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**News Release**

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Editors: A map showing the sites assessed in South Dakota and photographs are available at <http://sd.water.usgs.gov/pressrelease/press.html>

## Ecological Resources Assessed at South Dakota Streams

The U.S. Geological Survey in cooperation with the South Dakota Department of Game, Fish and Parks conducted assessments of streams in South Dakota for the Environmental Monitoring and Assessment Program-West (EMAP-West) study beginning in 2001. Stream assessments were completed at 64 randomly selected sites during 2000-2004 and at 45 reference sites during 2002-2004 across South Dakota. The ecological indicators measured included physical habitats, vegetation, fish, amphibians, algae, benthic macroinvertebrates (aquatic organisms without backbones that can be seen with the naked eye), water chemistry and properties (such as nutrients and pH), and fish tissue contaminants.

One of the greatest benefits gained from the EMAP study was the statewide aquatics inventory of many small streams that had not been previously sampled. According to USGS scientist Allen Heakin, "The study provided us with information on fish communities and habitats that exist across a range of geologic and hydrologic conditions. The study also provided new records of rare fish monitored by the South Dakota Natural Heritage Program."

Another benefit of the study was obtaining additional information regarding the range of the Topeka Shiner, which is on the Federal list of threatened and endangered species.

Physical changes occurring in a waterbody, such as fluctuations in temperature and sediment concentrations, or chemical changes such as fluctuations in concentrations of nutrients or trace metals, can result from both natural and anthropogenic sources. Even subtle changes in physical or chemical conditions may stress more sensitive members of the aquatic community, causing a shift in biological integrity that favors the less sensitive and more tolerant aquatic organisms over those that are more sensitive and less tolerant, thus lowering species diversity. Reliable data are required to make meaningful assessments of biological integrity, which in turn, is essential for providing accurate evaluations of the condition of our Nation's surface-water resources.

The EMAP-West study was initiated in 2000 by the U.S. Environmental Protection Agency to assess the current condition of our Nation's ecological resources on both regional and national scales. The objectives of the study were to develop the monitoring tools necessary to produce unbiased estimates of the ecological condition of surface waters across a large geographic area of the western United States, and to demonstrate the effectiveness of those tools in a large-scale assessment.

Details regarding the EMAP-West study in South Dakota are available in USGS Scientific Investigations Report 2006-5007 at <http://pubs.water.usgs.gov/sir20065007>, and a brief overview of the program is presented in Fact Sheet 2006-3001 at <http://pubs.water.usgs.gov/fs20063001>.

\*\*\*MORE\*\*\*

Additional information about the USGS water-resources studies in South Dakota can be obtained by visiting the USGS South Dakota Water Science Center home page at <http://sd.water.usgs.gov/>.

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