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Fish Lines

Region 3 - Great Lakes/Big Rivers

Leadership in Conserving, Enhancing, and Restoring Aquatic Ecosystems

Laboratory Study Jump-Starts Endangered Winged Mapleleaf Recovery Efforts

(See the "Feature Article" on Page 5)



-USFWS;USGS;WisconsinDNR

Series of photos depicting Fisheries involvement in winged mapleleaf mussel `recovery: (Lt. to Rt.) (Top Row) Endangered winged mapleleaf mussels; U.S. Geological Survey laboratory used during research to determine the host fish for the winged mapleleaf; Blue catfish were tested as a potential host fish; (Middle Row) Channel catfish were tested as a potential host fish; A fisheries biologist examines a host fish for the presense of mussel larvae (glochidia); Magnified image of a 36-day old juvenile winged mapleleaf; (Bottom Row) Building mussel cages at the Genoa National Fish Hatchery; Getting mussel cages ready for deployment. Mussel cages hold host fish inoculated with mussel larvae; Scott Yess, La Crosse Fishery Resources Office, prepares for a dive to look for native mussel beds.



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

Conserving America's Fisheries



Fisheries Program Vision for the Future

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.

Strategic Plan Vision 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. 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.

4. 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.

5. 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.

6. 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.

7. 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.

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Great Lakes - Big Rivers Region Fisheries Field Offices

National Fish Hatcheries

National Fish Hatcheries develop and maintain brood stocks of selected fish strains with our primary focus on native species such as lake trout, pallid sturgeon, lake sturgeon and brook trout. Hatcheries also provide technical assistance and sources of fish and eggs to cooperating agencies, provide fish and eggs for research, stock fish and eggs as part of native fish restoration programs. stock fish in fulfillment of federal mitigation obligations and assist with restoration and 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. This program is supported through funding from the State Department and administered through the Great Lakes Fishery Commission.

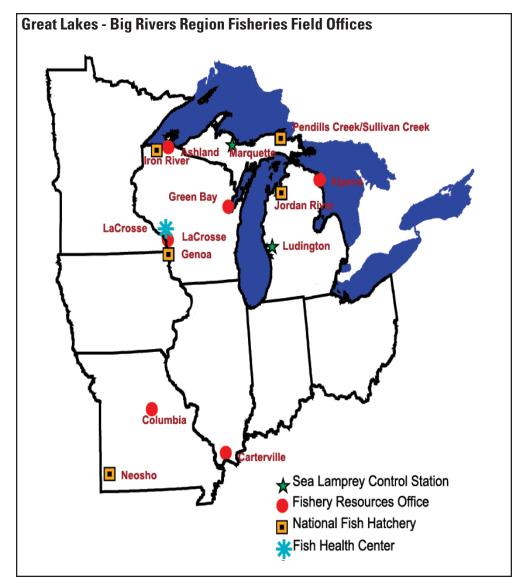
Fishery Resources Offices

Fishery Resources Offices perform key monitoring and control activities related to invasive aquatic species; survey and evaluate native fish stocks and aquatic habitats to identify restoration 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 Private Lands and the Great Lakes Coastal Programs; provide coordination and technical assistance toward the management of interjurisdictional fisheries; maintain and operate several key interagency databases; provide technical assistance to other Service programs addressing contaminants, endangered species, federal project review and hydro-power operation and re-licensing; evaluate and manage fisheries on Service lands; and, provide technical support to 38 Native American tribal governments and treaty authorities.

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 Regional Fisheries Program

Feature Article - Laboratory Study Jump-Starts Endangered Winged Mapleleaf Recovery Efforts



-WisconsinDNR

Winged Mapleleaf Mussel

The winged mapleleaf mussel is a Federally listed endangered species that is approaching extinction. Once found throughout many Midwestern rivers, only three known populations exist, one of which is in a 10mile stretch of the St. Croix National Scenic Riverway that borders Minnesota and Wisconsin. The other two populations are found in the Ouachita River in Arkansas and the Bourbeuse River in Missouri. The population in the St. Croix River is at risk from zebra mussel infestation, the effects of variable water releases at an upstream hydro power dam, and an incomplete knowledge of its life history. Among the recognized factors that are limiting the recovery of this mussel is the lack of data regarding which species of fish can serve as hosts for its parasitic mussel larvae (glochidia). Since 1997, a team of biologists working at the University of Minnesota (UMN) has conducted research to identify potential host fish for this endangered mussel. Beginning in 2001, Department of the Interior colleagues working in western Wisconsin at the Fish and Wildlife Service's La Crosse Fishery Resources Office (FRO), Twin Cities Field Office, and Genoa National Fish Hatchery, the National Park Service's St. Croix National Scenic Riverway in St. Croix Falls, and the Geological Survey's Upper Midwest Environmental Sciences Center (UMESC) in La Crosse joined other team members in cooperative efforts to expand and accelerate the laboratory host fish identification program by making use of the well-equipped aquatic research facilities available at the UMESC.

A total of about 11,000 living juvenile winged mapleleaf mussels were recovered from the blue catfish and about 9,000 juveniles were recovered from the channel catfish during laboratory fish host tests conducted in fall 2003.

These efforts "jumpstarted" winged mapleleaf recovery efforts in the Mississippi River basin.

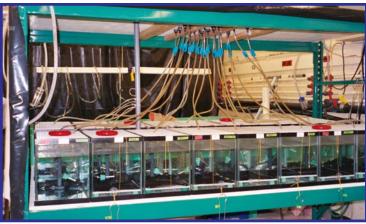
Prior to 2003, more than 60 species of fish comprising 14 taxonomic families had been investigated as potential host fish for winged mapleleaf glochidia. These early efforts achieved very limited success with only certain catfish species (Family Ictaluridae) because the long-term tests were often beset by problems (e.g., fish mortality) that yielded inconclusive results. These tests were also limited by the ability of divers to find sufficient numbers of egg bearing (gravid) female winged mapleleaf in the fall to provide the necessary glochidia for testing. In the summer of 2003 however, an interagency dive team stockpiled adult winged mapleleaf in the St. Croix River into small aggregations that were placed near one another to increase chances for successful reproduction. The effort proved successful when divers returned early in the fall and collected several gravid females that later released large numbers of viable glochidia for testing. These glochidia were used to infest the gills of four Ictalurid species (blue catfish, channel catfish, flathead catfish, and slender madtom) in similar temperature-controlled tests that were initiated in early October at both the UMESC

(66°F) and the UMN (72°F). Approximately 8 to 12 weeks after the fish were infested, a total of about 11,000 living juvenile winged mapleleaf mussels were recovered from the blue catfish and about 9,000 juveniles were recovered from the channel catfish indicating that these 2 species are suitable hosts for this endangered mussel.



