

2.0 GEOGRAPHIC SETTING

The Morrison Cove study area encompasses about 185 square miles in portions of Blair and Bedford counties, Pennsylvania. The study area is located in the Juniata River Subbasin and is comprised of a valley largely bounded by mountain ridges (Figure 2-1). The major population centers include the boroughs of Roaring Spring, Martinsburg, and Williamsburg. The study area is approximately 10 miles southeast of Altoona.

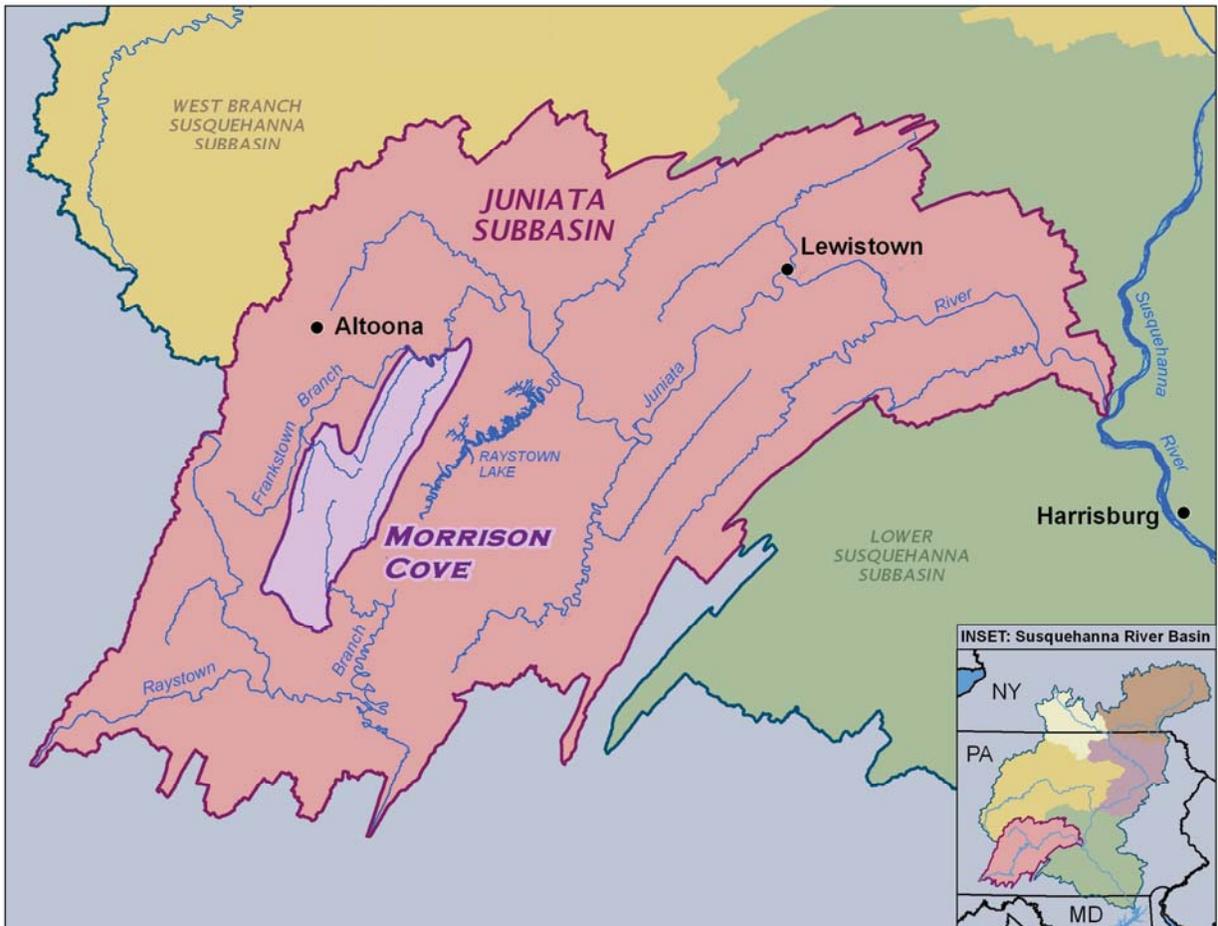


Figure 2-1. Location of Morrison Cove in the Juniata Subbasin of the Susquehanna River Basin

The predominant land uses (Figure 2-2) are agricultural (55 percent) and forested (about 40 percent). Developed areas (urban, commercial, and industrial) cover approximately 1 percent of the valley. The economy is largely agricultural, but also includes mineral extraction at a large limestone quarry and a paper mill.

