U.S. Fish & Wildlife Service

Fish Lines

Region 3 - Great Lakes/Big Rivers

Leadership in Conserving, Enhancing, and Restoring Aquatic Ecosystems

Fiscal Year 2006
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The Midwest Driftless Area Restoration Effort: Working in a Landscape of Opportunities (See the "*Feature Story*" on Page 5)

-USFWS, Iowa DNR, and Vernon County Land and Water Conservation Department photos

Midwest Driftless Area photos (Top row, Lt. to Rt.): Apple River Canyon State Park near Stockton, Illinois; Agricultural landscape in Northeast Iowa; Angler in Little Turkey Creek, Delaware County, Iowa; (Middle Row) Wild brook trout in South Pine Creek, Iowa; Cut bank prior to restoration on Elk Creek, Vernon County, Wisconsin; Restored site on Elk Creek; (Bottom Row) Restoration site on Little Turkey Creek; Eroding bank at Bishops Branch, Vernon County, Wisconsin, was stabilized by reshaping the bank, placing in lunker structures, and topping with rip rap and dirt; South Pine Creek, Winneshiek County,Iowa

Region 3 - Great Lakes/Big Rivers 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.

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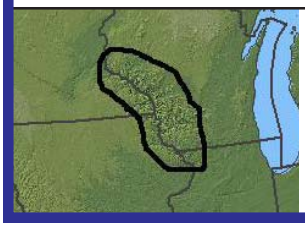

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Click here to visit our Fisheries Web Site

Great Lakes - Big Rivers 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 referrred 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.

Great Lakes - Big Rivers 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 - The Midwest Driftless Area Restoration Effort: Working in a Landscape of Opportunities

A call to action has been heard and answered by the Midwest Driftless Area Restoration Effort (MDARE), a fish habitat partnership working to improve cold and cool water resources in the Driftless Area of the Upper Midwest.

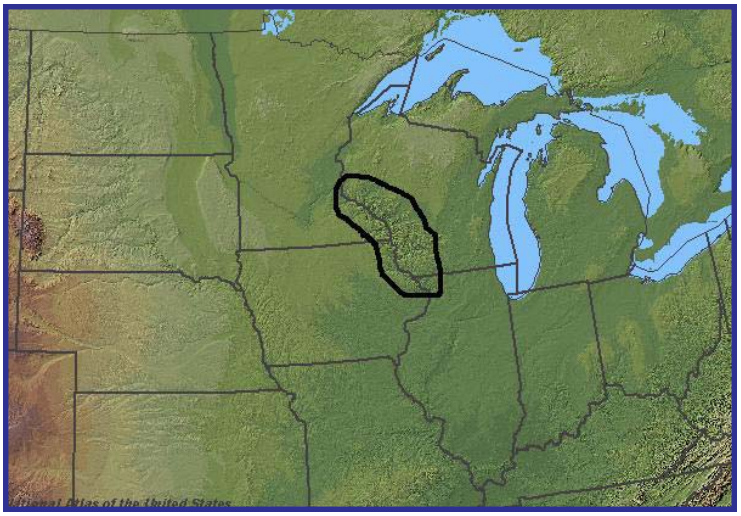
MDARE is one of five pilot partnerships operating in support of the National Fish Habitat Action Plan (NFHAP), a nationwide effort to protect, restore, and enhance fish and aquatic communities through partnerships that foster fish habitat conservation and improve the quality of life for people.

The Midwest Driftless Area, noted as a national treasure, is located in the heart of the Upper Mississippi River valley, encompassing a 24,000 square-mile area of southeast Minnesota, northeast Iowa, southwest Wisconsin, and northwest Illinois. It was bypassed by the last continental glacier some 12,000 years ago, leaving behind a picturesque landscape marked by forested hills, beautiful limestone and sandstone bluffs, and steep river valleys shaped from weathering and erosion.

Caves, sinkholes, and disappearing streams are characteristic of the Driftless Area. Numerous springs also dot the landscape. They are supplied by deep limestone aquifers that feed coldwater streams, many of which support trout.

The Driftless Area is a highly biodiverse area. Hundreds of rare animals and plants can be found here, including the endangered Pleistocene snail and the threatened monkshood plant. These glacial relics have made their home among the cold air microhabitats of Algific Talus.

The ever-colorful brook trout is also known to the Driftless Area, the westernmost edge of this native fish's historic range. The area offers excellent brook, brown, and rainbow trout fishing and some of the best smallmouth bass fishing around. This region is also a mecca for canoeists, kayakers, tubers, birders, hunters, and campers.



The Driftless Area, highlighted in black, is located in the heart of the Upper Mississippi River valley, encompassing a 24,000-square-mile area of southeast Minnesota, northeast Iowa, southwest Wisconsin, and northwest Illinois.

For all its grandeur, the Driftless Area echoes the problems of the Midwest. Sedimentation, habitat fragmentation, high stream temperatures during summer, invasive species, loss of habitat and flooding, are all common occurrences. The karst topography so characteristic of this predominantly agricultural landscape makes ground water highly susceptible to contamination.

Though the Driftless Area is only about one-sixth of the Upper Mississippi River drainage, it carries significant silt loads to the Mississippi River and is a major contributor to the hypoxia problems in the Northern Gulf of Mexico.

Efforts to improve natural resources in the Driftless Area have been on-going for decades; however, successes have come more or less on a local level. MDARE is taking a collaborative and coordinated approach to increase the effectiveness of watershed restoration by linking Farm Bill conservation programs, administered through the Natural Resources Conservation Service and practiced by willing private landowners, with stream habitat restoration efforts.

The Midwest Driftless Area Restoration Effort has embarked on a long term mission to:
-Reduce habitat fragmentation;
-Reduce sediment inputs and improve water quality in streams and rivers and to the Upper Mississippi River National Wildlife and Fish Refuge;
-Enhance aquatic habitat for trout, smallmouth bass and other aquatic species, including federal trust species and state species of concern;
-Increase angling and other recreational opportunities; and
-Increase community support and awareness by engaging volunteers in restoration and monitoring activities.

Outreach and community involvement is important to the partnership. Engaging watershed groups, local chapters of angling and conservation organizations, and rod and gun clubs in restoration activities will yield great learning experiences, a sense of accomplishment, and a greater appreciation of stream and watershed health.

Strengthening and building partnerships will be essential to the overall success of this landscape-scale effort to improve aquatic habitat in the Midwest Driftless Area. MDARE, coordinated by Trout Unlimited - the nation's leading cold water fisheries conservation organization, is working with the Fish and Wildlife Service, U.S. Geological Survey, Natural Resources Conservation Service, and other Federal agencies; departments of natural resources from Minnesota, Iowa, Wisconsin, and Illinois; resource conservation and development councils, soil and water conservation districts, and county agencies; The Nature Conservancy, and other conservation organizations; local angling groups; academic institutions, land trusts and foundations; and landowners, local business, and industry.

