

Science Programs in Kansas

Groundwater and Streamflow Information Program—The U.S. Geological Survey (USGS) helps fund and operates real-time groundwater monitoring at 19 locations and streamflow monitoring at 216 locations to provide information for water supplies, flooding, and drought throughout Kansas.

National Water Quality Program—Provides information on water-quality issues and trends in Kansas as part of a national monitoring network. USGS helps fund the operation of water-quality monitoring sites in the Little Arkansas and Kansas Rivers.

Sediment Transport—Study of inflows and outflows of sediment to/from reservoirs and in streams helps Kansas assess changes in water storage and effects of streambank stabilization. Examples include the Neosho River and sediment management from Tuttle Reservoir

Harmful Algal Blooms—National research is being done to increase understanding of the potential for human and environmental health risks from toxins, occurrence, and causes of algal blooms. Kansas studies examine the causes, effects, and potential for transport in the Kansas River, Milford Lake, and Cheney Reservoir.

Water-Quantity and Water-Quality Effects of Artificial Groundwater Recharge—USGS provides streamflow and continuously monitors water quality in groundwater and the Little Arkansas River to assess effects of *Equus* Beds Aquifer Storage and Recovery Project near Wichita, Kansas, on aquifer water-quality

Water Availability and Use Science Program—Compiling Kansas municipal and irrigation water-use data statewide. A national compilation is published every 5 years.

Environmental Health Toxic Substance Hydrology Program—Focused on national occurrence, effects, and movement of environmental pesticides, antibiotics, algal toxins, and taste-and-odor compounds.

State Water Resources Research Institute Program—The USGS funds the Kansas Water Resources Research Institute to further research and education through Kansas universities.



Measuring streamflow under ice conditions using an acoustic Doppler velocimeter



Groundwater sampling in *Equus* Beds aquifer



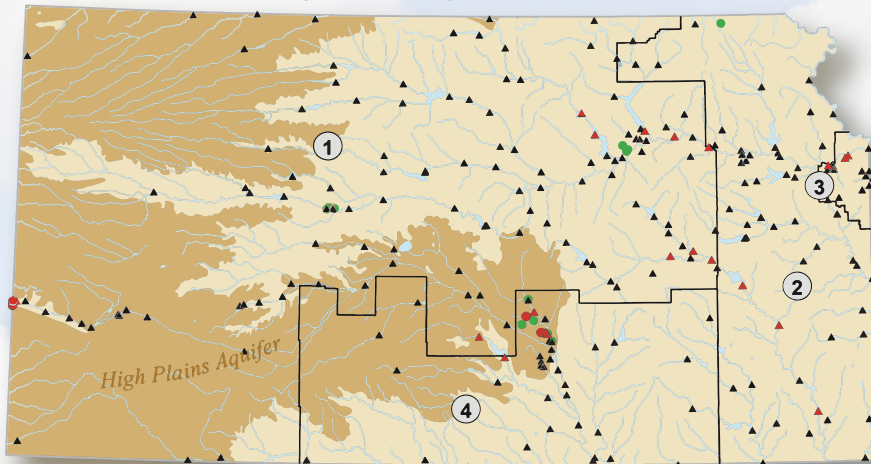
Retrieving a stormwater runoff sample collected using a passive sampler located on the bank of Little Mill Creek in Lenexa, Kansas



Harmful algal bloom at Milford Lake, Kansas

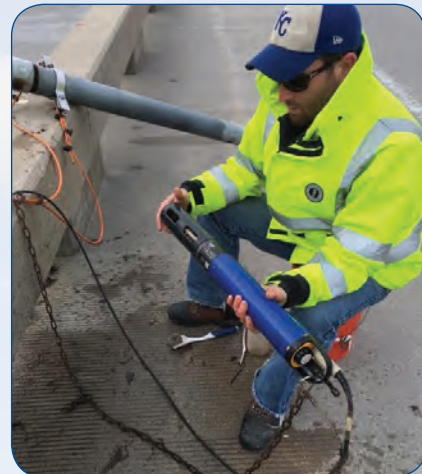
The USGS is a non-regulatory Earth science agency within the Department of the Interior, founded in 1879, that [provides impartial scientific information](#) to describe and understand the health of our ecosystems and environment; minimize loss of life and property from natural disasters; manage water, biological, energy, and mineral resources; and enhance and protect our quality of life. The USGS also cooperates with Federal, State, tribal, and local agencies to deliver long-term data in real-time and interpretive reports describing what those data mean to the public and resource management agencies.