USFWS photo by Mark Steingraeber

These tiny winged mapleleaf mussels (white dots) are less than 24 hours old.



-USFWS

U.S. Geological Survey laboratory used during the research to determine the host fish for the endangered winged mapleleaf mussel.

In mid-November, dive team members placed most of the juveniles produced by the catfish into cages that were submerged at sites near existing mussel beds in the St. Croix River. Unfortunately, because these tests were conducted at unseasonally warm water temperatures to accelerate the transformation process, none of the 20,000 juveniles recovered during mid- to late-autumn were in synchrony with the natural environmental conditions of the St. Croix River in November. Although prospects that these juveniles survive the winter and resume growth during the spring were considered poor, their chances were much better in the river than keeping them in the lab.



-USFWS

Test results achieved in 2003 by colleagues from three Department of the Interior agencies and the University of Minnesota conclusively indicate that both blue catfish and channel catfish (pictured) are suitable hosts for glochidia (mussel larvae) of the endangered winged mapleleaf mussel.



-U.S. Geological Survey photo by Shari Greseth

This juvenile winged mapleleaf mussel is less than 24 hours old. It has been about 38 weeks since the glochidia (mussel larva) was infested onto the gills of a channel catfish.



-USFWS photo by Carlos Lozano

Minnesota Department of Natural Resources scuba diver Mike Davis prepares to submerge into the St. Croix River with a container filled with hundreds of juvenile winged mapleleaf mussels for placement into protective enclosures.



-USFWS photo by Carlos Lozano

La Crosse Fishery Resources Office biologist, Mark Steingraeber, transfers juvenile winged mapleleaf mussels into containers for placement into protective cages in the St. Croix River near Marine-on-St. Croix, Minnesota.

In an effort to improve future chances of survival, four glochidia-infested channel catfish were maintained at UMESC by Mark Steingraeber, a fishery biologist at the La Crosse FRO, for nine months at a thermal regime that closely followed the reported mean daily water temperature of the St. Croix River. All fish survived the winter and remained infested with glochidia while in cages that were submerged in a pond for five months. Fish were returned to individual tanks in the spring when mussel development resumed (water temperatures above 48°F). A total of about 3,500 juvenile mussels were recovered during a one-week period at the start of summer. An interagency team of divers from the Fish and Wildlife Service, National Park Service, and Minnesota Department of Natural Resources will assemble in July near Marine-on-St. Croix, Minnesota to place about 3,100 of the recently transformed juvenile winged mapleleaf mussels inside protective enclosures in the St. Croix River. Biologists hope that many of these juvenile mussels will survive and continue to grow here, thermally 'in-synch' with their natural environment. The knowledge and experience gained during this successful long-term scientific investigation will soon be put to practical use by the Fish and Wildlife Service and its partners. Appropriate propagtion efforts will soon begin to help restore the St. Croix winged mapleleaf mussel population and recover this species in other portions of its historic range.

Mark Steingraeber, La Crosse FRO

Partnerships and Accountability

Carterville Fishery Resources Office continues to Reintroduce Shovelnose Sturgeon to the Upper Ohio River Basin

Yarterville Fishery Resources Office (FRO) is working in partnership with the Ohio Department of Natural Resources (DNR) to reintroduce shovelnose sturgeon to the upper Ohio River Basin. Shovelnose sturgeon were once common in the Ohio River, but dam construction, habitat loss, and pollution extirpated the species from the upper Ohio River Basin. The last wild shovelnose sturgeon reported from the state of Ohio was in 1957. Shovelnose sturgeon remain fairly common in the lower Ohio River downstream from the state of Ohio. The Ohio DNR requested technical assistance from Carterville FRO for this reintroduction effort. During March, Carterville FRO, with the assistance of local volunteers, collected 155 adult shovelnose sturgeon from the tail-waters of the Smithland Dam on the lower Ohio River, near Paducah, Kentucky. The Ohio DNR then transported the fish 9-hours to the Scioto River, a tributary to the upper Ohio River. The Scioto River was chosen as the relocation site due to its good water quality and aquatic habitat. The fish were said to be lively and in good condition when released. Additional stockings and evaluations of effectiveness are planned for the future.

Colby Wrasse, Carterville FRO



-USFWS

Fishery Biologist Nate Caswell from the Carterville Fishery Resources Office (FRO) holds a shovelnose strugeon. Carterville FRO is working in partnership with the Ohio Department of Natural Resources to reintroduce shovelnose sturgeon to the upper Ohio River Basin.

Brook Trout Assessment in the Near Shore Waters of Lake Superior on the Bayfield Peninsula and in the Apostle Islands

shland Fishery Resources Office (FRO), with assistance from the Wisconsin Department of Natural Resources, National Park Service, Trout Unlimited, and the Red Cliff Tribe, conducted electrofishing and fyke-netting operations on the Bayfield Peninsula (Sand, Little Sand, Raspberry, Buffalo, and Red Cliff bays) and electrofishing around Oak and Basswood islands in an attempt to determine the presence of coaster brook trout in these waters. Coaster brook trout are described as brook trout that live any part of their life in the lake, generally exhibiting a migratory behavior. During electrofishing efforts, brook trout were targeted for capture while estimates of abundance of other species were noted. Fish that were captured in the fyke nets were identified to species and counted.

All salmonids captured with either method were measured and

weighed. Brook trout captured were measured, weighed, a scale sample taken for aging, a fin clip for genetic analysis, and then tagged with a floy tag before being released. These efforts complete the spring component of a larger study. Future work includes electrofishing streams on Oak and Stockton islands during the summer to determine the presence of brook trout during low water periods. A fall sampling component will include stream and near-shore electrofishing to determine whether brook trout are coming into the streams to spawn. Information gathered will be used by cooperating parties to manage brook trout in the region to establish populations that exhibit a "coaster" life history. Jonathan Pyatskowit, Ashland FRO

Two More Partners join the Battle against Sea Lampreys

The Michigan Department of Natural Resources and Emmet County, Michigan have joined forces with the Great Lakes Fishery Commission (Commission) and the Fish and Wildlife Service to combat sea lampreys in the Great Lakes through the construction of two new sea lamprey barriers. The Fish and Wildlife Service is currently pursuing the construction of new sea lamprey barriers in the South Branch Galien River in Berrien County, Michigan and Carp Lake River in Emmet County, Michigan. Memoranda of Agreement were signed by officials from the Commission, Fish and Wildlife Service, and the local co-sponsors to construct, operate and maintain sea lamprey barriers in the two tributaries.

