

US EPA ARCHIVE DOCUMENT

## Key Messages from the *Mid-Atlantic Highlands Streams Assessment*

- For the first time, a benchmark for stream condition across the Mid-Atlantic Highlands (includes all of West Virginia, most of Pennsylvania, and half of Virginia, as well as Western Maryland) and a scorecard against which to compare future changes in stream condition has been developed.
- This report assesses the ecological condition of streams in the Highlands and ranks the things that adversely affect their condition (stressors).
- Stream condition was determined by the health of the biological organisms in the stream, rather than just focusing on chemicals in the stream. It also measured the stream chemistry as well as the physical habitat in which the organisms live. Through the joint efforts of many individuals and organizations it represents the way regional studies will be conducted in the future. A single indicator only tells part of the story. Multiple indicators are needed to determine stream condition and to identify the stressors affecting that condition.
- Approximately 500 sections of streams throughout the Highlands were statistically sampled, similar to a political poll, for the survey.
- Sampling was done in partnership with the Mid-Atlantic States, the U.S. EPA Region 3, the U.S. EPA Office of Research and Development, the U.S. Fish and Wildlife Service, multiple universities and private contractors.
- A greater number of stream miles had biological organism in poor condition than in good condition throughout the Highlands.
  - 31% of stream miles were in poor condition based on fish and 27% were poor based on insects.
  - 17% of stream miles were in good condition based on fish while 25% were good based on insects.
- The major stressor throughout the Highlands is habitat destruction. Habitat destruction is occurring both in the stream and along the stream banks, removing trees and shrubs that provide cover for fish and other aquatic organisms.
- Just one management perspective is not enough. Therefore, stream condition was examined from several different levels -- by ecoregion, watershed, and state. Habitat destruction was the major stressor in streams regardless of the geographic perspective. Other stressors, however, varied depending on the geographic boundary.
- All of West Virginia and most of Pennsylvania are in the Highlands, therefore, the statistical survey design results are applicable for these two states and management insights can be gained by ranking the stressors and looking at the condition of their streams.
  - In Pennsylvania, the miles of streams in poor condition was 27% using both fish and insects; the miles of streams in good condition was 25% based on insects and only 14% based on fish.
  - Stream-side habitat alteration and channel sedimentation were associated with 21% and 19% of the stream miles, respectively, in Pennsylvania. Mine drainage, acidic deposition, and fish tissue contamination were associated with about 15% of the stream miles.
  - In West Virginia, the miles of streams in poor condition was 44% using fish compared with 25% using insects; the miles of streams in good condition was 20% based on insects and 13% based on fish.
  - Stream-side habitat alteration (26%) and channel sedimentation (18%) were also the two highest stressors in West Virginia. Mine drainage and acidic deposition were associated with about 14% of the stream miles.
- Repeated monitoring is necessary to evaluate the success of management actions. Monitoring the change in stream condition after management actions have been taken is the only approach for evaluating the success of these actions.