



Fisheries Program

Fish Lines

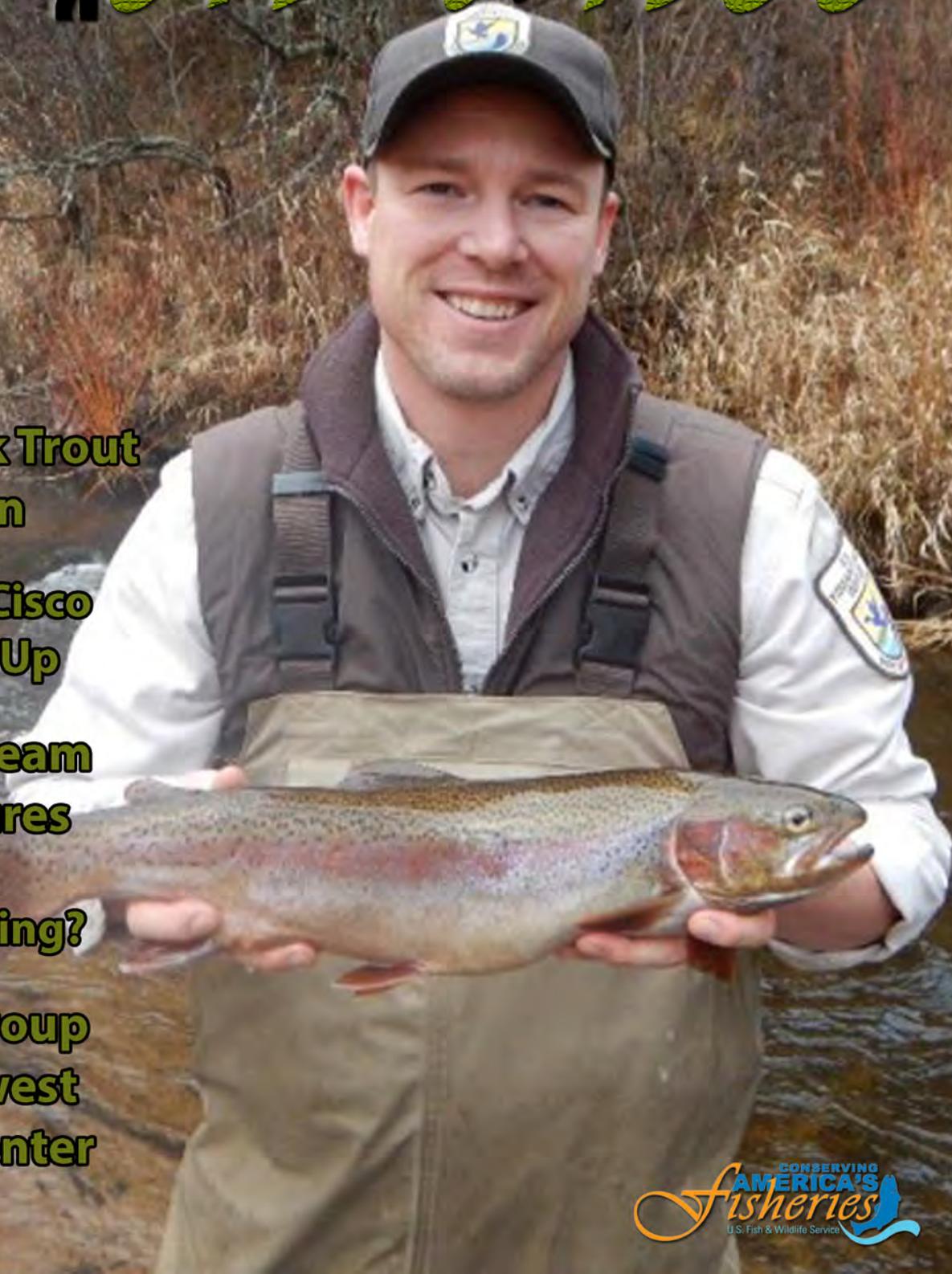
Coaster Brook Trout Migration

Lake Huron Cisco Measuring Up

Monitor Stream Temperatures

What's Cooking?

