

U.S. Geological Survey

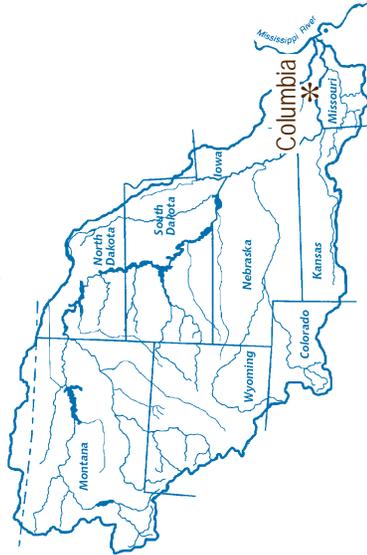
Columbia Environmental Research Center

4200 New Haven Road, Columbia, MO 65201

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Missouri River Basin



8th Annual Missouri River Natural Resources Conference
<http://infolink.cr.usgs.gov/events/04.htm>

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8th ANNUAL MISSOURI RIVER NATURAL RESOURCES CONFERENCE

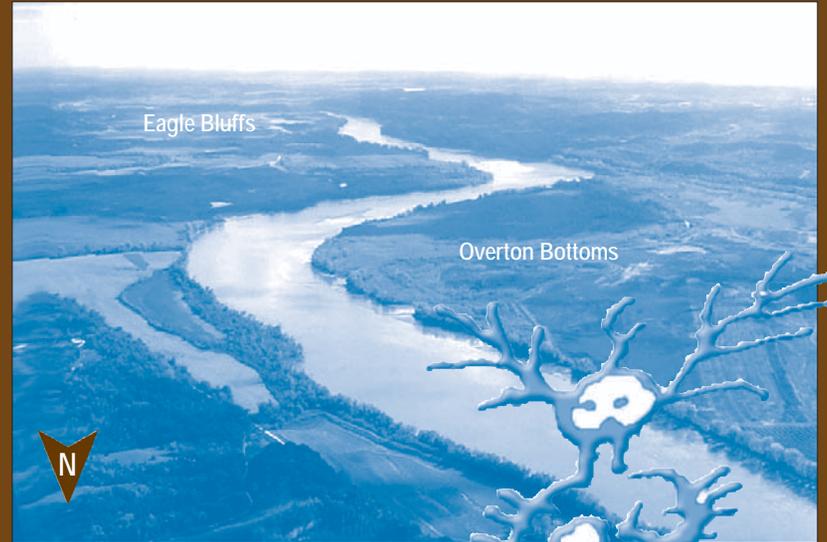
Rediscovering Missouri River **CONNECTIONS**



May 23-26, 2004
Manitou Bluffs Region

Columbia, Missouri
Holiday Inn Select

INVITATION



The Basinwide Conference Dedicated to the
Environment of the Missouri River



Rediscovering Missouri River **CONNECTIONS**

A FORUM for
Missouri River
stakeholders to
EXCHANGE
information,
SHARE
perspectives,
SOLVE
problems.

As we commemorate the 200th anniversary of the Lewis and Clark Corps of Discovery, modern Missouri River explorers are rediscovering how to live in harmony with the river.

Today, as we answer management questions based on the scientific principles underlying this large river's ecosystem, we look to the Lewis and Clark records as one historical snapshot in time of a constantly changing river. Modern scientific exploration involves not only recording the river's natural resources, but providing unbiased interpretation of the science and collaborating with others to conduct research and make decisions.

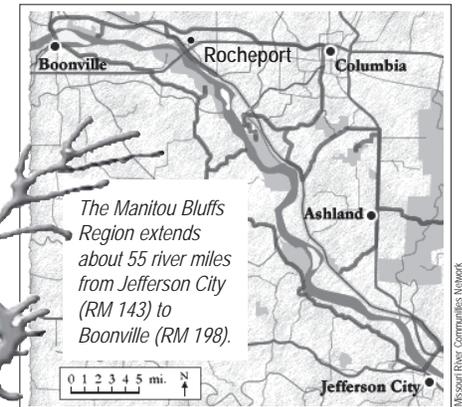
Missouri River stakeholders are part of a worldwide endeavor to connect with each other and their unique river to discover complex resource management solutions that merge ecosystem health with multiple human uses. At this year's Missouri River Natural Resources Conference, we explore new ways to make connections and share visions of how to move forward with Missouri River resource management.

Missouri River Manitou Bluffs Region



In June 1804, the Lewis and Clark Corps of Discovery passed between the limestone bluffs that line the river near modern-day Rocheport, Missouri. Clark saw pictographs painted on the bluffs and recorded these Manitous (representations of the Great Spirit) in his journal. The Manitou lends its name to the region today.

The Missouri River naturally narrows between the bluffs in this region referred to as the Ozark Border Woodland/Forest Hills land type. Characterized by high dissection and local relief over 200 feet, the area has typical Ozark Mountain karst features such as sinkholes, caves, and springs.



After the Midwest Flood of 1993, thousands of floodplain acres were bought by public agencies to provide natural areas for flood dispersal and to rehabilitate fish and wildlife habitat (shaded areas in map). At the conference, daily field trips highlight these sites as we travel by barge, research vessel, bus, van, and hay wagon to view habitat rehabilitation in progress (pages 4, 8-9).

