The Great Lakes Policy Report

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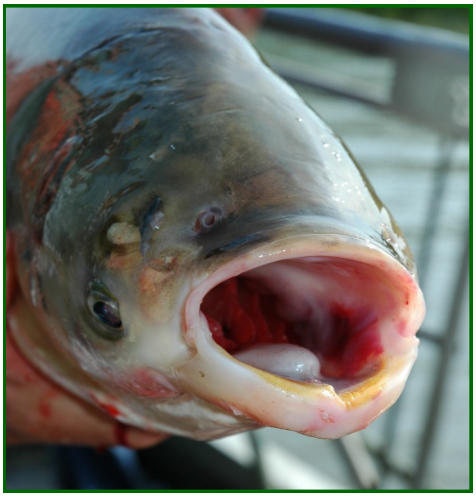
The Great Lakes Policy Report is a quarterly news report published by the Little Traverse Bay Bands of Odawa Indians Natural Resource Department's Environmental Services Program. The report features Great Lakes policy updates and relevant initiatives, projects, and issues.

The report is meant to be an educational document, and does not express an opinion on the subjects discussed. Stories and information cited in this report are taken from a variety of sources including news articles, non-governmental reports, interviews, and government documents.

Asian Carp: A Great Lakes Threat

In the late 1980s aqua culture farmers along the Mississippi River had unwanted algae growing in their ponds. The solution to this problem was to stock the ponds with several fish species of Asian carp that feed on algae. However, flooding in the early 1990s allowed the non-native species to escape into the Mississippi River system. Slowly Asian carp spread through the Mississippi River and its tributaries, including the Illinois River; which is hydrologically connected to Lake Michigan through the Chicago Area Waterway System (CAWS).



Silver carp; one of the invasive Asian carp species. Photo credit: T. Lawrence, GLFC

In the late 1800s Chicago was a growing metropolis with a serious health issue: untreated sewage was contaminating the city's drinking water supply (Lake Michigan), causing illness and death. The unprecedented solution was to reverse the flow of the Chicago River and send the city's sewage away from Lake Michigan. This required connecting the Chicago River, which naturally flowed into Lake Michigan, to the Illinois River, which naturally flowed into the Mississippi River, and sending the city's sewage downstream. This engineering led to the modern day CAWS, 28-miles of constructed waterway. In addition to managing sewage, the system supports

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Putting GLRI Funds To Use: Paradise Lake AIS

The Little Traverse Bay Bands of Odawa Indians Natural Resource Department is collaborating with the Michigan Department of Natural Resources and the Paradise Lake Improvement Board to prevent the spread of aquatic invasive species (AIS). The project will result in the installation of a boat washing station on Paradise Lake, near Mackinaw City, MI. In preventing the transportation of AIS by recreational activities, this project will protect the Great Lakes and connected waterways.

Transportation of AIS from one water body to another by boats and boat trailers is a significant vector for the spread of AIS. AIS can attach to boat hulls, propellers, or trailers as vessels enter and exit waterways containing AIS. If

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commercial shipping; diverts stormwater to control flooding in Chicago; and provides a pathway for thousands of recreational boats, tour boats, and water taxis.

The hydrological connection of the Great Lakes and Mississippi River basins solved a serious human health problem, but it also caused an unforeseen ecological problem. The connection allows fish and other aquatic life, including non-native invasive species to pass freely between the two basins. There have already been two known cases of invasive species (the zebra mussel and round goby of the Great Lakes) using the CAWS to invaded the Mississippi River basin. As Asian carp made their way up the Mississippi River - and eventually the Illinois River - in the 1990s, the focus turned to prevent them from entering the Great Lakes. In recent years, debate has focused on whether Asian carp are a threat to the Great Lakes ecological health, specifically: could Asian carp, especially the Bighead and Silver carp species, survive and establish a reproducing population in the Great lakes?

Several studies indicate that the Great Lakes provide suitable habitat for Asian carp. Twenty-two tributaries in the Great Lakes basin provide potential habitat for spawning. In addition, a recent U.S. Geological Survey (USGS) study found that Lake Erie's watershed provides suitable habitat for Asian carp. A new report concludes that "Asian carp threaten native fish populations because they grow rapidly, reproduce quickly, and consume vast quantities of phytoplankton and zooplankton, the founda-tion of the food chain in a healthy aquatic ecosystem." If Asian carp can establish in the Great Lakes, as some studies suggest, ecosystem disruption will likely depend on how the Asian carp population(s) grow and thrive.

To address the threat of invasive species, in 2007 the U.S. Congress authorized the U.S. Army Corps of Engineers (USACE) to conduct a study to identify potential aquatic pathways between the Great Lakes and Mississippi River basins. This study includes the CAWS and several other locations where invasive species transfer is possible between the two basins. The Great Lakes and Mississippi River Interbasin Study (GLMRIS) has identified 39 species with a high risk of transferring from one basin to the other through the CAWS. Including Asian carp, 10 invasive species have been identified as potential invaders to the Great Lakes and 29 invasive species could potentially invade the Mississippi River basin from the Great Lakes. GLMRIS also released a report identifying control methods to prevent invasive species transfer.