FIS Work Group Tours Midwest Fisheries Center





U.S. Fish & Wildlife Service Fisheries, Midwest Region

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Fish Tails

"**Fish Tails**" refers to articles that are submitted by field staff that do not appear as a feature 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.

Field Notes

"**Field Notes**" is an online searchable database that showcases hundreds of employee-written summaries of field activities and accomplishments of the U.S. Fish and Wildlife Service from across the nation.

Last updated: July 1, 2016



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Partnering to Monitor Coaster Brook Trout Migration in Pilgrim River, Michigan

BY JASON ROSS, ASHLAND FWCO

The Pilgrim River is approximately 21 kilometers long and located near Houghton, Michigan. The stream empties into the Keweenaw Waterway and supports self-sustaining populations of resident brook trout and migratory coaster brook trout. Recently, the Michigan Department of Natural Resources (DNR) changed regulations in ten streams, near the river mouths, lowering the harvest limit on brook trout, lake trout and splake to 1 per day and with an increased minimum size limit of 20 inches, in an attempt to benefit migratory brook trout. Understanding the possible overlaps between the resident and migratory life history forms of brook trout is important for agencies that manage these fisheries.

So, during 2014 and 2015 the Michigan DNR, US Fish and Wildlife Service - Ashland Fish and Wildlife Conservation Office (FWCO), and Michigan Technological University (MTU) partnered to assess the brook trout residing near the mouth of the Pilgrim River at river kilometer (rkm) 1. Fish were captured with backpack electroshockers and implanted with passive integrated transponder (PIT) tags and released. During 2014, nearly 100 brook trout were tagged at rkm 1, while about 40 brook trout were tagged during 2015. Approximately 20 brook trout and 24 rainbow trout were tagged at rkm 6 during 2015. PIT tag stations, capable of recording the date and time that tagged fish pass by the antenna, as well as their direction of travel, were installed at rkm 1 and rkm 6 in October 2015. Thus far, tagged fish have been detected at both stations from both tagging years.



Fish biologist, Jason Ross, with a non-native rainbow trout captured in the study area. Credit: C. Adams, USFWS



Post spawn female Pilgrim River brook trout ready to be PIT tagged and released. Credit: C. Adams, USFWS

Graduate student, Chris Adams, from MTU has been routinely maintaining and downloading data from the PIT tag stations, which were provided for the study by Ashland FWCO. Chris, who is pursuing a doctorate degree, will continue to manage the tag recording stations, and will evaluate the data to determine the migration patterns of brook trout and other, tagged trout and salmon. The evaluation is intended to find where overlaps may exist between stream resident and migratory brook trout. Chris also hopes to determine whether or not regulation changes appear to be benefitting migratory brook trout.



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Lake Huron Cisco Measuring Up

BY CHRIS OLDS, ALPENA FWCO



Biologist Chris Olds taking measurements of the dorsal fin with digital calipers.
Credit: USFWS

height of the dorsal fin, pelvic fin, and ventral fin. These measurements are taken with a digital caliper and then divided by the standard length of the fish to give a ratio for a comparison among fish of various sizes. Meristic measurements are counts of characters, such as the number of gill rakers, that can be compared to historical records and examined for any trends over time. Cisco morphometrics and meristics will continue to be collected as the USFWS begins to rear Cisco in the federal hatchery system.

This work will support efforts by Lake Huron management agencies to evaluate Cisco reintroduction strategies.