Trout Unlimited received a two-year $192,000 multistate conservation grant from the Fish and Wildlife Service's Sport Fish and Wildlife Restoration Program for development of the partnership. An action plan outlined in the grant includes: Inventory coldwater resources and catalog past, current, and potential restoration efforts; prioritize watershed focus areas and cultivate "strategic partnerships" to help implement restoration projects; implement on-the-ground projects with monitoring in place to evaluate successes; showcase projects in each state to demonstrate integrated conservation efforts; develop an outreach strategy to increase public awareness of the value and importance of area resources; inform and update stakeholders to ensure future support of the NFHAP and MDARE partnership; and conduct economic assessment to determine benefits of increased restoration to local communities and recreation enthusiasts.

The partnership is currently working on a strategic plan, set for completion in December, which will lay the course for aquatic habitat restoration for the next five years. An assessment, vision, goals, actions, and watershed focus areas will be included in the plan. Geographic Information Systems will be used as a tool to help prioritize watershed focus areas. Past, current, and potential restoration efforts, resource benefits, impaired waters, partner willingness and capacity, potential landowner cooperation, and priorities of other partners working in the Driftless Area are some of the criteria that will be used in prioritizing watersheds.

These are exciting times for the Midwest Driftless Area. This well-kept secret is now gaining national attention. This past winter, MDARE received $100,000 from the National Fish Habitat Action Plan for partnership coordination and on-the-ground projects. Earlier this spring, a joint resolution was signed by the Secretary of Agriculture and the governors of Wisconsin, Minnesota, Iowa, and Illinois, pledging to work together to promote and facilitate restoration of Driftless Area watersheds and use Farm Bill conservation programs to help finance the work. Also this spring, Wisconsin's Senator Kohl secured a $263,000 Federal appropriation to help conservation efforts in the Driftless Area.

There is great potential for stream restoration in the Driftless Area. Streams like Minnesota's Trout Run, Wisconsin's Kickapoo and Timber Coulee, Iowa's North Bear and French Creeks, along with many others have shown positive impacts. MDARE will be working in this landscape of opportunities with other partnerships to enhance and restore streams and improve overall watershed health.

For Additional information about this article and the LaCrosse Fishery Resources Office,
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E-mail: louise_mauldin@fws.gov
or visit the Midwest Driftless Area website at:
http://www.fws.gov/midwest/lacrossefisheries/projects/Driftless.html

Partnerships and Accountability

Scout Earns Eagle Badge at Hatchery

Genoa, Wisconsin, resident Alex Derrickson of De Soto/ Wheatland Troop 31 achieved the Boy Scout rank of Eagle Scout this summer and assisted the Genoa National Fish Hatchery (NFH) with its outreach program at the same time. He fulfilled the community service requirements of his Eagle Scout badge by working with hatchery staff to design and complete an interpretive walking trail that describes ongoing conservation efforts at the station.

The trail encompasses a mile of gravel roads encircling the hatchery grounds and includes 16 interpretive signs and bases. A trail map guides visitors along their way. The walking trail should serve the community and hatchery visitors for years to come. As it is in all of life, Alex had assistance along the way in completing the project. Hatchery employee Jenny Walker and crack maintenance crew Dan Kumlin and Jeff Lockington were instrumental in helping Alex on the project. Alex is a 2006 graduate of De Soto High School and will attend Wisconsin Technical Community College in La Crosse, studying computer electrical technology.

Doug Aloisi, Genoa NFH

-USFWS

Alex Derrickson stands by a trail interpretive sign at the Genoa National Fish Hatchery. He earned his Eagle Scout rank for Boy Scouts by working with hatchery staff to design and complete an interpretive walking trail at the hatchery.

Biologist gives Presentation to Michigan Aquaculture Association

On Aug. 22, Ken Phillips of the La Crosse Fish Health Center (FHC) gave a presentation to the Michigan Aquaculture Association during its meeting at Jordan River NFH. Phillips discussed the causes and symptoms of numerous bacterial, parasitic, and viral diseases of salmonid fishes including furunculosis, Enteric Red Mouth, bacterial kidney disease, Viral Hemorrhagic Septicemia (VHS), and whirling disease. The group had numerous questions concerning VHS, a disease of international concern that has been responsible for numerous kills of warm and cool water fish in lakes Erie, Ontario, and St. Clair. Phillips provided copies of the book *Introduction to Fish Health*, which is published by the Fish and Wildlife Service and used as a reference for the La Crosse FHC's Introduction to Fish Health course.

Ken Phillips, La Crosse FHC

Ashland FRO assists with Hydro-Acoustic Work on Lake Superior

Ashland FRO offered the assistance of its *R/V Chub* and boat captain/biologist Glenn Miller to help conduct near-shore hydro-acoustic work in the waters of Lake Superior along the Michigan coastline. The *Chub* covered about 100 miles of Lake Superior in three nights.

Its crew, which included U.S. Geological Survey (USGS) intern Dan Crigas and University of Minnesota-Duluth graduate student Matt Balge, conducted nighttime surveys working out of the ports of Black River, Ontonagon, and the north side of the Keweenaw Waterway. Balge is studying prey species that make up the diet of primary predators in Lake Superior using hydro-acoustics. Correlating fish "echoes" through sonar with actual fish captured in trawl tows by the USGS Lake Superior Biological Station's *R/V Kiyi* will enhance our ability to understand fish relationships without having to physically capture them. This survey, and others like it, will improve our understanding of the Lake Superior commercial and sport fisheries and help develop management strategies implemented by state agencies. Fish managers hope that this will be another tool for conducting fisheries surveys on the Great Lakes.

