

MUDDY WATERS

Fisheries News from the Kansas Cooperative Fish and Wildlife Research Unit

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COOPERATORS



RECOVERY

On June 11, 2008 a tornado came through the Kansas State University campus. It was quite a shock for many of us as the tornado hit around 10 pm. The campus incurred over \$20 million in damage from the EF4 tornado and unfortunately there was loss of life in the nearby town of Chapman. Several buildings around Manhattan were destroyed including the True Value hardware on the west side of town, which was completely leveled. Thankfully everyone from the Coop Unit was ok with minimal damage to personal property. Leasure Hall, where the Coop Unit is housed, had no damage but several Unit vehicles had substantial damage. Our Biology colleagues in other buildings were not so lucky. The Ecology group in Bushnell Hall received substantial damage to some labs and many of the windows were broken.

Recovery is well underway. Our vehicles



A branch stuck in a car tire near Bushnell Hall after the June 11 tornado.

are repaired and Bushnell Hall has new windows. Other campus buildings appear to be nearly or completely repaired. Although this is a part of living in the Great Plains, I do not think it helped recruiting students to K-State! None of the Coop Units students quit after the tornado, but I am sure several decided that Kansas was not the place for them!



A pickup north of Bushnell Hall after the June 11 tornado.

We are also somewhat in the triage mode in regards to budgets. As everyone is aware, budget cuts are occurring in both the public and private sector and Kansas State is no different. The budgets for the Coop Unit program has remained relatively steady over the last couple years. However, that is likely due to previous cuts, vacant positions, and limited operating budgets. It's hard to cut when you start with minimal funds! The state of Kansas has required a state-wide budget cut of 3-5% this fiscal year. K-State Biology and our co-operator, Kansas Department of Wildlife and Parks, is currently evaluating where to cut. By all accounts the next year (and likely future years) will be pretty lean.

So what does all this mean to Coop Unit fisheries program and meeting the needs of cooperators? That remains to be seen. Since almost all of the work we do is from grants and contracts it may depend on budgets of cooperating agencies. Right now we operate as we always have. Graduate student training remains a top priority and likely will not change. Stay tuned and thank you for your support. As always, if there are any needs that we can help with, I am a phone call or email away.

Craig Paukert

KANSAS UNIT STUDENTS CONSIDERED SOME OF THE BEST IN THE MIDWEST

Two students were honored recently at the Midwest Fish and Wildlife Conference in Columbus, Ohio. **Mackenzie Shardlow** was awarded the Janice Lee Fenske Award, and **Wes Bouska** was selected as a finalist. This award is given to two students (one fisheries and one wildlife) in the Midwest and is based on scholarship, professionalism, enthusiasm to protect fish and wildlife through management, selflessness and motivation to teach others, interest in professional involvement, positive attitude, and compassion. These are prestigious awards that reflect that quality and ambition of the students. Mackenzie and Wes are both well deserving of these awards.

KANSAS STUDENTS AND STAFF RECEIVE AWARDS

Kansas students also received other awards. **Wes Bouska** was awarded the Joan Duffy Travel Grant by the Kansas Chapter of the American Fisheries Society to attend the Midwest Fish and Wildlife Conference. **Mackenzie Shardlow** was awarded second place for her oral presentation at the Midwest Fish and Wildlife Conference. Her presentation was titled 'Sign survey techniques for river otters: looking back and moving forward.' **Craig Paukert** was given a USGS STAR award for outstanding performance in the Cooperative Fish and Wildlife Research Units.

FISHERIES STUDENT UPDATES

As always, there are changes in personnel since our last newsletter. **Josh Schloesser** defended his MS thesis in summer and now works on the Missouri River for the agency that supported his thesis work—the US Fish and Wildlife Service in Columbia, Missouri. **Kristen Pitts** also graduated in summer, and is working for American Rivers in Washington, D.C. She became the first Lapham Fellow at American Rivers, and is working on water resources infrastructure and community development. **Wes Bouska** defended his MS thesis in December. Wes will remain at K-State to continue his work on fish passage issues for stream fishes.



UNDERGRADS ACTIVE IN RESEARCH

One of the added aspects of working with graduate students is to get undergraduates, who are typically technicians for the graduate students, involved early in research. My graduate students and I believe that getting undergraduates involved in projects really helps their interest in the project and professional development. This spring we will have four undergraduates conducting independent research projects. **Michael Proffer**, who worked for graduate student **Andrea Severson**, will be investigating spatial and temporal dynamics of zooplankton in a reservoir. **Kirk Mammoliti**, who worked for graduate student **Wes Bouska**, will evaluate densities of fishes near road stream crossings, **Brandon Tritsch** will work with **Mackenzie Shardlow** to evaluate factors that influence detectability of river otter sign, and finally **Brandon Senger** will determine the suitability of a tributary in Grand Canyon, Colorado River for reintroduction of the endangered humpback chub. These undergraduates are commonly mentored by graduate students, and we hope this additional training will help their future careers.

