

MUDDY WATERS

Fisheries News from the Kansas Cooperative Fish and Wildlife Research Unit

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Craig Paukert
Assistant Leader-Fisheries
Kansas Cooperative Fish and
Wildlife Research Unit
Division of Biology
205 Leasure Hall
Kansas State University
Manhattan, Kansas 66506
785-532-6522
cpaukert@ksu.edu
www.k-state.edu/fisheries/



COOPERATORS



MEETING THE MISSION

Most organizations have a mission statement and the Cooperative Fish and Wildlife Research Units are no different. All Cooperative Research Units have three facets to their mission:

Education - Unit scientists teach graduate-level university courses, provide academic guidance to graduate students, and serve on academic committees.

Research - Unit scientists conduct research designed to meet the information needs expressed by unit cooperators.

Technical Assistance - Units scientists provide technical assistance and training to State and Federal personnel and other natural resource managers.

The fisheries group at the Kansas Unit meets the education facet of the mission by teaching courses, mentoring graduate students, and serving on university and graduate student committees. I teach Advanced Fisheries Science and team-teach Fisheries Management. I also serve on two graduate student committees at K-State and one at University of Arizona. The Cooperative Research Units program is developed around graduate education. Every project in fisheries at K-State currently has a graduate student. There are currently four students in fisheries, with an additional two starting in January 2008.

Our research facet of the mission is closely linked with education. The research projects in fisheries at the Kansas Unit are primarily being conducted by graduate students on pro-



Jeff, Josh, Heather, Jesse, Kristen, and Craig head out fishing in San Francisco Bay before the Annual AFS meeting

jects funded by stakeholders and cooperators. The Kansas Unit strives to conduct *relevant* and *applied* research that can be used to answer stakeholder questions of conservation and management. The work we do is disseminated to the stakeholders and scientific community that will use the information.

The last facet of our mission, technical assistance, often gets overlooked. The Cooperative Research Units strive to provide technical assistance to cooperators. In fisheries at the Kansas Unit, this ranges from statistical consultation to field work. Recent technical assistance ranged from helping KDWP with field work to sample Topeka shiners to analysis of data on the effects of dredging on Neosho madtom. We have also analyzed data related to habitat improvements on the Missouri River (for Nebraska Game and Parks Commission) and even browsing preferences of elk in Colorado (for Bureau of Land Management). These services are provided for free. Technical assistance is an important part of our mission and I encourage stakeholders to contact me if they have a question or concern in which I may help.

Craig Paukert

KANSAS UNIT STAYS ACTIVE IN SOCIETY MEETINGS

Fisheries staff and students have remained active in professional society activities. Not only are we actively presenting our work at many meetings (19 presentations in 2007), but are active in the organization of these meetings. **Craig Paukert** is part of the steering committee (and breakout session chair) for the Kansas Natural Resource Conference (KNRC), a meeting that will bring together scientists, managers, and all interested parties related to fish, wildlife, soil and water conservation, rangeland management, and forestry. **Josh Schloesser** is also involved in the KNRC as part of the audio visual committee and has also participated in some steering committee activities. **Jodi Whittier** created the KNRC website and also serves on the publicity committee.

Wes Bouska and **Jeff Eitzmann** are chairs of the Fundraising Committee for the Kansas Chapter of American Fisheries Society, and are involved in organizing a raffle at the KNRC.

Finally, **Kristen Pitts** is chair of the audio visual committee for the Arizona-New Mexico American Fisheries Society Annual Meeting in Prescott, Arizona in February 2008.

PERSONNEL UPDATES AT THE KANSAS UNIT

Since the last newsletter in May 2007 there has not been many personnel changes. However, spring 2008 will bring several new students as well as the completion of several students. **Joe Gerken** and **Andrea Severson** will be starting their graduate programs in January 2008 and more details on these two will be provided in the next newsletter.

Luke Kowalski, a former research technician that worked with Jeff Eitzmann on the Kansas River the last two years accepted a position working with Nebraska Game and Parks Commission on the Missouri River. On a related note, **Jesse Fischer**, a former MS student at K-State has accepted a PhD position at Iowa State University working with a former Kansas Unit student (and now Assistant Professor) Mike Quist.

COLLABORATORS AND COOPERATORS

There are many cooperators and collaborators on fisheries projects at the Kansas Unit. We thank each of these collaborators and cooperators for their support.

