U.S. Fish & Wildlife Service

Fish Lines

Region 3 - Midwest Region

Leadership in Conserving, Enhancing, and Restoring Aquatic Ecosystems

Fiscal Year 2007
Vol. 5 No. 8

Alpena FRO's Lake Sturgeon Program

(See the Feature Story" on Page 5)

-IMAX photo by Adam Lintz

The IMAX dive team prepare to dive near the Blue Water Bridge in the St. Clair River. Their goal is to capture film of spawning lake sturgeon.

Implementing the National Asian Carp Management and Control Plan

(See the Feature Story" on Page 7)

-Sarah Bauer

Hundreds of invasive silver carp leap into the air on the Illinois River after a paddlewheeler passes by.

To view other issues of "Fish Lines", see our Regional website at: (http://www.fws.gov/midwest/Fisheries/)

Region 3 - 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

Region 3 Focus Areas

1. Partnerships and Accountability

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.

2. Aquatic Species Conservation and Management

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.

3. 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.

4. Public Use

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.

5. Cooperation with Native Americans

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.

6. Leadership in Science and Technology

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.

7. Aquatic Habitat Conservation and Management

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.

8. Workforce Management

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.

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.

Inside this Issue

Click here to visit our Fisheries Web Site

Midwest Region Fisheries Field Offices

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.

Sea Lamprey Control Stations

Sea Lamprey Control Stations assess and control sea lamprey populations throughout the Great Lakes. The U.S. Department of State and Canadian Department of Fisheries and Oceans fund this program through the Great Lakes Fishery Commission.

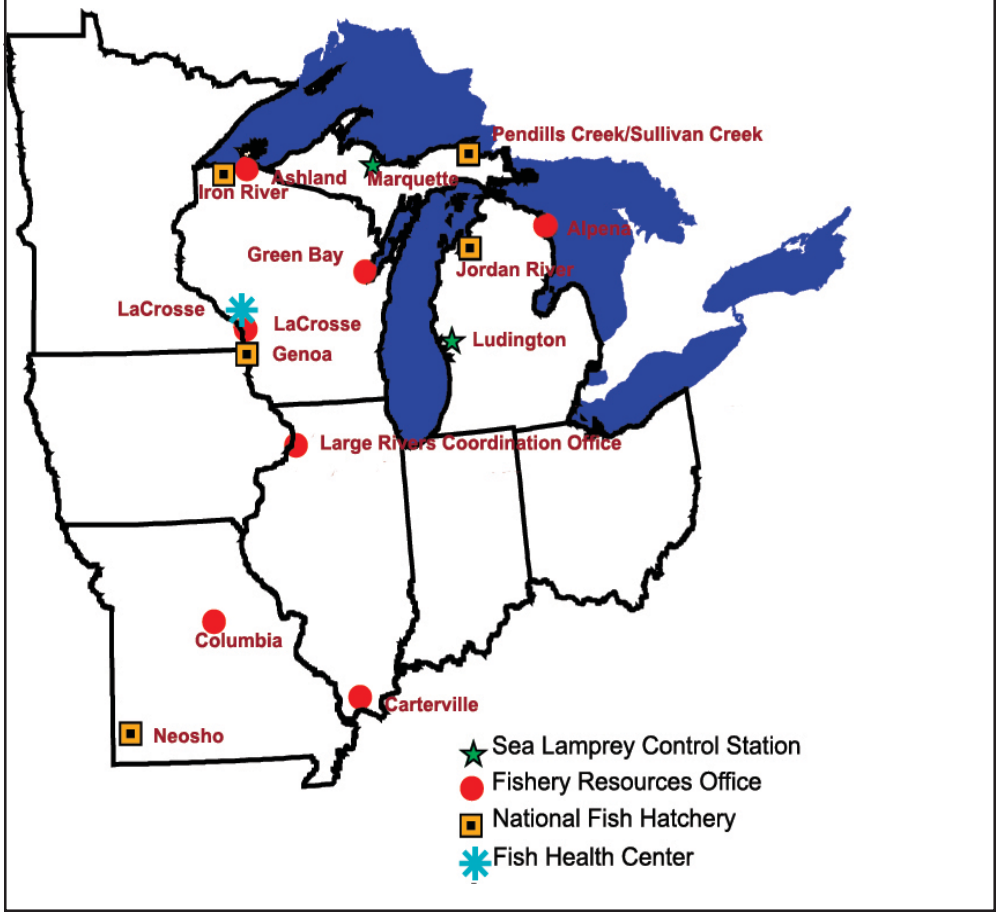
Fishery Resources Offices

Fishery Resources 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 hydropower operation and re-licensing; evaluate and manage fisheries on Service lands; and, provide technical support to 38 Native American tribal governments and treaty authorities. In other Regions of the Service, FRO's are also referred to as Fish and Wildlife Management Assistance Offices.

Fish Health Center

The Fish Health Center provides specialized fish health evaluation and diagnostic services to federal, state, tribal and private hatcheries in the region; conducts extensive monitoring and evaluation of wild fish health throughout the region; 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 Field Offices



List of Acronyms

DNR- Department of Natural Resources
FHC- Fish Health Center
FRO- Fishery Resources Office
NFH- National Fish Hatchery
NWR- National Wildlife Refuge

Feature Story - Alpena FRO's Lake Sturgeon Program

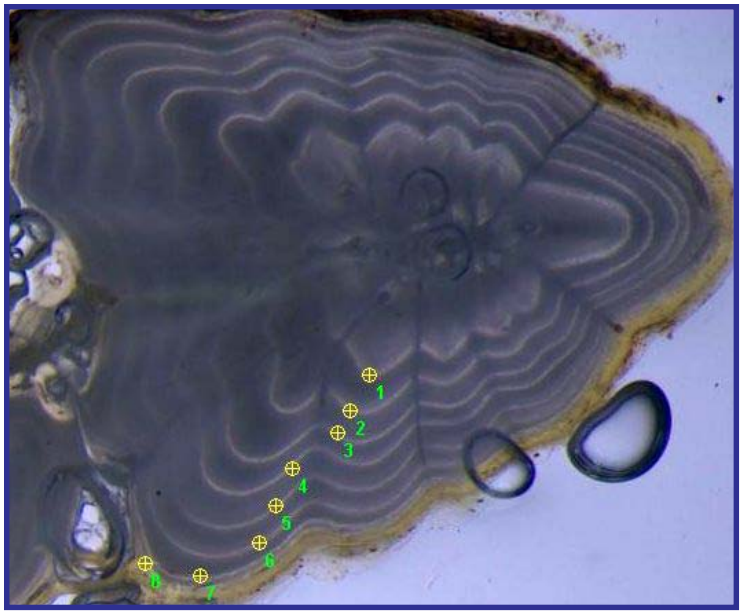
Soon after the Alpena Fishery Resources Office (FRO) was established in 1992, lake sturgeon status and trends was identified as a focus for the station's developing program. At that time very little was known about the status of lake sturgeon, not only in Alpena FRO's jurisdictional waters of Lake Huron and Western Lake Erie, but throughout the Great Lakes. In 1994, Alpena FRO began to collaborate with Michigan Department of Natural Resources (DNR), Ohio Division of Wildlife and Ontario Ministry of Natural Resources (OMNR) for information sharing and data gathering. Since that time, the effort has grown to include partnerships with 18 state, Federal and tribal agencies in the United States and Canada, 8 universities, and over 25 non-profit groups, corporations and commercial fishers.

Historically, lake sturgeons were abundant throughout the Great Lakes but today represent about 1% of the numbers that were here just 150 years ago. The reasons for their decline are due mostly to overharvest by commercial fishing, habitat destruction and dam construction which blocked access to spawning habitat. Changes in management of lake sturgeon and the introduction of the Clean Water Act in 1972, coupled with similar regulatory changes in Canadian waters of the Great Lakes has led to improvements in lake sturgeon populations in many regions of the basin. Because lake sturgeon have not been an economically important fish species throughout much of the Great Lakes in recent times and have generally not been a target species for recreational anglers, management efforts were not historically focused on them. As a result, very little was known about what remnant stocks still existed and little was known about the life history of the fish. Changes in management philosophies have elevated lake sturgeon to a more important status as an indicator of overall aquatic system health; and as a result, greater efforts to understand the species are taking place throughout the Great Lakes. Since the early 1990's, Alpena FRO has worked closely with commercial fishers, the OMNR and the Michigan DNR to collect basic biological information and tag fish to better understand status, trends and distribution of remaining stocks of lake sturgeon in this region of the Great Lakes.

-USFWS photo by James Boase

Purdy Fisheries lifts a trap net in Southern Lake Huron. Alpena Fishery Resources Office works with commercial fishers to collect biological information and tag any lake sturgeons incidentally captured.

When lake sturgeons are captured, basic biological information is collected from each fish that includes the length, girth and weight. In addition, the leading edge of the pectoral fin ray is removed. The purpose for removing the fin ray is two fold; 1) age estimates can be obtained from the fin ray, and 2) a tissue sample from the fin ray can be analyzed for DNA sequencing. By tagging and collecting biological information from each lake sturgeon when it is captured, researchers can infer about distribution and movement patterns, growth rates and the general health of a particular lake sturgeon when it is recaptured. What has been learned from these collective efforts is that places like Saginaw Bay, Southern Lake Huron and Lake St. Clair provide important foraging and resting habitats for lake sturgeon during much of their lives. In addition, genetic information that has been collected has enabled researchers to determine the relatedness of all of the known lake sturgeon spawning populations throughout the Great Lakes.



-USFWS photo by Adam Kowalski

This is a cross-section cut from a fin ray sample of a lake sturgeon, used to determine fish age. The annual growth rings are marked.

To date, this joint effort has been able to tag and release over 4,500 lake sturgeon. Similar tagging efforts are ongoing in other Great Lakes regions as well. Due to the number of tagged lake sturgeon at large in the system, Alpena FRO led the development of a database to house a listing of all tags and provide a point of contact if those tags are encountered by agency or private individuals. The database is housed at the Great Lakes Fishery Commission and can be accessed at the following web site: http://www.glfc.org/sturgeontag/.

Alpena FRO has also been involved in a number of telemetry projects in the Detroit River, St Clair River and St. Mary's River to help identify critical habitats and better understand sturgeon movement in these systems. From these studies, new spawning sites have been identified in the Upper St. Clair River near the Blue Water Bridge and in the Detroit River near Zug Island, which was the first documented lake sturgeon spawning in the Detroit River in almost a century. Telemetry studies have also documented river resident stocks of lake sturgeon existing in the Detroit, St. Clair and St. Mary's rivers, habitats unique to the connecting waters of the Great Lakes. Juvenile telemetry studies in the St. Clair River have documented early life history use of large deep-water habitats that are also unique behaviors associated with lake sturgeon found in the connecting waters. Alpena FRO is working with partners from the U.S. Geological Survey to map and inventory these critical spawning, staging and nursery habitats, with many sections of the Detroit and St. Clair rivers already completed. In places where spawning habitats have been destroyed or severely altered, such as the Detroit River, Alpena FRO is conducting research to determine lake sturgeon response to the construction of artificial reefs and to date, results have been promising. At the artificial reef constructed at Belle Isle, preconstruction assessment determined that three species of fish were using the site - following construction 14 species of fish were captured at the reef with most using the new substrate for spawning. The pre-assessment phase of a second artificial lake sturgeon spawning reef is currently under way at Fighting Island which falls within the Detroit River International Wildlife Refuge, which is the first joint international project of its kind. Alpena FRO research has been at the center of much of the recent lake sturgeon media coverage taking place throughout the Great Lakes, with their research being featured in numerous major news paper releases, a recent Public Television Documentary *Giants in the River*, and will be featured in the IMAX documentary *Wonders of the Great Lakes* which is scheduled to be released in theaters in May, 2008.

James Boase, Scott Koproski and Adam Kowalski; Alpena FRO

-IMAX photo by Adam Lintz

A lake sturgeon spawns in the St. Clair River below the Blue Water Bridge .

