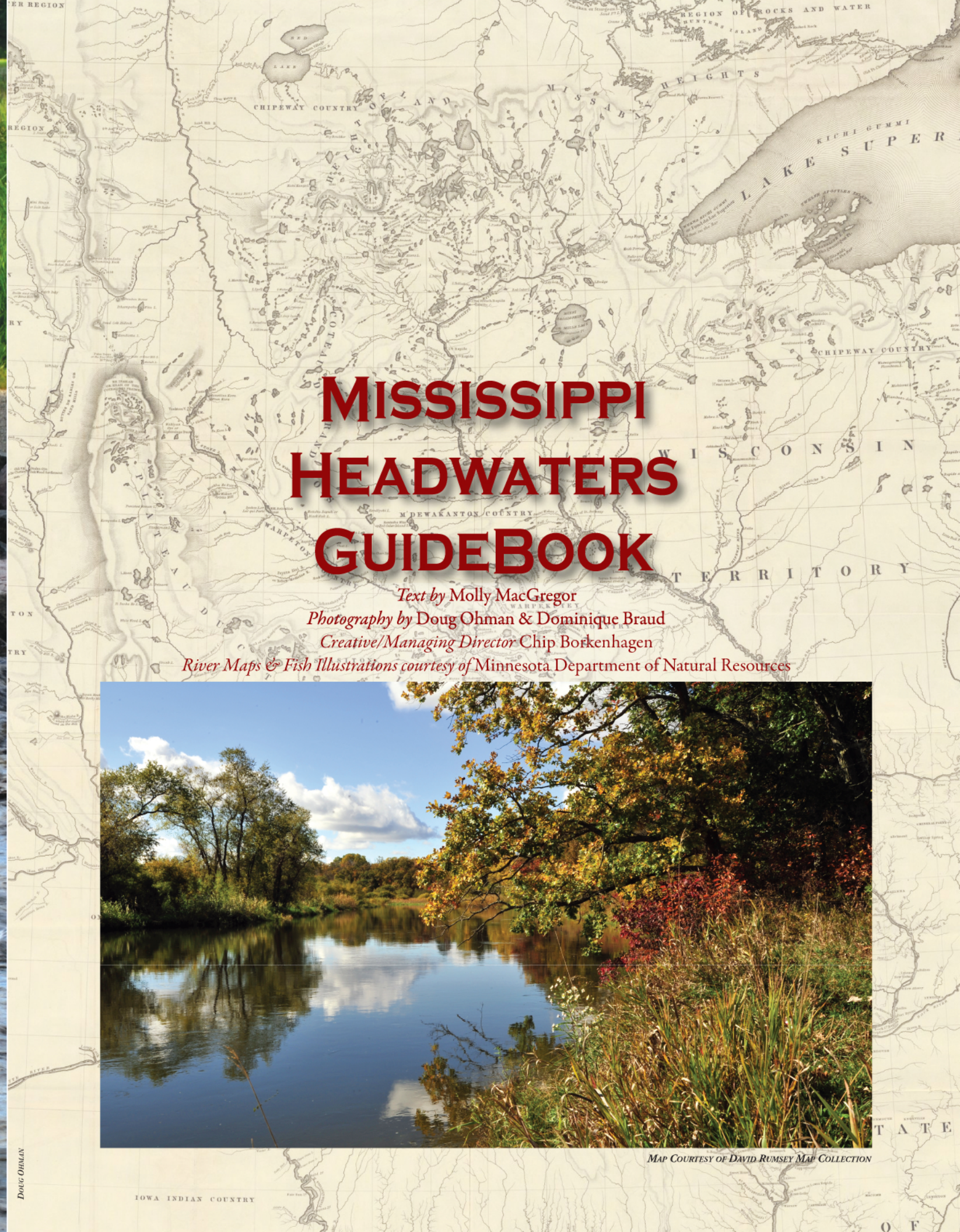
An aerial photograph of a vast river delta, likely the Mississippi River Delta, showing a complex network of distributaries and wetlands. The water is a light blue-grey color, and the surrounding land is a mix of green and brown. The title "MISSISSIPPI HEADWATERS GUIDEBOOK" is overlaid in a large, dark, serif font, centered horizontally and vertically. The text is arranged in three lines: "MISSISSIPPI" on the top line, "HEADWATERS" on the middle line, and "GUIDEBOOK" on the bottom line. The font is a classic serif typeface, possibly Times New Roman or similar, in a dark brown or black color. The background image is a high-resolution aerial shot, showing the intricate patterns of the river channels and the surrounding landscape. The overall tone of the image is naturalistic and documentary.

