



Fish Lines

**Celebration Marks Lake
Sturgeon Return
to the Kalamazoo River**

**Great Lakes Mass
Marking Team
Completes Tagging Operations**

Fish Lines

Fisheries & Aquatic Resources Program - Midwest Region

The Mission of the U.S. Fish & Wildlife Service: working with others to conserve, protect and enhance fish, wildlife, and plants and their habitats for the continuing benefit of the American people.

The vision of the Service's Fisheries Program is working with partners to restore and maintain fish and other aquatic resources at self-sustaining levels and to support Federal mitigation programs for the benefit of the American public. Implementing this vision will help the Fisheries Program do more for aquatic resources and the people who value and depend on them through enhanced partnerships, scientific integrity, and a balanced approach to conservation.

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The Great Lakes mass marking team wrapped up the tagging season at Iron River NFH.
BY ALLEN LANE, GREEN BAY FWCO



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People line up for a tour of the lake sturgeon streamside rearing unit. Over 700 people attended an event on September 24, 2011 celebrating the repatriation of lake sturgeon originating from the Kalamazoo River, Michigan.

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fish lines

2011 Vol. 9 No. 12

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The Partners for Fish and Wildlife and the Fish Passage Program teamed up with Huron Pines, Inc., the Upper Black River Council and the Montmorency County Road Commission to improve the Roth Road/Van Hellon Creek road crossing on this Black River tributary (Michigan).

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Celebration Marks Lake Sturgeon Return to the Kalamazoo River

BY DOUG ALOISI, GENOA NFH

A total of 587 people attended an event on September 24, 2011 celebrating the repatriation of lake sturgeon originating from the Kalamazoo River. Their release was marked by a celebration that included outreach exhibits set up by

techniques such as egg traps and larval drift nets.

Lake sturgeon eggs and fry have a very high mortality rate, and one restoration strategy is to isolate the eggs and resulting fry from predators until they reach a size where they are relatively safe

from predation. Another

specific restoration technique is to rear larval and juvenile sturgeon on water from their birth or natal rivers, to ensure that they can relocate their birth rivers up to twenty years later when it is

time for them to reproduce. Thanks to federal funding available through the Great

Lakes Restoration Initiative and its specific goal of restoring lake sturgeon and lake trout to the Great Lakes, funds were secured through the Environmental



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The lake sturgeon streamside rearing unit on the Kalamazoo River produced 106 juvenile fish during the 2011 production season.

the Michigan Department of Natural Resources (DNR), Fish and Wildlife Service, Kalamazoo Chapter of *Sturgeon for Tomorrow* and other local area attractions. A fishing event was also held for the kids in the river to begin the day, and then the participants were allowed to release the cultured lake sturgeon into the river. The stocking event culminates a cooperative effort involving a process that collected eggs from wild spawning adult lake sturgeon that had returned to their birth river. Lake sturgeon populations in the Kalamazoo River are a fraction of historic numbers, with returning spawning adult numbers estimated to be at less than 100. Members of the Gun Lake tribe, Kalamazoo River chapter of *Sturgeon for Tomorrow*, Michigan DNR employees and Fish and Wildlife Service employees helped to collect close to 500 eggs from the river this spring using a variety of

Protection Agency in order to construct and operate a streamside rearing trailer using Kalamazoo River water as a water source. Staff from the Green Bay National Fish and Wildlife Conservation Office, Genoa National Fish Hatchery (NFH) and Michigan DNR carefully reared the lake sturgeon to a size of over 8 inches. The fish were then large enough to be fitted with an individually specific tag and released into the river. One hundred and six juvenile sturgeon were released to begin the long process of migration and maturation in Lake Michigan. With an amount of good fortune, a large percentage of these fish will come back in twenty years or so to complete the circle of life by reproducing their own offspring. Plans are to continue to use the trailer the next few years to help bolster lake sturgeon numbers that will return to the river and create a self-sustaining population.

For further info about the Genoa NFH: <http://www.fws.gov/midwest/genoa/>

Great Lakes Mass Marking Team Completes Tagging Operations at Iron River NFH

BY ALLEN LANE, GREEN BAY FWCO

The Great Lakes mass marking team from the Green Bay Fish and Wildlife Conservation Office (FWCO) wrapped up the tagging season at Iron River National Fish Hatchery (NFH) near Iron River, Wisconsin, on October 2nd. The Fish and

To round out the year, the team (made up of Elliot Hoffman, Kevin Pankow, Jim Webster and Allen Lane) coded-wire tagged (CWT) 1.8 million lake trout in 14 working days with an average output of 7,583 fish per hour. The five million lake trout raised annually by Iron River, Pendills Creek and Jordan River NFHs support a multi-agency effort to rehabilitate the native top predator in lakes Michigan and Huron.



-USFWS/AllenLane

Debbie Frostman (Lt.) and Mary Reijo from the Iron River National Fish Hatchery process out-sized and rejected lake trout from the AutoFish clipping and tagging trailer.

Wildlife Service has worked with the Council of Lake Committees to provide automated fish marking to state, federal and tribal hatcheries, in order assist the states in managing their sport fisheries, as well as measure progress toward restoring native lake trout. The trout and salmon are marked by a computer operated system contained in a 44 foot trailer that clips the adipose fin and injects a coded-wire tag (CWT) into the nose of the fish. The system can process over 7,000 fish per hour.

The CWT along with an adipose fin clip allows anglers and biologists to identify lake trout and salmon as hatchery raised fish. These observations collectively will help federal and state managers answer important questions such as lake trout strain

survival rate, age composition of fish stocks, movement after stocking, and levels of natural reproduction of native lake trout and salmon. When fish are captured and the tag extracted, the code indicates the year class, strain, hatchery origin and stocking location and is combined with data collected at capture. The combined

information from other tagged and untagged fish at harvest help to determine movement, rates of reproduction, and relative contributions to fisheries.

The Fish and Wildlife Service has four trailers being used at state and federal hatcheries. This year, biologists tagged 5.1 million lake trout at three national fish hatcheries and one state hatchery and 4.7 million Chinook salmon at 7 different state hatcheries in Illinois, Indiana, Wisconsin and Michigan. This project was funded by the Great Lakes Restoration Initiative.

For further info about the Green Bay FWCO: <http://www.fws.gov/midwest/Fisheries/library/StationFactSheets/greenbay.pdf>

Troutmere Creek ARRA / NFPP Fish Friendly Road Crossing

BY TED KOEHLER, ASHLAND FWCO

During the summer of 2011, partners from the Chequamegon Bay area of northern Wisconsin worked to restore fish passage in the Town of Marengo near Ashland, Wisconsin. The restored crossing is located on Troutmere Creek at Midway Road. Troutmere Creek is a tributary to the Marengo River, which is part of the Bad River watershed of Lake Superior. The work from this project was funded by the American Reinvestment and Recovery

take place above and below the restored sites to evaluate the initial

effectiveness of the restoration as well as long term changes in fish populations within the stream reaches above and below the sites. Sediment monitoring is also taking place to help determine changes in the

Partnerships are essential for effective fisheries conservation. Many agencies, organizations, and private individuals are involved in fisheries conservation and management, but no one can do it alone. Together, these stakeholders combine efforts and expertise to tackle challenges facing fisheries conservation. The success of these partnerships will depend on strong, two-way communications and accountability.



