

Fisheries:

Aquatic and Endangered Resources Program

Providing expert research support and technical assistance to the Department of the Interior and other Federal, State, Tribal, local and non-governmental partners and customers to strengthen science-based natural resource management and decision making.

Program Goals

- Aquatic species diversity, life history, and species interactions
- Aquatic organism health
- Aquatic species-habitat interactions
- Aquatic species-at-risk
- Restoration science for aquatic species and habitats
- Research support and technical assistance to aquatic resource managers

Science Support Expertise

- Modeling and decision support tools
- Risk assessment & viability analyses
- Multi-disciplinary syntheses
- Statistical analysis synthesis
- Research & technology tools



Science Planning & Partnering

- Organize workshops and meetings with partners to define and prioritize science needs.
- Answer specific science information needs.
- Conduct long-term research on aquatic species-habitat interactions to aid adaptive management actions.
- Develop, adapt and test new research techniques and technology tools.
- Develop decision support tools for natural resource managers and other decision makers.
- Respond to natural resource managers' and decision makers' short-term science needs through targeted technical assistance.

**For more information about the Fisheries:
Aquatic and Endangered Resources Program
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Research for DOI Partners



The USGS has a primary responsibility to provide high-quality scientific information to Department of the Interior bureaus that oversee DOI lands and waters.

Living Resources and At-risk Species

One of the main areas of research focuses on imperiled species, including: the effects of river and watershed management on at-risk species of native mussels and fish; establishing genetic markers; life history traits; and developing aquatic systems models. These studies provide Federal, State, and Tribal agencies with data and analytical tools for use in adaptive management plans. A major effort investigates endangered Klamath Basin suckers. USGS scientists have been monitoring Lost River and shortnose suckers to determine changes to population structure and species-specific survival. The Western Fisheries Research Center maintains the historical database for adult suckers in the Upper Klamath Basin. The long-term monitoring program provides data crucial for understanding demographic and reproductive characteristics of these endangered sucker populations. The information is provided to water and natural resources managers to help in water allocation to meet water availability demands and sustain ecological function in the basin.

Research for federal water management partners



USGS aquatic biologists conduct interdisciplinary studies to provide scientific information to determine river management alternatives for conserving water and ecological functions in impounded rivers, and designing restoration projects. Current studies include:

Mississippi River

USGS scientists have determined that the assumption of habitat limits on the production of fish throughout most of the northern portion of the Upper Mississippi River is unfounded. Backwater areas, characterized by very low flow velocity, may limit the abundance of largemouth bass and other valuable fishes only where those backwater areas are very scarce below St. Louis, Missouri.

Missouri River

USGS scientists are engaged in modeling the hydrologic and geomorphologic dynamics of the river to understand the impact of water management on sediment transport and consequent river channel morphology. They are also studying the influence of water discharges from dams on aquatic fauna. The result of these studies, along with studies of sturgeon life histories, provide information to partner agencies for the recovery of this large river and its aquatic fauna, including the endangered pallid sturgeon.

Research for international partnerships



Great Lakes Research

Great Lakes research is focused on the study of fishes, fisheries, aquatic invertebrates, and their aquatic water-dependent habitats in the basin. The main focus of the research is on the long-term dynamics of native and non-native aquatic species and the sustainability of Great Lakes fisheries, including fish stock assessments, trophic relationships, thiamine deficiency complex and early mortality syndrome in lake trout and other salmonids. USGS scientists are also quantifying linkages between the fish community and other biotic and abiotic components of the aquatic ecosystem. One current initiative focuses on the Huron-Erie Corridor, where conflicting human uses of waste disposal, water withdrawals, shoreline development, shipping, recreation, and fishing have decreased the ecological resilience of this system.