MUDDY WATERS

Fisheries News from the Kansas Cooperative Fish and Wildlife Research Unit

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INSIDE THIS ISSUE:

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Kansas Cooperative Fish and Wildlife Research Unit

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THE STUDENTS

One of the most rewarding parts of my job is working with students and I have been lucky to have a great bunch of students (although I might be biased!). Therefore, it's always good to see them get recognized and rewarded for their efforts. I want to share their accolades with you.

Since I arrived at K-State in November 2003 I have graduated six MS students and currently have two MS students and one PhD student. They collectively have earned 28 state, regional, national, and international awards since 2005. These awards were based on presentations, research productivity, ambition, professionalism, teaching, and promise as a future professional. Every past and current graduate student has won at least two awards. The students received (or were honorable mention) for five Skinner Memorial Awards which is an award given to only 10-15 students each year to attend the international American Fisheries Society (AFS) meeting. They also received two Janice Lee Fenske Memorial Awards, which are given to one fisheries and one wildlife student each year for the 13-state Midwest region. In addition, they received two runner-ups for the Fenske Award. Finally, the students received numerous regional and local awards related to teaching, professionalism, and presentations including being nominated for the outstanding graduate teaching in the Division of Biology, four Kansas AFS Tieimer-Cross awards for outstanding fisheries student in Kansas, and seven awards (or runner up) for outstanding presentations or posters at the Kansas Chapter AFS meeting, Missouri River Natural Resources Conference, and the Kansas Chapter AFS meeting.

These students have also been active publishing their research results. They have been lead author on 14 peer reviewed manuscript that are published, accepted, or in review since 2006. In addition these students have

co-authored six other manuscripts (including three where the graduate student mentored a undergraduate who was the lead author).

In addition, the graduate students have been active presenting their work at professional society meetings. They authored or co-authored 71 oral or poster presentations at state, regional, and international meetings since 2005. There has also been seven KSU undergraduate presentations which were typically mentored by graduate students. Two students have given invited presentations at international and regional meetings.

These students are also very active in professional societies. They provided service to professional societies and other organizations in 23 instances from state to national level. In addition, six students held officer positions with the KSU Student SubUnit of AFS, and held regional and national committee memberships or chairs for AFS and other societies and organizations.

I often hear terms like 'the fisheries or biology program at that school is good'. The next time you hear accolades about a particular school or faculty member don't forget it's the students that do the real work. Good students make my job a lot easier.

Craig Paukert

Kansas Unit Students and Staff Recognized within K-State Biology

Kansas Unit fisheries students and staff were recognized recently within the Division of Biology at K-State. **Andrea Severson** was nominated for the Watkins Award for outstanding graduate student teaching in Biology. **Andrea** also received the Ackert Award for the Outstanding Presentation at the Biology Graduate Student Forum. **Craig Paukert** was a finalist for the Outstanding Biology Graduate Faculty Award, which is given by the graduate students in the Division of Biology.

Kansas Students Receive Awards

Kansas students also received other awards. **Joe Gerken** and **Wes Bouska** co-authored the Outstanding Student Poster at the Kansas Chapter AFS meeting. **Andrea Severson** was awarded the Outstanding Student Oral Presentation at the Kansas Chapter AFS meeting. Andrea also received the Tiemeier-Cross Award from the Kansas Chapter AFS. **Mackenzie Shardlow** was awarded the Kansas Chapter TWS Travel Award to attend the national meeting in California, and was also selected as the Outstanding Kansas Unit Student for 2008.

Fisheries Student Updates

There actually have been few changes in personnel since our last newsletter. **Wes Bouska** left K-State to work with the US Forest Service in Missoula, Montana sampling fish and amphibians in the Rocky Mountains. **Kristen Pitts**, a former student, will also be a part of that team. However, we have a herd of technician working with the students and staff this summer. **Kyle Steinert**, **Kirk Mammoliti**, and **Michael Proffer** are all back working with **Andrea Severson** and **Joe Gerken**. **Kitt Lee** joined the group working with Joe and Andrea. **Brandon Calderon** will be working with Colorado River Basin datasets with **Jodi Whittier**, and **Mallik Pinjala** will be working with the students to help with their database needs.