The GLMRIS study has been criticized by some in the Great Lakes community for several reasons. Some feel that the GLMRIS study is too broad; Asian carp, as the imminent threat, should be the priority of the study. Criticism has also centered on the fact that the study is looking at both complete prevention as well as reducing the risk of invasive species transfer. Finally, criticism has arisen because the GLMRIS study is not scheduled to be finished until 2015.

Currently, USACE operates the electric dispersal barriers in the CAWS. There are now three electric barriers installed on the waterway, with two operating at a given time and the third as a backup, about 25 miles south of Lake Michigan. The barriers are specifically designed to prevent aquatic organisms from passing though the waterway. Environmental DNA (eDNA) testing occurs in the CAWS regularly, as well as physical monitoring. In June 2011, seven positive eDNA samples were found beyond the electric barriers; bringing the total since 2009 to 85. However, after extensive netting and electrofishing, no Asian carp were found. Researchers make it clear that positive eDNA results do not necessarily mean that a live Asian carp is present.

Asian carp south of Chicago are within 40 miles of Lake Michigan, but are not spawning. There is verified spawning 150 miles south of Lake Michigan; which has occurred over the last three years. Only one live Asian carp has been found above the electric barrier since monitoring began. A netting survey found this fish in Lake Calumet in 2010. In order to best coordinate government activities, such as eDNA sampling and netting surveys, an Asian Carp Regional Coordinating Committee was formed. The commit-

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tee has outlined its goals and actions in the 2012 Asian Carp Control Strategy Framework and the 2011 Monitoring and Rapid Response Plan. With over 180 known invasive species established in the Great Lakes, the 2012 Framework stresses past and future impacts, stating invasive species "can devastate native communities, as well as cause great economic damage to the Great Lakes commercial, sport, and tribal fisheries." The Framework continues, "[t]he potential invasion of Asian carp is one of the most serious invasive species threats facing the Great Lakes today."

There is an increasing concern over the live transportation of Asian carp. In 2012 alone border patrol guards have seized three separate shipments transporting Asian carp from the U.S. into Canada; totaling over 9,000 pounds of live fish. Resource and wildlife managers are worried about this issue because it increases the likelihood that a person could intentionally or unintentionally release live Asian carp into new waters. Ontario banned the possession of live Asian carp in 2005 but the demand for the fish in Toronto's Asian markets remains high. The U.S. Fish and Wildlife Service passed regulations making the transport of Asian carp between U.S. States illegal in 2011.

In January 2012, the Great Lakes Commission and Great Lakes and St. Lawrence Cities Initiative's released a report that examines the feasibility of hydrologically separating the Great Lakes and Mississippi River basins at Chicago. The report concludes that hydrological separation is possible, but would cost several billion dollars.

The Little Traverse Bay Bands of Odawa Indians (LTBB) Natural Resource Department (NRD) has been taking an active role in the Asian carp issue since 2010. LTBB formally consulted with the United States Government regarding Asian carp. LTBB NRD expressed concerns on how the invasive species could impact the tribe's treaty fishing rights and also stated that LTBB NRD supports hydrological separation as the best and most permanent option to prevent Asian cap from entering the Great Lakes.

More information on Asian carp and the regional coordinating committee can be found at www.asiancarp.us. The GLMRIS website is http://glmris.anl.gov.

Great Lakes Geography

Watersheds: the natural boundaries

A watershed, sometimes called a catchment, drainage basin, or simply basin, is a geographic area where all of the streams, rainfall and groundwater drain to a common outlet such as the mouth of a bay or larger river. Watersheds can range in size from an acre or less to hundreds of thousands of square miles; the Great Lakes basin which drains into the Atlantic Ocean via the St. Lawrence River contains approximately 94,250 Sq. miles of surface water and 201,460 Sq. miles of land that drains all water into the Great Lakes.

Increasingly natural resource management has taken a "watershed management" approach to solving environmental problems. This is because any land or water activity that takes place in a watershed will inevitably impact "downstream" ecosystem processes. For example, several watersheds that outlet into Lake Michigan have heavy agricultural activities present; these activities can lead to increased nutrient runoff (from fertilizer use) impacting water quality, fish and wildlife habitat, and ecosystem processes.

The U.S. Geological Survey (USGS) uses unique hydrologic unit codes (HUCs) that divides and subdivides the landscape into successively smaller watersheds. Using HUCs, USGS monitors the quantity and quality of surface and ground waters throughout the nation. HUCs are generally the basis for watershed management activities. Lake Michigan has 33 watersheds at the commonly cited 8-digit HUC. For information on Lake Michigan watersheds visit Watershed Central at http://1.usa.gov/GXO6vU. For information on watershed science and monitoring visit: http://water.usgs.gov/wsc/.