For additional information about lake sturgeon restoration in Lake Huron, contact Jim Boase at the Alpena FRO:

Phone # 248/894-7594

or visit their website at:
http://www.fws.gov/midwest/alpena/index.htm

Feature Story - Implementing the National Asian Carp Management and Control Plan

Three species of Asian carp - bighead, grass and silver - are reproducing in many parts of the Mississippi River basin. A fourth species of Asian carp, the black carp, has been collected from the Mississippi River basin but natural reproduction of this species has not been documented. The Fish and Wildlife Service and our partners are concerned about potential ecological and economic effects caused by wild established groups of all Asian carps.

The Carterville, Illinois, Fishery Resources Office (FRO) chairs the Asian Carp Working Group and led the development of a comprehensive national management and control plan for bighead, black, grass and silver carps in the United States. These four species have been introduced into the Mississippi River and other waters in the United States. Other Region 3 Fisheries offices are also contributing to efforts to control the spread of invasive Asian carps.

The collaborative process used to develop the Asian carp management plan was a success, with working group members—representing multiple stakeholder groups—developing 48 strategies and 136 recommendations to manage and control Asian carps. Having undergone reviews by the Aquatic Nuisance Species Task Force and the public, the management plan is now being finalized for submission in July by the Region 3 Fisheries Program to the task force for implementation approval.

Like many of our partners, Region 3 Fisheries has been active in implementing components of the management plan. Actions identified in the plan address goals to prevent carp introductions, contain and control the expansion of wild populations, remove or reduce abundances of wild populations, and minimize the potential adverse effects of wild Asian carps. The plan also addresses outreach, research and coordinated implementation. Throughout Region 3, many stations are involved with projects addressing the goals identified in the management plan.

The working group identified 22 potential pathways for continued introduction of Asian carp to the wild. Four pathways were seen as being the highest risk: transport and release of Asian carps mixed with wild-caught baitfish; transport of live wild-caught Asian carps; unintentional escapes of farm-raised Asian carps from fish farms subject to flooding; and intentional stockings of Asian carps capable of reproducing in the wild—specifically stocking fertile (diploid) grass carp for nuisance vegetation control.

-Bill Dance

A single throw with a cast net in the Illinois River yielded a net-full of young, invasive silver carp.

As a starting point to address these pathways, the Large Rivers Coordination Office and the Region 3 Fisheries Program office are working to summarize state regulations pertaining to import and possession of live Asian carps. In some cases, additional or consistent state regulations would help to reduce the introduction and spread of Asian carps.

Most states prohibit stocking of fertile (diploid) grass carp that can spawn and produce more grass carp. While some states prohibit stocking of any grass carp, many states permit the stocking of sterile, or triploid, grass carp for vegetation control. The Fish and Wildlife Service operates a Triploid Grass Carp Inspection and Certification Program to help prevent the stocking of fertile (diploid) grass carp in states where they are prohibited. The Regions 3 and 4 Fisheries Programs work closely with states and triploid grass carp producers to continually improve the effectiveness of this program, and are developing plans for a workshop with state agencies in early 2008.

Many Fish and Wildlife Service offices are involved in a variety of outreach efforts to provide information about the potential risks and consequences of unknowingly transporting and introducing Asian carps. In many tributary streams, Asian carp are often unable to swim past dams and into the lakes and reservoirs above these dams; however, unknowing anglers could easily transport and release Asian carps mixed with wild-caught baitfish into these otherwise protected waters. The La Crosse FRO assisted in the distribution of an informational video developed by the Tennessee Wildlife Resources Department featuring Bill Dance speaking about risks of transporting live bait fish.

Considerable effort is being focused on preventing the dispersal of Asian carps up the Illinois River and into the Great Lakes. The Carterville and LaCrosse FRO's participate in early detection monitoring in the Upper Illinois River to search for bighead and silver carps near an electric fish barrier, intended to stop these fish from swimming into the Great Lakes.

Carterville FRO has constructed a network of receivers in the 60-mile reach immediately below this barrier. The network tracks the movements of bighead and silver carps carrying surgically inserted tags that transmit unique signals to the network of receivers.

-USFWS

A receiver is mounted on a stand and ready for deployment, as part of a network in the Illinois River to monitor movements of radio-tagged bighead and silver carps.

There is much to learn regarding management and control of Asian carps. Region 3 Fisheries is working with our partners to complete needed research. The working group identified alternatives to black carp for snail control in aquaculture ponds as its highest research priority.

Many fish farmers need to control snails in their ponds because infected snails release parasites that can kill the fish and create significant financial losses. Carterville FRO and Southern Illinois University are evaluating different stocking densities of native fish species such as redear sunfish, and investigating the potential of redear crossed with warmouth and redear crossed with green sunfish hybrids for controlling snails.

Natural resources managers need to develop gears and methods for collecting multiple sizes and ages of Asian carps during sampling. Managers also must understand what these samples tell us about the wild population in order to assess the current status of Asian carps and evaluate management actions targeted at reducing abundances of these fish. Columbia FRO is working with a Master Trawl Builder—one of only seven in the world—to develop gears designed specifically to capture Asian carps in various habitats.

-USFWS

A sonic transmitter is being surgically implanted into a bighead carp. The fish was captured and released back into the Illinois River, to determine movement patterns of this invasive fish species.

It is also important for managers to understand how Asian carp use the different habitats available to them. The La Crosse and Carterville FROs are working with Southern Illinois University to evaluate potential habitats favorable for spawning and recruitment of Asian carps in the Mississippi River. These evaluations are intended to help managers focus future field studies to control wild populations. Enhancing harvest, especially commercial harvest, is currently the best tool available for removing bighead and silver carps from the wild. Although several entities are actively pursuing ideas, few markets or uses for wild-caught Asian carps have been developed. Carterville FRO is assisting the St. Louis Zoo Department of Nutrition in evaluating the potential for using Asian carp to feed zoo animals rather than many of the ocean fish that are currently used.

The Region 3 Fisheries Program office is also working with others to evaluate the use of pheromones as a means to attract and concentrate Asian carps in designated areas to increase the harvest of these fish. Some pheromones may also work to repel Asian carps and provide an additional tool to control the movement and distribution of these fish.

-Bill Dance

Hundreds of small bighead and silver carps are pictured in this photo. They can easily be collected and transported as live bait, a major concern for controlling the spread of Asian carp.

Much additional research is still needed on pheromones and other potential tools to manage and control Asian carps.

To successfully and efficiently manage and control Asian carps, the strategies and recommendations identified in the management plan must be funded adequately, effectively ordered, coordinated among agencies and put into action. Immediate actions are needed to develop a coordination structure and implementation team for Asian carp management that is prepared to fully implement the plan once approved by the Task Force.

The Region 3 Fisheries Program will continue to take an active role working with our partners to coordinate and implement the Asian carp management plan. *Greg Conover, Carterville FRO*

For additional information on Asian carps and the National Asian Carp Management and Control Plan, contact the Carterville FRO at: 618/997-6869.

Partnerships and Accountability

Deputy Director Luthi Meets with Alpena FRO Staff

Fish and Wildlife Service Deputy Director Randall Luthi was in Michigan the week of May 13 to visit with staff and see various aspects of agency programs in the state. He was accompanied by Deputy Regional Director Charlie Wooley and East Lansing Field Supervisor Craig Czarnecki. As part of the tour, Alpena Fishery Resources Office (FRO) Project Leader Jerry McClain and biologist Heather Rawlings met Luthi during his visit to the Jordan River National Fish Hatchery (NFH) and escorted him back to Alpena, Michigan, to meet with station staff. On the return to Alpena, the group stopped to view and discuss the Eichorn Bridge road stream crossing project on the Thunder Bay River. The project, completed in 2003, was a partnership effort to improve habitat for several native fish species and was funded, in part, by the Partners for Fish and Wildlife and Fish Passage programs delivered by Alpena FRO in the northern lower peninsula of Michigan. The group also visited a restored wetland site west of Alpena. Following the tour, the group met the remainder of the Alpena FRO staff for dinner and to explain the programs of the Alpena FRO.
Jerry McClain, Alpena FRO

-USFWS
Deputy Director Randall Luthi, Alpena Fishery Resources Office staff and others view the Eichorn Bridge restoration project on the Thunder Bay River during Mr. Luthi's visit to Northern Michigan.

St. Marys River Fishery Task Group Meeting Held

The St. Marys River Fishery Task Group met on May 15 in Brimley, Mich., at the Bay Mills Indian Casino and Resort. Major agenda items included the Lake Superior State University fish and wildlife beneficial use impairment delisting criteria project, a review of preliminary analysis of the 2006 fish community assessment data and review of annual fall walleye recruitment electrofishing data. Joshua Parish of the Bay Mills Indian Community hosted the meeting.

Greg Zimmerman of the university provided an overview of a delisting criteria project that has received Michigan Department of Environmental Quality funding. The university sought volunteers from the group to sit on the Technical Committee they will be assembling to review existing historical fish and wildlife population and habitat information and formulate restoration projects. The Technical Committee will share this information with stakeholders in the fall.

Dave Fielder of the Michigan DNR provided a preliminary analysis of the river-wide fish community assessment conducted by the task group last August. He provided a breakdown of the trends and abundance of major sport species including walleye, yellow perch, lake herring, smallmouth bass and northern pike. The information will be presented to the Lake Huron Technical Committee at its summer meeting and a final report written by the task group will be published on the Great Lakes Fishery Commission's website. For the 2002 report, *Population Dynamics of the St. Marys River Fish Community 1975-2002*, go to http://www.glfc.org/lakecom/lhc/lhchome.php#pub and click on the Publications and Products link.

Greg Wright of the Chippewa/Ottawa Resource Authority provided a data summary of the annual fall walleye recruitment electrofishing survey. He found that the mean benchmark "catch per unit of effort" of walleye was 6.7 fish per hour electrofishing. The data also indicated that stocked hatchery fish comprise approximately a third of walleye captured from the river.

Creel clerks will be working a number of areas of the river this summer to gather harvest data. The Michigan DNR will have a clerk on the lower reaches of the river and Ontario Ministry of Natural Resources will have two clerks on the river, one surveying the rainbow trout fishery in the lower rapids and one surveying Lake George and the St. Joseph Channel. They will also be conducting a creel survey of the lake herring fishery near St. Joseph Island.
Anjanette Bowen, Alpena FRO

Regional Directorate Team Meets on the Detroit River

On May 10, Alpena FRO biologists James Boase and Jim McFee had the opportunity to demonstrate some of their work in Michigan's Huron-Erie Corridor to Deputy Regional Director Charlie Wooley, Regional Office Refuges Supervisor Jon Kauffeld and Detroit River International Wildlife Refuge (IWR) manager John Hartig and staff Steve Dushane and Stephanie Millsap. The group toured some of the new properties the refuge manages and saw some of the ongoing fishery research taking place on the refuge. BASF Corporation provided its corporate boat to shuttle the group to locations on the river and provided lunch at the Fighting Island Lodge.

Alpena FRO biologists have been conducting fisheries assessments within Detroit River IWR on the Detroit River and Western Lake Erie since 2005. Research efforts have involved collaboration with U.S. Geological Survey's Great Lakes Science Center, Michigan Department of Natural Resources (DNR), Ontario Ministry of Natural Resources and the Department of Fisheries and Oceans Canada. Alpena biologists worked closely with Hartig when he was River Navigator and now as refuge manager to identify issues affecting aquatic resources within Detroit River IWR.

Alpena's current efforts have focused on an area at the northeast corner of Fighting Island where Canadian funds from Environment Canada and funds through the Fish and Wildlife Service's Challenge Cost Share Program have supported phase one (preconstruction assessment) of a three phase project to build a lake sturgeon spawning reef. U.S. Congressman John Dingell and Canadian Member of Parliament Jeff Watson simultaneously released news of the joint United States/Canadian project within the Detroit River IWR and the story was picked up by the Detroit News.

Following a tour of the refuge, Wooley and Kauffeld helped lift setlines used to capture adult lake sturgeon near the proposed Fighting Island Reef site. Three lake sturgeons were captured that day, the largest one measuring over five feet. Charlie Wooley described it as the "highlight of the trip." *James Boase, Alpena FRO*

-USFWS photo by James Boase

Members of the Regional Directorate Team are pictured with a lake sturgeon captured from the Detroit River International Wildlife Refuge in May. Pictured left to right are: Charlie Wooley, Bruce Manny, Aime Bourdon, John Hartig, Jim McFee, Steve Dushane, Stephanie Millsap and Jon Kauffeld.