Wes Bouska 'working'

Kitt Lee at our AFS Riverpond sampling below Tuttle Creek Reservoir

Recent Publications

Eitzmann, J. L., and C. P. Paukert. In press. Longitudinal differences in habitat complexity and fish assemblage structure of a Great Plains River. American Midland Naturalist.

Peterson, J. T., and C. P. Paukert. In press. Data conversion methods for various sampling methods. In: S. A. Bonar, D. W. Willis, and W. A. Hubert, editors. Standardized Sampling Methods in North America. American Fisheries Society, Bethesda, Maryland.

Pullen, R. R., W. W. Bouska, S. Campbell, and C. P. Paukert. In press. Intestinal helminths of *Cyprinella lutrensis* in Deep Creek, Kansas; prevalence and spatial distribution estimates for *Bothriocephalus acheilognathi* (the Asian fish tapeworm) and *Rhabdochona Canadensis*. Journal of Parasitology.

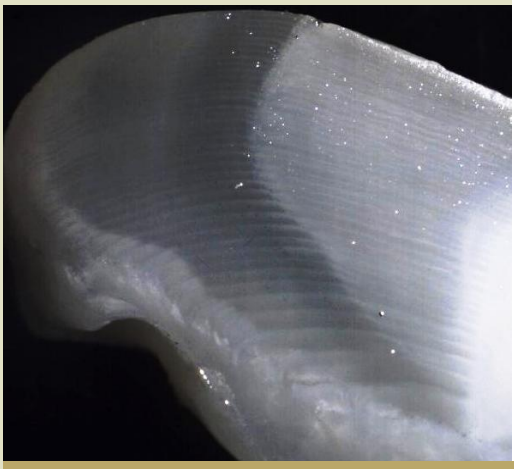
White, K., J. Gerken, C. Paukert, and A. Makinster. In press. Fish community structure in natural and engineered habitats in the Kansas River. River Research and Applications.

Fischer, J. R., and C. P. Paukert. 2009. 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 66:277-290.

Quinn, S. P., and C. P. Paukert. 2009. Centrarchid fisheries. Pages 312-339 *In*: S. J. Cooke and D. P. Phillip, editors. Centrarchid fishes: diversity, biology, and conservation. Blackwell Science, London.

CURRENT PROJECTS AT THE KANSAS UNIT

Recruitment of Large River Fishes.
The objectives of this project, which is funded by K-State and KDWP, 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 started his second field season where he is concentrating on the link between backwaters and the mainchannel to determine how fishes in large rivers use the habitats and energy from backwaters. He is one of the few people in Kansas looking forward to high water that typically occurs in June.



Freshwater drum otolith section. Otolith courtesy of Ely Sprenkle of KDWP

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 to develop methodologies used to answer conservation related questions. **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 involved. We will be finalizing the predictive models for fishes in the basin soon and should complete this project in fall 2010.

Developing Conservation Priorities for Desert Fishes Through the National Fish Habitat Initiative.
In conjunction with the Desert Fish Habitat Partnership, we will identify areas of high native fish diversity at multiple scales, quantify the threats to achieving conservation goals, and determine how the magnitude of threats varies across spatial scales. We will also asses the association between species' distributions, taxonomic and functional community composition, and threats in order to forecast the future effects of environmental change. This project is funded by the USGS Status and Trends Program and will begin in summer 2009 and continue for three years. The Co-PIs are **Jodi Whittier** at K-State and **Julian Olden** at the University of Washington. A post-doctoral Research Associate will be hired in summer 2009.

Evaluation of Humpback Chub Translocations in Grand Canyon.
One of the conservation measures considered to aid in endangered humpback chub recovery is translocating these fish to develop a second population in Grand Canyon tributaries. The goals of this project are to evaluate potential tributaries for translocations by analyzing data on movement of translocated humpback chub in and out of tributaries in Grand Canyon. Bioenergetics modeling will also be used to determine how growth and consumption may differ in different tributaries. This project was unfunded but now has funding from Grand Canyon National Park and the Bureau of Reclamation.

