

Sustaining the Missouri River for Future Generations



**March 21-24, 1999
Ramkota Inn RiverCentre
Pierre, South Dakota**

SPONSORS

Dakota Chapter of the American Fisheries Society
Missouri River Natural Resources Committee
Missouri River Basin Association
South Dakota Department of Game, Fish and Parks
USGS-BRD Columbia Environmental Research Center
U.S. Fish and Wildlife Service, Region 3 and 6
U.S. Environmental Protection Agency, Region 8

ORGANIZING COMMITTEE

Mark Albers

U.S. Fish and Wildlife Service

Chuck Berry

USGS-BRD, South Dakota Cooperative Fish & Wildlife Research Unit

Pam Haverland, Jeanne Heuser, & Mark Lastrup

USGS - Biological Resources Division

Ken Iverson & Christine Yackley

Missouri River Corridor Program

Mike LeValley

Missouri River Natural Resources Committee

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Greg Power

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U.S. Bureau of Indian Affairs

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Sustaining the Missouri River for Future Generations



The 3rd Annual Conference on Natural Resources of the Missouri River Basin continues a tradition initiated in 1997 to provide a forum for information exchange on the stewardship, ecology, and management of the Missouri River and its flood plain. The 1999 theme focuses the plenary and panel sessions on national, regional, and local issues that consider how to sustain river uses by integrating natural resources, cultural values, and economics.

The 1st conference was held in Missouri, the 2nd in Nebraska, and this year in South Dakota as we travel the river getting to know each unique area. Pierre is located along Lake Sharpe and just south of Oahe Dam. The Ramkota Inn RiverCentre is adjacent to Steamboat Park on the banks of the Missouri River.

Sunday March 21	Noon to 7:30 p.m. 1:00 - 4:00 p.m. 7:00 - 9:00 p.m.	Registration Field trip (leaving every hour) Social with GIS presentation on Captain Grant Marsh
Monday March 22	8:00 a.m. - 5:00 p.m. 8:00 a.m. - Noon Noon - 1:15 p.m. 1:15 - 5:00 p.m. 5:30 - 7:00 p.m.	Posters and exhibits displayed Plenary session Lunch with Leonard Andera Paper presentations Social with MO River slideshow
Tuesday March 23	8:00 a.m. - 5:00 p.m. 8:30 a.m. - Noon Noon - 1:00 p.m. 1:00 - 5:00 p.m. 5:30 p.m.	Posters and exhibits displayed Panel discussion Lunch on your own Paper presentations Banquet with Tony Dean
Wed. March 24	8:00 a.m. - Noon Noon	Concurrent Paper sessions Closing remarks - conference adjourns

PIERRE

South Dakota

Pierre (pronounced "Peer") is the South Dakota state capitol and the Hughes County seat. It is located in the center of South Dakota and is home to more than 13,000 people. Pierre sits on the east bank of the Missouri River between two main stem reservoirs, Lakes Oahe and Sharp, which offer a wealth of recreational opportunities including some of the finest walleye fishing in the midwest.



Historically, Arikara villages once lined the shores of the Missouri River in this area. Later the Sioux Nation tribes migrated here. The first record of Europeans date to 1743 when two French brothers claimed the region for their king. The founding of Fort Pierre, across from Pierre on the west bank of the river, dates back to the fur-trading days of Fort Techumseh and Fort Pierre Chouteau. It was here that explorers Lewis and Clark had their first encounter with the Teton Sioux in 1804.

In 1880, the Dacotah Central Railroad arrived and helped support the mining and cattle industries in central South Dakota.

South Dakota State Capitol

The State Capitol built in 1910 and fully restored in 1989 is of Greek Roman architecture and features Italian terrazzo tile throughout the building. The Capitol Rotunda reaches 96 feet from floor to ceiling and features Victorian leaded stained glass surrounded by oval-like alcove openings decorated with handpainted art.

Capitol Lake

Fed by a warm artesian well, the lake never completely freezes and is a winter haven for waterfowl. The *Flaming Fountain* is fed by an artesian well which has a natural gas content so high that it has a perpetually burning flame serving as a memorial to all veterans who are commemorated at the Peace Officer, Fighting Stallion, Korean and Vietnam Memorials.