Glenn Miller, Alpena FRO

Acting Deputy Director Tours Upper Mississippi Operations

Ken Stansell, the Fish and Wildlife Service's acting Deputy Director and Assistant Director for International Affairs, and the Chairman for the Standing Committee of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), toured the Upper Mississippi River National Wildlife and Fish Refuge (NW&FR) and the Genoa NFH on August 23. He was accompanied by refuge manager Don Hultman; Richard Nelson, supervisor of the Rock Island Ecological Services Field Office; and biologist Mark Steingraeber of the La Crosse Fishery Resources Office (FRO). While en route to see several habitat rehabilitation and enhancement projects in the refuge's La Crosse District, the group discussed the Fish and Wildlife Service's role in collaborative management of the river and conservation of its native fauna and flora. They later stopped at Genoa NFH, where manager Doug Aloisi and his staff guided the group on a tour of facilities where biologists propagate a variety of native fish and endangered mussels for recovery and restoration efforts in the Midwest. Before departing, the group also discussed the growing global demand for caviar and the need to ensure CITES protection for sturgeon populations throughout the Mississippi River basin. The opportunity for employees from diverse field offices to host a member of the Fish and Wildlife Service Directorate on a tour like this enhances communication within the agency and helps all participants accomplish their common mission.
Mark Steingraeber,La Crosse FRO

Near Shore Fish Study Continues in the Detroit River Refuge

As part of the Fish and Wildlife Service's Challenge Cost Share Grant Program, biologists from the Alpena FRO, Detroit River International Wildlife Refuge (IWR), Michigan Department of Natural Resources (DNR)-Lake Erie Management Unit, Michigan DNR-Lake St. Clair Research Station, and U.S. Geological Survey's Great Lakes Science Center teamed up to conduct the second fishery survey within the recently established refuge, whose boundary includes Michigan waters of the lower Detroit River and Lake Erie. The last time a similar fishery survey was conducted in that area of the Great Lakes was in the early 1980s. Since that time many changes have taken place, specifically the establishment of invasive species that have likely displaced or reduced the numbers and diversity of native species. Detroit River IWR provides some of the last remaining natural wetland areas available in the Detroit River and western Lake Erie.

The first part of the survey took place in September 2005 and focused on wetland areas along western Lake Erie. The second part was conducted in July 2006 to identify wetland areas being used as nursery areas. The primary goal with this project was to provide baseline information about which species—both native and invasive—use the remaining wetland complexes within refuge waters in the lower Detroit River.

During the September 2005 survey along western Lake Erie, crews collected 46 fish species using both electro-fishing and seining and demonstrated that some state-listed species as well as many economically valuable sport fish species - among them walleye, largemouth and smallmouth bass, northern pike, and sunfishes - were using those locations as nursery areas. In 2006, sampling took place earlier in the season - July - with the rationale that many of the species spawn early in the spring and would still be in the nursery areas. In the 2006 survey, the partners used small mesh fyke nets in addition to electro-fishing and seining gear. Sampling consisted of 14 seine hauls, electro-fishing at 24 locations, and 29 fyke net sets. Survey crews caught a total of 11,814 fish representing 55 species from 15 families. Two species - the silver lamprey and the state-listed silver chub - were collected last year but not found this year. Ten new species were captured this year that were not represented in last year's catch: alewife, muskellunge, rainbow trout, striped shiner, horneyhead chub, black buffalo, smallmouth buffalo, silver redhorse, northern hog sucker, and white crappie. Again this year, sampling found a number of economically important species of sport fish using the limited number of wetland areas as nursery grounds.
James Boase, Alpena FRO

Aquatic Species Conservation and Management

Putting Mussels to Bed in the Cedar River

The old adage that many hands make for light work was proven in August when 31 volunteers from the Waterloo, Iowa, area showed up to assist Genoa NFH, the Hartman Reserve Nature Center, and the Iowa DNR in mussel restoration efforts on the Cedar River in eastern Iowa.

The volunteer cadre was comprised of interested local residents, a local Boy Scout troop, and students from Hawkeye Community College. They were eager to assist in tagging the mussels and placing them in the Cedar River. The mussels for this restoration effort were cultured in 2005 in cages floated in Ice Harbor at Dubuque, Iowa, in a joint effort between Genoa NFH and the National Mississippi River Museum and Aquarium in Dubuque. The mussels were harvested from the floating cages in the fall of 2005 and placed back into submerged cages in Lake Pepin, Minnesota, to over-winter below the ice. With assistance from Minnesota DNR, the mussels were harvested from Lake Pepin in June 2006 and taken to Genoa NFH.

At the hatchery, the mussels were scrubbed to remove any invasive zebra mussels and quarantined for 30 days to insure that no zebra mussels would be transported to the Cedar River. In total, volunteers tagged and released 3,500 mussels of two species, the plain pocketbook and the black sandshell. The mussels were divided into three equal groups; two beds were established on the Cedar River upstream of Waterloo at Palisades-Kepler State Park, and a third bed was established on the Wapsipinicon River near Central City. This bed will be used as a control site to compare survival and growth with those in the Cedar River. The mussel beds will be monitored over the next several years to answer questions about the low densities of mussels in the Cedar River.

Tony Brady, Genoa NFH

-Photo by Lyndsey Anderson

Volunteers work to tag 3,500 mussels to be released into the Cedar and Wapsipinicon rivers in Iowa as part of a cooperative effort to restore several mussel species.

Genoa NFH Fish Health Inspection Conducted

On August 15 Eric Leis and Corey Puzach of the La Crosse FHC and Ashley Umberger of Genoa NFH completed the annual fall inspection of salmonids and lake sturgeon at Genoa to screen for harmful pathogens and ensure that disease-free fish are being released in the wild, transferred to other hatcheries, or used as brood fish for future egg sources. The crew sampled three lots of salmonids and one lot of lake sturgeon. Each lot is screened separately for target pathogens.

The biologists first took kidney swabs from all species to screen for bacterial pathogens. A second kidney sample was taken to be later screened for *Renibacterium salmoninarum*, a causative agent of bacterial kidney disease. Next, they collected kidney and spleen samples and screened them for viruses in the salmonids—Infectious Pancreatic Necrosis, *Oncorhynchus masou* viruses, Viral Hemorrhagic Septicemia, and Infectious Hematopoietic Necrosis Virus. A kidney sample was also taken for confirmation of *Renibacterium salmoninarum*. The last sample taken from salmonids was a combination of 60 head samples from all three lots, to be crushed, digested, and screened for *Myxobolus cerebralis*, more commonly referred to as whirling disease.

Biologists screened for all but one of these same bacterial and viral pathogens in the lake sturgeon at the hatchery, and took one additional tissue sample from a pectoral fin clip to screen for Irido-like viruses found in sturgeon. These viruses cannot be detected using tissue cell culture and must be further analyzed using histological methods.

Rick Nelson, La Crosse FHC

Lake Sturgeon Tagged at Genoa NFH

Kristen Dziubinski of the La Crosse FHC and Patricia Polzin of the La Crosse FRO, along with a student worker from Trempealeau National Wildlife Refuge (NWR), assisted Genoa NFH staff in tagging lake sturgeon. They tagged about 2,000 hatchery fish in one day, out of 13,000 that were tagged in total. A stainless steel coded wire tag was placed between the first two scutes on the dorsal side of the fish. This was done in order for the hatchery biologists to keep track of the sturgeon after release into the wild. The lake sturgeon is on the state endangered species list for Wisconsin.

