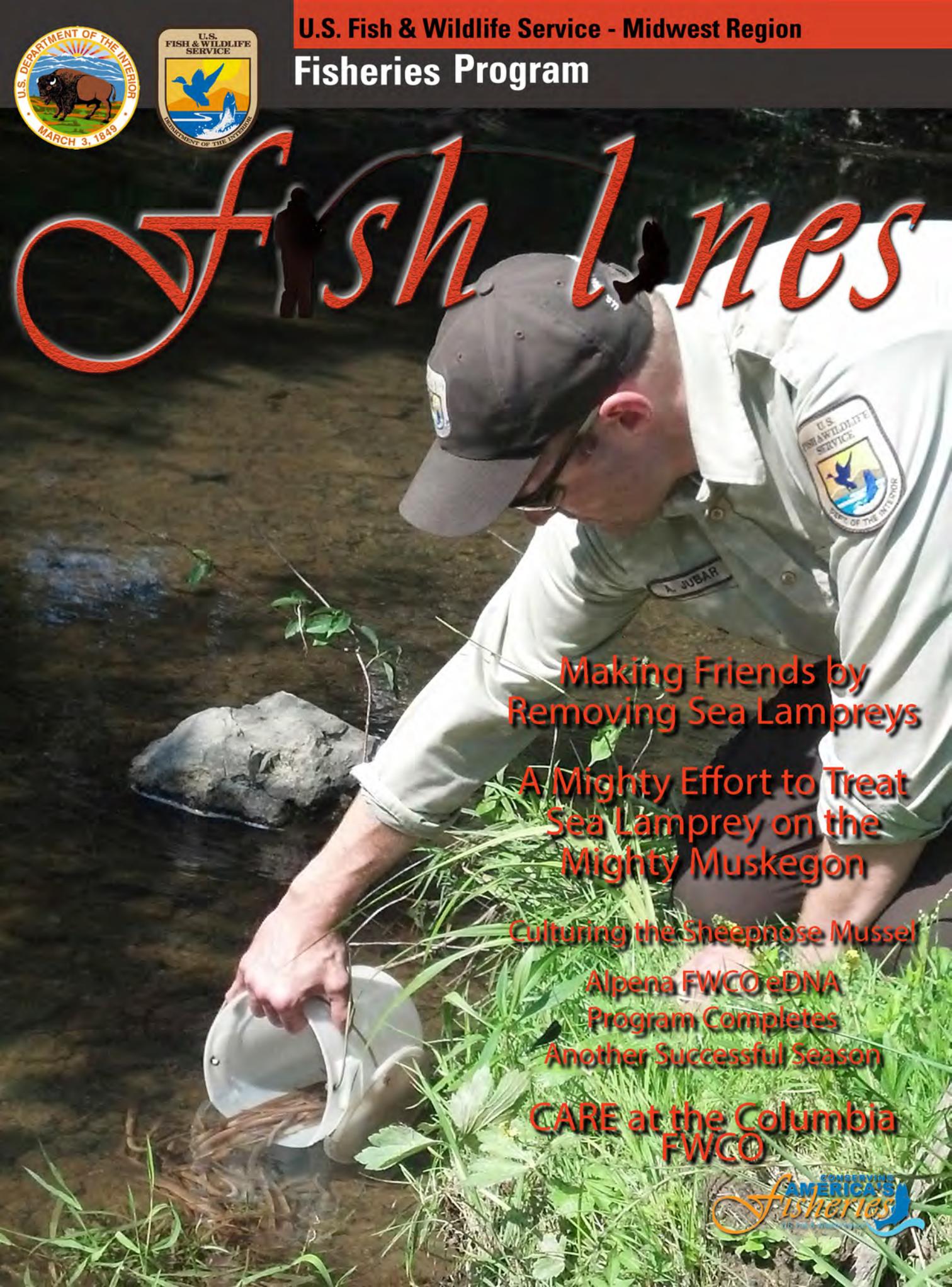




U.S. Fish & Wildlife Service - Midwest Region

Fisheries Program

Fish Lines



**Making Friends by
Removing Sea Lampreys**

**A Mighty Effort to Treat
Sea Lamprey on the
Mighty Muskegon**

Culturing the Sheepnose Mussel

**Alpena FWCO eDNA
Program Completes
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U.S. Fish & Wildlife Service Fisheries, Midwest Region

