GLMRIS
Great Lakes and Mississippi River Interbasin Study

The Great Lakes and Mississippi River Interbasin Study Newsletter

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Inside this issue:

GLMRIS Interim Products	1-3
Calendar of Events	4
ANS White Paper and Interactive Web Site	4
GLMRIS Teams Partner Up	5
Q & A's with Kelly Baerwaldt, USACE Fish Biologist	6

If you have questions or comments about the GLMRIS Newsletter or have suggestions for future topics you would like to see addressed, please contact the Chicago District Public Affairs Office at ChicagoDisrict.PAO@usace.army.mil or call us at (312) 846-5330.

Additional information about GLMRIS, including previous issues of the newsletter, are available online at glmris.anl.gov.

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Letter From The Team

What a busy and productive year it's been for the GLMRIS Team! During 2011, we held 12 scoping meetings throughout the Great Lakes and Mississippi River basins; released a Study Management Plan as well as several Interim Products, including the Aquatic Nuisance Species (ANS) White Paper, the NEPA Scoping Summary Report and the Baseline Assessment of Commercial Non-Cargo Navigation in the Chicago Area Waterway System. In late 2010, the GLMRIS Team worked with other federal and state agencies to provide information that led to the construction of a temporary fence at Eagle Marsh, adjacent to Fort Wayne, Ind., specifically to protect against the transfer of adult Asian carp into the Great Lakes. Throughout the year, the GLMRIS Team has also been completing a report to identify long-term solutions for preventing ANS transfer between the basins at Eagle Marsh, as well as providing stakeholders with numerous ways to get involved —and stay involved— with the ongoing study efforts.

As we move toward 2012, the GLMRIS Team looks forward to releasing more Interim Products detailing current data collection efforts, as well as hosting more events for stakeholders to attend and get involved. The winter months will be busy for the GLMRIS Team, as we prepare Interim Products detailing ANS control technologies, document baseline information for commercial cargo navigation and identify fisheries in the Great Lakes and Mississippi River basins. We will also be preparing documents that further refine the Other Pathways information in a final risk characterization report.

Thanks for your interest and participation in GLMRIS, and be sure to stay tuned for all of the great things to come!

The GLMRIS Team

GLMRIS Interim Product Milestones

During GLMRIS, the team will compile Interim Products, many of which are generated from the data-gathering phase. These Interim Products will continue to be made available to the public, as they are completed, at http://glmris.anl.gov/documents/index.cfm.

Baseline Assessment of Non-Cargo Chicago Area Waterways System Traffic

This assessment was released Sept. 28, 2011 and serves as a baseline assessment of lock traffic by commercial passenger, recreational and governmental vessels that includes an appraisal of historical traffic through the locks and a description of the lock operations. Cargo-related traffic will be identified through a separate report. This effort serves as a basis from which to compare potential impacts to waterway uses in the consideration of ANS controls.

Chicago Harbor Lock, City of Chicago. On a busy day, dozens of vessels can be locked at once (U.S. Army Photo, Jessica Vandrick)

GLMRIS Interim Product Milestones (Continued)

Michigan had the greatest number of people submitting or signing submittals (about 30 percent of the 950 total)

National Environmental Protection Act (NEPA) Scoping Summary Report

This report was released Sept. 9, 2011 and documents the methods and procedures followed during the NEPA Scoping process, as well as summarizes the comments received during the scoping period (Nov. 16, 2010 through March 31, 2011).

NEPA regulations include a requirement to prepare a detailed document outlining major Federal actions that may significantly affect the quality of the human environment. For GLMRIS, this document is called an Environmental Impact Statement (EIS). As part of the preparation of the EIS, NEPA requires that there be an early and open process for determining the scope of the issues to be addressed by a study. This process is commonly known as "NEPA scoping."

The GLMRIS Team will use the NEPA Scoping Summary Report to assess topics of interest in order to refine the scope of the study. The potential impact of Asian carp entering the Great Lakes ecosystem, hydrologic separation, study timeline and the use of other studies to help inform GLMRIS were areas of public interest.

