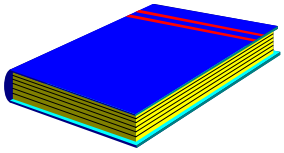
REPORT ANNOUNCEMENT



SUSQUEHANNA RIVER BASIN COMMISSION 08/2002

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—using a depth-integrating sampler—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 24 and August 3, 2000, and from Group 3 stations May 1–7, 2001.

Physical habitat sampling. Eleven habitat parameters were field-evaluated at Group 1 and 2 stations between July 24 and August 3, 2000, and at Group 3 stations between May 1–7, 2001.

Results

Water quality in most interstate streams continues to meet designated use classes and water quality standards. Of the 3,008 total observations, only 38 exceeded water quality standards. The parameters that most frequently exceeded water quality standards were pH and dissolved oxygen.

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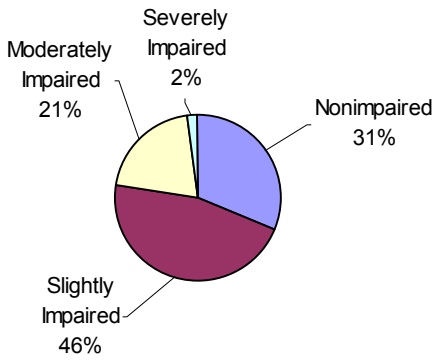
Figure 1. Summary of Biological Assessments



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

Cowanesque River. Moderately to severely impaired conditions have existed on the Cowanesque River downstream of the Cowanesque Reservoir for the past nine years of sampling. During July 2000, the site was dominated by Chironomidae, and the rest of the sample consisted of other organic pollution-tolerant taxa. Low dissolved oxygen was one of the major water quality problems at this site.

Seeley Creek. This creek contained a moderately impaired biological community for the past four years, although the water quality analysis has indicated fairly good water quality. Habitat conditions appeared to be a possible cause for the moderately impaired macroinvertebrate community. Dredging, streambank erosion, and instability of the stream channel were problems in this creek.

Wappasening Creek. The past three years have shown an increase in impairment at Wappasening Creek. The biological index rating decreased from slightly impaired to moderately impaired during fiscal year 2001. However, the water quality and habitat rating did not show significant evidence of degradation, so it is unknown what was the cause of impairment.

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

Ebaughs Creek. For 12 years this site has had either a slightly or moderately impaired biological condition. The chemical analysis suggested that wastewater discharges might have affected the water quality and the biological community at this site.

Scott Creek. Raw sewage discharges have been a problem in this creek; however, in recent years some steps have been taken to decrease the amount of raw sewage. The water quality appeared to improve from the previous year, although the macroinvertebrate population remained severely impaired.

Conclusions

The 2000-2001 biological indexes of the:

New York-Pennsylvania border streams and rivers sampled indicate:

- 13 streams are nonimpaired
- 17 are slightly impaired
- 9 are moderately impaired

The most common sources of water quality degradation in these streams are high metal 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 indicate:

- 2 streams are nonimpaired
- 5 are slightly impaired
- 1 is moderately impaired
- 1 is severely impaired

The most common sources of water quality degradation in these streams are excess nutrients. Streambank erosion and sedimentation impacted the instream habitat at sites in this region.

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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