

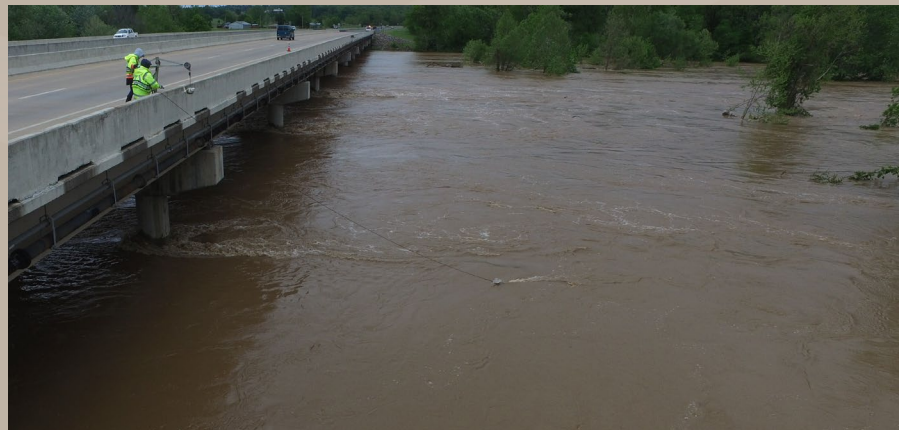
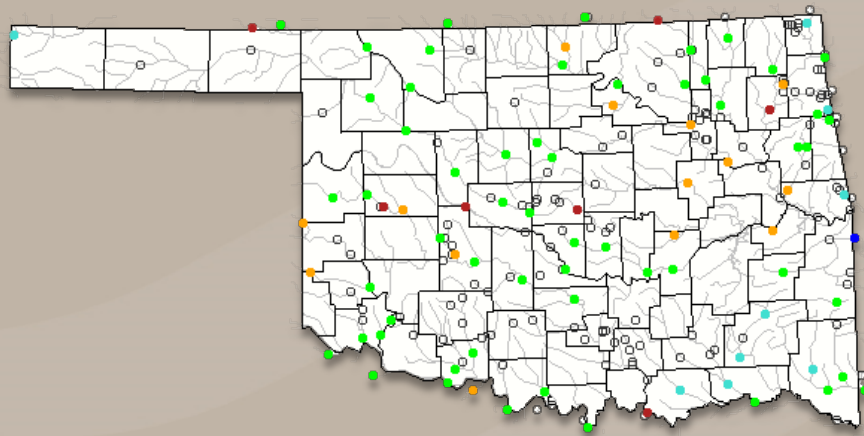
An Overview of the Oklahoma Water Science Center