South Dakota Cultural Heritage Center

Headquarters for the South Dakota State Historical Society, the South Dakota Cultural Heritage Center is built into the side of a Missouri River bluff near the Capitol. From early American Indian cultures to the arrival of the settlers, river boats and railroads, the museum displays present South Dakota history in fascinating high-tech fashion.



Discovery Center and Aquarium

The hands-on science center features aquariums with Missouri River fish and over 50 science activities for families. Based on the "please touch" learning concept, the ground floor is decked with colorful displays and aquariums. The gallery area is full of hands-on exhibits and non-traditional science displays. Visitors can experience the universe through astronomy in the Sky Lab planetarium or test their reflex skills in the reactionary car.

LaFramboise Island

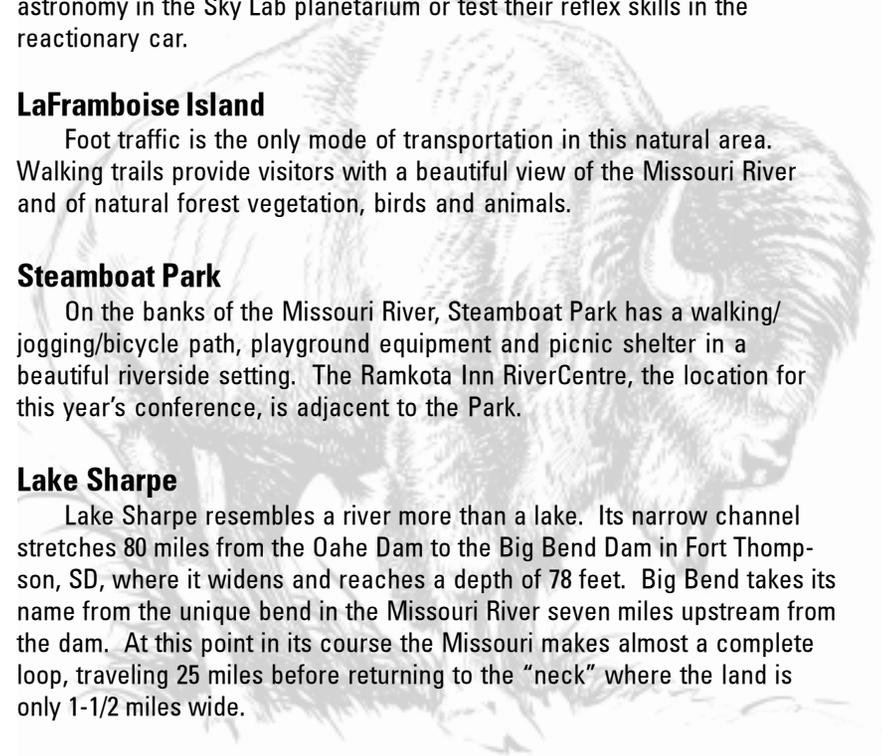
Foot traffic is the only mode of transportation in this natural area. Walking trails provide visitors with a beautiful view of the Missouri River and of natural forest vegetation, birds and animals.

Steamboat Park

On the banks of the Missouri River, Steamboat Park has a walking/jogging/bicycle path, playground equipment and picnic shelter in a beautiful riverside setting. The Ramkota Inn RiverCentre, the location for this year's conference, is adjacent to the Park.

Lake Sharpe

Lake Sharpe resembles a river more than a lake. Its narrow channel stretches 80 miles from the Oahe Dam to the Big Bend Dam in Fort Thompson, SD, where it widens and reaches a depth of 78 feet. Big Bend takes its name from the unique bend in the Missouri River seven miles upstream from the dam. At this point in its course the Missouri makes almost a complete loop, traveling 25 miles before returning to the "neck" where the land is only 1-1/2 miles wide.