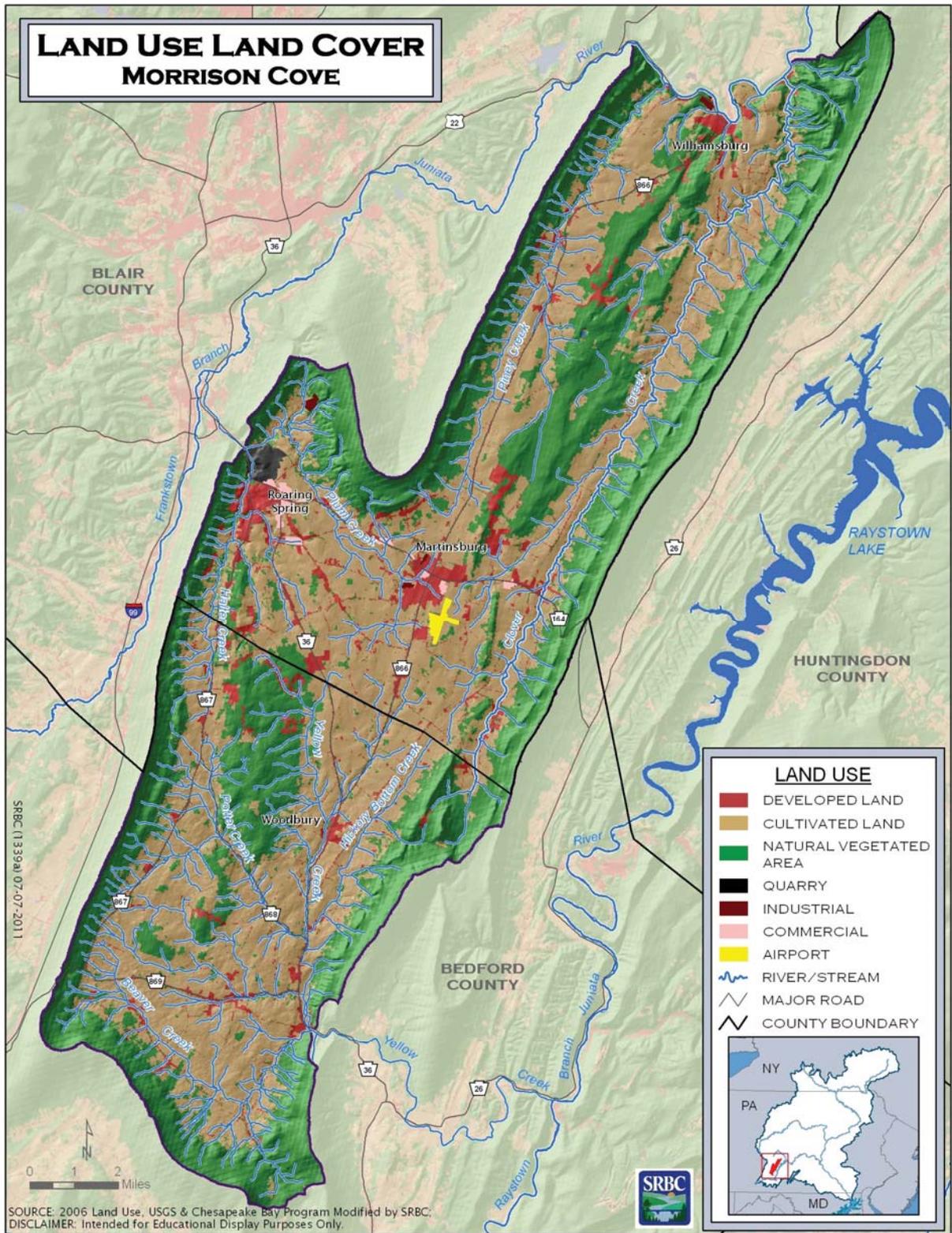


Figure 2-2. Land Use in Morrison Cove

The study area is located entirely within the Ridge and Valley physiographic province, a region characterized by sub-parallel, locally sinuous mountain ridges and broad intervening valleys. Morrison Cove is the southernmost part of an intermountain valley complex more than 100 miles in length that extends northeastward to the State College area, where it splits into Nittany Valley and Penns Valley. The Frankstown Branch Juniata River forms the northern boundary of the Morrison Cove.

Morrison Cove is an elongate valley, approximately 30 miles long and five to eight miles wide. Local relief between the mountain ridges and the adjacent valley typically ranges from 600 to 1,200 feet. Local relief in the central valley ranges from 80 to 300 feet. Mountain crest elevations range from 1,800 feet to approximately 2,560 feet (junction of Dunning and Evitts mountains, at the southwest corner of Morrison Cove). Summit elevations in the hilly terrain of the interior valley range from approximately 900 feet in the northern portion of the Morrison Cove to 1,700 feet in the south.

2.1 Surface Water Drainage

Streams in the northern and central portions of Morrison Cove drain to the Frankstown Branch Juniata River. Streams in the southern portion of Morrison Cove drain to the Raystown Branch Juniata River. Morrison Cove is drained by four major streams: Halter, Yellow, Clover, and Piney Creeks. In addition to the four major streams listed above, Schmucker Run and three unnamed tributaries discharge directly into the Frankstown Branch Juniata River.

The streams exhibit two distinctive patterns; one characterized by trunk streams that flow parallel to the adjacent mountain ridges (called strike-parallel) and a second where streams flow across the valley (called cross-strike). Examples of the strike parallel type include Halter Creek, Plum Creek, Clover Creek, Piney Creek, Hickory Bottom Creek, and Beaver Creek. Yellow Creek (excluding Beaver Creek and Hickory Bottom Creek) flows across the valley to the water gap at Loysburg, where it leaves Morrison Cove before its confluence with the Raystown Branch Juniata River.

The streams (including the Frankstown Branch Juniata River) pass through water gaps in the surrounding mountain ridges. Gap elevations generally decrease from south to north. Yellow Creek exits Morrison Cove through the Loysburg water gap at an elevation of approximately 1,110 feet. Halter and Plum Creeks exit Morrison Cove through the gap northwest of Roaring Spring at an elevation of 1,060 feet. Piney Creek and Clover Creek exit the Cove at their confluence with the Frankstown Branch of the Juniata. The mouth of Piney Creek is at an elevation of approximately 850 feet. The mouth of Clover Creek is at an elevation of approximately 805 feet. These elevations establish both erosional base level and the lowest groundwater head in each watershed. Surface water and groundwater are graded to these elevations.