



## Asian Carp Regional Coordinating Committee

*Leading the way in Asian carp control and management.*

### Asian Carp Frequently Asked Questions

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School of silver carp jumping. Photo by Jason Jenkins.

#### **What are Asian carp?**

There are three species of Asian carp that are considered invasive and a threat to the Great Lakes: the bighead, silver and black carp. Silver and bighead carp are filter-feeding fish and consume plant and animal plankton. Asian carp can grow to large sizes: some as large as 110 pounds, though the average size is around 30-40 pounds. Bighead and silver carp are voracious eaters, capable of eating 5-20 percent of their body weight each day. They consume plankton—algae and other microscopic organisms—stripping the food web of the key source of food for small and big fish. Black carp differ in that they consume primarily mollusks, and threaten native mussel and sturgeon populations. They can grow to seven feet in length and over 100 pounds.

#### **How did Asian carp make their way into Illinois waterways?**

Asian carp were originally imported from Southeast Asia to the southern United States to help aquaculture and wastewater treatment facilities keep retention ponds clean. Flooding allowed these fish to escape into the Mississippi River system and migrate into the Missouri and Illinois rivers. The Mississippi, Missouri, and Illinois rivers are all connected and allow fish to swim freely between them. The Illinois River is also connected to the Great Lakes by a manmade connection, known as the Chicago Sanitary and Ship Canal.

#### **Why are they a problem in the Illinois River system?**

A manmade connection, known as the Chicago Sanitary and Ship Canal, connects the Great Lakes to the Illinois River, which in turn connects to the Mississippi River. This canal system provides a pathway of greatest concern for Asian carp to enter the Great Lakes.

Asian carp have harmed the ecosystem, the economy, property, and boaters in the Mississippi River system. The diet of Asian carp overlaps with the diet of native fishes in the Mississippi and Illinois Rivers, meaning the carp compete directly with native fish for food.

In addition to causing ecological harm, the silver variety of the Asian carp has caused direct harm to people. The silver carp is skittish and easily startled by the sound of a boat motor. The sound can cause the fish to leap as high as ten feet out of the water, earning them the nickname "the flying fish." Some of these fish weigh more than twenty pounds. They land in boats, damage property, and injure people.

#### **What happens if Asian carp enter the Great Lakes?**

The presence of Asian carp in the Great Lakes could cause declines in abundances of native fish species. Asian carp will compete with native fish for food—native fish like ciscos, bloaters, and yellow perch, which in turn are fed upon by predator species including lake trout and walleye. The Great Lakes are home to federally and/or state listed threatened or endangered fish, mollusks, plants, mammals, insects, and reptiles. Other Great Lakes invasives have been implicated in adverse effects upon

up to 46 percent of the local federally listed endangered plant and animal species. Introduction of Asian carp to the region could further harm these organisms and threaten their existence in the Great Lakes.

An established Asian carp population also could threaten Great Lakes recreation, as silver carp are known for leaping out of the water at the sound of boat or jet-ski motors, causing physical harm to people and property.

#### **Is it possible to eradicate Asian carp if they were to enter the Great Lakes?**

Eradication of any established population of Asian carp might be difficult and expensive, if possible at all. Ability to eradicate depends partly on the area that has been invaded. Asian carp are thought to have exacting spawning requirements, requiring long rivers for the development of the eggs and larvae. If the invaded water is a reservoir or lake with no such river tributary, then Asian carp would probably eventually die out (although this may take more than 20 years). It may also be possible to deny carp access to those rivers by erecting barriers prohibiting upstream movement to spawn.

#### **Do Asian carp have any predators?**

There are no North American fishes large enough to eat an adult Asian carp. White pelicans and eagles, however, have been seen feeding on juvenile or smaller adult Asian carp. Largemouth bass have often been observed feeding on small juvenile Asian carp, and many other native predators probably also feed on them before they grow too large. However, Asian carp produce many offspring which grow quickly and, if conditions are good, rapidly become too large to be eaten by North American predators. Juvenile Asian carp are also known to move into very shallow water where they are inaccessible to many large predators.

#### **What factors would contribute to a sustainable population of Asian carp becoming established in the Great Lakes?**

The establishment of a sustainable population of an exotic species, like the Asian carp, in a new ecosystem depends on variables such as predator-prey interactions between the invading species and those in the new ecosystem; food availability, temperature, growth rates, predation, and spawning habitat availability. Primary factors limiting the range of Asian carp will be access to rivers of the required length, size, and water flow rate for successful spawning, as well as access to nursery habitat (shallow areas with slower-moving water) for survival of young.

