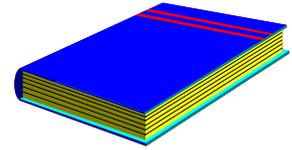


NEW REPORT ANNOUNCEMENT

SUSQUEHANNA RIVER BASIN COMMISSION

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WATER QUALITY OF INTERSTATE STREAMS IN THE SUSQUEHANNA RIVER BASIN

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*by: Jennifer Rowles
Darryl Sitlinger*

The Susquehanna River Basin Commission (SRBC) monitors and submits an annual report on the water quality of the 83 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 the 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 were sampled quarterly. Group 2 streams

were sampled annually. Group 3 streams were visually inspected with no samples taken.

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 27 and August 6, 1998.

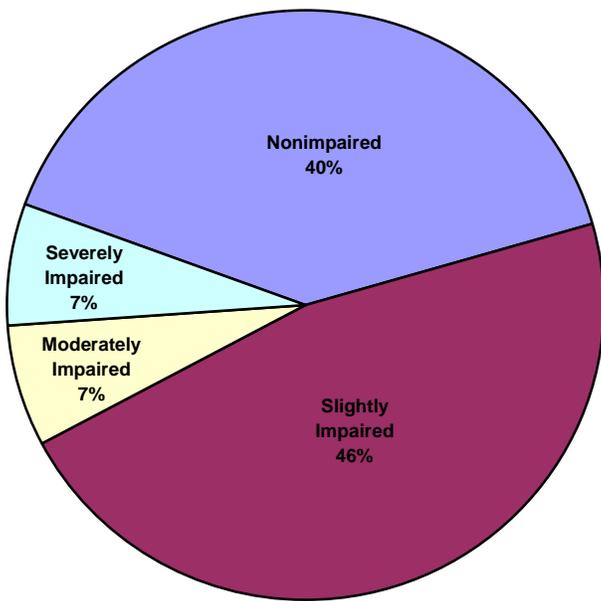
Physical habitat sampling. Eleven habitat parameters were field-evaluated at Group 1 and 2 stations between July 27 and August 6, 1998.

Results

Water quality in most interstate streams continues to meet designated use classes and water quality standards. Of the 2,228 total observations, only 23 exceeded water quality standards. The parameter that most frequently exceeded water quality standards was total iron.

(over)

Figure 1. Summary of Biological Assessments



N.Y.-Pa. border streams with either moderate or moderate to severe conditions include:

Cowanesque River. This river continues to have a moderately to severely impaired biological community below Cowanesque Reservoir. Increased phytoplankton production in the reservoir causes a shift in the biological community, resulting in a population dominated by filter-feeding organisms. Additionally, the bottom discharge dam depressed oxygen levels in the Cowanesque River downstream of the outflow. However, this problem has now been corrected and the dam can release water from varying depths. Impaired conditions also may be affected by very poor habitat conditions at this site.

Seeley Creek. This creek shows signs of a moderately impaired macroinvertebrate population, although the water quality in Seeley Creek is good. The impaired biological community is probably the result of flow-related incidents or rechannelization of the streambed.

Troups Creek at Austinburg, Pa. This creek has a moderately impaired macroinvertebrate community. Water quality at this site is degraded with high total iron, nitrates and phosphorus.

Pa.-Md. border streams with either moderate or moderate to severe conditions include:

Scott Creek at Delta, Pa. This creek has had a moderately to severely impaired macroinvertebrate population for the past ten years. Raw sewage discharges are the cause of water quality degradation. Additionally, a home heating fuel spill occurred on Scott Creek in 1998, which affected the biological community of the site.

Conclusions

The 1998 biological indexes of the:

New York-Pennsylvania border streams sampled indicate:

- ten streams are nonimpaired
- seven are slightly impaired
- two are moderately impaired
- one is severely 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 sampled indicate:

- two streams are nonimpaired
- seven are slightly impaired
- one 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.

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For copies of this report or other publications of the Susquehanna River Basin Commission please contact:
PATRICIA ADAMS
 Susquehanna River Basin Commission
 1721 North Front Street, Harrisburg, PA 17102-2391
 Phone: (717) 238-0423
 Fax: (717) 238-2436
 Web: <http://www.srbc.net>