SUNDAY, MARCH 21

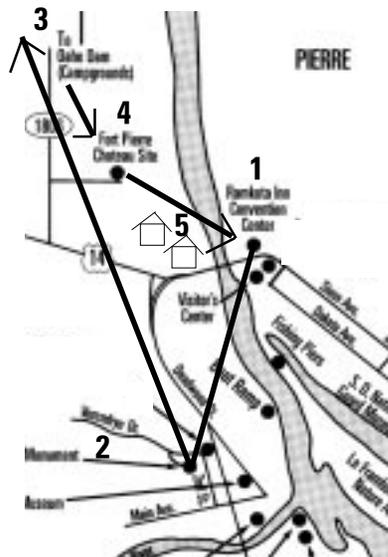
Registration - Noon to 7:30 p.m.

Field Trip

1 p.m., 2 p.m., 3 p.m. or 4 p.m.
Reservations required - lasts 2 hours

The field trip:

- 1) begins at the Ramkota Inn RiverCentre.
- 2) stops at the LaVerendrye Monument with its scenic overview of the Missouri River,
- 3) tours Oahe Dam and Powerhouse,
- 4) visits Ft. Pierre Chouteau, and,
- 5) drives through a new housing development constructed in the river's flood plain.



Lake Oahe and Dam

Oahe Dam is one of the six main stem projects operated by the U.S. Army Corps of Engineers in the upper Missouri River basin. Lake Oahe is the 4th largest reservoir in the United States with a storage capacity of 23.5 million acre-feet, a shoreline of 2,250 miles, and a maximum depth of 205 feet. It is 231 miles long, extending from Pierre, SD, north to Bismarck, ND. The dam is the 2nd largest rolled earth dam in the world with a fill volume of 92 million cubic yards and a height of 245 feet.



Hydroelectric power generating capacity is 786,000 kilowatts. More than 1.5 million visitors enjoy Lake Oahe's recreation facilities each year.

LaVerendrye Monument

French Canadian Explorers Chevalier and Louis LaVerendrye buried a lead plate at this site in 1743 while seeking a route to the Pacific Ocean. The plate was an important historical find, providing evidence of the earliest known Europeans in this region. This French expedition established France's claim to the region for the king of France, which eventually led to the Louisiana purchase in 1803.

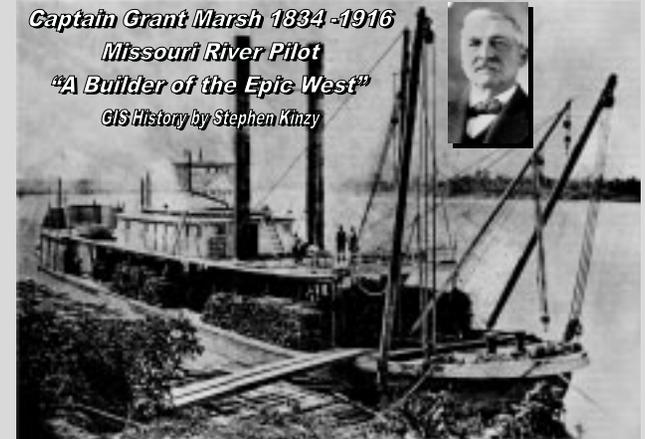
Ft. Pierre Chouteau

The largest fur trading fort on the upper Missouri was located here from 1831-1855. Sioux Indians brought about 17,000 buffalo robes a year and other furs to trade for guns, tobacco, blankets, kettles, beads and other supplies. Indian bands were greeted with a cannon salute, followed by a welcome ceremony and feast. At times, hundreds of tipis covered the Ft. Pierre plain. Steamboats from St. Louis delivered trade goods to the fort and returned loaded with robes bound for New York.

Opening Social

7 to 9 p.m.

Captain Grant Marsh 1834-1916
Missouri River Pilot
"A Builder of the Epic West"
GIS History by Stephen Kinzy



Captain Grant Marsh was a Missouri River steamboat captain from 1840-1880. Stephen Kinzy from the Environmental Systems Research Institute (ESRI), developers of ArcView and ArcInfo software, will give a multi-media GIS historical-biographical presentation about Captain Marsh with particular emphasis on the Missouri River and the Battle of Little Big Horn.

MONDAY, MARCH 22

Registration - 7:00 a.m.

