

serving water needs

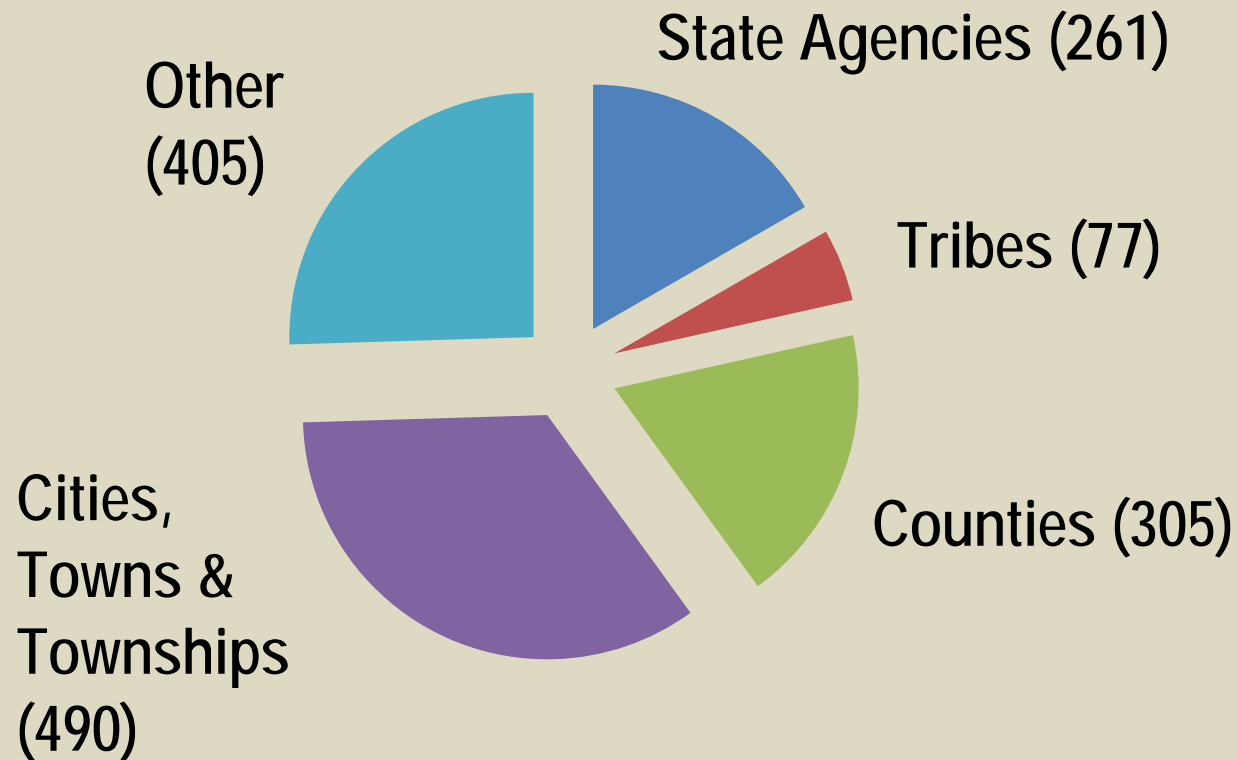
From the Ground Up

USGS Cooperative Water Program

Pixie Hamilton
National Coordinator
May 3, 2012



Cooperators in FY11 – Totaling nearly 1,550



Note – “Other” includes organizations associated with local, State, and Tribal agencies, such as regional commissions, State Universities, and conservation, irrigation, and natural resource districts.

Hydrologic Networks – Streamgaging – FY11



CWP and 850 cooperators help to support more than 77 percent of streamgages across the Nation.

About 95 percent are in real time, critical during flooding and to support emergency decisions to protect life and property.

Other common uses include infrastructure design (roads, bridges), recreation, and water permitting.



Hydrologic Networks – FY11

Groundwater and Water Quality

- CWP supports groundwater measurements at more than 8,000 sites.
- About 1,400 are in real time. Real-time groundwater levels, such as measured at this platform in North Carolina, are critical for managers during times of drought.



- CWP supports water-quality monitoring at nearly 4,000 stream sites and wells.
- Real-time water-quality sensors are used at selected sites to measure pH, water temperature, dissolved oxygen, specific conductance, and turbidity which can change quickly, particularly before, during, and after storms.
- Data are also critical in day-to-day operations of reservoirs, and management of drinking-water intakes and beach health.

