U.S. FISH AND WILDLIFE SERVICE
COLUMBIA FISHERY RESOURCES OFFICE
ACCOMPLISHMENT REPORT

...Dedicated to Conserving Big River Ecosystems in America's Heartland.

Partnerships and Accountability

Adult Pallid Sturgeon Returned to Missouri River

During March and April of 2005, biologists from the Columbia FRO collected pallid sturgeon broodstock from the Missouri River for propagation at Gavin's Point National Fish Hatchery. Six fish were collected near Weldon Springs, MO using gill nets. The fish were transported to the hatchery where staff attempted to spawn them. Unfortunately all six fish were immature and none were ready to spawn. In order to gain as much information from these fish as possible, Fishery Biologist, Aaron Delonay, from the U.S. Geological Survey implanted 18 month ultrasonic transmitters in each sturgeon prior to release into the Missouri River. The transmitters will enable biologists from USGS and Nebraska Game and Fish Commission (NGFC) to track their movement, habitat selection and assist Columbia FRO in their future recapture during next year's spawn. These fish were reintroduced to the Missouri River near St. Helena, NE.

Columbia FRO and USGS personnel telemetry tagging pallid sturgeon

Telemetry data from endangered pallid sturgeon will help the Fish and Wildlife Service recommend future habitat modification and improvements on the Missouri River. This project supports the Service's goal of restoring declining fish populations and helping to preserve endangered species. Coordinating with other agencies also fulfils the Service's Partnership and Accountability Goal of the Fisheries Program Vision for the Future.

Andy T. Plauck

Doyle Talks Muddy Water to Smallmouth Alliance

The Missouri Chapter of the Smallmouth Alliance was the target of Wyatt Doyle's efforts to promote fisheries conservation and enhance partnerships with sportsman groups. This was the second opportunity given to Columbia FRO to speak to this influential group, which boasts membership of over 300 anglers and conservationists. In 2004, Wyatt gave an overview of our mission in outreach while introducing some of the many services offered by the USFWS. He used our partnership with Ecological Services to introduce Malacologist (Andy Roberts) to the group, who in turn, showed stunning and rare underwater video of mussels releasing their Glochidia into river fishes by use of their life-like lures. In 2005, the Missouri River was the topic and Wyatt used his four years of experience as a Missouri River fishery biologist to outline the many issues facing their local St. Louis waterway. Over 50 power-point pictures of enormous and unusual fish were used to show the diversity of such a system and impress on the group the importance of protecting it for future generations. The Alliance members expressed sincere gratitude for the brief glimpse into the Big Muddy and were gracious enough to extend an additional invitation to speak next year. Partnerships with friends groups like the Smallmouth Alliance will enhance our future credibility as a Resource Trust Agency. Developing long-term professional relationships will allow us to call on such groups when another voice is needed to aide in our conservation efforts.

Smallmouth Bass
Joseph Tomerelli

Wyatt J. Doyle

MO River Teachers Workshop at Overton Bottoms

The Missouri Department of Natural Resources (DNR) hosted an 'in-service' workshop for Boone County public school teachers. The workshop provided college credit to area teachers and highlighted Missouri River history, morphology, and resources. The workshop began on June 13th with presentations from the DNR, Boone County Historical Society, University of Missouri, Project WET, Missouri River literature review and Columbia FRO. Jeff Finley provided an overview of the operations and projects of the Columbia FRO and insight into the diverse fish communities that inhabit the Missouri River.

Jennifer Johnson discusses forage fish found in flood-plain habitats to teachers from Boone County Schools.

The following day a field trip was planned to provide teachers with a tour of several historic sites along the river and of two units of the Big Muddy National Fish and Wildlife Refuge. Due to flooding conditions on the river these events were cancelled. However Columbia FRO biologists Geno Adams, Jennifer Johnson, Jeff Finley and refuge Outreach Specialist Tim Haller provided an alternative to the river tour by visiting the inundated flood plain and scour holes at the Overton Bottoms Unit of the Refuge. Columbia FRO biologists set various sized fyke nets in the connected scour holes and discussed the

importance of flood plain connectivity with the river and the temporary and permanent fish residents of these habitats.
The teachers left the workshop with a greater understanding of the river, its dynamic potential and the benefits the Big Muddy National Fish and Wildlife Refuge provide to commerce, flood control, recreation and riverine fish communities. This endeavor supports the "Public Use" and "Partnership and Accountability" goals of the Fisheries Program Vision for the Future by involving public educators and providing insight to the benefits of floodplain connectivity. *Jeff M. Finley*