Conserving America's Fisheries



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Every three years the Sea Lamprey Control Program's lampricide control teams set up camp in[Read More](#)

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Removing Sea Lampreys

Sea Lamprey control agents use specialized backpack electrofishing equipment to survey Great Lakes streams. ...[Read More](#)



Making Friends by Removing Sea Lampreys



Mighty Effort to Treat Sea Lamprey



Culturing the Sheepnose Mussel



Another Successful Season



CARE at the Columbia FWCO

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: September 25, 2014



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

Conserving America's Fisheries

Making Friends by Removing Sea Lampreys

BY AARON JUBAR, LUDINGTON BIOLOGICAL STATION



Aaron Jubar, USFWS Fish Biologist, releases native lampreys back to Conneaut Creek. Credit: Cheryl Kaye, USFWS

Sea Lamprey control agents use specialized backpack electrofishing equipment to survey Great Lakes streams for larval Sea Lampreys. The gear, which is operated by a single user, passes a relatively low voltage current through the water. The low voltage agitates lampreys out of their burrows in the stream bed. Upon emergence the operator quickly switches to a higher current which immobilizes the larvae, allowing them to be captured. Backpack electrofishing has been utilized for decades to assess streams for Sea Lamprey abundance, guide lampricide applications, and evaluate treatment effectiveness. However, the gear has never been tested as an alternative measure of controlling a Sea Lamprey population, until recently.

In August, Sea Lamprey Control Program (SLCP) staff from the US Fish and Wildlife Service Ludington and Marquette Biological Stations worked alongside personnel from the Pennsylvania Fish and Boat Commission (PFBC) and the Pennsylvania Department of Environmental Protection (PDEP) in an effort to remove Sea Lampreys from a portion of Conneaut Creek, a tributary to Lake Erie. Conneaut

Creek has long been a Sea Lamprey producing stream in the Lake Erie basin and was most recently treated with lampricide during May 2013. However, due to PFBC concerns over the Hornyhead Chub, SLCP agreed to not treat a 5.9 mile stretch of Sea Lamprey infested stream not routinely permitted for treatment in the upper reaches of Conneaut Creek. The Hornyhead Chub is common in many portions of the Great Lakes but there are only small populations in two Pennsylvania streams. Given that the effect of lampricide on Hornyhead Chubs is unknown, the PFBC and PDEP requested an alternative method of lamprey removal, specifically backpack electrofishing. "Our main concern is that we don't want to risk extirpating Hornyhead Chubs from Conneaut Creek and Pennsylvania", said Doug Fischer, PFBC state Ichthyologist.

The USFWS provided the electrofishing equipment and brought ten SLCP staff to Conneaut Creek. The PFBC and PDEP reciprocated by providing staff for the removal effort. "Working side by side with the Pennsylvania staff was one of the highlights of this project. A partnership was forged and friendships were made", said Shawn Nowicki, SLCP Larval Control Unit Supervisor. For six days, teams covered all 5.9 miles of Sea Lamprey infested stream, with many areas being electrofished multiple times. The main objective was to remove as many Sea Lampreys as possible. A total of 1,781 Sea Lamprey larvae were removed from the stream. Additionally, the effort removed 202 newly-metamorphosed Sea Lampreys that would have migrated to Lake Erie this fall and destroyed about 40 pounds of sport fish each.

Conneaut Creek also contains abundant American Brook Lampreys, which is a harmless and non-parasitic lamprey species native to the Great Lakes. Throughout the electrofishing removal, efforts were made to return American Brook Lampreys to the stream. Over 3,500 native lampreys were released back into Conneaut Creek unharmed.

Although numerous Sea Lampreys were removed from Conneaut Creek, it is unknown at this time how much the total population was reduced. Based on 2013 survey data, the Sea Lamprey population in the removal area exceeded 12,000 large larvae. If that number is accurate, then only a fraction of the population was removed via electrofishing. Standard larval assessment surveys are planned for Conneaut Creek during late September 2014 to evaluate the effectiveness of the removal effort and determine if treatment with lampricide will be necessary to control these aquatic invaders in upper Conneaut Creek.



