

# Rivers and Streams Probabilistic Monitoring

## OWRB FACT SHEET

Monitoring and data collection in Oklahoma rivers and streams allow the OWRB to identify pollution problems, track general water quality trends, and determine compliance with water quality standards.

Since 2003, the OWRB has collected data through probabilistic monitoring on rivers and streams across the state. Analysis of the data helps answer comprehensive questions about the quality and quantity of water in Oklahoma's rivers and streams and enables us to inform stakeholders on river and stream conditions.

► **Analysis of data collected by the OWRB helps answer questions about water quality and quantity in Oklahoma streams.**

Probabilistic monitoring involves the sampling of river and stream sites across the state that have been selected at random by a computer program. This approach is similar to public opinion polls, where data from a relatively small but representative, random sample are used to describe characteristics of a larger population.

### Seasonal Collection Schedule

Each year from June through September, OWRB staff visit each randomly selected site to collect physical, chemical, and biological data to assess the overall condition of the river or stream and its organisms.

### Water Sample Collection

Water samples are collected and analyzed for nutrients, metals, minerals, alkalinity, hardness, turbidity, dissolved oxygen, pH, and specific conductivity.

### Algae Collection

Algae samples are collected and analyzed to determine types and amounts of algae present in the water column and bottom substrate.

### Macroinvertebrate Collection

Aquatic macroinvertebrates are collected from various habitats within each river and stream reach and sent to a certified laboratory for sorting, identification, and enumeration.



### Fish Collection

Fish are collected using seines or electrofishing equipment. Most fish are identified in the field and released. Unidentifiable fish are vouchered and removed for later identification; predator fish may be kept for tissue analysis.

### Physical Habitat Assessments

Physical habitat assessments measure streambed and riparian zone characteristics, including substrate composition, stream width and depth, canopy cover, bank vegetation, stream discharge, and riparian condition.

### Applying the Data

OWRB monitoring data are utilized by academic researchers and local businesses, such as recreation outfitters and others that depend on reliable water supply. Through partnerships with the Oklahoma Conservation Commission, Oklahoma Department of Environmental Quality, Secretary of Energy and Environment, and the U.S. Environmental Protection Agency (EPA), data are used to assess the health of local and national waters. Findings are published in multiple reports and publications, including the OWRB's Statewide Stream/River Probabilistic Monitoring Network Report and the EPA's National Rivers and Streams Assessment. Monitoring data and analysis tools are available to the public on the OWRB website.



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