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On the Cover: A blufftop view of Lock & Dam #1 on the lower Osage River. Photo credit: Jeff Finley, USFWS.

*Above: Snow geese (*Chen caerulescens*) all but obliterate the sky from view at Swan Lake National Wildlife Refuge. Photo credit: Rick Hansen, USFWS.*

Perspectives on Osage River Lock & Dam #1

The following article provides viewpoints from four staff members that work, live and care about the Osage River.

The Osage River in central Missouri is a beautiful river with a long and fascinating history. The river was made famous by, and is named after, a large group of Native American people that once lived along its banks. Evidence of their time lie scattered in the riverbed--bits and pieces of stone tools and pottery skillfully crafted long ago. One area shows evidence of continuous human occupation dating back to end of the last ice age, almost 10,000 years ago. While this was a very long period in human history, the remains left behind are difficult to find even for the most trained eye. But at river mile 12, there is an obvious remnant of a period in history that has been all but forgotten.

At river mile 12 lie the ruins of Lock & Dam #1. Stretching across the entire channel of the Osage, this was the crafty work of Europeans in the early 1900's. Those were the days when steamboats toiled up the Osage River to deliver goods to settlers living in remote, central Missouri river ports. Like other rivers at the time,

navigating the Osage was risky because of the number of shoals along the way. These shallow areas occurred every 2 miles of river and greatly frustrated the steamboat industry causing boats to run aground. Beginning in the middle 1800's the U.S. Army Corps of Engineers began dredging and constructing training structures to create deep, navigable channels through all the shoals of the Osage River. The lock and dam was just a part of this navigation system, allowing the easy



At river mile 12, the remains of Lock & Dam #1 stretch across the entire channel of the Osage River. Photo credit: Jeff Finely, USFWS.

passage of steamboats through one of the most difficult portions of the river. It was not long before other interests took precedence on the Osage. The last time a steamboat was used was to aid the construction of Bagnell Dam, which created hydropower and Lake of the Ozarks in 1932. Shortly after, the entire navigation system on the

Osage River was abandoned, including Lock & Dam #1. Other reservoirs were created in the basin creating an economy of recreation, hydropower, and farming that quickly overshadowed the history of the area.

Today, 80 miles of the Osage River remains below Bagnell Dam before it empties into the

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Missouri River. The interest in the river itself has now shifted to more pleasurable pursuits such as fishing, hunting and recreational boating. The dilapidated condition of the now privately-owned Lock & Dam #1 is causing a number of problems on the river. While its lock once provided safe passage for boats, it is now dysfunctional, causing serious navigational hazards for all watercraft. The structure is dangerous for swimmers with forceful hydraulics including a menacing whirlpool that draws water under the dam. Ecologically, it is believed to block spawning runs of a number of important fish species potentially including paddlefish, American eel, walleye, sauger, white bass, lake sturgeon, and the federally endangered pallid sturgeon. As with any ecosystem, one effect leads to another.

Over 30 species of freshwater mussels occur in the lower Osage River including important populations of three federally endangered species. These ecologically important animals depend upon different fish species to complete their life cycle. Fewer fish in the river means less mussel reproduction.

The situation with Lock and Dam #1 on the Osage River sounds like an easy problem to fix. Surely creating fish passage will be much easier than passing steamboats—just remove the structure and allow people and fish to move freely about the river. However, there is a catch. When the dam was created, it impounded 20 miles of river. Over time, the river appears to have deposited an enormous amount of gravel upstream of the structure. So much material has

been deposited that the upstream reach has become a river again and there is a 9 foot drop in the river bottom at the structure. Mussel beds have formed along the shoals and islands. Complete removal of the lock and dam would mobilize a massive amount of material. Biologists fear that the river would then begin an unraveling process as sediment and gravel migrate downstream, creating an environmental disaster that could last for decades. The river's banks, channels, islands, farmland, and other



A view of the plunge pool and powerful hydraulics created by debris in the upper portion of the old lock. Photo credit: Andy Roberts, USFWS.

important habitat would be eroded both upstream and downstream of the dam. To make matters worse, there may not be much time before the structure fails and is removed for us by the Osage River.