Hornyhead Chub collected in Conneaut Creek. The fish is a species of special concern in Pennsylvania. Credit: Doug Fischer, Pennsylvania Fish and Boat Commission.



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

Conserving America's Fisheries

A Mighty Effort to Treat Sea Lamprey on the Mighty Muskegon

BY TIM SMIGIELSKI, MIDWEST REGION FISHERIES AND AQUATIC CONSERVATION PROGRAM
AND JENNA TEWS, LUDINGTON BIOLOGICAL STATION



The Muskegon River at Croton Dam.



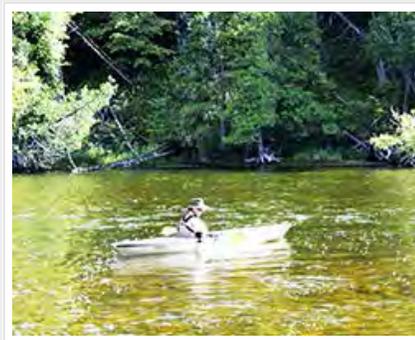
At Croton Dam (the application site) equipment preparations are made and the lampricide is staged.



Lisa Dennis measures the amount of liquid Niclosimide being applied to the Muskegon River at Croton Dam during the recent sea lamprey control treatment.



Staff from Department of Fisheries and Oceans Canada and USFWS staff top off the chemical tanks during the sea lamprey treatment.



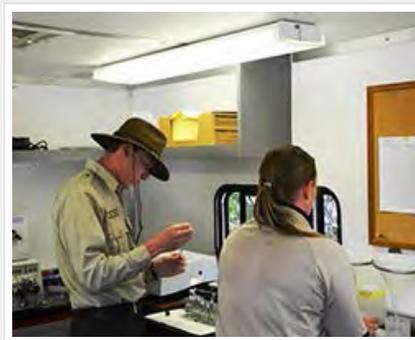
USFWS Biological science technician Stacie Lawerance collects water samples at the Pine Avenue public access during the Muskegon River sea lamprey treatment.



USFWS crew prepares to treat "secondaries". TFM (lampricide) bars like the one shown here by Dan McGarry, along with other forms of lampricide chemical, are applied to springs, streams and other areas that have been previously identified as potential locations where sea lampreys may seek refuge from the chemical in the mainstem of the river.



USFWS Sea Lamprey Control analysis lab at the Pine Avenue public access site on the Muskegon River, MI.



USFWS Chemist Steve Lantz and Biological science technician Stacie Lawerance analyze water samples collected during the treatment. Chemical concentrations are monitored to ensure that they are in the range necessary to be lethal to sea lampreys. Refinements in the application are made based upon the data analysis.



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

Conserving America's Fisheries

Culturing the Sheepnose Mussel

BY JORGE BUENING, GENOA NFH

The sheepnose is a federally endangered freshwater mussel that Genoa National Fish Hatchery (NFH) is working to propagate. While uncommon in the rest of its range in the Upper Mississippi River Basin; the sheepnose is fairly common in the lower Chippewa River. It is a conglutinate producer, which means that it produces packets that look like food particles to potential host fish. When the fish eat the particle they become infested and will potentially produce juvenile sheepnose.

The sheepnose is an interesting creature that offers some challenges to captive propagation. The first of these challenges is that their brooding window is very small. This is the time when the glochidia, which are baby mussels before they attach to a host fish, are available to infest host fish. In other mussels, this brooding period can last for several months. In the case of the sheepnose it lasts just over a week, generally around the Fourth of July. Another challenge is that the host fish the sheepnose uses is the golden shiner. This is a species that is not readily available at Genoa NFH right now. Until we have established a broodline at the hatchery, we are limited by the small numbers of golden shiners that we can certify and bring on station. Ultimately we are working toward establishing a large population of golden shiners on the station that will be used specifically for sheepnose production.



