Lakes Monitoring
FACT SHEET

OWRB
the water agency

Historically, most water quality monitoring performed by the Oklahoma Water Resources Board has been at targeted (fixed-station) lakes that are predominantly greater than 100 surface acres in size. Data from these sites are important in telling us about compliance with water quality standards, tracking general water quality trends, and identifying pollution problems. However, data from targeted monitoring is not as useful in ascertaining the general condition of Oklahoma's lakes.

An integrated approach to monitoring is required to answer the big questions:

How good is Oklahoma's lake water quality?

What is the condition of all lakes in Oklahoma?

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

Currently the lakes program employs a combination of both fixed-station and statistical survey monitoring. This holistic program design allows for condition and beneficial use assessments on a greater number of waterbodies.

The goal of statistical survey monitoring is to provide statistically sound, unbiased information on the health of all lakes across Oklahoma. At each site, a broad suite of parameters are collected to assess the integrity of the lake 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.

Bacteria Collection
Samples are collected between May and September to determine bacteria levels as needed.

Metals Collection
Samples are collected as needed for metals analysis to determine if heavy metals are present within the waterbody.

Physical Habitat Assessment
A visual assessment of shore-line and in-lake habitat is performed at each lake.

Data Application
Data from the project will be used by the OWRB and other state agencies for a number of reporting purposes. The U.S. Environmental Protection Agency documents the condition of the nation's waters through data collected from some of these lakes. Oklahoma also participated in the 2011-2012 National Lakes Survey.

When integrated with fixed-station networks or with land use/cover and stressor information, local areas of concern can be more readily identified. Additionally, the data can show areas where pollution is likely to occur and allow resource managers to concentrate monitoring efforts in those areas.

www.owrb.ok.gov/monitoring