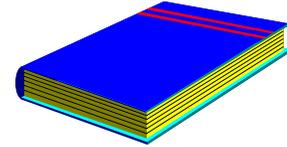


# REPORT ANNOUNCEMENT

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. Group 3 streams are sampled annually in the month of May 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. Every five years trend analysis will be performed on Group 1 streams through use of the Seasonal Kendall nonparametric test.

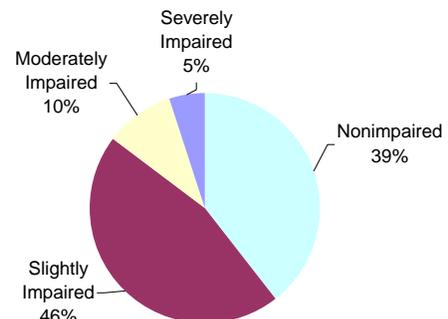
**Macroinvertebrate sampling.** Benthic macroinvertebrates were collected from Group 1 and 2 stations between July 30 and August 8, 2002, and from Group 3 stations May 13-15, 2003.

**Physical habitat sampling.** Eleven habitat parameters were field-evaluated at all stations where a macroinvertebrate sample was collected.

### Results

Water quality in most interstate streams continues to meet designated use classes and water quality standards. Of the 1,182 possible total observations, only 41 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 impaired biological community below Cowanesque Reservoir, although slight improvements were seen in water quality and biology. An organic pollution intolerant taxa was noted downstream of the reservoir.

Group 3 Streams. Dry Brook and White Branch Cowanesque River were designated severely impaired due to urban pollution/channelization and agriculture/impoundment, respectively. Denton Creek and Biscuit Hollow were designated moderately impaired due to habitat impairments. Denton Creek was downstream of Lake Hawkins and had low alkalinity. Most impairments in Group 3 streams were due to agriculture pollution or habitat degradation.

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

Long Arm Creek was moderately impaired due to nonsupporting habitat. This site was located in a cow pasture and could be improved with streambank fencing and forested vegetation in the riparian zone. Scott Creek remained severely impaired as it has been for years. There were no mayflies or stoneflies at this site and the population was dominated by pollution tolerant midges.

*N.Y.-PA. BORDER STREAMS AND RIVERS THAT EXCEEDED WATER QUALITY STANDARDS:*

- Appalachin Creek
- Cascade Creek
- Cayuta Creek
- Little Snake Creek
- Troups Creek
- Chemung River
- Cowanesque River
- Susquehanna River at Sayre, PA
- Susquehanna River at Kirkwood, NY
- Susquehanna River at Windsor, NY

*PA-MD BORDER STREAMS THAT EXCEEDED WATER QUALITY STANDARDS:*

- Conowingo Creek
- Deer Creek
- Ebaughs Creek
- Susquehanna River at Conowingo, MD

## *Conclusions*

The 2002 biological indexes of the:

New York-Pennsylvania border streams and rivers sampled indicated:

- 15 streams were nonimpaired;
- 20 were slightly impaired;
- four were moderately impaired; and
- 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:

- two streams were nonimpaired;
- six were slightly impaired;
- one was moderately impaired; and
- one was severely 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.

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