

Description of the Middle Subbasin

The Middle Susquehanna Subbasin drains an area of approximately 3,700 square miles from Ulster to Sunbury, Pennsylvania, which includes portions of the counties Tioga, Lycoming, Bradford, Sullivan, Susquehanna, Wayne, Lackawanna, Wyoming, Luzerne, Columbia, Montour, Carbon, Schuylkill, and Northumberland. Three different ecoregions are found within this area:

- Northern Appalachian Plateau and Uplands
- North Central Appalachians
- Central Appalachian Ridges and Valleys (Omernick, 1987) (Figure 2).

The Middle Susquehanna Subbasin is a mixture of urban and rural lands that include forest, agriculture, abandoned mines, and cities (Figure 3). The major urban centers in this area are Scranton and Wilkes-Barre, Pa. A section of this subbasin was heavily mined and remnants of the industry, such as coal slag piles, abandoned mines, and abandoned mine drainage (AMD) still impact the water quality of many miles of streams and rivers throughout the Lackawanna and Wyoming Valleys.

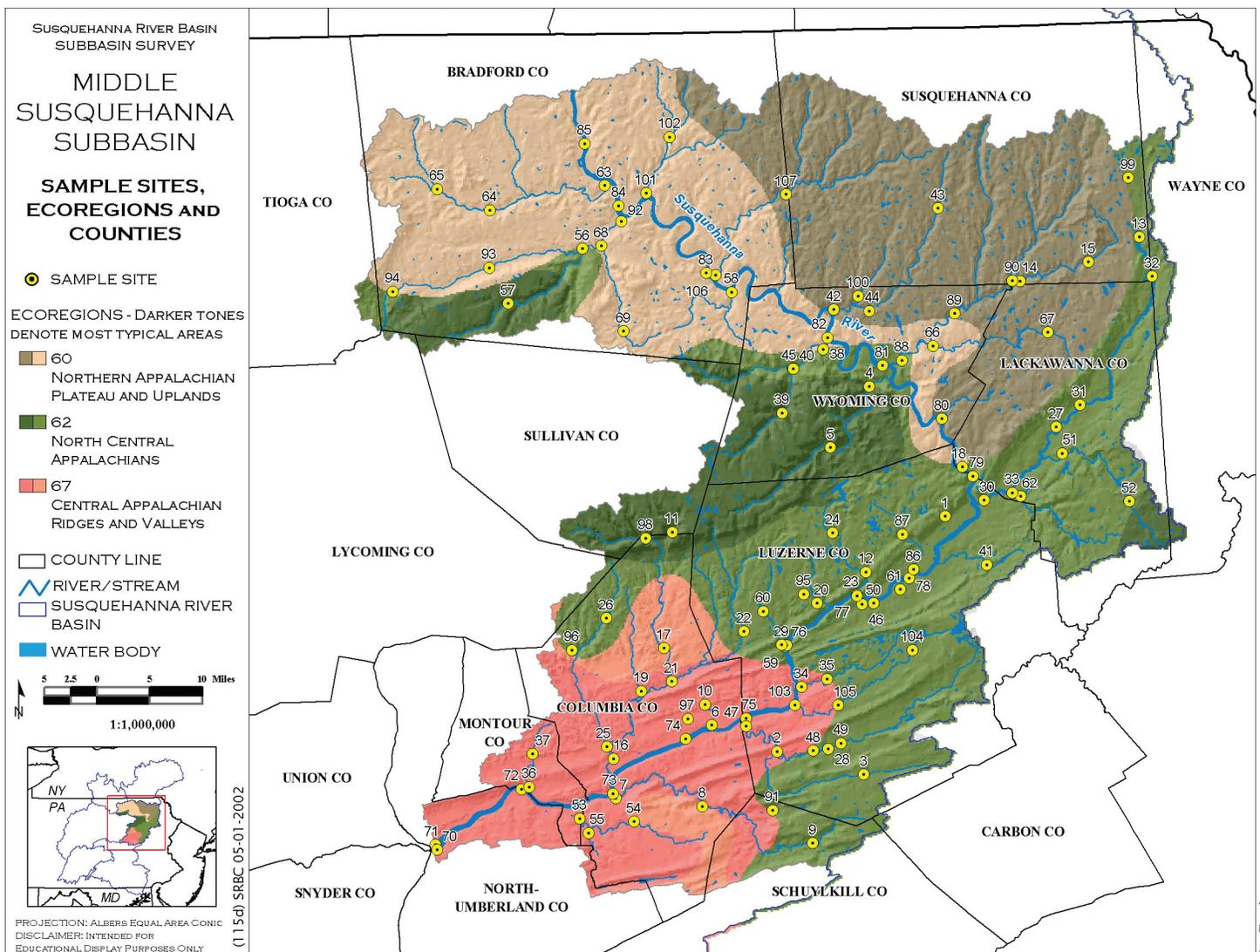


Figure 2. Ecoregions and Counties in the Middle Susquehanna Subbasin

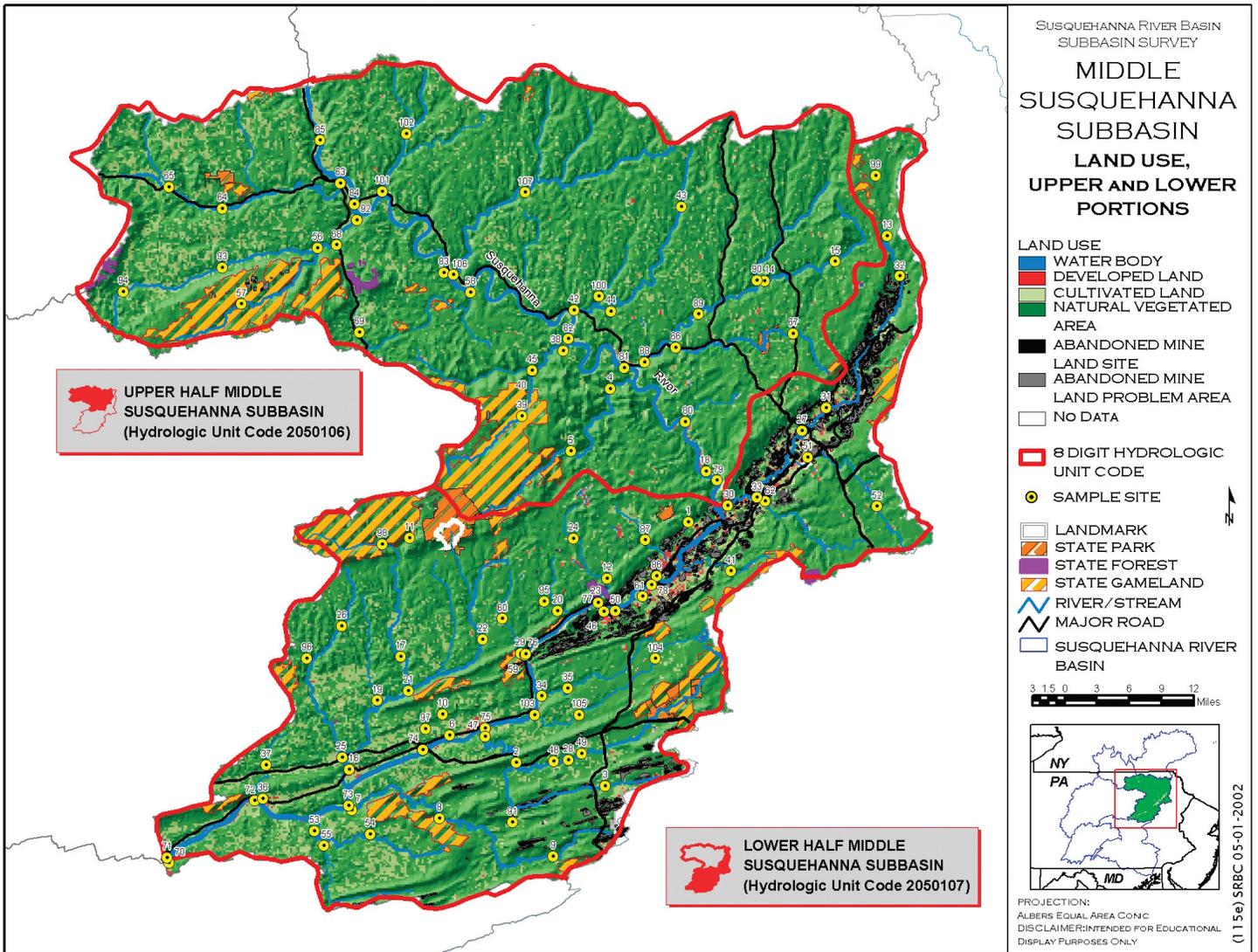


Figure 3. Land Use in the Middle Susquehanna Subbasin

Methods Used in the Subbasin Survey

DATA COLLECTION