Before fish passage improvements



After fish passage improvements

-USFWS

The fish passage project on Troutmere Creek near Ashland, Wisconsin, provided uninhibited fish passage to two miles of stream.

Act (ARRA) through the Fish and Wildlife Service's National Fish Passage Program (NFPP). The work has opened over two miles of stream to fish passage above the former barrier. The Marengo River system is an important watershed for native brook trout, with ongoing restoration planning and projects being carried out by many different organizations and agencies to enhance this important fishery. The Marengo and its tributaries are popular and highly utilized by local anglers as well as those that travel from great distances to fish its productive waters.

Two rock weir structures were installed below the culvert to raise the water level inside the existing structure in order to facilitate fish passage. Unlike most passage projects that occur in a road right-of-way, this project needed permission from the downstream landowner. The landowner was very supportive and happily gave permission to install the weir structures on his property. Another important part of the Troutmere Creek project includes fish and sediment assessments which will be ongoing over the next few years. Fishery assessments will continue to

stream profile and movement of sediment as a result of restoration at these sites.

Many partners were involved in the project and contributed financial support, technical assistance or access permission. They included the local landowner, Ashland County Land and Water Conservation Department, Bad River Watershed Association, Town of Marengo, Wisconsin Department of Natural Resources and the Ashland Fish and Wildlife Conservation Office (FWCO). A Fish and Wildlife Service Partners for Fish and Wildlife Program Habitat Development Agreement was signed with the private landowner to protect the habitat improvements for a period of 10 years.

The Chequamegon Bay and Bad River watershed community highly support fish and wildlife habitat projects such as this. The local chapter of Trout Unlimited and the Bad River Watershed Association regularly assist with habitat and other projects on the Marengo River and in the surrounding area. Without the combined forces of the partners involved, and the exceptional local support for fish and wildlife restora-

tion in the community, projects like the fish friendly modifications to the culvert on Troutmere Creek at Midway Road would be more difficult. Because of the

partners and their hard work, the one-time problem barrier is now a habitat link for brook trout and other important aquatic species.

For further info about the Ashland FWCO: <http://www.fws.gov/midwest/ashland/>

Dive Partners

BY SCOTT YESS , LA CROSSE FWCO

Down in the murky Mississippi waters, divers assisted Augustana College in a mussel monitoring effort in Pool 15. Jon Duyvejonck with the Endangered Species program recruited Scott Yess from the La Crosse Fish and Wildlife Conservation Office (FWCO) and Bob Schanzle, formerly with Illinois Department of Natural Resources, as divers to assist on a mussel survey conducted by faculty and students from Augustana College (Rock Island, Illinois). The two day effort was very successful with numerous sites sampled in Sullivan Slough, Pool 15. Both timed sampling and quadrats were sampled by divers. Students worked up the mussels by recording species, size and age. This effort was two-fold, utilizing divers for the deep water sites as students searched for mussels in shallow near shore sites. A report will be prepared by the students and sent to the partnering agencies.



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Students from Augustana College record the species, size and age of each mussel captured during a survey conducted in Sullivan Slough on Pool 15 of the Mississippi River.

For further info about the La Crosse FWCO: <http://www.fws.gov/midwest/lacrossefisheries/>

Great Lakes Fish Health Committee Update

BY KEN PHILLIPS, LA CROSSE FHC

Ken Phillips represented the La Crosse Fish Health Center (FHC) at the Great Lakes Fish Health Committee (GLFHC) meeting held August 16th -18th on the campus of Lake Superior State University (LSSU) in Sault Ste. Marie, Michigan. The GLFHC is a bi-national committee that develops fish health policy recommendations for the Great Lakes Fishery Commission and its member agencies. The GLFHC meets in February and August each year, allowing members to discuss fish health issues and research pertinent to the Great Lakes region. Ken Phillips currently serves as chair of the committee.

The primary focus of the meeting was the revision of the Great Lakes Fish Disease Control Policy and

Model Program, a special publication of the Great Lakes Fishery Commission. The document, which provides a basis for member agencies to coordinate fish health management efforts within the basin, was last revised in 1993. Other items on the agenda included a tour of the LSSU aquaculture facilities, an update from Janet Whaley with the U.S. Department of Agriculture - Animal and Plant Health Inspection Service) regarding the status of Federal rules for viral hemorrhagic septicemia virus (VHSV), and research updates from Michigan State University graduate students Thomas Loch, Carolyn Schulz and Andrew Winters.

For further info about the La Crosse FHC: <http://www.fws.gov/midwest/LaCrosseFishHealthCenter/>

Everyone Out!

BY ANGELA BARAN, GENOA NFH

Fall is here and it is pond harvest season at Genoa National Fish Hatchery (NFH)! We are starting to drain all of the ponds and stocking the fish in their new homes. This spring, we stocked the ponds with walleye, largemouth bass, yellow perch, smallmouth bass, bluegill, black crappie and channel catfish. Now it is “report card” time for us; we will be able to see how everything survived the summer and how much they have grown. On September 19th, we opened the drains on our two biggest ponds, the 34 surface acre



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A seine full of smallmouth bass are harvested from a culture pond at the Genoa National Fish Hatchery.

For further info about the Genoa NFH: <http://www.fws.gov/midwest/genoa/>

You Found What? Where?

BY COREY PUZACH, LA CROSSE FHC

For the past year and a half, the La Crosse Fish Health Center (FHC) has screened baitfish as part of a plea agreement in court cases from the state of Wisconsin. In the fall of 2009, four baitfish companies were charged with violating the Lacey Act by importing baitfish from outside the state without valid import permits and health certificates. The Lacey Act makes it unlawful “to import, export, transport, sell, receive, acquire, or purchase in interstate or foreign commerce any fish or wildlife taken, possessed, transported, or sold in violation of any law or regulation of any state or in violation of any foreign law.”

The investigation was a joint effort between the Fish and Wildlife Service and the Wisconsin Department of Natural Resources. The companies plead guilty to violations of the Lacey Act and were sentenced to fines, probation, up to two random site visits per year for disease testing, and disease testing of monthly imports for two years. The companies

Pond 1 with minnows and the 11 surface acre Pond 3 with largemouth bass. With the flood waters of the Mississippi River finally subsiding, we

were able to quickly drain Pond 3 and started harvesting the largemouth bass on September 27th. After three days of pulling nets and seines, we got the last of the largemouth bass out and started getting them ready to stock. On September 30th, the fish were right back out the door... 12,000 fish were hauled by Dan Kumlin to Legend Lake for the Menominee Tribe and approximately 2,500 fish were picked up by Wisconsin Department of Natural Resources for stocking in local lakes. The rest of the fish will be out the door shortly, as everything comes in, it must go right back out to keep space available for harvest in the rest of the ponds. Pond 1 continues to slowly drain. It is now about at half capacity, and we are hoping to harvest the minnows before the ice and snow this year, which will serve as forage fish for captive adult fish!

