

WATER AVAILABILITY: EXAMINING QUANTITY, QUALITY, AND USE

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The 21st century brings with it a new set of water-resource challenges. Water shortage and use conflict have become more commonplace in many areas of the United States—even in normal water years—for irrigation of crops, for growing cities and communities, for energy production, and for the environment and species protected under the law. Much has changed since the last overall assessment of water resources for the Nation was published by the Water Resources Council in 1978. Over the next ten years, the U.S. Geological Survey (USGS) plans to conduct a new assessment of water availability for the Nation that will track changing flow, use, and storage of water, as well as develop models and predictive tools to guide water-management decisions. The President's FY09 budget for the USGS contains a new initiative, called Water for America. This initiative fulfills an important recommendation of the Subcommittee on Water Availability and Quality of the National Science and Technology Council: to conduct “... *an ongoing census of water that describes the status of our Nation's water resource at any point in time and identifies trends over time.*”

This presentation describes the technical plans for the Water for America Initiative. Case studies from the USGS Ground-Water Resources and Cooperative Water Programs that demonstrate various aspects of water-availability science are discussed. These studies include investigations of ground-water/surface-water interactions, saltwater intrusion, changes in ground-water flow divides, and ecological flows. A case study is presented that demonstrates the effects of water quality on water availability. Finally, conceptual models of data integration to improve the understanding of water availability are discussed and presented.

KEYWORDS

Water shortage, use conflict, Water for America Initiative