Impact assessment for the fauna are complete and both the NOAA technical report and the revised

fact sheets are out for review. Draft summary of the findings will be presented at the meeting. Impact assessments for plants and microorganisms are anticipated to be completed by the fall panel meeting. See attachments.

Contact: Rochelle Sturtevant, 734-741-2287, rochelle.sturtevant@noaa.gov

National Park Service

Botulism

NPS and partners continue to address possible relationships between ANS and botulism outbreaks at Sleeping Bear Dunes National Lakeshore through modern food web studies as well as paleolimnological analysis. In 2011, NPS and partners will conduct high frequency monitoring of weather, water chemistry, hydrodynamics, and biological attributes (including ANS) at a site in Good Harbor, near Leland, Michigan, and will relate these factors to outbreaks of avian botulism. Additionally, the group will regularly collect and analyze key ANS (e.g., dreissenids and round gobies) for presence of the botulinum toxin gene.

Spiny Water Flea

NPS and Michigan Technological University continue to investigate the effects of spiny water fleas on inland lake food webs at Pictured Rocks National Lakeshore and Voyaguers National Park, and hope to complete work on this project in 2011.

Zebra Mussels

NPS staff are monitoring coastal embayments at Isle Royale National Park following the 2009 discovery of zebra mussels near a dock there. Further, NPS and cooperators from Michigan Technological University are modeling how water exchange between harbors and coastal zones affect the transport of dreissenid veligers and the likelihood of dreissenid establishment at Isle Royale.

Native Lamprey

We are beginning to address the status and distribution of native lamprey in Great Lakes national parks through a 2011 GLRI project. We hope to use such information to improve management of these native species in the context of sea lamprey control efforts.

Ballast Water

The threat of invasive species from ballast discharges remains high given the Coast Guard's 2025 projection for full regulatory implementation and a 3-

year minimum for technology approvals. Isle Royale N.P. is working to implement NPS' zero organism release standard by instituting treatment on Isle Royale's passenger vessel, the Ranger III, pursuing development of emergency treatment procedures and technology, and shepherding development of technology for permanent installation on Great Lakes freighters. Freshwater vessels similar to those in the Great Lakes have been overlooked by technology developers due to the small fleet size. The lack of preventative measures on Great Lakes freight vessels is a particular problem for Isle Royale due to shipping lanes running through jurisdictional waters and the risk of grounding. Releases in the Great Lakes have the potential to affect all regional parks with aquatic resources that are connected hydrologically or through human use.

Emergency ballast treatment systems are needed in case of vessels groundings with untreated ballast, failure of ballast treatment systems, and as an interim method of treatment until full regulatory implementation. Isle Royale N.P., Superintendent Green is coordinating development of a skid-mounted system with the U.S. Maritime Administration and will conduct testing with the Great Ships Initiative. Superintendent Green is also coordinating development of a promising technology for freshwater vessel ballast treatment created by USGS scientists. The team will conduct ship trials this summer aboard a Great Lakes freight vessel.

Contact: Gary Vequist, Associate Regional Director, Natural Resources Stewardship and Science, Midwest Region, 402-661-1860, gary_vequist@nps.gov.

State / Provincial

Illinois

[insert update here]

Contact: Pat Charlebois, 847-242-6441, charlebo@illinois.edu.

Indiana

Although wet weather has settled over Indiana in late winter and so far this spring, the recently installed fence at Eagle Marsh in Fort Wayne designed to block the movement of Asian carp has not experienced flooding substantial enough to force water over the watershed divide. Fortunately we have USGS water stage gauges on either side of the fence feeding data in real-time so we can monitor flooding

A number of studies are underway to understand more about Asian carp and their movements near the Ft. Wayne watershed connection and in the upper Wabash River. Indiana DNR contracted with Notre Dame to perform Asian carp eDNA analysis on each side of the watershed divide in the fall of 2010. There was no Asian carp DNA detected in any of the samples. With the extremely low water in late 2010 due to drought, any Asian carp that may have previously been in the upper Wabash watershed likely moved downstream in search of more water. Additional eDNA work is planned for late spring/early summer 2011 when water levels are higher and Asian carp will likely be more mobile due to spawning. Indiana DNR has also contracted with Purdue to assess Asian carp movement and spawning in the upper Wabash. We plan to have 100 radio tagged Asian carp in the Wabash River yet this spring, but due to high water levels only 25 have been tagged so far. We hope to learn how far up in the Wabash they actually spawn to possibly aid in predicting potential spawning rivers in the Great Lakes watershed should they establish a population. All of our Asian carp work is funded through the Great Lakes Restoration Initiative (GLRI).