The Fisheries Program maintains and implements a comprehensive set of tools and activities to conserve and manage self-sustaining populations of native fish and other aquatic resources. These tools and activities are linked to management and recovery plans that help achieve restoration and recovery goals, provide recreational benefits, and address Federal trust responsibilities. Sound science, effective partnerships, and careful planning and evaluation are integral to conservation and management efforts.

must submit a list of their anticipated imports for each month, and fish groups to be tested are selected. To date, the testing has provided a great deal of information regarding baitfish pathogens.



-USFWS/Corey Puzach

A fathead minnow with a distended abdomen (Lt.) was dissected revealing a tapeworm that was living in the body cavity.

One of the most unique parasites found was located in the body cavity of a shipment of fathead minnows from South Dakota. Upon arrival, many of the minnows appeared extremely bloated. After making an incision in the fish for the retrieval of fish

health samples, the cause of the bloating quickly crawled out. Extremely large tapeworms began crawling from the body cavities of many of the fathead minnows. These tapeworms are unique because of their overall size compared to the fish host. When uncoiled, the tapeworms are much longer than the host fathead minnow, and just as wide in some spots. Biologists can narrow down the type of

tapeworm to a specific family using the overall size of the larval tapeworm, host fish which it was found in, and where it was found in the fish. They won't know the genus and species of the tapeworm until it is stained and identified using taxonomic keys. Results from the virology, bacteriology and parasitology testing are also generating an astonishing amount of data on baitfish pathogens.

For further info about the La Crosse FHC: <http://www.fws.gov/midwest/LaCrosseFishHealthCenter/>

Winged Mapleleaf Season Goes Well

BY JORGE BUENING, GENOA NFH

September was a busy month for native mussel propagation at the Genoa National Fish Hatchery (NFH). During this month, the females of the federally endangered winged mapleleaf are gravid and displaying in order to attract host fish. It is at this time that the hatchery staff is tasked with collecting these displaying females and infesting channel catfish with their babies, or glochidia.



-USFWS

A winged mapleleaf is in full display, trying to attract a host fish.

The last remaining population of winged mapleleaf in the area is found in the St. Croix River around both the Wisconsin and Minnesota Interstate State Parks. Over the years, adult winged mapleleaf in this area have been collected and distributed along aggregation lines. We scuba dive along these lines and collect any displaying females and bring them back to the hatchery each fall. At the hatchery, the females are placed

in water filled containers and gently aerated until they release the glochidia that they are storing; this usually takes a day or two. The glochidia are then mixed with channel catfish and will attach themselves to the gills of the catfish until they transform into a juvenile mussel. One of the tricky things about propagating winged mapleleaf is that the window for collecting displaying females is very small. This means a lot of time must be put into monitoring those aggregation lines so we don't miss the gravid period. We work with the National Park Service, Macalester College, La Crosse Fish and Wildlife Conservation Office and the Twin Cities Field Office to check the lines three times a week during the month of September. This ensures we don't miss that gravid period. This year with the help of our partners, seven females were brought back to Genoa NFH and glochidia were collected from six of them. From those six, 286 channel catfish were infested and are still holding the glochidia on their gills. Hopefully, this spring we will have baby winged mapleleaf to report about!



-USFWS

Young mapleleaf mussels appear as tiny white spots on the gills of this channel catfish.

For further info about the Genoa NFH: <http://www.fws.gov/midwest/genoa/>

Alpena FWCO Completes Annual Ruffe Surveillance on Lake Huron and the St. Marys River

BY ANJANETTE BOWEN, ALPENA FWCO

During September 2011, the Alpena Fish and Wildlife Conservation Office (FWCO) completed an annual survey to detect new populations of Eurasian ruffe (ruffe) and monitor existing populations of other invasive fish species, including round goby (goby). Bottom trawling gear was used to conduct the survey. Sampling was conducted at eight near shore locations in Michigan waters of Lake Huron from Port Dolomite near Cedarville, to Harbor Beach, and at six locations in the St. Marys River from Sault Ste. Marie to De Tour Village. Ruffe were not captured during sampling; however, goby continue to persist and were captured at all eight Lake Huron sampling locations.

Ruffe and goby are two invasive fish species that are thought to compete with native species for food and habitat resources. They are native to Eurasia and were unintentionally introduced into the Great Lakes. Ruffe have been found from Thunder Bay, Ontario to the Tahquamenon River, Michigan in Lake Superior, the Green Bay area of Lake Michigan, and in the

For further info about the Alpena FWCO: <http://www.fws.gov/midwest/alpena/index.htm>

Twin Cities Carp Watch ... The Beat Begins

BY NICHOLAS BLOOMFIELD, LA CROSSE FWCO

When one thinks of the Asian carp problem, Chicago immediately comes to mind as the front line of defense. While the Chicago Area Waterway System provides a pathway for Asian carp to invade the Great Lakes basin, there are numerous other fronts throughout the Midwest where these invasive fish are primed to take over, including the Upper Mississippi River (UMR) and its tributaries.

Scattered reports have documented Asian carps from the La Crosse, Wisconsin (WI) area (Pool 8) of the UMR to Lake Pepin (Pool 4), as well as the lower St. Croix River. Environmental DNA (eDNA) samples collected indicated that these fish may be as far north as St. Croix Falls, WI.

On September 14, Louise Mauldin and I travelled to Prescott, WI, to collect eDNA samples in UMR Pool 3, just below Lock and Dam 2. This was part of a multi-agency federal/state effort, led by Byron Karns of the National Park Service (NPS), to rapidly survey for Asian carps in the Twin Cities region.

For further info about the La Crosse FWCO: <http://www.fws.gov/midwest/lacrossefisheries/>

Aquatic Invasive Species

Aquatic invasive species are one of the most significant threats to fish and wildlife and their habitats. Local and regional economies are severely affected with control costs exceeding \$123 billion annually. The Fisheries Program has focused its efforts on preventing introductions of new aquatic invasive species, detecting and monitoring new and established invasives, controlling established invasives, providing coordination and technical assistance to organizations that respond to invasive species problems, and developing comprehensive, integrated plans to fight aquatic invasive species.

Thunder Bay and Trout rivers of Michigan waters of northern Lake Huron. Goby have been found in each of the five Great Lakes and the Mississippi River system.

Although both species have been found in the upper Great Lakes, only gobies have been detected in the St. Marys River which is the connecting waterway between Lake Superior and lakes Huron and Michigan. Gobies were captured in the southern portion of the St. Marys River near Drummond Island, Michigan, for the first time during the summer of 2008 by recreational anglers and were captured in nearby Raber Bay in 2010.

Since Louise and I regularly perform this sampling in the Chicago area, we also provided guidance on how and where to collect samples from the UMR and its tributaries. The next day, we helped collect more samples in UMR Pool 2. We spent both evenings, as well Friday morning, filtering samples and preparing them for final analysis. Meanwhile, the NPS and Minnesota Department of Natural Resources (DNR) crews collected more samples from UMR Pool 1 on Friday.