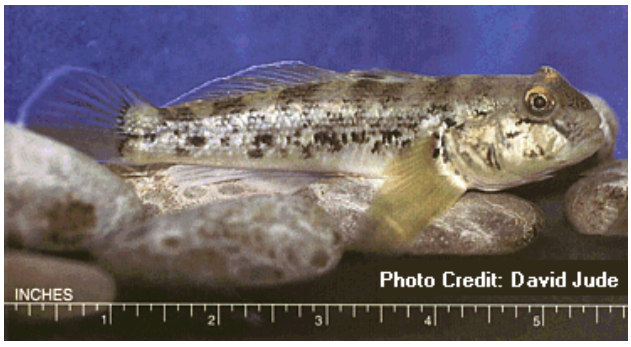
Habitat Assessment Project Field Meeting on the Lower Missouri River

Representatives from the Army Corps of Engineers, US Fish and Wildlife Service and Nebraska Game and Fish Commission met on the lower Missouri River near Columbia on June 23, 2005 to discuss issues relating to the startup of the Habitat Assessment Project. The Habitat Assessment Project (formerly known as shallow water habitat) is to monitor and provide biological and hydrologic feed back on the physical reconstruction of lost habitats by ACOE work crews on the canalized portion of the Missouri River. Sampling site selection, sampling gears and mapping were all subjects of discussion. Actually being on the river and seeing what is being discussed helped immensely in understanding the issues that the field crews are encountering as this new project gets underway.

These results will lead to our vision in leadership in science to recover an endangered species and protect sensitive communities. This project will assist the Service's Fishery Program with meeting its Partnership and Accountability goal of developing collaborative conservation strategies for aquatic resources. *Andrew B. Starostka*

Surveillance of the Exotic Round Goby on the Illinois River

The annual "Carp Corral/Goby Roundup" organized by the LaCrosse Fishery Resources Office of the US Fish and Wildlife Service, took place June 14 to June 17 over a 180-mile stretch of the Illinois waterway system. The purpose of the roundup is to determine the downstream range expansion of the round goby and the upstream distribution of silver and bighead carp. Louise Mauldin, Fishery Biologist with the Columbia FRO, and Deloris Hampton, volunteer for the Nature Conservancy, were one of twelve crews sampling for the invasive species. Federal, State, and Regional staffs participated in this important survey along with not-for-profit agencies and community volunteers.



The round goby is from the Black and Caspian Seas, brought to the Great Lakes in ballast waters discharged by transoceanic vessels. Now established in the Great Lakes, the round goby poses a threat to native fishes by competing for food and displacing several species from optimal spawning and feeding habitats. The goby is currently moving its way from Lake Michigan

towards the Mississippi River via the Illinois waterway system. The last known downstream collection was made in 2003 below the Peoria Lock and Dam on the Illinois River. Sampling crews this year sampled stretches of the Little Calumet River, Calumet Sag Channel, Chicago Sanitary and Ship Canal, Des Plaines River and Illinois River. In the four day survey, crews deployed minnow traps baited with smelt to target round goby. Traps were set primarily along shallow rocky areas, the preferred habitat of the round goby, and at mouths of tributaries, outfalls and water intakes. Angling was also used to try and capture the invasive species. No round goby were collected by Louise's crew between river miles 136 and 142 of the Illinois River.

The Fish and Wildlife Service continues to work with states, tribes, NGOs and others by conducting surveys and monitoring efforts to detect, control and prevent the spread of aquatic nuisance species to new locations and limit the growth of established populations.

