Biological testing

The biological health of a stream can be determined by analyzing the aquatic life communities.

We sample the fish, benthic macroinvertebrates (aquatic insects, snails, worms, and other invertebrates living on the stream bottom), and algae communities. Collected organisms are then preserved for identification in the lab. Some organisms are tolerant to pollution (e.g. green sunfish, midges), while others (e.g. trout, mayflies and stoneflies) are very sensitive to various disturbances. Because these organisms are exposed to any pollutants that may have been in the water before the sample date, the existing biological community provides a good assessment of the health of the stream prior to sampling.

Habitat evaluation

The assessment teams evaluate the stream and streamside habitat. The teams look at streambank condition, level of sedimentation and streamside vegetation. Agricultural, industrial, and other man-made disturbances are also taken into account Keeping streamside habitat as natural as possible helps keep the stream healthy.

How data is used

Data collected by WAS is utilized to generate various reports, which are then made available to the general public, government agencies, consultants, academia, and any other interested parties. These reports are invaluable in helping these groups to protect and improve water quality in the state.

Success depends on your cooperation

The success of the Watershed Assessment Section depends in large part on the cooperation of land-owners. While many of our sites are along state highways and are easy to access, others are off the beaten path and on private property. In order for these assessments to be sound scientific studies with defensible conclusions, the random sites need to be sampled within a few yards of the spot chosen by the computer program.

Because of the number of sites which must be assessed each year and the limited resources available, the individual stream surveys are designed to be completed quickly, usually within an hour. The Watershed Assessment Section recognizes the importance of developing and maintaining a good relationship with the private landowners of the state. **We thank all landowners in advance for their cooperation.**

For more information or to obtain copies of reports, contact a member of the Watershed Assessment Section at:

dep

west virginia department of environmental protection

Division of Water and Waste Management
601 57th Street SE
Charleston, WV 25304
(304) 926-0495 TDD/TTY: (800) 926-0484
Emergency spill number: (800) 642-3074

DIVISION OF WATER AND WASTE MANAGEMENT
WEST VIRGINIA

Watershed Assessment Section

dep

west virginia department of environmental protection

Watershed Assessment Section (WAS)

The focus of this group is to scientifically and systematically measure the water quality and biological health of the state's rivers and streams.

WAS has four principal monitoring components.

General monitoring

In monitoring streams of selected watersheds, WAS personnel attempt to sample all streams with documented problems and a subset of those streams for which little is known.

Random monitoring

To provide data that best characterizes the condition of an area (watershed, ecoregion or entire state). Sampling these streams at specific computer-chosen sites enables statistically valid statements to be made about the condition of the area without sampling every stream.

Long-term large river monitoring

Sampling is conducted on larger rivers at permanent locations over a long period of time in order detect changes in water quality.

Pre-TMDL monitoring

Sampling of streams is conducted to support the development of TMDL's (total maximum daily loads). TMDL streams are monitored monthly for one year to provide data for allocating pollutant loadings. The allocations are intended to reduce the degree of impairment and help streams meet water quality standards.

Stream Sampling

Water quality

Assessment teams use water quality meters to measure certain parameters while at the stream. Temperature, dissolved oxygen, pH, and conductivity are all determined onsite. Samples of water are taken to a laboratory to test for fecal coliform bacteria, alkalinity, acidity, nutrients and other common pollutants such as aluminum, iron and manganese.

Share Your Knowledge

Let the folks in the Watershed Assessment Section know if there are any streams in your area that you think are being polluted, or if there are any that you think are particularly clean and deserving of further protection. We can learn a great deal from the people who live in the watersheds that we are trying to better understand.

Call the number inside to provide information about any stream that you would like to have sampled.