

**Susquehanna River Basin Commission (SRBC)
Water Quality Advisory Committee (WQAC) Meeting Minutes**

Webinar/Conference Call

June 30, 2009
1:00 p.m.

A. Introduction and Webinar/Conference Call Participants (Dave Heicher, SRBC)

Dave Heicher, SRBC, opened the meeting with introductions (see Participant List in Attachment A). The WQAC usually meets twice a year, in spring and fall.

B. Report on Whitney Point (NY) Adaptive Management Plan Baseline Monitoring (Luanne Steffy, SRBC)

Luanne Steffy, SRBC, gave an update on the Whitney Point Adaptive Management Plan baseline monitoring. Whitney Point Reservoir was created in 1942 for flood control purposes. It is located in Broome County, N.Y., and provides a variety of recreational activities. SRBC has been working with the U.S. Army Corps of Engineers (USACE) and the New York State Department of Environmental Conservation (NYSDEC) since 1996 to implement a restoration project that allows for low flow releases from the reservoir.

The main objective of the project is to maintain a year-round pool level that includes approximately 8500 acre feet of storage that will be available to augment downstream flows in the Otselic, Tioughnioga, Chenango, and Susquehanna Rivers. SRBC started the monitoring with a baseline year in 2008. An Adaptive Management Plan for the project will be re-evaluated every year to make sure the project goals are being met. Monitoring will provide information to assess the chemical and biological conditions of the lake and the surrounding watersheds, document changes in stream quality over various flow regimes, assess fish and macroinvertebrate use of side channel/backwater habitats, and assess submerged aquatic vegetation (SAV) growth in the lake.

SRBC conducted baseline sampling at 10 instream sites and two side channel sites in June, August, and October 2008. June had the highest flow regime, followed by August and October. Staff sampled the lake itself in August for water quality, macroinvertebrates, and SAV. Overall, the water quality was very good, with only a few sites having slightly elevated nutrient levels. Macroinvertebrate communities were all rated as nonimpaired or slightly impaired except for the site directly downstream of the dam. Fish diversity was generally high, with good populations of game fish such as smallmouth bass, rock bass, and walleye. Staff found that the side channel areas provide excellent habitat for a variety of minnows and darters as well as young-of-the-year smallmouth bass. As flows decreased in August and October, the loss of habitat in the side channels was very evident (i.e., undercut banks and root wads were no longer under water, pools were shallower, riffles were more exposed).

Whitney Point Lake is a very eutrophic lake with high phosphorus, high chlorophyll a, and low water clarity. Staff sampled for SAV in targeted recreational areas and found that it ranged from very dense to sparse vegetation. Staff had poor results when sampling macroinvertebrates in 2008 and will sample again in 2009.

SRBC staff will sample every June for the next four years as a baseline. During low flow events, releases of water from the lake will be triggered by specified flows recorded at two U.S. Geological Survey (USGS) stream gages: 700 cfs on the Susquehanna at Waverly and 150 cfs on the Chenango River near Chenango Forks. SRBC staff will sample before, during, and after a low flow release, as well as monitor lake conditions after a release.

C. Discussion Regarding Draft Low Flow Monitoring Program (Dave Heicher, SRBC)

Dave Heicher, SRBC, gave an update on the draft low flow monitoring program. SRBC manages water resources on a watershed basis and serves as an effective forum to provide coordinated management, promote communication among its member jurisdictions, and resolve water resource issues and controversies within the Basin. SRBC's leadership role in water resource planning and management is also exercised through its regulatory function, which fills the regulatory gaps that exist in each state's water resource management programs. SRBC regulates ground and surface water withdrawals, consumptive water uses, and out-of-basin diversions, when any of these reach certain quantity thresholds. SRBC also regulates all diversions of water into the Basin.

Low flow mitigation planning has been a priority SRBC activity for many years. In the mid-1980s, SRBC prepared a series of planning reports related to the storage and release of water from Cowanesque Lake in Tioga County, Pa., and initiated a series of low flow management framework plans that were prepared for each of the Susquehanna's six major subbasins. Planning for potential pooled water storage from large federal and state reservoirs was continued in the 1990s and storage was obtained from Cowanesque Lake and Curwensville Lake on the West Branch Susquehanna River in Clearfield County, Pa. In 2007, SRBC made arrangements with the Commonwealth of Pennsylvania to provide water storage from the Barnes and Tucker abandoned mine pool in Clearfield County, Pa. SRBC is actively continuing to perform consumptive use mitigation planning and seek additional sources of water for release as needed during low flow periods.