Conference Organizers

Robert Bacon and Joe Engeln, Missouri Department of Natural Resources, Jefferson City MO

Jim Berkley, U.S. Environmental Protection Agency, Denver CO

Brian Canaday (Chairman) and Vince Travnichek, Missouri Department of Conservation, Jefferson City MO

Michael Chapman, U.S. Army Corps of Engineers, Kansas City MO

Mike Cooper, Missouri River Communities Network, Columbia MO

David Galat, USGS Cooperative Research Unit, University of Missouri, Columbia MO

Tim Haller and Maureen Gallagher, Big Muddy National Fish and Wildlife Refuge, U.S. Fish and Wildlife Service, Columbia MO

Jeanne Heuser and Carl Korschgen, U.S. Geological Survey, Columbia MO

Jane Ledwin (Columbia MO) and Mike Olson (Bismarck ND), U.S. Fish and Wildlife Service

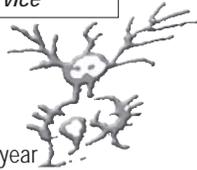
Mike LeValley, Missouri River Natural Resources Committee, Missouri Valley IA

Tony Prato, CARES, University of Missouri-Columbia MO

Chad Smith, American Rivers, Lincoln NE

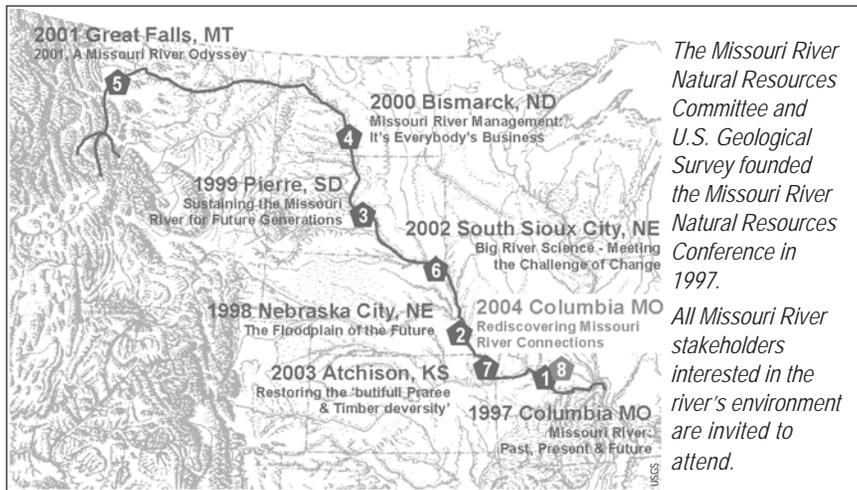
Michael Snyder and Jeff Turner, HDR Engineering, Inc. Kansas City MO

Financial support provided by HDR Engineering, Inc. and the U.S. Fish and Wildlife Service



New Cycle

The Missouri River Natural Resources Conference changes location each year so participants may explore the variability in the river's ecosystem. In 2004, the conference comes full circle, returning to where it began in Columbia, Missouri. With this new cycle, we initiate a tradition designed to improve collaboration and provide even better science to aid in making Missouri River resource management decisions.



Schedule Overview

All activities at the Holiday Inn Select unless otherwise noted.

Sunday, May 23 - All Sunday events open to the public

Noon Registration - Poster and exhibit set-up for evening social
 1:00 p.m. Overton Outing river trip (see descriptions on page 4 & 8-9)
 5:00 p.m. Welcoming Social and Poster, Exhibit and Book Signing Session (p.5)
 7:00 p.m. *Sharing the Challenge: Ten Years After* by Gerald Galloway (p.4)

Monday, May 24

7:00 a.m. Registration and Breakfast
 8:00 a.m. Plenary (p.6)
 • *From Pelican Island to the Missouri Basin: Collaboration and Resource Management* by Steve Yaffee
 • *Independent Science Review* by Deborah Brosnan
 10:30 a.m. Concurrent Presentations (p.7)
 Noon Lunch
 1:00 p.m. Down by the River Trips (p.8-9)
 5:30 p.m. BBQ Supper at the Rocheport Winery (p.7)

Tuesday, May 25

7:00 a.m. Registration and Breakfast
 8:00 a.m. Plenary (p.10)
Best Practice Governance of Large River Basins: Implications for Large Rivers Systems like the Missouri by Bruce Hooper
 10:30 a.m. Concurrent Presentations (p.11)
 Noon Lunch - *Search for the Missouri River Source* by John LaRondeau (p.10)
 1:00 p.m. Down by the River Trips (p. 8-9)
 5:30 p.m. Fish Fry at Cooper's Landing (p.11)

Wednesday, May 26

7:00 a.m. Breakfast
 8:00 a.m. Concurrent Presentations (p.12-13)
 Noon Lunch - *The Lewis and Clark Expedition and the Lower Missouri River: Running the First Gauntlet* by Jim Denny (p.12-13)
 1:30 p.m. Main Conference ends - - -
 Workshop begins on *Independent Science Review: Moving Towards a Fair Way to Judge Science in the Missouri River Basin* (p.14).
 The workshop is continued on Thursday, May 27, 8:00 a.m. - Noon

Sunday May 23

All Sunday activities open to the public at no charge

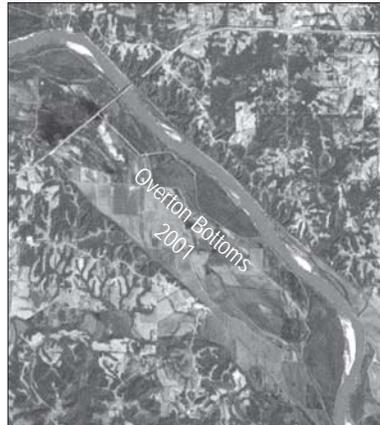
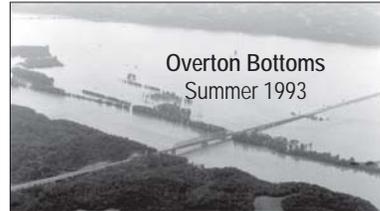
Down by the River: Overton Outing Barge Trip

1:00 - 5:00 p.m. Meet at the Holiday Inn. Reservations required (125 person limit).