Kristen Dziubinski, La Crosse FHC

Jordan River NFH Fish Health Inspection Conducted

Staff from the La Crosse FHC conducted a fish health inspection at Jordan River NFH in August. During the inspection, FHC staff observed the facilities and conditions at the hatchery and collected tissue samples from four production lots of lake trout to screen for bacterial, viral, and parasitic pathogens. Lake trout reared at Jordan River NFH are stocked into lakes Huron and Michigan as part of the Fish and Wildlife Service's rehabilitation efforts on the upper Great Lakes.

Rick Nelson, La Crosse FHC

Cooperators make Strides in Endangered Mussel Recovery on the Upper Mississippi River

Recovery efforts for the Federally endangered Higgins' eye pearlymussel made significant progress during 2006 in the upper Mississippi River system through the concerted efforts of Federal and state natural resource agencies. Under the guidance of the 2002 relocation plan—formulated by the U.S. Army Corps of Engineers and the Mussel Conservation Team, a consortium of state and Federal agencies charged with mussel conservation on the upper Mississippi River—more than 2.2 million juvenile Higgins' eye pearlymussels were released into multiple recovery sites in the upper Mississippi River watershed.

In addition to the millions of young mussels stocked by the Mussel Conservation Team in 2006, the group completed harvest operations on advanced growth cage culture operations located in Lake Pepin, Wisconsin, and Dubuque, Iowa. Combined production of yearling mussels at the two sites yielded more than 22,000 sub-adults that will be cultured for an additional two years before being stocked in relocation and recovery sites in the upper Mississippi River watershed in Minnesota, Wisconsin, Iowa, and Illinois. Placement of sub-adult and adult mussels from these operations began in 2004, and since that time has helped establish six additional populations of Higgins' eye pearlymussels in the Mississippi River and several tributaries. In 2006, biologists released an additional 2,443 adult and sub-adult mussels from the Lake Pepin culture operation into recovery areas in Minnesota, Wisconsin, and Illinois.

As an active participant in the Mussel Conservation Team, the Fish and Wildlife Service has been a key player in recovery efforts and provides technical assistance through its Twin Cities Ecological Services Field Office in Minnesota, and the La Crosse FRO and Genoa NFH in Wisconsin. Cooperative efforts among these offices, as well as with the U.S. Army Corps of Engineers and the departments of natural resources of Minnesota, Wisconsin, Iowa, and Illinois stand as an example of how different programs, agencies, and people can come together and overcome great challenges.

Roger Gordon, Genoa NFH

-USFWS

These Higgins' eye pearlymussels were removed from culture cages in Lake Pepin. Cages protect the young mussels.

Aquatic Invasive Species

Fish and Wildlife Service Controls Sea Lampreys in Great Lakes Streams

In July and August, the Fish and Wildlife Service's Sea Lamprey Control program treated seven Great Lakes streams - four in Lake Michigan and three in Lake Superior - with lampricide to eliminate larval sea lamprey populations. The treatments destroyed more than 2.5 million sea lampreys including about 128,300 that would have metamorphosed to the parasitic phase this year and entered the Great Lakes, where each would have been capable of killing upwards of 40 pounds of lake trout during its year-long life.

The treatment of the Pere Marquette River, a Lake Michigan tributary, involved the volunteer efforts of members of the Pere Marquette Watershed Council, a partner group dedicated to preserving this important natural resource. The council supports sea lamprey management in the river and members volunteered to assist in the collection of dead and dying sea lamprey larvae to aid in the evaluation of treatment effectiveness.

The Fish and Wildlife Service's 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.
Dennis Lavis, Ludington Biological Station

-GLFC photo by Ellie Koon
Ludington Biological Station technician Danya Sanders prepares a slurry of Bayluscide, a lampricide used during a recent treatment of the Pere Marquette River in Mason County, Michigan. Bayluscide is used in combination with TFM, another lampricide, to control invasive sea lamprey populations in Great Lakes tributaries.

-GLFC photo by Jeff Slade
Ludington Biological Station employee Hank Cupp applies lampricide to a backwater during a recent treatment of the Manistee River in Manistee County, Michigan.

Asian Carp Surveillance Completed

Fish and Wildlife Service staff from the La Crosse FRO conducted two days of surveillance for invasive Asian carp in the Des Plaines and Illinois rivers in mid-August. No Asian carp species were captured or detected at any of the five sites surveyed within a 50-mile downstream range of an electrical fish barrier. This Fish and Wildlife Service-led effort completed surveillance requirements for the month to determine whether Asian carp are approaching the barrier, designed to prevent these fish from entering Lake Michigan. The responsibility for conducting surveillance for Asian carp is rotated from month to month among the Fish and Wildlife Service, Illinois DNR, U.S. Army Crops of Engineers, and the Metropolitan Water Reclamation District of Greater Chicago.
Mark Steingraeber, La Crosse FRO

Outreach Efforts help Prevent Release of Unwanted Pet Fish

After several large exotic fish were found to have been released by their owners in the upper Mississippi River in Wisconsin this summer, La Crosse FRO biologist Mark Steingraeber took the initiative to help prevent the re-sale or release of unwanted aquarium pets that can adversely affect the river ecosystem.

State fishery authorities reported the capture of at least four large pacu in the upper Mississippi River, including one each in La Crosse and Prairie du Chien, Wisconsin. These fish are native to South America's Amazon River basin and resemble piranhas. They are sold by some pet retailers to fish hobbyists. A pacu can grow beyond a foot long and is best suited for display in a large aquarium; unfortunately, some fish hobbyists, as well as some sales associates at retail pet stores, are unaware of this growth potential and the problems it may create for an unprepared owner. A pet fish like this may soon grow to an unmanageable size and become unwanted by its owner, who may mistakenly believe a solution is to release the fish into the wild. These owners may not know that the release of aquarium fish into public waters is illegal, and the

disease pathogens that may infect pet fish could adversely impact native fish and have serious consequences for sport and commercial fisheries.

Faced with a dilemma like this, fish hobbyists need to learn of approved alternatives to the abandonment of their pets in the wild. Following a discussion with staff from the Coulee Region Humane Society about the need to distribute information to help curtail the local release of unwanted pet fish into public waters, Steingraeber contacted the La Crosse County Health Department and obtained a list of all licensed commercial animal establishments in the county to identify pet fish retailers. Fish and Wildlife Service staff visited these stores to inquire about their sales practices and whether they would accept unwanted pet fish, particularly pacu and other large species. Several independent retailers said they accept most unwanted pet fish brought to them and re-sell these fish to customers after a disease quarantine period; however, no local retailers currently accept large pacu because they are too difficult to re-sell. To help prevent the release of these and other large unwanted pet fish in the area, the La Crosse FRO now accepts these fish directly from pet owners and will humanely euthanize them at no cost. Pet fish retailers in the area are informing the owners of such unwanted fish of this service and encouraging them to call the La Crosse FRO for more information.

