Rivers and Streams Monitoring

OWRB FACT SHEET

The Oklahoma Water Resources Board monitors water quality and water quantity in rivers and streams across Oklahoma with an integrated approach using fixed station and probabilistic monitoring techniques.

Targeted monitoring at fixed stations on rivers and streams generate data that allow the OWRB to identify and determine ambient trends and constituent loads. These fixed stations are mostly located on larger rivers and serve as an integration point for their respective watershed, providing important indicators of general conditions at the site and insight into conditions upstream.

Fixed station monitoring is useful for the determination of trends in a specific river or stream, while probabilistic monitoring allows for a broader view of the general health of rivers and streams across the state. The OWRB conducts probabilistic monitoring on an annual basis using a computer model to randomly select sites across Oklahoma.

Both fixed station and probabilistic monitoring utilize a broad suite of chemical, biological, and physical parameters to assess and analyze the health and integrity of Oklahoma rivers and streams.

Water Chemistry

Water samples are taken at each site and analyzed for a variety of constituents, including nutrients, minerals, hardness, alkalinity, turbidity, dissolved oxygen, pH, chlorophyll, and specific conductivity.

Water Quantity

The OWRB partners with the U.S. Army Corps of Engineers (USACE) and U.S. Geological Survey (USGS) to support a large network of stream gages across Oklahoma. The OWRB also operates stream gages that provide continuous water level data. The data, along with flow measurements, allow staff to generate continuous volumetric discharge data for each site.

Biological Monitoring

OWRB Staff conduct annual or rotating biological monitoring at fixed stations. Physical habitat assessment, fish collection, and macroinvertebrate collection help generate biological integrity scores, observe riparian quality, and analyze stream morphology as it pertains to hydrology and aquatic habitat. Biological monitoring helps to assess the overall condition and health of rivers and streams and their aquatic communities.

Applying the Data

When data collected at fixed station monitoring locations are integrated with data from probabilistic monitoring, local areas of concern are easier to identify for specific purposes. The data can also show areas where pollution is likely to occur, allowing resource managers to focus additional monitoring efforts in those areas and identify problems before they become more serious. These data and analyses are utilized by public water suppliers, local businesses, academic researchers, and other local, state, and federal agencies to determine water supply availability and water quality needs.

Through partnerships with the Oklahoma Conservation Commission, Oklahoma Department of Environmental Quality, USGS, USACE, Oklahoma Secretary of Energy and Environment, U.S. Environmental Protection Agency (EPA), and others, data are used to assess the health of local and national waters and determine which lakes need additional study and rehabilitation. Findings are published in multiple publications, including the EPA's National Rivers and Streams Assessment.

Monitoring data and analysis tools are available on the OWRB website.

OKLAHOMA
Water Resources Board
(405) 530-8800 · www.oklahoma.gov/owrb