Louise M. Mauldin

Aquatic Species Conservation and Management

End of a "Wild" Pallid Sturgeon Season

June 30th marked the end of the 2004-2005 pallid sturgeon sampling season on the Missouri River. For Columbia FRO, this turned out to be a record setting season for pallid sturgeon captures on the lower Missouri River with 37 captures, shattering the old record of 25 set back in the 2003-2004 season. Over the past decade, the Columbia FRO has experienced an increase in the number of pallids captured (Figure 1), most notably, there has been an increase in the number of wild pallids captured (i.e. not stocked or tagged). Since 1999, Columbia FRO has captured a total of 30 wild pallid sturgeon, of which, a record 13 were collected this past season. This topples the old record of 5 set back in the 2003-2004 season. Wild pallid sturgeon are important in brood stock development and indicate the presence of a naturally reproducing population in the river. In years to come, biologists at Columbia FRO will be looking to wild pallid captures as an indication of the successful recovery of this endangered species. These ongoing efforts in recovering this endangered species and understanding its role in Big River ecology are in full collaboration with the Native Species goal of the "Fisheries Program Vision for the Future".

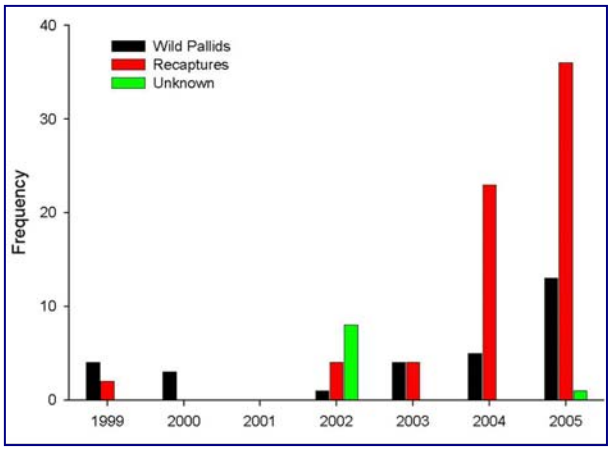


Figure 1. Missouri River pallid sturgeon captures from 1999 to June 30, 2005 from river mile 0 to 250. These captures included: wild pallids (no tags or markings when captured); recaptures (coded wire tagged fish from 1992, 1997, and 2004 stockings and elostomer tagged hatchery fish); and pallids of unknown origin (fish that were not scanned for tags).

Utrup with pallid sturgeon

Nicholas J. Utrup

Five Pallids Captured at Lisbon Bottoms in 48 hours

On June 20-21, 2005, Fishery Biologists Corey Lee and Wyatt Doyle captured five pallid sturgeon at the Lisbon Bottoms unit of the Big Muddy National Fish and Wildlife Refuge. The Lisbon Bottoms unit of the Refuge contains a chute that formed naturally during the Flood of 1993. This chute continued to evolve into a chute-sandbar complex during flooding in 1995 and 1996. The Columbia FRO and USGS geomorphologists have studied Lisbon Chute since 1997 watching the chute along with species composition transform from year to year. The chute was also the site of a very important endangered species discovery in 1997. Pallid sturgeon reproduction was documented for the first time in 50 years on the lower Missouri River at Lisbon Chute in 1997 when a larval pallid was collected.

Lee with pallid at the mouth of Lisbon Chute

Two stocked pallids and two possible wild pallids were captured in Lisbon Chute on June 20, while trammel netting and otter trawling. One pallid was captured adjacent to Lisbon Chute on the main river while trammel netting on June 21. The effort inside the chute on June 20 captured four pallids to mark the greatest number of pallids captured in one day and in one area for the Columbia FRO. The Columbia FRO has also captured more juvenile pallids at the Lisbon Bottoms unit than anywhere else on the river.

Increased focus, stocking, funding, expertise and manpower have contributed to Columbia FRO's efforts to recover endangered pallid sturgeon populations to the Missouri River thus supporting the 'Native Species' goal of the 'Fisheries Program Vision for the Future'.

Corey W. Lee

Another Large Lake Sturgeon Captured At Mouth of Osage River

In the past eight years of sampling the lower Missouri River large lake sturgeon (over 1 meter long) have simply not been found, until recently. Last month Columbia FRO collected a 1,348 mm lake sturgeon only to be outdone. Lake sturgeon are listed as a state endangered species in Missouri. Their populations were strong until over fishing for the caviar trade decimated the populations in the late 1890's. Efforts to recover this species by the Missouri Department of Conservation have resulted in the stocking of 230,000 lake sturgeon since 1988. These fish are tagged with pit tags, coded wire tags or both.