Because of this unique partnership with local businesses, the La Crosse FRO received inquiries in August from two people considering releasing three large pet pacu into area waters. One of these owners also identified a pet retailer in an adjoining county that currently sells pacu. This retailer and others that sell frequently problematic fish like pacu will soon be contacted to encourage their staff to make sales of these fish only to well informed customers and to distribute the La Crosse FRO's 'crisis-intervention hotline' telephone number to owners of large, unwanted pet fish.
Mark Steingraeber, La Crosse FRO

-Wisconsin DNR photo by Pat Short
Wisconsin Department of Natural Resources authorities report the capture of at least four large pacu in the upper Mississippi River this summer, including one each in La Crosse and Prairie du Chien, Wisconsin. These fish are native to South America's Amazon River basin, resemble piranha, and are sold by some pet retailers to fish hobbyists.

Fish and Wildlife Service assists EPA with Aquatic Invasives Early Detection Case Study

The Ashland FRO provided technical assistance to the U.S. Environmental Protection Agency (EPA) Laboratory in Duluth, Minnesota, in developing an aquatic invasive species early detection monitoring protocol. The study location was the Duluth/Superior Harbor (St. Louis River Estuary in Minnesota and Wisconsin) where the EPA is studying sampling methods for early detection of invasive fish and aquatic invertebrates. Fish sampling methods included electrofishing, trapping, and bottom trawling. The Ashland FRO assisted with the trawling phase by providing a small trawler and an operator. A trawl was specially configured with a fine mesh liner for capturing larval as well as juvenile and adult fish. A total of 40 five-minute tows were completed in three days at point locations and zones representing a spectrum of trawlable habitats identified by the EPA.

Invasive species captured during the study included Eurasian ruffe, round and tubenose goby, white perch, common carp, and zebra mussels. All are reproducing in the St. Louis River Estuary. Other invasive catches of interest included 1,100 Eurasian ruffe from one tow near a sewage treatment facility and two common carp with each measuring nearly three feet long, from separate tows in diverse habitats. One carp was captured from a heavily dredged boat slip with a clay substrate. The other large carp was captured far upriver in an undisturbed natural channel containing woody debris. Ruffe were the most abundant of all invasive fish captured and were present in nearly all tows. Trawls detected no new aquatic invasive species in the estuary.
Gary Czypinski, Ashland FRO

Public Use

Outreach Event held during Annual Sailboat Race

Each July tens of thousands of spectators line both sides of the St. Clair River and the Lake Huron shoreline to watch the start of the annual Port Huron to Mackinaw sailboat race, which begins in the headwaters of the St. Clair River at the southernmost end of Lake Huron, near the cities of Port Huron, Michigan, on the United States side and Point Edward on the Canadian side. Thousands gather at the Purdy family's commercial fishery near Point Edward to witness the race's start while enjoying an outdoor dinner at Purdy's restaurant. The outdoor dining area along the banks of the St. Clair River is adjacent to one of the largest lake sturgeon spawning reefs in the Great Lakes. Within the outdoor dining area is a 12,000-gallon aquarium that houses representatives of the local fish community including lake sturgeon.

While guests were treated to a dinner of fresh caught lake trout, walleye, and perch, Alpena FRO biologist James Boase presented information about fisheries research in the St. Clair River and Lake Huron. Following dinner, many guests were taken to the fish raceways at the Purdy facility for an opportunity to handle live lake sturgeon. For most, this was the highlight of the event.

Boase was invited to make this presentation because the Alpena FRO has worked on a number of research projects with the Purdy family, including telemetry projects in the St. Clair River and the Lake Huron tagging study. Findings from those research projects continue to broaden our understanding of lake sturgeon in this part of the Great Lakes. This event provided an excellent opportunity for Alpena FRO to highlight the continued sprit of cooperation between the Fish and Wildlife Service and its partners towards the rehabilitation of lake sturgeon in the Great Lakes.
James Boase, Alpena FRO

-USFWS photo by Jim Boase
These lake sturgeon are on display at Purdy Fisheries in Sarnia, Ontario.

Biologists Spend "Friday Night Downtown" in Alpena

On July 21, biologist Aaron Woldt staffed a Fish and Wildlife Service booth at the Alpena, Michigan, "Friday Night Downtown!" festival, a city-sponsored family event held every Friday night during the month of July in the downtown streets. Each Friday combines a different mix of live musical entertainment, kid's games, food, pony rides, public safety demonstrations by local law enforcement and emergency services agencies, and informational booths by local businesses, civic groups, and government agencies. Woldt distributed Fish and Wildlife Service pamphlets, children's coloring books, and posters, and spoke with more than 200 visitors about the role of the Fish and Wildlife Service and the Alpena FRO in conserving natural resources. Topics discussed included lake trout rehabilitation, lake trout stocking, potential impacts of double crested cormorants, sea lamprey control, the national fish hatchery program, aquatic invasive species control, fish passage, endangered species, the Partners for Fish and Wildlife program, lake sturgeon tagging and tracking, lake whitefish population viability, and lake trout movement patterns.
Aaron Woldt, Alpena FRO

Alpena FRO Participates in Journalism and Natural Resources Event

Project Leader Jerry McClain of the Alpena FRO participated in the Institutes for Journalism and Natural Resources event day on July 23 in Alpena, Michigan. This annual gathering brings journalists from around the United States and Canada to tour locations in the Great Lakes and to discuss, and in some cases see first-hand, a variety of regional natural resource issues. This year's event focused on issues in northern Michigan, primarily on Lake Huron. Participants included print journalists from Michigan, other Great Lakes states, some western states, and Canadian provinces of Ontario and Quebec, and a reporter from Michigan Public Radio. The panel discussion that McClain participated in dealt with the changing food web in Lake Huron, and terms and implementation of the 2000 Consent Decree. Other stops on the tour included the Hammond Bay Biological Station and the Kirtland's warbler management areas near Grayling, Michigan.
Jerry McClain, Alpena FRO

Hubbard Lake Kids Fishing Day a Success

Biologist Aaron Woldt staffed an information booth at the Hubbard Lake Kid's Fishing Day festival in northern Michigan, an annual event sponsored by the Hubbard Lake Sportsmen and Improvement Association and designed to educate children ages 5 to 13 about local fish populations and recreational fishing. Woldt distributed pamphlets and spoke to ten groups of approximately ten children each, their parents, and other interested public, regarding invasive sea lamprey and lamprey control. He described the timeline and path of the sea lamprey invasion in the Great Lakes, negative impacts of sea lamprey predation on native fish species such as lake trout and lake whitefish, the biology and unique anatomy of sea lamprey. He also discussed control techniques used by the Fish and Wildlife Service, including chemical treatment of juveniles, trapping of adults, in-stream barriers and the sterile male release program. Each lecture also included a hands-on demonstration of sea lamprey anatomy using live lampreys.
Aaron Woldt, Alpena FRO

Hatchery assists Corps of Engineers with Kids Fishing Day

The Genoa NFH assisted its neighbors on the Mississippi River, the U.S. Army Corps of Engineers (CORPS), by staffing a display during the educational portion of the Kids Fishing Day held on August 5 at the CORP's Blackhawk Park. The annual event typically draws participants from nearby Iowa, Minnesota, and Wisconsin.