Looking inside a sheepnose to see if it is gravid. Credit: USFWS



Service employees and volunteers searching for sheepnose. Credit: USFWS

In July we were able to collect several gravid sheepnose and use their larvae to infest nearly 1,500 golden shiners which were placed in our mussel culture cages at one of our established mussel culture locations. By facing these challenges we learn more about fresh water mussel propagation and help to prepare ourselves for the future. By working to protect the sheepnose we also protect the places that it calls home. From the Chippewa River to the Mississippi River Basin everything is connected and it is our job to understand those connections. Here's to a successful year of sheepnose production and ultimately improving our natural places.



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

Conserving America's Fisheries

Alpena FWCO eDNA Program Completes Another Successful Season

BY CHRIS OLDS, ALPENA FWCO



Chris Olds fish biologist with Alpena FWCO collects a water sample from the Cuyahoga River near Cleveland Ohio. Credit: USFWS

After collecting 1,575 samples from tributaries of Lakes Erie and Huron, and assisting other Midwest Region and Northeast Region Fish and Wildlife Conservation Offices (FWCO) to collect an additional 2,300 samples, Alpena FWCO's eDNA team completed its spring early detection program for Asian carp! The eDNA program began collecting its first samples the week of April 21, 2014 from Lake Erie and completed sampling the week of July 14, assisting the Carterville FWCO on the Ohio River. The Alpena FWCO eDNA team traveled with the Mobile eDNA Lab throughout the Midwest and Northeast Regions, assisting other U.S. Fish and Wildlife Service (Service) Offices with their eDNA sampling, while also completing its own work on tributaries of Lakes Erie and Huron.

This year's early detection efforts were spread across more tributaries of lakes Erie and Huron to determine the presence or absence of Silver and Bighead Carp DNA in the environment. Early detection efforts were expanded this year to include more tributaries that could be suitable for spawning activities by silver and bighead carps. Tributaries

were ranked as either high priority (to be sampled twice) or medium priority (to be sampled once). The high priority tributaries received this classification based on previous sampling results, connections to known Asian carp waters, such as the CAWS and Ohio River, and literature reviews. A medium priority tributary was classified based on literature reviews identifying rivers with suitable spawning characteristics, and proximity to previously sampled tributaries that had positive eDNA results for silver or bighead carp. This year's sampling was targeted during two distinct water temperature thresholds of 10 and 20°Celsius, thought to correspond with silver and bighead carp spawning activities. Alpena FWCO had four tributaries ranked as high priority, however only two of them were sampled twice at the desired temperature thresholds. In 2013 only seven tributaries were sampled, all of which were in Lake Erie. In 2014 sampling was expanded to include 12 tributaries from Lake Erie and five from Lake Huron.

With the assistance of 11 biologists from four Service offices spread over four weeks, Alpena FWCO was able to complete its work in a timely manner. The crew collected and filtered an average of 100 samples per day and drove over 7,000 miles to complete the work. This effort covered seven states spanning the Midwest and Northeast regions. Each tributary sampled required a location for setting up the lab and a water source in close proximity. This led to several new partnerships being developed with local municipalities, state parks, and campgrounds that could be affected if Silver or Bighead Carp were to become established. Overall it was a very successful season with all of the ranked tributaries being sampled at least once.

Despite the challenges, the partnerships developed with the local municipalities. State agencies and other Service Offices throughout the region will strengthen the program for the future. Plus, while sampling in the Saginaw, Michigan area, the Alpena FWCO eDNA team had the opportunity to meet Service Director Dan Ashe while he was there for a separate meeting. Alpena staff were able to provide a tour of the mobile eDNA Lab and describe the eDNA program in detail, which truly made the season end on a high note for everyone.