There is a group of people, including state and federal natural resource agencies, interested in fixing the multitude of problems at

Lock and Dam #1. To say we are interested is actually an understatement—we are very anxious. Time may be short, and the potential environmental disaster looms. However, the Osage River is primed for the restoration of fish passage because the habitat in the lower 80 miles of the river has been improved recently. Major operational changes have been implemented at Bagnell Dam that have improved water quality, reduced bank erosion, and provided ecological flows to improve spawning conditions for fish and other aquatic life. Additionally, more restoration is planned on the river in the next 40 years. Now we just need to get the fish up the river. The solution may be as easy as stabilizing the structure with rock and creating an area for fish and boats to pass. The

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difficult part—money. Acquiring the necessary funding is more than difficult, especially these days with the federal government facing a budget crisis. I am hopeful that if we face this problem with the same determination as the settlers had moving the steamboats up the river, we will be successful. Time is ticking...watching the Osage River flow through Lock and Dam #1 makes me think of sand flowing through an hour glass.

Andy Roberts
Ecological Services



The broken and eroded concrete, twisted metal and decaying timbers of Lock & Dam #1. Photo credit: Patty Herman, USFWS.

Much of the United States is currently experiencing severe drought conditions and mid-Missouri is no exception. Reports of near-record low water levels in the Mississippi River, barge traffic restriction and even rock blasting to maintain a safe navigation channel cause big river biologists to pause and reflect. As a former Mighty Miss river rat, I have many pictures of the river at flood stage but no pictures of the river at the other extreme. Of course, this made me reflect about the low water conditions in my own “backyard.” As I asked field crews to snap landscape pictures of the Missouri River whenever time permitted, my thoughts immediately turned to the Osage River and Lock



Whirlpool formed by undercutting of the dam sill adjacent to lock wall. Photo credit: Jeff Finley, USFWS.

and Dam #1.

An opportunity to explore a historic dam doesn't present itself very often. The last pictures we had of Lock and Dam #1 at low water were from 2006. Andy Roberts, Fish & Wildlife Biologist, had taken a number of photos of Lock & Dam #1 while conducting mussel surveys upstream. We also had photos taken by Missouri Department of Conservation that same year. Our more recent photos of the dam were all taken during high water and didn't allow for much descriptive quality or comparative value. I approached Jeff Finley and Andy Roberts with the idea of a day trip to the dam. Both biologists agreed that it was opportune, not only for pictures but also for “shelling.” The low water and exposed gravel bars would allow them to look for freshwater mussel shells as part of an ongoing inventory of the river.

We timed our trip perfectly to coincide with the “January thaw” and temperatures were balmy - in the mid 70's. The overcast skies weren't ideal for a photo shoot, however water levels were perfect. Downstream access would have been impossible with a prop boat but the water was just deep enough for the jet boat to glide right to the base of the dam. Andy Roberts, Jeff Finley,

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Rocks and boulders present
Barrier between L&D#1 and open river

Rocks and boulders absent
Gravel bars present
Connected water to open river



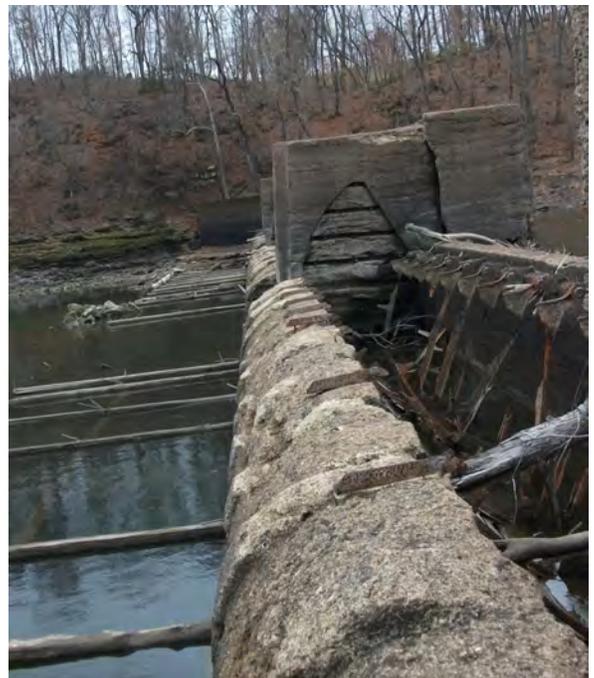
Left: A simple comparison of the degrading pillar shows that the elevation of the dam sill appears to have changed since 2006. Above: The boulders protecting the cribbing below the dam appear to have been washed away since 2006. Below: Side view of broken pillar. Photo credit: Heather Calkins, USFWS.