Detroit River Work Featured on Detroit News Website

Alpena FRO biologists Jim McFee and James Boase showcased their Detroit River field work in May as Boase conducted a phone interview with *The Detroit News* reporter Christine Ferretti. A week later, *The Detroit News* cameraman Ricardo Thomas and videographer David Coates joined McFee on the Fish and Wildlife Service vessel *Sentinel*. The resulting story ran in the May 30 edition and a video clip was posted on *The Detroit News* website.

The article and video clip highlighted some of the research Alpena FRO has been working on during the spring of 2007 to assess historic spawning locations and obtain pre-construction assessment data for a proposed artificial spawning reef. Efforts for the past two years have focused on identifying whether historic spawning locations along the entire length of the Detroit River are still being used. Sampling locations are located in both United States and Canadian waters and a majority of the sites fall within the boundaries of the Detroit River IWR. This work gives biologists an opportunity to compare past and present species use in given locations. Target species for this work are the economically valuable walleye, lake whitefish and lake sturgeon. Crews use setlines and gillnets to catch adults, towed Bongo nets to capture larval fish, and egg mats to collect eggs. U.S. Geological Survey (USGS) biologists from the Great Lakes Science Center performed the larval fish and egg work.

Most site locations changed daily except for one location at the northeast corner of Fighting Island. Located on the Canadian side of the Detroit River and owned by the BASF Corporation, Fighting Island is the area of a proposed spawning reef construction project, which would be a collaborative effort among U.S. and Canadian Federal, state and provincial agencies, and corporations. A constructed reef in this location could benefit a wide range of species, including our target species walleye, whitefish and lake sturgeon.

Fish and Wildlife Service biologists captured fourteen species in gillnets throughout the

survey and found all of these species near the proposed spawning reef site. The gillnet catch was dominated by walleye ranging in size from 391 mm to 668 mm. The setline portion of the study yielded 59 lake sturgeons ranging in size from 722 mm to 1,725 mm. Crews measured, weighed, tagged and released all captured sturgeon. Two additional juvenile sturgeons were captured in gillnets near Fighting Island.

USGS biologists are still processing larval fish and egg data. This project will continue this fall with an emphasis on capturing adult spawning-ready lake whitefish and their eggs. Setlines will also be fished to continue collecting information about the river resident stock of lake sturgeon.
James McFee, Alpena FRO

-USFWS photo by Jim McFee
Alpena Fishery Resources Office volunteer Aime Bourdon holds a lake sturgeon captured from the Detroit River as David Coates of *The Detroit News* records the action.

Lake Sturgeon Recovery Highlighted on Public Television

It has been four years since researchers from Michigan Sea Grant, USGS, Michigan DNR and the Fish and Wildlife Service first brainstormed on the idea of constructing an artificial lake sturgeon spawning reef in the Detroit River. Those early planning meetings, the research that followed, construction of the reefs, and the history of lake sturgeon were highlighted in a documentary titled *Giants in the River* which aired on Detroit Public Television on April 26.

The document featured interviews with researchers and partners from Michigan Sea Grant, USGS, Michigan DNR, DTE Energy, JJR Consulting, and the Fish and Wildlife Service. This was the second time the documentary has been aired on Detroit Public Television, and since the initial airing on April 30, 2006, the film was updated to include the capture of the first adult lake sturgeon on the reef during the spawning period in the spring of 2006, and use of the reef by the northern madtom, a state listed species in Michigan and a federally listed species in Canada.

Along with the documentary, Michigan Sea Grant has developed an educational lake sturgeon display that was unveiled in spring 2006 at the Detroit Science Center in downtown Detroit. The display has since moved to the Smith Terminal at Detroit Metropolitan Airport.
James Boase, Alpena FRO

Cooperators Get a Lesson in Mussel Culture at Genoa NFH

By many standards, freshwater mussels are among the most endangered of America's aquatic fauna. Loss of habitat, coupled with the drastic reduction in range in many species, population fragmentation, and the high percentage of recognized species currently on state or Federal imperiled species lists mean the outlook for these unique animals is bleak. Given the ecological importance of freshwater mussels to healthy aquatic ecosystems, a host of academic, state and Federal agencies have been carrying out restoration and recovery efforts to stabilize the downward trend in mussel populations across the country.

One of the most successful programs to emerge in the past ten years is happening in the Midwest Region. This project encompasses two endangered species—the Higgins' eye pearlymussel and the winged mapleleaf mussel—and a consortium of Federal and state agencies known as the Mussel Conservation Team. Composed of representatives of the U.S. Army Corps of Engineers, Fish and Wildlife Service, the natural resource agencies of Iowa, Minnesota, Wisconsin and Illinois, as well as U.S. Geological Survey, the National Park Service, and several universities, the team has helped introduce millions of these Federally listed species into their historic ranges in the Upper Mississippi River system. Concurrently, methods developed by the team have caught the attention of other researchers and management biologists wrestling with restoration and recovery projects for threatened mussel species in other areas of the country.

Most recently, state biologists from West Virginia have become interested in replicating some of the techniques and methods being used in the Upper Mississippi River to restore multiple species in the Ohio River system. In May, West Virginia DNR District Fisheries Manager Scott Morrison and biologist Janet Clayton traveled to Genoa NFH in Wisconsin to view mussel propagation operations. The pair observed and participated in a wide range of operations including host fish inoculation and distribution, mussel cage culture and harvest.

The visiting biologists interviewed a wide assemblage of cooperators at the hatchery and in the field, looking for insights that will be readily adaptable to programs in West Virginia. Genoa NFH and the rest of the Mussel

Coordination Team will continue to provide assistance into the future for the state or any other cooperator interested in enhancing mussel populations through active propagation efforts.
Roger Gordon, Genoa NFH

-USFWS photo
Janet Clayton from the West Virginia Department of Natural Resources helps prepare mussel culture cages for deployment.

National Geographic Magazine Photographer Visits Genoa NFH

Noted National Geographic Magazine photographer Joel Sartore spent several sleepless nights at the Genoa NFH mussel propagation facility this past month. Sartore, who is currently working on an article for the magazine about the Endangered Species Act, was trying to capture the mantle display of the endangered Higgins' eye pearlymussels housed at the facility. Each spring, the hatchery collects dozens of these rare mussels from the Upper Mississippi River watershed to carry out a range-wide recovery effort in which millions of these imperiled mussels are propagated, distributed and cultured.

Sartore was specifically interested in the unique life history of this animal, in which the female mussel uses a modified labial palp to "decoy" a perspective host fish into striking, thus facilitating the release of larval mussels onto the host fish and completing the life cycle.

Unfortunately for the photographer, the majority of these "displays" take place in the wee hours of the night because the mussels are sensitive to bright lights, vibration and handling. With assistance from project personnel, Sartore captured several mussels at various levels of activity over two nights. We hope that these shots will make the final edit and appear in the magazine in the near future, perhaps helping to raise the awareness of the plight of these unique, rare and declining animals.
Roger Gordon, Genoa NFH

Missouri River Summit II Convenes

The Iatan/Weston Missouri River Corridor along the Missouri-Kansas border is one of several "Conservation Opportunity Areas" along the Missouri River as identified in Missouri's Comprehensive Wildlife Strategy. Those areas highlight top resource priorities to assist in developing regional partnerships and effectively focus conservation activities.

The Mid-America Regional Council is coordinating a working group to engage in strategic conservation planning for the corridor. This group effort will target priority areas, maximize partner resources, and provide multiple benefits to the agencies and the corridor. Biologist Joanne Grady attended this workgroup meeting to learn how the Columbia FRO could assist.

In the Iatan/Weston Corridor, desired future projects include trail development, land acquisition and restoration of wetlands, river, and other floodplain and bluff natural communities. Located near Kansas City and several local universities, this area also offers great potential for increased recreation, outreach and education opportunities. While some beneficial projects have been initiated in the area by individual agencies or groups, they have occurred independently. Columbia FRO is in the early stages of developing an endangered species management plan to assist Fort Leavenworth in expanding habitats for pallid sturgeon. Fort Leavenworth sits in the middle of the target corridor and is a keystone property for trail development. Biologist Jane Ledwin of the Missouri Ecological Services Field Office, who represents the Fish and Wildlife Service's Missouri River program in this workgroup, has been instrumental in helping the group understand the U.S. Army Corps of Engineer's mitigation and shallow water habitat efforts in the corridor, as well as the Fish and Wildlife Service's conservation priorities along the Lower Missouri River.
Joanne Grady, Columbia FRO and Jane Ledwin, Missouri ES FO

MICRA Executive Board Meeting Held

Project Leader Tracy Hill of the Columbia FRO traveled to Davenport, Iowa, on May 29 to attend the Mississippi Interstate Cooperative Resource Association Executive Board meeting. The meeting primarily addressed the issue of shovelnose sturgeon and caviar harvests. The board heard presentations about shovelnose and pallid sturgeon population viability; issues and concerns about pallid sturgeon loss associated with commercial harvest of shovelnose sturgeon; the "similarity of appearance" endangered species listing process; and recent court cases involving pallid sturgeon and commercial fishermen. Following the presentations, state delegates

discussed the issues and tried to determine a course of action. The next day, the incoming MICRA chair decided to hold a conference call to further evaluate the course of action that the board would take. The meeting also provided an excellent opportunity for the board to address issues related to the recently released Asian Carp Management Plan.
Tracy Hill, Columbia FRO

Columbia FRO Helps Historic River Town Prepare for High Water

When the Missouri River began rising in April, the town of Rocheport, Mo., was at risk of flooding. Local radio stations began broadcasting a call for help for the small river town, and Columbia FRO staff members were quick to respond. When we arrived at Rocheport, water was already within 150 yards of the edge of town and volunteers from local communities, multiple branches of the armed forces, law enforcement officers and the Department of Corrections were hard at work building a sandbag barricade more than a mile long. Together, we all worked to fill and place sandbags, hoping to save Rocheport. With the sandbag levy in place all we could do was wait. When the river peaked two days later, Rocheport's levy held and the town remained safe and dry.
Brian Elkington and Cliff Wilson, Columbia FRO

-USFWS
Columbia Fishery Resources Office staff fill sandbags to deter flood waters in the historic town of Rocheport, Missouri.

Ashland FRO's Webpage Hits 114,000 Times in April

The Fish and Wildlife Service's Internet tracking system has shown that the Ashland FRO website (http://www.fws.gov/midwest/ashland/) received 114,545 hits in April. If we were to equate this demand to phone calls during a normal 20-day work month, the office would have received 5,727 phone calls per day. Naturally this is an overstatement of what would have actually occurred; however, what is not exaggerated is the enhanced level of technical support and general information the public is accessing. This level of public interest will pay dividends in the future.
Frank Stone, Ashland FRO

Mourning Dove Call-Count Survey Conducted

As part of the Fish and Wildlife Service's nationwide Mourning Dove Call-Count Survey, Ashland FRO biologist Ted Koehler surveyed Wisconsin Route #0060 in Ashland County. Designed specifically for mourning doves, the call-count survey provides an annual index to population size during breeding season. Biologists also use data on the total number of doves heard on each route to determine trends in populations. Wildlife managers use the resulting information on status and trends in setting annual hunting regulations.

