

## WHAT IS AN AQUATIC RESOURCE SURVEY?

Susquehanna River Basin Commission (Commission) scientists conduct comprehensive field data collection in wadeable streams where a proposed water withdrawal is regulated by the Commission. This detailed assessment of the physical, chemical, and biological components of a stream is known as an aquatic resource survey (ARS).

An ARS generates site-specific, baseline information to supplement the technical review of a water withdrawal application. An ARS may also be performed to collect follow-up data after a withdrawal is initiated and has been operational for a period of time.

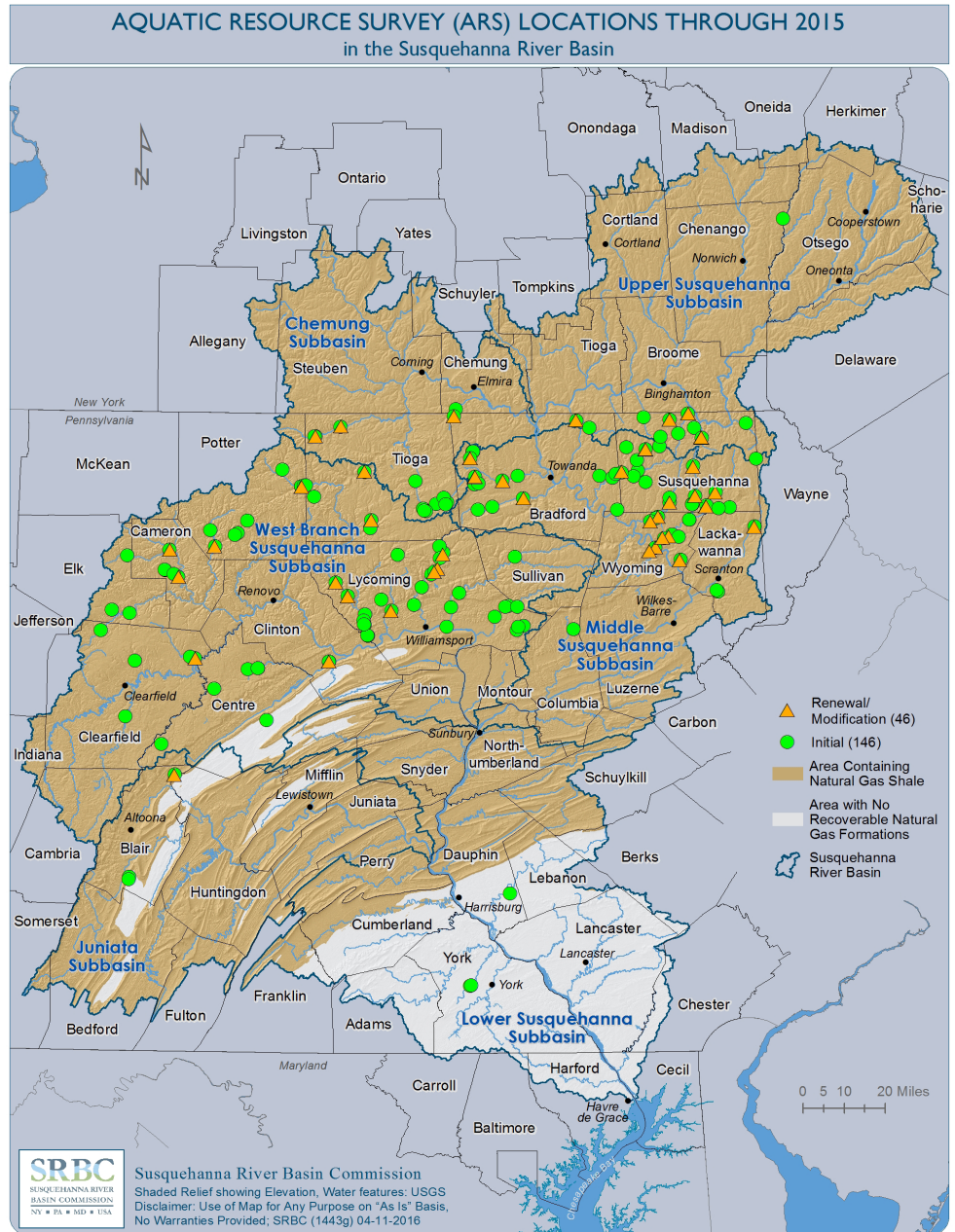
Understanding the aquatic resources and habitat present in streams is important as these are indicators of ecosystem health and water quality.

## WHAT ARE THE CRITERIA FOR CONDUCTING AN ARS?

The Commission screens all project sites for environmental resources and conducts an ARS when one or more of the following conditions are met:

- Recent or comprehensive stream data are not available;
- A state agency has designated the stream as sensitive;
- Wild trout populations and/or rare, threatened or endangered species are likely to be present;
- The stream is in a headwater setting.

Between January 2008 and December 2015, the Commission conducted ARSs (noted by green dots & orange triangles on map) at 192 surface water withdrawal sites in the Basin.



*Aquatic Resource Surveys contribute important, site-specific information to supplement the Commission's technical review of a proposed water withdrawal.*

## WHAT INFORMATION AND DATA ARE ASSESSED?

Data collected and analyzed during an ARS include:

- Field measurements of water quality indicators, including temperature, pH, dissolved oxygen;
- Laboratory water analysis including total dissolved solids, barium, chloride, bromide and lithium;
- Biological community data, including fish and macroinvertebrate communities, and the presence/absence of invasive species;
- Physical habitat data, including stream channel, streambank, and riparian area conditions and quality; and
- Stream discharge (flow) measurements.

## WHAT IS THE OUTCOME OF AN ARS?

Site-specific data collected during an ARS allow Commission scientists to assess the current 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 the Commission's evaluation of potential impacts to the stream. In the technical review of an application, staff recommend appropriate protective measures, as needed, to avoid or minimize impacts to the stream.

If a water-dependent, sensitive species - such as the Eastern hellbender - was found during an ARS, staff would assess

the need for instream protective conditions to avoid impacts to the species and its habitat. A protective condition might involve a restriction to avoid instream disturbance during a critical life cycle stage, such as breeding and egg incubation periods.

## DOES THE COMMISSION REVISIT WHERE AN ARS WAS CONDUCTED?

Yes, staff revisits selected sites where an ARS was previously conducted after an approved water withdrawal is operational, and prior to renewal of its approval. Baseline data collected during the initial ARS allow for *before and after* comparison of the biology, water chemistry, and physical habitat. Staff evaluate the data to determine if the aquatic community or stream quality has changed, and uses this information to inform its regulatory decision-making process.

## WHAT HAPPENS IF IMPACTS ARE IDENTIFIED?

If adverse impacts to a stream are occurring as a result of an approved water withdrawal, Commission staff can use its administrative discretion to issue appropriate orders to protect public health, safety and welfare or water resources. To address longer term impacts, staff can recommend to the Commissioners that the approval be



terminated or that it be modified to include remedial measures to address the impacts, additional protective conditions, or other mitigation.

## ADDITIONAL RESOURCES AND PUBLICATIONS

- **Water Resource Portal**—<http://mdw.srbc.net/waav>. Includes information on pending/approved projects, application/approval documents.
- *Water Use Associated with Natural Gas Development in the Susquehanna River Basin*—[www.srbc.net/pubinfo/techdocs/NaturalGasReport/](http://www.srbc.net/pubinfo/techdocs/NaturalGasReport/)