Using GLRI funding, we will be continuing our assault on newly invading aquatic plants. Our 5th consecutive year for a whole-lake Sonar treatment will occur at Lake Manitou in our battle against hydrilla. Through 4 years we have achieved a 99% reduction in hydrilla tuber abundance. We will be into a third year of parrot feather eradication at a small natural lake in northeast Indiana although we are now more into monitoring rather than chemical treatment because only one small sprig was found in 2010. One of the most difficult new invaders we have encountered has been starry stonewort which is now in three natural lakes in northeast Indiana. This macroalgae has proven very difficult to control but we continue to try different chemical prescriptions with hopes of finding one that is effective at eliminating the plant. Finally, this year we will also take a much more aggressive role in treating Eurasian watermilfoil at some of our high use public waters that have had very little attention paid to them.

Contact: Doug Keller, AIS Coordinator; Indiana Department of Natural Resources; 402 W. Washington St, Rm W273; Indianapolis, IN 46204; 317-234-3883; dkeller@dnr.in.gov.

Michigan

[insert update here]

Contact: Roger Eberhardt, Michigan Department of Natural Resources and Environment, Office of the Great Lakes, P.O. Box 30473, Lansing, MI 48909; 517-335-4227; eberhardtr@michigan.gov.

Minnesota

[insert update here]

Contact: Luke Skinner, Invasive Species Program Supervisor, MN DNR, 500 Lafayette Road, Box 25, St. Paul, MN 55155-4025; 651-259-5140; luke.skinner@state.mn.us

New York

Ballast water management requirements, implemented via Letter of Certification to the EPA VGP, requires the installation of treatment technology to meet a discharge standard ~ 100 x IMO by January 2012. Approximately 1400 letters requesting an extension to this date were received. Department of Environmental Conservation replies granted these requests by extending the implementation date for Condition 2 to August 2013. Extension request regarding Condition 3, ~1000 x IMO for new vessels, are due June 30, 2011. The Department has received letters requesting additional time to develop such, and therefore, will accept extension requests pertaining to Condition 3 if received by September 30, 2011.

A joint operation involving the Queens District Attorney's Office, New York State Department of Environmental Conservation and US Fish and Wildlife Service resulted in an arrest for illegal importation of live Snakehead fish. Several Invasive Species Council member agencies and interested stakeholders met several times to discuss opportunities for reducing the risk of introduction or transfer of nonnative invasive species via the Champlain and Erie Canal system. A two day Invasive Species Symposium: Databases and Beyond was held in conjunction with the 2011 Northeast Natural History Conference. The Saint Lawrence-Eastern Lake Ontario Partnership for Regional Invasive Species Management contract has been awarded, bringing the number of funded Partnerships to 4.The release of two GLRI RFPs in spring 2011 provided opportunities for potential project implementation, with a focus on Invasive Species Prevention and Control and the State's Aquatic Nuisance Species Management Plan. Office of Invasive Species Coordination staff coordinated the development and prioritization of a number of proposals with interested stakeholders.

Contact: David Adams, 518-402-9149, djadams@gw.dec.state.ny.us

Ohio

[insert update here]

Contact: John Navarro, ODNR Division of Wildlife, 614-265-6346, john.navarro@dnr.state.oh.us

Ontario

The Ontario Invasive Species Strategic Plan (OISSP) was posted on the Environmental Registry for public comment in early May. The OISSP outlines priority actions for the province with respect to both terrestrial and aquatic invasive species. The plan is led by the Ontario Ministry of Natural Resources (OMNR) in collaboration with the Ontario Ministry of Agriculture and Rural Affairs, Ontario Ministry of Transportation and Ontario Ministry of Environment. The plan highlights existing work, gaps in current response and areas for future work and collaboration. The goals of the plan are complementary to the National Strategy on Invasive Alien Species, focusing upon prevention, early detection, rapid response and management/control.