The majority of invasive sea lampreys are currently controlled through the application of the lampricide TFM. Sea lamprey barriers are a proven alternative to lampricide control and these agreements are instrumental in reducing or eliminating the need to treat the streams with the lampricide as the program moves toward the Commission strategic vision milestone of achieving 50% of control of the invasive parasites through alternative control methods by 2010. Kasia Mullett, Marquette Biological Station

Aquatic Nuisance Species Task Force Asian Carp Working Group Meeting hosted by Carterville Fishery Resources Office

reg Conover, Carterville JFishery Resources Office (FRO), serves as chair of the Aquatic Nuisance Species Task Force, Asian Carp Working Group (Working Group). The Working Group is charged with developing a national Asian Carp Management and Control Plan to address invasive bighead, black, grass, and silver carp species. The Working Group held its first meeting in Columbia, Missouri on May 24th to initiate a collaborative process to develop the plan. Nearly 70 people representing Federal, state, tribal, and Canadian natural resource management agencies, aquaculturists, trade association representatives, private consultants, and non-governmental organizations gathered to exchange information and ideas. The meeting was a great start at engaging the various stakeholders and working cooperatively to address this ominous natural resources issue facing the nation's rivers and lakes. Greg Conover, Carterville FRO

Fish and Wildlife Service participates in Actions toward a Sustainable Great Lakes Conference

Project Leader Jerry McClain from the Alpena Fishery Resources Office (FRO) attended a May "Actions toward a Sustainable Great Lakes" Conference in Cleveland, Ohio. The conference, hosted by the U.S. Army Corps of Engineers and the Great Lakes Commission, brings Federal, state and tribal natural resource agencies, as well as representatives of municipalities and industry together to share concerns and ideas on actions necessary to protect biological, social, and economic interests in this complex ecosystem. Breakout sessions focused on eight topics; Water Use and Management, Water Quality, Toxic Hotspots, Aquatic Invasive Species, Human Health, Habitat and Wetlands, Sustainable Waterways and Research, and Decision Support. During each breakout session, participants discussed the most pressing issues and ways to better communicate and collaborate to address these issues for the benefit of the ecosystem. Fish and Wildlife Service staff, including Regional Director Robyn Thorson, participated as speakers, session moderators, and resource specialists during various segments of the conference. McClain served on a panel of resource specialists for the Wetlands and Habitat breakout session. Conferences such as this are important first steps in addressing existing concerns and meeting future challenges faced in the Great Lakes ecosystem. Fish and Wildlife Service offices participating in the planning exercise included the East Lansing, New York and

Reynoldsburg field offices, and the Lower Great Lakes and Alpena fishery resources offices. Jerry McClain, Alpena FRO



Fish Health Center Staffs partner to Advance Science and Technology

Fish Health Center staff from the Regions recently gathered at the National Conservation Training Center to attend a 3 day workshop to add finishing touches to several national projects and to provide updates to Regional and Washington office fisheries directorate. The Fish Health Group had many recent accomplishments of note to share with the directorate including a newly revised National Fish Health Policy, National Implementation and Procedure Guidelines for fish health diagnostics (a joint publication with the American Fisheries Society), Risk Assessment procedures, Quality Assurance /Quality Control procedures, and a newly revised national database for an improved Wild Fish Health Survey.

Presentations and interactions were completed during the three day workshop with Assistant Director for Fisheries Dr. Mamie Parker, Deputy Science Advisor Bill Knapp, and Assistant Regional Directors for Fisheries Linda Kelsey (R4), and Jaime Geiger

(R5). They were quite supportive and pleased with the successes of the Fish Health Group. Other topics for discussion and assignment to work groups were the following; updating Title 50 import regulations, training needs, promotion of scientific excellence, continued participation in other national programs and partners such as the Journal of Animal Science, Animal and Plant Health Inspection Service, National Marine Fisheries Service, U.S. Department of Agriculture and to be more proactive with the American Fisheries Society, nongovernmental organizations, and state/private laboratories. Next year's workshop will be a joint meeting of all Fish Health Centers and Fish Technology Centers to minimize travel costs, exchange ideas, and increase productivity.

Rick Nelson, La Crosse FHC

Thunder Bay River Working Committee Meeting

ssistant Project Leader Tracy AHill, Alpena Fishery Resources Office (FRO), participated in a Federal Energy Regulatory Commission (FERC) Working Committee meeting for Thunder Bay Power (Working Committee). The Working Committee was created to assist Thunder Bay Power, located near Alpena, Michigan, with its requirements to FERC under the terms of their license. Dr. Hill is the Fish and Wildlife Service representative on the Working Committee. During the May meeting Dennis McCauley of Great Lakes Environmental Center gave a presentation regarding strategies for diversion and protection of downstream fish passage. McCauley presented the current techniques available for

downstream passage and gave advantages and disadvantages of each technique. At the request of the committee, he will develop a proposal recommending a technique to be considered for the effectiveness study that is required as part of (Article 419) Fish Passage.

Control of Eurasian watermilfoil at Fletcher's Floodwaters was also discussed. Thunder Bay Audubon Society and Huron Pines Resource Conservation and Development (RC & D) would like to conduct a survey on Fletcher's Floodwaters to determine the extent of the invasive watermilfoil infestation and the possibilities for control. A proposal will be developed by Huron Pines RC & D for funding consideration by the Working Committee. In addition, a check was presented to the city of Alpena, Michigan to begin construction on the Lamarre Park fishing pier (Article 418). The pier should be completed in June 2004.

The meeting was attended by member representatives from Michigan Department of Natural Resources, Thunder Bay Power, Fish and Wildlife Service, Hubbard Lake Sportsmen and Development Association, Northeast Michigan Counsel of Governments, Huron Pines RC & D, Montmorency County Conservation District, Thunder Bay River Restoration Committee, Michigan Hydro Relicensing Coalition, and Thunder Bay Audubon. Fish and Wildlife Service involvement in this initiative provides an opportunity to minimize the impacts of habitat alteration on fish and other aquatic species from the hydropower facilities.

