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# Asian Carp Could Help Us Solve Hunger Problem

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## Asian Carp Could Help Us Solve Hunger Problem

Author: Michael Tran

### Overview

Bighead carp and silver carp (Invader Species – Asian Carp) invaded the Illinois River waterway over a decade ago. Populations of these fishes have apparently grown dense in the lower and middle Illinois Rivers and both species are approaching the Chicago Area Waterway System (CAWS) and potentially making their way into Great Lakes. So far, positive DNA of Asian Carp has been found beyond the defensive electrical barrier, which means they have made their way to Great Lakes somehow.



Asian Carp are fast growing, aggressive, and adaptable fish that are outcompeting native fish species for food and habitat in much of the mid-section of the United States. Asian Carp were imported into the U.S. in the 1970s to filter pond water in fish farms in Arkansas. Flooding allowed them to escape and establish

reproducing populations in the wild by the early 1980s. At present, bighead carp have been found in the open waters of 23 states and silver carp in 17 states. Asian Carp represent over 97% of the biomass in portions of the Illinois and Mississippi Rivers and are swiftly spreading northward up the Illinois River in the direction of the Great Lakes. They are now on the verge of invading the Great Lakes.

Asian carp are advancing towards the Great Lakes at multiple locations. The CAWS, a series of sewage and shipping canals, is the pathway of greatest concern for Asian Carp to enter the Great Lakes. The U.S. Army Corps of Engineers maintains three electric barriers to prevent Asian Carp from entering Lake Michigan, but these barriers are only temporary impediments and have proven to be penetrable.

Alive bighead carp was discovered only 6 miles from Lake Michigan near Chicago. One bighead carp was found in the Chicago Sanitary and Ship Canal, just below the first electric barrier. DNA evidence has been found in multiple locations on the Lake Michigan side of the barriers. Asian Carp eggs, fry and fingerlings were found in the Wabash River in Indiana. There is acute risk of the Wabash River flooding into the Maumee River, which leads directly into Lake Erie.

The temperatures in the Great Lakes are well within the fishes' native climate range. Parts of the Great Lakes, including nutrient-rich bays, tributaries and other nearshore areas, would offer Asian Carp an abundant supply of their preferred food, plankton; plankton is also favored by most young and many adult native fishes and the voracious carp would likely strip the food web of this fundamental resource. The U.S. Geological Survey has identified 22 rivers in the U.S. portion of the Great Lakes that would provide suitable spawning habitat for Asian Carp.

## **Introduction**

Asian Carp are by far the world's most cultured fish because they are a healthful source of protein and perhaps omega 3 fatty acids. Thus, unlike so many nuisance or invasive species, these problematic fishes in the U.S. have one positive aspect: They can be converted to desirable food for both human and nonhuman consumption. Organic fertilizer also is desirable option. The research described herein is designed with one simple idea in mind: to beat Asian Carp in the Illinois River and eventually other U.S. waterways is consuming them. Harvesting is an immediate, revenue positive complement to other control efforts, which may be effective but have not yet been developed.

Overharvest of Asian Carp occurs in their native range and thus is possible in the Illinois River and other waterways of the U.S. However, several research questions must be addressed to ensure that both public and private resources are expended wisely and efficiently to effectively control these species. This report describes a multi-institution effort to quantify the abundance and ecological impact of these species in the Illinois River and then determine whether fishing is a viable option for control. Successful fishing requires an incentive on behalf of the commercial fishers and processors, because demand and selling price are currently very low. Thus, marketing options need to be identified.

According to the research that being conducted by University of Illinois at Carbondale, contaminant concentrations varied among individual Asian Carp and were generally low. Heavy

metals such as mercury were generally low in these species, although a few individual (about 10%) had concentrations that mandated limited consumption by sensitive people such as pregnant women. Metal concentrations were low relative to most commercially important fish species. Other concentration contaminants were low as well.



**Figure 1: Jim Garvey - Assistant Professor at Southern Illinois University at Carbondale**

### **Nutritional composition and quality**

Nutrition composition of Asian Carp was similar among other species. Silver carp were comprised of 18% lipid and 56% protein. Bighead carp, on another hand, were leaner with 10% lipid and 61% protein. Fat content increased with body length in both species. Both species produce a fishmeal equivalent in composition and value to other meals on the market.

Leaving Southern Illinois University at Carbondale, I headed over Thompson, Illinois where I had a meeting with Michael Schafer who is the owner of Schafer Fisheries. According to Michael, last year [2011] they have handled over 12 million pounds of Asian Carp alone. Their products, among other such as liquid organic



**Figure 2: Michael Schafer, owner of Schafer Fisheries**

fertilizer that created from Asian Carp, have a great impact in the local area. They have created a new product that is called “Asian Tuna Hotdog,” and now available in the market.



Figure 3: 'Asian Tuna' hotdog, an Schafer's product

By creating ‘Asian Tuna Hotdog,’ they have eliminated the biggest concern that consumers have always being afraid of: Fish Bone. Asian Carp is known as an extremely bony fish, and it is difficult to remove all the bones as once when filleting. These hotdogs, after went through the *deboning* machine, the meat and the bones are mix together, eventually brings up the potential benefit of this specie which is rich in protein, and the combination between meat and bones make this product rich in vitamin and calcium.