Work is ongoing on the development of an Asian Carp Response Plan for Ontario led by OMNR and Fisheries and Oceans Canada. Stakeholders as well as various federal and provincial government departments, participated in a tabletop exercise held in March 2011 to test Ontario's response capacity in the event of an Asian Carp discovery in Ontario waters. The feedback and comments received from the tabletop exercise were extremely valuable and are being incorporated into the next version of the response plan.

Work on the development of the federal/provincial Invasive Species Research Centre continues in Sault Ste. Marie, with the completion of construction of the core building in March 2011. A call for research proposals was issued in February/March 2011.

Plans are in development for continuation of control/eradication programs for the invasive aquatic plants' Water Soldier (Stratiotes aloides) and European Water Chestnut (Trapa natans) in the Trent Severn Waterway and Ottawa river respectively.

Documents outlining the best management practices for Common Reed (Phragmites australis) and Giant Hogweed (Heracleum mantegazzianum) are in various stages of development, and it is anticipated that they will be available for review in the late spring/early summer.

Contact: Francine MacDonald, OMNR, Biodiversity Policy Section, 705-755-5136, francine.macdonald@ontario.ca

Pennsylvania

[insert update here]

Contact: Jim Grazio, 814-217-9636. jagrazio@state.pa.us

Quebec

Québec was the host of the Northeast Aquatic Nuisance Species (NEANS) Panel spring meeting from April 27-28 2011. A HACCP training was provided by US Fish and Wildlife prior to the meeting. The agenda and presentations can be accessed at: http://www.northeastans.org/docs/meetings/201104/. The Ministère du Développement durable, de l'Environnement et des Parcs (MDDEP - Sustainable Development, Environment and Parks) is developing a protocol for the detection and monitoring of 13 aquatic invasive plants for its Volunteer Lake Monitoring Program. A pilot project with 50 lakes will start this summer to test the protocol and it will be made available to the 656 lakes of the network in 2012. Identification tools like plastic cards, a taxonomic key and a virtual herbarium will be developed for the network and will be posted on MDDEP Web site in 2012.

The implementation of the ministry's action plan on invasive species will start in 2011. Prevention, detection and management are the main issues of the action plan are: prevention, detection and management. A new financial agreement was signed for 2010-2015 the water chestnut eradication program to make sure that all the necessary resources will be available to eradicate the plant. A mobile application for phone iPhone, iPad and iPod touch to detect exotic invasive plants is under development for a citizen scientist network.

Asian clam was detected in 2009 in the St. Lawrence river near a nuclar power plant in Gentilly. The Ministère des Ressources naturelles et de la Faune (MRNF - Natural Resources and Wildlife) started a research project to determine its location in the river and determine if it can survive in colder water, outside the influence of the thermal plume of the power plant. MRNF is developing a strategy and an action plan on exotic invasive animals.

Contact: Isabelle Simard, 418-521-3907 # 4417, isabelle.simard@mddep.gouv.qc.ca.

Wisconsin

On the local level the Wisconsin AIS Partnership is busy implementing the GLRI funded projects. This has enabled Wisconsin to increase it's capacity for AIS monitoring, outreach and education in the Great Lakes basin. Using contracts with UW Oshkosh, UW Sea Grant and UW Madison the Partnership has increased it presence at boat launches doing Clean Boats Clean Waters Programs, and is developing AIS messages that target key user groups while at the same time evaluating the effectiveness of those messages. In addition $600,000 has been distributed to a variety of grant eligible recipients for AIS Coordinators at the county level, nonprofit organizations, or municipalities. We have implemented a media campaign that uses TV (cable) and radio to extend our reach to key audiences. Wisconsin is also initiating an AIS monitoring program that will determine the rate of spread in the state. This will be the ultimate judge of our education and outreach programs. Collecting presence absence data from 200 lakes a year for a period of five years will enable us to determine if the rate of AIS spread in increasing, decreasing or remaining the same.