Tracy Hill, Alpena FRO



-USFWS

Thunder Bay Power near Alpena, Michigan has a working committee created to assist with meeting the Federal Energy Regulatory Commisssion license requirements. Alpena Fishery Resources Office staff represent the Fish and Wildlife Service on the committee and have provided guidance for fish passage and other aquatic issues.

Ruffe Control Presentation given to the National Nuisance Species Task Force

Project Leader Mark Dryer, Ashland Fishery Resources Office (FRO), serves as Chair of the Ruffe Control Committee. He gave a presentation on the status of invasive ruffe monitoring and control in the Great Lakes. program accomplishments and needs, at the semi-annual meeting of the National Aquatic Nuisance Species Task Force (Task Force). The Task Force is co-chaired by the Fish and Wildlife Service and the National Oceanic and Atmospheric Administration and includes membership by numerous Federal, state, and tribal entities involved in aquatic invasive species issues.

Mark Dryer, Ashland FRO

Aquatic Species Conservation and Management

Shovelnose Sturgeon Spawning Habitat Investigation in the Middle Mississippi River

Tarterville Fishery Resources Office (FRO) conducted sturgeon sampling on the Middle Mississippi River this spring to examine population characteristics and habitat utilization during the pre-spawn and spawning periods. Carterville FRO extensively sampled 2 stretches of river which are part of the Middle Mississippi River National Wildlife Refuge. A total of 1,083 shovelnose sturgeon and one lake sturgeon were collected during the spring sampling. Shovelnose sturgeon were implanted with tags and had a portion of the pectoral fin removed for age and growth analysis. A total of 26 tagged fish were recaptured. The data from these recaptures provides biologists with important information regarding shovelnose sturgeon population demographics, growth, and fish movement. No endangered pallid sturgeon were captured during this project. Colby Wrasse, Carterville FRO



-USFWS

Amy Levin, Carterville Fishery Resources Office holds a shovelnose sturgeon captured from the Mississippi River during a project which examines population characteristics and habitat utilization.

Everything is coming up Mussels in Polander Lake

Tussel diving on rivers is very Linteresting work, especially when a new bed of native mussels is discovered. This was the case for members of the Region 3 Dive Team during a recent assignment. Tony Batya from the Upper Mississippi River National Wildlife & Fish Refuge-Winona District requested the assistance of Scott Yess from the La Crosse Fishery Resources Office (FRO) and Nick Rowse from the Twin Cities Field Office on a native mussel survey. The project goal was to determine the native mussel status in a boating channel in Pool 5A of the Mississippi River near Winona, Minnesota. Since the channel has several shallow areas during low water which makes boat passage difficult, the area was scheduled for dredging, pending results of the mussel survey.

The team of Rowse, Yess, and Steve Erickson (also from the Winona District) surveyed three sites along the proposed channel. At all three sites, mussels were not only present but very abundant! Three species were listed as threatened in Minnesota (round pigtoe, butterfly, and mucket) and one Species of Special Concern (black sandshell) were collected. Due to the diversity and abundance of mussels in the proposed dredged site, an alternative to dredging will be implemented.

Scott Yess, La Crosse FRO



-USFWS

Divers from the Region 3 Dive Team prepare to "treasure hunt" for native mussels in the upper Mississippi River.

Black Carp Surveillance at Cypress Creek National Wildlife Refuge

Black carp pose a significant threat to aquatic resources, especially endangered mussels, within the Upper Mississippi River Basin. Black carp, utilized in aquaculture programs as a biological control agent against snail-borne fish parasites, were accidentally introduced into the wild when the Mississippi River inundated a private aquaculture facility in 1993. The first black carp captured in the wild was in 2003 by a commercial fisherman in Horseshoe Lake in Alexander County, Illinois. The black carp was thought to have entered Horseshoe Lake through the Cache River Basin during a period of high water. Since that time, Carterville Fishery Resources Office (FRO) has implemented a monitoring program for black carp, as well as other invasive Asian carp species, in the Cache River Basin. The Cache River Basin is a unique feature in southern Illinois. It is home to Cypress Creek National Wildlife Refuge and the Cache River Illinois State Natural Area. This area contains a

RAMSAR wetland of international importance (the Ramsar Convention of Wetlands is an international treaty which provides the framework for national action and international cooperation for the conservation and wise use of wetlands and their resources).

Infestations of bighead, silver, and especially black carp could threaten the native fish and mussel communities in this unique ecosystem. To date, no additional black carp have been found in Horseshoe Lake or the Cache River system; however, some juvenile silver carp have been captured, and not surprisingly, are believed to be present in relatively high numbers in the lower Cache River near its mouth at the Mississippi River. Nate Caswell, Carterville FRO

Spring Surveillance for Invasive Ruffe conducted in Lake Huron

lpena Fishery Resources Office (FRO) conducted surveillance efforts to detect the spread of spawning phase adult Eurasian ruffe (ruffe) in Thunder Bay, Lake Huron. Thunder Bay contains the only known population of ruffe in Lake Huron. The FRO conducted nighttime electrofishing surveys in near shore areas north and south of the Thunder Bay River, a known ruffe spawning location. The surveys were conducted on May 11 and 20. No ruffe were discovered as a result of the effort. Addressing the threats to aquatic species and providing effective conservation and management are important components of the Fisheries Program Vision for the Future. Anjanette Bowen, Alpena FRO

Large Numbers of Sturgeon captured in 2004 Spawning Run in the Bad and White Rivers

he long, drawn out spring of 2004 provided excellent conditions for Ashland Fisheries Resources Office's (FRO) annual assessment of spawning lake sturgeon in the Bad and White rivers in Wisconsin. Assessment nets were set on April 26th and ran through May 15th, during which a total of 178 sturgeon were captured and released. This was the largest number of lake sturgeon captured since assessment began 16 years ago. Water levels were low and remained fairly stable, and the water temperature remained near the low end of preferred spawning temperature in the high 40's and low 50's for the entire assessment period. The slow warm-up and low water likely contributed to the drawn out spawning run which helped the crew capture the large number of sturgeon.

