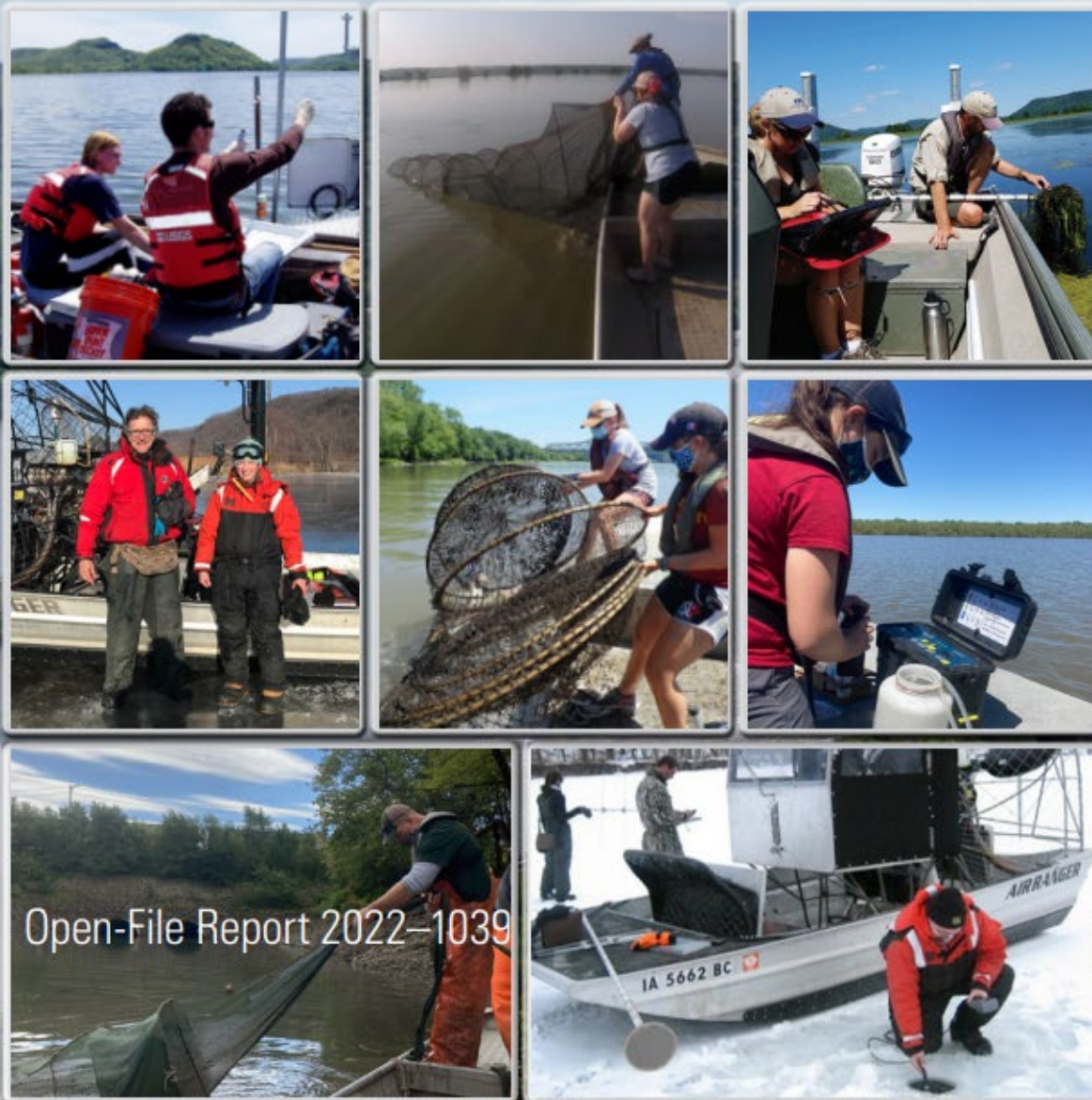


Species Management Research Program and Land Management Research Program

In cooperation with the U.S. Army Corps of Engineers

Ecological Status and Trends of the Upper Mississippi and Illinois Rivers



Open-File Report 2022-1039

**U.S. Department of the Interior
U.S. Geological Survey**

Online Report:
<https://doi.org/10.3133/ofr20221039>



Upper Mississippi and Illinois Rivers Experiencing Widespread and Regional Changes

The U.S. Army Corps of Engineers, Rock Island District; and the U.S. Geological Survey, in partnership with others, have released a report regarding the **Ecological Status and Trends of the Upper Mississippi and Illinois Rivers**.

The Status and Trends report is the third of its kind produced as part of the Upper Mississippi River Restoration (UMRR) program and includes information on long term changes in water quality, aquatic vegetation and fish from six study areas spread across the Upper Mississippi and Illinois Rivers. The report also summarizes trends in possible drivers of long-term changes in the river including river discharge and floodplain land cover.

In the Water Resources Development Act of 1986, Congress authorized a program to provide fish and wildlife habitat rehabilitation and enhancement in the Upper Mississippi River System (UMRS). The act also implemented long-term resource monitoring and research efforts, including the use of state-of-the-art scientific methods to understand changing environmental conditions within the river system. The Status and Trends report describes what was learned from that monitoring.

The report summarizes analyses of more than 25 years of monitoring data to help detect trends, understand change over time and observe complex river patterns. Analysis of long-term data provides critical insight to help inform effective management, rehabilitation and resiliency efforts of this important river system. The understanding of river function we learn from the UMRS extends our ability to address large river issues nationally and internationally.

Key findings from the report include:

- There is more water in the river more of the time with high flows lasting longer and occurring more frequently throughout the system. Water flow is an important factor affecting the quality and quantity of habitat.
- Floodplain forest loss has occurred across most of the system. Healthy floodplain forests provide important habitat for wildlife, and they support outdoor recreation opportunities and access to clean water for millions of people.
- In most of the river system, water in the main channel has become clearer. In parts of the river system, water has become clearer and aquatic plants more abundant, improving habitat for some fish and wildlife. Reduced sediment in the river allows sunlight to reach deeper into the water and promote plant growth. Plants slow the water and anchor sediment, further improving water clarity and triggering additional plant growth.
- Concentrations of nutrients, notably nitrogen and phosphorus, remain high, exceeding U.S. Environmental Protection Agency benchmarks. However, total phosphorus concentrations have declined in many of the studied river areas.
- The river system continues to support diverse and abundant fishes. Popular sport fishes have increased in parts of the river system. However, there have been substantial declines in forage fish which serve as important food for larger fishes and other animals. Invasive carps have substantially affected the river ecosystem where they have become common.

The Status and Trends report is prepared by the UMRR program, which is a partnership of federal and state agencies, non-governmental organizations and individuals working together to support UMRS ecosystem rehabilitation, research and monitoring. Previous Status and Trends reports were released in 1998 and 2008.

A digital version of the report is available online at <https://doi.org/10.3133/ofr20221039>. To learn more about the UMRR visit <https://www.mvr.usace.army.mil/Missions/Environmental-Stewardship/Upper-Mississippi-River-Restoration/> and the Long Term Resource Monitoring element visit <https://www.umesc.usgs.gov/ltrm-home.html>