



FISHERIES STREAMS AND RIVERS NEWSLETTER

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2008 Year Review

The Stream Fisheries Program provides high-quality fisheries information for management purposes and applies the results of research to improve fish populations, habitat, and fishing.

Because 69% of Arkansas resident anglers fish flowing waters, and 37% fish large rivers, the Arkansas Game and Fish Commission determined that a coordinated, statewide Stream and River Fisheries Management Program was needed which concentrates primarily on sport fisheries. The goal of this report is to outline activities of the Stream Fisheries Program for 2008. The year 2008 will go into history as a high-water year, and a physically difficult year for me, because I had surgery October 16 to repair my esophagus and stomach. Despite these challenges, I had a really productive year.

Statewide Stocked Catfish Exploitation Study

A statewide study is being conducted to assess the exploitation rate of catchable channel catfish stocked into Arkansas waters. This study is important in that the Fisheries Division spends a large percentage of its annual budget stocking catfish, but these stockings have not been adequately evaluated to determine if anglers are actually catching the fish stocked. The study has two objectives: (1) determine exploitation in Corps of Engineers reservoirs, AGFC lakes, and streams, and (2) determine exploitation of catchables (~11 inches total length) vs. yearlings (~7 inches) in Corps reservoirs. For the purposes of this study, three categories of water bodies are being studied: large Corps-owned reservoirs, AGFC lakes (125-6,000 acres), and streams. Six fisheries from each category were selected for study. The number of fish tagged in each fishery will be a standard 500 fish per fishery for COE reservoirs and 400 for all other waters. The fish will be tagged with reward tags containing a

toll-free phone number (local regional AGFC office) for the anglers to call. Anglers reporting a tag (see yellow tag on fish below) will be asked several questions. Tags must be mailed in for anglers to receive a reward payment (due to state fiscal policies). A follow-up mail survey will be performed to ask additional questions concerning angler satisfaction, demographics, and attitudes towards harvest regulations.



This winter, a total of 1,500 yearling channel catfish were tagged at the Charlie Craig Hatchery in Centerton, and fish were stocked in Lake Ouachita, Bull Shoals Lake, and Beaver Lake. A total of 1,400 catchable channel catfish were tagged this fall at the Pot Shoals net pens and the Joe Hogan State Fish Hatchery in Lonoke. These fish were stocked in Bull Shoals Lake, Lake Ouachita, and the White River at Sylamore.

Endangered Pallid Sturgeon Management

Pallid sturgeon are a federally-listed endangered fish species. Within Arkansas, they are only known to occur in the Mississippi River. Every year the U.S. Army Corps of Engineers requests comments from Arkansas Game and Fish Commission biologists concerning new wing

dikes and rock revetments they plan to construct on the Mississippi River. In the past, biologists did not know what to tell the Corps relative to pallid sturgeon because we had little data concerning pallid sturgeon habitat use. Therefore, during the month of January, we initiated studies to implant pallid sturgeon with ultrasonic transmitters. The transmitters allow us to track the fish to determine the spatial locations of the “honey holes” that need to be protected.



Above: Mississippi River shovelnose sturgeon, and (below) sturgeon endoscopy to visualize gonads.

The problem is that pallid sturgeon are rare and difficult to catch. For example, if you catch 100 sturgeon in the Mississippi River, you may catch two pallid sturgeon and 98 shovelnose sturgeon. Therefore, it takes a big effort to find the fish we need for the study. AGFC biologists are cooperating with several partners in this project, including biologists from several states and federal agencies. We all converged during January for the first-ever “pallid sturgeon rodeo.” I made six trotline jump boxes and trotlines, which are the preferred tackle for capturing pallid sturgeon. We also used gill nets to capture sturgeon. The weather was terrible during our

sampling. High winds (up to 60 miles per hour) the first day, and sleet the third day, resulted in the entire partnership only capturing two pallid sturgeon. We also implanted transmitters into five shovelnose sturgeon. Veterinarians from the University of Georgia came and demonstrated the best surgical techniques for implanting transmitters into fish. They injected saline into the body cavity, which I previously had never performed during a fish surgery. They had a nice endoscope (\$20,000) that allowed visualization of the gonads internally and accurate sex determination.