PLENARY SESSION

- 8:00 a.m. **Welcome**
Gary Drewes, Mayor of Pierre & Jim Riis, Conference Chairman,
South Dakota Department of Game, Fish, & Parks, Pierre, SD
- 8:10 a.m. **Plenary Session Introduction**
Mike LeValley, MO River Natural Resources Committee Coordinator
- 8:15 a.m. **Opening Remarks - Thinking Seven Generations Ahead**
Gregg Bourland, Chairman, Cheyenne River Sioux Tribe, Eagle
Butte, SD
- 8:30 a.m. **The Natural History Lessons of Lewis and Clark:
Presettlement Landscapes and Modern Uses of Science**
Dr. Daniel Botkin, President, the Center for the Study of the
Environment, Arlington, VA
- 9:15 a.m. **The Economic Consequences of Watershed Management:
Values, Impacts, and Equity**
Dr. Ed Whitelaw, President, ECO Northwest and Professor of
Economics, University of Oregon, Eugene, OR
- 10:00 a.m. BREAK
- 10:30 a.m. **Science and Values in River Restoration in the Grand Canyon -
the Glen Canyon Dam Experiment**
Dr. Richard Marzolf, Chief, Branch of Regional Research,
United States Geological Survey, Reston, VA
- 11:15 a.m. **Sustaining the Natural Resource, Cultural, and Economic Values
of the Missouri River - Native American Perspectives**
Wes Martel, President, Wind River Associates, Fort Washakie, WY

LUNCH - Noon

Lewis and Clark Reenactment
by Leonard Andera

PAPER PRESENTATIONS

- 1:15 p.m. *Master Manual Update.* Richard Opper, Missouri River Basin
Association, Lewistown, MT
- 1:35 p.m. *An Overview of the Missouri River Land Transfer Bill and South
Dakota Strategy for Implementation.* Rick Collignon, South
Dakota Department of Game, Fish, and Parks, Pierre, SD
- 1:55 p.m. *Enhancing Natural Resources for the Native Americans in the
Missouri River Basin.* Richard Bad Moccassin, Mni Sose
Intertribal Water Rights Coalition, Rapid City, SD
- 2:15 p.m. *Missouri River Restoration.* Ron Kucera, Missouri Department
of Natural Resources, Jefferson City, MO
- 2:35 p.m. *The Geospatial Component of the Missouri River InfoLink.*
Mark Lastrup, USGS-BRD, Columbia, MO
- 2:55 PM BREAK
- 3:20 p.m. *Aquatic Assessment of the Northern Great Plains.* Thomas R.
Johnson, Environmental Protection Agency, Region 8, Denver, CO
- 3:40 p.m. *Environmental Monitoring and Assessment Program:
An Assessment Framework for the Upper Missouri River Basin.*
Eric Hyatt, Environmental Protection Agency, Region 8, Denver, CO
- 4:00 p.m. *Multiple Attribute Decision-making Approach to Sustainable
Management of the Missouri River.* Tony Prato, University of
Missouri, Columbia, MO
- 4:20 p.m. *A Decision Support System for Information Management and
Water Quality Assessment in Dardenne Creek.* Yan Barnett,
University of Missouri, Columbia, MO
- 4:40 p.m. *The GEWEX Continental-scale International Project (GCIP) and its
Plans for the Missouri River Basin.* Rick Lawford, NOAA Office of
Global Programs, Silver Spring, MD

EVENING SOCIAL - 5:30 p.m.

Missouri River Slide Show by Gene Zuerlein,
Nebraska Game and Parks Commission

TUESDAY, MARCH 23

Sustaining the Missouri River for Future Generations PANEL DISCUSSION

8:30 a.m. - Noon

The panel will address the following questions:

- How does your interest affect sustainability of the river for multiple uses?
- How do other uses of the river affect the sustainability of your interest?