Matthew Varonka, PhD
Studies Chief
Oklahoma Water Science Center



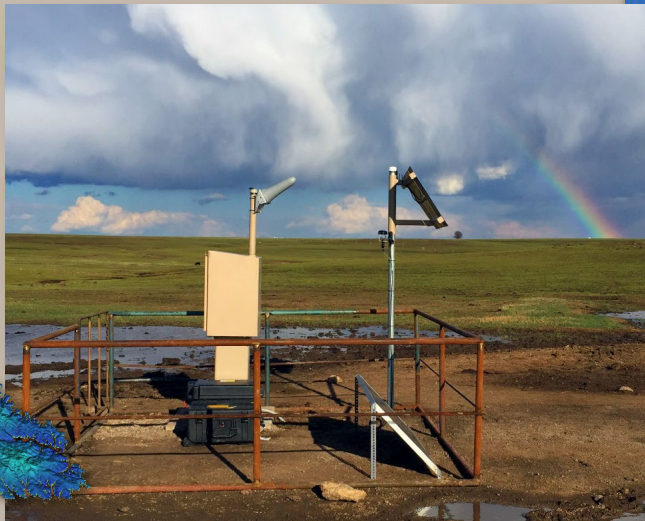
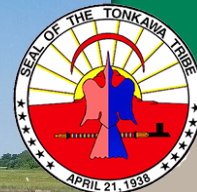
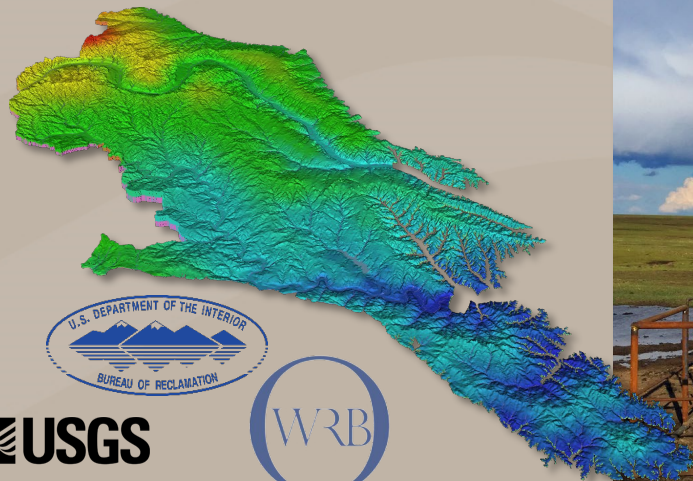
Streamgage and Groundwater Networks

- The OK WSC currently operates approximately 200 streamflow-gaging stations, with 23 of those stations also having continuous water-quality data-collection platforms, and 55 continuous groundwater-level monitoring wells.
- These gages and wells are funded by the USGS and **40** cooperating agencies.
- Provide vital streamflow, groundwater, and water-quality data to the National Weather Service, permit holders, water managers, civil engineers, emergency managers, recreational users, and researchers.



Groundwater Projects

- Develop groundwater-flow models to assess water availability for the Oklahoma Water Resources Board and Bureau of Reclamation.
- Provide data and interpretive studies that can be used to assist Tribes with water planning.
- Investigate seismic effects of oilfield wastewater injection in cooperation with USGS Earthquake Hazards Program.