Data collected included length, weight, girth, sex and stage of maturity, sea lamprey wounds, and information on existing tags. A quarter sized piece of pectoral fin tissue was collected for genetic analysis. For fish meeting certain size and gender criteria, a section of the pectoral fin ray was collected for age analysis. All sturgeon were marked with a yellow Floy tag and an internal passive integrated transponder PIT) tag. Data will be used to estimate the size, describe biological characteristics of fish, and to analyze the genetic characteristics of the spawning runs. Assistance was provided by the Bad River Natural Resources Department and the Great Lakes Indian Fish and Wildlife Commission, Great Lakes Section. Glenn Miller, Ashland FRO



-USFWS

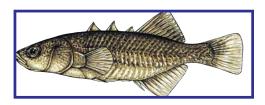
Ashland Fishery Resources Office biologists assess spawning sturgeon populations in the Bad and White rivers, Wisconsin, Data collected will be used to estimate the size, to describe biological characteristics of fish, and to analyze the genetic characteristics of the 2004 spawning runs.

Several Invasives captured in Lake Superior Survey

Biologists collected four invasive species along the south shore of Lake Superior in a spring aquatic invasive species survey conducted by the Ashland Fishery Resources Office (FRO). The invasive species included Eurasian ruffe, threespine stickleback, zebra mussel, and Eurasian watermilfoil.

Ruffe were captured from two new locations within the Keweenaw Waterway, where they were initially found in 2002. Threespine sticklebacks were captured in two new locations. including Pictured Rocks National Lakeshore and Grand Marais, Michigan. Eurasian watermilfoil was discovered in the Marquette, Michigan harbor along with two threespine sticklebacks and one zebra mussel, which had been previously found there. The single iuvenile zebra mussel was collected adjacent to an ore dock.

A reproducing population of zebra mussels has not been confirmed to exist in Marquette harbor. Spanning from Superior, Wisconsin to Grand Marais, Minnesota, this survey uses bottom trawling to target invasive species habitat and high risk introduction locations. The survey will also be conducted during summer and fall; and it is composed of permanent monitoring stations which provide biological data and early detection. *Gary Czypinski*, *Ashland FRO*



The threespine stickleback is an invasive species in Lake Supreior. They were captured in 2 new locations this year during the spring aquatic invasive survey conducted by the Ashland Fishery Resources Office.

Fish Health Inspection at Neosho National Fish Hatchery

Dick Nelson from the La Crosse Fish Health Center (FHC) traveled to the Neosho National Fish Hatchery (NFH) to complete the semi-annual fish health inspection prior to stocking rainbow trout into Lake Tanevcomo in the State of Missouri. The rearing of rainbow trout is part of a mitigation project with the Army Corps of Engineers and Neosho NFH. Fish distribution trucks from the Missouri Department of Conservation pick up fish at the hatchery and haul them to various sites on Lake Taneycomo. The health check looks at various fish tissues for signs of disease by using scientific procedures in virology, bacteriology, and parasitology. The lab is looking for the presence or

absence of seven certifiable fish pathogens as listed by the Fish and Wildlife Service 2004 Fish Health Policy and Fish Health procedures and protocols.

Rick Nelson, La Crosse FHC

Spring Spawning complete at Genoa National Fish Hatchery

Region 3 National Fish
Hatcheries (NFH) annually
produce over 20 million fish and
eggs for recovery, restoration,
mitigation, and conservation
activities across the United States.
Genoa NFH has historically been
one of the largest suppliers of fish
eggs, fry, and fingerlings (by
numbers produced) in the country.

Crews at Genoa NFH recently completed their spring distribution efforts for cold, cool, and warm water fish species along with their annual wild fish spawning operations on the Mississippi River and other tributaries. The station shipped over 8.2 million fertilized walleye, sauger, and lake sturgeon eggs to other Federal and cooperator agencies in six states to meet fishery management plan tasks. Additionally, the hatchery produced over 7.2 million fish of nine species to fulfill Federal, tribal, and state cooperator commitments in 10 states and three Native American nations. Programs supported include lake sturgeon restoration activities in the Midwest and Southeastern United States, Lake Superior coaster brook trout restoration activities, and host fish production for endangered mussel programs. The station will continue to stock additional fish and mussels throughout the coming months until winter blasts a signal to conclude this year's efforts.

Roger Gordon, Genoa NFH



-USFWS

Genoa National Fish Hatchery staff spawn a walleye on the Upper Mississippi River National Wildlife and Fish Refuge. Resultant eyed eggs, fry, and fingerlings support recovery, restoration, mitigation, and conservation activities across the United States.

Focus on Fish and Wildlife Newsletter – June 2004

The Ashland Fishery Resources ▲ Office (FRO) has shared its resource accomplishments through the Focus on Fish and Wildlife Newsletter since 1998. The newsletter is a written quarterly to keep our many cooperators informed about our activities and accomplishments. The latest issue was mailed to 118 local and national contacts. The topics from our June mailing included: Mount Maude Lake Wild Rice Restoration Project; Surveillance Detects Minor Ruffe Range Expansion During 2003; Fisheries Program Presentations at Opening of Whittlesey Creek NWR Exhibit; 2004 Tribal Wildlife and Tribal Landowner Incentive Grant Programs; and Coaster Brook Project is College Capstone Presentation. You can access the newsletter from the Internet web site at: http://midwest.fws.gov/ ashland/news/news.html.

Frank Stone, Ashland FRO

Public Use

Annual Spring Fish Survey performed at Crane Naval Base

Trane Naval Weapons Support Center (Base), located in central Indiana, is home to Lake Greenwood (820 acres) and several smaller ponds which support recreational fishing for sportfish species including largemouth bass, walleye, channel catfish, crappie, and bluegill. Carterville Fishery Resources Office (FRO) sampled the recreational fishery in Lake Greenwood and one pond during May. Biologicsts use the data collected to make management decisions regarding the fisheries. Carterville FRO is currently preparing an annual report to summarize the status of the fishery in the two lakes including management recommendations.

In addition, Genoa National Fish Hatchery stocks walleye fingerlings into Lake Greenwood annually in an effort to establish a walleye fishery. Biologists have collected harvestable size walleye during the annual surveys and some are turning up in anglers' creels.

Colby Wrasse, Carterville FRO



-USFWS

Carterville Fishery Resources Office (FRO) staff in partnership with the Crane Naval Weapons Support Center work up fish collected during electrofishing operations. Carterville FRO is currently preparing an annual report to summarize the status of the recreational fishery in 2 lakes on the base.

Happy Day for Veterans at Tomah Veterans Administraion Hospital

For more than 50 years, Fish and Wildlife Service employees at the Genoa National Fish Hatchery (NFH) have raised a variety of game fish species for stocking in public waters, including the American Legion Fishing Pond at the Tomah Veterans Administration (VA) Medical Center. Angling is a very popular activity that provides VA clients with many hours of outdoor recreational opportunities.

