

MICRO-Invertebrate Sampling

Over 5,000 Stream Team volunteers have learned how to monitor water quality by sampling macroinvertebrates (aquatic invertebrates that live in our streams), but what about *micro*invertebrates? Several Missouri Stream Team volunteers are learning about “microinvertebrates” and gathering valuable data on *E. coli* bacteria. You may ask, “Is this important?” The greater the numbers of pathogenic (disease causing) bacteria present the greater the possibility that bodily contact with the water can cause infections or infectious diseases. High levels of pathogenic bacteria are a direct threat to human health. High levels of *E. coli* indicate the stream is contaminated with feces of warm-blooded animals. *E. coli* sampling provides an effective way to monitor water quality of streams that may be impaired by bacteria.

There have been numerous independent studies conducted across the state by Stream Team members. The results of these studies have been reported to the public through Local Public health agencies and the media whenever high levels of bacteria were found. Bill Miller and Mark Adams Stream Team 2895 conducted a study on 6 Newton county streams. Wayne Christian and Frank Martinez Stream Team 2416 conducted a study of 7 miles of the Spring River. Christian County Health Department Stream Team 701 has conducted a study of 10 sites over the last 10 years in Christian Co. Dr. Cynthia Cooper of Truman State University conducted a study of 7 sites in northern Mo. There have been two studies, Melody Torrey and Scott Dye on Hinkson Creek in Boone Co. and Larry Ruff and Gerry Boehm on Brush Creek in Franklin County, where Stream Team volunteers assisted the Missouri Department of Natural Resources in the collection of *E. coli* information. All of these studies have shown high levels of *E. coli* at several sites at different times of the year.

The Missouri Department of Natural Resources (MDNR) Volunteer Water Quality Monitoring Program and the Missouri Stream Teams are in the process of implementing a new program titled Cooperative Stream Investigations (CSI). This program will foster cooperation between the MDNR, Watershed Management Committees and Volunteers in performing sampling for special projects. The primary (but not only) focus of CSI sampling will be *E. coli*.

CSI volunteers will be trained to level 2 or higher, and have submitted consistent and credible data. Volunteers will also attend the MDNR’s Basic Sampling training. They will be trained, along with agency personnel, on the proper protocols for collecting and handling of environmental samples, transportation to a qualified laboratory and proper use of the chain of custody. The department will provide appropriate sample containers and sample analyses will be performed by the MDNR State Environmental Laboratory or an MDNR authorized laboratory.

There are standards that define permissible levels and when processed by accepted methods through the CSI program, the data is given a higher degree of validity, and can be more effectively used by state and federal agencies.

Interested Watershed committees and Stream Teams may contact Stream Team Volunteer Water Quality Monitoring Program at 1-800-781-1989 or streamteam@dnr.mo.gov for inquiries or to schedule a CSI presentation. As a new program there are sure to be many questions. Call or visit the following web site at: <http://www.dnr.mo.gov/env/esp/CSI.htm> for more information.