

MUDDY WATERS

Fisheries News from the Kansas Cooperative Fish and Wildlife Research Unit

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COOPERATORS



TAKING ADVANTAGE OF OPPORTUNITIES

The flooding in northeast Kansas has had positive and negative effects on fisheries research at the Kansas Unit. High flows has stalled some efforts to sample both small streams and the big rivers. Wes Bouska has been delayed occasionally in sampling stream crossings for his project evaluating fish passage. However, these smaller streams have flushed quickly and he is back on schedule. The big river sampling has been a different story. Jeff Eitzmann is anxiously waiting for the Kansas River to subside so he can sample all fishes in the main channel areas. Based on high water levels in the Kansas River reservoirs (some are at least 20 feet above normal), the high releases from these reservoirs will likely keep the river at flood levels for much of June. The work will get done, and the rains have certainly been a positive in many aspects for the drought stricken plains. This is just a temporary setback.

However, with the frustration of high water to Jeff and Wes, comes opportunity for Andrea Severson, an undergraduate that will be working this summer on the Kansas River. With the high water, off-channel habitats (some several miles long) have been completely flooded since early to mid May. Some of these areas are typically high and dry, but are now under 4-8 feet of water. These 'new'



Josh Schloesser, Jeff Eitzmann, Kristen Pitts, and Andrea Severson sampling Kansas River side channels.

habitats may benefit riverine fish, and Andrea has taken advantage of the high water and will be conducting a project evaluating use of these habitats by fishes. Backwater habitats are known to be important habitats for flood-plain fishes, and there is substantial effort to create these habitat types in the Missouri River. Because of the high water, we have a chance to evaluate these habitats on the Kansas River this summer, and will continue to monitor the potential response of fishes in the Kansas River to these high flows through our standardized sampling and continued projects on recruitment of large river fishes.

Although the high water has hampered some of our existing projects, it also has provided new opportunities for research. Mother Nature doesn't always cooperate in field studies, but she always provides opportunities!

Craig Paukert

UNIT STUDENTS SWEEP AFS AWARDS

Unit fisheries staff and students swept the best presentation and best poster awards at the Kansas Chapter of the American Fisheries Society (AFS) meeting in February, which was a joint meeting with Iowa and Nebraska AFS chapters. Jesse Fischer won the best student presentation for his talk on sampling effort to detect species in small streams. Jesse also won the best poster for his work on historic and current environmental influences on plain topminnow populations in Nebraska. Craig Paukert won the best professional presentation on a project evaluating fish communities at sand dredge sites in the Kansas River. His presentation was part of his graduate-level Advanced Fisheries Science class; his coauthors were the students in the class: Jeff Eitzmann, Jesse Fischer, Kristen Pitts, Josh Schloesser, and Darren Thornbrugh.

CRAIG PAUKERT INVITED TO PRESENT AT UNIVERSITY OF KANSAS

Craig was invited to present his research on sampling large rivers as part of the University of Kansas Field Station and Ecological Reserves Seminar Series. His presentation was attended by researchers from the University of Kansas, US Fish and Wildlife Service, and National Park Service.

FISHERIES STAFF AND STUDENT UPDATES AT THE KANSAS UNIT

Since the last newsletter in December 2006 there have been some personnel changes in fisheries at the Kansas Unit. **Wes Bouska** started his MS in January 2007, and **Andrea Severson** will be working this summer as



Jesse Fischer

part of a Research Experience for Undergraduates program. **Jesse Fischer** graduated in May 2007 and is currently working on large rivers with the Nebraska Game and Parks Commission. Also, two technicians have moved

on. **Miles Thompson**, who worked with us since last summer, graduated in May 2007 and has accepted a MS position at Arkansas-Pine Bluff. Miles will be working on applied aquaculture issues.



Miles Thompson

Tony Ferlage, a under-



Tony Ferlage

graduate student who has worked with us over the last 18 months, has taken a position with the Army Corps of Engineers as a parks ranger at Perry Lake. Tony is a Parks and Recreation major at K-State.