Heather Calkins and I all began exploring the exposed remains of Lock and Dam #1; shooting photos and video from every angle we could safely access. Operations ceased at Lock and Dam #1 in 1951 and was sold to a private entity in 1960. It has been over 50 years since the last maintenance on the dam occurred. The broken and eroding concrete, rusted metal and decayed timber cribbing made us all reverent of the danger but it was the intimidating, turbulent outflow of water undercutting the sill of the dam that left us feeling the most unsettled. A video of the undercutting is available at (video credit: Jeff Finley, USFWS): <http://www.fws.gov/midwest/videos/WhirlpoolUpstreamUndercuttingOfSill.AVI>

A non-scientific comparison of pictures from 2006 and 2013 give the illusion that a portion of the sill of the dam may be settling. Another comparison of the cribbing and rock buffer suggest that flows over and through the dam may have degraded

the rock buffer since 2006. The opportunity to access nearly all parts of the dam allowed us to collect meaningful information - which may be useful for resource managers and engineers. Even to my untrained eye, the sense of urgency needed to begin stabilization efforts could not be dismissed. Stabilization and passage of this historical dam is paramount for the protection of not just endangered species and their associated habitat but for people and property as well.

*Patty Herman
Fisheries*



Given our current drought conditions, it seemed an opportune time to explore Lock and Dam #1 on the Osage River. Having only seen it inundated with water, I looked forward to seeing the gnarly mess that usually lies well below the water's surface. The structure definitely didn't disappoint. As I looked around at the cracked concrete, old logs and rusted metal parts, I imagined just how this monument might have functioned in its prime. Was there more or less water in the river back then? What fish species did they find in the clear river? Did the workers ever take the time to cast a line? If any of them

There is evidence that some fish can cross this impediment, but only at high water levels. Although it may not be a physical barrier at these stages, the structure remains and though unseen, creates turbulence underwater. For weak swimmers, benthic organisms or other bottom dwellers, the disturbance created may pose as a behavioral barrier. Whether the organism is unable to navigate the rough waters or just prefers not to, it is seen as an unsurpassable hurdle. Not only is Lock and Dam #1 a threat to fish, it's also quite dangerous for other organisms that linger too close, say humans. Over the years, boats have capsized and lives have been lost in the torrents created



Turbulence created by L&D#1 at high water levels. Photo credit: USFWS.

were fisherman, I wonder if the thought ever crossed their mind "Will this affect the fishing?" I doubt those folks had much thought about fish passage as they worked diligently constructing this dam for navigation. Our ancestors around that time were stocking common carp from train cars and harvesting vast amounts of mussel shells for buttons, so for most, conserving native resources likely wasn't a common concern. As I looked at the dam, I couldn't help but think about the years of movement that have been hindered for the aquatic organisms that call the Osage River home.

by this structure. As the dam continues to weather, the possibility of a failure also becomes more of a reality. As you can imagine, a failure would devastate habitat, not to mention private property far beyond the dam itself, both up and downstream.

So why not just remove it? Well there are many reasons why it's not that simple. These range from important mussel beds just upstream that would be dewatered to the severe head-cutting likely to occur until the river regains its natural slope. This is a privately owned dam and the cost to remove it is too high for the owners. Although

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it's very unlikely for this dam to ever be removed, there are alternatives that could stabilize the structure *and* allow organisms to pass. One such solution is to create a bypass chute. These are often referred to as fish ladders, fishways or fish steps. As the name implies, a series of gradual drops would stretch the elevation change to a slope that is navigable by fish. Some designs have built-in pools that act as resting areas for fish while maneuvering through various levels of the chute. This type of alternative would be coupled with some type of fortification of the existing structure. Another possible option is to transform the entire dam into a single, large, gently sloped rock ramp. This



In combination with stabilizing the dam, modifications to the lock structure may provide suitable fish passage. Photo credit: USFWS.

would be a very costly option given the length of this particular structure and the amount of materials needed. The options are somewhat unlimited... A hybrid of the said designs may also

be the answer for this particular area. While there are no current replacement/reinforcement plans in progress, Lock and Dam #1 on the Osage River may one day

be an opportunity for the National Fish Passage Program to partner with the state and local landowners in a big way to proactively address this looming concern.