Moderator

Chuck Berry, USGS-BRD, South Dakota Cooperative Fish and Wildlife Research Unit, South Dakota State University, Brookings, SD

PANEL MEMBERS

- Mike Dwyer, Upper Missouri Water Association, Bismarck, ND
- Don Johnston, Public Works Department, Flandreau, SD
- Scott Jones, Lower Brule Tribe, Lower Brule, SD
- Mike Kayser, Department of Tourism, Pierre, SD
- Tom Olsen, the Outpost Lodge and Marina, Pierre, SD
- Chad Smith, American Rivers, Lincoln, NE
- Christine Yackley, Missouri River Corridor Program, Onida, SD

Noon **LUNCH - On Your Own**

PAPER PRESENTATIONS

- 1:00 p.m. *Missouri River Bank Stabilization and Navigation Fish and Wildlife Mitigation Project.* Robert G. Dimmit, U.S. Army Corps of Engineers, Kansas City, MO
- 1:20 p.m. *Characteristics & Evolution of a Side-channel Chute on the Lower Missouri River.* Robb Jacobson, USGS-BRD, Columbia, MO

- 1:40 p.m. *State of the Floodplain: Dynamics of Selected Areas after 1993 Flooding along the Missouri River.* Curt S. Niebur, Washington University, St. Louis, MO
- 2:00 p.m. *Decommissioning of Privately Owned Dams: the Effects of Deregulation in Montana.* Aart Dolman, Great Falls, MT
- 2:20 p.m. *Fish and Wildlife Resources and Bank Stabilization on the Upper Missouri River.* William Bicknell, U.S. Fish and Wildlife Service, Bismarck, ND
- 2:40 PM BREAK
- 3:00 p.m. *Reservoir Deltas: Processes and Impacts.* John Remus, U.S. Army Corps of Engineers, Omaha District, Omaha, NE
- 3:20 p.m. *Use of Continuous Seismic Reflection to Assess the Composition of the Missouri River Bed.* Steve Sando, USGS, Huron, SD
- 3:40 p.m. *Pipeline Transport of Large Volumes of Solids.* C.A. Shook, Edmonton, Alberta, Canada
- 4:00 p.m. *Conversion of the Pick-Sloan System to a Sustainable System: The Pipeline Transport of Silt.* Howard Coker, University of South Dakota, Vermillion, SD
- 4:20 p.m. *Missouri River Corridor Program of South Dakota.* Christine Yackley, Missouri River Corridor Program, Onida, SD
- 4:40 p.m. *Water Demands from Five Missouri River System Tributaries in Kansas.* Thomas A. Eddy, Emporia State University, Emporia, KS

BANQUET - 5:30 p.m.

Presentation by Tony Dean, outdoor writer, television and radio producer, multi-species angler, and river/reservoir system expert. Mr. Dean is the host and Executive Producer of "Tony Dean Outdoors," an outdoor television series that airs across the northern U.S. and produces the daily radio show, "Dakota Backroads." He has authored "Fishing the Missouri River System" and "Salmon Mania" and writes articles for a variety of magazines.

WEDNESDAY, MARCH 24

CONCURRENT SESSION I

Water Quality, Vegetation, Birds, and Amphibians

- 8:00 a.m. *Water Quality of a Remnant Riparian Wetland along the Missouri River.* Dale Blevins, USGS-WRD, Independence, MO
- 8:20 a.m. *Mercury Contamination in Missouri River Fish.* Jake Joyce, Environmental Protection Agency, Region 7, Kansas City, KS
- 8:40 a.m. *Pollution in Big Spring Creek: A Success Story.* Isaac Opper, Elementary School Student, Lewistown, MT
- 9:00 a.m. *Corps Planted and Natural Plant Recolonization on the Benedictine Bottoms.* Joseph Curry, Benedictine College, Atchison, KS
- 9:20 a.m. *Historical Description of Benedictine Bottoms Missouri River Flood Plain Plant Biodiversity.* Sarah Kafka, Benedictine College, Atchison, KS
- 9:40 a.m. *Avian Use of Missouri River Flood Plain Wetlands.* Dale Humburg, Missouri Department of Conservation, Columbia, MO
- 10:00 a.m. BREAK
- 10:20 a.m. *Waterbird Use of a Chute and Flood Plain Wetland Complex during Spring Migration.* Ellen Ehrhardt, USGS-BRD, Columbia, MO
- 10:40 a.m. *Waterbird Use of Lower Missouri River Flood Plain Wetlands.* Amanda McColpin, University of Missouri, Columbia, MO
- 11:00 a.m. *Birds Respond to Habitat, 1998, Piping Plover and Least Tern Survey Results.* Casey Kruse, Army Corps of Engineers, Yankton, SD
- 11:20 a.m. *Can the Missouri River Play a Role in Piping Plover Recovery in the Northern Great Plains?* Nell McPhillips, U.S. Fish and Wildlife Service, Pierre, SD
- 11:40 a.m. *Amphibian Use of Flood-created Wetlands on the Missouri River Flood Plain.* Rochelle B. Renken, Missouri Department of Conservation, Columbia, MO
- NOON **CLOSING REMARKS - Post-conference meetings 1 - 4 p.m.**