MISSISSIPPI HEADWATERS GUIDEBOOK



“Rivers have what man most respects and longs for in his own life and thought--
a capacity for renewal and replenishment, continual energy, creativity, cleansing.”
—John M. Kauffmann, *EPA Journal*. May 1981

The mighty Mississippi River begins its long journey through these rocks at Itasca State Park



MISSISSIPPI HEADWATERS GUIDEBOOK

Text by Molly MacGregor
Photography by Doug Ohman & Dominique Braud
Creative/Managing Director Chip Borkenhagen
River Maps & Fish Illustrations courtesy of Minnesota Department of Natural Resources



MAP COURTESY OF DAVID RUMSEY MAP COLLECTION

MISSISSIPPI HEADWATERS GUIDEBOOK

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For information, write to the Mississippi Headwaters Board
Cass County Government Building
P.O. Box 5
Backus, MN 56435.
cass.mbh@co.cass.mn.us
www.MississippiHeadwaters.org

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The Mississippi Headwaters Board was established in 1980 under Minnesota Statutes 103F.361-378 to identify and protect the natural, cultural, scenic, scientific and recreational values of the Mississippi River’s first 400 miles. Visit www.MississippiHeadwaters.org for more information. All referenced web addresses/links are “hot-linked” on our website.

Information in this book is presented in conjunction with the Minnesota Department of Natural Resources mapping system of the river. Each of these section maps are available at no charge as PDF formatted maps available at www.dnr.state.mn.us/watertrails/mississippiriver/index.html. Printed maps are available at info.dnr@state.mn.us Be sure to check out our Resources Listing on page 78 for further helpful information.

The 5 sections/maps of the Headwaters region are identified by the white boxes on the map below.

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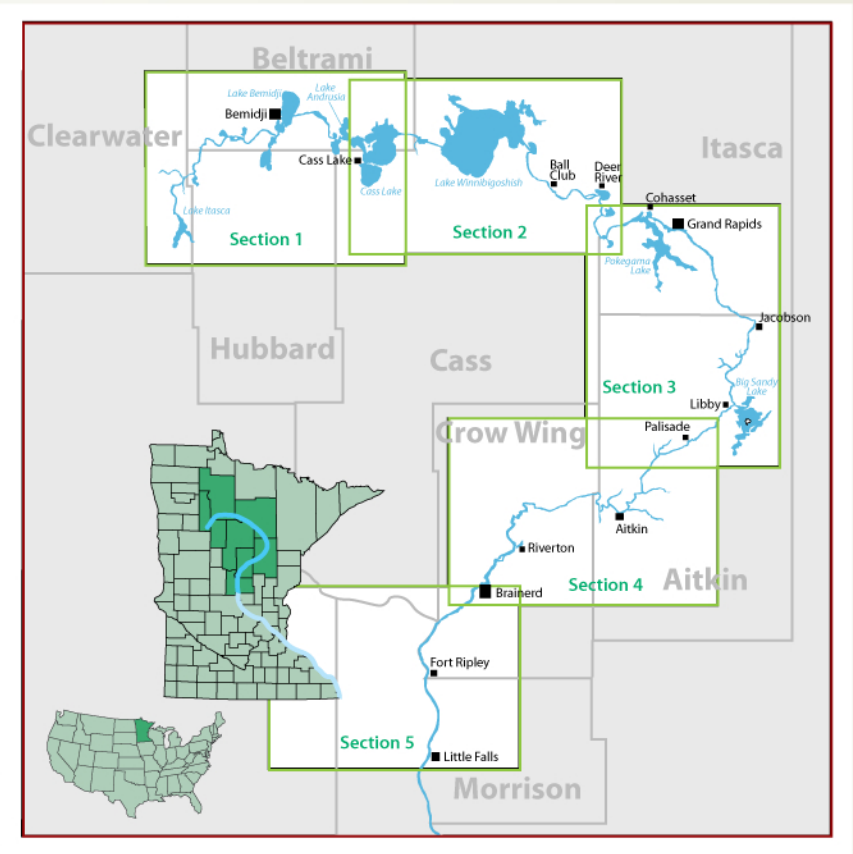
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"In a country where nature has been so lavish and where we have been so spendthrift of indigenous beauty, to set aside a few rivers in their natural state should be considered an obligation"
—Senator Frank Church