The mourning dove is one of the most widely distributed and abundant migratory bird species in North America. As part of their courtship behavior, mourning dove calling peaks at sunrise and diminishes gradually thereafter. The survey is conducted along a twenty-mile route, and records all doves seen along the route, as well as those heard at stopping intervals. The results are entered into the national Mourning Dove Call-Count database.
Ted Koehler. Ashland FRO

Friends of Pendills Creek Hatchery Donate and Install Park Bench

The Friends of Pendills Creek Hatchery came through for Pendills Creek NFH again, donating and installing a recycled plastic park bench on hatchery grounds overlooking a fantastic Lake Superior vista. This bench replaces one built in the 1970s by Youth Conservation Corps workers that had been destroyed and burned by vandals. This new bench is environmentally friendly, aesthetically pleasing and blends into the surroundings of the site. Friends of Pendills Creek Hatchery are dedicated to conservation, education and enhancement of Fish and Wildlife Service lands in support of the hatchery mission. The staff at Pendills Creek NFH would like to thank President George Goetz, Membership Director/Fund Raising Chairman Sam Burdick, and members Bruce Burdick and George Shields for their hard work installing the bench.
Curt Friez, Pendills Creek NFH

Aquatic Species Conservation and Management

Recovering Endangered Mussels: The Beat Goes On

In May, staff from Genoa NFH, Twin Cities Field Office, U.S. Army Corp of Engineers, National Park Service, Minnesota DNR and West Virginia DNR came together in the name of mussel conservation to place culture cages into the Mississippi and St. Croix rivers. These dedicated individuals and their agencies have been placing cages containing fish inoculated with larval Higgins' eye pearlymussels at a culture site in Lake Pepin, Minn., for the past seven years. For the last three years, Dubuque's Ice Harbor has also been successfully used for the floating cages designed at Genoa NFH. Culture cages from these two sites have produced between 25,000 and 30,000 sub-adult mussels in the last two years. This year, crews placed a total of 88 cages between the two sites in anticipation of another bumper crop of endangered mussels, to be placed back into relocation sites on the Mississippi River.

Not to be overshadowed by the Higgins' eye pearlymussel, the winged mapleleaf mussel is the Upper Midwest's most endangered mussel, found only in the St. Croix River. The number of available egg-bearing winged mapleleaf females typically is fewer than five a year, limiting the size of the program. In 2007, crews placed a record 600 inoculated fish into 25 cages at Lake Pepin and the Hudson Narrows on the St. Croix River. In 2005, the Hudson Narrows site produced the first propagated winged mapleleaf mussel in the country. It is estimated that the 2007 cohort of channel catfish host fish produced nearly 78,000 newly metamorphosed mussels. In two years, surviving mussels will be large enough to be harvested and surveyed, helping us measure the success of the program and prevent this species from being extirpated from the Mississippi River basin.

Tony Brady, Genoa NFH

-USFWS

Volunteers from the National Park Service and the West Virginia Department of Natural Resources assemble mussel cages on the Minnesota side of Lake Pepin.

Mussel Conservation Partnership with Nature Center Enters Second Year

In 2006, Genoa NFH began working with the Hartman Reserve Nature Center in Waterloo, Iowa, to produce freshwater mussels to be introduced into the Cedar River. Historically, the Cedar River had a rich and diverse mussel population, but because of excessive sedimentation, over harvest and pollution, only a few mussels remain. News of the grim outlook for mussels in the Cedar River alarmed the Hartman Reserve, which contacted the hatchery about beginning a restoration program for the Cedar Falls/ Waterloo portion of the river.

Any new mussel program takes time to find the best working conditions, and the Cedar River project is no exception. The first year of the project saw some success that gave everyone involved hope for this year. Summer partners for the project included Genoa NFH, Hartman Reserve, Iowa DNR and Blackhawk County Conservation Board. Partners are comparing a new culture cage site on Alice Wyth Lake to the old site on George Wyth Lake. Both lakes are located in the George Wyth State Park. Fish, collected by biologists from the Iowa DNR, were inoculated with plain pocketbook glochidia, or larval mussels, and placed in floating cages in the two lakes. The cages will be harvested this fall and mussels produced will be marked and placed into restoration areas in the Cedar River.

Tony Brady, Genoa NFH

-USFWS

Mussel biologist Tony Brady inoculates wild fish, called host fish, by placing mussel larvae on their gills. The mussel culture is taking place at George Wyth State Park in Iowa.

Genoa NFH Salmonids Vaccinated

Staff biologists at Genoa NFH completed the annual vaccination of rainbow and coaster brook trout, to immunize the hatchery's salmonids against outbreaks of furunculosis. Though furunculosis can be found in many species of fish, trout are especially susceptible to this disease.

Symptoms include external lesions which in acute cases may result in death. The disease occurs naturally in many lakes and rivers throughout the world. Producing furunculosis-free trout is vital to Genoa NFH's mission because of the repercussions of transmitting the disease to uninfected watersheds.

The hatchery vaccinated 70,000 rainbow trout and 20,000 coaster brook trout this year. Once the young trout are vaccinated, they remain on the hatchery for another year. Fish may be carriers of the disease without showing any clinical signs, which is why hatchery fish are periodically tested by the La Crosse FHC. Fortunately, Genoa NFH has been furunculosis-free since the inception of the vaccination process. The certified "clean" trout are eventually stocked with the cooperation of tribal and state governments from Wisconsin, Minnesota and Michigan.

Nick Starzl, Genoa NFH

-USFWS

Trout are vaccinated at the Genoa National Fish Hatchery.

Project Assesses Lake Sturgeon

In April, biologists James Boase and Jim McFee from the Alpena FRO and volunteers Larry Hess, Barry Pulaski and Larry Dinsmore began the third and final year of sampling for the evidence of lake sturgeon spawning in the Saginaw River watershed. Alpena FRO has used a number of volunteers from Shiawassee National Wildlife Refuge (NWR) and the Friends of the Shiawassee during all three years, and their assistance has been invaluable.

Initial evidence suggests that lake sturgeon use the Saginaw River watershed during the spring spawning season, but very little is known about the importance of this watershed to the lake sturgeon population of Lake Huron. The primary goal of this project is to document lake sturgeon use of the Saginaw River watershed for spawning, one of the criteria for delisting the Saginaw River as an *Area of Concern* as stated in the Remedial Action Plan.

A number of other partners have been involved with this project, including the Michigan DNR, USGS Great Lakes Science Center, Dow Chemical and the City of Frankenmuth. The project is funded through the Saginaw Bay Watershed Initiative Network and the National Fish and Wildlife Foundation.

In 2005 and 2006, sampling efforts focused on capturing adult lake sturgeon as they were expected to migrate into the watershed in the spring to spawn and, if spawning took place, capturing and collecting their eggs. Crews used setlines in an effort to collect adults, fishing mainly in the deepest sections of the Saginaw River where the Cass, Shiawassee and Tittabawassee rivers converge. Although one adult lake sturgeon was sighted below the Dow Dam on the Tittabawassee River in 2005, high water prevented the capture of the fish, and the crew did not document spawning.

In addition to setlines, crews also used egg-mats below the Dow Dam on Tittabawassee River, the Frankenmuth Dam on the Cass River and below the Chesaning Dam on the Shiawassee River. In 2005 and 2006, eggs collected from the egg-mats were taken back to the USGS laboratory at the Great Lakes Science Center in Ann Arbor and incubated until hatching. Hatched fish larvae were then raised until their yolk sacs were absorbed and the fish could be positively identified. Most eggs collected in the system were either walleye or various sucker species. No lake sturgeon eggs have been collected so far.

After three years with no documented lake sturgeon spawning in the watershed, our final assessment focuses on determining whether the system can support lake sturgeon during spawning, whether habitat is available for egg survival, and whether sufficient nursery habitat is available for larvae and juveniles during the first few months after hatching. Habitat assessment will take place this summer and fall.

James Boase, Alpena FRO

Lake Whitefish Age Determinations Made

During the month of May, Alpena FRO biologist Scott Koproski finished aging lake whitefish fin rays collected during the Lake Huron Lake Whitefish Distribution Study in 2004, 2005 and 2006. Funded through the Great Lakes Fish and Wildlife Restoration Act, the study involves the Fish and Wildlife Service, Michigan DNR, Ontario Ministry of Natural Resources, Chippewa/Ottawa Resource Authority, Chippewas of Nawash First Nation, Saugeen First Nation and Bruce Power. Some 15,000 lake whitefish were tagged lakewide in each of three years to better delineate lake whitefish spawning stocks in Lake Huron.

Koproski began aging fin rays by cross-sectioning the fin ray and identifying annuli present within the sample. The cross-sectioned fin ray is placed on a glass slide, a drop of vinegar placed on the sample, and the sample is examined under a stereomicroscope. Two distinct growth patterns are identified using this technique: broad summer growth and narrow winter growth. By counting the bands of winter growth, age estimates are obtained from the fin rays. Koproski analyzed more than 800 fin ray samples collected during this study.

Scott Koproski, Alpena FRO

Lake Huron Lake Whitefish Study Data Compiled

In May, biologist Aaron Woldt compiled lake whitefish tagging data from Fish and Wildlife Service and partner agencies in a shared database as part of a Great Lakes Fish and Wildlife Restoration Act-funded Lake Huron lake whitefish distribution study. The goals of this study are to determine the spatial distribution and movement patterns of eight selected lake whitefish stocks in Lake Huron and the contribution of each stock to commercial fishery yields. Partner agencies for this study include the Fish and Wildlife Service, Chippewa/Ottawa Resource Authority, Michigan DNR, Bruce Power, Chippewas of Nawash, Saugeen First Nation and Ontario Ministry of Natural Resources.

In the fall of 2006, the partners tagged more than 12,000 lake whitefish across all sampling sites bringing the total number to more than 36,000 lake whitefish tagged and released between 2003 and 2006. Each agency entered data into a standard database that Woldt designed, and sent data to the Alpena FRO for inclusion in a central study database. Woldt provided each agency with data collection protocols and database formats prior to the study's start, and has been working with agency representatives to ensure data accuracy and timely entry. To date, 2006 data has been entered and proofed from six agencies. Once all data has been entered, Woldt will distribute copies of the central database to all partners. The full database is needed to accurately process tag returns and issue rewards. Each tag return carries a $5 or $10 reward.

Aaron Woldt, Alpena FRO

Record Fish Production Year at Pendills Creek NFH

The staff at Pendills Creek NFH is happy to report a record year of lake trout production, with 101,600 fish distributed in November in Lake Michigan. The story begins last fall with a new fall fingerling lake trout program initiated to put more lake trout in Lake Michigan waters. In addition to increasing fall fingerlings, the hatchery dramatically increased yearling lake trout program production numbers with two enhancements — water filtration and oxygen supplementation capabilities. The yearling production goal was increased from 750,000 to 900,000 fish annually, and this year's distribution amounted to 950,533 yearlings. The hatchery's total production for Fiscal Year 2007 was 1,052,133 lake trout, a more than 40 percent increase in lake trout production from the old production goal. Not only has the total number of lake trout produced increased but the overall quality or vitality of the fish has increased by improving the environment for fish at the hatchery.

Curt Friez, Pendills Creek NFH

Contaminated Fish Food Affects Hatcheries

Melamine contamination in pet food made headlines this spring. The effect of this phenomenon so far to the Pendills Creek/Sullivan Creek NFH Complex has been one of disruption, alarm and increased work load dealing with recalls of fish food.

Adding melamine to animal feeds gives an appearance of increased protein content. Melamine, an industrial chemical that should not be used in food/feed products, has also been purposely

added as a binder to fish and cattle feed.

Fortunately to date, the only melamine contaminated feed used at Pendills Creek has been a brood stock diet. Used in this way, the level of melamine is significantly lower than when used in wheat gluten. The effects on long-lived lake trout are not known at this time.

The hatchery complex has processed two feed recalls including replacing those contaminated feeds with new clean fish food. Until now, fish food issues have involved some type of quality factor, such as too many fine particles or some other nutritional specification of the diet not being met. These contaminated fish food recalls bring a whole new issue to the forefront since we are involved with a captive brood stock and restoration program - contamination of any kind could potentially impact our program for years to come.

Curt Friez, Pendills Creek NFH

Hatchery Coasters Get New Digs

This May, when water levels were stable and insects beginning to hatch, 20,000 spring fingerlings from Iron River NFH and 50 adult coaster brook trout from Genoa NFH settled into new stomping grounds when Fish and Wildlife Service biologists and volunteers from Trout Unlimited, Northland College and Ashland, Wis., schools stocked them in the Whittlesey Creek watershed. The stockings are part of a cooperative experiment between the Fish and Wildlife Service and Wisconsin DNR to determine whether a migratory population of brook trout can be established in Whittlesey Creek by stocking several different life stages of Lake Superior strain coaster brook trout, as well as through protective regulations and habitat improvements.

The stocking crew fought clouds of mosquitoes and hatching black flies to transfer the fish safely to suitable stream habitat. They stocked fingerlings in upstream reaches providing suitable rearing habitat for juvenile trout and salmon, and placed the adults downstream in areas with deeper pools and larger forage. Biologists are hoping the fish will leave the stream, feed and grow in Chequamegon Bay and Lake Superior and return to spawn in the creek.