The best information available provides evidence that if an invasion of Asian carp into the Great Lakes were to occur, it would probably take many years for the population to become problematic, based on the history of Asian carp invasions, models of invasive species and the size of the Great Lakes.

Asian carp (bighead and silver) are filter feeders and need algae to sustain larger populations; they may not be able to survive in larger numbers in deeper, colder lakes. However, there is also the potential that Asian carp could adapt to the local food system and availability, shorter rivers for spawning, and other detrimental behavior as yet unforeseen.

#### **How can we determine if there is a sustainable population of Asian carp in Lake Michigan?**

The best indication of a sustainable population would be repeated capture of both juvenile and adult Asian carp, including young-of-the-year Asian carp to provide evidence of a successful spawn, juvenile fish to provide evidence the young-of-the-year fish are surviving, and adult fish of varying ages. We currently have no evidence of a sustainable population either in Lake Michigan or above the electric dispersal barriers in the Chicago Area Waterway System.

#### **Where are the Asian carp now?**

The advancing population front of Asian carp is represented by a small population of bighead carp in the Dresden Island Pool, about 25 miles downstream of the dispersal barriers. There are moderately abundant populations of both species in the Marseilles Pool of the Illinois River (approximately 50 miles downstream of the dispersal barriers) and abundant population farther downstream. Reproduction has not been documented in waters upstream of Marseilles Lock and Dam.

Extensive monitoring continues to show that there is no established Asian carp population above the electric barrier in the Chicago Sanitary and Ship Canal. Although Asian carp eDNA has been found at locations in the CAWS upstream of the electric dispersal barrier system located near Romeoville, Illinois, only one bighead carp has been captured in this region during extensive sampling that included nearly 1,100 person-days of effort and examined over 125,000 fish. In all, sampling teams treated 2.6 river miles with rotenone, completed 344 hours of electrofishing, and fished 45 miles of trammel/gill net.

#### **Have Asian carp been found in Lake Erie?**

Five Bighead carp have been individually collected between 1995 and 2003 in western Lake Erie. Since 2004, the U.S. Fish and Wildlife Service have monitored western Lake Erie in Sandusky and Toledo, Ohio using trammel nets in response to these discoveries. This surveillance sampling has not resulted in any additional collections of bighead or silver carp. These sampling suggest a reproducing population does not exist in Lake Erie.

#### **How would the fish enter Lake Michigan in Illinois?**

The Chicago Sanitary and Ship Canal (CSSC) is a manmade waterway that provides a direct connection between the Mississippi River system and Lake Michigan. There are aggressive efforts underway in this area as part of the Asian Carp Control Strategy Framework to prevent Asian carp from passing through the system.

In addition to a direct connection through the CSSC, there are other points of possible entry to the CSSC above the electric barrier through low lying areas of land positioned between the Des Plaines River and the Illinois and Michigan (I&M) Canal. During heavy rainfall events, these areas are prone to flooding. In 2010, the USACE constructed physical barriers in this area to prevent Asian carp in the Des Plaines River and the Illinois and Michigan Canal from crossing into the Chicago Sanitary and Ship Canal during flooding.

#### **Are there other ways Asian carp may be able to get into the Great Lakes?**

Yes, the USACE is working with state natural resource agencies to identify and close off other potential aquatic pathways where Asian carp could enter the Great Lakes basin. This effort is part of the Great Lakes and Mississippi River Interbasin Study (GLMRIS) and is referred to as the "Other Pathways Study." An example of this is the effort at Eagle Marsh in Fort Wayne, Indiana. Once it was identified as a potential Asian carp pathway, the Indiana Department of Natural Resources used federal funding to install a 1,500 foot fish barrier fence at Eagle Marsh to block advancement of Asian carp from the Wabash to the Maumee and Lake Erie.

Asian carp could also get into the Great Lakes through live bait, or if fish processors, fish markets or retail food wholesalers transport live Asian carp to markets within the Great Lakes basin, resulting in accidental or intentional release of carp into the Great Lakes. To address these issues, the U.S. Fish and Wildlife Service is enforcing the new listing of bighead carp as injurious under the Lacey Act and is working with state natural resource agencies to undertake carp inspections at bait shops, fish processors, fish markets and retail food establishments.

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