U.S. Geological Survey Real-Time Continuous Water Information for Kansas



EXPLANATION

- ① Congressional district
- ▲ Streamgage
- Groundwater level monitoring site
- ▲ Water quality monitoring site
- Groundwater quality monitoring site



Continuous water-quality monitor at Wamego, Kansas

In 2018, USGS operated 216 streamgages, 19 groundwater sites, and 21 water-quality sites.

Examples of USGS Kansas Water Science Center Projects in Congressional Districts

District 1

- Water-quality conditions in Cheney Reservoir and watershed
- Groundwater-level changes and quality in the High Plains Aquifer
- Kansas River algal study
- Algal mapping of Milford Lake
- Monitoring of hydrologic conditions at Fort Riley
- Monitoring sediment transport to John Redmond Reservoir and Neosho River watershed

District 2

- Kansas River algal study
- Water-quality monitoring in the Kansas River at DeSoto, Kansas
- John Redmond Reservoir dredging sediment study
- Monitoring sediment transport to John Redmond Reservoir and Neosho River watershed

District 3

- Kansas River algal study
- Effects of storm water on water quality in Johnson County streams
- Analysis of altered streamflow in Johnson County, Kansas
- Water-quality monitoring in the Kansas River near Lake Quivira, Kansas

District 4

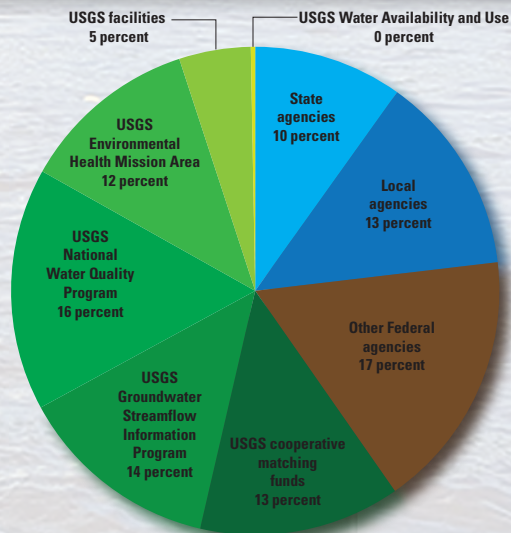
- Water-quality and water-quantity effects of *Equus* Beds artificial groundwater recharge project
- Water-quality monitoring in the Little Arkansas River
- Seismic monitoring

Statewide

- Streamgaging
- Streamflow alteration and statistics
- Environmental Health Science
- Water Availability and Use
- Institute funding to universities

Who Cooperatively Funds USGS Science in Kansas?

USGS (Environmental Health Program, Groundwater and Streamflow Information Program, National Water Quality Program, Water Availability and Use Science Program); NASA (Goddard Space Flight Center); U.S. Army; U.S. Bureau of Reclamation; U.S. Environmental Protection Agency; U.S. Fish and Wildlife Service; The Conservation Fund; University of Maryland; Federal Emergency Management Agency (Region VII); Kansas Department of Agriculture (Division of Water Resources); Kansas Department of Health and Environment; Kansas Department of Transportation; Kansas Department of Wildlife, Parks, and Tourism; Kansas Geological Survey; Kansas State University; Kansas Water Office; Prairie Band of Potawatomi Nation; Arkansas River Compact Administration; Cities of Augusta, Hays, Hutchinson, Lawrence, Leavenworth, Manhattan, Ottawa, Olathe, Russell, Topeka, and Wichita; Douglas County Emergency Management; Johnson County Department of Public Works; University of Kansas Athletics; Kansas River Water Assurance District; Leavenworth County; Lower Platte South Natural Resources District; Pawnee Watershed Joint District; Shawnee County; Southwest Kansas Groundwater Management District GMD3; Unified Government of Wyandotte County; U.S. Army Corps of Engineers (Kansas City District and Tulsa District); and WaterOne.



Fiscal year 2018 total funding was \$8.4 million. USGS funding was \$5.0 million (60 percent).