To assess the status of the fish community and estimate abundance of trout and salmon, Wisconsin DNR and Fish and Wildlife Service biologists, with help from Trout Unlimited volunteers, conduct a survey each September in Whittlesey Creek. In addition, Ashland FRO has placed an underwater video camera in the stream to detect upstream and downstream movement of fish.

Henry Quinlan, Ashland FRO

-USFWS

Fish and Wildlife Service biologists and volunteers from Trout Unlimited, Northland College, and Ashland, Wisconsin, area schools stocked brook trout in the Whittlesey Creek watershed.

Technical Assistance for Fish Relocation at Shacte Creek

Frank Stone and Jessica Krajniak provided technical assistance to the staff of the Iron River NFH during their effort to transfer wild trout via back pack shocking from the upper sections of Shacte Creek in Wisconsin. This collection effort was targeted primarily for brook trout found within a three-quarter-mile section of the creek up-river of the hatchery. As a result of this effort, 30 brook trout were moved to a lower section of the creek below the dam.

Shacte Creek is the primary water source for the hatchery, making it imperative to maintain wild fish stocks to a minimum to reduce the potential for transferring disease pathogens to the hatchery fish.

Frank Stone, Ashland FRO

-USFWS

Frank Stone shocks brook trout in Shacte Creek, the primary water source for the Iron River National Fish Hatchery. The fish are moved to an area of the Creek below the hatchery, to minimize the potential of disease transfer to hatchery stocks.

Lake Sturgeon Study Continues to Do Well in the White River

Ashland FRO staff, with the assistance of the Bad River Tribal Natural Resources Department and area volunteers, set gill nets for sturgeon on the White River in Northern Wisconsin. This is the second year of a study to

determine whether sturgeon are reaching spawning habitat upriver or are blocked by four large log jams. Crews set two 100-foot gill nets below the potential barrier and one 100-foot net just upriver of the structures. After three weeks of sets, the lower nets caught 44 sturgeons and the upstream net caught 7. The fish were measured, weighed, sexed and given a numbered Floy tag and a passive internal transmitter, or PIT tag. Seven of the fish were recaptures dating back several years with one being handled initially in 1994. None of the sturgeons captured were caught in both the downstream and upstream nets.

On May 3, 10 and 17, crews set three larval drift nets to collect larval sturgeon. The nets were set at dusk and lifted twice, approximately once an hour. Larval fish were counted and sub-samples of 50 individuals from each genus were measured. The catches primarily consisted of suckers and walleye but one larval sturgeon was caught on the last night of sampling. The larval sturgeon, measuring 18 mm, was brought to the lab for pictures and then released in the river.
Jessica Krajniak, Ashland FRO

-USFWS
Ashland Fishery Resources Office staff tag a lake sturgeon from the White River, Wisconsin, to track its location.

Fish Health Surveys for the Midwest Region

Wild Fish Health Surveys, inspection and diagnostic cases kept the La Crosse Fish Health Center (FHC) busy in May. The month's work totaled 35 cases consisting of 140 groups of fish from 17 species tested. Testing included Federal hatchery inspections, wild fish health surveys, state fish hatchery cooperative agreements and viral surveillance in the Great Lakes basin.
Rick *Nelson, La Crosse FHC*

Keeping an Eye on Paddlefish

Columbia FRO technician Brian Elkington helped track paddlefish on the Osage River this month. Josh Lallaman, a graduate student from the University of Missouri, surgically implanted telemetry tags in 18 Osage River paddlefish this spring, and these fish are being tracked from Bagnell Dam to the Osage/Missouri river confluence, more then 80 river miles. Paddlefish are tracked from a boat outfitted with an underwater sensor and radio antenna. Motoring or floating slowly downriver, the sensor receives a unique signal from each nearby paddlefish tag and creates a beeping sound. Loud beeps indicate a stronger signal and a close proximity to the fish. Locations were noted for each paddlefish tag as we traveled down river. This data may help describe habitat preferences and paddlefish behaviors in the wild. Many questions arose regarding the ability of paddlefish to pass over or through Lock and Dam #1 on the Lower Osage River during Bagnell Dam re-licensing. The Missouri Department of Conservation is funding this research project to examine paddlefish movements and spawning success in the Osage River.
Brian Elkington, Columbia FRO

Examining Potential Post-Flood Spawn of Shovelnose Sturgeon

Columbia FRO has been collaborating on a multidisciplinary research project with the USGS Columbia Environmental Research Center to address spawning behavior, physiology and habitat use of sturgeons on the Missouri River. Using various methods, Columbia FRO has collected blood and egg samples for analysis from shovelnose sturgeons throughout the Lower Missouri River.

We have noticed some interesting developments in the data collected thus far. Results suggest that the fish are now approaching prime spawning season in the Upper Missouri River. In contrast, the data suggest that spawning has already occurred on the Lower Missouri River. A major flood event in early May on the lower portion of the river may have triggered a frenzied spawning response in the shovelnose sturgeon (among other riverine species). Data from post-flood blood and egg specimens show females preparing to spawn next year.
Patty Herman, Columbia FRO

Aquatic Invasive Species

U.S. Sea Lamprey Control Program Destroys Lampreys to Save Lake Trout

In May and June, the Fish and Wildlife Service's sea lamprey control program treated 27 Great Lakes streams—3 in Lake Superior, 14 in Lake Michigan and 10 in Lake Huron—with lampricide to eliminate larval sea lamprey populations. These treatments destroyed an estimated 5.3 million larval sea lampreys, including nearly 100,000 that would have metamorphosed to the parasitic phase in 2007 and entered the Great Lakes. There, each parasitic phase sea lamprey would have been capable of killing upwards of 40 pounds of lake trout during its year-long life in the lakes.

The sea lamprey control program is conducted under contract with the Great Lakes Fishery Commission. The successful control program continues to ensure sport fish rehabilitation in the Great Lakes and protects a fishery valued at more than $4 billion.
Sea Lamprey Control Staff, Marquette Biological Station

-GLFC
Lampricide (TFM) is applied to a Great Lakes stream as a first line of defense to control invasive sea lampreys.

Soo Locks Sampled for Ruffe, and other Aquatic Invasive Species

Gary Czypinski and University of Notre Dame volunteer Jody Murray, in cooperation with the U.S. Army Corps of Engineers, completed surveillance trawling for ruffe and other aquatic invasive species in the two most active of the four United States locks of the Soo Locks. Results were encouraging - no aquatic invasive species were captured in the area. Close coordination, including radio communication and visual observation, between the Ashland FRO survey crew and Chief Lockmaster Gary Clow insured the safety of the crew and prevented delays to shipping traffic. Although the trawl fish finder showed many fish within the lock water columns, no fish were captured in the bottom trawl, which primarily samples bottom dwelling forage fish such as the ruffe.

No further surveillance trawling is planned within the Soo Locks until ruffe are confirmed in closer proximity to the locks. Corps personnel Carl Woodruff, Al Klein, Kevin Sprague and Gary Clow are to be commended for their high level of support and coordination, which contributed greatly to the successful trawling of this surveillance target. In other surveillance sampling, no ruffe or other aquatic invasives were captured during extensive sampling in the St. Marys River above the Soo Locks or in Marquette Harbor and Huron Bay in Lake Superior.

The Eurasian ruffe, an invasive perch-like fish, was accidentally introduced into the Duluth/Superior Harbor, (Minnesota/Wisconsin border) in Lake Superior in the mid 1980s. The Ruffe Control Committee of the National Aquatic Nuisance Species Task Force developed eight management objectives in its Ruffe Control Plan to prevent or delay the spread of ruffe...surveillance is one of these objectives. Three Fishery Resources Offices and the Ontario Ministry of Natural Resources are actively involved in monitoring the spread of ruffe and any other AIS that are observed incidentally in the Great Lakes. With implementation of the Ruffe Control Plan and cooperation from the public and many partners, ruffe are mostly confined to the south shore of Lake Superior, and the spread of ruffe across the south shore was successfully delayed for 20 years until 2006, when ruffe were confirmed in Eastern Lake Superior in Whitefish Bay, 55 km west of the Soo Locks, the gateway to Lake Huron and the other Great Lakes. The Soo Locks make it possible for fish as well as shipping to bypass the Soo Falls in the St Marys River, allowing access between Lake Superior and the other Great Lakes.
Gary Czypinski, Ashland FRO

-USFWS
Ashland Fishery Resources Office staff and partners completed a survey for aquatic invasive species in the area of the Soo Locks, which is the connection between Lake Superior and the Lower Great Lakes.

Michigan Marks Aquatic Invasive Species Awareness Week

The Alpena FRO got the word out about aquatic invasive species during Michigan's Aquatic Invasive Species Awareness Week, May 22-28. Biologist Anjie Bowen provided invasive species materials to more than 45 bait and license vendors along the St. Marys River and Lake Huron shoreline from Sault Ste. Marie to Bay City. The goal of the effort is to make vendors and anglers aware of invasive species that may spread into nearby areas. Bowen gave out WATCH identification cards with information about two invasive fish species, the Eurasian ruffe and round goby, which have been found in the Lake Huron basin and other areas of the Great Lakes and are thought to compete with native species for food and habitat resources. Both can become abundant quickly and have become a nuisance in areas where they are found. The Alpena FRO surveys Lake Huron and St. Marys River locations for new and existing populations of these species. Neither species has been found in the St. Marys River.

The WATCH cards aid in identifying these invasives and explain to anglers how they can help prevent the spread of invasive species and how to report invasive sightings. We are hopeful that anglers will take steps to prevent the spread of invasives and will report any unusual fish they catch to the Alpena FRO or their local DNR office.

Anjanette Bowen, Alpena FRO

Marquette Biological Station Meets High Demand for Sea Lamprey Management Outreach

In April and May, personnel from the Marquette Biological Station Sea Lamprey Management Program conducted outreach to more than 500 people, including Deputy Director Randall Luthi who visited the sea lamprey sterilization facility at the Hammond Bay Biological Station where sea lampreys are sterilized as an alternative control method to reduce populations of the parasitic invader in the Great Lakes. Luthi clipped sea lamprey fins, saw local sea lamprey barriers and trap sites and witnessed field studies to test pheromones as a potential tool to manipulate sea lamprey behavior for control purposes. The visit was part of a tour of Fish and Wildlife Service operations in Northern Michigan.

In addition to Luthi's tour, station staff also discussed the Fish and Wildlife Service's role in sea lamprey management and other natural resource issues with media, school and community groups. Journalists with the 2007 Great Waters Institute of the Institutes for Journalism & Natural Resources took a tour similar to Luthi's. The gathering generates several stories about sea lamprey control. Participating media included Living on Earth/ National Public Radio, *Milwaukee Journal Sentinel*, *Dow Jones Newswires*, *The Canadian Press*, WDET/Detroit Public Radio, *Traverse City Record-Eagle* and *Traverse Magazine*.

This spring, a new outreach opportunity emerged when Amanda Bedora was approached while servicing adult sea lamprey traps at the Menominee River in Wisconsin. Bedora was asked to present an on-site demonstration and explanation of the sea lamprey management program to students from local public schools. As word spread about the educational opportunity, Bedora was flooded with requests and delivered the presentation every weekday for four weeks.

Other outreach activities included presentations on adaptations of aquatic animals, insects, fish and amphibians, and impacts that invasive species have on native species; along with hands-on sampling in local streams to students from Cherry Creek Elementary School, Clear Lake Education Camp, Marquette Area Public Schools, Munising Central Elementary School and Father Marquette Middle School. Staff delivered community programs on sea lamprey and other aquatic invasive species as part of the Great Lakes Presentation Series at the Portage Lake Public Library in Houghton, and to members of the Ishpeming Kiwanis Club.

Sea Lamprey Control Staff, Marquette Biological Station

-GLFC

Amanda Bedora displays an adult invasive sea lamprey to students from the Menominee, Michigan, school district.