Little Colorado River, AZ

Effects of Zebra Mussels on Reservoir Fishes.
Zebra mussels established in El Dorado Reservoir in 2003. A previous study 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. Preliminary results indicate that white bass abundance has declined with zebra mussel invasions, but zooplankton taxa diversity may have increased after zebra mussel invasions. Andrea will conduct her second field season this summer. The project is funded by Kansas State University and 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, was to determine the factors that affect distribution of river otters in eastern Kansas. **Mackenzie Shardlow,** the MS student on the project, just finished her second field season. She will defend her thesis in July. She found that that local habitat factors may affect occupancy of river otters more than landscape-level factors.

RECENT PRESENTATIONS

Peterson, J. and C. Paukert. Converting non-standard fish sampling data to standardized data. Western Division of the American Fisheries Society Annual Meeting, Albuquerque, NM, 5 May 2009. poster

Secondary channel in Kansas River during high water

Pool, T., J. Olden, J. Whittier, and C. Paukert. Riverscape patterns and environmental drivers of functional diversity and composition of fish communities in the Lower Colorado River Basin. Western Division of the American Fisheries Society Annual Meeting, Albuquerque, NM, 5 May 2009.

Kretschmann, A., S. Bonar, K. Young, J. Whittier, C. Paukert, and D. Guertin. Using Geographic Information Systems to delineate native fish and sport fish management areas in the Verde River watershed, Arizona. Western Division of the American Fisheries Society Annual Meeting, Albuquerque, NM, 4 May 2009.

Whittier, J., C. Paukert, and J. Olden. Modeling local and watershed drivers of native and non-native fishes in the Lower Colorado River Basin. Western Division of the American Fisheries Society Annual Meeting, Albuquerque, NM, 6 May 2009.

Paukert, C., W. Bouska, and T. Keane. Road crossing design and their impacts of fish assemblages and geomorphology of Great Plains streams. Kansas Transportation Engineering Conference, Manhattan, KS 15 April 2009.

Bouska, W., and C. Paukert. Passage of prairie fishes through different crossing designs and water velocities in an experimental stream. Kansas Natural Resources Conference, Wichita, Kansas 28 January 2009. poster

Shardlow, M., C. Paukert, and T. Cable. Furharvester sighting reports and opinions regarding river otters in Kansas. Kansas Natural Resources Conference, Wichita, Kansas 28 January 2009. poster

Prebyl, T., T. Mosher, C. Paukert, and S. Wisely. Identifying the strain of a record largemouth bass using a DNA-sequencing approach. Kansas Natural Resources Conference, Wichita, KS 28 January 2009. poster

Gerken, J. W. Bouska, and C. Paukert. Effects of instream habitat and fish communities on the endangered Topeka shiner in Kansas streams. Kansas Natural Resources Conference, Wichita, KS 28 January 2009. poster

Winders, K., and C. Paukert. Reduction in the abundance and condition of native fishes after invasion of white perch. Kansas Natural Resources Conference, Wichita, KS 28 January 2009. poster

Gerken, J.E. and C.P. Paukert. Impacts of a Low-head Dam on fish communities in the Kansas River. Kansas Natural Resources Conference, Wichita, KS 28 January 2009.

Severson, A. C.P. Paukert. Impacts of zebra mussels on fishes in El Dorado Reservoir. Kansas Natural Resources Conference, Wichita, KS 28 January 2009.

Gerken, J.E. and C.P. Paukert. Impacts of a Low-head Dam on a Great Plains River Fish Community. American Fisheries Society Midwest Student Colloquium, Annual Meeting, Ames, IA. 17 January 2009.

Gerken, J.E. and C.P. Paukert. Factors impacting Topeka Shiner distribution in Kansas. American Fisheries Society Midwest Student Colloquium, Annual Meeting, Ames, IA. 17 January 2009.

Zebra mussels at Winfield City Lake (photo by C. Johnson, KDWP)

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COLLABORATORS AND COOPERATORS

There are many cooperators and collaborators on fisheries projects at the Kansas Unit. These relationships are 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
Missouri Department of Conservation
Arizona Game and Fish Department
Utah Division of Wildlife Resources
National Park Service, Grand Canyon National Park
US Geological Survey, NBII
US Geological Survey, GAP Analysis Program
US Geological Survey, Northern Rocky Mtn. Research Center
US Fish and Wildlife Service, Columbia, MO Fisheries Office
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