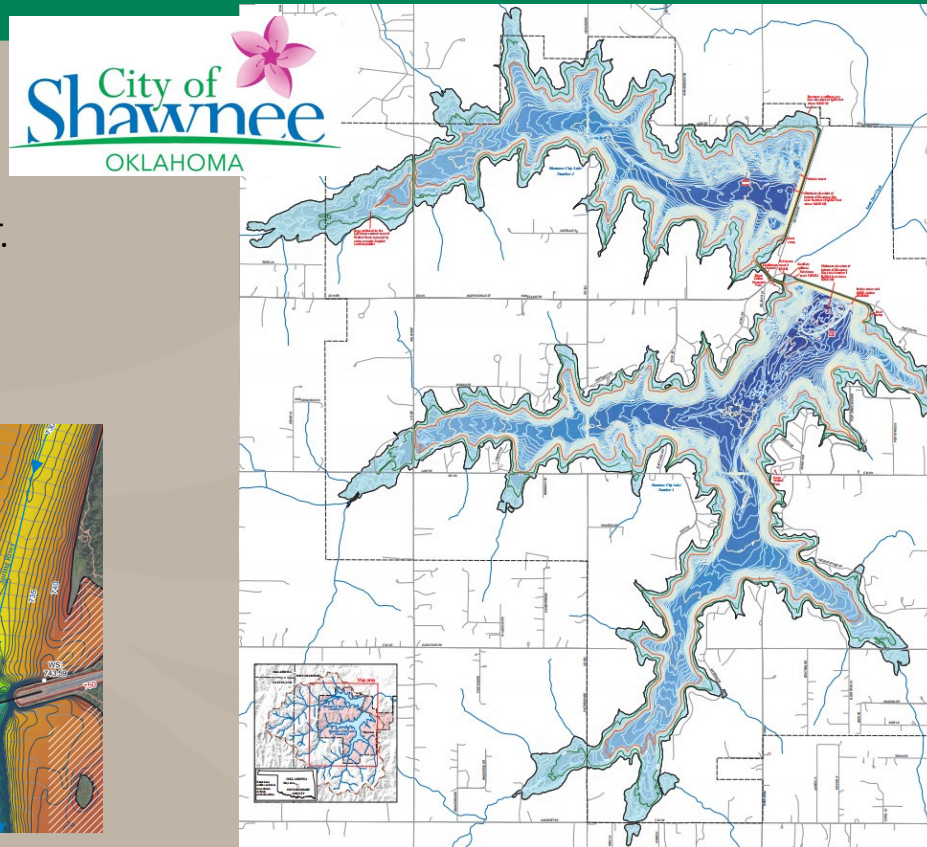


Surface Water Projects

- Completed several river and lake bathymetry studies, flood inundation maps, and dam breach investigations.
- Estimate peak flows of ungaged streams for ODOT.
- Calculate storage capacity and assess long-term sustainability of reservoirs for GRDA and Reclamation.



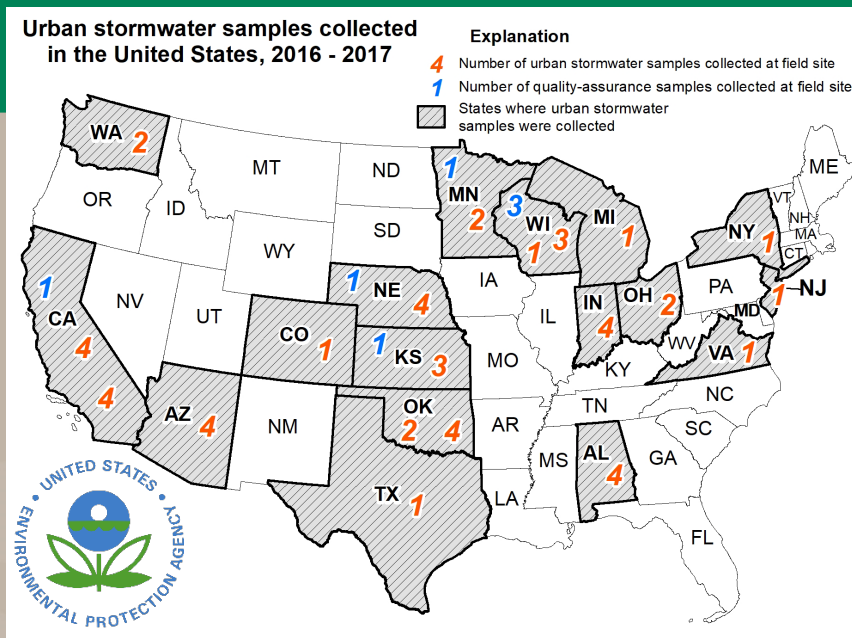
Hunter, S.L., Ashworth, C.E., and Smith, S.J., 2017, Bathymetric surveys of the Neosho River, Spring River, and Elk River, northeastern Oklahoma and southwestern Missouri, 2016–17: U.S. Geological Survey Scientific Investigations Report 2017–5101, 59 p., <https://doi.org/10.3133/sir20175101>.



Ashworth, C.E., Smith, S.J., and Smith, K.A., 2017, Bathymetry and capacity of Shawnee Reservoir, Oklahoma, 2016: U.S. Geological Survey Scientific Investigations Map 3374, 1 sheet, <https://doi.org/10.3133/sim3374>.

Water Quality Projects

- Collaborating with the U.S. EPA and the USGS Toxics Substances Hydrology Program to assess water-quality impacts to groundwater from urban runoff.
 - Phase I – Collect urban runoff samples and analyze for a large suite of water-quality parameters.
 - Phase II – Select three sites to examine how urban runoff infiltrates to groundwater through green infrastructure projects and the associated changes in groundwater quality.
- Working with OSU's South Central Research Station to study water chemistry of treated wastewater used to irrigate row crops.