RECENT PUBLICATIONS

Fischer, J. R., and C. P. Paukert. Accepted. Spatial scale of stream fish assemblage and abundance estimates: effects of sampling effort, community structure, and habitat heterogeneity. *Canadian Journal of Fisheries and Aquatic Sciences*.

Brinkley, P., J. R. Fischer, and C. P. Paukert. 2008. Effects of fixative on total length of small bodied stream fishes. *Journal of Freshwater Ecology* 23:471-473.

Davis, N., and C. P. Paukert. 2008. Impact of gravel bar scalping on Neosho madtom populations from the Lower Neosho River, Kansas. *Journal of Freshwater Ecology* 23:501-511.

Doyle, W., C. P. Paukert, A. Starostka, and T. D. Hill. 2008. A comparison of four sampling gears used to collect shovelnose sturgeon in the Lower Missouri River. *Journal of Applied Ichthyology* 24:637-642.

Paukert, C. P., J. Schloesser, J. Eitzmann, J. Fischer, K. Pitts, and D. Thornbrugh. 2008. Effect of instream sand dredging on fish communities in the Kansas River USA: current and historical perspectives. *Journal of Freshwater Ecology* 23:623-633.

Fischer, J. R., and C. P. Paukert. 2008. Habitat relationships with fish assemblages in least disturbed Great Plains regions. *Ecology of Freshwater Fish* 17:597-609.

Paukert, C. P., and A. S. Makinster. 2008. Longitudinal patterns in flathead catfish relative abundance and length at age within a large river: effects of an urban gradient. *River Research and Applications*, DOI: 10.1002/rra.1089.



Japanese biologists electrofishing the moat at the Imperial Palace in Tokyo.

CURRENT 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 just finished his first field season, and he is currently busy ageing fishes from his sampling. Ultimately, Joe's goal is to identify how water flows and backwater affect recruitment of riverine fishes. 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 is funded by Kansas Department of Transportation and will evaluate fish passage at different road crossings. **Wes Bouska** just completed his MS these related to the project. His work suggested that low water crossings may not effectively allow fish to pass and disrupt the physical stream function when compared to other crossing designs. The project will be completed by this summer as Wes will continue to finish up this work.



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. **Jodi Whittier** is the primary researcher and Co-PI on this project, but Julian Olden and Thomas Pool from the University of Washington are also heavily involved in the project to develop methodologies used to answer conservation related questions.

Effects of Zebra Mussels on Reservoir Fishes.

Zebra mussels established in El Dorado Reservoir in 2003, and previous studies have sampled age 0 largemouth bass and invertebrates in this reservoir in 2001 and 2002. **Andrea Severson**, the MS student on the project, finished up her first field season evaluating littoral fish abundance before and after zebra mussel invasions. She is also using the KDWP long term reservoir dataset to determine effects on zebra mussels on fish abundance and condition. The project is primarily funded by Kansas State University with additional support from KDWP.

Status of River Otters in Eastern Kansas.



River otters were extirpated from the state in 1904, but reintroduction efforts have been established throughout the Midwest. The objective of this project, funded by KDWP, is to determine the factors that affect distribution of river otters in eastern Kansas. **Mackenzie Shardlow**, the MS student on the project, is just beginning her second field season this winter. She will be evaluating local and landscape factors that affect occupancy and detection probability of river otters.

CRAIG PAUKERT AND JODI WHITTIER PARTICIPATE IN FISHERIES MEETING IN JAPAN



Craig (left) with a statue of Godzilla in Tokyo

Craig Paukert and Jodi Whittier participated in the Fifth World Fisheries Congress in Yokohama, Japan in October. Jodi helped teach a GIS workshop at the meeting, and Craig gave an invited presentation on the effect of invasive species. The trip was a great experience and opportunity to see different cultures and research conducted in different parts of the world.

Many thanks go to Doug and Beth Beard for their guidance throughout the trip. Without them we would still be somewhere lost in translation in Tokyo. The highlight of the trip was the sushi eating contest. After some debate and controversy, it became apparent the Craig and Jodi beat out the teams of Beth and Doug, and Mike Hansen and Nancy Nate, for the greatest amount of sushi consumed.



Craig with a pile of sushi plates in Tokyo as Mike Hansen and Nancy Nate look on.

PROFESSIONAL SOCIETY INVOLVEMENT OF STUDENTS AND STAFF

Key to the development of our students is professional society involvement.

Mackenzie Shardlow and **Jodi Whittier** are webmasters for the Kansas Natural Resources Conference (KNRC). Jodi is webmaster for the Western Division of the American Fisheries Society (AFS) Annual Meeting, and the Kansas AFS. **Joe Gerken** and **Wes Bouska** are co-chairs the Fundraising Committee for the Kansas AFS. Joe is also newsletter co-editor for the Education Section of the AFS. **Andrea Severson** is Secretary-Treasurer for the KSU-AFS. **Craig Paukert** is on the KNRC program committee and is President of the Kansas AFS. Craig is on the Certification Committee for the AFS and an Associate Editor for North American Journal of Fisheries Management.