On a more national level Wisconsin has been present at the ANS Task Force Panel meetings (Great Lakes Panel and Mississippi River Basin Panel). In addition, Wisconsin continues to cooperate with the US ACOE on the Great Lakes Mississippi River Interbasin Study (GLMRIS) to evaluate the potential for interbasin exchange of AIS. The ACRCC (Asian Carp Regional Coordinating Committee) is also requiring a fair amount of time as Wisconsin continues to be on the next frontier for Asian Carp.

Contact:

Regional/Binational

International Joint Commission

[insert update here]

Contact:

Great Lakes Fishery Commission

[insert update here]

Contact:

Great Lakes Commission

An update on GLP activites, as reported to the ANS Task Force at their spring meeting, is provided as an attachment to this page. The following is an update on other GLC AIS initiatives.

Asian Carp and the Chicago Waterway System

In response to the imminent threat of Asian carp invasion into Lake Michigan, the Commission and the Great Lakes and St. Lawrence Cities Initiative (GLSLCI) are working collaboratively on a study to develop and evaluate scenarios for separating the Mississippi River and Great Lakes watersheds. The initiative, with funding from the Joyce Foundation, the C.S. Mott Foundation, the Great Lakes Fishery Trust, the Great Lakes Protection Fund, the Wege Foundation and the Frey Foundation, will evaluate the economic, technical, and ecological feasibility of ecological separation by illustrating scenarios to achieve it, along with associated costs, impacts and potential benefits of a re-engineered hydrologic system for greater Chicago. Project activities will play an important role in addressing the Commission's resolution "Actions to Address the Threat to the Great Lakes from Asian Carp" passed in February 2010.

Phragmites Management and Control

The Commission, in cooperation with the Michigan departments of Natural Resources and Environmental Quality, hosted *Phragmites Invasions in Michigan: A Symposium to Build Capacity for Management*, on March 28-30, 2011 at the Kellogg Hotel and Conference Center in East Lansing, Mich. The symposium featured plenary sessions on current and future invasive phragmites management and control efforts and technologies. In addition, a series of breakout sessions were offered on topics including building organizational capacity, policy and regulations, case studies in collaborative management, and distribution and mapping. The symposium is being held as part of a broader initiative to develop a strategic framework to advance phragmites management and control in Michigan with relevance to the Great Lakes region. Refer to http://www.glc.org/ans/initiatives.html#phrag for more information.

Publication on Prevention of Asian Carp Invasion into the Great Lakes

The article, *Halting the Invasion: Maintaining the Health of the Great Lakes and Mississippi River Basins by Preventing Further Exchange of Aquatic*

Invasive Species, co-authored by Anjali G. Patel, Katherine Glassner-Shwayder and Tim Eder, has been published in the journal, Environmental Practice Vol. 12, No. 4 (December 2010). The article is available online at http://www.glc.org/ans/pubs.html#halt.

Contact: Kathe Glassner-Shwayder, 734-971-9135, shwayder@glc.org.

Canadian Federal

Transport Canada / Fisheries and Oceans Canada

Ballast Water Activities:
Transport Canada (TC) and Fisheries and Oceans Canada (DFO) have completed an evaluation of the efficacy of the current ballast water management program for the Great Lakes (Journal of Environmental Science and Technology 45: 2554-2561). While results are very positive, Canada has already harmonized regulations with the Ballast Water Convention at the International Maritime Organization (IMO), which will phase in requirements for treatment technologies. DFO is now examining if using ballast water treatment technologies in combination with ballast water exchange will provide a feasible means to enhance protection for Great Lakes' freshwater ports against AIS beyond the IMO D-2 discharge standard.

TC, the USCG, and both Seaway Corporations continue to cooperate in the joint enforcement program in Montreal. In 2010, 100% of vessels bound for the Great Lakes Seaway received administrative review, while 7347 ballast tanks (94.8%) were physically sampled. Vessel compliance rates remained high in 2010 (93.8% of all ballast tanks in compliance). Vessels that did not exchange their ballast water or flush their ballast tanks were required to either retain the ballast water and residuals on board, treat the ballast water in an environmentally sound and approved manner, or return to sea to conduct a ballast water exchange. Vessels that were unable to exchange their ballast water/residuals and that were required to retain them onboard, received a verification boarding during their outbound transit prior to exiting the Seaway.

