Missouri River

RECOVERY PROGRAM

MISSOURI RIVER BASIN

THE NATION'S RIVER

The Missouri River, the nation's longest, travels more than 2,300 miles from Three Forks, Montana, to join the Mississippi River near St. Louis, Missouri. For centuries, the river has served as the center of life for the inhabitants of North America's Great Plains. Following exploration and mapping by Lewis and Clark's Corps of Discovery in the early 1800s, the Missouri River became the gateway to the West.

Historically, the dynamic and untamed Missouri River has produced violent floods in the spring and summer with erosive forces that ate away its banks and turned its waters the color of mud.

Since Lewis and Clark returned from their expedition, the Army Engineers have had very close ties to the Missouri River. Over the years, the U.S. Army Corps of Engineers has been charged by Congress to remove snags, protect banks, construct navigation channels and build flood risk management structures (levees and dams) on the Missouri River to provide social and economic benefits to the nation. Some of these development activities on the Missouri River have come at the expense of the river's native fish and wildlife.

MRRP VISION

A sustainable ecosystem supporting thriving populations of native species while providing for current social and economic values.

MRRP MISSION

Implement actions to accomplish Missouri River ecosystem recovery goals in coordination and collaboration with agency partners and stakeholders.

RECOVERING THE RIVER

Today, the river hosts a wide variety of interests and uses, all of which are considered in the river's recovery program. They include social, economic, historical and cultural uses such as agriculture, commerce, conservation, energy, environmental, natural resources, navigation, recreation, residential, urban uses and water supply.

These uses have resulted in significant impacts to the Missouri River ecosystem:

- Three million acres of natural river habitat altered
- 51 of 67 native fish species now rare, uncommon or decreasing
- Reproduction of the cottonwood, historically the dominant floodplain tree, has ceased
- Aquatic insects, a key link in the food chain, reduced by 70 percent

Least Tern

Piping Plover

Pallid Sturgeon

PROTECTING SPECIES

The ecosystem of the Missouri River provides habitat for a wide variety of wildlife, including species under federal protection. Here are three examples of species that live along the river.

The endangered least tern and the threatened piping plover are shorebirds that use non-vegetated sandbars and reservoir beaches for nesting. The river currently does not naturally build the habitat these birds need to nest and feed.

The endangered pallid sturgeon is an ancient fish species that lives in large rivers. Loss of habitat and changes to the river's natural flows contribute to the pallid sturgeon's decline.

Advancing THE MRRP MISSION

Activities to restore some of the Missouri River ecosystem's natural form and function are under way and will continue for decades. Although the river will never return to the wild, untamed form encountered by Lewis and Clark, its ecosystem can be revitalized for the benefit of all the basin's inhabitants.

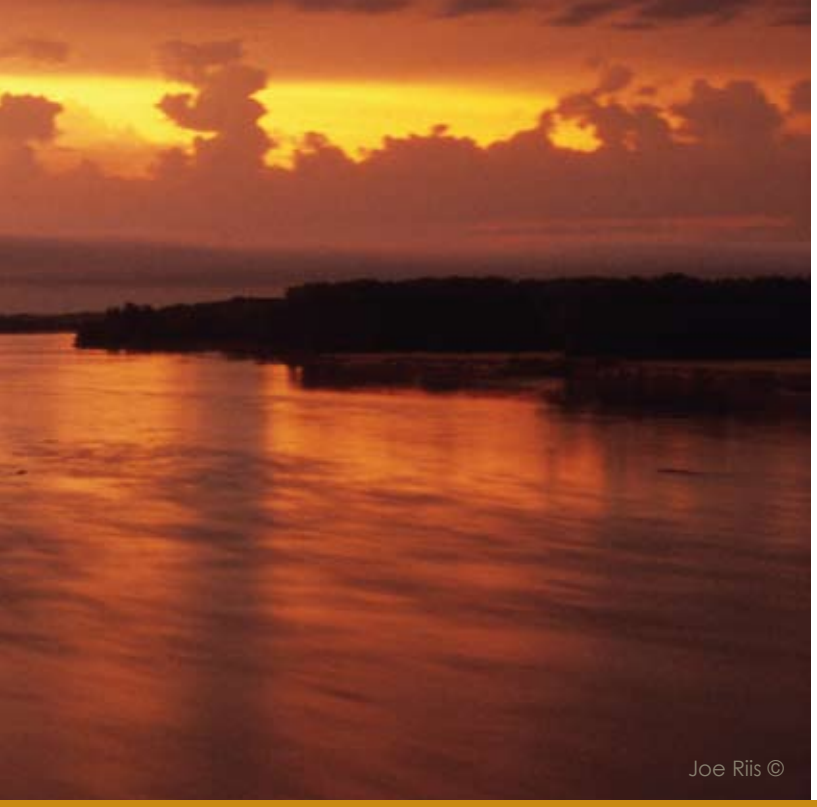
The U.S. Army Corps of Engineers and the U.S. Fish and Wildlife Service, in partnership with Tribes, states and other agencies, continue working together to develop and implement recovery actions. Here are two examples of how the Corps works collaboratively for river recovery:

The Fish and Wildlife Service developed a Biological Opinion to protect the three threatened and endangered species that depend on the Missouri River.

The Corps developed a substantial Mitigation Project to acquire the land needed to develop fish and wildlife habitat from Sioux City, Iowa, to St. Louis, Missouri.

The foundation of the recovery program is based on science. Actions proposed include habitat creation, flow modification and more public involvement.

THE MISSOURI RIVER ecosystem can be revitalized for the BENEFIT OF *all* THE BASIN'S INHABITANTS



HABITAT CREATION

ISSUE

Habitat diversity within the Missouri River and its floodplain has declined. Native species that depend on the river's ecosystem are suffering.

GOAL

Provide habitat for native fish and wildlife by restoring features and natural functions of the river. Habitat creation includes establishing shallow water and sandbar habitat and restoring cottonwood forests and wetlands.

The Shallow Water Habitat Program exemplifies creating new space for native species. Shallow water habitat can be restored by widening the river channel, restoring chutes and side channels and controlling the amount of water released from dams at certain times of the year.

Likewise, the Emergent Sandbar Habitat Program builds sandbars for species like the least tern and piping plover. Sandbars can be created and maintained by mechanically building new areas, clearing existing sandbars of vegetation or modifying river flows during the year.

To balance habitat restoration with the river's other uses, the Corps is currently using construction methods rather than manipulating river flow levels.

HATCHERY SUPPORT

Raising pallid sturgeon in hatcheries and stocking them in the river are not solutions to saving the species, but are important parts of their recovery. The hatchery replenishes missing generations and preserves population structure while the ecosystem is restored.

FLOW MODIFICATION

ISSUE

Altered timing and volume of the Missouri River's natural flow have affected native fish spawning and the availability and quality of habitat. Processes such as nutrient cycling and sediment transport that are important to the river's ecosystem have changed.

GOAL

Implement a more natural flow regimen to benefit the native fish and wildlife species while seeking balance with social, economic and cultural resources.

The operation of the six large dams on the mainstem of the Missouri River has altered the river's natural flows. Flood peaks have been greatly reduced, and stored water is released during the drier months to provide water supply downstream. The sediment that gave the "Big Muddy" its nickname is now trapped behind the dams, along with nutrients. Water impounded by the dams creates reservoirs, inundating large reaches of the river and the adjacent flood plains.

SCIENCE PROGRAM

ISSUE

Incomplete knowledge and understanding of a complex river system that spans a large, diverse landscape creates challenges for making good recovery decisions.

GOAL

Ensure that management decisions are based on the best available science by planning, conducting and communicating an integrated science program.

ADAPTIVE MANAGEMENT

Adaptive management is a strategy that uses collaboration, planning and science while measuring performance over time to sort out the individual components of a complex ecological system. By understanding how the components work together, better management decisions can be made. Implementation of adaptive management must consider the social and economic concerns within the basin and develop a comprehensive strategy for making environmental decisions. Adaptive management broadens the decision-making process to take into account the uncertainties, conflicts and social issues that may not have been part of the process before.

PUBLIC INVOLVEMENT

ISSUE

The complexity of demands on Missouri River resources can create conflicts among the wide range of basin stakeholders. Communicating and collaborating on recovery actions with so many differing interests over such a broad geographical area is difficult.