The post-1993 Midwest Flood report, *Sharing the Challenge: Floodplain Management into the 21st Century*, recommended the removal of towns and farms from the floodplain. In the Manitou Bluffs Region some landowners sold their land to the U.S. Army Corps of Engineers, including sections of Overton Bottoms.

Now part of the *Missouri River Fish and Wildlife Mitigation Project*, Overton Bottoms is managed by the Missouri Department of Conservation and U.S. Fish and Wildlife Service to increase fish and wildlife habitat. The government works in cooperation with private landowners who continue to farm, demonstrating how multiple uses of the river can coexist.

The river trip highlights the new fish and wildlife habitat rehabilitation and the connections between public and private landowners (go to p.8 for details). People making "connections" on board include General Galloway (see below), Jim Denny (p. 13), citizens and researchers.



Welcoming Social

with Special Poster, Exhibit, and Book Signing Session

5:00 p.m. Holiday Inn Select Expo Center

Posters

Analysis of Soils and Chute Reconstruction Success at Tobacco Island Bend. Jolene M. Hulsing, University of Nebraska at Omaha, U.S. Army Corps of Engineers, Omaha NE

Changes in Distribution and Abundance of Songbirds in Floodplain Habitats of the Lower Missouri River Watershed. Neal Young, University of Missouri and Big Muddy National Fish and Wildlife Refuge, Columbia MO

Chemical Contaminants in Sediments of the Lower Missouri River. Carl Orazio, U.S. Geological Survey, Columbia MO

Developing Vegetative Cover Types for the Big Muddy National Fish and Wildlife Refuge Using the National Vegetation Classification System. Maureen A. Gallagher, U.S. Fish and Wildlife Service, Columbia MO

Effects of Discharge on Sandbar Morphometry between Two Types of Sandbars. Emily K. Tracy, Missouri Cooperative Fish and Wildlife Research Unit, University of Missouri, Columbia MO

Habitat Use and Defining Riparian Buffers for Aquatic Turtles Along the Missouri River, Overton Bottoms, MO. Maureen A. Gallagher, U.S. Fish and Wildlife Service, Columbia MO

Influence of Hydrologic Events on Least Tern and Piping Plover Nesting in the Lower Niobrara River, NE. Stephen K Wilson, National Park Service, Missouri National Recreational River, Yankton SD

Integrative Samplers Used to Provide a Holistic Assessment of Aquatic

Contaminants. David Alvarez, U.S. Geological Survey, Columbia MO

Invertebrate Composition and Availability as Food for Migratory Shorebirds and their Microhabitats on Sandbars in the Lower Missouri River. Jessica Lee, South Dakota State University and Big Muddy National Fish and Wildlife Refuge, Brookings SD

The Effect of Age and Hydrology on Tree Species Composition in Bottomland Forests. Thomas McCullough Faust, University of Missouri, Columbia, MO

The Kansas City - Missouri River Relationship: In Love, Out of Love, Back in Love? Amahia Mallea, University of Missouri-Columbia, Columbia MO

Tow Boat Utilization of the Channelized Missouri River. Eugene J. Zuerlein, Nebraska Game and Parks Commission, Lincoln NE

Upper and Middle Mississippi Valley Cooperative Ecosystem Studies Unit. Daniel Zerr, CARES, University of Missouri, Columbia MO

Water Quality and Ground-water Flow of the Columbia/Eagle Bluffs Wetland Complex and McBaine Bottoms. Brenda J. Smith, U.S. Geological Survey, Rolla MO

Book Signing

• *The Atlas of Lewis and Clark in Missouri* (p.13) by Jim Denny & Jim Harlan

• *Rivers of Change - Variety, Voices and Two Centuries of Altering our Rivers and Lives* (p.11) by Tom Mullen

Sharing the Challenge: Ten Years After

7:00 p.m. Holiday Inn



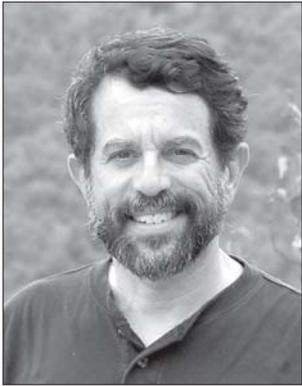
Retired Brigadier General
Gerald Galloway

In February, Retired Brigadier General Gerald Galloway was selected as a member of the National Academy of Engineering for distinguished leadership in the management of sustainable water resources and education in environmental engineering. Many in the Missouri River basin are familiar with General Galloway from his lead on *Sharing the Challenge*, the 1993 Midwest Flood report. In 2001, General Galloway again served the Missouri by working on the National Research Council study of the Missouri River.

As a geographer, public administrator and civil engineer, General Galloway has served as a water resources and flood mitigation consultant to many national, international, and non-governmental organizations. He commemorates the tenth anniversary of the flood report by sharing a renewed vision for the future of the Missouri River.