Non-Ballast Water AIS Activities:
DFO, in collaboration with the Ontario Ministry of Natural Resources, McGill University, University of Waterloo, St. Lawrence River Institute and Environment Canada, is conducting research activities in the nearshore of Lake Ontario and the St. Lawrence River to better understand the distribution, abundance, predators, and impacts of the bloody red shrimp

(*Hemimysis anomala*) a recent invader of the Great Lakes. Sampling will also be conducted at a known lake trout spawning reef in Lake Ontario where goby predation on Hemimysis has been documented to evaluate patterns of seasonal and temporal variation of Hemimysis and to make estimates of 'emergent' Hemimysis at this reef. *Hemimysis* has had significant impacts in invaded ecosystems in Europe, however, these are very different ecosystems from the Great Lakes. Current research is aimed at determining if ecological processes in the Great Lakes will moderate previously observed impacts

Centre of Expertise for Aquatic Risk Assessment (CEARA) - DFO's CEARA plans to continue with several pathway risk assessments: aquarium, water garden, baitfish, live food, ballast water and recreational boating, pending funding. The ship-mediated risk assessments for the Great Lakes and Arctic were completed and peer reviewed this spring. Work continues on the next phase of the ship-mediated risk assessment, focussing on the Pacific and Atlantic coasts. The information from all four areas will feed into a national assessment of the ship-mediated pathway. We also plan to continue participating in a larger project (led by Oregon Sea Grant) to gather data on the biological supply house as a potential pathway for AIS; the Great Lakes is one of the focus areas of that project. Biological synopses were completed for Tench (*TInca tinca*) and *Garra rufa* ("pedicure fish). Work is underway to complete a national recreational boating pathway, includes the Great Lakes. CEARA is leading a bi-national risk assessment for Asian carps which will target the Great Lakes to provide advice on key questions to inform prevention, monitoring and control actions. Work on this project is on schedule and will be completed before the end of 2011. All completed documents associated with CEARA are available at: http://www.dfo-mpo.gc.ca/science/coe-cde/ceara/index-eng.htm

Contacts: Sarah Bailey, sarah.bailey@dfo-mpo.gc.ca
Chris Wiley, chris.wiley@dfo-mpo.gc.ca

Tribal Authorities

Chippewa Ottawa Resource Authority

CORA represents five tribes in Michigan with regard to the tribes' commercial and subsistence fisheries in the 1836 treaty-ceded waters of Lakes Huron, Michigan and Superior. The tribes which are party to the 1836 Treaty are the Bay Mills Indian Community, Grand Traverse Band of Ottawa and Chippewa Indians, Little River Band of Ottawa Indians, Little Traverse Bay Bands of Odawa Indians and Sault Ste. Marie Tribe of Chippewa Indians.

CORA, through the Inter-Tribal Fisheries and Assessment Program, participates on the Council of Lake Committees under the Great Lakes Fishery Commission and is helping to establish sea lamprey control plans for Lakes Huron, Michigan and Superior. The CORA tribes are also assisting the U.S. Fish and Wildlife Service and partners by providing a staging area for sea lamprey control efforts in the St. Marys River scheduled for the summer of 2011. CORA is also assisting with a sea lamprey telemetry project in the St. Marys River in conjunction with the Department of Fisheries and Oceans Canada, U.S. Fish and Wildlife Service and University of Guelph. The results will be used to enhance the effectiveness of alternative control methods such as trapping and barriers by designing and placing structures that take advantage of sea lamprey movement patterns.

