

WHO?

The Bureau of Water (BOW) at KDHE is responsible for implementing the Probabilistic Stream Monitoring Program. Although BOW staff collect and analyze the data, Kansas landowners also play a very important role in making this program a success. Because more than 99% of Kansas lands are privately owned, monitoring programs depend on the assistance of landowners for access to sampling locations. With their help, it is possible to monitor and manage Kansas' water resources properly.

Together we can ensure clean water for future generations.



Photo: L. Lauber

Photo: L. Knight

WHAT?

Probabilistic Stream Monitoring is a program started by KDHE in 2005. The goal of this program is to provide statistically sound, unbiased information on the health of streams and rivers across Kansas. Stream health is gauged using biological, chemical, and physical parameters measured at each site. The most novel aspect of this program is the way that sampling locations are selected. Instead of program staff hand-picking targeted sampling locations, sites for this program are chosen based on a random selection of points from all classified stream miles in the state.

WHY?

The Clean Water Act requires all states to monitor the physical, chemical, and biological condition of their water resources and report these findings to the public every two years. In Kansas, this is the responsibility of KDHE. Probabilistic Stream Monitoring is one program used to accomplish this objective. Because the main goal of this program is simply to assess the condition of Kansas' waters, results are not intended for regulatory or enforcement purposes.



Photo: E. Smith

**Quality
Water
Means
Quality
Life!**

In order to determine the overall level of stream health in Kansas, we could attempt to sample every waterbody in the state. However, with about 28,000 miles of classified streams and rivers, that method would be very expensive and time-consuming. A probabilistic method allows us to estimate the health of all streams in the state by using what is found in a small set of randomly selected representative sites. This type of survey provides an efficient and unbiased way to evaluate the condition in all of Kansas' streams and rivers without actually visiting each one. This saves both time and money.

HOW?

Field crews park at the nearest vehicle-accessible location and walk to the sampling point. When they arrive at the site, they use aquatic insect nets to collect samples from the stream bottom and from bank vegetation. Channel dimensions are recorded along with notes on the types of habitat and flow conditions provided by the stream. Fish and algae communities are characterized. Water samples are collected at a nearby bridge for standard chemical analysis. Fish are also sampled at some of the larger sites, tissue plugs are taken and tested for mercury that might render the fish questionable for human consumption.



Photo: E. Smith



Photo: S. Cringan



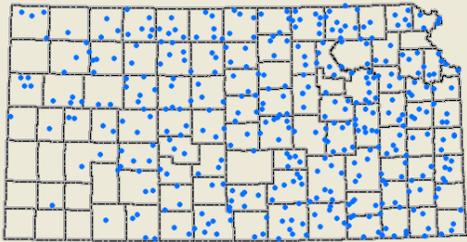
Photo: E. Smith

Collecting water samples and aquatic insects; preparing a fish tissue sample.

WHEN?

The goal of this program is to monitor 30 to 50 sites each year. We identify and contact landowners for permission prior to sampling. Primary fieldwork is conducted from April to September with some additional sampling throughout the year. Landowners receive courtesy calls in advance – to establish the day that sampling will occur on their property. It typically takes no more than one day to complete work at each site, often much less. On occasion, some previously sampled sites are randomly selected for revisit.

New candidate sites for 2014-2016



WHERE?

Monitoring activities are conducted in streams and rivers throughout Kansas. The sampling locations for this study are chosen based on a random draw of all streams in the state. Each year a new set of sites is chosen. Although alternative sites are available in case of landowner denial, pursuing new permissions requires additional resources. Therefore, it is important that permission be acquired at as many of the originally selected sites as possible.

The mission of KDHE is to protect the health and environment of all Kansans by promoting responsible choices.

We are grateful to the citizens and landowners of Kansas who provide access to sample the rivers and streams on their property for statewide water quality monitoring. Without their cooperation, this program would not be possible.

CONTACT INFORMATION

You may contact Program Manager Elizabeth Smith at 785-296-4332 or esmith@kdheks.gov.

For more information about KDHE and its programs, visit our website at www.kdheks.gov

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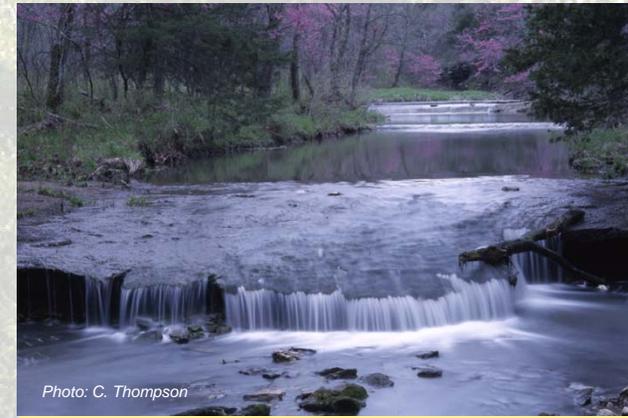


Photo: C. Thompson

Probabilistic
Stream
Monitoring
Program