Cooperative Water Program



Assessments and Research

- Conducts more than 700 interpretative studies annually
- Produced about 325 information products in FY11
- Informed a myriad of stakeholder decisions related to water availability, ecosystem health, water quality and drinking water, hazards, energy, and climate.

“On the Ground” Water Challenges

- Provide real-time information to minimize loss of life and property from water hazards.
- Ensure water availability amidst competing demands and climate change.
- Coordinate management of groundwater and surface water.
- Maintain environmental flows and healthy ecosystems.



“On the Ground” Water Challenges

- Mitigate water-quality issues in groundwater and streams, and their effects on estuaries and critical bays.
- Manage sources, transport, fate of nutrients, chemicals, and algal toxins.
- Track natural and manmade (including emerging) contaminants in drinking water.
- Assess impacts of energy development, such as hydraulic fracturing on water quantity and quality.



Groundwater/Surface Water Assessment in the Yakima River Basin, Washington



Prepared in cooperation with the Bureau of Reclamation, Washington State Department of Ecology, and the Yakama Nation

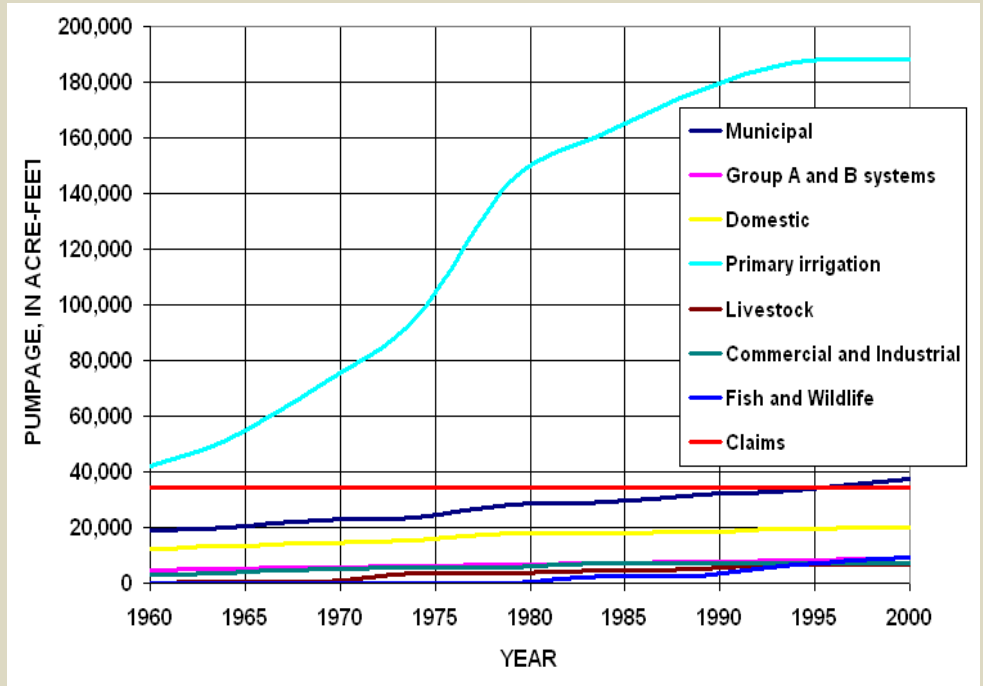


Numerical Simulation of Groundwater Flow for the Yakima River Basin Aquifer System, Washington