CONCURRENT SESSION II

Fish and Macroinvertebrates

- 8:00 a.m. *Benthic Macroinvertebrates Associated with Specific Habitats and Substrates in the Lower Missouri River.* Barry Poulton, USGS-BRD, Columbia, MO
- 8:20 a.m. *Biodiversity Patterns of Terrestrial Macroinvertebrates on the Benedictine Bottoms in Northeast Kansas.* Liesa Hummel, Benedictine College, Atchison, KS
- 8:40 a.m. *Missouri River Long-term Monitoring and Assessment Database.* Shea M. Bergman, Rivers Corporation, Inc., Crofton, NE
- 9:00 a.m. *Habitat Use and Catch Rates of Benthic Fishes in the Missouri River.* Bradley Young, South Dakota State University, Brookings, SD
- 9:20 a.m. *Electrofishing in the Missouri River in the Vicinity of the AmerenUE Labadie Power Plant.* Kenneth W. Lynn, Ameren Corp., St. Louis, MO
- 9:40 a.m. *Use of Backwater Habitats by Native Fishes in the Missouri River, ND.* Shannon Fisher, South Dakota State University, Brookings, SD
- 10:00 a.m. BREAK
- 10:20 a.m. *Changes in Walleye Population Status and Angler Use and Harvest Patterns in Lake Oahe, South Dakota.* John Lott, South Dakota Game, Fish & Parks, Pierre, SD
- 10:40 a.m. *Understanding Changes in Rainbow Smelt Distribution and Abundance and their Effects on Condition and Angler Catchability.* Wayne Nelson-Stastny, SD Game, Fish, and Parks, Pierre, SD
- 11:00 a.m. *Trends in Selected Cyprinid Populations in the Lower Missouri River.* Joanne Grady, U.S. Fish and Wildlife Service, Columbia, MO
- 11:20 a.m. *Morphometric and Meristic Differences among Missouri River Sicklefin Chubs.* Doug Dieterman, University of MO, Columbia, MO
- 11:40 a.m. *The Status and Habitat Association of Sturgeon Chub and Sicklefin Chub in the Middle Mississippi River.* David P. Herzog, Missouri Department of Conservation, Cape Girardeau, MO
- NOON **CLOSING REMARKS - Post-conference meetings 1-4 p.m.**

POSTERS

**Displayed Monday & Tuesday
8 a.m. - 5 p.m.**

A proposal for the Missouri River Institute.

Angler Use and Fish Harvest from the Missouri River Reservoirs in Montana, North Dakota, and South Dakota, 1997.

Assessment of Larval Fish Consumption by Goldeye in Two Missouri River Backwaters.

Bad River Water Quality Project.

Bird Biodiversity of the Missouri River Benedictine Bottoms Migration Site, 1994-1998.

Entrainment of Ichthyoplankton in the Lower Yellowstone River.

Fishes of the Missouri National Recreational River, South Dakota and Nebraska.

Microbial Biodiversity on the Benedictine Bottoms.

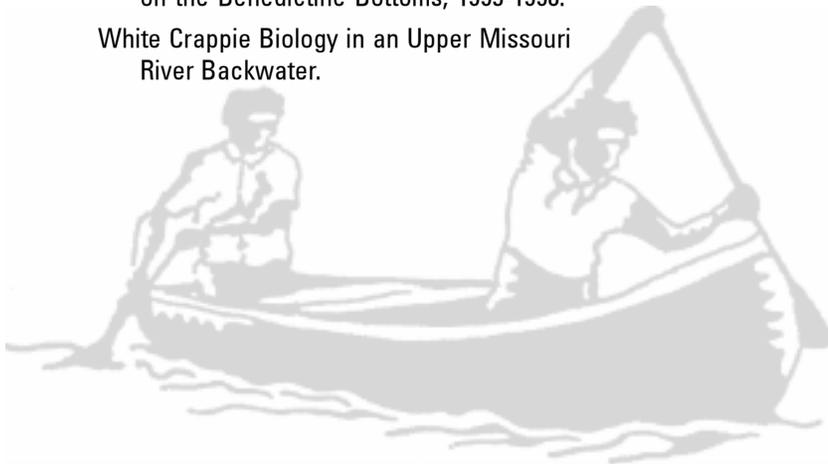
Size Selectivity of a Dual-mesh Trawl: Collecting Sicklefin and Sturgeon Chubs in the Middle Mississippi River.