The Mississippi heading north from Lake Itasca

INTRODUCTION

A single raindrop is hardly noticeable. Many raindrops gather into rivulets that cut through soils as they flow across the land, finding paths and also shaping those paths. When the rains end, a river remains: a mix of the rainwater and the material it has moved from the landscape. The channel and the water it holds is a source of life and a refuge for living things. It is a community of many places, all linked together by this zzzzmeandering artery of water.

This is a guide to the first four hundred miles of the Mississippi River. These miles are the river's headwaters, from its beginning at Lake Itasca, downstream to the city of Little Falls. This guide will take the reader through the river's natural setting as well as the communities that populate the river. The river defines and is defined by its ecological setting, which, in turn, defines the well-being of the river's communities. This guide is a testament to the significance of the Mississippi River and how it has shaped the environment and our lives in northern Minnesota. The book explores three themes to explain the Mississippi's significance:

Rivers connect us, through time and landscapes. The landscape and setting of the Mississippi River were sculpted by glaciers tens of thousands of years ago. The visitor can easily visit sites where the evidence of glaciation is clear. Understanding these geological processes helps us understand how natural processes affect the landscape and how human uses contribute to those changes. Three distinct vegetative communities have evolved since then and the Mississippi Headwaters flow past each—prairies to the west, pine forests to the north, and hardwoods to the south. Finally, we know that people have lived on and near the river at least since the glaciers left. The river connects us with them: the river is something our culture shares with those who came before us, and it is something we share with those

who come after us.

River management begins in the community. The Mississippi is a mighty river, large enough that it is known as North America's fourth coast. It changes and is changed by every place it flows through. Keeping the river healthy is a collective act, with

each community contributing in a way that fits its setting, its economy, and its people. Each community uses the river and each community is challenged to be a steward of its river resources.

Individual actions matter. In the spring, when the snow melts and rain falls, the river may flood. The high water carries loads of sediment, parts of which is deposited at places where the river slows, such as bends in the channel. In the summer, when it is dry, the river's level falls. Just as the seasons change rivers, the way people manage the land along rivers can change the river. Fertilizers, herbicides, road salts, and other pollutants can leach into the runoff. Removing trees and shrubs from a parcel of land, draining a wetland or swamp, planting crops or paving the surface, changes how water runs off the land. That runoff eventually flows to a river. Runoff can be slowed, or collected, or buffered to help maintain the balance of water and sediment and reduce the chance that the runoff can cause excessive damage.

This book tells two important stories: what individuals can do to enjoy the river and how communities can protect the river. It does so by taking a closer look at five sections of the river, each covering about eighty river miles. Each section explores the themes of landscape, people, management, and individual actions to tell the story of the Mississippi Headwaters and to show



Western Grebe and chick

DOMINIQUE BRAUD

Gichi-ziibi, meaning "Great River" or Misi-ziibi, meaning the "Father of Waters" in Ojibwe, is the fourth longest river in the world.