Equipment controls are run to ensure there is no contamination before filtering a water sample. Fish biologist Steven Gambicki, Alpena FWCO, filtering deionized water, the filter from this process will be used as the equipment control. Credit: USFWS



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

Conserving America's Fisheries

CARE at the Columbia FWCO

BY AMBER MASTERS, COLUMBIA FWCO



Molly Vornholt CARE intern, releasing an endangered pallid sturgeon caught during Missouri River fish community monitoring. Credit: Amber Masters, USFWS

Columbia FWCO by undertaking tedious duties such as repairing nets and cleaning and helping with boat, vehicle and building maintenance. This summer, Molly and Mayson quickly proved that they had what it takes to be productive and valuable members of a field crew. In addition to working in the shop, they got out on the Missouri River for some first-hand fish wrangling! By being a part of our field crew, Molly and Mayson were able to get involved with the Columbia FWCO's pallid sturgeon projects. They learned about the project goals, fisheries sampling techniques, and the ecology and biology of the Missouri River. Of course, they also got out on the boats, got muddy and messy and handled a menagerie of fish, turtles and aquatic invertebrates (Molly was able to handle and release an endangered pallid sturgeon!) - All while earning a paycheck and developing critical employment skills.

At the Columbia FWCO we always jump at any chance for educational programs and outreach, but the CARE program in particular gives us a very unique and special opportunity to engage our interns in fisheries, wildlife and conservation work. Hopefully, gaining such knowledge will inspire both of these students to be more conservation-minded in their outdoor activities and to share their new-found knowledge of pallid sturgeon and other fisheries issues with their friends, family and whoever they meet.

This summer, the Columbia Fish and Wildlife Conservation Office (FWCO) had some young helpers in amongst our busy field crews. Our participation in the City of Columbia's Career Awareness and Related Experience (CARE) program brought two Columbia high school students, Molly Vornholt and Mayson Gregory onto our team.

CARE works with local employers to create job opportunities for high school students so that they have the ability to develop valuable life and job skills. Many of the interns have never had a job and would have had a difficult time finding one without any job experience. CARE's mission is to provide those opportunities, guidance, and assistance during employment and ensure that the interns are getting the most out of their experiences.

In the past, CARE interns have helped the



Molly Vornholt, removing a shovelnose sturgeon from a trammel net. Credit: Heather Garrison, USFWS

and to share their new-found knowledge of pallid sturgeon and other fisheries issues with their friends, family and whoever they meet.



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

Conserving America's Fisheries

It Takes a Village

BY JENNA TEWS, LUDINGTON BIOLOGICAL STATION

Every three years the Sea Lamprey Control Program's lampricide control teams set up camp in the town of West Branch, Michigan, to treat the Rifle River for invasive sea lampreys. Larval sea lampreys in the Rifle River require three to four years to grow large enough to metamorphose into the parasitic life-stage and migrate downstream to Lake Huron, where they devastate Great Lakes fisheries. Therefore, the Rifle River complex, with its numerous tributaries, has been treated roughly every three years since 1969. And it takes a village to treat the more than 100 stream miles within the Rifle River, which is infested with nearly 1.3 million larval sea lampreys.

The U.S. Fish and Wildlife Service (Service), together with our partners from the Department of Fisheries and Oceans (DFO), Canada, joined forces for a 10-day trip during the second week of August to accomplish this task. A staff of 25 traveled across the Mackinaw Bridge from the Marquette Biological Station to meet up with the 17 staff from the Ludington Biological Station. Personnel from DFO also made the journey down from Sault Ste. Marie, Canada, with 14 of their staff. With nearly 60 crew members came all the field equipment necessary to accomplish this large lampricide treatment effort. The parking lots of two hotels were lined with over 30 trailers, providing work space and equipment storage.



Here the impressive vehicle fleet is ready to transport the crews into battle against invasive sea lamprey on the Rifle River, MI. Credit: USFWS



John Ewalt checks TFM (lampricide) application rates at a "boost" site during the Rifle River treatment. Credit: USFWSFeature

Field vehicles traveled in and out of the small town of West Branch to collect water chemistry data around the clock. Flashing lights atop trucks dotted the landscape of the small farming community as water samples were collected at nearly every road crossing. Orange treatment notification signs decorated the bulletin boards at public access sites to notify the public of the impending treatment. One by one, a portion of the equipment trailers were distributed from the parking lot and setup along the stream. The stage was set to control this invasive predator.

