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Fisheries & Aquatic Resources Program

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U.S. Fish & Wildlife Service

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Fish Tails

"Fish Tails" refers to articles that are entered by field staff in the U.S. Fish and Wildlife Service's Field Notes website, but are not published in the current edition of Fish Lines. These articles provide examples of the diverse work that the Service's Midwest Fisheries Program and partners perform on behalf of our aquatic resources and for the benefit of the American public. To view these articles, click on the links below. Enjoy!

1. [Preliminary Work Completed on Little Wolf Creek Restoration Project](#)
2. [Summer Youth Conservation Corps Program at Iron River National Fish Hatchery Another Great Success!](#)



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Newest Fisheries Friends Group Educates the Public about Aquatic Invasive Species at the Great Lakes Lighthouse Festival

BY ANJANETTE BOWEN, ALPENA FWCO

The Friends of the Lake Huron Watershed (FOLHW) worked with U.S. Fish and Wildlife Service staff to educate the public about aquatic invasive species (AIS) during the 17th Annual Great Lakes Lighthouse Festival held October 11 to 14 in Alpena, Michigan.

This is the first event that the FOLHW led as a new Friends Group supporting the mission of the U.S. Fish and Wildlife Service's Alpena Fish and Wildlife Conservation Office (FWCO).

The Lighthouse Festival had a great turnout with over 150 people visiting the FOLHW booth over the weekend. The FOLHW educated the public about the negative impacts of a variety of aquatic invasive species and had sample specimens on hand to help the public recognize them.

Invasive specimens included sea lamprey, round goby, zebra and quagga mussels, and mounts of bighead and silver carp. Handouts were also available to help the public identify invasive species; learn about what they could do to prevent their spread, and what to do if one is captured. Friends members that worked the event included President Fred Sterns, Joe Curtis, and Carl Anderson. Alpena FWCO Outreach Coordinator Anjie Bowen and Regional Fisheries Program Youth Education Coordinator Tim Smigielski also helped staff the booth.

The FOLHW also shared information about their group to stimulate interest and recruit new members. The group has been in existence for the past year and has been assisting the Alpena FWCO with fishery activities. They are gathering ideas for continuing public education about natural resources issues.

The FOLHW members are a valuable partner of the Alpena FWCO. The collaborative partnership between the FOLHW and the Alpena FWCO enhances mutual objectives for natural resource conservation, education, and connecting children with nature, making these efforts more likely to be achieved. For more information about the FLHW group or monthly meetings and activities, visit their Facebook page at <http://www.facebook.com/pages/Friends-of-the-Lake-Huron-Watershed/167083076759262> or contact Scott Koproski at (989) 356-5102.



Friends of the Lake Huron Watershed (FOLHW) President Fred Sterns talks about Asian carp with a visitor at the Lighthouse Festival on October 13, 2012. Credit: USFWS



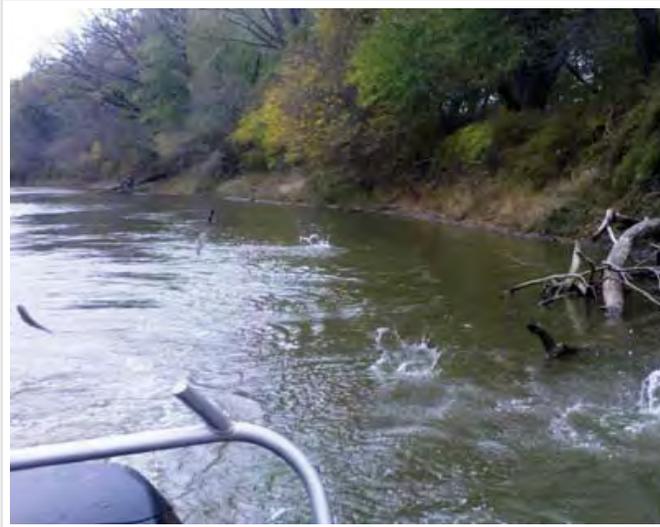
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One Bazillion Carp?

BY SAM FINNEY CARTERVILLE FWCO



So that's what's down there! With most SONAR work, biologists don't always know exactly what species of fish have just been detected below the water surface, however, these jumping silver carp provided an instant species identification for what we just saw on the computer. Credit: USFWS

Most folks are probably familiar by now with Asian carp. The videos of hundreds of slimy fish leaping from the river and into boats, whacking innocent bystanders in the head, leaves an unforgettable image burned into one's mind. Those of us who have witnessed this first hand have particularly sour memories. When the carp are jumping out of the water, it seems like there must be millions of them in the river, but how many are really present?