In November of 2015, the Alpena Fish and Wildlife Conservation Office (FWCO) collected Cisco (aka Lake Herring) from the Les Cheneaux Islands (LCI) in Northern Lake Huron as part of a pilot project looking to collect gametes for future restoration efforts in western basin of Lake Huron. This work has two objectives: to assist the Great Lakes Fisheries Commission in creating a contemporary Cisco key for identifying the different ciscoes from the Great Lakes; and to investigate whether or not these LCI Cisco resemble historical forms documented from other parts of Lake Huron in the 1920s. We examined cisco morphology by taking morphometric measurements and meristic counts and compared the morphology differences between sampling locations. Beginning in December 2015 Cisco morphometry was examined as a collaborative effort between the U.S. Fish and Wildlife Service (FWS), U.S. Geological Survey and Great Lakes Fisheries Commission. This work will also aid in identifying any relationship between genotype and phenotype in Cisco from the Great Lakes.

Examples of morphometric measurements are the



Fish Biologist Chris Olds working with Randy Eschenroder from the Great Lakes Fishery Commission and Tim O'Brien from United States Geological Survey to measure and count the characters of cisco capture in the Les Cheneaux Islands, Michigan.
Credit: A.Muir, GLFC



A Cisco pinned so all of its fins can be measured and photographed. Credit: A. Muir, Great Lakes Fishery Commission (GLFC)



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Teaming Up With Ashland Charter High School to Monitor Stream Temperatures

BY JASON ROSS, ASHLAND FWCO

Cold-water habitat is essential for the sustainability of brook trout and other cold-water species. Several cold-water streams in the Lake Superior basin of Wisconsin provide suitable habitat for brook trout, but are at risk of warming due to climate change. To validate predicted thermal classes of streams, we deployed 25 temperature loggers throughout the Iron River and Bad River watersheds. The loggers were set during May of 2015 and were retrieved during October of 2015. The loggers will be redeployed for several years to capture an accurate classification of thermal classes.

Promoting science and technology, the Ashland Fish and Wildlife Conservation Office (FWCO) teamed up with the local Ashland Charter High School to recover the temperature loggers. The students discovered the importance of recording meticulous notes and drawing detailed maps to locate these submerged data recorders. We recovered all 25 temperature loggers!! Students also had the opportunity to evaluate the data and to compare the predicted July temperatures to temperatures we observed. We found that most temperatures were similar to predicted temperatures. Only three stream segments were warmer than the predicted temperature of (41 degrees Fahrenheit) while one was cooler than predicted.

This has been a great opportunity for the students to gain experience in fisheries science while using technology and contributing to the goals of brook trout restoration. During the spring of 2016, students participated in deploying the loggers and generating the notes and maps to guide retrieval of loggers during the fall. It is our hope and goal to continue the collaboration with the Ashland Charter High School in years to come.



Temperature loggers were spread across the tailgate to display the multiple logger types and methods for anchoring the loggers. The long tubular loggers are the Hobo ProV2 while the Hobo Tidbits are encased in the PVC caps.
Credit: J.Ross, Ashland FWCO



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What's Cooking?

BY OLIVEA MENDENHALL, CARTERVILLE FWCO

This year, marked the 15th annual Cache River Nature Fest. For the past few years, the Carterville Fish and Wildlife Conservation Office (FWCO) have been frying up Asian carp to give participants the opportunity to taste this delectable invasive species. Approximately, 1,100 residents from Illinois, Missouri, Kentucky, and Indiana joined the Carterville FWCO employees, Friends of the Cache River Watershed, Cypress Creek National Wildlife Refuge, Illinois Department of Natural Resources, and Crab Orchard National Wildlife Refuge personnel along with other volunteers to make this event a success. Everyone was encouraged to try these fish and were also provided with guidance on proper filleting techniques in the hopes of educating the public about this tasty invasive. Asian carp is a mild, robust, and flaky white fish and once cleaned it is battered and deep fried (and who doesn't like deep fried?).