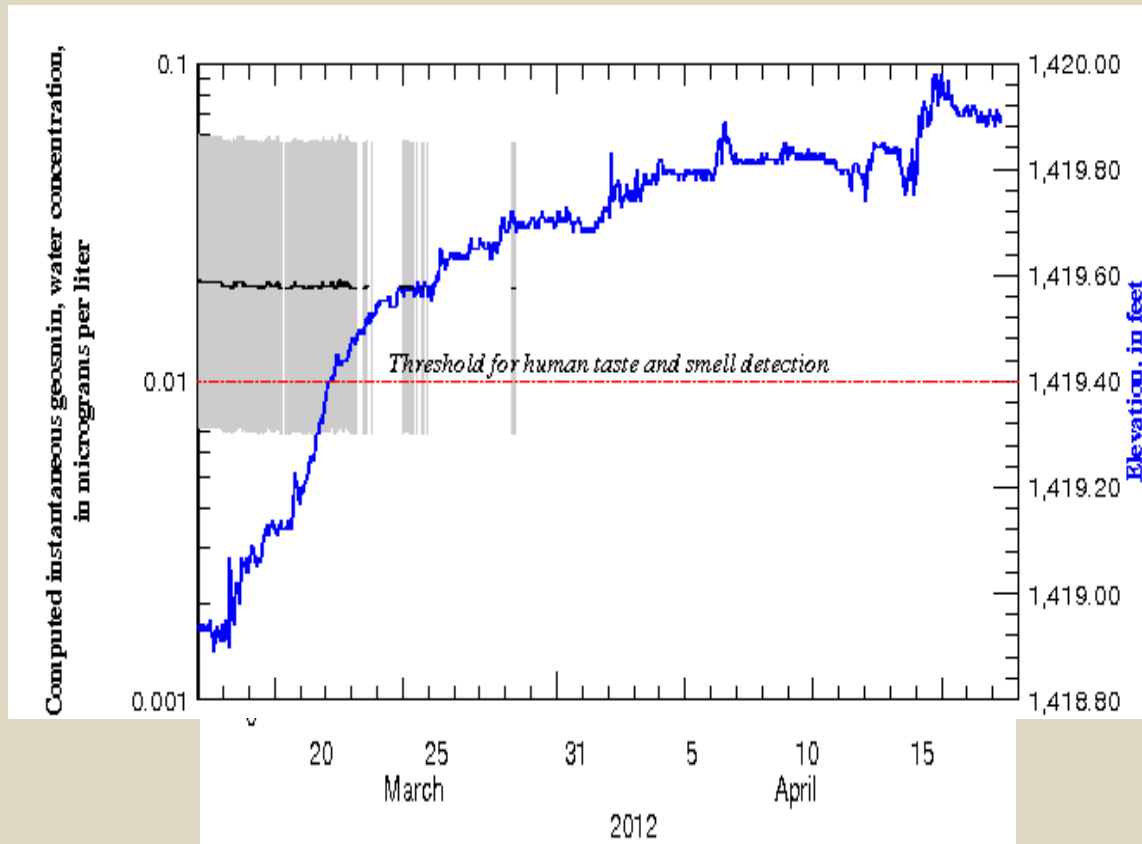


Scientific Investigations Report 2011-5155

U.S. Department of the Interior
U.S. Geological Survey



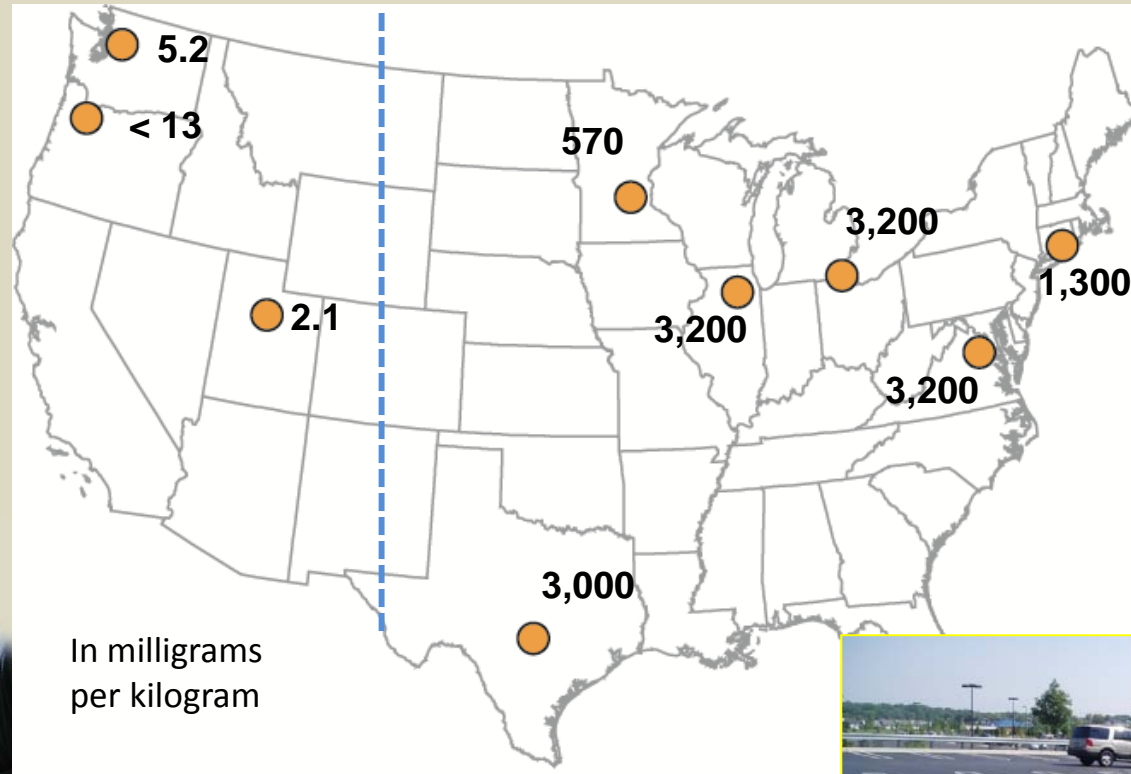
Studies in Kansas help to build real-time water-quality models to estimate geosmin