Public Use

Volunteer Spreads Sea Lamprey Story Far and Wide

Since retiring as a computer assistant in May 2006, Barry Matthews has volunteered his time to become the sea lamprey control program's personal outreach envoy. Beginning in June 2006 and continuing through year's end, Barry contributed more than 200 hours, reaching 1,150 people with information about sea lamprey control and other aquatic invasive species. Continuing with his volunteer work in 2007, Barry has logged about 140 hours of volunteer time at 10 events where he interacts with children in grade school and conducts interpretive programs in state parks, maritime museums, and aboard the Inland Seas Education Association schooner, "Inland Seas." So far in 2007 Barry has spread the invasive species story to nearly 1,600 people around the Great Lakes region.

Sea Lamprey Control Staff, Marquette Biological Station

-GLFC

Volunteer Barry Matthews explains about the sea lamprey invasion in the Great Lakes. The presentation was given aboard the educational schooner *Inland Seas*.

A Fish a Day Keeps the Doctor Away

On May 16, staff from Genoa NFH headed to the Tomah Disabled Veterans Medical Center in Central Wisconsin to co-sponsor the center's annual fishing tournament. Genoa NFH has a long and storied history supporting recreational fishing there by stocking the fishing pond with game fish. Since 1991, Genoa NFH and the La Crosse FRO have teamed up with the staff from the medical center, Tomah American Legion and students from the local Tomah Middle schools to provide the veterans with a day of fishing, food and fun. Armed with a fishing pole and a desire to catch a bigger fish than last year, more than 150 veterans and their student escorts cast a line in the fishing pond to hook one or more of the 1,000 eleven inch rainbow trout stocked from the hatchery. Successful anglers registered their fish and competed for the prizes awarded by the Tomah American Legion.

While serving samples at the fish-fry prepared by Genoa's dedicated crew and volunteers Zack Saolaski and Dan Pitre, staff heard many stories but one was more amazing than the others; one angler caught a total of 36 fish, including rainbow trout, large mouth bass, bluegills and a golden shiner.

The Tomah VA Medical Center is located on a 173-acre campus that encompasses a 271-bed facility focusing on primary care, mental health services and nursing home care for veterans from Midwestern Wisconsin and bordering counties in Iowa, Minnesota and Michigan. In addition to the favorite fishing pond with two accessible fishing piers, the center offers the veterans a canteen, library, golf course and a bowling alley. All of these activities provide the veterans with therapeutic social and recreational opportunities to augment their long-term care.

Darla Wenger, Genoa NFH

-USFWS

Student volunteers assist a Tomah Veterans Administration Hospital Fishing Day angler.

Genoa NFH Staff is the After-school Special in Stoddard, Wisconsin

In a continuing effort educate kids about the great outdoors, the staff at Genoa NFH put on an after-school program for the Stoddard, Wis., Middle School on May 22. Tony Brady, the hatchery's mussel biologist, spent an hour talking to the children about the fish and mussels the hatchery raises. Despite their young ages, the children asked, "Why do you raise fish and mussels?"

This question opened the door to teach the kids about fish and mussel habitat, life history, invasive species, as well as the importance of protecting endangered species and aquatic resource conservation. Even the sudden appearance of a spring thunderstorm could not dampen the enthusiasm of the next generation of natural resource stewards as they got to see and touch one of Genoa NFH's famed lake sturgeons.

Tony Brady, Genoa NFH

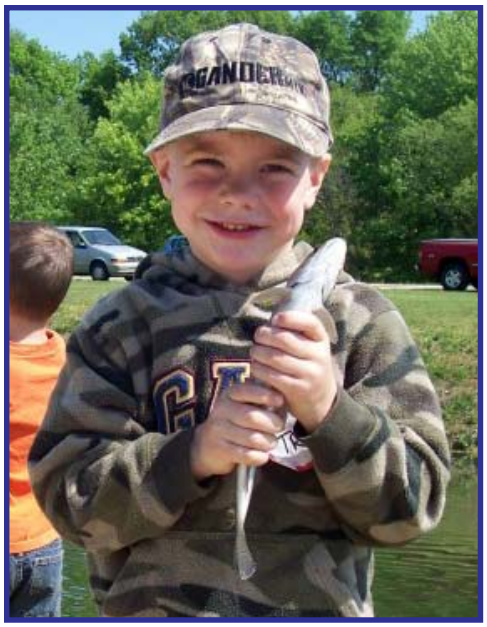
Kids Fishing Day Hooks Largest Crowd Yet

More than 125 six- to 12-year-olds from the tri-state area of Iowa, Wisconsin and Minnesota got their parents going early on Saturday May 12 to attend the 5th annual Kids Fishing Day at Genoa NFH. Sponsored by the cooperative Friends group of the La Crosse FRO, La Crosse FHC and the Genoa NFH, this event has grown into a local annual attraction, something that keeps the participants up late the night before in eager anticipation.

After registration, the group was broken up into four parts and treated to four separate learning stations. This year the Wisconsin DNR local game warden was on hand to explain how law enforcement assists good fish and game management, as well as the station's own mussel biologist Tony Brady explaining how mussels and fish go together. Then a group was amazed with the inner workings of a rainbow trout courtesy of La Crosse FHC Director Rick Nelson. The Take a Kid Fishing Program was then promoted by Dave Erikkson of the La Crosse Park and Recreation Department.

After an hour of learning opportunities, the kids were turned loose on a pond filled with rainbow trout and channel catfish. About 500 fish were caught in 2 hours, and the newly inaugurated fisher folks brought their catch to Dan Kumlin, who demonstrated proper cleaning and care of their catch. Lunch was served and prizes were provided by our sponsors, topping off a full and rewarding morning "on the water." Many thanks to our Friends group, volunteers, sponsors and dedicated Fish and Wildlife Service staff that make this event run like clockwork.

Doug Aloisi, Genoa NFH



-USFWS

This youngster is certainly happy with his catch at the 5th annual Kids Fish Day at the Genoa National Fish Hatchery.

La Crosse FRO Shows Kids "What's inside a Rainbow?"

Winona, Minn., seventh graders visited Perrot State Park near Trempealeau, Wis., on May 23 and 30 to learn "hands-on" about natural resources. Students participated in four of eight stations, including a nature hike, canoeing, fishing, outdoor cooking, learning about the lock and dam system, birding and several others. Heidi Keuler from La Crosse FRO helped about 60 students dissect rainbow trout provided by Genoa NFH, to learn about form and function of both external and internal organs. Students really enjoyed dissecting their own fish and being able to handle the heart, stomach, spleen, eye, and their favorite organ - the gas bladder. The future biologists were amazed to learn that there were so many organs in a rainbow trout.

Heidi Keuler, La Crosse FRO

-USFWS

Winona (Wisconsin) Middle School girls eagerly participate in a fish disection.

La Crosse Area Boy Scouts Get Hooked on Fish

Approximately 60 first grade Boy Scouts, known as "Tigertales," attended Camp Decorah on May 19 to learn about fishery biology, fishing and several other activities led by troop leaders. Heidi Keuler from the La Crosse FRO taught the young scouts how biologists sample fish by electrofishing, netting and trapping. First, the scouts learned about "shocking" and were given a live demonstration with the backpack shocker in a rainbow trout pond. Then the boys observed netting techniques with seines, mini-fyke nets and a gill net. Finally, the scouts learned hands-on fish identification using captured fish. Most of the Boy Scouts had never seen a musky or gar before and were quite impressed with all of the sharp teeth!

Heidi Keuler, La Crosse FRO

Press Trip on the Missouri River

Columbia FRO introduced local reporters, press agents and a state representative to the Missouri River via a guided boat tour that included visits to habitat rehabilitation project sites created in recent years. The U.S. Army Corps of Engineers seeks to spread the message on the usefulness of the Mitigation Chute Projects currently being constructed throughout the Lower Missouri River. The "hot topic" for the trip was disposal of dirt from the mitigation projects, which the Corps' policy coordinator and engineers addressed. Tracy Hill and Wyatt Doyle were able to use crews already engaged in sampling along the river to introduce more topics surrounding the plight of the endangered pallid sturgeon. A few jumping carp also provided an opportunity to discuss aquatic invasives in the river. Interest in the current work on the river has peaked because of several reports. The reporters were invited back to take future trips and give the Columbia FRO another opportunity to tell some "fish facts" surrounding the nation's longest river. *Wyatt Doyle, Columbia FRO*

-USFWS photo by Wyatt Doyle

The U.S. Army Corps of Engineers organized a press trip on the Missouri River to visit habitat rehabilitation sites.

Hallsville 4th Graders Go Aquatic

Columbia FRO employees Brian Elkington and Colby Wrasse participated in the 20th annual Hallsville Aquatic Day, which gives local 4th grade students an opportunity to fish, play educational games and learn about aquatic ecosystems. We brought live Missouri River fish, ensuring a hands-on, memorable experience. Included were species of gar, catfish, carp, crappie and buffalo. All 110 students and their teachers were given the chance to touch these fish and learn about their role in the Missouri River ecosystem. This event was a great opportunity for Columbia FRO to teach and excite others about Missouri River aquatic resources.

Educating children in environmental matters is crucially important. In today's ever more urban and ever less wild world, people are often disconnected from nature. Our planet, with its burgeoning population and increasing consumption of resources, faces many challenges. The only way to ensure a healthy Earth is through education and getting children interested in the natural world. By educating and inspiring young people today, we hope that they make wise future choices which will enhance our planet.

Hallsville Aquatic Day is one small step in this direction. The excitement, compassion and intelligence demonstrated by the students give hope that we are headed towards a better tomorrow. This is the third year that Columbia FRO has participated in this event. Hopefully we can continue to be a part of this great event for many years to come. *Brian Elkington and Colby Wrasse, Columbia FRO*

-USFWS

Biologist Colby Wrasse explains shovelnose sturgeon morphology to Hallsville fourth graders.

Columbia FRO Starts Planning WOW 2008

Technician Lee Erickson and biologist Jeff Finley have begun initial planning to host our first "WOW" (Wonders of the Outdoor World, National Outdoor Recreation and Conservation School) event in Columbia, in the spring of 2008. Our planned theme "The Missouri River- Bluff to Bluff" is designed to capture the majority of activities in which one could participate within the Missouri River floodplain.

WOW events are a multi-agency partnership including Wonders of Wildlife National Fish and Wildlife Museum, Fish and Wildlife Service, Bass Pro Shops, Missouri Department of Natural Resources, U.S. Forest Service, Missouri Department of Conservation, National Park Service and the U.S. Army Corps of Engineers. Collective efforts of these agencies provide multiple opportunities to provide outdoor learning for all ages and experience levels. Current WOW school locations include Kansas City, St. Louis, Springfield and Roaring River State Park. Although the organizers at each location vary the classes offered, they all emphasize the importance of safety, conservation, skill development and outdoor ethics. Each school provides the building blocks

for people to actively learn and enjoy local outdoor resources. WOW is an incredible opportunity to use professional conservationists to reconnect people to the outdoors and teach necessary skills needed to enjoy the outdoors.

Lee Erickson and Jeff Finley, Columbia FRO

Cub Scouts Learn About the Missouri River

Biologist Andy Starostka and technician Lee Erickson of the Columbia FRO provided a Missouri River outing for Cub Scout Troop 708, Den 10, helping the scouts complete most requirements for the Wildlife Conservation Belt Loop and Pin. Scouts learned many important facts about the Missouri River; the animals, fish and plants it sustains; and impacts of changes made to the river. We taught them about invasive species, habitat, endangered pallid sturgeon and how to protect them.

The trip began at Franklin Island Conservation Area near Booneville, Missouri, and included several units of the Big Muddy National Fish and Wildlife Refuge to examine the effects of flooding. The volumes of trash in the flooded waters provided evidence of why it is important to dispose of trash properly. Scouts scooped up larval fish from a flooded backwater and examined them. Lee Erickson taught them about river navigation, and he explained how the depth finder and GPS unit worked.

The Missouri River field trip has been the favorite field trip of this year for Den 10. "Awesome", "super cool" and "the BEST trip ever!" are quotes from the participants. The scouts are still talking about it and want to know when they can go again.

Andy Starostka, Columbia FRO

-USFWS photo by Andy Starostka

Lee Erickson of the Columbia Fishery Resources Office teaches Cub Scouts about the Missouri River.