The ecological effects of zebra and quagga mussels have added to ANS hardships experienced by tribal commercial fishers in the Great Lakes including the fouling of nets by aquatic algae and other plants that flourish in mussel-infested waters. An experiment conducted by fishers with the Bay Mills Indian Community has had the unexpected result of alleviating some of these adverse effects. In an effort to rehabilitate populations of lake trout in Lake Michigan and Lake Huron, small-boat commercial fishers have modified their nets with the intention of avoiding by-catch of lake trout. The experiment was not only successful at avoiding lake trout but also resulted in much cleaner nets because it lifted the nets above the area of vegetation and algae. Lake trout were effectively extirpated from Lakes Huron and Michigan in the twentieth century due in part to invasive sea lamprey and alewife.

CORA shares deep concerns with many others over the possible introduction of Asian carp into the Great Lakes. CORA is participating in the effort by the Great Lakes Commission and Great Lakes Cities Initiative titled **Envisioning a Chicago Area Waterway System for the 21st Century** on the Resource Committee. The Environmental Coordinator attended a meeting of the group in Chicago in March 2011. CORA has also produced a resolution calling for the closure of the pathways for ANS migration in the Chicago area. A copy of the resolution can be found at www.asiancarp.org .

Contact: Mike Ripley, mripley@sault.com

Private Groups (Environmental, Commercial, User)

Great Lakes United

[insert update here]

Contact:

Council of Great Lakes Industries

[insert update here]

Contact:

Great Lakes Sport Fishing Council

[insert update here]

Contact:

University / Research

Sea Grant Research

[insert update here]

Contact:

Sea Grant Advisory Services / Extension

Two regional-scale AIS projects are being conducted by programs of the Great Lakes Sea Grant Network.

"A Comprehensive Regional Public Outreach Campaign on AIS" led by MN Sea Grant's Doug Jensen has been funded by the Great Lakes Restoration Initiative. This initiative is a collaborative effort of the Great Lakes Sea Grant Network (GLSGN) to target the 15 most egregious pathways by which aquatic invasive species (AIS) are spread and focus comprehensive educational outreach efforts to reach these specific audiences aimed at preventing new and containing existing AIS infestations. In 2010-2011 (Year 1) *Stop Aquatic Hitchhikers!*^{TM} and *Nab the Aquatic Invader!* are being implemented. Focus to-date has been on the development and/or acquisition of materials supporting outreach including banners, display specimens, etc.

"*Fishing tournament organizers and professional anglers: Preventing the Spread of AIS by Extending AIS-HACCP and the Stop Aquatic Hitchhikers campaign in the Great Lakes*" led by WI Sea Grant's Phil Moy has been

funded by National Sea Grant. This project works with tournament organizers and professional anglers to implement a tournament HACCP planning process to incorporate AIS prevention steps into tournament operations and to help anglers become part of a broader citizen AIS monitoring network. To-date, focus has been on the development of materials and making contacts with anglers so that the program is ready to implement in the 2011 tournament season.

Cooperative Institute for Limnology and Ecosystems Research

[insert update here]

Contact:

At-Large

The Nature Conservancy

[insert update here]

Contact: Lindsay Chadderton

North Central Regional Aquaculture Center

The North Central Regional Aquaculture Center (NCRAC) has and continues to fund a number of activities, projects, or products pertaining to fish diseases, particularly viral hemorrhagic septicemia (VHS), and biosecurity. This includes a project on VHS project that began September 1, 2008, information for which can be found on the Web at http://www.ncrac.org/FundedProjects/vhs1.htm., and a fact sheet written by Glenda Dvorak entitled "Biosecurity for Aquaculture Facilities in the North Central Region" which is available at http://www.ncrac.org/NR/rdonlyres/2C878A92-8D58-4DCB-AAE0-C88A2F3A1152/96237/FS115Biosecurity.pdf. In addition, the U.S. Geological Service has published the following fact sheet: Tuttle-Lau, M.T., Phillips, K.A., and Gaikowski, M.P., 2010, Evaluation of the efficacy of iodophor disinfection of walleye and northern pike eggs to eliminate viral hemorrhagic septicemia virus: U.S. Geological Survey Fact Sheet 2009-3107, 4p. That document is available on-line at http://pubs.usgs.gov/fs/2009/3107/ and was based on the results of a project funded by NCRAC.

Contact: Ted Batterson, 517-353-1962, batters2@msu.edu.

