

## TOPOGRAPHY

The Mahanoy Creek Drainage Basin (157.1 sq mi), lies within the Ridge and Valley Province of the Appalachian Highlands. The drainage basin is one of a series of coal basins within a synclinorium which trends northeast to southwest. The axis of the syncline would be along a line from the town of Hunter to the city of Shenandoah.

The watershed is dominated by a series of almost parallel mountain ridges and valleys trending in the same direction as the drainage basin. The watershed is bounded on the east by Locust Mountain and Vulcan Hill, and on the north by portions of Locust, Mahanoy, and Little Mountains. The southern boundaries of the watershed are parts of Broad Mountain, Line Mountain, and Fisher Ridge (see Figure 1). The relief varies in elevation from a high of 2090 feet at the eastern end near Delano, to 420 feet where Mahanoy Creek enters the Susquehanna River. The elevation of the mountain ridges varies from 1400 feet to 1800 feet, with the valley floors being 600 to 800 feet lower.

The Mahanoy Creek drainage basin was divided into seven subwatersheds (see Figure 2, p. 15). The Upper Basin (21.8 sq mi), consists of the area drained by Mahanoy Creek upstream from its confluence with the Shenandoah Creek. Mahanoy Creek originates as a discharge from an abandoned slope mine, one and a half miles east of Mahanoy City. An intermittent unpolluted stream carrying predominately surface runoff from the Vulcan Hill area, was the original Mahanoy Creek streambed. The streambed, which is now dry most of the year joins the discharge flow one mile east of Mahanoy City.

North Mahanoy Creek originates from unpolluted springs and surface runoff from the south slope of Locust Mountain, and enters Mahanoy Creek in Mahanoy City. Although no mine discharges enter North Mahanoy Creek the stream flows through a region that has been seriously disrupted by strip mining. Mine waste leachants and pyritic materials contribute a significant amount of pollutants from the surrounding waste materials seriously degrading the stream. From Mahanoy City downstream to its confluence with Shenandoah Creek, Mahanoy Creek drains the south slope of Bear Ridge and the north slope of Broad Mountain. The Upper Basin has been severely disrupted by mining, with the Mahanoy Creek throughout the subwatershed seriously polluted by mine drainage.

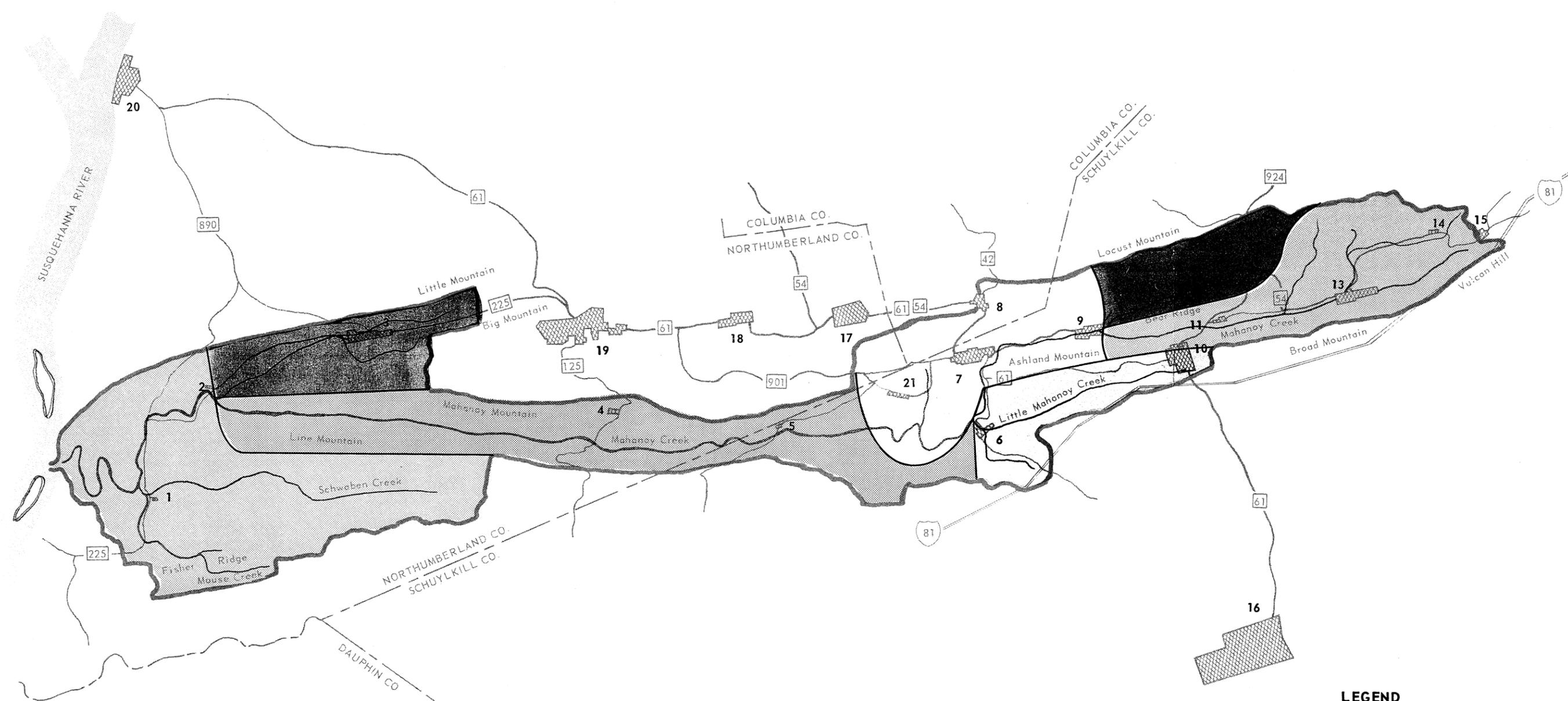
The Shenandoah Basin (11.6 sq mi), includes the entire area drained by Shenandoah Creek. Before stripping operations began, Shenandoah Creek originated from unpolluted springs and surface runoff from the south slope of Locust Mountain. Presently this water is directly entering mine pools via strip pits and cropfalls, Both Kehley Run and Lost

