

Upper Mississippi and Illinois Rivers Experience Widespread and Regional Changes in Fish Communities



Photo courtesy of Jason DeBoer

25 Years of Monitoring and Research Show the Fish Community Remains Resilient but Faces New and Ongoing Stressors

Fish in the Upper Mississippi and Illinois Rivers

The fish community remains diverse and functional despite impacts from human modifications and ecological changes. The river is home to at least 143 fish species and continues to support valuable recreational and commercial fisheries.

This community is changing for a variety of reasons including altered hydrology, habitat loss and degradation, and invasive species. These changes vary across the river ecosystem.

To date, the fish community remains resilient to many stressors, but in many parts of the river there remains a need to rehabilitate aquatic areas to ensure healthy habitats exist for the fish community.

Challenges to a Healthy Fish Community

The Upper Mississippi and Illinois Rivers constitute a large and diverse river system with many regional differences. However, throughout the system, there is now more water in the river more of the time with high flows lasting longer and occurring more frequently.

Increased frequency, duration, and magnitude of flooding events may reduce the abundance of aquatic plants necessary to support the native fish community.

In other areas of the river, invasive bigheaded carps [silver carp and bighead carp] are having a large and negative impact on fish communities.

How Do Invasive Carp Impact the System?

Increases in invasive carp have caused the following trends:

- ▶ Declines of native filter feeding species, such as bigmouth buffalo
- ▶ Declines of economically, recreationally, and socially important fish, such as largemouth bass and bluegill
- ▶ Declines in forage fish and overall native fish communities
- ▶ Increased competition for plankton resources



UMRR is a unique, collaborative, science-based restoration program that uses state-of-the-art research and monitoring to understand changing environmental conditions of the river. By collecting and evaluating data over decades, scientists can assess the health of the river and target habitat restoration projects for the greatest benefit of the river and the public.

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This is a summary of the long-term trends in fish populations observed from 25 years of monitoring as reported in the [Ecological Status and Trends of the Upper Mississippi and Illinois Rivers](#).



NATIVE FISH

populations have increased in some pools with improved water clarity and more aquatic vegetation.



RECREATIONAL FISH

have increased in some pools despite changes in fishing methods and technology as well as species targeted by anglers.



INVASIVE BIGHEADED CARPS

now dominate the fish community in the lower reaches of the river system leading to declines in native fish.



FORAGE FISH

are declining throughout much of the river network. They serve as an important food source for larger fishes and other animals and play an intermediate role in the food web — eating plankton, invertebrates, and plants.

Top photo courtesy of Nick Schlessler, other photos courtesy of University of Illinois, Prairie Research Institute, Illinois Natural History Survey

Take a Closer Look at the Data

INDICATOR	UPPER MISSISSIPPI RIVER					ILLINOIS RIVER
	Upper Impounded			Lower Impounded	Unimpounded	La Grange
	Pool 4	Pool 8	Pool 13	Pool 26	Open River	
Lentic Fishes	▲	▲	■	■	▲	▼
Nonnative Fishes (excluding common carp)	■	■	■	▲	■	▲
Forage Fishes	▼	■	■	▼	▼	▼
Recreational Valued Native Fishes	■	▲	▲	▼	■	▼
Commercially Valued Fishes						
Native	■	▲	▲	■	■	▼
Nonnative	▼	▼	▼	▼	▼	▼

▲ Significant Long-Term Increase ▼ Significant Long-Term Decrease ■ No Trend