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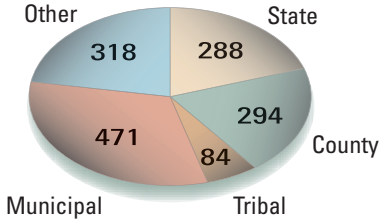
Cooperative Water Program—
A Partnership in the Nation's Water-Resources Program

By Bruce E. Taggart

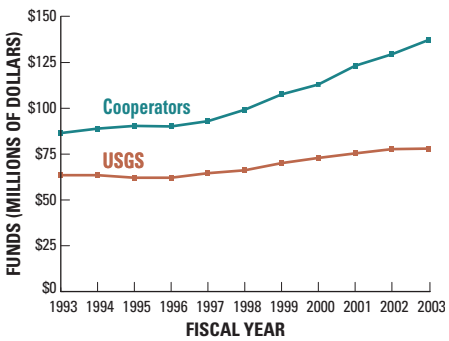
Increasingly, the Nation's water resources are vital to the long-term health of our citizens and the stability of our economy. These resources—our rivers, lakes, and aquifers—supply our drinking water, support our industries, transport our products, and provide us with recreational opportunities. Management of these resources is a complex task involving all levels of government and a multitude of laws, regulations, and competing interests. The U.S. Geological Survey (USGS) Cooperative Water Program has been providing basic scientific information needed by water-resources managers across the Nation since 1895.

> *"The USGS surpassed our expectations. Other state and federal agencies instantly recognized the credibility that USGS brought to the project, enabling us to more quickly utilize the results of the modeling work. We look forward to partnering with USGS on future projects."*
>
> — Tim Harbaugh, Director, Kane County, Illinois Department of Environmental Management

The USGS Cooperative Water Program is an ongoing partnership between the USGS and non-Federal agencies. The program jointly funds water-resources projects in every State, Puerto Rico, and several other U.S. Trust territories. USGS employees use nationally consistent procedures and quality-assurance protocols in conducting cooperative projects. These standards ensure that all data from the Cooperative Water Program are directly comparable from one region to another and available from USGS databases for use by citizens, public officials, industry, and scientists nationwide. Agencies, or "Cooperators," that participate in the Cooperative Water Program are primarily State, Tribal, county, and municipal agencies with water-resources management and policy responsibilities. In 2003, more than 1,400 Cooperators participated in the program.



Number of cooperators in 2003.



In terms of funding, the USGS contribution to the Cooperative Water Program in federal fiscal year 2003 was $78.4 million; $64.4 million is from the Cooperative Water Program federal appropriations, and an additional $14.0 million is from two USGS bureau-level appropriations. These other two appropriations cover some of the administrative and facilities costs attributable to the Cooperative Water Program. Although the Program originated as a 50:50 fund-matching arrangement, Cooperator funds have grown faster than USGS funds in recent years. In 2003, Cooperative Water Program funds totaled $215.8 million. Cooperators contributed $137.3 million, or nearly two-thirds of that total.

Valued Cooperation

The USGS and Cooperators jointly plan the scientific work performed in the Cooperative Water Program. This ensures that this work simultaneously meets the mission objectives of the USGS and the data and information needs of the Cooperators. The result is a national program with broad relevance and widespread use of its products. This significant tie to local and State water-resources needs also creates a program that responds quickly to emerging issues. Cooperators choose to work with the USGS because of the agency's broad technical expertise, its long-standing record of performing high-quality measurements and assessments, and its commitment to providing public access to data collected by the Cooperative Water Program. The scientific, non-regulatory mission of the USGS means that parties in many types of regulatory and jurisdictional disputes accept its data and analyses as valid. To ensure that these activities do not infringe on work more appropriately done by the private sector,

Monitoring the health of the Nation's water supply. Measuring river flow along a tag line.

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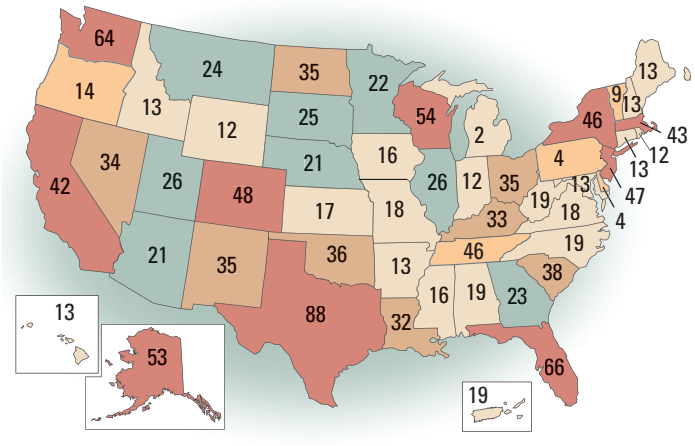