Monday, May 24

Plenary Session 8:00 - 10:00 a.m.



Dr. Steven Yaffee is the Theodore Roosevelt Professor of Ecosystem Management and Professor of Natural Resource and Environmental Policy at the University of Michigan. His doctorate is from the Massachusetts Institute of Technology.
<http://www.snre.umich.edu/emi/>

From Pelican Island to the Missouri Basin: Collaboration and Resource Management

For twenty-five years, Dr. Steven Yaffee has explored multi-party, collaborative problem solving as necessary elements of ecosystem management. He currently directs the Ecosystem Management Initiative at the University of Michigan, Ann Arbor, which focuses on landscape-scale conservation and sustainable management of natural resources.

Last summer, Dr. Yaffee conducted a workshop on collaborative resource management for 34 Missouri River federal, tribal and state resource managers and scientists who sought to discover a new way to approach management of the Missouri River's natural resources.

He shares the results of the training and presents a vision for how collaboration might function more effectively on the Missouri River in this plenary address.

http://www.snre.umich.edu/emi/collaboration/missouri_basin.htm



Dr. Deborah Brosnan is the founder and president of the Sustainable Ecosystem Institute in Portland, Oregon. Her doctorate in marine ecology is from Oregon State University.
<http://www.sei.org/>

Independent Science Review

Dr. Deborah Brosnan is an advocate for the role of science and scientists in environmental decision making. She believes that scientists need to assume a new role in society by putting their expertise to use and providing the scientific foundation for resource management decisions.

Through the Sustainable Ecosystem Institute, Dr. Brosnan advises national and international governments on how to establish independent science review. She has experience working on projects in South Florida, the Columbia River, and the California Redwoods.

Dr. Brosnan discusses how independent science review might be initiated on the Missouri River.

In addition to giving the keynote addresses, Dr. Yaffee and Dr. Brosnan co-facilitate the *Independent Science Review Workshop* on Wednesday, May 26.

Concurrent Presentations 10:30 a.m. - Noon

Session 1

Linking Habitats with Species

Habitat Availability Contributions of Side-Channel Chutes. Robert Jacobson, U.S. Geological Survey, Columbia MO

Fish Community Assessment of Lower Missouri River Side Channels. Louise Mauldin, U.S. Fish and Wildlife Service, Columbia MO

Waterbird Abundance on Side-Channel Habitats Along the Lower Missouri River. John M. (Jack) Finley, University of Missouri, Columbia MO

Linking Habitat with Species: Integrating Science to Adaptively Manage the Big Muddy Refuge. Maureen A. Gallagher, Big Muddy National Fish and Wildlife Refuge, U.S. Fish and Wildlife Service, Columbia MO

Session 2

Hydrology and Water Quality

Ground-Water Flow in the Missouri River Alluvial Aquifer Near Ft. Leavenworth, Kansas. Brian P. Kelly, U.S. Geological Survey, Lee's Summit MO

Hydrology of Artificial Flooding on the Eagle Bluffs Conservation Area - Where Does All That Water Go? Matthew F. Knowlton, University of Missouri, Columbia MO

Real-Time Water Quality Assessment of the Missouri National Recreational Corridor. Jim Novak, University of South Dakota and The Missouri River Institute, Vermillion SD

QUAL-W2 Two-Dimensional Hydrodynamic and Water Quality Modelling on the Mainstem. William Doan, U.S. Army Corps of Engineers, Omaha NE

Down by the River Trips 1:00 p.m. - 5:30 p.m. (p.8-9)

BBQ Supper at Rocheport Winery - 5:30 p.m.



The vantage point from Monday night's BBQ supper at Les Bourgeois Winery in Rocheport, Missouri provides a bird's eye view of Overton Bottoms and its constructed side-channel chute. The Winery is just above the popular Katy Trail State Park, a former railroad turned into a hiking and biking trail

that runs along the banks of the river for the entire 55 miles of the Manitou Bluffs region. Access to the Trail is available just down the road from the Winery in the historic river town of Rocheport. Music at the BBQ is provided by Union Label.

<http://www.mostateparks.com/katytrail>

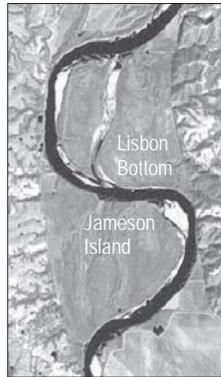
Down by the River

Daily river trips show habitat rehabilitation in action

The Missouri River reach between Jefferson City and Glasgow is home to thousands of floodplain acres acquired as public lands since the 1993 Midwest Flood. Fish and wildlife habitat rehabilitation is occurring at multiple sites, showcased in three days of river trips where we'll discuss current research and how best to enhance habitat. Trips start at the Holiday Inn Select at 1:00 p.m., last all afternoon, and end at the evening supper location. They are offered on a first come-first serve basis; please provide your preferences on the registration form (page 17).

