Columbia Environmental Research Center

Publication Brief

The Pallid Sturgeon Recovery Challenge

Scientists investigate the factors affecting survival of the endangered Missouri River fish

For more than one hundred years, human activities have modified the natural forces that control the Missouri River and its native fish fauna, which eventually resulted in the pallid sturgeon *(Scaphirhynchus albus)* being listed as endangered in 1990. Though there is a general understanding of the ecological effects of river regulation and channel engineering, additional scientific information is needed to guide river rehabilitation and management for pallid sturgeon recovery.

Conservation and restoration of the pallid sturgeon requires knowledge of both the biology of the species and the factors limiting its recovery. In 2004, the U.S. Geological Survey (USGS) began research funded by the U.S. Army Corps of Engineers to determine the ecological factors affecting reproduction and survival of pallid sturgeon in the Missouri River. Shovelnose sturgeon *(Scaphirhynchus platorhynchus)* are used as a surrogate species for the rare pallid sturgeon in some of the investigations. Scientists are exploring where, when, and under what conditions sturgeon spawn, and what type of habitat conditions are necessary for successful reproduction and recruitment.

The multi-agency and multi-disciplinary research includes components of fish behavior, physiology, habitat use and availability, and population modeling of all life stages. The USGS is examining the effects of management actions and environmental variables on sturgeon biology and habitat use. The first two years of scientific investigations are now available in USGS Open-File Report 2006–1262 (see box below).

The report includes newly developed and tested methodology and technology to track sturgeon during spring migration and to document changes in reproductive status and success. Preliminary analysis includes habitats selected by migrating and post-spawn adult female sturgeon. Observations of geomorphic change relate flow modification and sediment transport. Larvae collection supports the suggestion that sturgeon may have a protracted spawning period.

These types of scientific investigations contribute to understanding the factors affecting pallid sturgeon reproduction and survival. This information will be useful for resource managers to develop restoration actions for the endangered fish species.

Korschgen, C.E. ed., 2007, Factors affecting the reproduction, recruitment, habitat, and population dynamics of pallid sturgeon and shovelnose sturgeon in the Missouri River: U.S. Geological Survey Open-File Report 2007–1262, 279 p.

Download the report from http://pubs.usgs.gov/of/2007/1262/

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November 2007