*Heather Calkins
Fisheries*

There are many different perspectives related to the issue of a degraded lock and dam on the lower Osage River and I have most of them. These perspectives are best summarized into two categories; recreational and biological.

As a recreational boater and angler I enjoy the Osage River on a regular basis. My father owns a vacation home just a few miles downstream of Lock and Dam #1 and as such I frequent the location with my family to swim, boat, tube, waterski and fish. Many are the summer memories my children have of the "river house". The clean gravel bars below the structure are always popular with locals where children swim, family pets fetch, and adults lounge in chairs enjoying cold beverages and often picnic or grill. We gather there because of the gravel bar and by the simple fact one can boat no further due to the

structure. The fishing, especially for hybrid striped bass, can be phenomenal below the dam during the right river conditions. When the water is at



Two gravel bars that have formed immediately downstream of L&D#1. Photo credit: Heather Calkins, USFWS.

normal flows the fish pile up in the "holes" below the structure. The old saying "the grass is always greener on the other side" always comes to mind

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when the fishing is poor and I wish I could get over the structure to find what lies beyond. When water levels are a little bit on the high side some boaters will attempt to cross the torrents and drive over the dam or through the lock. This has been met with mixed results and, is at best, a risky maneuver. I have done it on occasion and when the water levels drop to normal or low flows I



These pink mucket mussels, engraved with unique identifiers, inhabit mussel beds in the Osage River. Photo credit: Josh Hundley, USFWS.

realize, yet again, what a huge risk I took, vowing to never do it again...until next time.

As a biologist, I work specifically in two areas that this dam impacts; fish passage and freshwater mussel conservation. As a SCUBA diver I assist malacologists in surveying freshwater mussel populations annually on the Osage River. In the sediments just above the dam two endangered species of mussels are found; the pink mucket and spectaclecase. We have sampled and found endangered sturgeon, both pallid and lake sturgeon, congregated below the structure during spring spawning migrations. The plight for both sturgeon and mussels contradict each other. The sturgeon cannot migrate beyond the dam to spawn and the mussels need the dam to retain their home.

The Lock and Dam #1 presents quite the conundrum with several alternatives. A catastrophic failure would decimate endangered mussel beds, silt in fishing holes, pollute gravel

bars, and alter the navigability of the river for miles, in both directions. The fish and the angler would eventually benefit by both being able to navigate beyond the dam assuming the failure would be a passable area. Shoring up the structure to prevent catastrophic failure would mean status quo. Creating a bypass channel for fish and boater passage would alleviate water pressure on the dam and secure the mussel bed, but this would involve willing landowners to sell good crop land. Building up the area downstream for fish passage and to reinforce the structure would annihilate the recreational gravel bar. If done correctly, would allow for limited boat passage which would be necessary for anglers since the congregation of fish will be lessened and a quest for another gravel bar necessary for lounging. The solution is unclear and finding an alternative will take cooperation from all stakeholders, including me.

*Jeff Finley
Fisheries*



Right: Josh Hundley releases a pallid sturgeon captured at the base of L&D#1. Photo credit: Patty Herman, USFWS.

...OTHER DUTIES AS ASSIGNED: FISHERIES ENGINEER

Quite often we find ourselves working in areas outside of our position description; whether by necessity or by talent, our employees frequently perform "other duties as assigned". Fortunately my additional duty is one I dearly enjoy; I call it "Fisheries Engineering".