I contracted with Mississippi State University to have them work on this project; and, so far, \$100,000 of Section VI of the Endangered Species Act funds has been allocated to this project over two years. Since the pallid sturgeon telemetry project began, a total of 25 pallid sturgeon have been implanted with ultrasonic transmitters. One of those fish was tagged near the mouth of the Arkansas River and it was recently detected near the mouth of the Ohio River!

The Mississippi Interstate Cooperative Resource Association (MICRA) held a meeting concerning the proposed listing of shovelnose sturgeon under the Endangered Species Act due to similarity of appearance with the endangered pallid sturgeon. The problem is the two species are difficult to tell apart, especially smaller fish. The U.S. Fish & Wildlife Service (USFWS) asked for MICRA’s advice on the listing, which they described as forthcoming. Mark Oliver (Fisheries Division - Assistant Chief) and I attended the meeting and requested that any listing should not impact fishing for other species.

Stream Smallmouth Bass Management

Caddo River sampling was a major project during the spring when water levels were not too high. District VIII biologists, Stuart Wooldridge and Brett Hobbs, and I have been evaluating the Caddo River fishery. We are specifically concerned about a potential reduction in the range and abundance of smallmouth bass in the drainage and species replacement with other black basses (largemouth and spotted). We sampled the river at several localities, and have been finding more smallmouth than in 2007 and 2008.

I've been writing a case-history manuscript of the management of Crooked Creek smallmouth bass. I ran a rigorous split-plot repeated measures analysis of variance that clearly shows biomass of smallmouth bass and PSD increased with the Blue Ribbon Stream regulations. I plan on evaluating the special regulation zones (18 inch minimum length limit, and one fish creel or catch-and-release), but the statistical details are beyond my capabilities. I'm attempting to obtain access to a statistician before I move forward on this project.

We also sampled the Ouachita River at Rocky Shoals. Next year I expect the genetics study of the Arkansas smallmouth bass will finally be finished at Auburn University.



Above: Stuart Wooldridge with a healthy Caddo River largemouth bass.

Paddlefish Commercial Fisheries

This year I published three manuscripts about paddlefish based on studies done since 2002. One article co-authored with Steve Donabauer and Joe Stoeckel looked at movement and mortality of paddlefish in Ozark Lake and Pool 13. The second article evaluated paddlefish harvest from special commercial fishing seasons on the Arkansas River. In the third manuscript, I reviewed harvest of paddlefish in North America, which required collecting harvest data from all states with open fisheries. All these paddlefish papers will be published in an American Fisheries Society book about paddlefish.

This fall I analyzed paddlefish angler diary data provided by commercial fisher Kim Campbell. Based on the data, the Fisheries Division decided to reduce the minimum length limit for paddlefish on the Mississippi River. I also worked with biologists from Mississippi and

Tennessee to develop a joint Mississippi River Paddlefish Management Plan. This plan was agreed upon by the Fisheries chiefs of the above mentioned states, but was never enacted. I attended a meeting with the Arkansas Fishermen and Shelltaker's Association to discuss the paddlefish regulations, and numerous regulations were changed this year.

We tagged greater than 300 paddlefish on Pool 13 to determine exploitation at the special season in January 2009. We also sampled Ozark Lake as a routine stock assessment. The bad news is that few gravid females were captured, but the good news was that numerous young paddlefish were captured. This suggests that we should have good harvests in the next few years. High water for two years previous to sampling was likely related to the low number of gravid females observed this year.

We also tested tagging paddlefish with Floy lock on tags, and we are evaluating tag loss of these tags in the next couple of years.



Above: AGFC biologist Frank Leone with one of the common "smaller" paddlefish sampled this year.

Arkansas River Management

The Arkansas River is the single largest fishery in the state of Arkansas, and Lake Dardanelle is among the top three lakes in the state for black bass tournaments. Every year I attempt to work on Arkansas River management issues. This year I published a manuscript about the long-term trends in the Arkansas River fishery with District IX biologist Bob Limbird. I have continued to work on developing a Habitat Restoration Plan for Rector Brake. I worked on a team to revise the standardized sampling procedures for the Arkansas River. In addition, I worked with the U.S. Army Corps of Engineers

to help them avoid fisheries impacts of emergency dredging operations. We moved the location of dredge disposal areas to prevent large impacts to the fishery of Lake Dardanelle.