The hatchery set up an aquarium and display featuring upper Mississippi River aquatic species. More than 100 kids got to see and touch live sturgeon, mussels, and flathead catfish. Then, five separate groups each saw a 15-minute presentation on fish identification, habitat requirements, and behavior. They were then turned loose to try their luck fishing in the Mississippi River. This cooperative effort is a unique opportunity to partner with another Federal agency to promote a conservation message to the next generation of natural resource stewards.
Doug Aloisi, Genoa NFH

-USFWS
Biologist Nick Starzl of the Genoa National Fish Hatchery shows children one of the many Mississippi River fish on display during the Kids Fishing Event held at the U. S. Army Corps of Engineers' Blackhawk Park.

Cooperation with Native Americans

St. Marys River Lake Sturgeon Telemetry Project a Success

Field work continued through July for the St. Marys River lake sturgeon project. Biologist Scott Koproski obtained funding through the National Fish and Wildlife Foundation to implant and track lake sturgeon in the St. Marys River. Lake Superior State University (LSSU), Bay Mills Indian Community, and the Soo Area Sportsman Club are partners on this project, which aims to capture adult lake sturgeon, surgically implant sonic telemetry tags, and identify critical habitat within the St. Marys River. Biological Science Aid Meghan Kline, a Student Temporary Employment Program hire, began working with the project in May, overseeing and coordinating all field activities with partners and volunteers. In addition to the partners, 30 volunteers have been involved, either working on the Fish and Wildlife Service's vessel during field activities or providing their own vessel to complete that day.

Beginning the week of May 15, set-lines were fished weekly in various reaches of the St. Marys River. By August, 299 set lines had been lifted, yielding 73 lake sturgeons. Project partners recorded basic biological data from all lake sturgeon encountered and implanted sonic telemetry tags in 10 of them whose total length exceeded 50 inches. Several lake sturgeons captured in June and July exceeded the 50-inch minimum but did not receive a sonic telemetry tag due to elevated water temperatures. Once the water temperature exceeded 20 degrees Celsius, all surgery ceased in order to minimize stress on the fish. Biologists tracked the movement of the 10 fish that had sonic telemetry tags implanted.

Most of the 10 sonic tagged fish remained relatively close to the initial capture location. A few moved quite a distance within a few days. One fish was at large for several weeks, but LSSU staff located it about five miles down river from the initial capture location. That particular fish has since moved back up stream and has been found close to its initial capture location. Alpena FRO and LSSU staff will continue to track the implanted fish at least weekly until the river freezes. After the river opens up again next spring, they will begin looking for the fish again.

This project was funded for one year through the National Fish and Wildlife Foundation; however, additional funds are being sought to continue this important work. The battery life of the tags is four years. Hopefully, the implanted fish will lead us to spawning habitat within the St. Marys River in subsequent years. If continued funding is obtained, partners plan to implant up to 10 more fish next season.

Scott Koproski, Alpena FRO

-USFWS photo by Scott Koproski

Biological Science Aid Meghan Kline and volunteer John Larsen holds a lake sturgeon captured in the St. Marys River as part of a cooperative effort to track adult lake sturgeon.

Leadership in Science and Technology

Viral Hemorrhagic Septicemia Symposium Held

A symposium in Minneapolis, Minnesota, brought together 40 fish health, research, university, and hatchery experts to discuss current information and provide recommendations on how to resolve issues with viral hemorrhagic septicemia, or VHS. VHS is a viral fish disease that has caused large scale mortalities in rainbow trout and turbot aquaculture operations in Europe and in Pacific herring and pilchard populations along the Pacific coast of North America.

VHS is caused by a rhabdovirus, Viral Hemorrhagic Septicemia Virus (VHSv), which has a number identified isolates in four types - three from Europe and one from North America. Each appears to have unique effects with specific pathogenicity on certain species of fish. The isolate found in the Great Lakes basin is most similar to the VHS strain previously isolated from the Atlantic Coast in Eastern North America.

VHS is a reportable disease that requires notification of the Department of Agriculture-Animal and Plant Health Inspection Service, appropriate Canadian agencies, and the International Organization for Animal Health. It is also listed as an emergency disease by the Great Lakes Fishery Commission's Great Lakes Model Program.

Mortalities have occurred in freshwater drum in lakes Ontario and Erie, muskellunge and gizzard shad in Lake St Clair, round goby in Lake Ontario, and yellow perch in lakes Erie and St. Clair. Species confirmed as carrier fish that did not show signs of disease are smallmouth bass, rock bass, silver redhorse, bluegill, northern pike, walleye, white bass, and shorthead redhorse.

To date VHS has been confirmed in the St. Clair River; Lake St. Clair; west central basins of Lake Erie; the Bay of Quinte, Ontario and Rochester, New York, area of Lake Ontario; and the St Lawrence River.

Rick Nelson, La Crosse FHC

Viral hemorrhagic septicemia (VHS) is a viral fish disease that has caused large scale mortalities in rainbow trout and turbot aquaculture operations in Europe and in Pacific herring and pilchard populations along the Pacific coast of North America. To date VHS has been confirmed in the St. Clair River; Lake St. Clair; west central basins of Lake Erie; the Bay of Quinte, Ontario and Rochester, New York, area of Lake Ontario; and the St Lawrence River.

Aquatic Habitat Conservation and Management

Second Culvert Replacement on Billy Creek Completed

The second and final culvert replacement on the headwaters of Billy Creek in Ashland County, Wisconsin, was completed on July 27 after two days of construction. This work was the result of cooperation and partnerships among the Ashland FRO, Ashland Bayfield Douglas Iron County Land Conservation Department, City of Ashland road crews, and Ken and Dale Excavation, Inc.

The morning of July 26 found partners eagerly waiting to prepare the construction site for heavy equipment by removing trees and brush from the road sides. The replacement proved challenging to construction workers, as the slope in this area was steep and a large ravine ran along the road on the downstream side of the culvert. In all, more than 16 feet of fill covering the downstream end of the culvert had to be removed to obtain the proper slope in the new stream bed. A 7 by 80 foot culvert was put in place in two sections, then fill was placed along the pipe and tamped down to prevent movement until approximately 2 feet of fill covered the culvert. As the creek began flowing again, the head cut on the upstream side of the culvert quickly transported new substrate through the culvert. Towards the end of the first day, the head cut was 2 feet deep had traveled 75 feet upstream, displacing debris and soil that had been backed up by the original, improperly placed culvert.