A Lisbon Bottom to Rocheport Monday Barge Trip

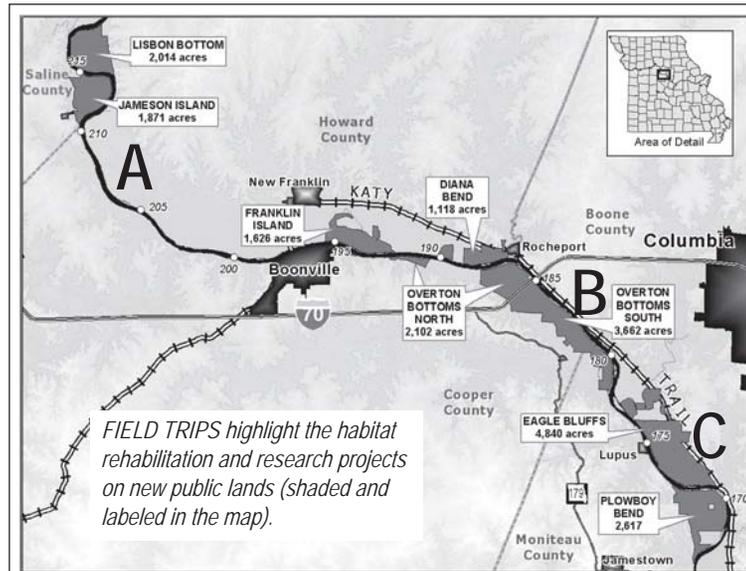
The naturally formed side channel chute at Lisbon Bottom was created by floods between 1993-97. Wing dike modifications on the northeast edge of Jameson Island are creating new sandbar habitat. The area provides a wealth of information for scientists learning how to rehabilitate fish and wildlife habitat sites. Participants travel overland to Glasgow, board the barge and travel down river to Rocheport, about 35 river miles. The units are part of the U.S. Fish and Wildlife Service *Big Muddy National Fish and Wildlife Refuge*.



C Rocheport Bat Cave Monday and Tuesday Land Trip on a bus



Cited in the 1933 *Journal of Mammology* as an important bat cave, this colorful historical landmark was visited by Lewis and Clark, Quantrell's Raiders and river pirates. Throughout its history the bat use has persisted in "The Cave" despite, saltpeter mining, gunpowder manufacturing and development as a show cave. Purchased by the Missouri Department of Conservation as critical habitat for the endangered Indiana and gray bat species, construction of the world's largest cave gate has allowed opening the area to public use. The tour includes discussions of endangered species, cave gates and public use of critical endangered species habitats.



River Trips at-a-glance - reserve your place on page 17

Barge (125 people)	Sunday - Overton Outing (B1) - see page 4
	Monday - Lisbon Bottom to Rocheport (A)
	Tuesday - Overton Bottoms to Plowboy Bend (B3)
Small Boat (50)	Monday - Overton Bottoms water (B2)
Bus (50)	Monday/Tuesday - Rocheport Bat Cave and Eagle Bluffs (C)
Van and Wagon (50)	Tuesday - Overton Bottoms land (B4)

Eagle Bluffs

Monday and Tuesday Land Trip on a bus

May is the peak of shorebird migration at the innovative Eagle Bluffs Conservation Area where 1,600 acres of constructed wetlands are maintained with water from the Missouri River and City of Columbia wastewater treatment plant. Before entering Eagle Bluffs, the wastewater goes through traditional treatment and a secondary cleaning in the city-owned constructed wetlands. Eagle Bluffs is owned by the Missouri Department of Conservation and was initially designed to provide wetland habitat for migratory birds. A recent addition has potential to also help restore fish populations. Included in the tour are visits to Columbia's wastewater treatment wetlands and the multiple constructed wetlands within Eagle Bluffs.



Overton Bottoms looking north (Interstate 70 bridge in the back). Coexisting uses of the floodplain occur here where the levee on the left protects farmland adjacent to the fish and wildlife habitat on the right.



B Overton Bottoms

Sunday (1) and Tuesday (3) barge trip • Monday small boat trip (2) • Tuesday land trip (4)

Overton Bottoms is part of the *Missouri River Fish and Wildlife Mitigation Project*. All trips are designed to show habitat transitions occurring in the past ten years and ongoing fish and wildlife research. Four choices available:

- 1) *Sunday Overton Outing Barge Trip*: see page 4
- 2) *Monday Small Boat Trip*: Up-close views of the constructed side-channel chute and wing-dike modifications designed to create additional aquatic habitat. Experience research occurring on fish such as sturgeon and invasive carp.
- 3) *Tuesday Overton to Plowboy Bend Barge Trip*: Meander down the river past Overton Bottoms, Eagle Bluffs, and Lupus to Plowboy Bend, which is owned by the Missouri Department of Conservation and private landowners. See changes made to the wing dikes at Overton and Plowboy to enhance aquatic fish habitat. Jim Denny is on board to explain the cultural sites in the Manitou Bluffs Region, including Lewis and Clark stops made in 1804 (p. 13).
- 4) *Tuesday Overton Bottoms Land Trip*: Experience ten years of habitat changes and research on turtles, birds, and other wildlife species.

Tuesday, May 25

Plenary Session - 8:30 a.m.

Best Practice Governance of River Basins: Implications for Large Rivers like the Missouri

'Best practice' is a somewhat assuming term. However, the recent focus on the governance of river basins at the international scale (such as the 3rd World Water Forum) suggests that best practice integrated river basin governance is driven by: (a) clear and strong institutional arrangements, (b) good water related data, information and systems, (c) a package of policies, procedures and strategies, (d) communication and participation, and (e) basin sustainability indicators.

Basin organizations need to develop performance indicators that prove the effectiveness of implementing each of these five groups of practices. Dr. Bruce Hooper discusses the practices and the prescription of performance indicators. He puts forward a preliminary application to large rivers such as the Missouri.