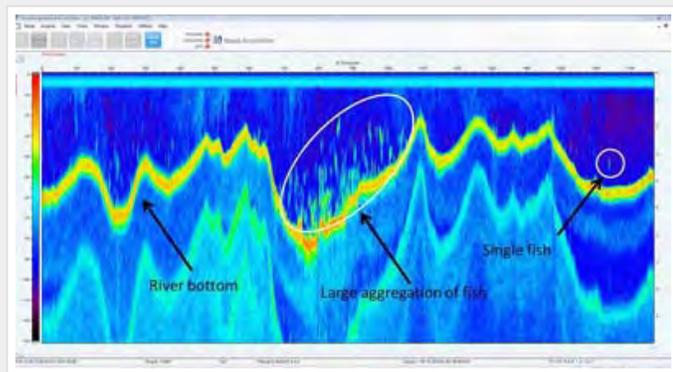
Biologists want an answer to this question, particularly in the Illinois River, where carp abundances are high and there is an aquatic connection to the Great Lakes near Chicago. This question is one that fisheries biologists at Southern Illinois University (SIU) aim to answer using hydroacoustic SONAR equipment. Hydroacoustics are regularly used in fisheries work- typically to assess stocks in open systems such as the oceans or the Great Lakes. The application of the tool in rivers is fairly novel.

Last year, SIU biologists were able to scan the entire main stem of the Illinois River in order to get an estimate of Asian carp abundance. This year,

they are scanning selected sections of the Illinois River along with side channels, where Asian carp seem to be plentiful. Carterville Fish and Wildlife Conservation Office (FWCO) biologists got the chance to assist on some of the field collections during the week of October 15th on the Illinois River. Biologists took shifts on the river helping SIU collect data while learning about the setup, operation, and capabilities of the hydroacoustic equipment.

The SIU researchers had two computer monitors set up safely inside the cabin of their research vessel where images of the river bottom and fish could be seen in real time as the boat moved along the river. Fish that are detected by the hydroacoustic SONAR devices show up as elongated, vertical oval shapes on the computer screen. When the first few fish, represented by vertical ovals, were observed on the computer screen it was hard to imagine them as actual fish in the water. However, when large groups of "vertical ovals" were observed on the computer in a small area, the all-too-familiar sight of silver carp jumping into and around the boat followed immediately after. Eventually, the Carterville biologists could tell a few seconds ahead of time when the SIU research boat was going to endure an onslaught of carp just by looking at the computer screen first.

The Carterville FWCO has hydroacoustic equipment on order from the manufacturers and is currently learning the technology from SIU with plans to collaborate with SIU researchers and assist in counting fish and developing the methods needed to count fish in the river. If possible with current technologies, Carterville FWCO also has plans on trying to get species specific signals developed for Asian carp. This will involve pond experiments testing different SONAR frequencies on caged Asian carp as well as native species. Asian carp specific signals will help to get more accurate counts and will be helpful in other applications, such as finding and targeting Asian carp for removal in areas near Chicago where fish are in low abundance.



A typical SONAR computer image. The bright orange/yellow line is the river bottom and the elongated vertical ovals are fish that were detected by the SONAR equipment. Credit: USFWS



Great Lakes Fish Tag and Recovery Laboratory Assists States with Coded Wire Tag Recoveries

BY KEVIN PANKOW GREEN BAY FWCO



Fish Biologist Allen Lane examines a Chinook salmon at Algoma, Wisconsin, during the Kewaunee/Door County Salmon Tournament. Credit: USFWS

In 2012 anglers in Lake Michigan completed many successful fishing trips, with many indicating it was the most productive fishing in decades. Great Lakes Fish Tag and Recovery Laboratory fish biologists Elliot Hoffman, Allen Lane, Kevin Pankow and Jim Webster, headquartered at the Green Bay Fish and Wildlife Conservation Office, heard this often from anglers this fishing season while assisting the Wisconsin Department of Natural Resources (WIDNR) with collecting information on angler caught salmon and trout in Lake Michigan. This is encouraging news for Great Lakes fisheries management agencies, including WIDNR, that are concerned over the balance of predator fish to prey fish in Lake Michigan.

To address this concern, the Great Lakes Fish and Tag Recovery Laboratory was created in 2010 and began to coded-wire tag (CWT) and clip the adipose fin of Chinook salmon and lake trout stocked into Lake Michigan by state and federal hatcheries. The lab uses a mobile automated tagging trailer to tag and adipose fin clip fingerling sized fish. The CWTs are 1mm long by 0.25 mm diameter stainless steel that is injected into the snout of the fish. The CWTs have a 6-digit code specific to the origin (agency and hatchery) and stocking location of the fish. The tags and clip allows biologists to identify all recaptured Chinook and lake trout as a hatchery fish or a wild fish. After the tags are removed from the snouts of fish caught, agencies can then estimate the rates of natural reproduction, determine lake wide movements, and contributions of each agencies stocking program to the lake wide fishery. The ultimate objective is to stock the correct number of fish that provide the best return to the fisheries without significantly impacting the forage fish base.