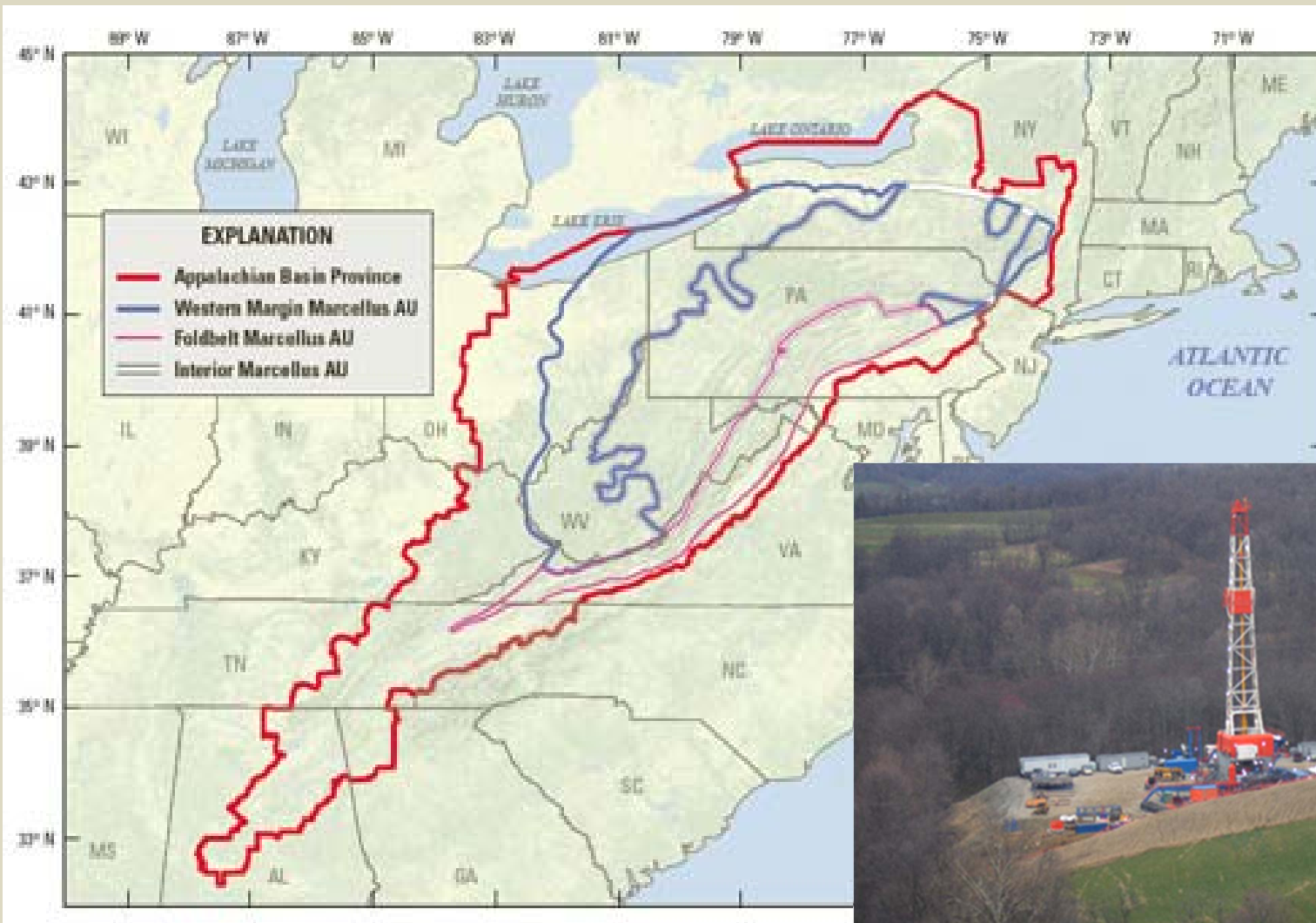
Cyanobacteria in Cheney Reservoir, Wichita, Kansas. (Photo Courtesy of Kansas Department of Health and the Environment)

Geosmin is estimated in Cheney Reservoir, Wichita, Kansas with real-time models based on continuously monitored variables, such as light, temperature, conductivity, and turbidity.