On June 30th, the final day of trawling for the Missouri River pallid sturgeon sampling season, service biologists Wyatt Doyle, Corey Lee, and STEP student Casey Bergthold netted a 1,488 mm long lake sturgeon. The sturgeon was captured while stern trawling using a 16 ft. otter trawl near Missouri River mile 130. It appeared to be of wild origin and in good physical condition. There was a small scar on the fish's right operculum indicating it may have lost a tag. Project leader Tracy Hill informed the crew that

operculum tags were frequently used in lake sturgeon research in the Great Lakes and there are no records of operculum tags having been used in the Lower Missouri River. The large lake sturgeon collected last month had been fin clipped, another technique once used on the Great Lakes. This evidence raises the question; *could these fish have migrated from the Great Lakes?* Age estimates, based on compiled lake sturgeon data, predicted that this fish was 25-30 years old at time of capture. Snout to fork length measurements were taken, the sturgeon was PIT tagged, and released. Later that same day, a smaller lake sturgeon was netted in the same area. It too was measured, tagged, and released.

Both of the aforementioned lake sturgeon were captured in the mixing zone of the Osage and Missouri Rivers. A 4°C. difference in temperature was recorded between the waters of the Missouri and the Osage. Additionally, turbidity in the Osage was near zero while turbidity in the Missouri was much higher. Columbia FRO intends to continue monitoring the Osage River mouth as anecdotal evidence suggests sturgeon congregate in this area.

The information gathered from these sampling efforts will assist the Columbia FRO in supporting the 'Aquatic Species Conservation Management' goal of the Fisheries Program Vision for the future by obtaining habitat preference information on aquatic species of concern.

Casey L. Bergthold

Technical Group Meeting for a Spring Rise on the Missouri River

Project Leader Tracy Hill and Fishery Biologist Wyatt Doyle traveled to Bismarck, ND on 27 June to attend the second meeting of the Missouri River Spring Rise Pallid Sturgeon/Fish and Wildlife Technical Group. The group's tasks include both developing Missouri River Spring Rise options for consideration by the Plenary Group as well as providing the Plenary Group with technical information that they will require to develop a Spring Rise proposal. A Spring Rise on the Missouri River would be a significant increase in water flows that is generally designed to accomplish specific goals such as shifting sedimentation to create new sandbars and islands, providing habitat for pallid

sturgeon, and providing and transporting nutrients. During the two day meeting the technical group focused on reaching agreement on providing advice to the Plenary Group regarding the Spring Rise regime. Three models for a Spring Rise were proposed by the technical group for consideration by the Plenary Group. The technical group will be holding two conference calls to further refine the models and establish the level of monitoring that will be necessary to evaluate the Spring Rise event before its third and final meeting scheduled for 20 July.

Columbia FRO Staff setting gear in scour hole during flood plain connectivity.

Involvement in this multi-partnered collaborative effort is another example of Columbia FRO's commitment to the following Fisheries Vision Priorities of "Partnerships and Accountability" and "Aquatic Species Conservation and Management".

Tracy D. Hill

Public Use

Sturgeon Huggers

When Southern Boone County Middle School requested a workshop on Missouri River Resources the Columbia FRO was ready to appease. Sixty students enrolled in a voluntary summer school outdoors education program to learn more about nature resources in vicinity of their rural community of Ashland, MO. Teresa McNeely, one of the summer school teachers, invited Fishery Biologist Jeff Finley to provide a workshop of his choice to these 6-8 grade classes. Finley enlisted the help of Fishery Biologists Geno Adams and Andy Starostka for the June 28th workshop. Since the Missouri River is only a few miles away and these children are familiar with sport fishes in the river. Given this, the choice of highlighting sturgeon was easy.


Finley printing shirts with small sturgeon

So Bo Co Student displays his shirt.

Students began the workshop with a brief introduction of USFWS and Columbia FRO activities involving sturgeon species on the Missouri River. They were then divided into two groups; one group was given a presentation on net types used to collect sturgeon, boats and equipment, while the other group took a virtual tour using interactive media on the sturgeon species found in North America with emphasis on Missouri River sturgeon and the work of the Columbia FRO. The students reconvened to make fish print tee shirts using the ventral surface of small shovelnose sturgeon collected the day before. When the session ended the children asked Andy, Geno and Jeff to autograph their shirts.