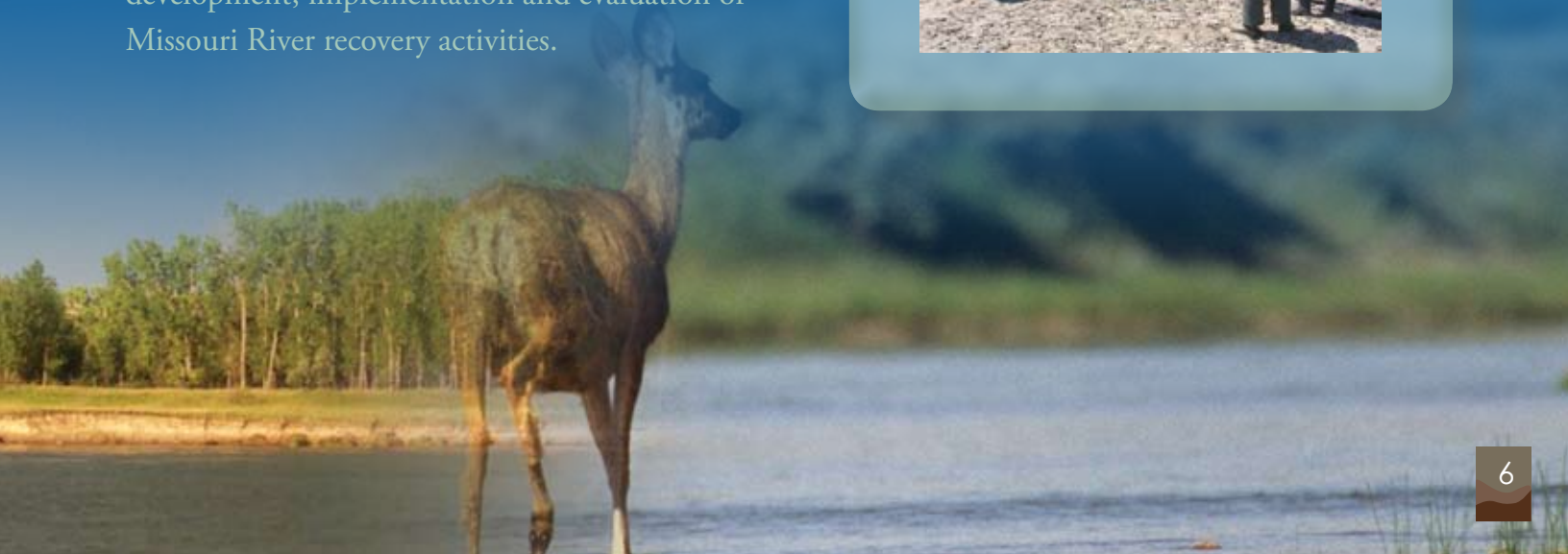
GOAL

Establish collaborative stakeholder processes and educational opportunities within the basin to provide insight and recommendations on the development, implementation and evaluation of Missouri River recovery activities.

JOIN US

...in a discussion of the Missouri River Recovery Program that will last for decades! The MRRP project team wants input from all sources and is committed to staying in touch with stakeholders.

www.moriverrecovery.org



U.S. ARMY CORPS OF ENGINEERS
ENVIRONMENTAL OPERATING PRINCIPLES

- Strive to achieve environmental sustainability. An environment maintained in a healthy, diverse and sustainable condition is necessary to support life.
- Recognize the interdependence of life and the physical environment. Proactively consider environmental consequences of Corps programs and act accordingly in all appropriate circumstances.
- Seek balance and synergy among human development activities and natural systems by designing economic and environmental solutions that support and reinforce one another.
- Continue to accept corporate responsibility and accountability under the law for activities and decisions under our control that impact human health and welfare and the continued viability of natural systems.
- Seek ways and means to assess and mitigate cumulative impacts to the environment; bring systems approaches to the full life cycle of our processes and work.
- Build and share an integrated scientific, economic and social knowledge base that supports a greater understanding of the environment and impacts of our work.
- Respect the views of individuals and groups interested in Corps activities, listen to them actively, and learn from their perspectives in the search to find innovative win-win solutions to the nation's problems that also protect and enhance the environment.

FOR MORE INFORMATION:

www.moriverrecovery.org

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Cover Photo: Nebraska Land Magazine/Nebraska Game and Parks Commission