JODI WHITTIER TEACHES GIS COURSES IN THREE COUNTRIES

Jodi Whittier was invited to teach part of a GIS course at the World Fisheries Congress in Japan in October. Jodi was part of a team of GIS experts from the US, Japan, Africa, and others. The students came from at least six countries. Jodi also taught GIS courses in Ottawa, Canada at the Annual American Fisheries Society (AFS) meeting in August, and in Oregon at the Western Division of the AFS meeting in May.

RECENT PRESENTATIONS

Bouska, W., and C. Paukert. 2008. Fish on the move: effects of culvert design on the passage of Great Plains stream fish. Midwest Fish and Wildlife Conference, Columbus, OH. 15 December 2008.

Gerken, J., and C. Paukert. 2008. Fish community changes associated with a low-head dam in a large Great Plains river. Midwest Fish and Wildlife Conference, Columbus, OH. 16 December 2008.

Shardlow, M., and C. Paukert. 2008. Sign survey techniques for river otters: looking back and moving forward. Midwest Fish and Wildlife Conference, Columbus, OH. 17 December 2008.

Paukert, C. P. 2008. Using long-term data to assess the distribution of a rare fish: lessons from the Colorado River. Midwest Fish and Wildlife Conference, Columbus, OH. 17 December 2008.

Gerken, J., W. Bouska, and C. Paukert. 2008. Factors influencing the endangered Topeka shiner in Kansas streams. Midwest Fish and Wildlife Conference, Columbus, OH. 17 December 2008. (poster)

Bouska, W., and C. Paukert. 2008. The effects of crossing design and water velocity on the movement of Great Plains lotic fishes. Midwest Fish and Wildlife Conference, Columbus, OH. 17 December 2008. (poster)

Paukert, C. P., and J. Whittier. 2008. Effects of invasive species in freshwater fisheries. 5th World Fisheries Congress, Yokohama, Japan. 23 October 2008.

Paukert, C. P. 2008. Effects of human alteration on stream and river fishes: what we know and what are we doing about it? Kansas State University, Division of Biology Seminar Series. 19 September 2008.

Whittier, J. B., C. P. Paukert, and J. D Olden. 2008. Spatial patterns in the distribution and conservation of imperiled fishes in the Lower Colorado River Basin. American Fisheries Society Annual Meeting, Ottawa, Canada. 17 August 2008.

Pitts, K. L., C. P. Paukert, and J. B. Whittier. 2008. Assessing anthropogenic threats to fishes in the Lower Colorado River Basin. American Fisheries Society Annual Meeting, Ottawa, Canada. 17 August 2008.

Peterson, J., and C. Paukert. 2008. Converting non-standard fish sampling data to standardized data. American Fisheries Society Annual Meeting, Ottawa, Canada. 18 August 2008.

Schloesser, J., C. Paukert, W. Doyle, T. Hill, G. Mestl, and V. Travnicek. 2008. Detection and occupancy probabilities for monitoring Missouri River fishes. American Fisheries Society Annual Meeting, Ottawa, Canada. 19 August 2008.

Bouska, W., and C. Paukert. 2008. Road crossing designs and their impact on movement and diversity of Great Plains stream fishes. American Fisheries Society Annual Meeting, Ottawa, Canada. 19 August 2008.

Gerken, J., and C. Paukert. 2008. Effects of a low-head dam on the fish community of a large Great Plains River. American Fisheries Society Annual Meeting, Ottawa, Canada. 18 August 2008.

Fischer, J., and C. Paukert. 2008. Habitat relationships with fish assemblages in minimally disturbed Great Plains regions. American Fisheries Society Annual Meeting, Ottawa, Canada. 18 August 2008.

Shardlow, M., C. Paukert, and P. Gipson. 2008. Factors affecting the distribution and detectability of river otters in Eastern Kansas. Midwest Furbearer Workshop. Olathe, KS. 10 June 2008.

Japutnich, R., S. M. Borthwick, S. J. Hayes, and C. P. Paukert. 2008. Impacts of big game browse and drought on the mountain shrub community in Southwestern Colorado. 15th annual Wildland Shrub Symposium, Bozeman, MT. 18 June 2008.



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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 Geography
Kansas Department of Wildlife and Parks
Kansas Department of Transportation
Nebraska Game and Parks Commission
Tennessee Wildlife Resources
National Park Service, Grand Canyon National Park
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, AZ Fisheries Office
Arizona Game and Fish Department
Utah Division of Wildlife Resources
Environmental Protection Agency
US Forest Service
National GAP program
In-Fisherman, Inc.

Arizona Cooperative Fish and Wildlife Research Unit
Georgia Cooperative Fish and Wildlife Research Unit
Arizona State University
University of Arizona
University of Washington
University of Wisconsin-Stevens Point