Aquatic Nuisance Species (ANS) White Paper

This white paper was released July 27, 2011 and catalogues potential non-native species within the Great Lakes and Mississippi River basins and identifies which high-risk species will be an initial focus in GLMRIS. The ANS White Paper identifies species that occur in one basin or the other that have the potential to transfer through aquatic pathways and become invasive. The list presented in the White Paper is the first step in establishing the current and future without project conditions for GLMRIS alternative plan formulation purposes.

Thirty-nine (39) species in all were categorized as potentially high risk. Ten (10) species pose a risk for potential transfer into the Great Lakes Basin, while 29 are deemed of significant risk for potential transfer to the Mississippi River Basin. View the High-Risk Species Fact Sheets at: http://glmris.anl.gov/documents/ans/index.cfm

The bloody red shrimp is one of the 29 high-risk species for potential transfer to the Mississippi River Basin. In the U.S., this species was recorded for the first time in 2006 from Lake Ontario and a channel associated with Lake Michigan. Introductions and dispersal of this species has been attributed to vessel ballast water and the aquarium trade.

Interim Reports Expected for Release Winter 2011

ANS Control Technologies Report

This report will identify available controls that could prevent ANS transfer through the Chicago Area Waterway System, as well as other potential aquatic pathways. The report will provide a brief description of each control or technology and will include citations from which additional information may be gathered. The GLMRIS Team will use the information in this document to develop and evaluate alternatives for GLMRIS.

Commercial Cargo Baseline Assessment

The Chicago Area Waterway (CAWS) Cargo report provides a detailed view of the commodity traffic as it relates to its movement into CAWS, through CAWS and within CAWS. The second part of the report details CAWS' navigation operations, constraints on navigation within CAWS, vessel traffic, lock utilization and performance. Data contained in this study is taken from the Waterborne Commerce Statistics, as collected and maintained by USACE Waterborne Commerce Statistics Center. Future alternative analysis will utilize data from this report to assist in the determination of plans presented in GLMRIS.

Interim Reports Expected for Release Winter 2011 (Continued)