Wes Bouska joined the Unit in January 2007 working on the effects of road crossings on stream fish passage. He will be evaluating if various crossing types impede fish passage, and if or how these crossings can be improved for fish passage. The project has an emphasis on the federally endangered Topeka shiner, but all stream fishes will be evaluated. Wes received his BS from South Dakota State University and has worked on stream surveys in South Dakota before coming to Kansas. He will be



working very closely with the US Fish and Wildlife Service (USFWS) and Kansas Department of Wildlife and Parks (KDWP).

Andrea Severson is from Vernal, Utah and will be working this summer on recruitment of Kansas

River fishes as part of the Research Experience for Undergraduate Program. Her work will include sam-



pling backwaters of the Kansas River to determine the use of fishes in high water periods. Andrea will graduate with her BS in December 2007 from Utah State, but has already accepted a PhD position in fisheries at the Kansas Unit beginning January 2008. Her doctorate research will focus on the effects of invasive species on native fishes.

We also have several new hires as summer technicians. **Kirk Mammoliti** and **Alex Lyon** will be helping Wes Bouska to evaluate fish passage at road crossings. Both Kirk and Alex are obtaining their BS in Fisheries and Wildlife at K-State. **Luke Kowalski**



*Luke Kowalski, Alex Lyon,
and Kirk Mammoliti*

has returned to help Jeff Eitzmann sample fishes in the Kansas River. This is Luke's second summer working with Jeff. **Brad Schmidt** joined us to help Jodi Whittier and Kristen Pitts with GIS assistance, and also help the graduate students with their database needs.

CURRENT FISHERIES PROJECTS AT THE KANSAS UNIT

Recruitment of Large River Fishes.

The first phase of this project will be part of Andrea Severson's undergraduate research project and will evaluate use of off-channel habitats (new backwaters created by the recent high waters) by fishes in the Kansas River. Sampling will consist of electrofishing and seining in June throughout the high water periods to monitor fishes. The focus of the work will be in two off-channel habitats, each 1-2 miles long, near Manhattan. This will be a pilot project for larger study on fish recruitment, funded by K-State and KDWP, that will begin in January 2008. A PhD student will be recruited for that study.

Effects of Road Crossings on Fish Passage.

This is funded by Kansas Department of Transportation and will evaluate fish passage at different road crossings. Wes Bouska, the MS student on the project, has tagged fish at 12 crossings this spring: 2 corrugated pipe culverts, 5 box culverts, and 5 vented fords.



Wes and his crew will sample fish throughout summer to determine movement through these culverts. To date several thousand fish

have been tagged and Wes has already seen some recaptures. He will hopefully continue to find recaptures throughout the summer.

Evaluation of Sampling Methodologies for Missouri River Fishes.

This project will use data collected by the USFWS, Nebraska Game and Parks Commission, and Missouri Department of Conservation but funded by the US Army Corps of

Engineers to determine microhabitat use of fishes in the Missouri River. The project is funded by USGS and the US Fish and Wildlife Service and began in 2006. Josh Schloesser is the MS student on this project. Josh has all the pallid sturgeon monitoring data and is busy this summer analyzing these data.

Lower Colorado River Aquatic GAP.



This project will develop conservation priorities for fishes in the Lower Colorado River Basin. The project is funded by USGS, but works with various stakeholders from throughout the Southwest. Kristen Pitts is the MS student on the project, and

has been working on relating fish presence to hydrologic variables. Jodi Whittier is the primary researcher and Co-PI on this project and is developing methodologies in GIS used to answer conservation related questions.

Population Dynamics of Kansas River Fishes.

This project, funded by KDWP, is evaluating the spatial distribution and food web structure of Kansas River fishes. Jeff Eitzmann, the MS student on the project, just completed a gear evaluation for sampling prairie rivers, and is currently getting ready for a field season to sample fish and habitat throughout the Kansas River.



