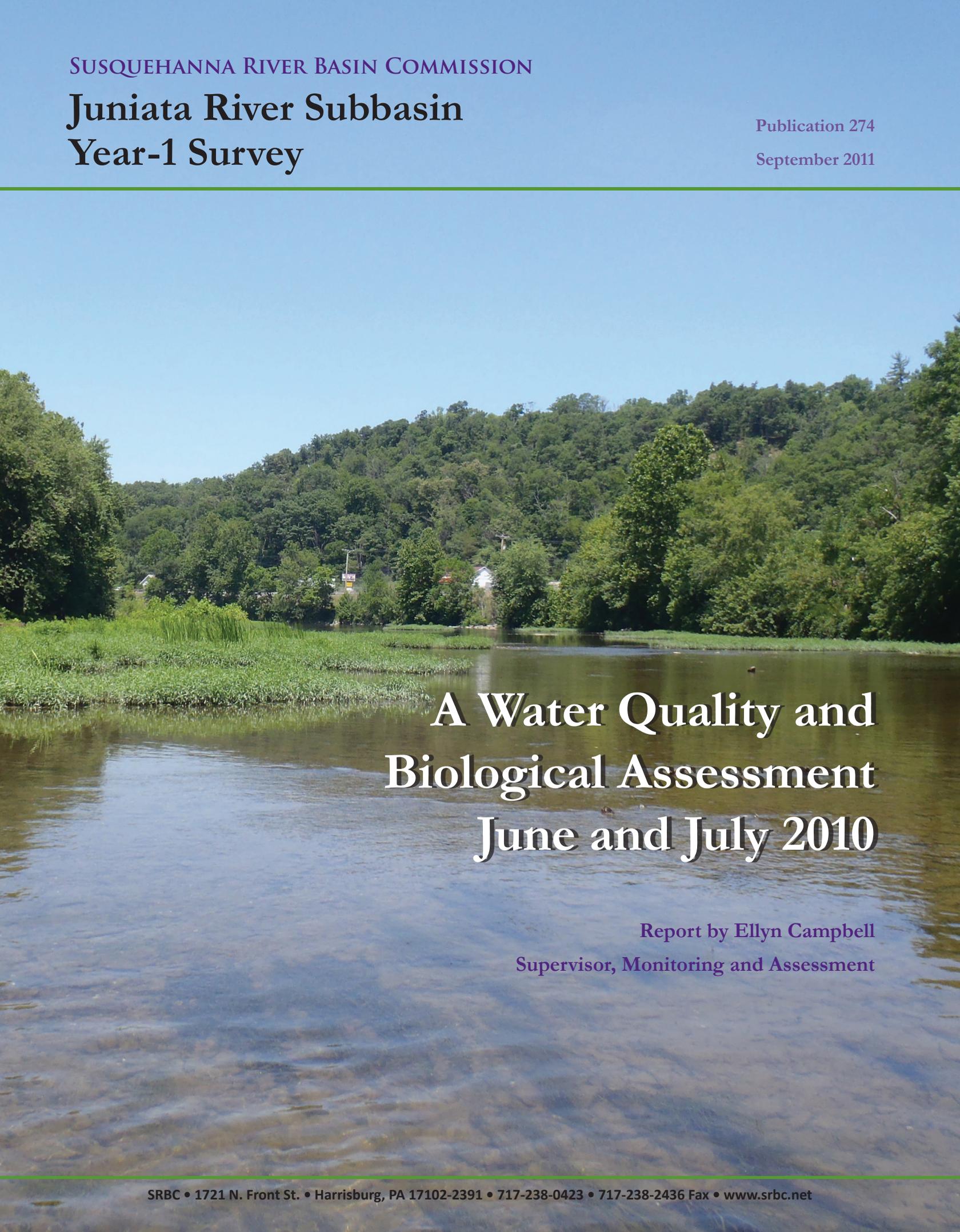


SUSQUEHANNA RIVER BASIN COMMISSION

Juniata River Subbasin Year-1 Survey

Publication 274

September 2011



A Water Quality and Biological Assessment June and July 2010

Report by Ellyn Campbell
Supervisor, Monitoring and Assessment

INTRODUCTION

The Susquehanna River Basin Commission (SRBC) conducted a survey of the Juniata River Subbasin in June and July 2010. This survey was conducted through SRBC's Subbasin Survey Program, which is funded in part through the United States Environmental Protection Agency (USEPA). This program consists of two-year assessments in each of the six major subbasins (Figure 1) on a rotating schedule. Included in this report are details of the Year-1 survey, which included one-time samples of the macroinvertebrate community, habitat, and water quality at 101 sites in the major tributaries and areas of interest throughout the Juniata River Subbasin.

The Year-2 survey is a more focused, in-depth study. The Year-2 survey for the Juniata River Subbasin will involve the Low Flow Monitoring pilot project, which was started in 2010 and continued through 2011. For this Year-2 survey, 27 sites will be sampled in both base flow and low flow conditions to document changes in the biological community, habitat availability, and water chemistry during extended periods of low flow conditions and/or drought. Previous surveys of the Juniata River Subbasin were conducted in 1985 (McMorran, 1986), 1995 (McGarrell, 1997), and 2004 (LeFevre, 2005). A comparison of the 1995 and 2004 data along with the 2010 results is included in this report.

Subbasin survey information is used by SRBC staff and others to:

- evaluate the chemical, biological, and habitat conditions of streams in the basin;