Environmental or Instream Flows

The vision of the River and Stream Fisheries Program is to protect environmental flows in our rivers to support healthy fisheries and ecosystems, which society needs and enjoys. Water is on everyone's mind. Think about how many people carry a water bottle around with them. The public is very aware of water issues, but the public is generally unaware that the flow in almost all of the rivers in Arkansas is unprotected. The quality of our lives depends on the maintenance of healthy ecosystems and fisheries, and research indicates that the public cares deeply about water resources. Fish need water every day to survive. Ecosystems depend on the availability of water; the timing, duration, and magnitude of flows.

The Arkansas Natural Resources Commission (ANRC) wants to readdress the Arkansas State Water Plan, which is an outdated document. I spent a lot of time attending meetings, along with Assistant Chief Steve Filipek, and attempting to address their requests for information. I did a literature review on instream flow issues in Arkansas due to the proposed revision of the State Water Plan. We attended multiple meetings with state working groups developing instream flow protection strategies.

I represented the Arkansas Game and Fish Commission at the Instream Flow Council meeting. At the FLOW 2008 meeting, I presented a poster with my co-author, Dr. John Jackson, concerning the Ouachita River fishery instream flows. I wrote a contract for U.S. Geological Survey (USGS) to run an instream flow gage on the Middle Fork of the Saline River at Owensville, and I attended USGS and Arkansas Department of Environmental Quality (ADEQ) meetings concerning this river's flow.

Northern Snakehead Distribution Study

The hottest issue in the Fisheries Division in Arkansas is the unwanted introduction of northern snakeheads into Arkansas. They have escaped into the Little Piney Creek drainage, near Brinkley. This is downstream of Lake Greenlee. I assisted with attempting to assess how far the species has spread. I was assigned to sample in the Big Creek watershed, north of Interstate-40. I quickly ascertained that access was a major issue. The local citizens were very

supportive of our efforts, and that was especially rewarding.

I've never seen as many bowfin as I saw in Big Creek. The creek was also loaded with stunted gar. Prey species were rare, and when you did see a bluegill it was usually pretty big. We saw a few buffalo and bullheads, too. Overall, the fish community suggests that low dissolved oxygen kills frequently occur. It is one of the most degraded streams I've sampled in my 10-year career.



Above: Matt Schroeder nets fish on Big Creek during snakehead sampling.

Training

I attended the Franklin Covey class, "The Seven Habits of Highly Effective People." I found the questionnaires filled-out by my peers very interesting. The "take home" message I got is that I need to involve them more in planning my work activities. This class prompted me to make a new 10-year plan of work that is coordinated with fisheries districts.

I attended training workshops about side-scan sonar, applying the Farm Bill to streams, and MesoHabSim instream flow modeling. I attended CPR training, and was recertified as a pesticide applicator. I attended several meetings during 2008, including the Southern Division of the American Fisheries Society, the summer meeting of the Warmwater Streams Committee, the MICRA paddlefish and sturgeon meeting, and the lower basin pallid sturgeon workgroup.

Other River and Stream Program Issues

Alligator gar sampling is an ongoing work task for the Stream Fisheries Program. I am assisting on two different projects that investigate alligator

gar on the Fourche LaFave and lower White Rivers.

Dr. Bill Lahyer recently completed field sampling for a three-year project to sample large river nongame fishes, and the final report should be available soon. This project was federally funded by a State Wildlife Grant in the amount of \$150,000.

I have continued to work on the Bayou Meto Conservation Reserve Enhancement Program (CREP) project evaluation. A total of 2,447 fishes were collected representing 49 species from 2002 to 2007. The CREP project is a federal Farm Bill program project to reforest the riparian zone of Bayou Meto.

I continued to work on stream issues in the Fayetteville Shale natural gas play issues, including assisting with development of a monitoring plan for Gulf Mountain WMA and assisting with coordination with Representative Betty Pickett's failed House resolution. Much of my spring monitoring/sampling plans in the Fayetteville Shale area were thwarted by high water. I expect this topic to really consume more of my time during 2009.