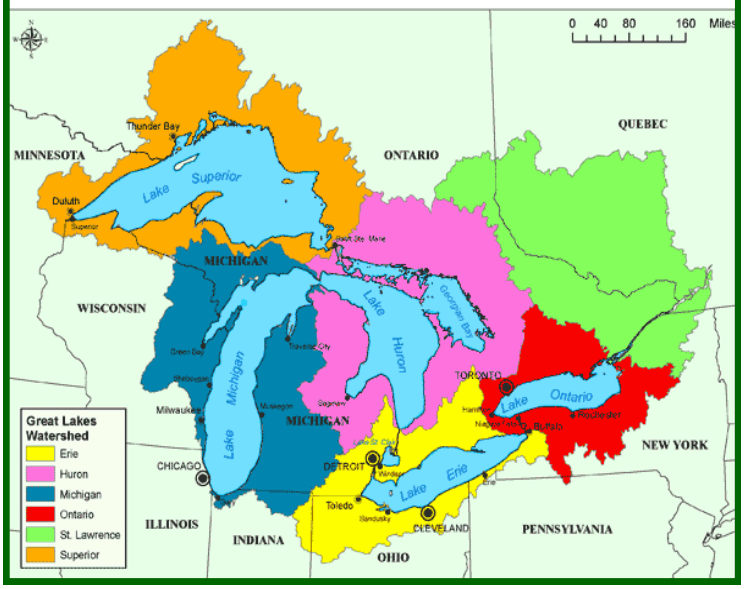

Photo credit: Food and Water Watch

GREAT LAKES POLICY WATCH

In this section you can find current legislation and proposed regulations related to the Great Lakes. When applicable public comment periods and information on how to comment will be given.

Rules and Regulations

On March 23 2012, the U.S. Coast Guard issued new regulations on ballast water management in an attempt to address the introduction and spread of aquatic invasive species transported by vessels' ballast water. The new regulations establish standards for "allowable concentration of living organisms" in vessels' ballast water discharged into U.S. Waters. The new rule will also regulate ballast water management systems and equipment. The regulations will begin to take effect on June 21, 2012.

Policy

On March 23 2012, the Michigan Department of Environmental Quality announced the release of its draft Aquatic Invasive Species State Management Plan. The management plan outlines existing and potential strategic actions aimed at preventing the introduction and spread of aquatic invasive species in the state. The draft plan is available for review at www.michigan.gov\deqaquaticinvasives. Information on meetings about the plan and instructions for submitting comments can be found on the website as well. Public comments will be accepted through May 1.

On January 20 2010, the governments of the United States and Canada began negotiations to amend the Great Lakes Water Quality Agreement. The agreement directs both countries to "restore and maintain the chemical, physical and biological integrity of the Great Lakes basin ecosystem." The renegotiated agreement is expected to be made official summer 2012.

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invasive species are not removed at the inhabited water body, there is increased risk of spread to uninhabited waters. Providing watercraft users with a boat washing station on site, at no cost, encourages users to take proactive actions to keep water bodies free of AIS.

Invasive species can negatively disrupt the natural processes of an ecosystem. AIS out compete native species for resources, prey on native species, and can impact water quality. Invasive Aquatic plants, such as Eurasian Watermilfoil, can also be a nuisance for recreational activities, making it difficult to navigate through water with the dense plant. Other AIS, such as zebra mussels, disrupt the ecosystem by filtering the water making it abnormally clear which can lead to other problems like increased algae growth.

Paradise Lake is inhabited by the AIS Eurasian Watermilfoil. A 2010 study showed that 750 acres of the 1,900-acre lake was infested with the plant. The Paradise Lake Pilot Boat Washing Station project will prevent the spread of Eurasian Watermilfoil to other water bodies and protect Paradise Lake from additional AIS introductions. Paradise Lake is in the Lake Michigan watershed but this project will also prevent the spread of AIS in the Lake Huron watershed.

The goal is for the boat washing station to be installed by fall 2012. There will also be an informational display on site to educate water users about AIS prevention. The information display will hold brochures on best practices to prevent the spread of invasive species for recreational and resource users. Additionally, education and outreach activities will occur, and surveys and promotional items will help educate water users about AIS.

The project is funded by the Great Lakes Restoration Initiative and will be complete by fall 2013. The benefit of this pilot project is not only the prevention of AIS transfers; the project can also serve as model for other water resource stakeholders to duplicate.

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Great Lakes RESTORATION

Questions, comments, or to join our E-mail list
Contact
Lucas Evans
Great Lakes Policy Specialist
Little Traverse Bay Bands of Odawa Indians
LEvans@ltbbodawa-nsn.gov
Phone: (231) 242-1570
http://www.ltbbodawa-nsn.gov/Departments/NaturalResources/Programs/Environmental/EnvironmentalStart.htm

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