Smallmouth Bass Movement and Habitat Use in Lower Lake Oahe, South Dakota.

Status and Trends of the Lake Oahe Coldwater Fishery.

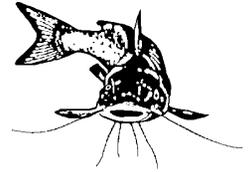
The Biodiversity of Non-avian Terrestrial Vertebrates on the Benedictine Bottoms, 1995-1998.

White Crappie Biology in an Upper Missouri River Backwater.



EXHIBITS

**Displayed Monday & Tuesday
8 a.m. - 5 p.m.**



- American Rivers
- Environmental Systems Research Institute (ESRI)
- Hydrolab
- Marine Sonic Technology
- Mni Sose Intertribal Water Rights Coalition
- Missouri River InfoLINK
- Native American Fish and Wildlife Society
- Scientific Fisheries, Inc. (SciFish Inc.)
- South Dakota Association of Resource Conservation and Development Councils
- South Dakota Department of Game, Fish and Parks
- South Dakota State University
- US Army Corps of Engineers, Gavins Point Office
- US Army Corps of Engineers, Missouri River Region
- US Environmental Protection Agency (Region 7 & 8)
- US Fish and Wildlife Service (Region 6)
- USGS-Biological Resources Divisions
Columbia Environmental Research Center
- USGS-Biological Resources Division
Midcontinent Ecological Science Center
- USGS-National Mapping Division
EROS Data Center
- USGS-National Mapping Division
Midcontinent Mapping Center
- USGS-Water Resources Division
South Dakota

Hotels

Ramkota Inn RiverCentre

920 W. Sioux Ave. 1-800-528-1234 or 605-224-6877

Room cost: \$59/single and \$65/double

Reserve your room under the name of "Missouri River Conference" by February 21, 1999 to get the group rate.

Located on the banks of the Missouri River, the Ramkota is a fully-equipped Best Western hotel within a few blocks of fishing piers, LaFramboise Island, nature trails, beautiful parks and the Discovery Center and Aquarium. The hotel features an indoor pool, sauna, whirlpool, exercise room, indoor garden courtyard, boat parking, and courtesy shuttle service.