Dr. Bruce Hooper earned his doctorate in integrated floodplain management from the University of New England, Australia. He recently moved to Southern Illinois University in Carbondale, IL, where he works as a natural resources geographer.

Dr. Hooper has extensive experience teaching integrated resources management and consulting on international water planning collaborative groups. His past involvement with the large Murray-Darling Basin in Australia provides insight into the ongoing management problems of the Missouri River.

He is the executive editor of "Water International," a peer reviewed journal of the Water Resources Association that supports sustainable management of water resources around the world.

Lunch Presentation - Noon

Quest for the Missouri River Source

John R. LaRondeau, U.S. Army Corps of Engineers, Omaha NE

Where does the Missouri River begin? When Lewis and Clark arrived at the confluences of three rivers entering the "Missouri River" from almost the same location with all three looking nearly the same, they elected to end the *named* Missouri River at Three Forks, Montana. However, geographers generally follow the longest tributary to identify the source of rivers and streams. John LaRondeau, a civil engineer and a hydropower/navigation specialist, confirms that Lewis and Clark did not reach the geographic source and describes some of the previous quests to find the source, including his own recent journey to Hell Roaring Creek in Montana and the 8,840 foot-high source.

Tuesday Concurrent Presentations 10:00 a.m. - Noon

Session 1 River Users

Tow Boat Utilization of the Channelized Missouri River. Eugene J. Zuerlein, Nebraska Game and Parks Commission, Lincoln NE

Missouri River Public Use Assessment: Overview and Study Design. Steven L. Sheriff, Missouri Department of Conservation, Columbia MO

Recreational Use Issues at the Dawn of the 200th Anniversary. David L. Miller, State University of New York College at Cortland, Cortland NY

Rivers of Change - Variety, Voices and Two Centuries of Altering our Rivers and Lives. Tom Mullen, Author, Malibu CA

A Strategy to Prevent Zebra Mussels Invasion on Boats during the Lewis and Clark Bicentennial. Bill Zook, Pacific States Marine Fisheries Commission, Shelton WA

Session 2 Biotic Habitat Interactions

Detailed Surficial Geological Mapping of the Missouri River Valley: River Management Implications. John Holbrook, Southeast Missouri State University, Cape Girardeau MO

Analysis of Soils and Chute Reconstruction Success at Tobacco Island Bend. Jolene M. Hulsing, University of Nebraska at Omaha, U.S. Army Corps of Engineers, Omaha NE

Evapotranspiration Rates and Water Balance of Platte River Riparian Woodlands. Matthew Landon, U.S. Geological Survey, Lincoln NE

A Probability Survey of the Successional Forest in the Garrison Reach. E. William Schweiger, U. S. Environmental Protection Agency, Denver CO

The Environmental Monitoring and Assessment Program for Great River Ecosystems. Ted Angradi, U. S. Environmental Protection Agency, Denver CO

Down by the River Trips 1:00 - 5:30 p.m.

Fish Fry Supper 5:30 p.m. Cooper's Landing

Tuesday night's fish fry is at Cooper's Landing just south of Eagle Bluffs. We'll enjoy catfish and carp, the non-native type, which taste great, but are threatening the river's ecosystem. Special "roast" served for Jim Milligan.



Missouri River at Cooper's Landing

Wednesday, May 26

Concurrent Presentations 8:00 - 9:30 a.m.

Session 1

Habitat Rehabilitation

Current Implementation Plan, Corps Fish and Wildlife Mitigation Project. Kelly Ryan, U.S. Army Corps of Engineers, Kansas City MO

Water Quality and Ground-water Flow at Eagle Bluffs Wetlands and McBaine Bottoms. Brenda J. Smith, U.S. Geological Survey, Rolla MO

Songbird Use of Early Successional Bottomland Habitats along the Lower Missouri River. Brian G. Root, Missouri Department of Conservation, Columbia MO

Integrated Investigations of Ecological Responses to Rehabilitation at Overton Bottoms, MO. Dale Blevins, U.S. Geological Survey, Lee's Summit MO

Restoration Modelling for Edward (Ted) and Pat Jones - Confluence Point State Park. Ken McCarty, Missouri Department of Natural Resources, Jefferson City MO

Session 2

Biotic Habitat Interactions

Waterbird and Invertebrate Response During Spring to Previously vs. Newly Flooded Habitats. Amanda McColpin, Missouri Department of Conservation, Rothville MO

Evaluation of Avian Use in the Missouri River and Floodplain. Andrew H. Raedeke, Missouri Department of Conservation, Columbia MO

Nursery Habitat for Larval Fishes in the Lower Missouri River. Kerry Reeves, Missouri Cooperative Fish and Wildlife Research Unit, University of Missouri, Columbia MO

Spawning Periods and Growth of Larval Gizzard Shad from the Lower Missouri River. Lori D. Patton, University of Missouri, Columbia MO

200 Year Missouri River History [1803-2003] of the Least Tern and Piping Plover. Bill Beacom, Sioux City IA

Concurrent Presentations 10:00 - Noon

Session 1

Public/Private Partnerships

The Wetland Reserve Program Along the Missouri River and Major Tributaries. Douglas L. Helmers, USDA-Natural Resources Conservation Service, Chillicothe MO

The Two Rivers Project of Fremont County, Iowa. David Carter, Fremont Soil and Water Conservation District, Tabor IA