Since 1991, Fish and Wildlife Service staff and volunteers from the Genoa NFH, the La Crosse Fishery Resources Office (FRO), and the La Crosse Fish Health Center have helped sponsor a hospital-wide fishing tournament at the pond. The 2003 fishing tournament was held on May 19th under sunny blue skies with a stiff westerly wind that aided the casts of anglers on the handicap accessible fishing pier. Tomah Middle School students were also on hand to aid veterans who needed some assistance angling. Successful anglers registered their catch to win prizes awarded by the Tomah American Legion. By all accounts, there was a lot of exciting action during this year's event. Many more large fish (rainbow trout, largemouth bass, and bluegill) were caught than at any past tournament, making for some very memorable moments. The popularity of this annual event, complete with a fish fry lunch prepared and served by Fish and Wildlife Service staff, has grown into a highly anticipated and rewarding spring-time event for all who participate.

Scott Yess, La Crosse FRO

ish Bio



-USFWS

Fish and Wildlife Service staff and volunteers from the Genoa National Fish Hatchery, La Crosse Fishery Resources Office, and the La Crosse Fish Health Center help sponsor an annual fishing tournament at the Tomah Veterans Administration Medical Center. A fish fry was enjoyed by all after a hard morning of fishing!

Students learn Biodiversity

Fifth grade students from the Marquette, Michigan area gathered for a week-long educational (as well as fun) program at Bay Cliff Health Camp. Fish and Wildlife Service personnel presented information on the importance of biodiversity and how the sea lamprey and other aquatic invasive species are having a significant effect on the health of the aquatic ecosystem and the economic impacts to the Great Lakes, Over 100 students learned that aquatic organisms have evolved into specialized body shapes with specialized appendages, and they also enjoyed learning why the adaptations complemented the existence of each type of organism in specific habitats within the aquatic community.

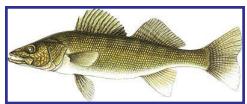
John Weisser, Marquette Biological Station

Cooperation with Native Americans

Mille Lacs Lake Walleye Survey
- "A Cold Operation"

The spring walleye spawn came L on strong during April and that meant survey time. The Great Lakes Indian Fish and Wildlife Commission (GLIFWC) requested assistance from both the La Crosse and Ashland fishery resources offices (FRO). Dave Wedan and Scott Yess (La Crosse FRO) and Gary Czypinski (Ashland FRO) assisted on Mille Lacs Lake this year. Weather conditions were cold and rainy during the 9 day spawning run. The team, which consisted of 2 GLIFWC boats, 2 Fish and Wildlife Service boats. and a Fond Du Lac boat, tagged over 10,000 walleye. The majority of the fish were males in the 17-22 inch range.

This effort was conducted in conjunction with a Minnesota Department of Natural Resources project which involved fyke netting. The information will be used to estimate the walleve population and set future harvest regulations. Mille Lacs Lake is the premiere walleye lake in Minnesota, and the harvest is allocated for both sport fishing and tribal spearing and netting. Harvest limits are set based on population estimates and the surplus that can be removed without depleting the population. Scott Yess, La Crosse FRO



Walleye

The La Crosse and Ashland fishery resources offices assisted the Great Lakes Indian Fish and Wildlife Commission with a population surey of walleye at Mille Lacs Lake, Minnesota. The information attained will be used to set future harvest regulations.

Ashland Fishery Resources Office assists with Lamprey Control

shland Fishery Resources Office (FRO) employees assisted the Great Lakes Indian Fish & Wildlife Commission (GLIFWC) and the Marquette Biological Station while receiving some hands-on experience with adult lamprey. Jessica Krajniak and Jonathan Pyatskowit aided GLIFWC Biologist Mike Plucinski with checking nets and marking captured lamprey in the Bad River, Wisconsin. Over 40 lamprey were caught, a surprisingly lower number compared with previous catches. Jessica also supported Marquette's Lamprey Control Team member, Sara Ruiter, by checking traps in the Middle, Amnicon, Poplar, and Brule rivers, but caught only one adult lamprey. Agencies work together to monitor the movements and characteristics of invasive sea lampreys while attempting to estimate the number of spawners in Lake Superior's tributaries.

Jessica Krajniak, Ashland FRO

Midwest Tribal Aquaculture Newsletter

The Ashland Fishery Resources Office (FRO) provides technical assistance to help numerous tribes develop fish hatchery programs. One aspect of this program is to publish a quarterly newsletter. The Midwest Tribal Aquaculture Network (MTAN) is dedicated to assist tribal hatchery programs through the sharing of cool/cold water fish culture practices.

This quarter's newsletter discusses: Marking System using Oxytetracycline, Experimental Treatment Used on Lake Trout Eggs, Aquaculture References from the World Wide Web, Blowers - Air Pumps or Compressors, and Minnesota Fish Producers Report Losses to Cormorants and Other Birds.

The MTAN has assisted tribal fish hatchery programs for the past 12 years. The rewards from this kind of technical assistance is providing information that enables hatchery programs to better utilize their resources and provide a healthier product for the fishery. The MTAN also helps to educate fish hatchery workers and direct them to other areas of opportunity so they can better research their specific needs. Issues of the MTAN, plus tribal hatchery stocking information, is accessible from the Ashland FRO web page. Readers can access this information by pointing their web browsers to: http:// midwest.fws.gov/ashland/mtan/ mtanhome.html.

Frank Stone, Ashland FRO

Leadership in Science and Technology

Asian Carp on the Middle Mississippi River National Wildlife Refuge

The invasive Asian carp (bighead and silver) are widespread and inhabit many of the backwaters of the Middle Mississippi River National Wildlife Refuge (NWR). Carterville Fishery Resources Office (FRO) has begun studying Asian carp usage of the Mississippi River. The data collected from this study will give fishery experts insight into the seasonal movements and habitat use of invasive Asian carp.

Carterville FRO surveyed backwaters of the Wilkinson Island Division of the Middle Mississippi River NWR, located in southern Illinois. Biologists used a variety of gear to collect Asian carp, which in the past have proven difficult to sample with conventional techniques. Bighead carp were common at the Wilkinson Island Refuge. The backwater areas were utilized by bighead carp of various sizes with fish up to 17 pounds collected.