The students were extremely excited and eager to show friends and family their shirts and share what they had learned. The following day biologist from Columbia FRO stopped into the town of Ashland to fuel up vehicles and boats when several patrons inquired "Are you the sturgeon guys that were at the school yesterday?" They humbly replied yes and several Ashland area children have since been spotted proudly displaying their tee shirts.

Our effort to reach out to river influenced communities teaches conservation of the Missouri River and its resources for the benefit of the public as outlined in the 'Public Use' goal of the Fisheries Program Vision for the Future.

Jeff M. Finley

Desoto Lake and the Mossy-back Cat

In cooperation with the Iowa Department of Natural Resources, the DeSoto Lake fish community was sampled June 20 through June 22, 2005 by Fishery Biologists Louise Mauldin, Jeff Finley, and Geno Adams. DeSoto Lake is an 800-acre oxbow lake located on DeSoto National Wildlife Refuge on the border between Iowa and Nebraska. It was renovated in the early 1980's with the current sampling conducted in an effort to fulfill objective 3.1, action 3.1.2 of the recreational fishing goal: "Provide increased expertise and assistance to help develop and implement fish and other aquatic resource management plans on National Wildlife Refuges". It was an excellent opportunity to collaborate work efforts with the Iowa Department of Natural Resources to reach a common goal. Sampling consisted of modified fyke nets and both day and nighttime electrofishing. A variety of different fish species were captured including bluegill, crappie, channel catfish, freshwater drum, largemouth bass, and gizzard shad. Biologists will take the data collected during this sampling exercise and develop management options that will allow for increased size structure of largemouth bass and increased abundance of crappie.

A happy Adams heaves this monster up for a picture.

The highlight of the trip was a flathead catfish that was captured during daytime electrofishing just down from the DeSoto National Wildlife Refuge visitor center. This amazing fish was 1,300 mm long and weighed around 27 kg or 60 lbs! After the lakes renovation in the early 1980's, flathead fingerlings were stocked in an effort to control nuisance populations of bullheads. This flathead is likely a remnant resident of that stocking. Though ageing structures were not taken, it was evident this fish was an old

timer having been around so long it had algae growing on its back!

W, Geno Adams

Public Fishing Lake at Fort Leavenworth Military Post

June 6th through 8th, Fishery Biologists from the Columbia FRO in conjunction with Fort Leavenworth Natural Resources Director Matt Nowak surveyed two lakes, Smith and Merritt, both located on the instillation. Residents of the post actively use these lakes for recreational fishing. The activity prompted an article in the local newspaper, the *Fort Leavenworth Lamp*. A two page article with interviews and pictures of the survey work was published on June 30th.

Fishery Biologists Cliff Wilson and Geno Adams, as well as step student Ryan Tilley used trap nets, mini-fyke nets, and electrofishing to survey the fish populations in the two lakes. Both lakes were found to contain large populations of stunted bluegill and bluegill hybrids. Combined the lakes contained only 10 largemouth bass weighing greater than one pound, the largest of which weighed 5.41 pounds. Anglers are currently prohibited from keeping fish due to catch and release regulations enforced by the post. After the data from this survey is analyzed it is anticipated that a new management plan can be implicated that will better serve the interest of all user groups.

Wilson and Tilley dipping fish in Ft. Leavenworth lake. Photo by Ft. Leavenworth Lamp.

This survey and the subsequent management plan supports the U.S. Fish and Wildlife Services "Public Use" objectives of the 'Fisheries Program Vision for the Future' by enhancing recreational fishing opportunities on Service and Department of Defense lands.