National Wildlife Federation

Regarding ballast water, NWF submitted brief oral and written comments in December to U.S. EPA concerning suggestions for improving the next Vessel General Permit. In addition, NWF has continued to examine the literature on effective and environmentally sound approaches to ballast water treatment, and also remains involved in litigation.

Regarding Asian carp and the Great Lakes and Mississippi River Interbasin Feasibility Study (GLMRIS), Trilby Becker researched issues associated with the other pathways vector, as part of preparation of comments. In addition, NWF coordinated (with four other NGOs) and submitted a group comment letter to the US Army Corps of Engineers on GLMRIS in March; a shorter comment letter highlighting key recommendations and with broader endorsement was submitted by Great Lakes United.

Contact: Michael Murray, 734-887-7110, murray@nwf.org

University of Minnesota Sea Grant Program

Outreach: MNSG continues to partner with the National Park Service to promote *Stop Aquatic Hitchhikers!*™ awareness and empower communities along the North Shore. We have scheduled events throughout the season giving talks to groups, supporting communities promoting awareness, and co-hosting booths at county fairs and special events that will reach several thousand people with prevention messages.

Based on a grant from GLRI, the Great Lakes Sea Grant Network (GLSGN), led by Minnesota, is implementing a comprehensive outreach initiative targeting 15 pathways aimed at preventing the spread of aquatic invasive species (AIS). Efforts focused on *Stop Aquatic Hitchhikers!*™, *Nab the Aquatic Invader*, and social media communication. Over the last three months, significant accomplishments were made by the GLSGN and its partners. Sixty-one presentations were given at meetings and other events educating 4,615 people. Support of Wildlife Forever's AIS communications through billboards rented from our grant will create 902,125 exposures based on daily estimated contact rates provided by the billboard company. Eight SAH! outreach items were designed and distributed (135,967 product exposures). Products serve as models for use elsewhere in the U.S. GLSGN and partners hosted booths at 23 sport shows and other events across the Great Lakes region educating 39,194 people. Displays (16), banners (40), Asian carp mounts (9 sets) and most popular items were produced to maximize exposure at these events. SAH! temporary tattoos (76k; zebra mussel, silver carp, spiny waterflea, Eurasian watermilfoil), bobbers (2,400), bumper stickers (25k), table banners (22), key floats (32.5k) and billboards (5/MN) were produced. One*Nab the Invader* teacher workshop hosted by IL-

IL-IN Sea Grant reached 17 teachers and non-formal educators. AIS service learning on-line course was viewed by 10,546 visitors. Overall, efforts generated 1,695,108 exposures (35% of total goal).

Based on a grant from NOAA-Sea Grant, the GLSGN, led by Wisconsin, is conducting an outreach effort in partnership with fishing tournament organizers and professional anglers. For the Minnesota component, MNSG is planning to attend four events hosted by Cabela's MWC (Red Wing, June), Sportsman's Club of Lake Vermilion Take a Kid Fishing Day, which is hosted by professional anglers (Tower, July), Sportsman's Salmon Classic (Silver Bay, July), and MWC West Division Championship (Cass Lake, September).

Ballast Water: MNSG is actively engaged in the Great Lakes Ballast Water Collaborative (BWC). This report is submitted on its behalf. In January, the U.S. Saint Lawrence Seaway Development Corporation and the IJC co-hosted the fourth full-scale meeting of the BWC in Toronto, Ontario. More than 100 senior representatives and subject-matter experts from multiple U.S. and Canadian stakeholder groups attended the event. The goals of the meeting were for participants to gain a better understanding of the ballast water treatment system (BWTS) testing process and technology-verification procedures by discussing uncertainty, and continue discussions about BWTS technology, research, and policies. WI DNR reported on their BWT Feasibility Determination and discussed the impacts of BWC working groups on final decision making. The CA Land Commission revised their finding and issued a modified report, citing the help received from BWC working groups (also noted by National Science Advisory Board). For more information, visit: www.greatlakes-seaway.com/en/environment/ballast_collaborative1101.htm.

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Coastal Management

[insert update here]

Contact: Cathie Cunningham Ballard

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[insert update here]

Contact:

U.S. Forest Service

[insert update here]

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