



Tim Welker holds a bullhead catfish caught by electrocuits "rocking" in the Missouri River above the mouth of the Kansas.

The Missouri River Bullhead Catfish

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The Missouri River, which flows through North Dakota, contains some distinctive fishes found few other places. Many of these fish have specialized adaptations for living

on or near the bottom and feeding in turbulent waters.

Bullheads are one that have these fish adaptations. They have a taste for grazing the heads of catfish, sturgeon, and other benthic

birds cover the heads bodies.

Several species of flatheads, channel catfish, sicklefin chubs and sturgeon chubs have small eyes.

and more on taste for feeding in turbulent waters and clearer

These special adaptations may seem strange to us.

They do not rely so much on sight for feeding, but to a Missouri River fish, they may make good sense.

as the river remained relatively undammed.

species prospered.

In the 19th century, extensive damming began.

Missouri River fish populations declined.

river of North Dakota where little natural free-flowing river remains.

Channelization – the dredging of

steams and rivers – has greatly reduced

the amount of sediment and silt available

for spawning and rearing young fish.

The water becomes clearer and

decreased in temperature.

Dam in Montana to Gavins Point Dam

on the South Dakota-Nebraska border.

Because of the dams, the river no longer

carries sediment loads in the reservoirs.

As a result, the reservoirs' headwaters changed the river's

flow and temperature downstream.

Water clarity increased daily

Traversing the Missouri River Upstream Mighty Mo'

fluctuations due to hydro-peaking. These low water conditions often create more turbulent, swift-flowing stretches more suited to the reservoir habitat over native species. We detect road kill or fast and shallow streams.

Despite these dramatic changes, a few small Missouri River reaches reflect an element of their natural character. No longer part of the river from its confluence with the Yellowstone River to the headwaters, the upper Missouri contains many rare, threatened, or endangered fish species. These include the

Yellowstone cutthroat trout, which supports the local fishing industry and is found in West, Middle, and South

The study areas in North Dakota, Montana and the Dakotas and western Minnesota are used to compare different portions of these rivers. In addition, comparisons are made between the upper Missouri River and the lower Missouri River. The study conducted on the

River flows and various flow dams greatly impact habitat conditions. Because many benthic fishes are unique to the Missouri River, their presence or absence is a key indicator of how substantially river habitat has been altered by resource management.

To better understand factors affecting abundance, growth, and survival of benthic fishes, researchers

from cooperative fishery management units and universities in seven states and three provinces in the upper Missouri, North Dakota, South Dakota, Iowa, Kansas and Missouri.

Information from the fish study, which supports the work within each state,

In 1996, more than 25,000 fish were collected throughout the river system. Many were sampled for information on length, weight and abundance, researchers also conduct

studies on age and growth in studies on 13 species. Data from these comparisons of all river can be compared.

Of all the rivers, the Missouri in North Dakota may provide the best contrast between all more mature, immobile, long-living species. The Williston Reach The Williston Reach which

extends from the Missouri-Yellowstone

Missouri River

The objectives of this study, initiated in 1996, are to describe and evaluate abundance, growth, and

survival of benthic fishes in their habitats and ecosystems. Other goals of the study are the Corps of Engineers