Donovan Henry, fish biologist, hands out samples of Asian carp to participants.
Credit: Olivea Mendenhall, USFWS



Jimmie Garth, technician, from the Carterville FWCO - Wilmington Substation assists with preparing Asian carp for the fryer. Credit: Olivea Mendenhall, USFWS

To make Asian carp "wings", you must first fillet the fish by removing the skin and red meat which often has a strong fishy taste that people dislike. Starting on the outside edge of the fillet, insert the fillet knife into a section of meat, using the Y bones as a guide, cut to the inside edge of the fillet. The portion near the tail will have bones that are irregular so discard this portion. For more information, check out one of the numerous videos available on the internet and YouTube that can provide guidance for making carp "wings".

This year, we had several repeat customers that enjoyed the samples of Asian carp and many individuals who had never seen let alone tasted Asian carp. It is always exciting to see a person's reaction when they try it for the first time. Most people are surprised at the texture of the meat and how good they taste. Although it is time consuming and takes a little practice to make the Asian carp "wing", hopefully many will utilize this resource in the future.



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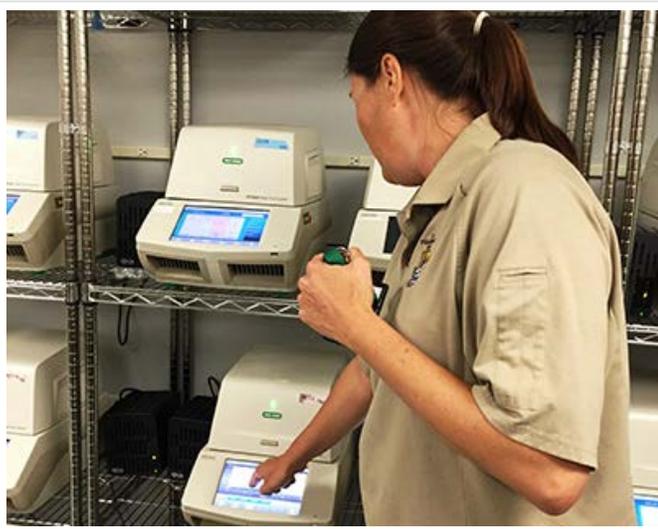
FIS Work Group Tours Midwest Fisheries Center

BY TIM SMIGIELSKI AND DAVE RADLOFF, REGIONAL OFFICE

The Fisheries Information System (FIS) is an online database for the collection and management of Fish and Aquatic Conservation (FAC) Program information, focused on tracking program accomplishments and operational needs for performance reporting and strategic planning. Now that is a mouthful!

The FIS Work Group (WG), (the keepers of this database) is made up of representatives from all US Fish and Wildlife Service regions, Headquarters (HQ) and the very important Environmental Conservation Online System or ECOS programmers. The FISWG coordinates with the Fisheries Management Team and (HQ) to ensure the database meets data collection, reporting, and management needs at the national, regional, and field office levels.

The FISWG meets annually to address their responsibilities of communication, reporting and guidance. This year was no exception. Some highlights of this year's annual meeting included; identifying and prioritizing high priority programming needs within the FIS and outlining a process to



Emy Monroe is pointing to results being generated in a real-time polymerase chain reaction (PCR) assay, which is screening field samples for the presence of bighead and silver carp DNA. Credit: USFWS



La Crosse Fish Health Center Project Leader Ken Phillips discusses the Center's diagnostic capabilities with the FIS work group. Credit: USFWS

incorporate annual work planning into the FIS. (Most of you are probably thinking...hmm...sorry I missed that meeting!) Every year FISWG members take turns hosting this important meeting. This year's annual meeting was held in Region 3 at the Midwest Fisheries Center (Center) located in beautiful La Crosse, Wisconsin.

The Center established in June of 2015, houses the La Crosse Fish and Wildlife Conservation Office (FWCO), the La Crosse Fish Health Center and the Whitney Genetics Laboratory. The Center's Director Teresa Lewis, along with others, provided not only a super meeting space, but also educated the group about the programs and responsibilities of the Center, through a tour led by Emy Monroe, with Whitney Genetics Lab, Ken Phillips with the Fish Health Center and Sam Finney with the La Crosse FWCO.