Democratizing Science, Management, and Public Policy in the Missouri River Ecosystem. Meghan Sittler, Environmental Resource Center, University of Nebraska, Lincoln NE

Important Bird Areas and the Missouri River: A Project Vision. Roger Still, Audubon Missouri, Columbia MO

Potential for Reducing Nutrient Loading to Rivers with Nutrient Farming/Trading. Tony Prato, University of Missouri-Columbia, Columbia MO

Session 2

Fisheries Resources

Analysis of the Missouri River Natural Hydrograph as Sioux City, Iowa. Donald Jorgensen, Siouxland Chamber of Commerce, Jefferson SD

Identification of Hard Spawning Substrates on the Lower Missouri River. Mark Lastrup, U.S. Geological Survey, Columbia MO

Annual Reproductive Hormone Levels in Shovelnose Sturgeon from the Missouri River. Diana Papoulias, U.S. Geological Survey, Columbia MO

Effectiveness of Ultrasound for Estimating Fecundity of Missouri River Shovelnose Sturgeon. Janice L. Bryan, U.S. Geological Survey, Columbia MO

Movements and Habitat Selection of Bighead and Silver Carp in the Lower Missouri River. Duane Chapman, U.S. Geological Survey, Columbia MO

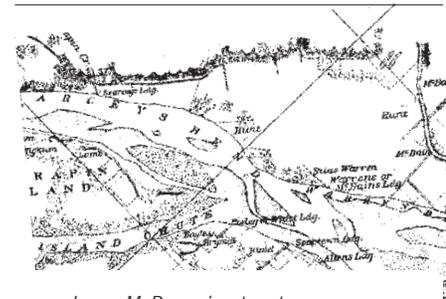


Lunch Presentation - Noon

The Lewis and Clark Expedition and the Lower Missouri River: Running the First Gauntlet

Jim Denny shares the story of the little known two-and-a-half month "gauntlet" the Lewis and Clark Expedition faced when they embarked on the Lower Missouri River. Faced with rafts of logs, ferocious rapids, shifting sandbars, mazes of snags and sawyers, and banks that suddenly

heaved into the river taking large trees with them, the explorers were ill-prepared for ascending the river, especially in the keelboat. This rousing tale once more demonstrates the resourcefulness of the explorers as they faced and conquered unexpected challenges.



James M. Denny is a twenty-seven year veteran historian with the Missouri Department of Natural Resources, Division of State Parks in Jefferson City MO. His American History Masters degree is from the University of Missouri.

This self-proclaimed river rat is the mayor of Lupus, a river town across from Eagle Bluffs. He is a prolific Lewis and Clark historian and has played an important role in the rediscovery of Lewis and Clark sites within the Manitou Bluffs Region.



In 2003, Jim co-authored "The Atlas of Lewis and Clark in Missouri" with Jim Harlan. He will sign books at the Sunday night social and be available on barge trips Sunday and Tuesday to share his knowledge of the Manitou Bluffs Region and Lewis and Clark.

Wednesday, May 26

Workshop 1:30 - 5:00 p.m.

Preregistration required (see page 17).

Workshop continued on Thursday, May 27, 8 a.m. - Noon

Independent Science Review: Moving Towards a Fair Way to Judge Science in the Missouri River Basin

Science is an important guiding light for decision making in the Missouri Basin, but often times there is conflict about the science, its objectivity and usefulness. Come participate in a one-day workshop, led by Dr. Steven Yaffee and Dr. Deborah Brosnan, that will explore how other river basins have used "independent science review" as a fair way to judge science. Also explore how independent science review might be used to help the Missouri Basin move from "science wars" to decision making.

Goals of the workshop are to familiarize participants with independent science review and facilitate a discussion about how a framework for independent science review might be constructed for the Missouri River. Limited to 50 people on a first come-first served basis.

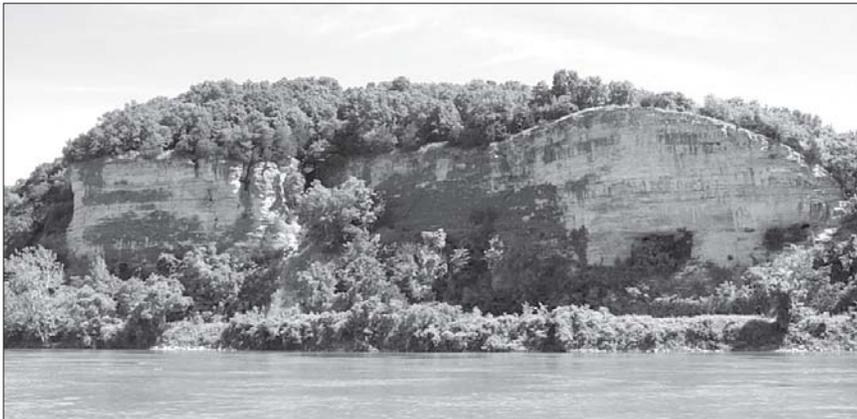
Contact Jim Berkley for information
303-312-7102 berkley.jim@epa.gov

Aquatic Nuisance Species Task Force (ANSTF) Spring Meeting

May 26-27 at the Holiday Inn Select (separate from the conference)

The ANSTF is an interagency committee created by the Nonindigenous Aquatic Nuisance Prevention and Control Act of 1990 (P.L. 101-636) and is comprised of 7 Federal agencies and 11 governmental entities.

For information, visit their website at www.anstaskforce.gov or contact Everett Wilson, Acting Executive ANSTF Secretary at (703) 358-2148.