Several media outlets were interested in eDNA sampling and came along to provide stories for the public.

Sample results will be available in the coming weeks. Positive findings may prompt additional inter-agency efforts to verify the presence and estimate densities of Asian carps in the Twin Cities metropolitan area.

Sturgeon Teacher Workshop

BY ANJANETTE BOWEN, ALPENA FWCO

The Alpena Fish and Wildlife Conservation Office (FWCO) participated in a Sturgeon Fisheries Education Teacher Workshop hosted by Michigan Sea Grant at the Walter and May Reuther UAW (United Auto Workers) Family Education Center in Onaway, Michigan (MI) on August 11th and 12th. The event was organized as an opportunity to connect sturgeon fisheries research with youth education through elementary, middle and high school teachers.

Biologist Anjanette Bowen was invited to provide an overview of station lake sturgeon activities and noted some areas where the station could provide materials or other assistance to teachers interested in incorporating lake sturgeon into their curriculum. The Alpena FWCO has been involved with lake sturgeon investigations in the St. Marys River (in cooperation with Lake Superior State University), Lake Huron (in cooperation with state licensed commercial fishermen), the Huron-Erie corridor (in cooperation with numerous partners), and in the Saginaw, MI and Maumee River, Ohio systems. The station also manages the Great Lakes Lake Sturgeon Website (<http://www.fws.gov/midwest/sturgeon>) and updates the Lake Sturgeon Tag Identification Database (<http://www.glf.org/sturgetag>). Staff members Justin Chiotti and Adam Kowalski provided the information that was presented on sturgeon activities

in the Huron-Erie corridor and Lake Huron commercial fishery, respectively.

The teachers met with university, agency and community partners that work with sturgeon. In addition to classroom learning, the teachers took a field trip to the lake sturgeon hatchery on the Black River near Onaway, MI. Approximately 19 people attended the event, including 14 teachers, Michigan State University sturgeon researcher Kim Scribner, and representatives from Michigan Sea Grant, Sprinkler Lake Education Center, and the AmeriCorps program. The event was funded by Michigan Sea Grant and the Center for Ocean Science Education Excellence - Great Lakes.

As the population in the United States continues to grow, the potential for adverse impacts on aquatic resources, including habitat will increase. At the same time, demands for responsible, quality recreational fishing experiences will also increase. The Service has a long tradition of providing opportunities for public enjoyment of aquatic resources through recreational fishing, habitat restoration, and education programs and through mitigating impacts of Federal water projects. The Service also recognizes that some aquatic habitats have been irreversibly altered by human activity (i.e. - dam building). To compensate for these significant changes in habitat and lost fishing opportunities, managers often introduce non-native species when native species can no longer survive in the altered habitat.

For further info about the Alpena FWCO: <http://www.fws.gov/midwest/alpena/index.htm>

International Visitors at Pendills Creek NFH

BY JAMES ANDERSON, SULLIVAN CREEK NFH

On August 11th, Pendills Creek National Fish Hatchery (NFH) was toured by nine Japanese exchange students who were taking part in a program through Lake Superior State University (LSSU). The Japanese students were from the University of Shiga Prefecture and are involved in the University's School of Environmental Science. According to Lake Superior State University associate professor Guidi Yang, "The program is to provide the undergraduate students with environmental science field experience in the Lake Superior watershed and adjacent areas."

The exchange students were accompanied by LSSU professor Dr. Ashley Moerke and Aquatic Resource Lab manager Roger Greil. The students were given a tour of the new production building, tank room, low head oxygen system (LHO) and water filtration systems. The tour was a little slow going at



-USFWS

Lake Superior State University staff and Japanese exchange students pose for a picture during a tour of the Pendills Creek National Fish Hatchery.

first with the language barrier, since only one person was able to translate back and forth, but by the end of the tour everybody was giving the “thumbs up” to indicate that both sides were communicating and on the same page. Once the students were finished touring the hatchery, they proceeded to shock a

section of Pendills Creek below the hatchery water intake structure, and also collected various stream samples to look for aquatic insects. The students then ate lunch along the stream bank and enjoyed the excellent scenery and weather that the Upper Peninsula of Michigan has to offer.

For further info about the Pendills Creek NFH/Sullivan Creek NFH: <http://www.fws.gov/midwest/Fisheries/library/StationFactSheets/pendills.pdf>

Fish Health Visits the Museum

BY SARAH BAUER, LA CROSSE FHC

Eric Leis, Lucas Purnell and Sarah Bauer represented the La Crosse Fish Health Center (FHC) at “Discover Wisconsin Waterways” at the Children’s Museum of La Crosse, Wisconsin. The event was geared towards teaching museum visitors about the lakes and rivers around the La Crosse area. The event was co-hosted by the La Crosse Public Library and the Museum. La Crosse FHC set up six micro-

scopes with slides of fish parasites. Visitors could examine and learn about parasite lifecycles. Most of the parasites on display were native parasites that are commonly found in game fish on the Mississippi River. However, Asian tapeworm and *Myxobolus cerebralis* were able to be viewed to remind visitors about the importance of surveillance and monitoring of invasive species.

For further info about the La Crosse FHC: <http://www.fws.gov/midwest/LaCrosseFishHealthCenter/>

La Crosse FHC Helps Out with Youth Outdoor Fest

BY DUSTIN HART, LA CROSSE FHC

Dustin Hart, Beka McCann, Lucas Purnell and Ashley Kast of the La Crosse Fish Health Center (FHC) assisted with the 3rd annual Youth Outdoor Fest at Pettibone Park. The fest took place from 11 am to 5 pm where kids and parents enjoyed fun outdoor activities. Canoe rides, archery range, rod casting games, fish cleaning and the popular minnow races were just a few of the many events. The muggy and hot weather did not deter the families from participating in the fest. The children had a great time playing the games and winning prizes, while learning about what the outdoors has to offer.



-Owen Johnson

Children examine and touch the fish on display at the Fish Anatomy booth at the Youth Outdoor Festival.

For further info about the La Crosse FHC: <http://www.fws.gov/midwest/LaCrosseFishHealthCenter/>

Fishery-Independent Lake Whitefish Survey in 1836 Treaty Waters of Northern Lake Huron

BY STEPHEN LENART, ALPENA FWCO

Staff from the Alpena Fish and Wildlife Conservation Office (FWCO) conducted fishery-independent lake whitefish surveys in two Lake Huron whitefish management units (WFH-04 and WFH-05) during July, August and September 2011. The surveys were developed in 2001 by the 1836 Treaty Waters Modeling Subcommittee to address data gaps in the catch-at-age statistical models used in recommending harvest limits for lake whitefish stocks in 1836 Treaty waters. The survey has two primary objectives: 1) to

FWCO has conducted the survey since 2002 in management units WFH-04 and WFH-05.