Special thanks goes out to Keith O'loughlin the Center's Administrative Officer for all of his planning, coordination and his awesome dining suggestions and to Fish Biologist, Heidi Keuler for her great interpretation of the eDNA trailer functions and water sample centrifuging techniques! Thanks to all for a fun and productive meeting!



Sam Finney La Crosse FWCO Project Leader (seated) and La Crosse FWCO Fish Biologist Heidi Keuler described the FWCO programs and informed the group about the work being done in the mobile eDNA trailer. Credit: USFWS



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Fisheries, Midwest Region

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Pendills Creek/Sullivans Creek National Fish Hatchery Eight Years and Counting

BY CURT FRIEZ, PENDILLS CREEK NFH

What originally started out as a farfetched dream... has come true. For years the hatchery staff had dreamed about having the ability to put on a children's fishing clinic where kids could learn how to fish. Enhancements to the water filtration building ended up adding to the potential for more recreational opportunities. Upon completion of the hatchery enhancements an enclosed sediment pond was created with a constant flow of fresh water that would support a population of catchable trout that would work for children's fishing pond.

For the first few years, the sediment pond worked as a temporary area for the children's fishing events. Due to the size, it did restrict the number of children able to fish at one time. It was amazing how successful the children were at catching fish out of such a little pond.

After the fourth annual event, the hatchery acquired visitor facility enhancement funding. We worked with the US Forest Service to obtain necessary permits and approvals to conduct work on Pendills Creek proper just south of the original hatchery water control structure spill dam. Timber and brush were



This trout didn't have enough "Spidey Sense" to get away from a lucky angler at the 8th Annual Friends of Pendills Creek Hatchery Children's Fishing Day held June 4th at Pendills Creek NFH near Brimley, Michigan. Credit: USFWS



Friends of Pendills Creek Hatchery helped to complete these wonderful improvements to the Pendills Creek NFH Lake Superior public access site. Credit: USFWS

removed, gravel trails and parking were established and grass areas were added to enhance the site to create the handicap accessible children's fishing area.

The new pond area allows for fishing access on both sides of Pendills Creek. This year marked the 8th Annual Children's Fishing Event, with the last four years being held at this renovated site. The event has been tremendously successful reaching out to hundreds of children and families annually. Once in a while "Lucy the Lake Trout" the hatchery mascot makes an appearance.

Numerous other enhancements have occurred around Pendills Creek facility, and more are yet to come. Since the inception of Friends of Pendills Creek Hatchery (FPCH), a non-profit organization established to assist promoting the US Fish and Wildlife Service and our complex, FPCH has taken great measures to further enhance the public beach access site to Lake Superior. Some of FPCH's efforts at the public beach access site include: a pavilion on top of a concrete pad sheltering several picnic tables, a charcoal grill, trash receptacle, a kiosk, and a boardwalk and bridge across the hatchery's effluent channel to access the mouth of Pendills Creek as it enters Lake Superior. Up next on the agenda for the public beach access site, is to include the site as a secondary access site for the Lake Superior Water Trail. Funding and planning for the site to serve as a secondary access site for the water trail is currently under way. Some further enhancements will need to be added to the current site, to allow those recreating on the water trail to first locate the site via water, and to provide further information within the kiosk as to what the site offers. Stay tuned!



Even more improvements are planned to assist in accessing the natural beauty of the Lake Superior shoreline near Pendills Creek NFH. Credit: USFWS



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Fish Tails

Articles submitted by field staff that do not appear as a feature within Fish Lines. These articles provide examples of the diverse work that is performed on behalf of aquatic resources.