Cliff D. Wilson

Aquatic Habitat Conservation and Management

Partnership Approach to Protect Maries River

Fishery Biologist Nick Frohnauer and Fish and Wildlife Biologist Rick Hansen of Ecological Services Columbia Field Office participated in an informational field trip to the Maries River on June 10, 2005. The event was organized by State Representative Tom Loehner to address bank erosion and habitat loss. The objectives of the trip were to identify problems landowners face along the Maries River and brainstorm possible solutions. In addition to the Fish and Wildlife Service, the trip was attended by the Missouri Department of Conservation, Missouri Department of Natural Resources, Army Corps of Engineers, Farm Bureau Service, area landowners, and private organizations. Participants visited several sites along the river that were indicative of the problems. They also visited with the sites landowners to get their view on potential solutions and

what has worked for them. The Maries River experiences high variability in stream flows resulting in flood problems and bank erosion. Landowners were looking for professional advice on ways to stabilize banks and identify cost cutting measures. One idea was blasting rock from nearby cliffs for bank stabilization versus having it hauled from a distant sight. Nick was along to identify federal funding opportunities through the National Fish Passage Program.

Limiting degradation or restoring degraded habitat promotes the Services commitment to aquatic habitat conservation and management. This project meets the Fisheries Program Vision for the Future Objective of working with other Service Programs to leverage available funding and expertise, and maximize the attainment of aquatic resource conservation goals.

Nicholas K. Frohnauer

Leadership in Science and Technology

Reference Collection Goes Digital

Fishery Biologist, Jennifer Johnson has begun photographing commonly misidentified fish species from the station's reference collection and linking the photos to a database. There are currently 194 preserved specimens representing 78 species in the physical collection. The database will provide information such as where and when individual specimens were collected and key characteristics. Johnson is using a Scion Color Digital Camera and Scion VisiCapture software which is primarily used for aging fish structures. She will complete photographing the entire collection as the field sampling schedule permits.

These photos of prominent characteristics will aid in correct identification of fish species and provide a digital image that may be used for other purposes. Jennifer's effort to utilize state-of-the-art scientific tools and equipment for multiple applications and promote the conservation efforts of big river ecosystems supports the 'Leadership in Science and Technology' goal of the 'Fisheries Program Vision for the Future'. *Jennifer L. Johnson*

From top to bottom; channel, river and sand shiners. Three Missouri River species commonly misidentified.

Workforce Management

A Moment to Remember Debin Benish

Debin Benish, owner of the local computer company Delta Systems, passed away after a long battle with cancer. She aided Columbia FRO and MICRA with the ACCESS programming to link our paddlefish recaptures. She was a computer programmer with the heart of a biologist. Her early education was in biology. She had worked in the field briefly assessing fish use/growth in the warmer waters created by power plant discharges. She was training last fall in the state's volunteer program to become a Master Naturalist. Working with Debin was a joy. She seemed to find the world a fascinating place and wondered about everything. While Fishery Biologist Joanne Grady has been working as the MICRA database coordinator, she's encountered biologists whose eyes glazed over when she tried to explain the data handling, and programmers frustrated by the numerous "human data errors" inherent to the reality of our project. Debin just got it. She understood the choices biologists would need to make in the boat and was intrigued by the additional challenge each one of them created for the coding. She sometimes worked as the translator between Joanne Grady and Delta System's other programmer. Debin's energy was invigorating. She thought the National Paddlefish Stock Assessment Project was an exciting interesting challenge and was enthusiastic about helping us get to where we wanted to be. It is our hope that when Debin arrived at her destination that she was gifted with the Divine Code and that she now has the answer to many of life's mysteries. She knows how the world was created, precisely why the dinosaurs died off, and EXACTLY how many paddlefish exist in the universe. We will miss her.

Joanne M. Grady

Columbia FRO Staff

Tracy D. Hill– Project Leader
Debra L. Tuner- Administrative Assistant
Joanne M. Grady – Branch Chief, Fisheries Conservation
Wyatt J. Doyle – Branch Chief, Corps Operations
Louise M. Mauldin – Team Leader, Refuge Assistance
Andrew B. Starostka – Team Leader, ANS/Habitat Assessment
Jeff M. Finley – Fishery Biologist
Corey W. Lee – Fishery Biologist
(Geno)Wells E. Adams – Fishery Biologist
Nicholas K. Frohnauer – Fishery Biologist
Nicholas J. Utrup – Fishery Biologist
Andy T. Plauck – Fishery Biologist
Cliff D. Wilson – Fishery Biologist
Jennifer L. Johnson – Fisheries Biologist
Casey L. Bergthold – Fisheries Biological Sciences Technician
Ryan P. Tilley – Fisheries Biological Sciences Technician
Devin B. Preston – Fisheries Biological Sciences Technician