U.S. Fish & Wildlife Service biologists working with WIDNR staff began collections of sport-caught salmon and trout on June 14th in Algoma, Wisconsin and ended on October 22nd at the WIDNR Strawberry Creek Chinook Facility in Sturgeon Bay. Sampling occurred on 27 days at various Wisconsin ports on Lake Michigan including Algoma, Kewaunee, Manitowoc, Sheboygan, Sturgeon Bay and Two Rivers. Collaboratively Service and WIDNR staff examined over 2,800 Chinook salmon, lake trout, Coho salmon, steelhead and brown trout. Length, weight, sex, maturity, lamprey marks and scales were collected on Chinook salmon and any species with fin clips. Over 600 snouts that contained CWTs were collected from adipose fin clipped fish and taken to the Great Lakes Fish Tag and Recovery Laboratory for processing. All this information will help biologists assess the health of the fishery and future management decisions.

In addition to CWT recoveries, more than 900 Chinook salmon tails were collected for a lake wide study that began in 2006 to estimate the level of natural reproduction in the Chinook salmon population. Prior to the CWT program, a portion of hatchery reared Chinook salmon was fed diets that contained oxy-tetracycline (OTC), which forms a mark on bony structures. The vertebrae from harvested fish are examined for OTC marks; those that have the marks are identified as hatchery-reared fish. This marked the inaugural season that the Great Lake Fish Tag and Recovery Laboratory has assisted agencies around both lakes Michigan and Huron with the CWT collection, focusing efforts at fishing tournaments.

The Service hired five additional technicians to aid state agencies in collection efforts at Milwaukee, Wisconsin, Zion, Illinois, Charlevoix, Michigan and two for Lake Huron at Alpena, Michigan. Service biologists from the Great Lakes Fish Tag and Recovery Laboratory, funded by the Great Lakes Restoration Initiative, also assisted Indiana DNR and Michigan DNR with CWT recoveries in April and May.



Fish Biologist Elliot Hoffman (left) records data



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On the Road Again! Lake Sturgeon Off to New York to Assist in Cooperative Conservation

BY DOUG ALOISI GENOA NFH

The staff from the Genoa National Fish Hatchery (NFH) was very glad to see off their lake sturgeon charges from New York this fall as they begin their life in the wild. It seems like long ago in late May staff from Genoa NFH assisted the New York Department of Conservation, U.S. Geological Survey's Tunison lab and the Fish and Wildlife Service's New York Field Office collect eggs from the St. Lawrence River in Massena, New York. Biologists from Genoa NFH were invited to participate in the egg collections due to our previous experience in egg and fingerling production, and to spread out efforts among cooperative conservation partners interested in restoring lake sturgeon populations in the St. Lawrence River basin. Eggs were brought back and successfully reared for stocking in the Salmon River, a tributary of the St. Lawrence River.

Lake sturgeon are considered endangered by the state of New York, with one of the last viable and reproducing population of lake sturgeon in the state residing in the boundary waters of the St. Lawrence River. The stocked fish were reared to over six inches in length, a size considered safe from most predators and large enough to individually tag with PIT tags. PIT tags are similar to grocery store bar codes, can be scanned externally, and are commonly placed in pets to be able to individually identify them. This will allow biologists to track and assess survival and individual reproductive success, if the fish are fortunate enough to stay alive for the 18 to 22 years that it will take to mature.

Drivers travelled through the night to reach the stocking destination, arriving at the stocking site 24 hours after leaving the beautiful west coast of Wisconsin. The truck was met by excited biologists from state and federal offices, and a tribal school from the St. Regis Mohawk tribe, who assisted in the stocking. A blessing was said by tribal officials, and the fish were released into their new home. Plans are being made for next year's egg take to help ensure that another year class of sturgeon may assist in rehabilitation efforts of this long lived and unique species of fish.



Fish Biologist uses clay to strip adhesive layer from lake sturgeon eggs to aid in shipping and hatchery incubation. Credit: USFWS



Lake sturgeon fingerlings being prepared for shipping. Credit: USFWS



Genoa National Fish Hatchery Stocks First "Home Grown" Mussels

BY NATHAN ECKERT GENOA NFH

Freshwater mussel culture at Genoa National Fish Hatchery (NFH) in the past has predominantly involved placing fish bearing mussel larvae in culture cages out at locations in the wild known to support mussel growth. Variable stream conditions and the invasion of the zebra mussel have made culture results at wild locations inconsistent.