Nate Caswell, Carterville FRO



-USFWS

These invasive bighead carp were captured in backwater areas of the Mississippi River in southern Illinois.

Protocol implemented to Minimize the Effects of Granular Bayluscide on Rare Organisms

isk management staff

Completed the "Protocol to Protect and Avoid Disturbance to Federal and/or State-Listed Endangered, Threatened, Candidate, or Special Concern Species and Critical or Proposed Critical Habitats in or near Great Lakes Streams Scheduled for Spot Applications of Granular Bayluscide to Assess Populations of Larval Sea Lampreys in the United States during 2004." The protocol was based on the state jurisdictional agency reviews during the granular Bayluscide assessment permit process and additional consultations with personnel of the Fish and Wildlife Service, Endangered Species Program. The protocol included a summary of the streams scheduled for granular Bayluscide assessments; details of known locations of listed species, Geographic Information System (GIS) map, procedures to protect and avoid disturbance; and an appendix with fact sheets that contained an image, description, and preferred habitat of the listed species in Minnesota, Wisconsin, Michigan, Ohio, and New York. The protocol was distributed to 12 field crews to minimize the risk to 20 Federal and/or state-listed endangered, threatened, candidate, and special concern species in or near 20 of 67 streams scheduled for granular Bayluscide assessments. All 5 Federal and state-listed species were designated in Michigan and included the bald eagle, eastern massasauga rattlesnake, Houghton's goldenrod, piping plover, and Pitcher's thistle. An

additional 15 state-listed species also were designated in Michigan and included beak grass, channel darter, common loon, common tern, Lake Huron locust, Lake Huron tansy, lake sturgeon, mooneye, northern goshawk, northern madtom, osprey, red-shouldered hawk, round-leaved orchis, sauger. wood turtle. The sea lamprey program continues to work closely with partners to control populations of sea lampreys in tributaries of the Great Lakes to protect the fishery and related economic activities in the basin (an estimated benefit of \$4-6 billion/ year to the region). John Weisser, Marquette Biological Station

Is the Middle Mississippi River National Wildlife Refuge a Nursery for Sturgeon and Paddlefish?

Yarterville Fishery Resources ✓Office (FRO) collected juvenile paddlefish and sturgeon at a priority acquisition site for the Middle Mississippi River National Wildlife Refuge (NWR) as part of a sturgeon habitat utilization project along the refuge. Nine young-ofyear paddlefish and seven youngof-the-year shovelnose sturgeon were captured. The paddlefish length ranged from 1.2 to 6.3 inches. The shovelnose sturgeon length ranged from 1.0 to 2.5 inches. These results indicate that the property could prove to be a very important acquisition to protect habitats for these two prehistoric river fish. Carterville FRO will continue to study this area to determine the extent to which it is utilized by young-of-theyear and juvenile paddlefish and sturgeon.

Nate Caswell, Carterville FRO

Aquatic Habitat Conservation and Management

Brickyard Creek Stream and Riparian Restoration

fish passage barrier was removed and the stream bank and forested slopes stabilized on Brickyard Creek in Bayfield County, Wisconsin. Brickyard Creek is a tributary to Lake Superior and supports anadromous fish. The landowners noticed that spring run stealhead trout were unable to pass a barrier created by bank slumping and contacted the Fish and Wildlife Service for assistance. The cause of the unstable slope was due to past clearing of the forest up to the point where the slope breaks sharply down to the creek. To solve the problem, a plan was developed with landowners to remove the barrier so minimal disruption of spring or fall spawning fish would occur and to stabilize the stream bank and slopes through tree planting. One of the most interesting things about the project site is the excellent regeneration of deer favored species such as hemlock, white spruce, and Canada yew. The 10 year Wildlife Habitat Development Agreement will help protect this unique site. Ted Koehler, Ashland FRO



-IISFWS

Trees are being planted to stabilize the stream banks on Brickyard Creek in Bayfield County, Wisconsin. A barrier to fish passage was also removed to allow upstream access by steelhead. Fish Passage Projects Funded in Illinois and Missouri

Tarterville Fishery Resources Office (FRO) secured funding through the National Fish Passage Program to complete 2 fish passage project proposals. Staff worked with the Illinois Department of Natural Resources to develop a proposal to add ramp structures to dams on the lower Big Rock Creek, Big Rock Creek, one of the largest tributaries to the Fox River, has excellent habitat and water quality and supports a diverse fish community including abundant populations of smallmouth bass. The Plano and Harrington dams are the only known in-stream structures to impede fish movements within Big Rock Creek. The ramp structures, to be built at the two dams, will reconnect 69 miles of tributary and perennial streams. One of Illinois' rarest fishes, the state endangered greater redhorse, and two state threatened mussels species, spike and slippershell, are expected to benefit from this project.

A second fish passage project was funded on Mingo National Wildlife Refuge (Refuge) in Missouri. This project will improve fish passage and restore aquatic resources by replacing the Ditch 11 structure which has been identified as a serious threat to the Refuge's fishery, mussels, and hardwood resources. Ditch 11 is the final of 4 fish passage projects that are required before an alligator gar restoration program can be initiated on the Refuge. *Greg Conover, Carterville FRO*

Road Stream Crossings in Northern Lower Michigan

Diologists Susan Wells and DHeather Enterline, Alpena Fishery Resources Office (FRO), met with representatives from the Montmorency County Road Commission (MCRC) and Huron Pines Resource Conservation and Development District (RC&D) to identify road crossing projects that prevent fish passage and contribute to sedimentation in the Thunder Bay River Watershed. The MCRC identified two sites they recognize as impeding fish passage. Engineering and labor for these sites will be provided by the MCRC. Additional money to purchase bottomless culverts for the two sites were requested from MCRC. Huron Pines RC&D acknowledged they had some money to put towards these projects. Wells informed the group that one of the sites had been submitted for funding through the Fish and Wildlife Service's Fish Passage Program but notification has not yet been received on funded projects. The site is located on Greasey Creek and would provide access to 6 miles of spawning and nursery habitat for brook trout in the Thunder Bay River Watershed. This is an example of collaboration between Federal and local governments to enhance aquatic habitat and foster positive working relationships to benefit fish and wildlife resources. Susan Wells, Alpena FRO

Workforce Management

Jordan River National Fish Hatchery partners with Area Agency on Aging

Since October 2003, the Jordan River National Fish Hatchery (NFH) has participated in the Senior Community Service Employment Program (Title V) with the Area Agency on Aging (Agency) located in Traverse City, Michigan. Title V is a job training program designed to provide useful part-time community service work for low income seniors age 55 and older. The program's goal is to put seniors in positions with non-profit agencies to gain work skills to increase their chances of permanent employment after the training is complete. Training periods typically last 6 months with a maximum of 23 hours per week that the enrollee can work. The Agency pays the seniors' wages and the host agency provides specific work and training. Mrs. Norma Sparks (Bellaire, Michigan) has been working/training at the hatchery since October 2003, and her services have recently been extended another three months. Norma has been doing a great job with a variety of duties at the hatchery which frees up valuable time for permanent staff. The NFH is required to provide at least two hours of training per pay period. Norma has learned many office duties (copying, faxing, computer activities, answering phones, etc.) that will assist her in finding a permanent job.