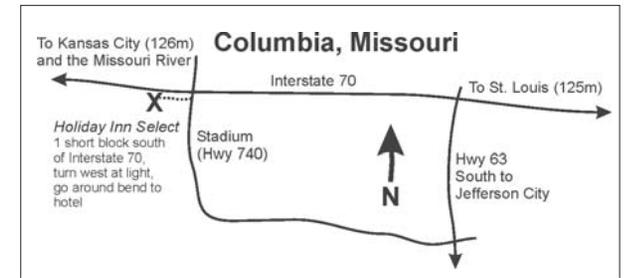


Hotel

Holiday Inn Select

2200 I-70 Drive S.W.
Columbia, MO 65203
573-445-8531

\$55.00 room rate
available until May 1.



Make your own reservations by one of three methods:

1) Call 1-800-HOLIDAY, 2) Web: www.ichotelsgroup.com, 3) Direct to hotel 573-445-8531
The hotel group booking code for your reservation is "MRC."

Travel links to the area:

Missouri Tourism - <http://www.missouritourism.org/>

Columbia map - http://www.visitcolumbiamo.com/web/plan_trip/maps/map/index.html

General Columbia Transportation - http://www.visitcolumbiamo.com/web/plan_trip/index.jsp

Columbia Regional Airport - 573-442-9770

<http://www.gocolumbiamo.com/PublicWorks/Airport/>

St. Louis Airport - <http://www.lambert-stlouis.com/>

Kansas City Airport - <http://www.iflykansascity.com/>

Local events and information links

Missouri River Clean-ups - <http://www.riverrelief.org/>
Saturday, May 23 - Cooper's Landing
Saturday, May 29 - Glasgow

Lewis and Clark Events - <http://www.lewisandclark.state.mo.us>
May 14-23 - St. Charles, Missouri
May 22 - Washington, Missouri
May 29 - Chamois, Missouri

Driving tour of the Manitou Bluffs Region
<http://www.moriver.org/bicentennial/tour2manitou/launch.html>

Missouri River Fish and Wildlife Mitigation Project
<http://www.nwk.usace.army.mil/projects/mitigation/>

For a complete list of links to the area,
go to the Conference web page
<http://infolink.cr.usgs.gov/events/04.htm>

Conference Registration

ONLINE REGISTRATION - <http://infolink.cr.usgs.gov/events/04.htm>

MAIL/ FAX FORMS

The Conference Managers - P. O. Box 7276, Bismarck, ND 58507-7276
 phone or fax 1-888-310-8900; email - confmgrs@aol.com

Name _____
 Affiliation _____
 Address _____
 City _____ State _____ Zip _____
 Phone (_____) _____ Fax (_____) _____
 E-mail _____

Pre-Registration Deadline - MAY 7, 2004

Before May 7:

After May 7:

\$155 Regular registration \$180 Regular registration
 \$135 Student registration \$160 Student registration

Daily Rate:

Regular \$15 May 23 \$75 May 24 \$75 May 25 \$30 May 26
 Student \$10 May 23 \$65 May 24 \$65 May 25 \$20 May 26

\$ _____ TOTAL cost - Payment due prior to the conference.

All meals covered with registration fee

Check: Payable to TCM-MRNRC (Tax ID#39-1894447)
A \$25 service charge will be added to all returned checks.

Credit Card:
 Master Card Visa American Express

Credit card number _____ Expiration date _____

Name as it appears on credit card _____

Signature _____

*Return policy: 80% refund by May 15, 2004; no refund after May 15, 2004
 (cancellation request must be in writing to "The Conference Managers")*

MEALS - All meal costs are covered within the registration fee.

Check here if you have special dietary needs.

What are they? _____

River Trip Registration

Letters (A-B-C) refer back to river trip descriptions on pages 8-9. We will do our best to accommodate your preferences, but priority is based on a first-come, first serve basis.

Sunday, May 23 - Overton Outing Barge Trip (B1) - see page 4

Yes, I want to go on the Overton Outing. (Leave blank if you are not interested in attending.) This trip is a mini-version of the Tuesday Overton to Plowboy river trip and is open to the general public. Limit of 125 people. I would like to bring _____ additional people.

**Please insert one number in each box for your river trip preferences:
 0 - no trip, 1 - first choice, 2 - second choice, 3 - third choice, 4 - fourth choice**

Monday, May 24 - see pages 8-9 for descriptions

- A - Lisbon Bottom to Rocheport barge trip (limited to 125)
- B2 - Overton Bottoms small boat trip (limited to 50)
- C - Rocheport Bat Cave land trip (limited to 50)
- C - Eagle Bluffs Conservation Area land trip (limited to 50)

Tuesday, May 25 - see pages 8-9 for descriptions

- B3 - Overton to Plowboy Bend barge trip (limited to 125)
- B4 - Overton Bottoms land trip (limited to 50)
- C - Rocheport Bat Cave land trip (limited to 50)
- C - Eagle Bluffs Conservation Area land trip (limited to 50)

Workshop Registration

Explanation of workshop on page 14. Check the box if you want to attend.

Independent Science Review Workshop
 Wednesday 1:30 - 5:00 p.m. and Thursday 8:00 a.m. - Noon

Register ONLINE - <http://infolink.cr.usgs.gov/events/04.htm>
For information, contact: Brian Canaday 573-522-4115 ext 3371
 Brian.Canaday@mdc.mo.gov