Ashland FRO Participates in Chequamegon Bay Birding and Nature Festival

The Chequamegon Bay Birding and Nature Festival was held May 18th through the 20th. The three-day event hosted by the Northern Great Lakes Visitors Center in Ashland, Wisconsin, consisted of birding and nature programs on the south shore of Lake Superior. Spring migration of many types of birds was in full swing during the festivities and the hundreds of participants and staff observed 178 individual bird species during the festival.

The Whittlesey Creek NWR played a major role in organizing the event, and the Ashland FRO helped with leading birding and nature excursions. Ted Koehler organized and led three tours called the Coastal and Inland Wetland Walk. The program focused on migratory waterfowl and began with a "Ducks on a Stick" presentation, where participants could literally handle and identify taxidermy-mounted ducks. The Ducks on a Stick were provided by Rice Lake NWR and were a big hit at the festival. Two additional presentations were given at Ashland Primary School.

The Chequamegon Bay region is among the top birding destinations in the Midwest, with an amazing variety of high-quality habitats ranging from pine barrens and upland forests to coastal wetlands. More than 300 species of birds call the area home permanently or during their migrations. Extraordinary natural beauty and abundant public land make Wisconsin's south shore of Lake Superior an ideal location for birdwatching and other wildlife viewing.

Ted Koehler, Ashland FRO

-USFWS

Ted Koehler organized Coastal and Inland Wetland tours during the Chequamegon Bay Birding and Nature Festival in Ashland, Wisconsin.

Alpena FRO Helps Out at Camp

Biologist Adam Kowalski was invited to attend an outdoor educational camp from May 24 to 25 as an adult chaperone and as a guest speaker about fisheries for the 5th and 6th graders from Alpena Lincoln Elementary, where his 10-year old son attends. The camp was structured as an educational experience of the outdoors along with periods of unstructured play time for the students. Since the focus of the camp was education, Kowalski talked about the educational requirements to obtain a biologist position with the Fish and Wildlife Service and other agencies.

Kowalski showed the students a model of a trap net, identified all the parts and described the size of an actual commercial trap net. Kowalski also discussed commercial fishing with trap nets and the use of trap nets used by the Alpena FRO as a research tool.

Kowalski set two small inland trap nets the night before the presentation, which allowed the students to see how they are fished and to help sort the catch. Kowalski then talked about other research done by the Alpena FRO, the importance of the data collected, and what it is used for. Kowalski also helped out in other areas throughout the day by assisting with a black bear population exercise, leading a nature scavenger hunt, a game of capture the flag, baiting hooks and untangling fishing line.

Adam Kowalski, Alpena FRO

-USFWS

Lincoln Elementary students in Alpena, Michigan, assist Alpena Fishery Resources Office biologist Adam Kowalski in bringing in a trap net during a two day outdoor camp.

Summer Notes at the Pine River Nature Center in Goodells, Michigan

The Pine River Nature Center invited biologist Jim McFee of the Alpena FRO to give a presentation for a weekly program called "Summer Notes." The Pine River Nature Center is a 5,000 square-foot log cabin located in the middle of a beautiful 80 acre tract of hardwoods along the Pine River in St. Clair County, Mich. It is operated by the St. Clair County Regional Educational Service Agency. The Center was built to give school kids the opportunity to be involved with nature. This is an amazing facility and is kept running strong by Lisa Appel, the operations coordinator.

On May 23, McFee gave a presentation entitled *Lake Sturgeon and Lake Whitefish Recovery in the Detroit River*. This presentation was prepared as a collaborative effort by USGS and Fish and Wildlife Service biologists. The talk gave a broad overview of the changes that have occurred along the Detroit River and the impacts of these changes over the last two hundred years. Following the overview of changes to the river, a snapshot of the work being done for lake sturgeon and lake whitefish recovery interested all listeners. McFee touched on the Belle Isle reef construction project, the proposed Fighting Island spawning reef project, and overall sampling in the Detroit River used to better understand the resource.

Everyone in attendance was very interested with the past changes and the recent work that is being done on the river. Following McFee's presentation was a short talk from a member of the St. Clair River Bi-National Public Advisory Council.

Jim McFee, Alpena FRO

-Pine River Nature Center photo by Lisa Appel

Alpena Fishery Resources Office biologist Jim McFee begins his "Summer Notes" talk at the Pine River Nature Center.

Cooperation with Native Americans

Spring Stockings help Tribes Restore Native Fish Populations and Provide Recreational Opportunities

Through many treaty agreements and the Fish and Wildlife Coordination Act, the Fish and Wildlife Service has Tribal Trust responsibilities to assist tribes with managing their fish and wildlife resources. There are more than 55 million acres of reservation and trust lands in the nation, containing some of the critical habitat of many threatened and endangered species.

The Genoa NFH in cooperation with biologists from the Fishery Resources Offices and tribal wildlife offices work together to provide fish of various species to support scientifically-based fishery management objectives. These fishery management plans all come to fruition in the spring and fall of every year, when fish reach stocking size and are released to restore native fish populations or increase recreational fishing opportunities. This spring, for example, coaster brook trout and lake sturgeon, both native species of concern for the tribes and the Fish and Wildlife Service; and rainbow trout - a highly valued recreational species reared at the Genoa NFH, were released at six Midwestern reservation locations. A total of 21,745 fish weighing 7,100 pounds were stocked to support two restoration programs and five recreational fishing programs. Through judicious management and continued cooperation, the Fish and Wildlife Service and its tribal partners hope to further efforts to conserve, protect and enhance our nation's fish and wildlife resources not only for the current generation, but for generations to come.

Doug Aloisi, Genoa NFH

-USFWS

A Tribal biologist gets the opportunity to stock fish that were provided by the Genoa National Fish Hatchery.

Another Edition of the MTAN Goes to Print

The Ashland FRO has the unique distinction of providing technical assistance for the development of numerous tribal fish hatchery operations. One of the ways we contribute to these programs is by publishing a quarterly newsletter. The Midwest Tribal Aquaculture Network (MTAN) is dedicated to assisting tribal hatchery programs through the sharing of cool- and cold-water fish culture information.

The most recent issue of the MTAN (Volume 60) has just been completed and is now available on the Internet. This quarter's newsletter discusses: Aquaculture Field Day and Vendor Fair, Northern Aquaculture Demonstration Facility - Walleye for the Lac Courte Oreilles Tribal Fisheries Program, Partitioned Aquaculture Systems (PAS) and Calculating Pond Surface Area.

The MTAN has been assisting tribal fish hatchery programs for the past sixteen years. The rewards from this kind of technical assistance is in knowing we are providing information that enables hatchery programs to better utilize their resources and provide a healthier product for the fishery. The MTAN has also helped to educate fish hatchery workers and direct them to other areas so they can better research their specific needs.

Previous issues of the MTAN newsletters are on the Ashland FRO webpage at: http://midwest.fws.gov/ashland/mtan/mtanhome.html.

Frank Stone, Ashland FRO

Midwest Tribal Aquaculture Network

Leadership in Science and Technology

Sturgeon Surgeons Apply New Technique to Reduce Stress

Since 2005, Columbia FRO has been working with the USGS to collect blood and eggs from shovelnose sturgeon. Blood and eggs are examined to better determine their maturity and what environmental factors trigger spawning in these fish. Eggs are extracted through a small incision in the belly of the fish that is then closed with veterinary sutures. Though effective, these sutures require several minutes of additional handling time that ultimately adds to the stress of the fish. Columbia FRO recently employed a new liquid adhesive called Nexaband® S/C for closing these invasive incisions. This adhesive acts much like superglue, offering many advantages over sutures. It is quick and easy to apply in the field and lessens handling time, thereby reducing stress on the fish. Clinical studies showed Nexaband® S/C was up to 70 percent faster than sutures and reduced the need for post-surgical care. At a price of $20 to $30 per 10 to 20 applications, Nexaband® S/C fits nicely into the budget. Ongoing studies in our laboratory will provide additional confirmation on healing and holding potential of this material.

Nick Utrup, Columbia FRO

-USFWS photo by Brett Witte

Columbia Fishery Resources Office technician Emily Kunz applies a tissue adhesive (Nexaband S/C) to an incision on the belly of a shovelnose sturgeon.

Sterilization of Female Lampreys is Studied

A study of the potential of sterilized females to reduce reproduction in sea lampreys began this spring. Funded by the Great Lakes Fishery Commission, the study is being carried out by the Fish and Wildlife Service Marquette Biological Station and the USGS Hammond Bay Biological Station. Over 4,000 females were sterilized by Fish and Wildlife Service staff and placed into the Trout River in Rogers City, Mich. The females were sterilized in the same manner as male lampreys. A sterile-male-release technique has been underway since 1991 and is contributing to control of sea lampreys in northern Lake Huron. A sterile-female technique could offer additional cost effective control since the females are available and can be processed in the same facility as the males. Observations of mating behavior and samples of eggs from nests were taken. The study will continue for four years before a determination is made on its potential to contribute to the ongoing control program.

Sea Lamprey Control Staff, Marquette Biological Station

-GLFC

A technician at the sea lamprey sterilization facility inserts an adult lamprey into an automatic injector used in the sterilization process.

Genoa NFH provides DNA Samples for a Research Project at the University of Miami in Ohio

Genoa NFH strives to be a leader in the science and technology of freshwater mussels. This reputation has prompted doctoral candidate Emy Monroe from the University of Miami in Ohio to seek our assistance in her research.

Monroe is working on understanding the number of paternal contributions made in a brood of a single female mussel. Mussels spawn by the males releasing sperm into the water column, and that sperm is then taken in by the female's incurrent siphon. The female then directs the sperm to her eggs for fertilization. A one-to-one spawning event is unlikely with this type of spawning behavior; therefore, recovery programs are most likely underestimating the number of parents contributing genetically to the mussels being produced. In order to answer the question of how many males contribute to a female's brood, Genoa NFH's mussel biologist Tony Brady collected glochidia (larval mussels) and a tissue sample from 20 female plain pocketbook mussels. These samples were stored in vials provided by the USGS Upper Midwest Science Center and will be shipped to Monroe to complete her study.

Tony Brady, Genoa NFH

Aquatic Habitat Conservation and Management

Ashland FRO Completes Re-vegetation Project for Wildlife Corridor

The Ashland FRO has completed a project in which two corridors of conifers and hardwoods were planted in field openings to connect two wood lots and enhance wetland restoration projects on the property. The project will provide native forest cover for migratory birds such as common yellowthroat, yellow warbler and American woodcock. The project will also help restore forested conditions in the Fish Creek Watershed. Fish Creek supports native brook trout and large runs of migratory fish from Lake Superior.

The Kindt property in the town of Moquah, Bayfield County, Wisconsin, obtained a Challenge Cost Share grant through the Ashland FRO for establishing the corridors and several food plots for passerine birds and wildlife found on the property. Approximately 2,900 trees including red and white pine, black and white spruce, balsam fir, tamarack, white cedar, northern red oak, red and sugar maple, along with crabapples, mountain ash and common and American elderberry were planted on approximately 8 acres of open field edges. Along with providing cover and food for the wildlife found on the property, it will also provide nesting cover for grassland bird species as a protected no-mow area has been established around and between the corridors. These corridors will further enhance the work done on the property several years ago to restore emergent marsh wetlands that have provided migration and breeding habitat for many species of migratory waterfowl. All of these projects include a 10-year Partners for Fish and Wildlife Program Habitat Development Agreement.

Glenn Miller, Ashland FRO

-USFWS

Tree planting completes the restoration project in the Fish Creek watershed which supports large runs of fish from Lake Superior.

Columbia FRO Provides Assistance on the Mississippi River

Columbia FRO technician Adam McDaniel assisted Carterville FRO with field sampling during April and May, teaming up in a collaborative effort to complete field work with Carterville FRO Project Leader Rob Simmonds, biologist Nate Caswell, and volunteers from the U.S. Army Corps of Engineers and Illinois DNR. They sampled fish passage projects on the Mississippi River at Lock & Dams 22 and 26 at Hannibal, Mo., and Alton, Ill., respectively. Fish passage was designed to determine possible locations for structure removal or bypassing barriers such as lock and dams that can impede fish migrations. Field work involved deep water electrofishing in conjunction with setting gill nets and trammel nets. Data collected from these gear types can be used to determine fish assemblages below lock and dams and the necessity or possible location for future fish passage structures. Deep water electrofishing is one tool the Carterville FRO uses to sample benthic communities by lowering electrodes to depths usually untouchable with other electrofishing gears. Two boats are used during this process with one electrofishing and another as a chase boat to follow behind and dip-net fish that undergo a state of electrotaxis. This method proved effective at Lock and Dam 26 during the month of April, sampling numerous blue catfish with some weighing up to 60 pounds. Gill nets and trammel nets at Lock and Dam 22 collected a variety of sport fishes and native species such as hybrid striped bass, lake sturgeon, paddlefish, sauger, smallmouth bass and shovelnose sturgeon.