Kansas State University, Biology
 Kansas State University, Landscape Arch.
 Kansas Department of Wildlife and Parks
 Kansas Department of Transportation
 Nebraska Game and Parks Commission
 Missouri Department of Conservation
 Arizona Game and Fish Department
 US Geological Survey, NBII
 Utah Division of Wildlife Resources
 USGS, Science Support Program
 USFWS, Columbia, MO Fisheries Office
 USFWS, Manhattan, KS Ecol. Services
 USFWS, Arizona Fisheries Office
 US Army Corps of Engineers, Pallid
 Sturgeon Monitoring Program
 Environmental Protection Agency
 US Forest Service
 Bureau of Land Management
 Arizona Cooperative Fish and Wildlife
 Research Unit
 University of Washington

FISHERIES STUDENTS HONORED

There have been several awards and honors to students from the Kansas Unit recently.

Jeff Eitzmann and **Jesse Fischer** were both awarded the American Fisheries Society (AFS) Skinner Memorial Award in 2007. This is an international award given to students to attend the Annual AFS Meeting, and is considered by many to be the highest award given to fisheries students. Jeff and Jesse were 2 of 10 award winners recognized at the AFS meeting in San Francisco.



Jeff Eitzmann (left) and Jesse Fischer with their Skinner Awards

Wes Bouska was runner up for the AFS Student Writing Contest, which is awarded based on an article that communicates the value of fisheries science to the public. Wes' article is on stream fish and road crossings and will be published in an upcoming issue of Fisheries. Jeff, Jesse, and Wes were all honored at the AFS meeting in San Francisco and are all mentioned in the November 2007 issue of Fisheries.

Josh Schloesser was runner up for the Kansas Chapter of the AFS Joan Duffy Travel Scholarship to attend the Midwest Fish and Wildlife Conference. Josh was awarded \$100.00 to help defray costs to attend the meeting.

Josh Schloesser was also a finalist for the Fenske Award at the Midwest Fish and Wildlife Conference. Josh was one of 10 fisheries students to be a finalist.

If you see these students please congratulate them on their accomplishments. These awards indicate that the future of the fisheries professional is bright with students like these on the horizon.

CURRENT FISHERIES PROJECTS AT THE KANSAS UNIT

Recruitment of Large River Fishes.

The objectives of this project are to identify recruitment bottlenecks for large river fishes and aid in the development of minimum flow requirements for fishes in the Kansas River.

Joe Gerken will begin his PhD on this project in January, and field work is scheduled to begin spring 2008. The study is funded by K-State and KDWP, and will build on previous studies funded by KDWP on the Kansas River.

Effects of Road Crossings on Fish Passage.

This study is funded by Kansas Department of Transportation and will evaluate fish passage at different types of road crossings. **Wes Bouska**, the MS student on the project, has tagged over 6,000 fish at 12 crossings in 2007: 2 corrugated pipe culverts, 5 box culverts, and 5 vented fords. Preliminary analyses suggest that box culverts pass fish almost as efficiently as natural riffles. However, vented fords and corrugated pipes may be more of a barrier. Wes will continue his data analysis and begin the second phase of this project, which will include experimentally testing crossing designs in a controlled facility at Konza Prairie Biological Station.

Evaluation of Sampling Methodologies for Missouri River Fishes.

This project is using data collected by the USFWS, Nebraska Game and Parks Commission, and Missouri Department of Conservation that was funded by the US Army Corps of Engineers to determine microhabitat use of fishes in the Missouri River. **Josh Schloesser** is the MS student on this project and his modeling has suggested that gill nets and otter trawls typically have the greatest detection probabilities of many large river fishes. Josh's data analysis was funded by USGS-Science Support Partnership.

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, completed a gear evaluation for sampling prairie rivers, and is just finishing his MS thesis on this project. Jeff has found that carbon signatures of fishes are highly variable in reaches with more braided channels and less in areas of high urbanization. This suggests that fishes in urban areas are using only one habitat whereas fish in the areas of braided channels are using various food sources and habitats. Jeff will be defending his thesis in February so stay tuned for more details.

Effects of Zebra Mussels on Invertebrates and Fishes Five Years After Invasions.

Zebra mussels have been established in El Dorado Reservoir since 2003, and previous studies sampled age 0 largemouth bass and invertebrates in this reservoir in 2001-2002. The objectives of this study are measure fish growth and invertebrate abundances to determine what changes have occurred since zebra mussel invasions. Sampling will also be conducted on two reservoirs that do not have zebra mussels (and were sampled in 2001 and 2002 as well). **Andrea Severson** will start her MS degree on this project in January 2008. The project is jointly funded by Kansas State University and KDWP.