Lake Huron Larval Coregonid Densities Down in 2016

BY CHRIS OLDS, ALPENA FWCO

The Alpena Fish and Wildlife Conservation Office (FWCO) completed its larval tows for coregonines (commonly known as the whitefishes) in Lake Huron in what seems to be a weak year class. With the above average temperatures in the fall and the late onset of winter coupled with the abnormally cooler spring temperatures, the spring larval distribution of Coregonines has been down compared to the last two years of sampling. Larval sampling will aid in identifying current distribution for pre and post re-introduction efforts in Lake Huron. Furthermore, this survey will be used to examine year class strength based on climate changes from year-to-year in Thunder Bay and Saginaw Bay.

Larval tows in Saginaw Bay have not captured larval Cisco; however Lake Whitefish have been captured. This is important to know because Lake Whitefish and Cisco at the larval stage compete for similar food resources. This can help managers recognize early life stage impediments to a successful Cisco rehabilitation program. Larval densities of Lake Whitefish in Saginaw Bay appear to be lower in 2016 than 2015.

In Thunder Bay survey effort and design was replicated in 2016 from 2015. A total of 35 tows were completed with 40% of those tows capturing Coregonines compared to 100% of tows in 2015. Densities of Coregonines in the tows from 2016 were also much lower than 2015. There is a lot of interest in the beach seine survey that will begin after the larval survey to see if similar patterns are observed in beach seine densities.

This work will support efforts by Lake Huron management agencies to evaluate Cisco reintroduction strategies.



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Midwest Region Fisheries Divisions

National Fish Hatcheries

The Region's National Fish Hatcheries (NFH) focus on native species recovery and restoration. Primary species include: lake trout, endangered pallid sturgeon, and endangered, threatened, and native mussels. Other major programs include coaster brook trout and lake sturgeon restoration, fulfilling tribal trust responsibilities for native aquatic species, and cost reimbursed rainbow trout production for recreational fishing. Hatcheries also provide technical assistance to other agencies, provide fish and eggs for research, and develop and maintain brood stocks of various species and strains.



Fish and Wildlife Conservation Offices

Fish and Wildlife Conservation Offices (FWCO) conduct assessments of fish populations to guide management decisions, play a key role in targeting and implementing native fish and habitat restoration programs; perform key monitoring and control activities related to aquatic invasive species; survey and evaluate aquatic habitats to identify restoration/rehabilitation opportunities; work with private land owners, states, local governments and watershed organizations to complete aquatic habitat restoration projects under the Service's National Fish Passage Program, National Fish Habitat Partnerships, Partners for Fish and Wildlife and the Great Lakes Coastal Programs; provide coordination and technical assistance toward the management of interjurisdictional fisheries; maintain and operate several key interagency fisheries databases; provide technical expertise to other Service programs addressing contaminants, endangered species, federal project review and hydro-power operation and relicensing; evaluate and manage fisheries on Service lands; and, provide technical support to 38 Native American tribal governments and treaty authorities.

Sea Lamprey Biological Stations

The Fish and Wildlife Service is the United States Agent for sea lamprey control, with two Biological Stations assessing and managing sea lamprey populations throughout the Great Lakes. The Great Lakes Fishery Commission administers the Sea Lamprey Management Program, with funding provided through the U.S. Department of State, U.S. Department of the Interior, and Fisheries and Oceans Canada.

Fish Health Center

The Fish Health Center provides specialized fish health evaluation and diagnostic services to federal, state and tribal hatcheries in the region; conducts extensive monitoring and evaluation of wild fish health; examines and certifies the health of captive hatchery stocks; and, performs a wide range of special services helping to coordinate fishery program offices and partner organizations. The Whitney Genetics Lab serves as a leading edge genetics laboratory and conducts environmental DNA (eDNA) sample processing for early detection of invasive species.

Whitney Genetics Lab

The Whitney Genetics lab provides environmental DNA (eDNA) surveillance for the early detection of invasive Silver and Bighead carp as part of the Asian Carp Regional Coordinating Committee's plans to detect, monitor, and respond to the threat of invasive carp in the Great Lakes. The lab also provides analysis for determining the ploidy of wild-caught Black and Grass carp, two more invasive carp species.



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