The second day had the crews finalizing the road bed and stabilizing the banks with large boulders called rip rap. The road crew spread a layer of seeded mulch over the site to finish the project. The culvert's replacement supplements the replacement of another culvert upstream on Poppe Road in May that has now opened over four miles of new habitat to brook trout and other fish species in Billy Creek.

Glenn Miller, Ashland FRO

-USFWS

This culvert in Ashland County, Wisconsin, will provide uninhibited fish access to the headwaters of Billy Creek.

Fiorio Wetland Restoration Project

The Fiorio Partners for Fish and Wildlife program wetland restoration project was completed in July. It consisted of 8 wetland restoration sites totaling 12 wetland acres. Also included in the project was the enhancement of 22 acres of upland grass waterfowl nesting cover through a deferred haying/grazing agreement. The restoration took place on former agricultural land in Bayfield County, Wisconsin. The wetland and grassland complex will provide ideal resting and nesting conditions for many species of migratory waterfowl and songbirds such as wood ducks and American black ducks, and wood thrushes and yellow warblers. The landowners have been diligently improving their farm for wildlife, and welcome the assistance of the Fish and Wildlife Service and other agencies. The Ashland Bayfield Douglas Iron County Land Conservation District provided surveying and financial assistance on the project and Ritola Incorporated of Mason, Wisconsin, performed the heavy equipment work. A Habitat Development Agreement was signed to protect the restored area for a period of 10 years.

Ted Koehler, Ashland FRO

-USFWS

The Fiorio Partners for Fish and Wildlife program wetland restoration project restored 8 wetland sites totaling 12 wetland acres.

Four Mile Creek Culvert Replaced

Over a two-day period in July, the crew from the Bayfield County, Wisconsin, Highway Department replaced a culvert that had been a barrier to fish passage on County Highway C with one that is now passable for fish and other aquatic life. The project took place where Highway C crosses Four Mile Creek and has opened seven miles of stream to uninhibited fish passage above the former barrier. Four Mile Creek is important habitat for brook trout and the Wisconsin DNR has spent considerable time and effort restoring habitat for this native species. Restoring passage at this site has linked valuable spawning habitat for brook trout and other fish. The creek is a tributary to the

Sioux River, which hosts impressive spring runs of steelhead trout and fall salmon runs from Lake Superior.

After attending training in "Fish Friendly Road Crossing Design," co-sponsored by the Ashland FRO, Bayfield County Highway Commissioner Dale Brevak was eager to put the training to good use. Major funding for the project was obtained by the Ashland FRO through the Partners for Fish and Wildlife Program's Fish Habitat Restoration fund. Ashland FRO then partnered with Bayfield County and the Wisconsin DNR. During construction, Ted Koehler from the Ashland FRO supervised the fish friendly installation aspects of the project. The resulting culvert is now a habitat link for brook trout and other aquatic species.
Ted Koehler, Ashland FRO

Touring Aquatic Habitat Restoration in Ohio

Alpena FRO biologist Susan Wells visited potential Fish Passage and Coastal program projects in Ohio in July along with the Ohio Division of Wildlife (ODOW), Cuyahoga Soil and Water Conservation District, Chagrin Watershed Coordinators, and the Fish and Wildlife Service's Ohio Partners for Fish and Wildlife program. Three dams in the Cleveland area were viewed by the group as good fish passage projects. One of the dams on Euclid Creek has already been funded in 2006 through the Fish and Wildlife Service's Fish Passage program and is scheduled for removal in 2007. Another larger dam upstream from the Euclid Creek project is owned by the Ohio Department of Transportation and will take a few years to coordinate before removal would be an option. A privately owned dam in the Chagrin River watershed that was created to pond water for the local community is now being looked at with the option of removal versus the cost of maintenance.

The Fish and Wildlife Service and ODOW visited a dam in the Findlay area that is owned by ODOW. They hope to provide fish passage to upstream waters. It is located on the Auglaize River, a major tributary to the Maumee River. This proposed project involves cutting the head of the dam and installing rock rapids below to allow fish to migrate above the dam.

Wells saw two other projects that involve in-stream work, including restoration of delta islands at the mouth of Euclid Creek which has potential for funding through the Coastal program. Upon conclusion of the tour, Wells identified one new Fish Passage project for potential funding in 2007 and other projects that have potential for funding in future years as partners start to come together.
Susan Wells, Alpena FRO

-USFWS photo by Susan Wells
The Euclid Creek dam passage project was funded in 2006 through the Fish Passage program and provides resources to remove this dam in 2007.

White River Habitat Project Meeting Held

Columbia FRO Project Leader Tracy Hill attended the White River Habitat Project meeting on the shores of Table Rock Lake in southwestern Missouri. The purpose for the meeting was to discuss how Bass Pro Shops, the National Fish and Wildlife Foundation, and the Missouri Department of Conservation, in cooperation with many other partners, could work together to conserve and restore fish habitat throughout the nation. These partners are considering a variety of fish habitat enhancement projects that will benefit reservoirs in the White River system consistent with the goals of the National Fish Habitat Action Plan, which offers a unique opportunity to restore and manage aquatic habitat on a national scale. The mission of the National Fish Habitat Action Plan is to protect, restore, and enhance the nation's fish and aquatic communities through partnerships that foster fish habitat conservation, and improve the quality of life for the American people. During the meeting, participants specifically focused on projects that would directly benefit Table Rock Lake as well as downstream Lake Taneycomo. Projects developed for these two lakes will serve as a model for improving the habitat of the nation's aging reservoirs and their watersheds.
Tracy Hill, Columbia FRO

Workforce Management

Meet Jeff Dahl, Summer Intern Student at La Crosse FRO

My name is Jeff Dahl and I am currently enrolled as a sophomore at the University of Wisconsin Stevens Point. I have a declared major of Water Resources in the natural resources field, and may receive an emphasis in fisheries, although I have not decided for sure. I am open to experiences in a variety of fields such as fisheries and refuges in the Fish and Wildlife Service. I have been volunteering for the Fish and Wildlife Service since I was in seventh grade. Volunteering has given me a lot of experience and also information on what each person does with the Fish and Wildlife Service. I wanted an internship with the Fish and Wildlife Service because volunteering just skims the surface on what occurs.