Twenty-four 2,700 foot gangs of graded-mesh

Conserving this Nation's fish and other aquatic resources cannot be successful without the partnership of Tribes; they manage or influence some of the most important aquatic habitats both on and off reservations. In addition, the Federal government and the Service have distinct and unique obligations toward Tribes based on trust responsibility, treaty provisions, and statutory mandates. The Fisheries Program plays an important role in providing help and support to Tribes as they exercise their sovereignty in the management of their fish and wildlife resources on more than 55 million acres of Federal Indian trust land and in treaty reserved areas.



Map of Two Lake Whitefish Management Units in Lake Huron

Twenty-four 2,700 foot gangs of graded-mesh (2-6 inch) gill nets were set in 2011, twelve in each of the two management units (WFH-04 and WFH-05) as part of a fishery assessment.

collect unbiased biological data (size, maturity, diet, aging structures and health indices) that can be used to estimate age-specific population-level parameters; and 2) to develop a fishery-independent index of abundance for individual lake whitefish stocks. Alpena

waters of lakes Huron, Michigan and Superior, will undertake a wholesale review of the survey in 2012 to determine whether it is meeting the stated objectives and whether substantive changes are necessary to improve survey efficiency.

(2-6 inch) gill-net were lifted in 2011, twelve in each of the two management units. Eleven different species were collected and lake trout, which were captured in each of the 24 lifts, dominated the catch. Lake whitefish were captured in 11 of the 24 lifts. Forty six whitefish were captured overall, the majority (36) in the four lifts conducted nearest Alpena, Michigan (MI). Aggregate catch rates for lake whitefish were low (less than 2 fish per lift), though not unlike previous years. Of interest was the capture of a juvenile (23") lake sturgeon near Rockport, MI in early August - this species is rarely captured during our standard gill-net surveys. The fish was returned unharmed after recording pertinent biological data.

Partner agencies who participate in the fishery-independent lake whitefish surveys, which is conducted in the 1836 treaty

For further info about the Alpena FWCO: <http://www.fws.gov/midwest/alpena/index.htm>

Poster Presentations Contributed to the American Fisheries Society Annual Meeting

BY DALE HANSON, GREEN BAY FWCO

Biologist Dale Hanson of the Green Bay Fish and Wildlife Conservation Office (FWCO) submitted a poster presentation to the annual American Fisheries Society meeting held in Seattle, Washington, September 4th -8th. The poster described variation among otolith – fish size relationships for lake trout that varied by strain, recapture location and sampling season. This research will be used to refine methods for determining age compositions in lake trout sampled in commercial and assessment catches.

Hanson also contributed to a second poster submitted by Dr. Sergiusz Czesny, (Illinois Natural History Survey) that detailed tissue specific differences in yellow perch fatty acid compositions. This work supports ongoing research in the use of fatty acid profiles as tools to evaluate diet and general health of Great Lakes fish with an emphasis on yellow perch and lake trout.

Science and technology form the foundation of successful fish and aquatic resource conservation and are used to structure and implement monitoring and evaluation programs that are critical to determine the success of management actions. The Service is committed to following established principles of sound science.

For further info about the Green Bay FWCO: <http://www.fws.gov/midwest/Fisheries/library/StationFactSheets/greenbay.pdf>

Paper presented on Coregonine Restoration at International Conference

BY CHARLES BRONTE, GREEN BAY FWCO

Biologist Charles Bronte of the Green Bay Fish and Wildlife Conservation Office (FWCO) presented an overview of the opportunities and challenges to restore coregonine fishes (cisco, deepwater “chubs”) in the Great Lakes at the 2011 International Coregonid Symposium in Mondsee, Austria, held in September. The meeting is held every three years and involves coregonine scientists from Europe, Asia and North America who gather to discuss the biology, management and restoration of these important food fishes.

Historically, the five Great Lakes contained a complex of six closely related deep water ciscoes (*Coregonus hoyi*, *C. johanna*, *C. kiyi*, *C. nigripinnis*, *C. reighardi*, and *C. zenithicus*) and one shallow water cisco (*C. artedi*). These species were primary and secondary consumers, and served as forage for large populations of lake trout in all five Great Lakes and Atlantic salmon in Lake Ontario, and were the target of intensive fisheries on some lakes. During 1940-60, overfishing and negative effects of invasive species caused the extinction or extirpation of many of these species. *C. artedi* survives in moderate abundances in lakes Superior and Huron, but in very small remnant populations in lakes Michigan, Erie and Ontario. Of the deepwater ciscoes, *C. hoyi*, *C. kiyi*, *C. zenithicus*,

can be found in Lake Superior, the only lake to still contain its original complex. *C. hoyi* also survives in lakes Michigan and Huron; *C. johanna*, and *C. reighardi* went extinct, and *C. nigripinnis* extirpated. Intensive stocking of Pacific salmon and other non-native predators has reduced non-native alewives to very low levels and has allowed native species to start to recover.

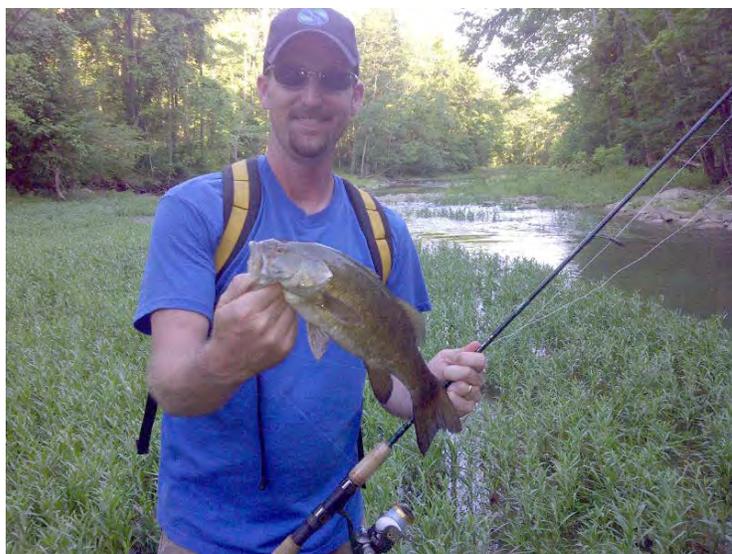
The absence of native and now non-native forage fish has resulted in efforts and proposals to reintroduce ciscoes from remnant populations in the Great Lakes. These efforts present both ecological and logistical challenges. Opportunities include ecosystem changes that favor native fishes, increasing appreciation for native species biodiversity, and recognition by managers that coregonines are good for the ecosystem and for fisheries. Challenges include the large sizes of the Great Lakes, limited source stocks for reintroduction, limited knowledge of deep-water coregonines culture and effective stocking strategies, and reduced primary and secondary production to support reintroduced coregonines caused by dresenid mussels. Lessons from coregonine reintroductions elsewhere would help inform these efforts to restore these fish communities.

For further info about the Green Bay FWCO: <http://www.fws.gov/midwest/Fisheries/library/StationFactSheets/greenbay.pdf>

Sharing Ohio River Basin FHP Efforts to Move from “Early Action Sites” to true “Priority Areas”

BY ROB SIMMONDS, CARTERVILLE FWCO

The National Conference on Ecosystem Restoration brings together professionals from a variety of disciplines from across the country (and other countries) to share ideas and approaches on ecosystem restoration. Cartersville Fish and Wildlife



-Matt Wooten

An angler holds a nice smallmouth bass caught from Gunpowder Creek, Kentucky, showing what is possible where good habitat exists.