JOSH SCHLOESSER ATTENDS MODELING WORKSHOP

Josh Schloesser attended a 3-day workshop in Fort Collins, Colorado on modeling patterns and dynamics of species occurrence. The workshop focused on occupancy models, a relatively new statistical technique that incorporates uncertainty in species detection. Josh is intending to use the methods from the workshop in his analysis of sampling methods of Missouri River fishes.



Wes Bouska, MS student, and Bryan Simmons, KDWP, sample for Topeka shiners

KANSAS UNIT PARTICIPATES IN 5 YEAR TOPEKA SHINER REVIEW

The Cooperative Research Units helped organize a meeting on the 5 year review of the federally endangered Topeka shiner. The meeting was spearheaded by the US Fish and Wildlife Service and South Dakota Unit Leader Chuck Berry. Other Unit scientists from Nebraska, Kansas, Minnesota, Missouri, and Iowa assisted with compiling the information for the meeting. A summary document spearheaded by the Kansas Unit will be developed by the Units and distributed to the USFWS and other interested parties.

KRISTEN PITTS SAMPLES ENDANGERED FISH IN ARIZONA

Kristen Pitts, a graduate student working on developing conservation priorities in the Lower Colorado River Basin, worked with Arizona Game and Fish Department in April to sample the endangered humpback chub and other fishes in the Little Colorado River, Arizona. This was a 10-day sampling trip as part of long-term monitoring of humpback chub in Grand Canyon.



Kristen Pitts with a humpback chub from the Little Colorado River, Arizona

FISHERIES STAFF AND STUDENT CONTINUE TECHNICAL ASSISTANCE TO COOPERATORS AND PARTNERS

Part of the mission of the Cooperative Research Units is technical assistance to cooperators. Fisheries students and staff continue this important role. Josh Schloesser, a graduate student, submitted a final report to Wolf Creek Nuclear Power Plant on the use of harvest regulations for walleye at Wolf Creek Lake. Craig has helped various agencies with report reviews and data analysis. These partners include the Kansas Department of Wildlife and Parks, US Fish and Wildlife Service in Arizona and Missouri, US Geological Survey, Bureau of Land Management in Colorado, and Nebraska Game and Parks Commission.



UNIT STUDENTS ATTEND MOTORBOAT OPERATORS CERTIFICATION SAFETY COURSE

Josh Schloesser, Andrea Severson, and Kristen Pitts attended the Department of Interior Motorboat Operators Certification Safety Course. This is a 3-day course required to operate any Department of Interior motorboat. Josh, Kristen, and Andrea attended the course in Brookings, South Dakota, which was taught by Steve Chipps and Chuck Berry of the South Dakota Coop Unit.

RECENT RESEARCH PRODUCTS AND ACTIVITIES

Publications:

Eitzmann, J. L., A. S. Makinster, and C. P. Paukert. In press. Distribution, abundance, and growth of blue suckers in a Great Plains USA river. *Fisheries Management and Ecology*.

Makinster, A. S., and C. P. Paukert. In press. Effect and utility of minimum length limits and mortality caps for flathead catfish in discrete river reaches of a large prairie river. *North American Journal of Fisheries Management*.

Paukert, C. P., and J. H. Petersen. 2007. Simulated effects of temperature warming on rainbow trout and humpback chub in the Colorado River, Grand Canyon. *Southwestern Naturalist* 52:232-242.

Paukert, C. P., M. McInerny, and R. Schultz. 2007. Current and historical black bass regulations in North America. *Fisheries (Bethesda)* 32(2):63-72.

Schloesser, J. T., and C. P. Paukert. 2007. Walleye harvest restrictions to minimize gizzard shad impingement. Final report submitted to Wolf Creek Nuclear Operating Corporation.



Presentations:

Schloesser, J., J. Finley, C. Paukert, W. Doyle, and T. Hill. 2007. Comparison between push trawl and mini fyke nets to sample shallow water fish communities. *Missouri River Natural Resource Conference*, Nebraska City, Nebraska.