Rick Westerhof, Jordan River NFH



-USFWS

Norma Sparks has been working at the Jordan River National Fish Hatchery as part of the Senior Community Service Employment Program. This is a job training program designed to provide community service work and experience to enrollees to better enable them to compete for permanent employment opportunities.

Preparing for a Safe Boating Season

n May 3 Fishery Biologists Adam Kowalski, Aaron Woldt, and Scott Koproski spent the afternoon providing the Alpena Fishery Resources Office (FRO) staff with a refresher on boat safety and maintenance. Every boat owned and operated by the Alpena FRO was brought to the office parking lot and issues specific to each was highlighted. Woldt, Kowalski, and Koproski carefully went through every boat explaining hook-up and trailering, what is on the vessel for safety gear and where it is located, launching procedure, explanation of the braking system on the trailer when applicable, special attention that a particular vessel may need while operating it, and general maintenance before and after operating a vessel.

This was the first time that the Alpena FRO has conducted a pre-field season boat orientation meeting and it was welcomed and helpful for those individuals that have not operated the station vessels since the last field season.

This will now be an annual session for the Alpena FRO staff. Boat safety and maintenance training was developed to provide employees with opportunities to maintain competencies in proper boating procedures and to help ensure that all employees are properly trained to safely and effectively perform their boating duties. Safety training is an important component in the Fisheries Strategic Vision. Adam Kowalski, Alpena FRO

Sharing Administrative Knowledge

ntering an administrative Prosition for the Fish and Wildlife Service has become much more difficult over the years. Long gone are the days of office personnel just answering telephones and filing paperwork. With so many new administrative personnel, administrative workshops at a premium, and travel reductions, field offices have become very dependent on other offices to fill in during times of vacancies and train new administrative personnel. It helps to get some of the information "first hand" when you are working with so many computerized systems and increased administrative responsibilities.

In March, Deborah Jones, new Administrative Technician at the Pendills Creek National Fish Hatchery (NFH) near Brimley, Michigan, visited the Jordan River NFH in Elmira, Michigan. Clarice Beckner, Administrative Technician at the Jordan River NFH for the past 32 ½ years, familiarized Deborah with Fish and Wildlife Service procedures and computer programs.

Clarice Beckner, Jordan RiverNFH

Great Lakes - Big Rivers Regional Fisheries Offices

Regional Office, 1 Federal Drive, Fort Snelling, MN 55111-4056; 612/713-5111 Gerry Jackson (gerry_jackson@fws.gov)

Michigan

Alpena Fishery Resources Office Federal Building; 145 Water Street Alpena, MI 49707 Jerry McClain (jerry_mcclain@fws.gov) 989/356-3052

Jordan River National Fish Hatchery 6623 Turner Road Elmira, MI 49730 Rick Westerhof (rick_westerhof@fws.gov) 231/584-2461

Ludington Biological Station 229 South Jebavy Drive Ludington, MI 49431 Dennis Lavis (dennis_lavis@fws.gov) 231/845-6205

Marquette Biological Station 1924 Industrial Parkway Marquette, MI 49855 Gary Klar (gerald_klar@fws.gov) 906/226-6571

Pendills Creek/Sullivan Creek National Fish Hatchery 21990 West Trout Lane Brimley, MI 49715 Curt Friez (curt_friez@fws.gov) 906/437-5231

Missouri

Columbia Fishery Resources Office 101 Park Deville Drive; Suite A Columbia, MO 65203 Tracy Hill (tracy_hill@fws.gov) 573/234-2132

Neosho National Fish Hatchery East Park Street Neosho, MO 64850 David Hendrix (david_hendrix@fws.gov) 417/451-0554

Illinois

Carterville Fishery Resources Office 9053 Route 148, Suite A Marion, Illinois 62959 Rob Simmonds (rob_simmonds@fws.gov) 618/997-6869

Wisconsin

Ashland Fishery Resources Office 2800 Lake Shore Drive East Ashland, WI 54806 Mark Dryer (mark_dryer@fws.gov) 715/682-6185

Genoa National Fish Hatchery S5689 State Road 35 Genoa, WI 54632-8836 Doug Aloisi (doug_aloisi@fws.gov) 608/689-2605

Green Bay Fishery Resources Office 2661 Scott Tower Drive New Franklin, WI 54229 Mark Holey (mark_holey@fws.gov) 920/866-1717

Iron River National Fish Hatchery 10325 Fairview Road Iron River, WI 54847 Dale Bast (dale_bast@fws.gov) 715/372-8510

LaCrosse Fish Health Center 555 Lester Avenue Onalaska, WI 54650 Richard Nelson (rick_nelson@fws.gov) 608/783-8441

LaCrosse Fishery Resources Office 555 Lester Avenue Onalaska, WI 54650 Pamella Thiel (pam_thiel@fws.gov) 608/783-8431



Fish Lines Region 3, Great Lakes/Big Rivers 2004 Vol. 2 No. 4

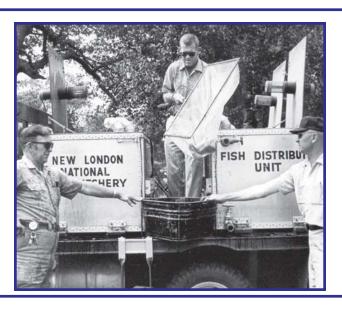
U.S. Fish & Wildlife Service Region 3 Divsion of Fisheries 1 Federal Drive Ft. Snelling, MN 55111

Phone: 612/713-5111

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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Windows in time

A Glimpse into our Proud Past

Hatchery crew stock fish that were transported with the fish distribution unit from the New London National Fish Hatchery. Can you identify any of the people in the photo?

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