Trumpeter Swans

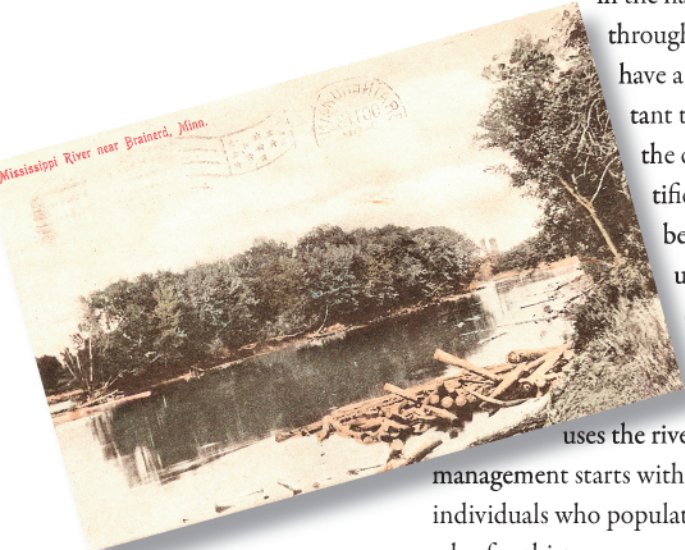
DOMINIQUE BRAUD

how its citizens are preparing for the future. By the end of the book, you will have taken a trip down the first four hundred miles of the Mississippi River. In the course of this journey, you will discover how the Mississippi Headwaters defines the landscape, shapes our culture, and most importantly, how we can be stewards of its gifts.

The Mississippi Headwaters Board provides local control of the first 400 miles of the river.

Stewardship of the nation's mightiest river is in the hands of the communities through which it flows. Rivers have a variety of values important to us: the natural setting, the cultural significance, scientific knowledge, scenic beauty, and recreational uses. Managing rivers requires attention to each value and, requires attention from each of us who uses the river. Thus, successful river management starts with the community and the individuals who populate that community. That's why, for thirty years now, the Mississippi Headwaters Board has protected the natural and human values of the Mississippi's first four hundred miles.

It might not have been this way. In 1975, the



Lake Itasca and its park are Minnesota's crown jewels.



DOMINIQUE BRAUD

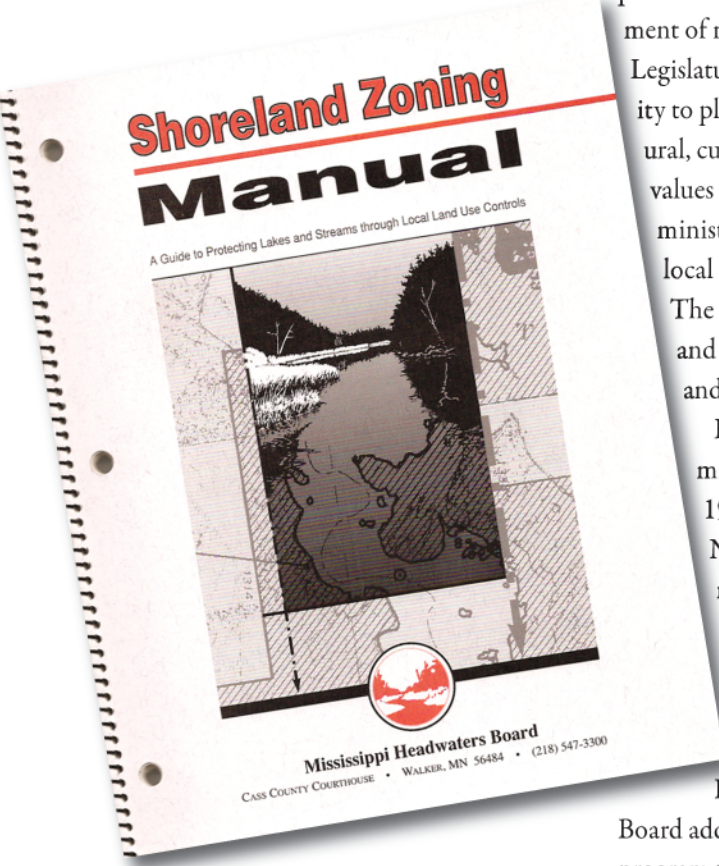


"The song of the river ends not at her banks
but in the hearts of those who have loved her."
—Buffalo Joe

Little Falls Park

DORIS ORMAN

federal government determined that the headwaters of the Mississippi River were eligible for inclusion in the National Wild and Scenic River System, a designation reserved for outstanding free-flowing and undisturbed rivers, such as the St. Croix.