- identify major sources of pollution and lengths of stream impacted;
- identify high quality sections of streams that need to be protected;
- maintain a database that can be used to document changes in stream quality over time;
- review projects affecting water quality in the basin; and
- identify areas for more intensive study.



Figure 1. Six Major Subbasins of the Susquehanna River

DESCRIPTION OF THE JUNIATA RIVER SUBBASIN

The Juniata River Subbasin drains an area of approximately 3,400 square miles from west of Bedford to Duncannon, Pa., which includes significant portions of Bedford, Blair, Fulton, Huntingdon, Perry, Juniata, and Mifflin Counties. Two different ecoregions are found within this area (Omernik, 1987):

- Central Appalachian Ridges and Valleys (Ecoregion 67), and
- Central Appalachians (Ecoregion 69).



Clover Creek, Blair County, Pa.

Ecoregion 67 is characterized by almost parallel ridges and valleys formed by folding and faulting events. Predominant geologic materials include sandstone, shale, limestone, dolomite, siltstone, chert, mudstone, and marble. Springs and caves are common in this ecoregion. Ecoregion 69 is largely a plateau formation that is predominantly sandstone, shale, conglomerate, and coal. Mining for bituminous coal has occurred in this ecoregion.

Six different subcoregions are found in the Juniata River Subbasin (Omernik and others, 1992) (Figure 2):

- 67a, Northern Limestone/Dolomite Valleys,
- 67b, Northern Shale Valleys,
- 67c, Northern Sandstone Ridges,
- 67d, Northern Dissected Ridges and Knobs,
- 69a, Forested Hills and Mountains, and
- 69b, Uplands and Valleys of Mixed Land Use.



Bells Gap Run at Hunter Road near Reightown, Blair County, Pa.