In an effort to protect against the risk of culture loss, Genoa NFH began to look for alternate options for the culture of freshwater mussels. Last year we placed a few test cages in one of the hatchery ponds to determine if mussels could be raised at the hatchery. Nine cages of five species all produced some level of juvenile mussels. These mussels spent the winter in the mussel building and then were placed in our streamside mussel rearing trailer for this summer to grow large enough to be stocked.

Last month we stocked 160 Higgins' eye in Pool 3 of the Mississippi River as well as sending 113 fatmuckets, 29 plain pocketbook and 32 black

sandshell to Farmers Creek in Iowa. All of these mussels were over an inch in length and large enough for us to mark with a unique ID so that we can monitor their growth and survival in the future. While these stockings are small in comparison to multiple thousands of Higgins' eye we have stocked in the past from our wild cage efforts, it is still a good start in our efforts to raise mussels in a controlled environment on a consistent basis. We hope that results next year will net more mussels for restoration efforts that have been raised right here at home.



Higgins' eye mussels with glue dot markings prior to release. Credit: USFWS



Biologists sieve mussel cage substrate to look for small juvenile mussels. Credit: USFWS



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We Ain't Afraid of No Carp!

BY JENNIFER JOHNSON CARTERVILLE FWCO

Carterville Fish and Wildlife Conservation Office

Asian Carp...That about sums up the majority of the work done at the Carterville Fish and Wildlife Conservation Office (FWCO). While we do work on a variety of other projects (e.g habitat, fish passage, and sport fish management), the majority of our office's time seems to be spent on these nuisance fishes. Over the past couple of decades, Asian carps have been moving up the Mississippi River Basin and now these fishes are threatening to enter the Great Lakes.

The Carterville FWCO's work aims to minimize the expansion and new introductions of Asian carp. While located in Marion, Illinois, much of this work requires some of the office's 12 employees to travel to throughout the state, particularly to the Upper Illinois River and the Chicago Area Waterways System (CAWS).

One project in which employees get to see much of the state is the "Distribution and Movements of Small Asian Carp in the Illinois Waterway" or the small Asian carp project as it is known in the office. Led by biologist Jeff Stewart, the small Asian carp project assess the presence and abundance of small (or young of the year) Asian carps in the Illinois River from the Peoria Lock and Dam near Peoria, Illinois to the Dresden Lock and Dam. Fish are collected through boat electrofishing and fyke nets, and all species collected are recorded. Any Asian carp collected which is believed to be a young of the year will be tagged. Little is known about the early life history of Asian carps. This project hopes to provide a better understanding of where these small fishes are located and their movements.



Carterville FWCO staff members complete a DIDSON survey in the electrical fish barriers near Romeoville, Illinois. Credit: USFWS



Staff complete surveys at all times of the year to ensure the Great Lakes are Asian carp free. Credit: USFWS

The other main Asian carp project we work on is the "Evaluation of Fish Behavior at the Electric Dispersal in the CSSC." This project, led by biologist Aaron Parker, is sometimes referred to as the DIDSON or caged fish project, and that is exactly what this project entails...DIDSON and caged fishes. Using Dual Frequency Identification Sonar (DIDSON), staff from the Carterville FWCO and assisting offices observe wild fish behavior in and around the electrical fish barriers near Romeoville, Illinois. Fish (Gizzard shad) are also being transported across the electrical barriers via a cage attached to the side our boat to determine more precisely how the fish respond to different areas in and around the barrier. Information from these projects along with accompanying projects will help managers make better decisions regarding the dispersal barriers and other fishery management actions in the CAWS and Upper Illinois River.

Aside from taking the lead on the DIDSON, caged fish, and small Asian carp projects, the Carterville FWCO assists several other agencies in related Asian carp ventures. Our staff regularly helps to monitor the potential presence of carp in the CAWS by means of sampling water for eDNA and electrofishing fixed and random sites upstream of the electrical barrier.

When carps are suspected to be present in the CAWS, the office aids our state, federal, academic, and private partners in rapid response actions. Staff also represents the Fish and Wildlife service on various committees working to keep the carp out of the Great Lakes. Assistant Project Leader Sam Finney is FWS's representative on the Monitory and Rapid Response Work Group, and the Carterville FWCO also headed the drafting of the Management and Control Plan for Bighead, Black, Grass, and Silver Carps in the United States. Ultimately, all of us at the Carterville FWCO would like to stop the spread of Asian carp allowing future generations to enjoy all the nation's waterways without these pesky fishes.



Crews from the USFWS, USACE, and IDNR complete a rapid response in the waterways around Chicago to determine if Asian carp are present in the area. Credit: USFWS



Biologist Jeff Stewart motors away from a fyke net set in the Illinois River to monitor the presence of small Asian carp. Credit: USFWS