

# Susquehanna River Basin Commission Information Sheet

## Aquatic Resource Surveys



### What is an Aquatic Resource Survey?

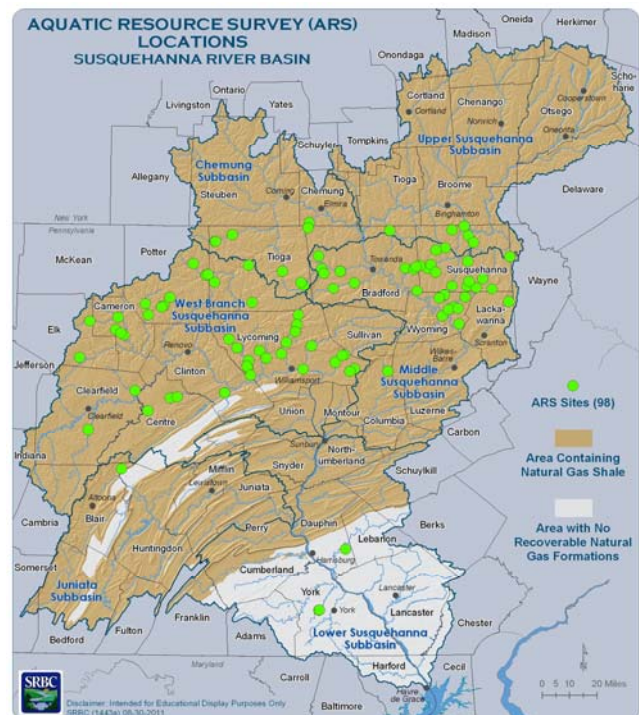
Susquehanna River Basin Commission (SRBC) staff conducts comprehensive aquatic resource field investigations within a stream reach where a water withdrawal regulated by SRBC is proposed and where the stream reach meets specific criteria. This detailed assessment of the physical, chemical and biological components of a stream is known as SRBC's Aquatic Resource Survey (ARS) program. An ARS contributes important, site-specific information to supplement SRBC's technical review of a proposed water withdrawal.

### What Are the Criteria for Conducting an ARS and How Extensive Are SRBC's ARS Activities?

SRBC staff screens all project sites for environmental concerns and conducts an ARS within a targeted stream reach when one or more of the following conditions are met:

- Recent or comprehensive stream assessment data are not available;
- A regulatory agency has designated the stream reach as sensitive or high integrity;
- Wild trout populations and/or rare, threatened or endangered species are likely to be present;
- The stream reach is in a headwater setting;
- SRBC staff determines, during its environmental screening process, that additional field investigations are warranted.

Between January 2008 and August 2011, SRBC staff conducted ARSs at approximately 80 percent of proposed surface water withdrawal sites located on wadeable streams. The majority of the ARSs have been associated with withdrawal applications for natural gas development.



### What Information and Data Are Assessed?

Data collected and analyzed during an ARS include:



- Field water chemistry analysis, including temperature, pH, dissolved oxygen and specific conductivity;
- Laboratory water quality analysis of parameters associated with natural gas development and other potential sources of pollution, including but not limited to, total dissolved solids, barium, chloride, bromide and lithium;
- Biological community data, including fish, macroinvertebrates, periphyton (algae) and the presence of any invasive species;
- Physical habitat data, including stream channel, stream bank and riparian area conditions; and
- Stream flow measurements.

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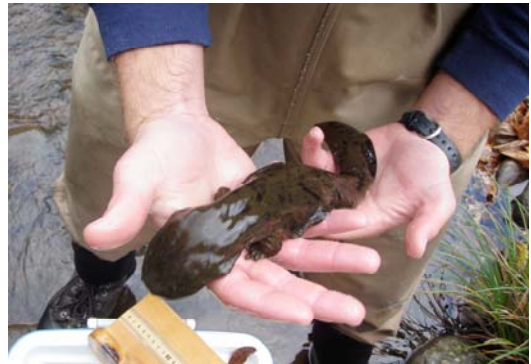


### **What Is the Outcome of an ARS?**

Site-specific data collected during an ARS allow SRBC staff in the Project Review Program to assess the baseline stream condition at a proposed water withdrawal location. These data are used in conjunction with information about water availability, stream hydrology and existing uses in SRBC's evaluation of potential impacts on the stream. In the technical review of an application, SRBC staff recommends appropriate protective measures, as needed, to avoid or minimize impacts to the subject waterway.

For example, if native sensitive or rare species such as wild trout are found during an ARS, SRBC staff may recommend a passby flow requirement be imposed on the project sponsor for a specific withdrawal point to ensure aquatic communities are protected during periods of low flow. The project sponsor would have to interrupt its withdrawal when the stream at the intake drops below a predetermined low flow level and could not withdraw any water until flows exceed the protected flow level for 48 hours. SRBC staff and regulated project sponsors monitor real-time stream flow data generated by stream gages maintained and operated by the U.S. Geological Survey.

Another protective measure might involve a restriction to avoid potential adverse impacts during a critical life cycle stage of a sensitive or rare species. If a sensitive species such as the Eastern Hellbender (*shown in photo*) is found during an ARS, SRBC staff may recommend a seasonal restriction on initiating construction of the intake structure to protect the spawning period.



### **Does SRBC Revisit Areas Where ARSs Were Conducted?**

Yes. Starting in fall 2011, SRBC staff began revisiting select sites where: (1) ARSs have already been conducted; and (2) approved water withdrawals are operational. The data collected from an ARS "revisit" allow for comparison to the baseline dataset collected prior to the start of a water withdrawal. A variety of statistical analyses are used to evaluate the biological, chemical and physical data to determine if any significant adverse impacts have occurred to aquatic communities or stream quality.

### **What Will SRBC Do If Stream Impacts from Approved Water Withdrawals Are Identified?**

If SRBC staff determines that adverse impacts to a stream are occurring as a result of an approved water withdrawal, staff will recommend to the SRBC commissioners that remedial measures be initiated to mitigate impacts or that the amount of water withdrawal be reduced or terminated.

### **For More Information, Contact the Following SRBC Staff Members:**

#### [ARS Project Review Questions](#)

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