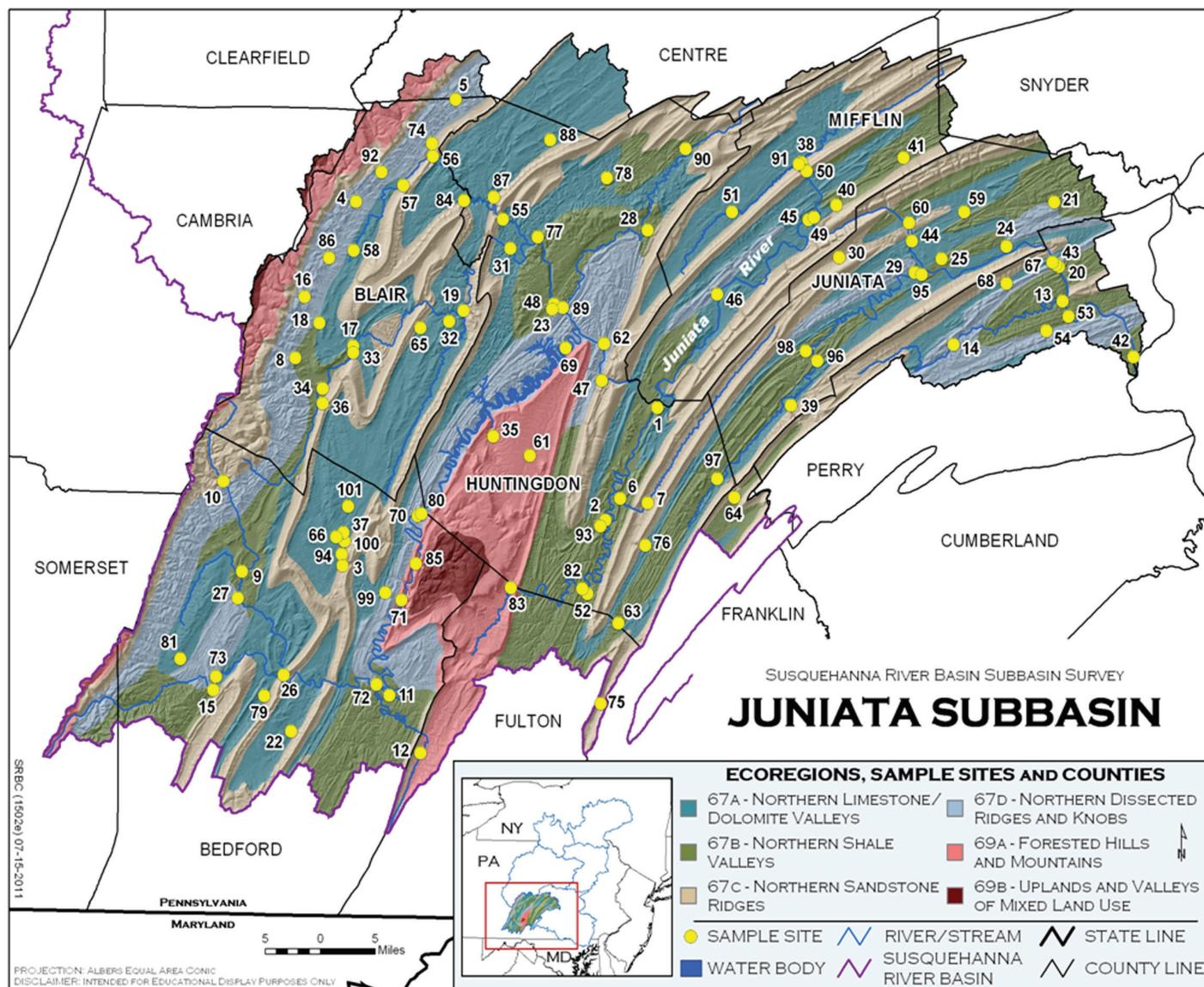


Figure 2. Juniata Subbasin Ecoregions and Sample Sites

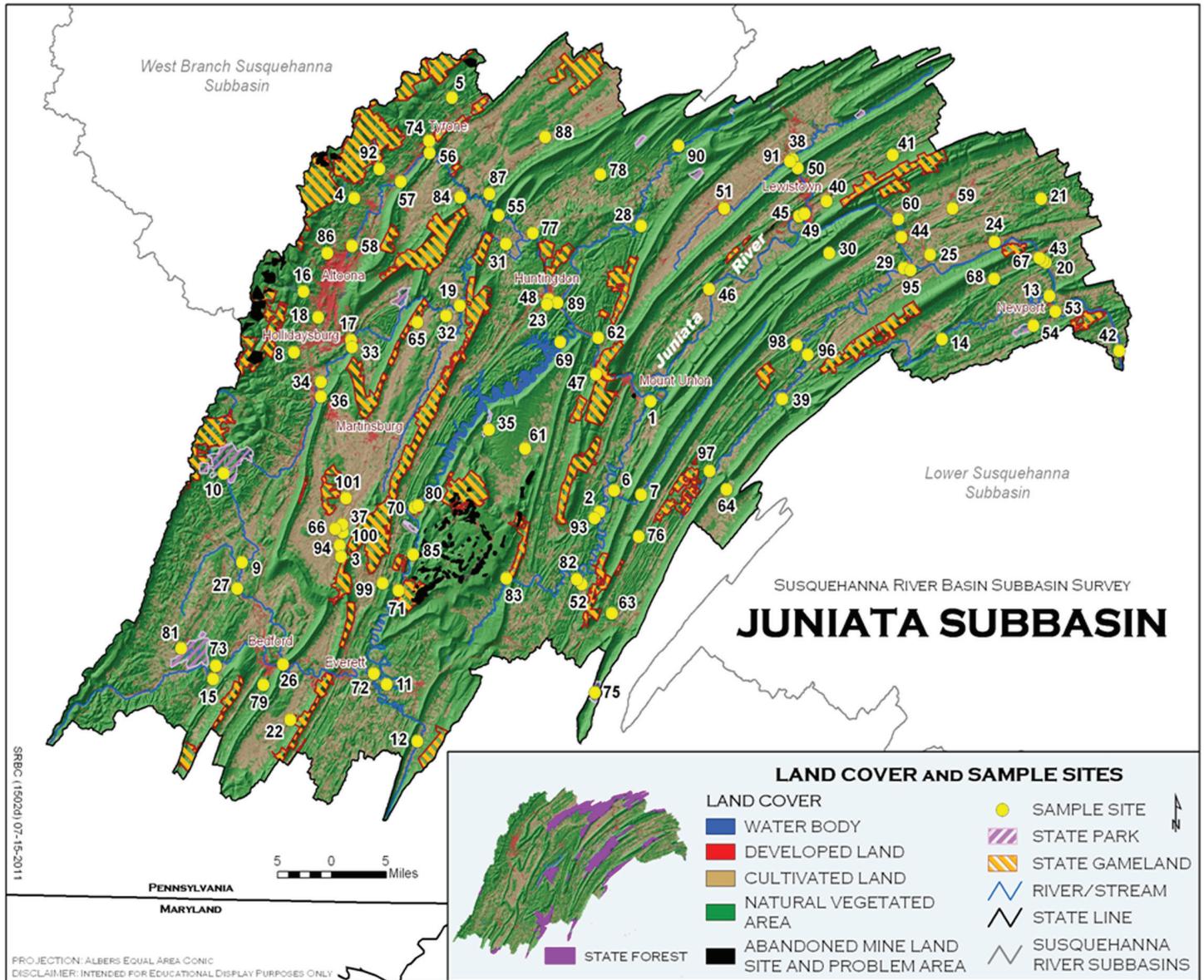


Figure 3. Juniata Subbasin Land Cover and Sample Sites

The mixed land use in the Juniata River Subbasin primarily includes forested areas concentrated in the ridges, with agricultural and urban areas in the valleys (Figure 3). Many of the forested areas include state forest or state game lands. The largest urban center is Altoona, with other notable developed areas including Bedford, Everett, Tyrone, Huntingdon, Mount Union, Lewistown, and Newport. Other important land uses in this subbasin are abandoned mine lands (AML) and impounded water in Raystown Lake. Raystown Branch Juniata River was dammed in 1968 primarily for flood control, but the lake is also used as a recreational impoundment. Today, some hydroelectric power is generated at this dam.



SRBC staff processing a macroinvertebrate sample at Buffalo Creek near Newport, Perry County, Pa.