Whittier, J. B., C. P. Paukert, K. L. Pitts, and J. D. Olden. 2007. The Lower Colorado River aquatic GAP project—an update. *Arizona-New Mexico American Fisheries Society Annual Meeting*, Albuquerque, NM

Paukert, C. P. 2007. You can't always get what you want: sampling challenges for rivers in the Great Plains. *University of Kansas*

Field Station and Ecological Reserves Seminar Series, Lawrence, KS.

Schloesser, J. T., D. E. Haines, and C. P. Paukert. 2007. Walleye harvest restrictions to reduce gizzard shad impingement. *Kansas, Nebraska, Iowa Tri-State American Fisheries Society Meeting*, Council Bluffs, IA.

Paukert, C. P., J. Eitzmann, J. Fischer, K. Pitts, J. Schloesser, and D. Thornbrugh. 2007. Fish community and habitat differences in dredges and undredged sites on the Lower Kansas River. *Kansas, Nebraska, Iowa Tri-State American Fisheries Society Meeting*, Council Bluffs, IA.

Paukert, C. P., and A. S. Makinster. 2007. Flathead catfish population dynamics in the Kansas River: implications for management. *Kansas, Nebraska, Iowa Tri-State American Fisheries Society Meeting*, Council Bluffs, IA.

Fischer, J., and C. Paukert. 2007. Sampling effort required to estimate species richness in wadable Great Plains streams with a towed electrofishing. *Kansas, Nebraska, Iowa Tri-State American Fisheries Society Meeting*, Council Bluffs, IA.

Eitzmann, J., and C. Paukert. 2007. Electrofishing and hoopnetting gear comparisons for fish communities in the Kansas River, Kansas. *Kansas, Nebraska, Iowa Tri-State American Fisheries Society Meeting*, Council Bluffs, IA.

Fischer, J., and C. Paukert. 2007. Historical and current environmental influences on an endemic great plains fish. *Kansas, Nebraska, Iowa Tri-State American Fisheries Society Meeting*, Council Bluffs, IA.



AWARDS AND HONORS

Josh Schloesser, was elected President of the Kansas State Student Subunit of the AFS.

Craig Paukert was elected President Elect of the Kansas Chapter of the AFS.

Jesse Fischer was awarded the outstanding student presentation *and* poster at the Iowa-Nebraska-Kansas AFS.

Jesse Fischer was awarded the 2007 Kansas AFS Otto Tiemeier-Frank Cross award.

Jesse Fischer won the outstanding graduate student for the Kansas Cooperative Fish and Wildlife Research Unit.

Josh Schloesser received 4th place at the Missouri River Natural Resources Conference for his poster of sampling shallow water fishes in the Missouri River.

Craig Paukert won best professional presentation at the Iowa-Nebraska-Kansas American Fisheries Society meeting.

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COLLABORATORS AND COOPERATORS

There are many cooperators and collaborators on fisheries projects at the Kansas Unit. These relationships may be through direct funding of research projects, providing data, intellectual ideas, services, staff, and/or equipment to the Unit. We thank each of these collaborators and cooperators for their support.

Kansas State University, Division of Biology
Kansas State University, Department of Landscape Architecture
Kansas Department of Transportation
Missouri Department of Conservation
US Geological Survey, NBII
US Geological Survey, Cooperative Research Units
US Geological Survey, Science Support Program
US Fish and Wildlife Service, Columbia, MO Fisheries Office
US Fish and Wildlife Service, Manhattan, KS Ecological Services
US Fish and Wildlife Service, Arizona Fisheries Office
US Army Corps of Engineers, Pallid Sturgeon Monitoring Program
Bureau of Land Management
Turner Enterprises, Inc.
Wolf Creek Nuclear Operating Corporation
Environmental Protection Agency
US Forest Service
Arizona State University
University of Arizona
Arizona Cooperative Fish and Wildlife Research Unit
University of Washington

Kansas State University, Department of Geography
Kansas Department of Wildlife and Parks
Nebraska Game and Parks Commission
Arizona Game and Fish Department
Utah Division of Wildlife Resources