During the summer of 2001, SRBC visited 106 sites throughout the Middle Susquehanna Subbasin and took water quality samples at all sites. Appendix A contains a list with the sample site number, the station name (designated by stream mile), a description of the sampling location, the ecoregion, and the drainage size category. Macroinvertebrate samples were taken at all but three sites due to excessive low flow (HNL 0.1), no riffle habitat (SUSQ 125.0A/B), or deep iron precipitates (NPT 0.1). Habitat was rated at all sites where a macroinvertebrate sample was collected and at NPT 0.1.

The sites were sampled once in this Year-1 sampling round in order to provide a point-in-time look at stream characteristics throughout the whole subbasin. Samples were collected using a slightly modified version of the

U.S. Environmental Protection Agency's (USEPA's) *Rapid Bioassessment Protocols for Use in Streams and Rivers* (RBP III) (Plafkin and others, 1989). Sampling was performed during the summer, when base flow was sustained primarily by ground water.

Water Quality

A portion of the water sample was separated for laboratory analysis, and the rest of the sample was used for field analysis. A list of the field and laboratory parameters and their units is found in Table 1. Measurements of flow, water temperature, dissolved oxygen, pH, conductivity, alkalinity, and acidity were taken in the field. Flow was measured using standard United States Geological Survey (USGS) methodology. Temperature was measured with a field thermometer in degrees Celsius. A Cole-Parmer Model 5996 meter was used to measure pH. Dissolved