A study on Polycyclic Aromatic Hydrocarbons (PAHs) in the City of Austin emerges as a national issue

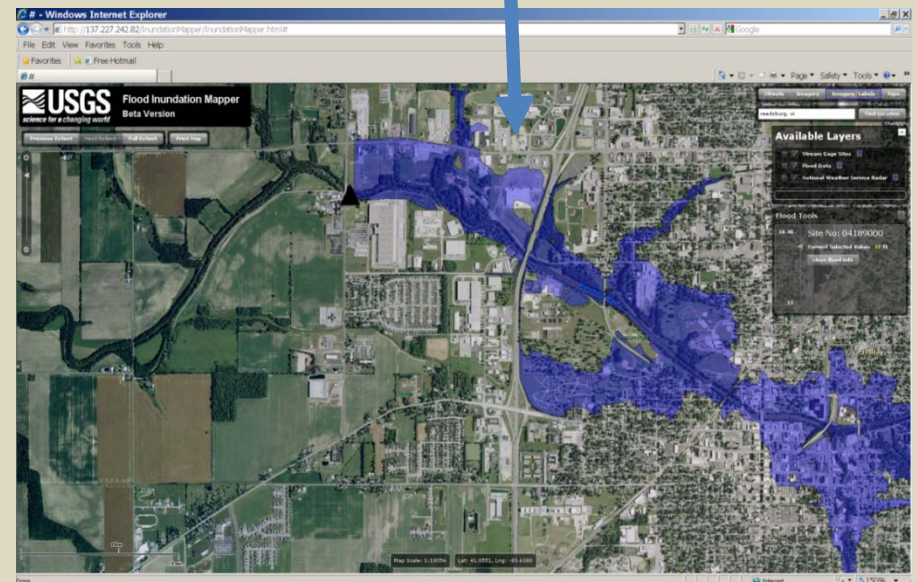
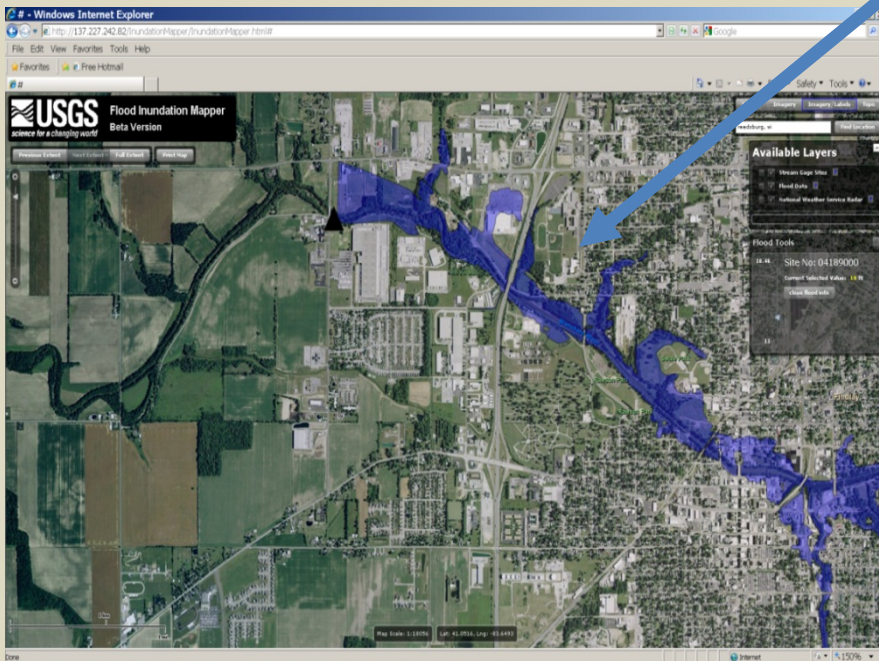
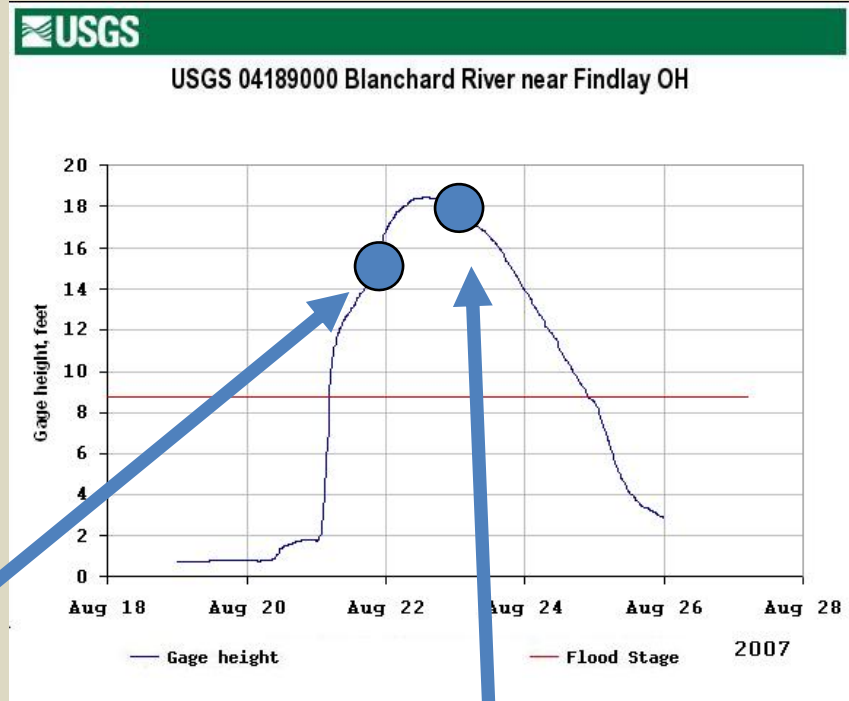


