

# Factivities

**December 2008**

**South Dakota Cooperative Fish and Wildlife Research Unit  
South Dakota State University  
Box 2140B, Northern Plains Biostress Laboratory 138  
Brookings, SD 57007-1696  
Telephone: 605-688-6121  
Fax: 605-688-4515  
Email: [charles.berry@sdstate.edu](mailto:charles.berry@sdstate.edu)**



Notice: The nationwide celebration of the Year of Science kicked off on January 2 on the National Public Radio's show called "Talk of the Nation: Science Friday." Listen to the 15 minute discussion about the Year of Science between show host Ira Flatow and guest scientist Lee Allison from the Arizona Geological Survey. The National Public Radio weblink is online: <http://www.sciencefriday.com/program/archives/200901021>

## Research Highlights for 2008

Each monthly Factivities newsletter highlights a recent finding by Coop Unit staff and students, usually one that has been published. The table highlights the highlights. Highlights of Factivities are archived on the Department's web page and starting with the November 2008 issue the complete Factivities newsletter is available.

<http://wfs.sdstate.edu/wfsdept/SD%20Cooperative%20Fish%20and%20Wildlife%20Research%20Unit.htm>

<b>Mo.</b>	<b>Research Highlight Featured in Factivities</b>
1	Competition between fish and fowl, stocking walleye can reduce fatheads and increase zooplankton in wetlands (Ecology of Freshwater Fish 17:59).
2	Energetics modeling is being used more and more; Assistant Unit Leader Dr. Steven R. Chipps describes ways to reduce model uncertainty (Transactions of the American Fisheries Society 137:298-313).
3	Juvenile pallid sturgeon habitat: more fish where water was >2 m deep, sand was dominate, and certain invertebrates were abundant (M.S. Thesis by Bryan D. Spindler).
4	Energetics modeling: incorporating largemouth bass feeding history into metabolism sub-models will improve model accuracy (M.S. Thesis by Steven H. Ranney).

5	Is walleye native to the Missouri River? Fossil and molecular evidence indicate walleye were present during the Pleistocene. (Ph.D. Dissertation by Christopher W. Hoagstrom).
6	Improved accuracy of output from the juvenile musky bioenergetics model after use of regression correction technique (Transactions of the American Fisheries Society 137:1891-1897).
7	Former Assistant Unit leader Dr. Kenneth F. Higgins documents differences in duck nesting sites since the 1960s (Technical Report to Fish and Wildlife Services as a volunteer researcher).
8	Fish distribution models for 10 rare fishes evaluated; some good, some not. (North American Journal of Fisheries Management 28:1259-1269).
9	Rocky Mountain Sandhill Cranes switched from crops to natural wetlands for food during their migration (preliminary results).
10	Prairie Coteau Escarpment is special geological structure and home for some unique mammal and fish species (Lucas Borgstrom's talk at Eastern South Dakota Water Conference).
11	Detection probabilities help to make better inferences about population size, structure, and distribution (Transactions of the American Fisheries Society 137:1606-1620).
12	Review of 2008 Research Highlights.

## Research Accomplishments

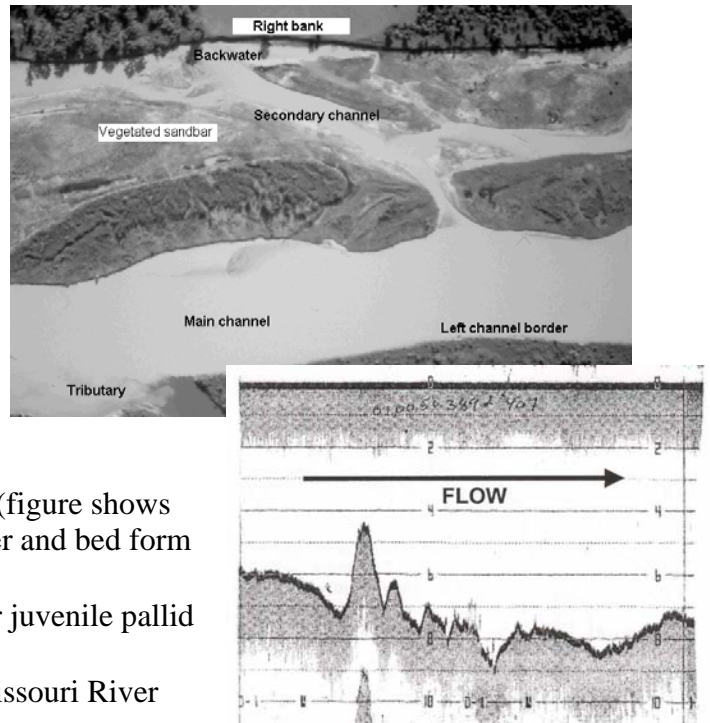
Midwest Fish and Wildlife Conference: Several Unit staff and students traveled to Columbus, participated in committees and technical groups, and presented papers (see Presentations listed below). The trip home was hazardous because of snow storms and ice.

Missouri River Studies: The South Dakota State University (SDSU) Wildlife and Fisheries Department (including the Coop Unit) have a number of studies, proposals, and teaching interests centered around the Missouri River. Unit staff met with Dr. Daniel Soluk and Rachel Hayes from the University of South Dakota to share past research results and discuss collaborative research opportunities with pallid sturgeon and aquatic invertebrates in the Missouri River. Chipps recently completed a survey of benthic invertebrates in river above Gavins Point Dam (shown in figure). Graduate Research Assistant (GRA) student K. Grohs presented the results in her thesis <http://wfs.sdstate.edu/wfsdept/Theses%20and%20Dissertations.htm>.