Adam McDaniel, Columbia FRO

Workforce Management

Westby Students Say "Uff da" during Fish Dissection and Career Presentation

In the small town of Westby, Wisconsin, you can still find a few people that speak their ancestor's native Norwegian language. "Uff da!" young high school students exclaimed when an old Westby High School alum sliced into the ventral side of a rainbow trout's stomach and minnows came exploding out. Heidi Keuler, the mentioned alum, graduated from Westby more than 10 years prior to becoming a biologist for the La Crosse FRO.

She now stood in Mr. Papendorf's aquaculture class, and performed a dissection to show the 15 students all of the organs before they would each have to dissect a trout. Students had to learn both form and function, and eagerly did so. At first, a couple of the students were hesitant, but by the end of class they were elbow-deep into their fish. Later in the fish and wildlife management class, Heidi presented a career talk to approximately 25 students. She explained experience and career positions in the Fish and Wildlife Service, the path she took in life, and how she ended up with such a satisfying career.

Heidi Keuler, La Crosse FRO

-USFWS

Heidi Keuler of the La Crosse Fishery Resources Office demonstrates the fine art of netting fish from the platform of an electroshocking boat to a group of students.

Columbia FRO bids Farewell to Biologist

Biologist Jennifer Johnson left the Columbia FRO after four years of service. She accepted a permanent biologist position with the Arizona FRO in Whiteriver, Arizona. Jennifer will provide fishery management assistance to various Indian tribes, state, and other Federal agencies in Arizona. Her primary responsibilities will include design and implementation of field studies to evaluate habitat use and ecological requirements of listed and other native fish species in Arizona. Field studies will be primarily located within the Gila, Salt, Verde, and Little Colorado River watersheds.

Jennifer started her Federal career with the Columbia FRO in May of 2003 as a Student Temporary Experience Program (STEP) student. Johnson received her bachelor's degree in Fisheries and Wildlife in 2004 from the University of Missouri and then enrolled in the Fisheries and Wildlife graduate program at the University in August 2004. She is currently finishing her thesis on *Reproductive Development of Macrhybopsis Chubs in Relation to Environmental Variables in the Lower Missouri River*. During her time at the Columbia FRO she assisted with pallid sturgeon monitoring, mitigation and habitat assessment and monitoring projects. Jennifer enjoyed her time at the Columbia FRO and looks forward to applying the knowledge and skills she gained during her time there in her new position.

Jennifer Johnson, Columbia FRO

-USFWS

After four years, Jennifer Johnson transferred from the Columbia Fishery Resources Office (FRO) to the Arizona FRO in Whiteriver, Arizona.

Columbia Fishery Resources Office Welcomes New Technicians

Chris McLeland

The Columbia FRO would like to welcome intermittent technician Chris McLeland to the team. Chris recently graduated from the University of Missouri-Columbia with an undergraduate degree in Fisheries and Wildlife sciences. Chris has been with the Columbia FRO as a STEP student since February 2006.

Courtney Culler

The Columbia FRO welcomed science aide Courtney Culler to the staff May 29. Courtney is from Northeast Missouri. His background in farming helped etch a desire to preserve the outdoors and conserve its beauty. Upon graduating from a Junior College in 2004 with an Associate in Arts

degree, Courtney transferred to the University of Missouri-Columbia (UMC) and majored in Fisheries and Wildlife. He graduated from UMC in the spring of 2007.

Meghan Ferry

This fall I will be a sophomore at the University of Missouri-Columbia and am dual majoring in fisheries and wildlife/ forestry. My hometown is Jefferson City, Missouri, but I would like to eventually live in the Western United States. My favorite activity is horseback riding, which I have done since I was five years old. I also enjoy mountain and road biking, as well as hiking. In addition to being a student, I also own a horse training and pet sitting business.

Clayton Ridenour

Clayton Ridenour began working on and studying large rivers and their fishes while completing his Bachelor of Science degree in Fisheries and Wildlife at the University of Nebraska-Lincoln. He worked on crews sampling sturgeons and small fishes on the Lower Platte River under the auspices of Dr. Ed Peters. After graduating he worked for the Nebraska Game and Parks Commission on their statewide stream survey. Clayton later served as the Upper Mississippi River Basin (UMRB) Node manager and was part of an international effort to assess the state of stream and river restoration. He represented the UMRB at national meetings and workshops where he helped develop protocols adhering to scientific rigor. Clayton is finishing his Master of Science degree (Fisheries and Wildlife) at the University of Missouri-Columbia with Dr. David Galat.

Cody Luebbering

On May 1st, Cody Luebbering joined the Columbia FRO for his second summer as a STEP student. He is a senior at Lincoln University in Jefferson City, Missouri, and will graduate in December 2007 with a Bachelors degree in Natural Resource Management.

Sara Marso

I was raised on a farm outside of Iberia, Missouri, near Lake of the Ozarks. I've always enjoyed the outdoors including hunting, fishing, and hiking and was taught to conserve and respect nature. I graduated from Iberia High School in 2005 and started at the University of Missouri-Columbia as a pre-med student. During my sophomore year, I returned with a new ambition of getting a Bachelor's degree in Fisheries and Wildlife. While I initially wanted to focus on wildlife, fisheries is where I've found myself.

Zac Buessink

A native Missourian, I left my childhood home of Jackson, Missouri, to serve in the U.S. Marine Corps following graduation from high school. After four years in the Corps, I made the transition from sergeant to college freshman and earned a Bachelor of Science in Biology and Psychology from Missouri State University (MSU) in Springfield, Missouri. My love of biology and education motivated me to complete graduate school at Missouri State where I studied the effects of host fish exposure to suspended sediment on the attachment and transformation success of larval freshwater mussels. During my time at MSU, I spent a lot of time conducting mussel surveys in the streams and rivers of Southwest Missouri and Northern Arkansas. I also participated in the ongoing efforts to propagate and grow out endangered mussel species under the guidance of Dr. Chris Barnhart.

Columbia FRO staff, Columbia FRO

-USFWS photos by Columbia FRO staff

Columbia Fishery Resources Office welcomes new technicians (Top, lt. to rt.) Chris McLeland, Courtney Culler, Meghan Ferry, Clayton Ridenour, Cody Luebbering, Sara Marso and Zac Buessink.

Ludington Biological Station hosts MOCC Course

Motorboat Operator Certification Course (MOCC) instructors Kevin Butterfield (Ludington Biological Station), Adam Kowalski (Alpena FRO), and Stewart Cogswell (Green Bay FRO) expertly guided employees from the Ludington and Marquette Biological Stations (Jenna Tews, Cady Tyron, Jon Tarasiewicz, Scott Oliver and Tiffany Opalka); and Shannon Podiuzny, an ecologist with USGS Northern Rocky Mountain Science Center in Bozeman, Montana, in the safe operation of watercraft. The course included classroom, in-water, and on-water instruction during the three-day session. This course is required Department of the Interior training for employees assigned boat operator duties.

Denny Lavis, Ludington Biological Station

Two New MOCC Instructors from Columbia FRO

The Fish and Wildlife Service prides itself in exceeding U.S. Coast Guard standards for boat safety. Certification courses like the Motorboat Operator Certification Course (MOCC) are a great way to ensure employees perform their everyday tasks safely. The high safety standards set forth by the Department of the Interior require that all motorboat operators complete MOCC. Each course requires several instructors and boats to ensure all components are thoroughly covered and each student is able to safely operate a boat. Until now, Region 3's group of instructors did not include representation from the Missouri River.

Columbia FRO biologists Jeff Finley and Andrew Plauck attended a Motorboat Operator Instructor Certification Course (MOICC) held at the La Crosse FRO. Several Region 3 personnel, as well as other Department of Interior employees, attended this week-long training session. Completion of this course allows the successful student to teach MOCC courses with experienced lead instructors.

The course layout was hands-on just like the MOCC. Instructor trainees held the role of students while experienced instructors walked them through each course component. Helpful hints on public speaking as well as personal experiences highlighted the first classroom day of the class. The next day, would-be instructors donned personal flotation devices (PFD) at a local pool. The pool portion of the class is extremely important, teaching the basics of PFD's, survival gear and rescue techniques. The third day of the class took place at a nearby lake. The instructors and students went out and set up different buoys, marking "courses" for students to navigate. Instructors "role" played with each student, putting them in situations often encountered during MOCC. The next day was spent with the students "teaching" a classroom component of the certification course. This was a great method to ensure the participants that they can handle public speaking and clearly convey important information. The final day was spent with the class setting up and executing all field exercises. The class discussed logistics of planning an MOCC before adjourning.

Andy Plauck and Jeff Finley, Columbia FRO
Aaron Woldt, Alpena FRO

Ashland FRO Biologist Glenn Miller Upgrades Merchant Marine Officer License

An upgrade to a Master of Steam or Motor Vessels of not more than 100 gross registered tons (domestic tonnage) upon the Great Lakes and Inland Waters, and also authorized to engage in commercial assistance towing, has been obtained by Ashland FRO biologist Glenn Miller. Glenn first received his 50 gross registered tonnage license, along with the towing endorsement in April of 2002. This type of license is required to renew every five years. With the time and type of effort obtained while working for the Ashland FRO on various projects on Lake Superior, utilizing the *R/V Chub* and *Northern Shoveler*, Glenn was able to obtain the upgrade to 100 gross registered domestic tonnage.

Glenn Miller, Ashland FRO


UNITED STATES COAST GUARD

LICENSE

U.S. MERCHANT MARINE OFFICER

This is to certify that

*** GLENN ALAN MILLER ***

having been duly examined and found competent by the undersigned is licensed to serve for the term of five years from the below issue date as:

MASTER OF STEAM OR MOTOR VESSELS OF NOT MORE THAN 100 GROSS REGISTERED TONS (DOMESTIC TONNAGE) UPON GREAT LAKES AND INLAND WATERS, EXCEPTING WATERS SUBJECT TO THE INTERNATIONAL REGULATIONS FOR PREVENTING COLLISIONS AT SEA, 1972; ALSO, AUTHORIZED TO ENGAGE IN COMMERCIAL ASSISTANCE TOWING.

Given under my hand this 10th day of May 2007

ISSUE PORT: TOLEDO, OH
EXPIRATION DATE: MAY 10, 2012

M. L. OSENBAUGH, USCG, BY DIRECTION
OFFICER IN CHARGE, MARINE INSPECTION

Students "Fish" for Details from Biologists

As part of the Junior Achievement Program at La Crescent Middle School in La Crescent, Minnesota, a teacher and eight eighth-grade students shadowed Heidi Keuler from the La Crosse FRO and Corey Puzach and Eric Leis from the La Crosse FHC. The eager students viewed equipment such as nets and fishing gear, boats, microscopes in the laboratories, and offices and garages of the Fish and Wildlife Service Resource Center in Onalaska, Wisconsin. Students saw a live fish health screening of an invasive Asian carp in the lab and then traveled to the La Crosse River to see a live electro-shocking demonstration. After the demonstration, students donned their waders for hands-on training using a trap net and collecting invertebrates. Finally, students interviewed Heidi about job-related questions such as the hours biologists work, how much education is required for the job, and many others.

Heidi Keuler, La Crosse FRO

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Fish Lines
Region 3, Midwest Region
2007 Vol. 5 No. 8

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-Jerry French Postcard Collection; U.S. Fish Hatchery; Leavenworth, Washington (1940)

Windows in time

A Glimpse into our Proud Past:

The Leavenworth Fish Hatchery was established in 1938 and continues operations to the present. The Fish Hatchery is located on the Wenatchee River in Chelan County, Washington.

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