Because the National Wild and Scenic Rivers Act protected natural conditions, it literally drew a line around the river and its riparian lands and set those lands aside from further development. That approach was not considered feasible in northern Minnesota. The Mississippi River had been the backbone of the region's commerce—first during the fur trade, later for logging and hydroelectricity, then transportation, and more recently for fishing, recreation, and drinking water. When the federal government proposed setting aside the Mississippi Headwaters, the eight

counties on the river answered back, "Let us manage the river."

The state was applying a similar concept to the six rivers it had designated as wild and scenic. Unlike the federal approach, the Minnesota approach used local land-use law to manage development of river shore land. The Minnesota Legislature delegated to the counties the authority to plan for protection of the Mississippi's natural, cultural, scenic, scientific, and recreational values in the unincorporated areas, and to administer a common zoning ordinance to assure local development met the intent of the plan. The counties administered the land use rules and the new board was empowered to review and certify county actions.

Each member county appointed a commissioner to the new board. Finalized in 1980, the proposal was endorsed by the National Park Service, enacted into Minnesota statute in 1982, and funded by the state, with matching funds from the counties. The eight counties signed on and the Mississippi Headwaters Board was established.

In 1988, the Mississippi Headwaters Board added a volunteer water quality monitoring program to its activities. Measuring water quality would help determine if the river management rules were protecting the river's health. Monitoring the biological, chemical, and physical aspects



The Mississippi River travels 2,552 miles to the Gulf of Mexico.

It would take a drop of water about three months to travel from Itasca through New Orleans.

Educational challenges and opportunities are bountiful within the Mississippi Headwaters Board's spheres of influence.

of water quality was a way to demonstrate that river management was effective, the Board reasoned.

The program used professional equipment, methods, and standards to measure several parameters of river health. Students in high school biology, chemistry, and even agriculture classes were trained by River Watch staff to use the equipment. All participants also engaged in quality assurance and quality control, not only to understand how professional scientists work, but to assure that the data collected by student monitors would be used

by the state's water quality agencies. Matching water quality to river protection added a new level of information, grounded in science, to local decision-making.

Linking water quality to local management makes sense, since the condition of riparian lands drives water quality. Since the 1970s, cities and industries significantly reduced pollution from point sources, or pollutants discharged from pipes from wastewater plants. Today, water bodies can be polluted by "nonpoint sources," which occurs when

stormwater moves sediment and nutrients from the landscape to water bodies. In a natural setting, topography and vegetation soften the force of stormwater. Filling low spots, removing plants, and "hardening" the surface by paving increase the amount of water running off the landscape.

Addressing the problem of nonpoint source pollution happens parcel-by-parcel, landowner-by-landowner. Individuals and communities can apply remedies to nonpoint source pollution and the community can monitor water quality to

measure the effectiveness of their actions. This is the Mississippi Headwaters Board's program of river management: guide the development to manage the effects of stormwater runoff and empower the community to monitor the effectiveness of that management.



PHOTOS FROM MISSISSIPPI HEADWATERS BOARD FILES



“When despair for the world grows in me and I wake in the night at the least sound in fear of what my life and my children’s lives may be, I go and lie down where the wood drake rests in his beauty on the water, and the great heron feeds. I come into the peace of wild things who do not tax their lives with forethought of grief. I come into the presence of still water. And I feel above me the day-blind stars waiting with their light. For a time I rest in the grace of the world, and am free.”
—Wendell Berry, *The Peace of Wild Things*

Sedge grasses filter water and provide essential habitat for wildlife.

DOUG OHLMAN

In short, the Mississippi River’s unique landscape and history is linked to the power of individual action. It is the sum of our independent actions that protect the river. Our respect for this river is re-

vealed through our commitment to managing our impacts so that the river is a legacy that empowers our children’s future.

*Rivers have a variety of values important to us:
the natural setting,
the cultural significance,
scientific knowledge,
scenic beauty,
commerce and
recreational uses.*



Snowy Egret

DOMINIQUE BRAUD



DOUG OHLMAN

Old railroad bridge at Palisade.