GIS COURSES OFFERED BY KANSAS UNIT STAFF

Jodi Whittier once again team taught the basic and advanced GIS courses at the Annual American Fisheries Society meeting in San Francisco. Jodi has been doing this for three years with Mick Porter from New Mexico. Mick has stepped down from his role so Jodi will be taking this over. She is currently planning on teaching the GIS courses at the Western Division AFS Meeting in Portland, Oregon (with help from **Kristen Pitts**), and at the World Fisheries Congress in Yokohama, Japan. As you might expect, Jodi has been our go-to person for GIS and database help. Her role has been invaluable to many students and projects!



Kristen with a longnose gar from the Kansas River



A vented ford crossing in a stream designated as critical habitat for the endangered Topeka shiner

STAFF AND STUDENTS

Kansas Cooperative Fish and Wildlife Unit

205 Leasure Hall, Division of Biology
Kansas State University
Manhattan, Kansas 66506
785-532-6070
www.k-state.edu/kscfwru

Craig Paukert

Assistant Leader-Fisheries
204B Leasure Hall
785-532-6522
cpaukert@ksu.edu
www.k-state.edu/fisheries

Joanna Whittier

Research Assistant Professor
206 Leasure Hall
785-532-6634
whittier@ksu.edu

Wes Bouska

MS Student
203 Leasure Hall
785-532-5761
bouska@k-state.edu

Jeff Eitzmann

MS Student
203 Leasure Hall
785-532-5761
Jle4477@ksu.edu

Kristen Pitts

MS Student
207A Leasure Hall
785-532-1818
kpitts@ksu.edu

Josh Schloesser

MS Student
203 Leasure Hall
785-532-5761
jts@ksu.edu



RECENT RESEARCH PRODUCTS AND ACTIVITIES

Publications:

Paukert, C., and A. Makinster. In press. Longitudinal patterns in flathead catfish relative abundance and length at age within a large river: effects of an urban gradient. *River Research and Applications*.

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

Petersen, J., D. DeAngelis, and C. Paukert. In press. Developing bioenergetics and life history models for rare and endangered species. *Transactions of the American Fisheries Society*.

Eitzmann, J., A. Makinster, and C. Paukert. 2007. Distribution and growth of blue sucker in a Great Plains, USA river. *Fisheries Management and Ecology* 14:255-262.

Technical reports and popular publications:

Paukert, C., C. Berry, and K. Pope. 2007. Topeka shiner 5-year review and workshop. Report submitted to US Fish and Wildlife Service and Topeka Shiner Recovery Team. 92 pages.

Paukert, C. 2007. Kaw River's big cats. *Kansas Department Wildlife and Parks Magazine* 64 (4):16-24.

Presentations:

Schloesser, J., C. Paukert, W. Doyle, T. Hill, G. Mestl, and V. Travnichek. 2007. Probability of detection and catch rate variability by gear type for Missouri River fishes. *Midwest Fish and Wildlife Conference, Madison, WI*.

Pitts, K., C. Paukert, and J. Whittier. 2007. Development and assessment of an ecological risk index for fishes in the Verde River Basin, Arizona. *Midwest Fish and Wildlife Conference, Madison, WI*.

Bouska, W., and C. Paukert. 2007. Impacts of road crossings on prairie stream fishes. *Midwest Fish and Wildlife Conference, Madison, WI*.

Paukert, C. 2007. Kansas River fishes: what do we know? *Friends of the Kaw Annual Board Meeting, Lawrence, KS*.

Paukert, C. 2007. Are the Kansas River fishes in peril? *Lower Kansas River basin Watershed Restoration and Protection Strategy Meeting, Lawrence, KS*.

Whittier, J., C. Paukert, K. Pitts, and J. Olden. 2007. Lower Colorado River aquatic GAP: meeting the needs of stakeholders. *National GAP Meeting, Asheville, NC*.

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. *American Fisheries Society Annual Meeting, San Francisco, CA*.

Pitts, K., C. Paukert, and J. Whittier. 2007. Hydrologic variability in the Lower Colorado River Basin: implications for fish conservation. *American Fisheries Society Annual Meeting, San Francisco, CA*.

Fischer, J., and C. Paukert. 2007. Spatial scale of stream fish assemblages and abundance estimates: effects of sampling effort, community structure, and habitat heterogeneity. *American Fisheries Society Annual Meeting, San Francisco, CA*.

Eitzmann, J., and C. Paukert. 2007. Evaluation of multiple gears to assess a Great Plains river fish community. *American Fisheries Society Annual Meeting, San Francisco, CA*.