After preliminary data were collected for several days, a treatment strategy plan was developed by the lampricide control team, and a well-laid plan was put into action. Once lampricide was introduced at the headwaters, maintenance applications were implemented in order to maintain lethal concentrations as the chemical bank diluted downstream. A constant rotation of staff from the Service and DFO traveled up and down the country roads around the clock for five days to maintain the lampricide applications.

The minimum amount of lampricide required to effectively kill sea lampreys was maintained throughout the infested reaches of the Rifle River. Thousands of dead sea lampreys were observed during treatment throughout the infested tributaries and the mainstream. This overwhelming task involved dozens of applications with twice as many sites sampled for lampricide concentrations. Successfully treating over 100 miles of stream relied upon coordination and partnership between the Service and DFO.

Every staff member played an important role in accomplishing the treatment of the Rifle River. It truly took a village.

The Sea Lamprey Management Program continues to work closely with partners to control populations of sea lampreys in tributaries of the Great Lakes to protect the fishery and related economic activities in the basin (an estimated annual benefit of more than \$7 billion/year to the region). The Service delivers a program of integrated sea lamprey control in U.S. waters of the Great Lakes in partnership with the Great Lakes Fishery Commission.



U.S. Fish & Wildlife Service

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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.

Midwest Region Selects New Manager at Iron River National Fish Hatchery

BY SHAWN SANDERS, IRON RIVER NFH

Nicholas Starzl has been selected as the Project Leader at the Iron River National Fish Hatchery (NFH), effective August 24, 2014.

Nick completed his formal education at the University of South Dakota and has been doing outstanding work in the National Fish Hatchery System since 1995. Nick brings a wealth of experience from a number of National Fish Hatcheries, across many types of species.

Nick began as a volunteer and later a Biological Technician in his hometown of Yankton, South Dakota in 1996, where he assisted in paddlefish and endangered pallid sturgeon culture at the Gavins Point NFH. He made his first Midwest Region appearance in 2000 at the Neosho NFH in Missouri, learning the tricks of the trade for two years rearing rainbow trout and lake sturgeon. At Genoa NFH in Wisconsin, he was responsible for creating an efficient record-keeping system for the operation of culturing many cold, cool, and warm water species while assisting in mussel culture propagation. Nick was eventually promoted to Lead Biologist. He became the Assistant Project Leader at Iron River NFH in 2010 and has been serving as the Acting Project Leader there since May, 2014.

In his spare time, Nick enjoys spending most of his time with his family, woodworking, and deer hunting in the fall. Please join us in congratulating Nick in his new official role.

Eating Lunch with a "Living Fossil"

BY ANDREW BRIGGS, ALPENA FWCO-WATERFORD, MI SUBSTATION

Fish biologist Andrew Briggs of the Alpena Fish and Wildlife Conservation Office (FWCO) – Waterford Substation joined staff of the Michigan Department of Natural Resources at the General Motors (GM) Renaissance Center in Detroit, Michigan on August 5th to educate the public on various environmental topics. The event was part of a series called "Lunchtime with the Department of Natural Resources" that has occurred twice a week this summer at the GM Renaissance Center. Members of the public were given the opportunity to learn about subjects being presented and ask questions about environmental topics of their choice.

The topic of this week's events was endangered species, with August 5th being about the Great Lakes' living fossil the lake sturgeon. Andrew brought with him a live, juvenile lake sturgeon, literature to hand out, along with some of the equipment biologists use to monitor lake sturgeon. Business men and women on their lunch break and tourists from all over the country were among the over 200 people educated. Upon seeing a photo of a 74 inch, 120 pound lake sturgeon, people could not believe that a fish that big resides in the river directly across the street. Many even questioned that the fish in the photo was the same species as the juvenile in the fish tank next to them.

Aside from questions about lake sturgeon, people also voiced their concern over the invasion of Asian carps. Andrew had also brought a mount of a bighead carp and was able to explain how to identify an Asian carp and who to contact if they catch one. Many of the people attending the lunchtime discussion gained a new appreciation for the environment around them and were inspired to do all they could to protect and restore native species like the lake sturgeon.



U.S. Fish & Wildlife Service

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Conserving America's Fisheries

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.



U.S. Fish & Wildlife Service

Fisheries, Midwest Region

Conserving America's Fisheries

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