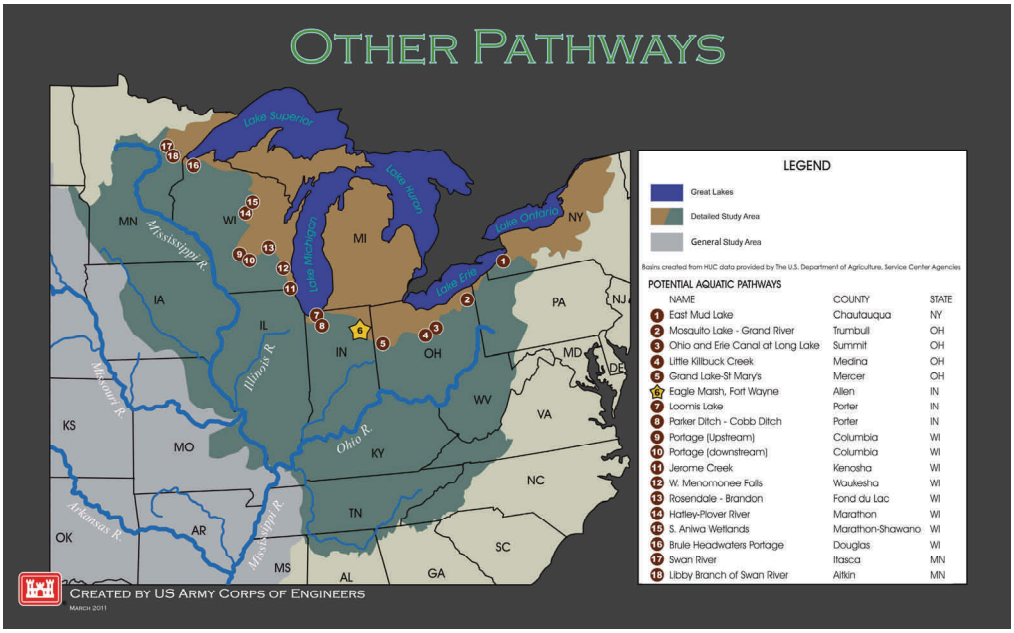
Commercial Fisheries Report

As a part of the GLMRIS Navigation and Economics Team, the Fisheries Economics Team will generate a baseline assessment of the commercial fisheries in the Great Lakes and Upper Mississippi River basins. This valuation will utilize commercial fishing harvest data provided by states' Department of Natural Resources to analyze commercial fishing harvests and their associated dockside values. The final product will be a valuation of the fisheries in the Great Lakes and Upper Mississippi River basins. This will set up a baseline ,which the Fisheries Economics Team will later compare to scenarios where ANS transfer would potentially occur. However, the baseline assessment of commercial fisheries will focus solely on the current value of the Great Lakes and Upper Mississippi River fisheries.

Expected for Release Spring 2012

Aquatic Nuisance Species Controls Report for Wabash-Maumee Basins Connection, Fort Wayne, Indiana

This report is the highest priority for GLMRIS Other Pathways or Focus Area II. This effort will identify technologies to prevent ANS from transferring between the Wabash and the Maumee river basins during flooding. The goal is to keep all ANS from transferring between the Great Lakes and Mississippi River basins. While the prevention focus has typically been on the CAWS, this report, developed by USACE Louisville District, examines a second potential pathway near the Fort Wayne, Indiana vicinity.



Other Aquatic Pathways Risk Characterization Report

To qualitatively evaluate the risk of ANS inter-basin transfer at aquatic pathways outside of the CAWS, a "Preliminary Risk Characterization" was completed in 2010, which took a cursory look at the entire length of the approximately 1,500 mile long divide between the Great Lakes and the Mississippi River basins.

USACE collaborated with the U.S. Geological Society, U.S. Fish and Wildlife, National Oceanic and Atmospheric Administration and the natural resource agencies in the states of Minnesota, Wisconsin, Indiana, Ohio, Pennsylvania and New York to identify 18 potential locations where it appeared that inter-basin flow could exist during storm events that occur at a frequency greater than the 1 percent annual return frequency storm. One of these 18 locations is the Wabash-Maumee (aka Eagle Marsh) site near Fort Wayne, Indiana, which was determined in 2010 to be the highest priority GLMRIS location outside the CAWS.

The current effort is intended to build upon these preliminary results through the collaborative efforts and evaluation of existing available data with stakeholders and partner agencies to better characterize the risk of ANS transfer at these locations. The results of this effort will be utilized to help prioritize the funding of future GLMRIS actions at these other aquatic pathways and the results will be incorporated into the overall study.

Calendar of Events

November 30-December 1 – Meeting of Great Lakes Panel on Aquatic Nuisance Species, in Ann Arbor, MI. www.glc.org/ans/panel.html#glpmeet

December 6-7 – Meeting of Binational Executive Committee (BEC), chaired by USEPA and Environment Canada, in Toronto, ONT.

-- 2012 --

February 27-29 – Great Lakes Commission Semi-Annual Meeting and Great Lakes Day, Washington DC. www.glc.org

February TBD – Great Lakes Marine Community Days, in Clevelnd, OH.

April 23-26 (tentative) - IJC Spring Semi-Annual Meeting, in Washington DC. www.ijc.org

April TBD - Meeting of Council of Lake Committees, Great Lakes Fishery Commission, in Ann Arbor, MI. www.glfc.org

May 13-17 – Annual Conference of the International Association for Great Lakes Research (IAGLR), in Cornwall, ONT. www.iaglr.org/conference/

May TBD – Annual Meeting of Great Lakes Fishery Commission, in Buffalo, NY. www.glfc.org

June 26-28 – Annual Meeting of Great Lakes-St. Lawrence Cities Initiative, in Quebec City, QUE. www.glslcities.org/annual-meetings/2012.cfm