Conservation Office (FWCO) Project Leader Rob Simmonds attended the bi-annual meeting held in Baltimore, Maryland. It was an opportunity to listen to some very impressive speakers share thoughts on topics ranging from management of the Everglades to the Mississippi River, and from ecosystem services to management of invasive species. It was also an opportunity to partner up with others from the Ohio River basin to present on the topic of large scale ecosystem restoration. Rob’s presentation covered

Loss and alteration of aquatic habitats are principal factors in the decline of native fish and other aquatic resources and the loss of biodiversity. Seventy percent of the Nation’s rivers have altered flows, and 50 percent of waterways fail to meet minimum biological criteria.

the efforts of the Ohio River Basin Fish Habitat Partnership (FHP) to move from “Early Action Sites” to “Priority Areas” that were identified through a basinwide assessment that was scientifically defensible and likely to result in conservation actions leading to measurable results in fish and mussel populations.

The Partnership, working with other FHPs in the Midwest, contracted with Downstream Strategies Inc. to complete the assessments. Without getting too deep into methods, data was gathered for habitat quality (e.g., soil type or slope) and disturbance variables (e.g., number of road crossings, % urbanization) and for response variables (e.g., abundance of smallmouth bass). Models were developed to relate the habitat variables to the response variables. The goal is to determine what factors drive the occurrence of smallmouth bass and then to find areas where the natural habitat is supportive and the disturbance level is low enough. These areas will be targeted for future habitat work to either protect high quality habitat or to restore habitat with potential. To complement the model, a potential future condition tool is being developed to manipulate disturbance variables. If a reasonable amount of change in one of those variables results in good habitat conditions for a target species, then those areas would be targeted for restoration efforts. In the end, these tools will allow us to better put the “right actions” in the “right places” resulting in truly effective aquatic habitat conservation.

Several preliminary models have been developed and are being reviewed and refined. Stay tuned for results later this year!

For further info about the Cartersville FWCO: <http://www.fws.gov/midwest/Fisheries/library/StationFactSheets/cartersville.pdf>

Partners for Fish and Wildlife Program in Bayfield County, Wisconsin - 2011 Wetland Restoration Projects

BY TED KOEHLER, ASHLAND FWCO

Working through the Ashland Fish and Wildlife Conservation Office (FWCO) and the Partners for Fish and Wildlife Program (PFWP), wetland restoration projects were completed on the Viater and Moore properties. The projects were located in

Bayfield County, Wisconsin, within the Lake Superior Watershed Focus Area for Region 3’s PFWP, and consisted of 4 wetland restoration acres as well as 15 acres enhanced for waterfowl and upland bird nesting habitat.

A PFWP Habitat Development Agreement was signed to protect the restored areas for a period of 10 years. These newly restored and protected wetlands will provide ideal resting and nesting conditions for many species of migratory waterfowl and songbirds. Species benefiting from the habitat restoration and protection projects include migratory waterfowl such as wood ducks, mallards and blue-winged teal, as well as other wetland associated migratory birds such as

olive-sided flycatchers, Canada warblers and sandhill cranes.

The vast majority of fish and wildlife habitat restorations are accomplished only through the coordination and hard work of many willing partners. Partners on these projects include the landowners, Bayfield County Land and Water Conservation Department, Ducks Unlimited and the Ashland FWCO.



-USFWS
Two Partners for Fish and Wildlife Program projects in Bayfield County, Wisconsin, within the Lake Superior Watershed Focus Area, restored 4 wetland acres and enhanced 15 acres for waterfowl and upland bird nesting habitat.

For further info about the Ashland FWCO: <http://www.fws.gov/midwest/ashland/>

Oceana County Road Commission Completes Two Culvert Replacement Projects on the Cobmoosa Creek

BY RICK WESTERHOF, GREEN BAY FWCO

The Oceana County Road Commission completed the 148th North of Yonkers Road and Johnson Road culvert replacement projects on Cobmoosa Creek in August, 2011. Aluminum D-shaped bottomed culverts were used at both road stream crossings, providing uninhibited fish passage and safer motor vehicle travels (widened the road, and installed guardrails). The two projects opened up four miles of quality habitat for brook trout, brown trout, steelhead, chinook salmon, coho salmon and other aquatic organisms. Total cost for the 148th and Johnson Road projects were \$130,450 and \$120,429 respectively. Funds were provided by the National Fish Passage Program.

Partners involved on the projects included the Oceana County Road Commission, White River Watershed Partnership, Michigan Steelheaders, Michigan Departments of Environmental Quality and Natural Resources, Hallock Contracting, Grand Valley State University, and Annis Institute of Water Research.



-USFWS
Before (above) and after pictures of 148th North of Yonkers Road culvert replacement project on Cobmoosa Creek in Oceana County, Michigan.





-USFWS

Before (left) and after pictures of the Johnson Road culvert replacement project on Cobmoosa Creek in Oceana County, Michigan.



For further info about the Green Bay FWC: <http://www.fws.gov/midwest/Fisheries/library/StationFactSheets/greenbay.pdf>

Habitat Enhancement in the Au Sable River, Michigan

BY JOSEPH GERBYSHAK, ALPENA FWC

On September 21st and 22nd, biologist Joseph Gerbyshak of the Alpena Fish and Wildlife Conservation Office (FWCO) helped Huron Pines and the Michigan Department of Natural Resources on a stream enhancement project that involved adding large woody debris to the Au Sable River, Michigan. Large woody debris was added to replace timber that had been removed from the river and the surrounding banks during the logging era. In order to accomplish this task efficiently and have a considerable impact on the amount of stream enhanced, a heavy-lift helicopter was used. The helicopter lifted downed trees to preselected locations in the river that would receive the greatest benefit from the addition of woody debris. Over 2,000 trees were placed in the river this year, enhancing habitat for aquatic species.

Large scale habitat restorations help the Au Sable River hold its title as a “blue ribbon trout stream.” The Au Sable River is popular with recreational anglers and is known for its trophy fishery. In fact, it was the river of primary interest when the conservation group “Trout Unlimited” was first initiated. The addition of large woody debris to the river will benefit the fishery by increasing habitat complexity and the scouring effect of the river, which will expose gravel substrate that is critical for trout reproduction. It will also help buffer against high water flows, preventing erosion.

For further info about the Alpena FWC: <http://www.fws.gov/midwest/alpena/index.htm>



-USFWS

A helicopter lifts a tree to be placed in the AuSable River as part of a habitat restoration project.

Student Job Shadowing Project at UW-Green Bay

BY KEVIN MANN, GREEN BAY FWCO

Approximately two months ago, Dr. Patrick Forsythe, professor at the University of Wisconsin-Green Bay, approached biologists at the Green Bay Fish and Wildlife Conservation Office (FWCO) to inquire if we were interested in allowing students from his aquatic ecology class to job shadow us. For the job shadow, each biologist will be paired with a student with the intention of the students interacting with a local professional on a research, technical or management topic in the field of aquatic ecology. Each student will work with their assigned biologist to document their responsibilities and duties within the Fish and Wildlife Service. Students will then be required to report their findings to the remaining class as a written report and presentation for a portion of their overall grade.

