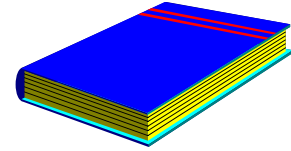


REPORT ANNOUNCEMENT

SUSQUEHANNA RIVER BASIN COMMISSION

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ASSESSMENT OF INTERSTATE STREAMS IN THE SUSQUEHANNA RIVER BASIN

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The Susquehanna River Basin Commission (SRBC) monitors and submits an annual report on the water quality of the interstate streams in the basin that flow across the New York and Pennsylvania state line or the Pennsylvania and Maryland state line. As part of the interstate stream monitoring program, SRBC periodically collects water and biological samples at selected stations. The data are used to:

- assess compliance with state water quality standards;
- characterize stream quality and seasonal variations;
- build a database for future assessment of water quality trends;
- identify streams for reporting to the U.S. Environmental Protection Agency under Section 305(b) of the Clean Water Act;
- provide information to signatory states for 303(d) listing and possible Total Maximum Daily Load development; and
- identify areas for restoration and protection.

Methods

The methods section describes sampling frequency, stream discharge, water samples, field chemistry, data synthesis, and macroinvertebrate and physical habitat sampling.

Sampling frequency. The interstate streams are divided into three groups according to the degree of water quality impairment, historical water quality impacts, and potential for degradation. Group 1 streams are sampled quarterly for water chemistry and annually for biology. Group 2 streams are sampled annually in July and August for water quality and biological conditions. Beginning in May 2000, Group 3 streams are sampled annually for biological conditions.

Stream discharge. Stream discharge data were obtained from U.S. Geological Survey gages or were measured, unless high streamflows made access impossible.

Water samples. Samples were collected at each of the sites, and nutrient and metal concentrations were measured in the laboratory.

Field chemistry. Temperature, dissolved oxygen, conductivity, pH, alkalinity, and acidity were measured in the field.

Data synthesis. Results of laboratory analyses for chemical parameters were compared to state water quality standards. In addition, a simple water quality index was calculated. Trend analysis was performed through use of the Seasonal Kendall nonparametric test on Group 1 streams.

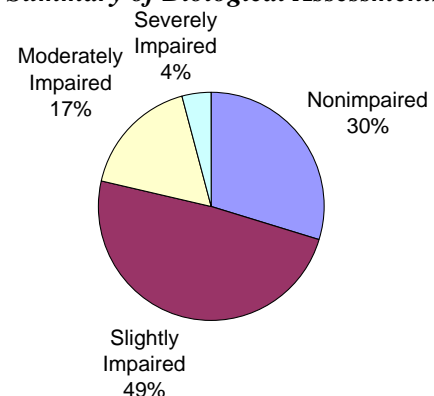
Macroinvertebrate sampling. Benthic macroinvertebrates were collected from Group 1 and 2 stations between July 23 and August 1, 2001 and from Group 3 stations May 6–9, 2002.

Physical habitat sampling. Eleven habitat parameters were field-evaluated at Group 1 and 2 stations between July 23 and August 1, 2001, and at Group 3 stations between May 6–9, 2002.

Results

Water quality in most interstate streams continues to meet designated use classes and water quality standards. Of the 2,784 total observations, only 25 exceeded water quality standards. The parameter that most frequently exceeded water quality standards was total iron.

Figure 1. Summary of Biological Assessments



N.Y.-PA. BORDER STREAMS AND RIVERS WITH EITHER MODERATE OR SEVERE CONDITIONS INCLUDE:

Cowanesque River. This river continues to have a moderately to severely impaired biological community below Cowanesque Reservoir. In this report a sampling station was added upstream of the reservoir to compare with the sites below the reservoir. The biological community and water quality data showed significant degradation from upstream of the reservoir to downstream of the reservoir.

Seeley Creek. This creek had a moderately impaired macroinvertebrate population, although the water quality in Seeley Creek was unaffected. The impaired biological community may have been due to flow-related incidents or rechannelization of the streambed.

Wappasening Creek. This creek had a moderately impaired macroinvertebrate community in 2001. In previous years the ratings were nonimpaired or slightly impaired. Water quality analysis indicated high nitrogen and nitrate values.

Group 3 Streams. Dry Brook and Prince Hollow Run were designated severely impaired, and Denton Creek, Smith Creek, Strait Creek, and White Branch Cowanesque Creek were designated moderately impaired. Most impairments were due to agriculture pollution or habitat degradation.

PA-MD BORDER STREAMS WITH EITHER MODERATE OR SEVERE CONDITIONS INCLUDE:

No Pennsylvania-Maryland border streams were designated moderately or severely impaired. Scott Creek has been impaired for the past 10 years; however, during 2001, drought conditions precluded sampling.

Conclusions

The 2001 biological indexes of the:

New York-Pennsylvania border streams and rivers sampled indicated:

- eight streams were nonimpaired
- 19 were slightly impaired
- eight were moderately impaired
- two were severely impaired

The most common sources of water quality degradation in these streams were high metal, nutrient, and sediment concentrations.

Rechannelization of the streambed and removal of instream habitat may have resulted in poor conditions for macroinvertebrate colonization in several streams.

Pennsylvania-Maryland border streams and rivers sampled indicated:

- six streams were nonimpaired
- three were slightly impaired

The most common source of water quality degradation in these streams was excess nutrients. Streambank erosion and sedimentation impacted the instream habitat at sites along the Pennsylvania-Maryland border.

SRBC's interstate monitoring program is funded, in part, through a grant from the U.S. Environmental Protection Agency.

This report is available on the
Susquehanna River Basin Commission website at:
www.srbc.net/technicalreports.htm
It also is available on compact disc.
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