Unconventional Energy Development – Hydraulic Fracturing, such as in the Marcellus Shale



Flood Inundation Mapping

Moving from “flood data/graphs to dynamic flood inundation map forecasts and digital map views



Search USGS Water Sites:

WATER DATA FOR THE NATION

National Water Information System (NWIS)

View current and historical streamflow, groundwater levels, and water-quality data

Date by State...

Data Discovery

For more data options, explore our data discovery tools

Today's Water Conditions

View maps of current and historical conditions



- Streamflow
 - Flood and high flow
 - Drought
 - Groundwater levels
 - Surface water quality
- Subscribe to hydrologic alerts:
- WaterAlert

WATER SCIENCE SPECIALTIES

- Surface Water
- Groundwater
- Water Quality
- Water Use
- Research

WATER SCIENCE BY STATE

USGS Water Science Centers are located in each state

Select a State...

Cooperative Water Program

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The Cooperative Water Program [monitors](#) and [assesses](#) water in every State, protectorate, and territory of the U.S. in partnership with nearly 1,800 local, State, and Tribal agencies. [Read more](#)

Features



Progress of groundwater decline through 2007 in western Arkansas. [View presentation](#)



New Products



[Water Availability and Use](#)



[Ecosystem Health](#)



[Water Quality and Drinking Water](#)



[Hazard Risk and Assessment](#)



[Energy](#)



[Climate and Land-use Change](#)

Our Mission

"The Mission of the USGS Cooperative Water Program is to provide reliable, impartial, and timely information needed to understand the Nation's water resources through a program of shared efforts and funding with State, Tribal, and local partners to enable decision makers to wisely manage the Nation's water resources."

USGS In Your State (clickable)



Informing Stakeholders

Wake County managers in North Carolina use USGS groundwater information collected in fractured-bedrock to manage freshwater, water use, and water supplies. [View video](#)



Stakeholders Speak!

[Managing Water Above and Below - Stakeholder Webinar, March 21st, 2012 \(PDF Presentation, 10MB\)](#)

Summaries of Cooperator Roundtables

- Colorado River Basin ([massive leak](#))
- Basin Interflows
- Florida
- Mid-Atlantic Region
- Ohio River Basin
- Upper Missouri River Basin
- Upper Mississippi River Basin
- Southwest
- California
- New England
- National Stakeholder Meeting in Washington, D.C.

External Review

- 2008
- 2009

<http://water.usgs.gov/coop/>



serving water needs

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