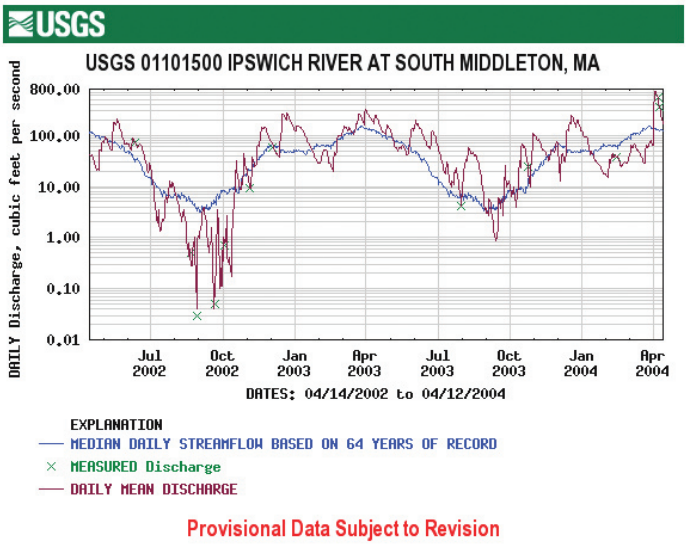
During 2003, the U.S. Geological Survey was actively engaged in over 1,400 Cooperative Water Program funded water-resources monitoring efforts and investigative studies in every State, Puerto Rico, and several other U.S. Trust territories.

the USGS distributes a list of activities that should be excluded from the Program, and works through the Federal Advisory Committee Act to obtain advice from both government and non-government entities.

Data and Information for Many

The Cooperative Water Program supports the collection of basic hydrologic data, studies of specific water-resources problems, and hydrologic research. In 2003, for example, Cooperative Water Program funds supported about 4,200 stream-gaging stations. The program also funds approximately 750 interpretative projects annually targeted at specific issues, such as the effects of urbanization, dam removal, agricultural practices, and energy development on the quality and quantity of the Nation's water resources.

Because data collected in the Cooperative Water Program are directly comparable at the local, regional, and national levels, large-scale syntheses and application of these data to pressing societal and environmental issues are possible. Examples of these syntheses include using historical streamflow information to evaluate regional drought and climate variability, and developing a technique for estimating time of travel for rivers, which provides information for estimating the arrival time for accidental chemical spills.



A hydrograph retrieved from the National Water Information System (NWIS), which includes online access to millions of water records. (http://waterdata.usgs.gov/nwis)

More recently, data from Cooperative Water Program interpretive projects continue to contribute significantly to emerging water-resources issues across the Nation. Examples include an improved understanding of the links between land-use changes and the physical habitat of streams (USGS Circular 1175), the behavior of freshwater-saltwater interactions in ground-water environments along the Atlantic coast (USGS Circular 1262), and the role of science in managing ground-water resources (USGS Circular 1247). Hydrologic data and results of interpretive projects are published as USGS reports, which are publicly available. In addition, more and more projects result in Internet products ranging from descriptive home pages and online reports, to interactive interfaces that allow users to run predictive models and conduct sophisticated statistical analyses by using data available online. Results from many of these interpretive projects, which are local or regional in scope, have broad transferability to other parts of the Nation where similar water-resources issues exist.

> *"Here's a Federal agency willing and enthusiastic to work with the states and local partners to use science to solve real-life problems. The USGS gets it, and the State of Washington is better off for it."*
>
> — Dr. Jeff Koenings, Director
> Washington Department of Fish and Wildlife

Data collected by the Cooperative Water Program are incorporated into the National Water Information System (NWIS). The NWIS contains hydrologic information collected by the USGS during the past 120 years. It includes streamflow data from 21,000 sites, water levels from over 1,000,000 wells, and chemical data from rivers, streams, lakes, springs, and ground water at 338,000 sites. All of these data are publicly available, and can be readily accessed on the Internet at *http://waterdata.usgs.gov/nwis/*. During 1999, the Cooperative Water Program underwent an extensive review by stakeholders external to the USGS—the first such review in the program's history. The Review Committee provided many insightful observations and recommendations, found at *http://water.usgs.gov/coop/review.html,* about the Cooperative Water Program that will help the USGS to maintain the Program's core strengths while leading to significant improvements. More detailed information describing the mission, goals, activities, and accomplishments of the Cooperative Water Program can be found at *http://water.usgs.gov/coop/*.

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