This month, students began contacting their assigned Fish and Wildlife Service employee and I was paired with a junior, majoring in Environmental Science, named Kaitlin Wilke. As we met and discussed my background and main job responsibilities, I informed her how I collected and reared larval lake sturgeon in the stream-side rearing facility (SRF) located on the Kalamazoo River, Michigan. The Kalamazoo River facility is the newest of six facilities around the Lake Michigan basin. Since the best way for her to understand what I do for my job, I needed to show her the SRF so she would be able to see its design and how it functioned. The opportunity to show Kaitlin the Kalamazoo SRF was unavailable, but

fortunately one of the remaining five facilities was still running and located near Green Bay, Wisconsin, on the Kewaunee River.

On September 30th, along with Green Bay FWCO biologist Rob Elliott, we traveled to the Kewaunee SRF and gave Kaitlin a tour of an operating lake sturgeon stream-side rearing facility. Rob and I explained to her the function of the trailer and the rearing process from fish collection - all the way through their release back to the river. We helped her understand the importance of streamside rearing and why it is being used as the selected method for lake sturgeon rehabilitation and reintroductions in Lake Michigan. At the end of our tour, the fish from the facility were released into the Kewaunee River and the rearing season was complete.

Biologists at the Green Bay FWCO have many different responsibilities and assignments from one another, and students were shown a large array of things that go on in our office on a daily basis. I can only hope that the soon-to-be graduates got as much of a positive effect out of the job shadowing as the biologists from Green Bay FWCO did.

The Fisheries Program relies on a broad range of professionals to accomplish its mission: biologists, managers, administrators, clerks, animal caretakers, and maintenance workers. Without their skills and dedication, the Fisheries Program cannot succeed. Employees must be trained, equipped and supported in order to perform their jobs safely, often under demanding environmental conditions, and to keep current with the constantly expanding science of fish and aquatic resource management and conservation.

For further info about the Green Bay FWCO: <http://www.fws.gov/midwest/Fisheries/library/StationFactSheets/greenbay.pdf>

2011 Summer Intern Workshop

BY BEKA MCCANN, LA CROSSE FHC

Student Career Experience Program students Dustin Hart and Beka McCann attended the 2011 Summer Intern Workshop held in Bloomington, Minnesota. The purpose of the workshop was to bring together student interns from all over the Midwest Region to share their experiences as student employees of the Fish & Wildlife Service and to expose them to the many career opportunities available within the agency. Students attended presentations given by representatives of many of the agency's programs including Ecological Services, Migratory Birds, Fisheries, External Affairs and Law Enforcement, among

others. Students were also given an opportunity to create and share a presentation of their own that described the work they have been doing at their individual stations. Highlights of the workshop included a visit to the Regional Office as well as a tour of the Minnesota Valley National Wildlife Refuge (NWR) Rapids Lake Education Center and the Minnesota Valley NWR headquarters. Overall, the workshop provided a wonderful opportunity for student interns to meet and share their passion for wildlife conservation and allowed them to focus their sights on future careers with the Fish and Wildlife Service.

For further info about the La Crosse FHC: <http://www.fws.gov/midwest/LaCrosseFishHealthCenter/>

Congressional Actions

S. 1201 (is) To conserve fish and aquatic communities in the United States through partnerships that foster fish habitat conservation, to improve the quality of life for the people of the United States, and for other purposes. [Introduced in Senate]

S. 52 (is) To establish uniform administrative and enforcement procedures and penalties for the enforcement of the High Seas Driftnet Fishing Moratorium Protection Act and similar statutes, and for other purposes. [Introduced in Senate]

H.R. 2373 (ih) To establish a regulatory system and research program for sustainable offshore aquaculture in the United States exclusive economic zone, and for other purposes. [Introduced in House]

S. 1401 (is) To conserve wild Pacific salmon, and for other purposes. [Introduced in Senate]

H.R. 1160 (rh) To require the Secretary of the Interior to convey the McKinney Lake National Fish Hatchery to the State of North Carolina, and for other purposes. [Reported in House]

H.R. 2325 (ih) To direct the Secretary of the Interior to establish a program to build on and help coordinate funding for restoration and protection efforts of the 4-State Delaware River Basin region, and for other purposes. [Introduced in House]

H.R. 2351 (ih) To direct the Secretary of the Interior to continue stocking fish in certain lakes in the North Cascades National Park, Ross Lake National Recreation Area, and Lake Chelan National Recreation Area. [Introduced in House]

H.R. 1160 (eh) To require the Secretary of the Interior to convey the McKinney Lake National Fish Hatchery to the State of North Carolina, and for other purposes. [Engrossed in House]

S. 651 (is) To require the Secretary of the Interior to convey the McKinney Lake National Fish Hatchery to the State of North Carolina, and for other purposes. [Introduced in Senate]

H.R. 1160 (ih) To require the Secretary of the Interior to convey the McKinney Lake National Fish Hatchery to the State of North Carolina, and for other purposes. [Introduced in House]

H.R. 2834 (ih) To recognize the heritage of recreational fishing, hunting, and shooting on Federal public lands and ensure continued opportunities for these activities. [Introduced in House]

H.R. 1837 (ih) To address certain water-related concerns on the San Joaquin River, and for other purposes. [Introduced in House]

H.Con.Res. 15 (ih) Expressing the sense of the Congress that the United States Fish and Wildlife Service should incorporate consideration of global warming and sea-level rise into the comprehensive conservation plans for coastal national wildlife refuges, and for other purposes. [Introduced in House]

S. 1224 (is) To amend Public Law 106-392 to maintain annual base funding for the Upper Colorado and San Juan fish recovery programs through fiscal year 2023. [Introduced in Senate]

S. 632 (is) To amend the Magnuson-Stevens Fishery Conservation and Management Act to extend the authorized period for rebuilding of certain overfished fisheries, and for other purposes. [Introduced in Senate]

H.R. 521 (ih) To amend the Federal Food, Drug, and Cosmetic Act to prevent the approval of genetically engineered fish. [Introduced in House]

S. 230 (is) To amend the Federal Food, Drug, and Cosmetic Act to prevent the approval of genetically-engineered fish. [Introduced in Senate]

S. 1657 (is) To amend the provisions of law relating to sport fish restoration and recreational boating safety, and for other purposes. [Introduced in Senate]

H.R. 520 (ih) To amend the Federal Food, Drug, and Cosmetic Act to require labeling of genetically engineered fish. [Introduced in House]

H.R. 3069 (ih) To amend the Marine Mammal Protection Act of 1972 to reduce predation on endangered Columbia River salmon and other nonlisted species, and for other purposes. [Introduced in House]

H.R. 1646 (ih) To amend the Magnuson-Stevens Fishery Conservation and Management Act to preserve jobs and coastal communities through transparency and accountability in fishery management, and for other purposes. [Introduced in House]

Source is <http://www.gpoaccess.gov/bills/index.html>
Searched database by keyword = "fish"

Midwest Region Fisheries Divisions

National Fish Hatcheries

The Region's National Fish Hatcheries primarily focus on native fish restoration/rehabilitation by stocking fish and eggs, such as pallid and lake sturgeon and by developing and maintaining brood stocks of selected fish strains, such as lake trout and brook trout.