Some folks have specific abilities for analyzing data, writing scientific reports, working with volunteers, or an affinity for using software programs which make everybody's job easier. Recognizing these unique skills and abilities, supervisors frequently task these specialists to work their craft for the good of the agency. Not all "additional duties" are fun and exciting; some are just necessary, but when they do align with an individual's particular passion, it results in an awesome day at work!

So, what is a Fisheries Engineer, you may ask. Coined from the true definition of engineering; a Fisheries Engineer can repair, replace, improve, design, fabricate and construct equipment used in sampling and collecting fish and aquatic organisms from the wild. Fisheries Engineering entails physics, mechanics, fabrication, welding and a lot of "head scratching" and trial and error. Whether using steel, wood, plastics, aluminum, wire, line, chain, or netting, they construct equipment using an understanding of the habitats we sample, the behavior of the organisms we are trying to collect and the environmental and human extremes this

equipment must endure. Fish biologists are frequently confronted with the challenges of "how can we catch species "X", more of species "Y", exclude species "Z", sample in a specific habitat or keep this gadget from breaking...again. Riverine habitats are often difficult to sample because of currents, flow, debris, grit, mud, rock and weather extremes. These considerations are all blended with field experience, a desire to dream and a preoccupation with tools, to ultimately spawn a Fisheries Engineer.



Modifying a river boat to fish like a shrimp trawler—the Paupier has been an exercise in physics, mechanics, fabrication, welding and head scratching. Photo courtesy of: Paul Rister Kentucky Department of Fish and Wildlife Resources.

Fisheries Engineers save their station time and money by circumventing costly trips to the repair shop, getting their crews back on the water as quickly as possible and creating innovative devices. Not everyone has an "engineering mind". There are

few folks who can diagnose and repair a mechanical problem, imagine a better contraption or that have the experience and skill to bring an idea to reality and all the while knowing their limitations. They might help figure out why an outboard engine is overheating and correct the issue so crews can finish their work or get off the water before dark. They can wire multiple components for an electrofishing boat rather than buying an "off the shelf" boat at twice the cost.

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Another feat of engineering—the push trawl. Photo credit: Andy Starostka, USFWS.

They'll weld what breaks, patch what leaks, replace what was lost and advance the science of fisheries with developing new gear and techniques or modifying old ones.

Applying Fisheries Engineering at this office has resulted in the development of several techniques and tools for the advancement of fishery science. Here are some examples.

The push trawl uses forward facing, mechanically lifted booms to deploy an envelope style, zipper cod, small board, benthic trawl off of the front of a jet boat. This technique has proved itself as a valuable tool in sampling riverine habitats too deep, too swift or with substrate too soft to seine or too shallow for traditional stern trawls.

The Paupier net is a modification of techniques used in Gulf Coast Shrimp Fisheries. The Paupier uses two frames mechanically deployed perpendicular to the gunnels of a boat to scoop up pelagic fishes. The intent was to come up with a method to collect Asian carp. While we have developed a solid framing system; a net design to retain these wary, fast swimming fish is still in development. We incidentally discovered the Paupier net technique is an excellent tool to collect young paddlefish.

Drifting trammel nets in the river can be an

arduous task with the vast amounts of small woody debris and sand waves which can halt the lead line of a drifting net...repeatedly. A net mule is a chevron shaped device made of dimensional lumber tied with a lead to the far end of the net. It helps plow the net through these lesser snags using the power of moving water in the rivers current.

Keeping a thousand baited ganions for trot lines organized and separated isn't easy. Several attempts were made to prevent them from getting tangled up on a rough river ride. Additionally, pre-baiting the hooks in a heated shop in the morning is preferred to baiting on the water or shore exposed to the elements and safer than bait-as-you-go with a line in the swift water. To do this we finally settled on a ganion box. Each box holds up to 500 baited hooks, hung sequentially from a steel rod. The large clips hang below and are clamped to the side of the box with a flap. The lid is closed for a neat, tidy and space saving method to safely deploy and retrieve the ganions.



Trotline ganion box at work on the Missouri River. Photo credit: Colby Wrasse, USFWS.

