Lakes Monitoring

OWRB FACT SHEET

The Oklahoma Water Resources Board (OWRB) monitors water quality in lakes with an integrated approach using fixed station and probabilistic monitoring techniques.

Moinitoring at targeted (fixed-station) lakes gives us data to identify and determine trends and pollution sources at a limited number of mostly large Oklahoma lakes. However, it does not tell us much about the general condition of all Oklahoma's lakes.

Fixed-station monitoring is useful to determine trends in particular lakes, while probabilistic monitoring gives us a look at the general health of all Oklahoma lakes.

The OWRB also conducts probabilistic monitoring, which focuses on randomly selected lakes of different sizes across the state. These lakes are selected by a computer program, where each lake in Oklahoma has an equal probability or chance of being selected for monitoring. This approach is very similar to how public opinion polls are conducted for large groups of people, where data from a relatively small, representative, random sample are used to describe the characteristics of a much larger population.

For both type of monitoring, a broad suite of parameters are collected to assess the integrity of lakes using the following types of data collection:

Water Chemistry

Water samples are taken from multiple sites on each lake and analyzed for a variety of parameters, such as nutrients, minerals, alkalinity, hardness, turbidity, dissolved oxygen, pH, and specific conductivity.

Algae Collection

Samples are collected and analyzed for the types and amounts of algae present in the water column.

Biological Collection

In addition to chlorophyll, phytoplankton and zooplankton are collected at each lake to gain an understanding of community makeup.

Physical Habitat

A visual assessment of shoreline and in-lake habitat is performed at each lake.

Applying the Data

When data collected at fixed-station monitoring networks 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.

OWRB monitoring data 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. Analysis of these data also provides information to decision makers and the public about the overall health of Oklahoma lakes.

Through partnerships with the Oklahoma Conservation Commission, Oklahoma Department of Environmental Quality, Oklahoma 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 and determine which lakes need additional study and rehabilitation. Findings are published in multiple publications, including the EPA's National Lakes Assessment.

Monitoring data and analysis tools and the latest findings and reports on Oklahoma lakes are available on the OWRB website.

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