Hatcheries also provide technical assistance to other agencies, provide fish and eggs for research, stock rainbow trout in fulfillment of federal mitigation obligations and assist with recovery of native mussels and other native aquatic species.

Fish and Wildlife Conservation Offices

Fish and Wildlife Conservation Offices conduct assessments of fish populations to guide management decisions, perform key monitoring and control activities related to invasive, aquatic species; survey and evaluate aquatic habitats to identify restoration/rehabilitation opportunities; play a key role in targeting and implementing native fish and habitat restoration programs; work with private land owners, states, local governments and watershed organizations to complete aquatic habitat restoration projects under the Service's 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

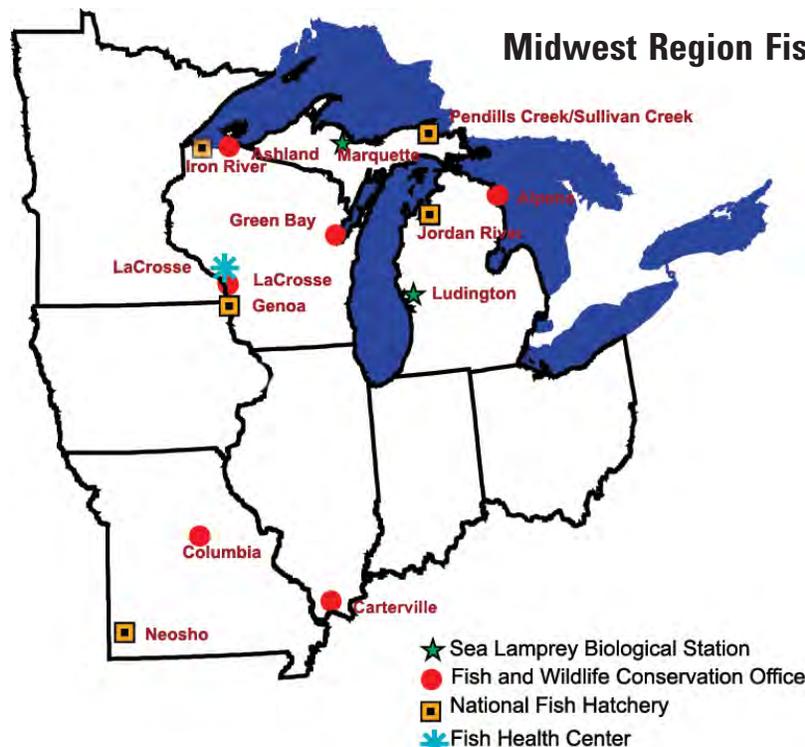
technical expertise to other Service programs addressing contaminants, endangered species, federal project review and hydro-power operation and relicensing; evaluate and manage fisheries on Service lands; and, provide technical support to 38 Native American tribal governments and treaty authorities.

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.



Midwest Region Fisheries Contacts

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“Fish Tails” includes articles that are included in field station reports that are not published in the “Conservation Briefs.” These articles are categorized by focus area and includes the article title, author and field station. The website link, where the full article can be viewed, is highlighted in blue type.

Partnerships and Accountability

Aquatic Species Conservation and Management

Aquatic Invasive Species

Public Use

Cooperation with Native Americans

Leadership in Science and Technology

Aquatic Habitat Conservation and Management

- [Thornapple River Post Dam Removal Site Visit](#)
 - Rick Westerhof, Green Bay FWCO

Workforce Management

- [SCEP Student Chris Olds Speaks at College Biology Seminar](#)
 - Chris Olds, Alpena FWCO
- [Biologist Attends Course in Hydroacoustic Data Processing](#)
 - Dale Hanson, Green Bay FWCO



STOP AQUATIC HITCHHIKERS!



Preventing the Spread of Pathogens, Bacteria and Invasives on/in Boats, Motors, Trailers and Equipment
Developed by the U.S. Fish and Wildlife Service Midwest Region

Disinfection Techniques and Options:

Boat, motor, trailer, and gear must have all aquatic vegetation, visible organisms/animals, soil, and water drained and removed BEFORE TRANSPORT. Upon leaving a water-body possibly infected with pathogens or invasive species, a proper disinfection must be completed before re-use of boat, motor, trailer, and any exposed gear in another waterway. **Contact time** is crucial for complete disinfection. **Contact time** reflects exposure of air, water, or disinfectant to a specific area, and not the total amount of time spent disinfecting. For example, if you are using 50C water to disinfect your boat, you must apply 50C water to each area for ten minutes or longer (see options and procedures below).

Disinfection is MANDATORY for all exposed equipment and gear!

Methods	Procedures	Positives	Negatives
Heat + Air (Drying in hot sun/air)	30C (88 F) 24 hours minimum (time at temp contact period crucial) (exposure to hot sun/ air while dry)	Chemical free Effective, but only if properly done under ideal conditions	Time consuming Weather/Temperature criteria critical to reliable results.
Heat + Water Spray &/or immerse	50C (122 F) contact time 10 minutes (time and temp contact crucial) (source of very hot water needed)	Chemical free Same as above	Must maintain high water temp/contact; hotter than normal tap or carwash. Use personal protective gear (ppg).
Steam Spray	100C (212 F) contact time 10 seconds (time and temp contact crucial) (steamer washer/ sprayer needed)	Chemical free Same as above	Must maintain very high water temp/contact; (i.e. steamer washer/sprayer). Risk of burns use ppg.
Virkon Aquatic	Follow product directions for proper mixture and minimum contact time (immerse in solution, apply directly, or spray-on with pressure washer & rinse)	Environmentally friendly Designed for aquatic use Quick inactivation time Sewer compatible	Follow MSDS directions for health risks and use ppg when mixing. Chemical based. Corrosive in concentrate form.
Quaternary Ammonium+Water (family of products)	Follow product directions for proper mixture and minimum contact time (immerse in solution, apply directly, or spray-on with pressure washer & rinse)	Effective, user friendly Low health risks Sewer compatible	Follow MSDS directions for health risks and use ppg. Chemical based.
Chlorine + Water	Min. 200 mg/liter water for 2 minutes (immerse in solution, apply directly, or spray-on with pressure washer and rinse/neutralize thoroughly)	Widely available Effective	Follow MSDS directions for health risks and use ppg. Highly Corrosive.

USFWS Contacts are: Corey Puzach Fish Health Center or Dave Wedan Watercraft Safety Coordinator, LaCrosse,WI.

Contact Dave Wedan (dave_wedan@fws.gov) to request a 9.5" x 7" self-adhesive, all-weather copy of these boat disinfection recommendations — supplies are limited