Opportunities arise to cooperate with other branches of the FWS. Currently I am working with a "Malacology Engineer" from Ecological Services to solve some mussel sampling

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conundrums. We are in the process of developing a boat mounted washing and sorting stand for mussel quantification surveys. This stand will incorporate a space saving reel for the surface air supply line for the SCUBA diver and a freshwater pump to wash and sort the substrate sample collected by the diver.

We've tinkered around with other small projects like durable transducer brackets to replace the plastic ones which inevitably break, various types of anchors to hold boats and gear in the swift waters of the Missouri River, racks to dry wet gear and drags to find lost nets and trawls.

Those before me paved the way for stern trawling safely on the river and have built net wheels for cleaning nets and many space and time saving devices. The ingenuity and application has, and will continue, to help advance fisheries science from those whose minds think a little differently, understand and speak “the language” of an engineer. I hope to identify the next person and one day pass the engineer torch to the next up and coming “other duties as assigned: Fisheries Engineer”.

*Jeff Finely
Fisheries*



Cleaned, dried, labeled and matched - these mussel shells are ready for school. Photo credit: Patty Herman, USFWS.

Columbia Montessori School Gets New Mussel Work

It is hard to be incognito when I drop my daughter off at school in the morning. The students of Columbia Montessori School love to touch the U.S. Fish and Wildlife Service badge on my uniform and ask questions about the “fish and bird” on the sleeve. Even teachers are curious about my job. When they find out what I do, they are eager to tap into my knowledge of science. Recently, my daughter’s teacher approached me with a request. She was developing a

continuous lesson unit on the species of Missouri and needed a little help.

The species of Missouri is a pretty broad topic to cover – especially for three to six year olds. As I was brainstorming one evening wanting to create “work” for the classroom that would be lasting, I had an epiphany...freshwater mussel shells! Knowing that most learning is facilitated by sensory experience, mussel shells would be



Columbia Montessori Primary Students, left-to-right: Anna, Aries and Aurora, dive into their new mussel work. Photos courtesy of: Nicole Johnson, Columbia Montessori School..

perfect for a primary classroom. From practicing fine motor control by matching shells together to learning shell anatomy, the mussel shells would hold the attention of all ages in the class, as well as holding up to the rigors of a primary classroom.

I was picking up a few mussel shells on the river one morning and discussing my plans for them with Andy Roberts, a Fish & Wildlife Biologist that specializes in freshwater mussels. He told me that he had boxes of nice shells that he would be happy to donate to the class. I was thrilled, and a couple of days later Andy delivered on his promise and provided me with shells of over 20 common freshwater mussel species from Missouri rivers and streams. He also donated two copies of "A Guide to Missouri's Freshwater Mussels" to the classroom. As I was preparing the new classroom work, I found myself asking questions - of which Andy and Josh Hundley, also a Fish & Wildlife Biologist, graciously answered for me. From the collection of mussels, I created flash cards with color pictures, common names and scientific names (it is never too early to teach Latin) for the students to practice matching the shells to pictures. I also

provided labeled diagrams of shell anatomy and the life cycle of a freshwater mussel. After a weekend of scrubbing and labeling the mussel shells, printing and laminating cards, and carefully bundling everything together, the work was ready for the classroom.

As reported by teachers, school administrators, parents and students, the freshwater mussel lesson has been a huge hit! The students of Columbia Montessori School love choosing the mussel work and are eager to show (and tell) their parents how to use the shells and pictures. I have even noticed the adults examining and matching the mussel shells. Thanks to the generosity of Columbia Ecological Services Field Office, children and adults alike will become familiar with some of the most imperiled animals in Missouri.

I've got a new idea for some classroom work now. If only I had enough time to tan some mammal skins...

*Patty Herman
Fisheries*

Middle Basin Pallid Sturgeon Workgroup Meeting

The Middle Basin Pallid Sturgeon Workgroup met during 2012 and planned work for 2013. The meeting was well attended with approximately 50 people in attendance over the 2 days and provided the opportunity for individuals to network across the Missouri River basin. Interagency participation in the workgroup ensures cooperation for recovery efforts of pallid sturgeon in the Missouri and Mississippi rivers. The effort is consistent with and supportive of the “Partnerships and Accountability” and “Aquatic Species Conservation and Management”, priorities of the Fisheries Program Vision for the Future.