crews, the North Dakota Game and Fish Department, which supports

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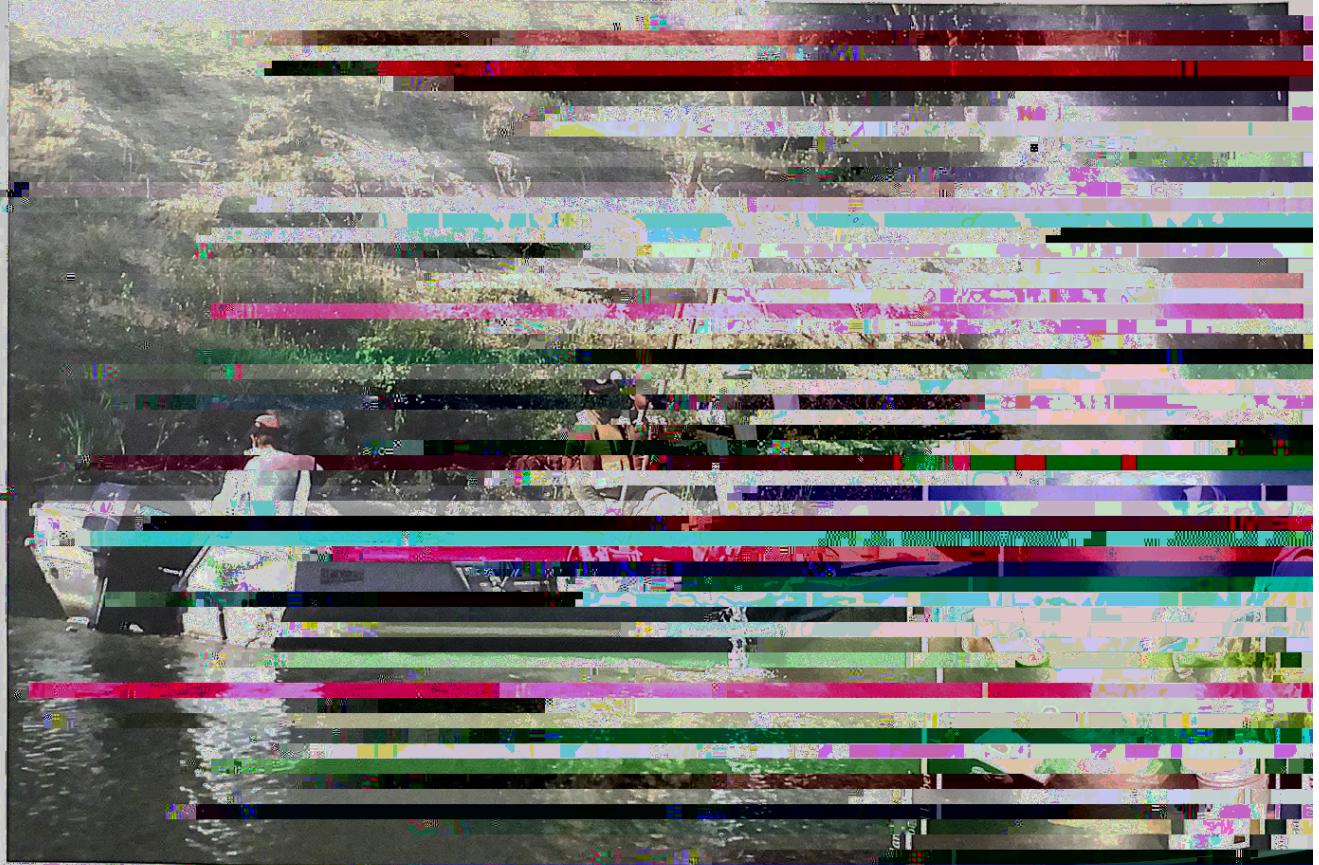
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to the mouth of the river. In the benthic fish study, plankton and larval fish surveys were conducted in the Missouri River.

For plankton surveys, researchers collect data for later analysis.



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the free flowing, turbid waters of the unimpounded Yellowstone River. This reach retains a flow regime, turbidity, and habitats similar to those found before

In contrast, the Garrison Reach which extends from Garrison Dam to the Lake

by Lake Sakakawea. Because water is often very turbid from the deepest portion of the reservoir, Garrison Reach water is typically much colder and clearer than the Williston Reach in summer.

The main fish species in these two reaches are strikingly different. In 1997, 1,500 fish, representing 30 different families were sampled in the Williston Reach. Most sampled fish (1,125) were small, non-game fish targeted for the study. Channel catfish, white shiners, minnows, big-mouth buffalo and channel catfish were most commonly captured. Other native species sampled regularly in the Williston Reach include white sucker, yellow perch, redear sunfish, bluegill, redear sunfish and channel catfish.

Photo by Jim Gipe, toward Trenton Lake near Williston, North Dakota, similar to Lake Sakakawea in this portion of the Missouri River, 2001.

the river. Fish from the Garrison Reach was also sampled. These waters contain distinctive, benthic species early explorers would have seen had they been able to sample the river.

Garrison Reach in 1997 represented only

22 different families.

White suckers, channel catfish, and

less than 35 percent of the catch was targetted benthic fish. Almost none of the

Williston fish were found in the

Garrison Reach. Results indicate that

changes in discharge, sediment and oil

in the Garrison Reach. Similar loss of

native fishes documented at several

white tail habitats

This analysis which continues through

1999 promises to provide information

on North Dakota's impact of river

use Missouri River upstream and down-

stream, taking up on the mighty

Missouri River. The Missouri River is changing an important river ecosystem. It is no longer a river of native Missouri River benthic fish.

Garrison Reach in the

Idaho FRED RYCKMAN is district

Game and Fish Department in Williston,

North Dakota.

