

Factivities

April 2009

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

Research Highlight

Unexpected Result: **More ducks** from stock ponds in fragmented (>75% tilled) than in unfragmented (<5% tilled) grasslands in western South Dakota. The usual working hypothesis might be that the fragmented landscapes would be less productive. Eleven species of waterfowl occurred on stock ponds – the most common being mallards, blue-winged teal, and gadwalls. Waterfowl productivity was higher (58 broods/100 pairs) in fragmented landscapes than in unfragmented landscapes (40 broods/100 pairs). Three factors may explain the unexpected results: 1) fragmented landscapes were flatter and therefore contained higher densities of natural wetlands than did unfragmented landscapes, 2) livestock grazing was less intense in fragmented landscapes and therefore vegetation was more abundant, and 3) the usual increase duck nest predators (fox, skunk, raccoon) with fragmentation did not occur because the predator community is a coyote-dominated community. There are about 73,000 impoundments and 14,000 excavated stock ponds in the west river study area, where waterfowl nesting may be 2x-4x higher than in many areas east river. West river cropland increased from 24% in 1974 to 29% in 1997; mostly wheat and soybean acres. Management recommendations include: 1) place new stock ponds near wetland complexes; 2) use rest rotation grazing, which fosters increased bird use of pastures; and 3) prevent stock pond deterioration because of erosion. This information was recently published by former Assistant Unit Leader Dr. Kenneth F. Higgins and associates (see list of publications).



Research Accomplishments

Marbled Godwits, Upland Sandpipers, and Western Willets: Unit Graduate Research Assistant (GRA) Dawn Gardner's summary of the status of these birds is now available in publication from the proceedings of the South Dakota Academy of Science (see list of publications). She covers spring and fall migrations, breeding season, monitoring, and nesting habitat. Nesting habitat factors include grazing, burning, prairie dogs, CRP, crop lands, and woodlands. PDF files are available from the Department's web page at <http://wfs.sdstate.edu/wfsci.htm>.



Flathead chub growth compared across six rivers showed that growth was slowest in the White, Belle Fourche, and Cheyenne rivers. Even though riverine conditions are harsh, flathead chubs are abundant in western tributaries to the Missouri River in South Dakota and were commonly found in recent studies of the White River near Badlands National Park by GRA Nick Ahrens (see photo).

Season's End: Global Warming's Threat to Hunting and Fishing. This 110- page color publication of the Bipartisan Policy Center, Washington, DC, compiles and synthesizes information on global warming with the intent to influence congressional debates. The website www.seasonsend.org keeps readers up to date. The Pheasants Forever Inc. input was from former Coop Unit students David Nomsen and Amy Lewis, and Dr. Ken Higgins. The trio collaborated with South Dakota State University (SDSU) faculty member Dr. K. C. Jensen. The book is free for educational purposes from the above web site. The book has a heavy South Dakota flavor being designed by Koupal Communications in Pierre. The Center was created by the efforts of Senator Tom Daschle (and others) and former South Dakota Game, Fish and Parks (GFP) Director John Cooper, who is a senior advisor to the Center and recognized for his assistance with the book.





Lake Sturgeon: Assistant Unit Leader Dr. Steven R. Chipps and GRA Stephanie Shaw (pictured) assisted with annual lake sturgeon collection efforts in Voyageur's National Park. GRAs Daniel James and Mark Finchel also assisted with gill netting efforts. Crews collected, tagged, and sampled blood from over 65 lake sturgeon. Shaw's thesis concerns lake sturgeon population characteristics, movements, and habitat use in the Namakan Reservoir.

Technical Assistance

To Journal: Unit Leader Dr. Charles R. Berry Jr. was asked to serve as an anonymous reviewer for a manuscript submitted to the Ecology of Freshwater Fish. The manuscript was about recruitment of fish from tributaries to the Missouri River.

To Nebraska and South Dakota Coop Units: Chipps and Assistant Unit Leader-Fish Dr. Kevin Pope (Nebraska Coop Unit) conducted an MOCC course for Unit graduate students and research technicians on April 23-26. The course was held at the University of Nebraska-Lincoln. Chipps and Pope co-instruct the course annually and alternate venues between South Dakota and Nebraska.

To SDSU: Chipps served as a graduate committee member (Graduate Representative) for Jonathan Pap in the Nursing Department.

To SDSU – Wildlife: Berry completed teaching a graduate class in Fish Biology (fish structure and function) to four graduate students.

To South Dakota Academy of Science: Berry convened and chaired a half-day symposium on Public Understanding of Science at the annual meeting of the South Dakota Academy of Science, Northern State University, Aberdeen, April 3.

To SDSU – Wildlife: Berry and Chipps participated in the Cooperative State Research Education and Extension Service (CSREES) Evaluation of the Department of Wildlife and Fisheries Science, April 21-23.

Publications

Berry, C. 2009. Energy development meets fish and wildlife science. Out of Doors 49(4):4/6 (newspaper of the South Dakota Wildlife Federation).

Berry, C. April 3, 2009. The Year of Science in South Dakota. Presented at the Annual Meeting of the South Dakota Academy of Science, Aberdeen, South Dakota.

Thomson, S. and C. Berry. April 4, 2009. The influence of livestock rearing ponds in river floodplains on riverine fishes, particularly the Topeka shiner (*Notropis topeka*). Presented at the Annual Meeting of the South Dakota Academy of Science, Aberdeen, South Dakota.

Berry, C. April 29, 2009. Issues that influence public understanding and skepticism of science. Annual Meeting of the SDSU Sigma Xi Chapter. Invited Banquet Speaker.

May, S. M., K. F. Higgins, D. E. Naugle, K. K. Bakker, and K. C. Jensen. 2008. Landscape characteristics affecting habitat use and productivity of ducks on stock ponds in western South Dakota. *Proceedings of the South Dakota Academy of Science* 87:63-84.

Gardner, D. M., K. C. Jensen, and K. F. Higgins. 2008. Status of marbled godwits in South Dakota: based on a 2007 literature synthesis. *Proceedings of the South Dakota Academy of Science* 87:85-110.

Gardner, D. M., K. C. Jensen, and K. F. Higgins. 2008. Status of upland sandpipers in South Dakota: based on a 2007 literature synthesis. *Proceedings of the South Dakota Academy of Science* 87:111-140.

Gardner, D. M., K. C. Jensen, and K. F. Higgins. 2008. Status of western willets in South Dakota: based on a 2007 literature synthesis. *Proceedings of the South Dakota Academy of Science* 87:141-166.

Hayer, C-A, N. L. Ahrens, and C.R. Berry Jr. 2008. Biology of flathead chub, *Platygobio gracilis*, in three great plains rivers. *Proceedings of the South Dakota Academy of Science* 87:185-196.

Berry, C. 2008. Fishes of the Cheyenne River: synthesis of recent research. *Proceedings of the South Dakota Academy of Science* 87:333 (abstract).