The Middle Basin Pallid Sturgeon Workgroup met 22-23 January in Blue Springs, MO. The first afternoon session consisted of updates from the pallid sturgeon Recovery Team and discussions about propagation. The group was also presented with an update about genetics from Dr. Ed Heist of Southern Illinois University. Dr. Heist is working with the group to determine genetic makeup of pallid sturgeon across their entire range. Funding for this joint project being conducted with USGS Columbia Environmental Research Center was made possible by a Science Support Project with the Columbia FWCO. The second day of the meeting was devoted to joint presentations from Group members providing updates on work completed

*Tracy Hill
Fisheries*

MICRA Paddlefish-Sturgeon Committee Meeting

Project Leader Tracy Hill and Assistant Project Leader Wyatt Doyle traveled to Paducah, KY to attend the Paddlefish-Sturgeon Committee Meeting. The Mississippi Interstate Cooperative Resource Association was formed due to a need to improve inter-jurisdictional management of paddlefish and other aquatic resources in the Mississippi River basin. MICRA was established in 1991 and is comprised of 28 member states. The purpose of the Paddlefish-Sturgeon Committee is to provide MICRA with information and recommendations to conserve and manage paddlefish and sturgeon through inter-jurisdictional coordination, communication and assessment. Items of interest covered during the two day meeting included the update of stock assessment project being funded by AFWA, ad hoc committee reports by the newly formed tagging protocol group, online commercial harvest reporting and lake sturgeon. Time was also allocated for presentations by Arkansas Game and Fish Commission on lower Mississippi River paddlefish assessment and an update from Tennessee Wildlife Resource Agency on their commercial fishing database. The highlight of the meeting occurred on day two when the FWS Columbia FWCO demonstrated the paupier nets. The net which was originally designed to capture Asian carp, has been capturing juvenile paddlefish. The group ventured on the Ohio River to see the net in action. Demonstration of the net resulted in the capture of 5 Asian carp but of more interest to the group was the 12 paddlefish which were also captured. Participation in this meeting is supportive of the “Partnerships and Accountability” and “Aquatic Species Conservation and Management”, priorities of the Fisheries Program Vision for the Future.

Project Leader Tracy Hill and Assistant Project Leader Wyatt Doyle traveled to Paducah, KY to attend the Paddlefish-Sturgeon Committee Meeting. The Mississippi Interstate Cooperative Resource Association was formed due to a need to improve inter-jurisdictional management of paddlefish and other aquatic resources in the Mississippi River basin. MICRA was established in 1991 and is comprised of 28 member states. The purpose of the Paddlefish-Sturgeon Committee is to provide MICRA with information and recommendations to conserve and manage paddlefish and sturgeon through inter-jurisdictional coordination, communication and assessment. Items of interest covered during the two day meeting included the update of stock assessment project being funded by AFWA, ad hoc committee reports by the newly formed tagging protocol group, online commercial harvest reporting and lake sturgeon. Time was

*Tracy Hill
Fisheries*

Paupier Net Demonstration on the Ohio River

Project Leader Tracy Hill and Assistant Project Leader Wyatt Doyle traveled to Paducah, KY on 28 January to demonstrate the paupier butterfly net to members of the MICRA Paddlefish-Sturgeon Committee. The paupier nets are being developed by the Columbia FWCO in cooperation with Innovate Net Systems to capture Asian carp. The purpose of the net is to provide state agencies and commercial fishers with a more efficient system for capturing large numbers of Asian carp. The large rigid frame nets originally designed to capture shrimp in the Gulf of Mexico, have been modified to aid in the capture of Asian carp as a method to

reduce population numbers. A by-product of this surface skimming net has been the capture of juvenile paddlefish. Columbia FWCO was contacted by the chairperson for the Paddlefish-Sturgeon Committee to determine if a net demonstration would be possible during the committee's annual winter meeting. Although field conditions were not ideal (high water and extremely windy) the net demonstration did result in the capture of both Asian carp and paddlefish.

*Tracy Hill
Fisheries*



*Photos courtesy of: Jeff Quinn,
Arkansas Game and Fish
Commission and Paul Rister,
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