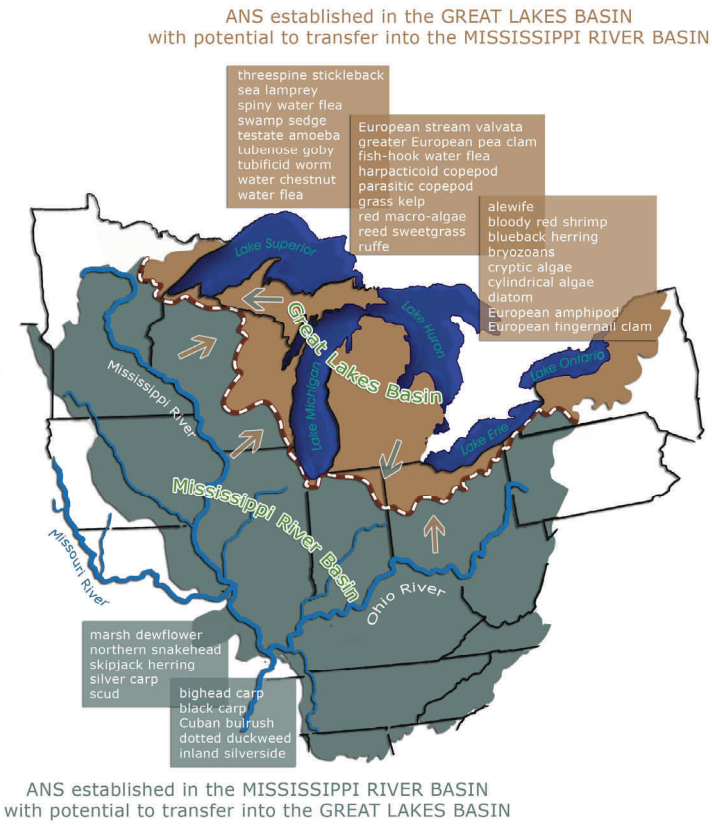
ANS Paper and the 'Interactive' ANS Web site

The GLMIRS Natural Resource Team recently released *The Non-Native Species of Concern and Dispersal Risk for the Great Lakes and Mississippi River Interbasin Study [Paper/Report]* , better known as the ANS White Paper. Within this report, the GLMRIS Team identified 39 High-Risk Species that may transfer via the Chicago Area Waterway System (CAWS - Focus Area I).

The bighead and silver carp are two of ten identified ANS that are of potential risk to the Great Lakes Basin. Twenty–nine ANS have been highlighted as potentially significant risk to the Mississippi River Basin.

Three steps were taken to narrow down the list to 39 High-Risk Species.

1. Identify All Potential Alien Species
2. Identify Potential Impacts & Transport Mechanisms
3. Identify High-Risk Invasive Species Pertinent to GLMRIS



This approach provided a consistent and objective process to identifying ANS that are considered invasive, highly mobile and within close proximity to inter-basin dispersal pathways. This approach is keystone for GLMRIS since all subsequent analyses and decisions are based upon, or correlated with, the High-Risk Species.

Once identified, the team put together factsheets on the 39 High-Risk Species. Detailed information such as description, ecology, habitat, distribution and status of each species, as well as photos, can be easily found on the ANS Portal of the Documents tab of the GLMRIS website: http://glmris.anl.gov/documents/ans

The identification of the species in the ANS White Paper will aid the GLMRIS Team in identifying available prevention and control technologies for further analysis. The Other Pathways Team (Focus Area II) will be using the ANS White Paper to develop site-specific High-Risk Species lists for all other potential aquatic pathways.

The GLMRIS Team would like to thanks those who took the time to review the ANS White Paper and comment; because of your input, several revisions were made.

GLMRIS Teams Partner Up

Stakeholder engagement is a key to the success of GLMRIS, and teams are taking advantage of strategic partnerships to ensure timely, quality products.

At an Asian Carp Summit, attended by GLMRIS representatives and hosted by the Michigan Lodging & Tourism Association, the Michigan United Conservation Clubs, Michigan Boating Industries Association and Michigan Snowsports Industries Association in September, Dr. Bill Taylor, Michigan State University distinguished professor of Global Fisheries Systems in the Center for Systems Integration and Sustainability, emphasized that "the power of the people will be the driving force" in protecting water as an economic resource and a driver for ecological protection. He stressed that we should all be working together towards a solution instead of fighting each other.