An internship really helps you to see the job requirements and the work that needs to be done on and off the job. During my summer internship, I worked on public awareness about invasive species, focusing on bighead and silver carp. I traveled to bait shops in the La Crosse area and gave them posters and stickers to post around their bait shop. I also gave bait shops awareness cards that they can hand out to the public. This may sound like an easy task, but it takes time to travel to the places and planning to find the bait shops. Besides working on my internship project, I had the opportunity to work in the field on the Goby Round-up and several other projects. This internship helped me see what is involved in the planning that needs to be done to get tasks done the correctly. The internship has also given me that "edge" over other students so that after graduation from college, I will have that experience to show the employers.
Jeff Dahl, La Crosse FRO

-USFWS
Jeff Dahl (left) has been both a volunteer and intern student with the Fish and Wildlife Service. Jeff is shown here with Scott Yess presenting him with an award for the most volunteer hours and a "Volunteer of the Year Award" at the 2005 Volunteer Banquet.

Columbia FRO Welcomes Student Volunteer

Meagan Montgomery, a graduate student at the University of Missouri, volunteered for two days with the Columbia FRO. Her master's project is titled *Fish Use of Passage Facility and Seasonal Wetland Pools at Eagle Bluffs Conservation Area*. Meagan spent her day with biologist Jennifer Johnson and technician Nick Siepker, electrofishing for the Missouri River Mitigation Project near Overton, Missouri. Meagan assisted with netting stunned fish, collecting habitat information, and identifying and measuring captured fish. By the end of the day, she could easily identify most of the species captured that day. Meagan also got a first-hand glimpse of the "flying carp" she had heard so much about when several invasive silver carp landed in the boat. The Columbia FRO was happy to have Meagan for the day and looks forward to future outings with students in the Columbia area. The Fisheries program depends on a range of professionals to accomplish its mission and career exploration opportunities such as this may help recruit potential employees.
Jennifer Johnson, Columbia FRO

-USFWS
Meagan Montgomery, a graduate student at the University of Missouri, volunteered for two days with the Columbia Fishery Resources Office.

Columbia FRO C.A.R.E.S

On June 20, three young men began a summer-long journey working with biologists at the Columbia FRO. This summer marks the first opportunity that the station has had to participate in the C.A.R.E program in Columbia, Missouri. Since 1982, the City of Columbia's Career Awareness Related Experience (C.A.R.E) program has served Columbia's youth ages 14 to 18 in many important ways, providing at-risk or disadvantaged participants with summer employment opportunities to help them become self-disciplined, productive, and skilled, and

educational opportunities to give them with practice applying basic skills to real world problems. C.A.R.E trainees work up to 180 hours and attend up to 25 hours in an educational setting problem-solving. Trainees are paid $5.15 per hour for attending work/class, up to 205 hours. The C.A.R.E. program is funded by the City of Columbia and administered through the Parks & Recreation Department.

Working with these three young men was a rewarding experience for all. Gary Shead Jr., Andrew Murphey, and Zachary Mace assisted in net repair, vehicle and boat cleaning and maintenance, assisting in the laboratory pressing fish scales, extracting paddlefish tags, and working on the river collecting data on multiple projects. More importantly, they got a taste of fisheries biology and life as an adult, and an opportunity to interact with mentors.

Biologist Cliff Wilson was instrumental in the development and accountability of these young men and serving as a positive influence. Their employment came to an end at the first of August. We are grateful to the City of Columbia for sponsoring this program and look foreword to working with them again next summer. Exposure to the fisheries field this early will give these young men insight to furthering their education and focusing on a career choice.

Jeff Finley, Columbia FRO

Columbia FRO Welcomes New Employees

Biologist Chris Eggleston joined the staff of the Columbia FRO in April. Chris graduated with a degree in biology from the Evergreen State College in 1999. He then went to work for the Fish and Wildlife Service as a biological science technician at Laysan Island NWR, 790 miles northwest of the main Hawaiian Islands. At Laysan, he studied seabird populations, the endangered Laysan teal, and invasive plant eradication. After finishing up the winter season he accepted a biologist position with the Northern Central Valley Fish and Wildlife Office in Red Bluff, California. Chris then returned to the Hawaiian Islands where he worked at Tern Island NWR as a technician and then assistant manager, studying the endangered Hawaiian monk seal, threatened Hawaiian green sea turtle, and many species of seabirds.

Technician Tammy Knecht joined the staff in May. Tammy came to Columbia from Klamath Falls, Oregon, where she was a USGS biologist studying the population dynamics of the endangered lost river sucker and the shortnose sucker. Prior to working with USGS, Tammy also worked for Fish and Wildlife Service in Red Bluff, California, sampling in the Sacramento River with rotary screw traps for the endangered Chinook salmon. Tammy graduated from the State University of New York (SUNY) College of Environmental Science and Forestry with a degree in environmental biology in 2005.

Technician Derek Eisenbrei also began in May. Derek comes to Columbia with a degree in oceanography/meteorology from SUNY Maritime College. While in college, Derek received a three-year Navy ROTC scholarship, which led to his commissioning as a naval officer upon graduation. His immediate activities before joining Columbia FRO included continuing his education at Walsh University in North Canton, Ohio, to pursue a license in education of adolescent to young adults, and working as a head high school swim team coach. In addition to these endeavors, Derek has experience writing and editing Navy publications and providing life skills and tutoring for K-12 youth. Derek is looking forward to working on the Missouri River in support of pallid sturgeon recovery.

Technician Lee Erickson joined the staff in June 12. Lee hails from southwest Minnesota. His love and enjoyment of the outdoors led him to pursue a career in the management of natural resources. He graduated from South Dakota State University in 2006 with a degree in wildlife and fisheries sciences. He has worked for the Fish and Wildlife Service in Region 3 at the Windom Wetland Management District as a technician, where he gained valuable experience working independently on wetland restorations and aiding in outreach events. He has also worked in Region 6 for South Dakota's Waubay NWR as a technician. He looks forward to learning the "ropes" of the Missouri River with the guidance of the Columbia FRO's experienced staff. His work ethic, willingness to learn and experience in outreach events will prove to be a valuable asset to the Columbia FRO.

Chris Eggleston, Columbia FRO
Tammy Knecht, Columbia FRO
Derek Eisenbrei, Columbia FRO
Lee Erickson, Columbia FRO

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Fish Lines
Region 3, Great Lakes/Big Rivers
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Region 3
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Questions or comments concerning ***Fish Lines*** can be addressed to Dave Radloff, 612/713-5158 or email at david_radloff@fws.gov

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-Jerry French Postcard Collection; U.S Fish Hatchery; Edenton, North Carolina

Windows in time

A Glimpse into our Proud Past:

The Edenton Fish Hatchery is located near the town of Edenton, Cowan County, North Carolina. Edenton is located in the northeastern part of the state where the Cowan Bay meets the Albemarle Sound. The hatchery was established in 1899 and was transferred to the town of Edenton in 1961. A new hatchery was established at Edenton in 1961.

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