Schafer Fisheries is taking the lead of creating new products out of Asian Carp, and they also impact the community by creating many jobs. The picture below shows the worker unload the Asian Carp after 8 hours on the river. One of each container, these workers can make roughly \$4,000.00.





Figure 4: These workers can earn up to \$4,000 daily

Understanding that if Asian Carp someday make their journey successful to the Great Lakes and threaten the \$7 billion annual fishing industry, the U.S. government has applied many different techniques, including the most advantage technologies, in order to stop the invasive. According to Newshound – Wildest News Source In The Outdoors, \$9.5 billion dollar project has been proposed to stop the invasion of Asian Carp. The hefty price tag would cover one of three engineering projects that would sever the Great Lakes from the river’s watershed via an artificial link that was constructed over a century ago. Scientist representing the concerned groups state that this water link has already allowed exotic and invasive species move into the Great Lakes and that Asian Carp sure to follow.

Carp moving into the lakes could cost local fishing industries millions if not billions of dollars in losses due to destabilized food webs. Time Eder, executive director of the Great Lakes Commission, which sponsored the study with the Great Lakes and St. Lawrence Cities Initiative told Indiana’s Post-Tribune, “We simply can’t afford to risk that. The Great Lakes have suffered immensely because of invasive species. We have to put a stop to this.”

But ‘putting a stop to this’ will be difficult as no single government agency has the authority to approve or reject the project. The closest thing to an overseeing agency in this case is the U.S. Army Corps of Engineers, which oversees shipping locks and other navigation infrastructure in the Chicago Waterway System for the Federal Government. The Corps are currently preparing a study of their own on how to close off 18 potential pathways between the watershed and the lakes, the results of which are expected sometimes in late 2015. In addition, the Federal Government has already spent more than \$100 million on three electric barriers and other efforts to keep Asian Carp from moving up the Mississippi, but these barriers are only temporary impediments and have proven to be penetrable, and many feel this simply isn’t enough.



Figure 5: Meeting with U.S. Army Corps of Engineers in Chicago

Along with electric barrier, the Illinois Department of Natural Resource (IDNR) and Scientist has applied a new method in Asian Carp fight: Water-gun, a ‘gun’ that shoots powerful pulses of



Figure 6: Water-gun Testing

water might be used to keep Asian Carp from slipping into Lake Michigan. The water cannon, which creates enough energy to deter or kill fish, could be positioned near the Chicago shipping lock, the point where some fear the invasive carp could get into the lake if the fish somehow got through electrical barriers.

“My guess is that this would stop them... and that would be to me something that we would really like to have in place,” said Leon M. Carl, USGS regional executive after a public hearing, calling the water guns an ‘urgent’ measure to deter and control the Asian Carp. The USGS also is researching the use of pheromones that could attract the carp to one area, continuous sonar to deter them and a possible chemical control specific to the Carp.

Fishing in the Great Lakes is an industry estimated to generate billions of dollars of revenue. An invasion of Asian Carp to the Great Lakes could be detrimental to the fishing industry and those financial assets. The potential financial risk to fishing alone indicates the significance of an Asian Carp invasion to the Great Lakes region.

### **Solution**

As stated in the introduction, Asian Carp – Invader Species is rich in protein and potential in Omega-3, they can be converted to desirable food for both human and nonhuman consumption. Instead of spending hundred of million of dollars to find and destroy Asian Carp, the government should create and provide funding for a program that support humanitarian food aid.

Louisiana Chef Philippe Parola has had his eye on the Asian Carp situation in Louisiana for several years, and he is not shy about expressing his worry and frustration over the slow bureaucracy of addressing what he sees as a serious threat to the ecosystem and the state’s multi-million dollar recreational and commercial fishing industry. Parola is waging a campaign that mirrors similar work addressing invasive aquatic species: If you can’t beat them, eat ‘em. “The flesh of Asian Carp is light, mild, and flaky, akin to delicate crabmeat,” said to Parola. The problem is, the fish suffer from a serious image problem: people confuse Asian Carp with common carp, a bottom-feeding species with a stronger, fishier flavor.



**Figure 7: Asian Carp meat is light, mild, and flaky, delicate crabmeat**

“People mistakenly think Asian Carp is a ‘trash fish’. It also has an incredibly complex bone structure, which makes it very difficult to clean,” says Parola, who has also worked to promote eating alligator, wild boar and nutria in campaigns aimed at population control. “Right now, there is no value



to encourage commercial fisheries to get out there to catch them.”

Now Parola is on a mission, not only to preach the delicious virtues of Asian Carp, but also to



**Figure 8: Chef Philippe Parola**

pave the way for creating a sustainable fish and food processing plant that can support a commercial Asian Carp fishing industry. Several things need to happen to complete Parola’s vision.

Nobel Prize – winning economist Paul Krugman asserts in the *New York Times* that one in six Americans living below the poverty line suffers from ‘low food security’. This is officially defined as involving situations in which ‘food intake was reduced at times during the year because households had insufficient money or other resources for food’ – in other words, hunger. Hunger is a reality, it’s time to educate and introduce Asian Carp into humanitarian food aid program.

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