The GLMRIS Navigation and Economic Team is collaborating with the National Oceanic and Atmospheric Administration and their Sea Grant program to research potential impacts to waterway uses in the consideration of alternative ANS controls of the Charter Fishing industry. In addition, Cornell University is conducting the recreation economic analysis.

Members of the GLMRIS Environmental Quality Team, Technology Team, Hydrology & Hydraulics Team and other GLMRIS team members met with representatives from Illinois Environmental Protection Agency (EPA) and the U.S. EPA in August to discuss regulatory issues associated with water quality impacts from potential hydrologic separation alternatives.

Moreover, modeling of water quality in the CAWS has commenced, and researchers at Marquette University are working to extend the boundaries of the existing model, update the model to incorporate more recent inflow data, and add the capability of modeling additional water-quality parameters.

Late October, the GLMRIS CAWS Team hosted a kick-off meeting to give agencies a perspective on GLMRIS and direction for making technical comments on the ANS Control Technologies Report. Participants included representatives from the U.S. EPA, U.S. Geological Survey, U.S. Fish and Wildlife Service, Illinois Department of Natural Resources, Illinois EPA and Metropolitan Water Reclamation District. The agency review represents the beginning of the final step toward finalizing this report, which is anticipated for public release winter 2011.

These are only highlights of the GLMRIS Team's stakeholder involvement, and the team will continue to encourage participation and input through the duration of the study.

Fall colors at the Chicago Sanitary and Ship Canal, which is a portion of the Chicago Area Waterway System (CAWS). (U.S. Army Photo, Jessica Vandrick)

Q & A's with Kelly Baerwaldt, USACE Fish Biologist and member of the GLMRIS Natural Resources Team

What is your background?

I have served as USACE Asian Carp Monitoring Team Lead since 2007, working closely with the Chicago District to develop and implement monitoring actions such as eDNA, telemetry, DIDSON and traditional monitoring for the Asian Carp Regional Coordinating Committee Monitoring and Rapid Response Work Group. I have eight years of experience working with the Asian carp invasion of the Illinois River. I'm also a contributing invasive species expert for the Electric Dispersal Barriers Efficacy Study. I have extensive experience with Asian carp biology and behavior and have authored several publications regarding Asian carp life history, behavior, reproduction, habitat use and movement.

I have a Bachelor of Science in Zoology with a concentration in Ecology, Evolution, & Organismal Biology from Michigan State University and a Master of Science in Zoology with a concentration in Fisheries Management and Large River Ecology from Southern Illinois University, Carbondale.

How do you work with the other GLMRIS teams?

Our team leader, Frank Veraldi, shares the Natural Resources Team Interim Products with the other GLMRIS teams for their consideration in developing their own products. Most recently, the team developed and released the ANS White Paper.

What has been the biggest challenge for this team?

In my opinion, a challenge has been to get a handle on the enormity of the tasks – to identify and characterize the risk of all aquatic organisms that posed a threat from invading the Great Lakes or Mississippi River basins. This wasn't limited to fish; we investigated plants, crustaceans, bacteria, algae, mollusks, viruses…. This is a huge list! We spent many hours conducting literature reviews, compiling fact sheets and synthesizing all this information into one condensed list of highly-invasive species

What are the biggest rewards in working for this team?

The biggest reward is the satisfaction of knowing you are working towards something that will benefit the nation for years to come. Having the opportunity to be able to stop ANS before they spread is truly a unique ecological opportunity, and to be involved on a team that strives to reach that objective is very exciting.

CAWS Project Manager Dave Wethington catching silver carp in Havana, Ill. , Sept. 27, 2011 (U.S. Army Photo).

USACE Fish Biologist Kelly Baerwaldt inserting a tag to track fish through receivers as part of an ultrasonic telemetry initiative, Oct. 20, 2010 (U.S. Army Photo).

Please, join the conversation and discuss GLMRIS topics with USACE and other stakeholders.

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