SRBC has performed instream flow studies with other organizations. The Nature Conservancy (TNC) used SRBC's monitoring data to prepare a report on the development of instream flow criteria to support ecologically sustainable water resource planning and management in Pennsylvania. SRBC is currently working with TNC and USACE on the Susquehanna Ecosystem Flows Section 729 study, which will provide basinwide goals for river flow management. This study will implement a key element of SRBC's Consumptive Use Mitigation Plan, which calls for an assessment of ecosystem flow needs while allowing for water use demands to be met. SRBC is also working with the state of Maryland regarding the freshwater inflows from the Susquehanna River that are needed to support biology in the Chesapeake Bay.

Low flow conditions can have a variety of differing impacts on the biotic community, including reduction in habitat availability, food production, and water quality. Changes in habitat availability occur through velocity, depth, and wetted width reductions and increased sedimentation rates, which in turn can change patterns of benthic macroinvertebrate community structure, behavior, and interactions. Water quality impacts can include changes in temperature, dissolved oxygen, pH, nutrients, and conductivity. These changes can be extremely subtle, and hard to attribute to actions by man or natural occurrences.

The goal of the low flow monitoring program is to complement the Susquehanna Ecosystem Flows Study, provide data to further refine management decisions, and document actual instream effects associated with low flow conditions. SRBC will also continue to monitor low flow events in the Whitney Point area, operate and expand its early warning system for public water suppliers, and work with others regarding the issue of smallmouth bass die-offs that have occurred in some portions of the Basin in recent years.

SRBC is proposing a monitoring plan with a two-pronged approach, encompassing a sentinel station system throughout the Basin and a more detailed pilot project in the Juniata Subbasin. The Juniata Subbasin was chosen because it has the fewest number of permitted withdrawals and is the most unregulated system in the Basin (with the exception of Raystown Lake and a few small water supply reservoirs). The 19 outlets of the USGS's Hydrologic Unit Code 8-digit (HUC-8) watersheds will be used as sentinel stations. These would be monitored annually for baseline conditions, as well as two weeks following a drought or when streamflow reaches the 7-day, 10-year low flow value. These stations will be located near USGS stream gaging streams at the nearest available riffle. Staff will collect macroinvertebrate, periphyton, and water quality data, as well as search for native freshwater mussels in dewatered areas to determine potential population stress.

Twenty-five stations are proposed for the pilot project in the Juniata Subbasin: five mainstem and 20 tributaries based on stream type, stream size, and ecoregion. As with the sentinel stations, macroinvertebrate, periphyton, and water quality data will be collected. Electrofishing would also occur as part of the sampling.

SRBC is interested in low flow impacts on recreational uses. In order to determine how drought conditions impact recreation, staff plans to develop a questionnaire to post on SRBC's web site. In the event of a drought, SRBC would issue a press release to solicit public comment on how the drought affects recreation such as fishing, kayaking, wildlife observation, etc. SRBC would investigate partnering with other entities (government and environmental agencies) with similar interests.

Staff plans to produce a yearly report on base flow conditions. A more extensive report would be developed during years with low flow conditions. This report would detail potential differences, if any, between base flow and low flow conditions for abiotic features, such as water quality and discharge, as well as biotic community structure. One key component of the program is to facilitate adaptive management so that the data can be used to assist in making management decisions to mitigate the effects of low flows. The data also should be helpful in making decisions regarding passby flows and surface water withdrawals.

D. Discussion Regarding Water Quality Aspects Associated with Natural Gas Well Development Projects

Dave Heicher, SRBC, led the discussion regarding water quality aspects associated with natural gas well development projects. This item was added to the agenda at the request of our Maryland commissioner, Dr. Robert Summers. Applications for withdrawal of water for gas well development continue to dominate SRBC's regulatory activities. SRBC does not presently regulate water quality; however, its member jurisdictions regulate the treatment and disposal of flowback fluids or produced brines from well drilling operations. SRBC has a provision that requires gas well applicants to certify that all flowback fluids will be treated and disposed of in accordance with applicable state and federal law. In addition, project sponsors are required to obtain all necessary permits and approvals that are required for the project from other federal, state, or local government agencies having jurisdiction.

Dave mentioned that since SRBC and others are continuing to receive water quality comments, we would like to develop a document that: (1) explains the regulatory requirements from member states and USEPA; and (2) provides information on water quality issues related to gas well drilling and development in other parts of the country.

Dave requested input from the WQAC in developing items 1 and 2 above. Rick Shertzer suggested contacting USEPA staff in Wheeling regarding their research on toxicity of fluids. Herb Sachs mentioned a new U.S. Department of Energy publication published in April 2009 called "Modern Shale Gas Development in the United States: A Primer." He will email the information to Dave, who will send out the information to the committee. Dave will also send a draft of the matrix/spreadsheet out to the committee when it is ready, along with the draft low flow monitoring plan for committee review.

The next WQAC meeting will be held on Wednesday, September 23, 2009, at the USGS Office in New Cumberland, Pa., from 10:00 a.m. till 3:00 p.m.

E. Adjourn

Attachment A

Participant List

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