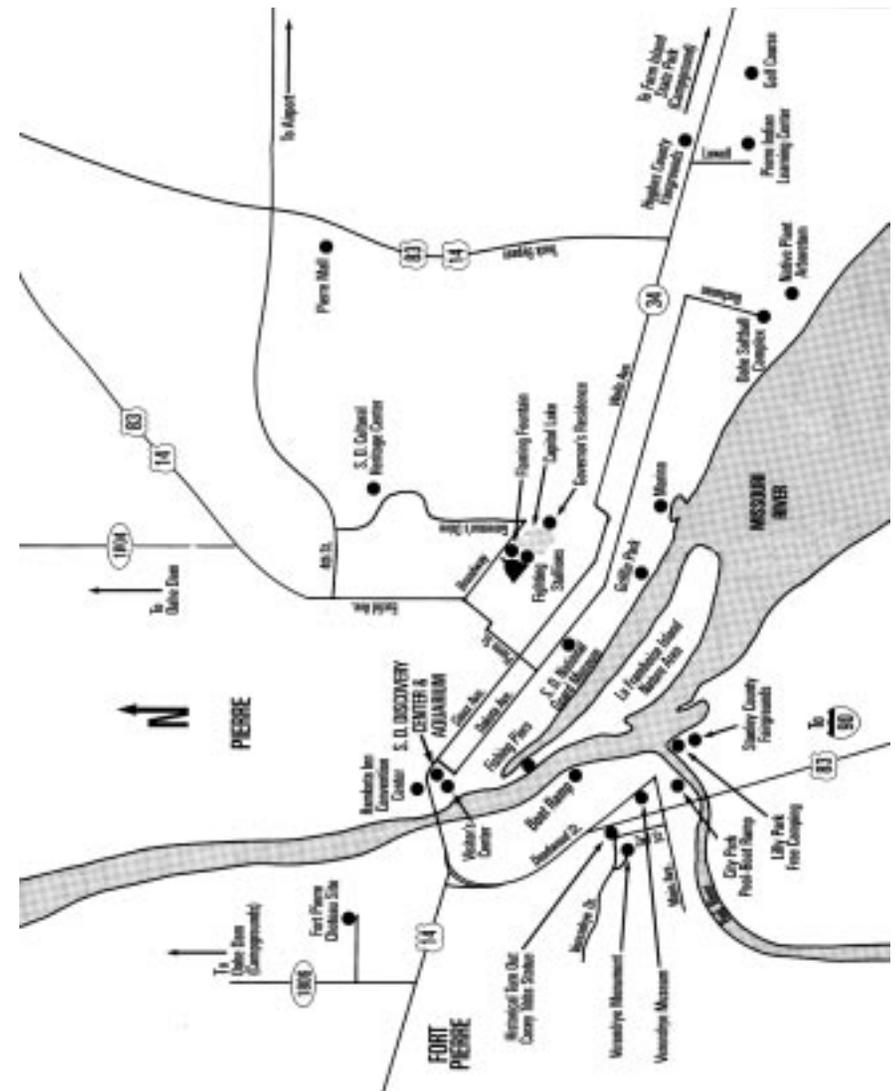
Other Area Hotels

COMFORT INN 410 W. Sioux Ave. 60 motel units, \$45-up 1-800-221-2222	GOVERNOR'S INN 700 W. Sioux Ave. 82 rooms, \$43-up 1-800-341-8000	SUPER 8 MOTEL 320 W. Sioux Ave. 78 rooms, \$29-up 1-800-800-8000
DAYS INN 520 W. Sioux Ave. 79 rooms, \$36-up 1-800-329-7466	KELLY INN 713 W. Sioux 47 rooms, \$37-up 1-800-635-3559	

Transportation

Major highways into Pierre are 83 from the south, 14 from the west, 14 and 83 from the north and 34 from the east.

The airport is within 5 miles of the hotel with a shuttle available. Fly to Pierre through Minneapolis or Denver.





Conference Home Page

<http://infolink.cr.usgs.gov>

Send registration to:

Missouri River Conference
 c/o Jeanne Heuser, USGS-BRD
 Columbia Environmental Research Center
 4200 New Haven Road, Columbia, MO 65201
 Phone 573-876-1876 Fax 573-876-1896
jeanne_heuser@usgs.gov

Space is available if your group would like to have a small meeting after the Conference adjourns. Please contact Jeanne at the above address to reserve a spot no later than March 6, 1999.

REGISTRATION

Please PRINT and complete one form per person attending.

Name _____

Affiliation _____

Address _____

City _____ State ____ Zip _____

Phone _____ Fax _____

E-mail _____

FIELD TRIP

No, I will not be attending Yes, I will be attending at:

1 p.m. 2 p.m. 3 p.m. 4 p.m. don't know what time

COSTS - Preregistration rate good only before MARCH 6, 1999

Check all that apply

FULL CONFERENCE

Regular: \$90 After March 6: \$115

Student: \$65 After March 6: \$90

Includes 3 socials, all breaks, 1 lunch, 1 banquet

INDIVIDUAL DAY

Sunday 3/21 \$15 (field trip and social)

Monday 3/22 \$45 (includes lunch)

Tuesday 3/23 \$45 (includes banquet)

Wednesday 3/24 \$25

Amount Enclosed \$ _____

Make check payable to *Dakota Chapter of AFS*, tax #23-7226667

OR

Purchase Order Number (attach copy) _____

Student ID number and school for student rates _____

clip here and mail or fax