In the 1990s, Unit Leader Dr. Charles R. Berry, Jr., studied the benthic invertebrates downstream from Gavin's Point Dam (<http://wfs.sdstate.edu/wfsdept/SD%20Cooperative%20Fish%20and%20Wildlife%20Research%20Unit.htm>). A summary of that study follows:

Summary: For shovelnose sturgeon from 400-700 mm long, diet was dominated by 11 orders of aquatic invertebrates (mostly midges, 60% of diet weight), but sturgeon also ate four kinds of terrestrial insects and a few fish. Diet did not differ among years with high, low and medium flow; however, diet weight decreased as discharges increased among months (but other factors – e.g., temperature and benthic biomass – are also acting). We also characterized the benthic and drift assemblages at the time of diet studies.



Missouri River projects now underway include (figure shows major aquatic habitat types in the Missouri River and bed form of a main channel reach):

- Development of a habitat assessment tool for juvenile pallid sturgeon.
- Prey resources and food web dynamics in Missouri River impoundments.
- Vulnerability of age-0 shovelnose sturgeon to predation.
- Use of stable isotope analysis to estimate trophic position of pallid sturgeon.

## Technical Assistance

To South Dakota Department of Game, Fish and Parks (GFP):

- Chipps met with GFP staff to develop sampling and identification protocols for invertebrate samples collected from small impoundments (Angostura and Lakota). Plans are in place for a winter drawdown in Angostura Reservoir and data collected in 2006 will be used to evaluate effects of water level fluctuations.
- Chipps participated in a half-day workshop organized by GFP to discuss spring water releases from Pactola Reservoir. With the recent filling of the reservoir, increased water releases are being planned for 2009 that could have implications for reducing blooms of nuisance algae (*Didymosphenia*) in Rapid Creek. Other participants included Department of Environment and Natural Resources, U.S. Bureau of Reclamation, U.S. Army of Corps of Engineers, and the U.S. Forest Service.

To SDSU – Wildlife:

- Unit staff submitted reports, forms, and other documents to be included in the briefing book for the Department's CREES (Cooperative State Research, Education, and Extension Service) review in spring 2009.

- Chipps completed his fall 2009 course instruction for WL 718 (Ecology of Aquatic Invertebrates). Ten graduate students successfully completed the course – and enjoyed their field trip to the Black Hills.
- Unit staff hosted Dr. Lars Rudstam (Cornell University), who gave a presentation for the Environmental Seminar Series organized by the Biology Department at SDSU. His talk summarized results from a long-term study on Oneida Lake, New York, and the impacts of cormorant predation on walleye and yellow perch abundance.

To Society of Wetland Scientists: Chipps reviewed three manuscripts for *Wetlands*, where he serves as Associate Editor.

To American Fisheries Society: GRA Luc Borgstrom chaired the Rivers and Streams Technical Committee meeting at the Midwest Fish and Wildlife Conference; Research Associate Cari-Ann Hayer serves on Rivers and Streams and Catfish Technical committees.

To SDSU and South Dakota: Berry continues to recruit collaborators and develop events for 2009 Year of Science ([www.yearofscience2009.org](http://www.yearofscience2009.org)). Most South Dakota colleges and universities have joined the Coalition for the Public Understanding of Science ([www.copusproject.org](http://www.copusproject.org)).

## Publications

Schoenebeck, C. W., S. R. Chipps, and M. L. Brown. 2008. Improvement of an esocid bioenergetics model for juvenile fish. *Transactions of the American Fisheries Society* 137:1891-1897.

Shaw, S. L., S. R. Chipps, D. W. Willis, S. Windels, and D. McLeod. 2008. Seasonal distribution of adult lake sturgeon in Namakan Reservoir, Voyageurs National Park. Poster presented at the 69<sup>th</sup> Midwest Fish and Wildlife Conference, Columbus, Ohio.

James, D. A. and S. R. Chipps. 2008. Influence of drought conditions on brown trout biomass in the Black Hills, South Dakota. Poster presented at the 69<sup>th</sup> Midwest Fish and Wildlife Conference, Columbus, Ohio

Van De Hey, J. A., M. J. Fincel, and S. R. Chipps. 2008. Nonlethal sampling of walleye and yellow perch for stable isotope analysis: a comparison of three tissues. 69<sup>th</sup> Midwest Fish and Wildlife Conference, Columbus, Ohio.

Bacula, T. D., B. G. Blackwell, D. W. Willis, and S. R. Chipps. 2008. Smallmouth bass bioenergetics model for Pickerel Lake, South Dakota. Poster presented at the 69<sup>th</sup> Midwest Fish and Wildlife Conference, Columbus, Ohio.

# Other News

Ethics Training: Both Berry and Chipps completed a one-hour course in ethics training. Thirteen principles of ethical conduct for USGS employees include honest effort, public service/public trust, financial interests, use of government information, gifts, promises, public offices for private gain, government property, lobbying, outside employment, fraud, waste and abuse, citizenship duties, and equal opportunity employment. Major topics were outside work as a consultant or elected official of a professional society, proper donations from outside entities.

Unit Records: Elimination of storage space provided by SDSU required the Unit staff to discard and shred many documents. We complied with the Federal Records Retention Schedule, which is three-year retention of all types of financial records and permanent retention for research deliverables (data, maps, reports, publications, etc). We are not required to keep Research Work Order Agreements, which are kept permanently by the Coop Unit Headquarters in Reston.