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 @USGS_Oklahoma

Hydrologist, GS-11/12

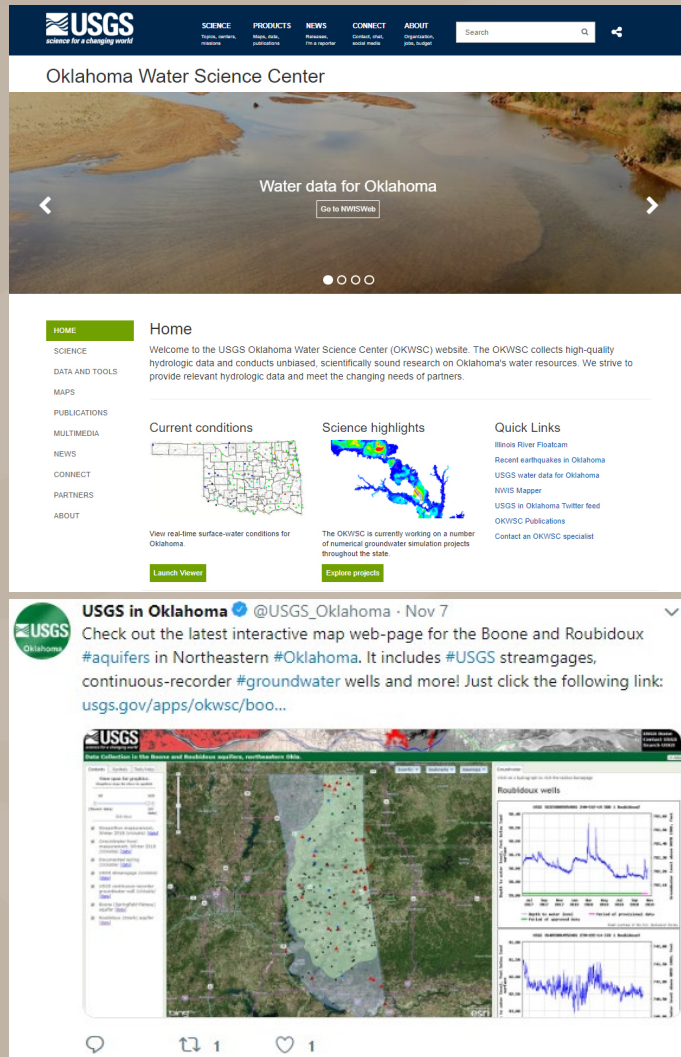
- PhD or experience in geology/hydrogeology
- Experience with groundwater-flow modeling and MODFLOW
- ArcGIS, Python, MS Excel/Access, Adobe Illustrator

Student Trainee (Hydrology), GS-04

- Interest in geology/hydrogeology
- Ability to perform fieldwork and travel
- Can work while still in school

USAJOBS

 handshake



The top section shows the USGS Oklahoma Water Science Center website. The header includes the USGS logo and navigation links: SCIENCE, PRODUCTS, NEWS, CONNECT, ABOUT. A search bar is on the right. The main banner features a river landscape with the text "Water data for Oklahoma" and a "Go to NWISWeb" button. Below the banner is a "Home" section with a sidebar menu (HOME, SCIENCE, DATA AND TOOLS, MAPS, PUBLICATIONS, MULTIMEDIA, NEWS, CONNECT, PARTNERS, ABOUT) and three main content areas: "Current conditions" with a map of Oklahoma, "Science highlights" with a map of a river network, and "Quick Links" with various resources. A social media post from @USGS_Oklahoma dated Nov 7 is shown below, featuring a screenshot of an interactive map web-page for the Boone and Roubidoux aquifers in Northeastern Oklahoma. The map shows streamgages, continuous-recorder groundwater wells, and more. The post includes a link: usgs.gov/apps/okwsc/boo.... The map interface includes a legend, a list of wells, and two line graphs showing water level data for Roubidoux wells.