Creek are clean streams that at one time drained into Shenandoah Creek but are now being intercepted by stripped areas and directed to mine pools. Shenandoah Creek now originates from sewage from the city of Shenandoah and the intermittent pumping of water from the mine pools in the area. Shenandoah Creek drains portions of the south slope of Locust Mountain from north of Shenandoah to the eastern end of Girardville, and the north slope of Bear Ridge. The Shenandoah Basin has been severely disrupted by mining resulting in the Shenandoah Creek being polluted throughout its entire length by acid mine drainage.

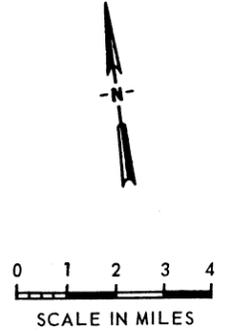
The Ashland Basin (17.7 sq mi) contains the area drained by Mahanoy Creek, from its confluence with Shenandoah Creek downstream to and including its confluence with Big Run. (This drainage basin does not include the area south of Ashland Mountain that is drained by Little Mahanoy Creek and Rattling Run.) This portion of the creek drains the south side of Locust Mountain from the eastern end of Girardville westward to an area just 4 miles past Ashland, and the north slope of Ashland Mountain. Two streams enter Mahanoy Creek in this basin. Big Mine Run originates from a drainage tunnel beneath Locust Mountain, one mile northeast of Ashland. Water flows southeast from the tunnel and enters Mahanoy Creek. The other stream, Big Run has its origin in strip pits 2 miles west of Ashland, and enters Mahanoy Creek 3/4 mile south of Lavelle. Both Big Run, and Big Mine Run are polluted throughout their length by mine drainage. The drainage basin has been heavily strip mined, leaving behind huge strip pits particularly in the Centralia Coal Basin, located east and southeast of Centralia. Throughout the Ashland Basin, Mahanoy Creek is severely polluted by mine drainage.

The Little Mahanoy Basin (11.6 sq mi) drains the south slope of Ashland Mountain from Frackville to Mahanoy Creek, and the north slope of Broad Mountain from Frackville to the western boundary of the Rattling Run drainage area. Little Mahanoy Creek originates in the area of Frackville and flows through the valley between Ashland and Broad Mountains. The valley is no more than a ravine just west of Frackville, but broadens out to almost two miles in width at Mahanoy Creek. Rattling Run, which is fed by springs on Broad Mountain, enters Little Mahanoy Creek in Gordon, just before the confluence of Little Mahanoy and Mahanoy Creeks. No mining has been done in this basin and both Little Mahanoy Creek and Rattling Run are unpolluted.

The Middle Basin (38.7 sq mi) drains the area between Mahanoy Mountain from Lavelle west to Hunter, and Line Mountain from Gordon west to the confluence of Mahanoy Creek and Zerbe Run at Hunter. Numerous spring fed intermittent creeks enter Mahanoy Creek along this length of stream. The valley floor varies from a width of one mile at points to just the width of the stream, Although no significant deep or surface mining has been done in this basin, the region has not escaped some of the harmful effects of mining. At numerous locations along the creek large silt deposits have accumulated from the mine wastes that are being continually transported downstream. Also, two



- LOWER
- ZERBE
- MIDDLE
- ASHLAND
- LITTLE MAHANOY
- SHENANDOAH
- UPPER



- LEGEND**
- |               |                 |
|---------------|-----------------|
| 1 RED CROSS   | 12 SHENANDOAH   |
| 2 HUNTER      | 13 MAHANOY CITY |
| 3 TREVORTON   | 14 PARK PLACE   |
| 4 GOWEN CITY  | 15 DELANO       |
| 5 HELFENSTEIN | 16 POTTSVILLE   |
| 6 GORDON      | 17 MOUNT CARMEL |
| 7 ASHLAND     | 18 KULPMONT     |
| 8 CENTRALIA   | 19 SHAMOKIN     |
| 9 GIRARDVILLE | 20 SUNBURY      |
| 10 FRACKVILLE | 21 LAVELLE      |
| 11 GILBERTON  | 22 LOST CREEK   |

Figure 2. Subwatersheds in the Mahanoy Creek Watershed

drainage tunnels, whose flows originate from a neighboring watershed, contribute mine water to Mahanoy Creek. Throughout the Middle Basin, Mahanoy Creek is seriously polluted by mine drainage.

The Zerbe Basin (13.0 sq mi) encompasses the entire Zerbe Run watershed. Zerbe Run which originates from unpolluted springs east of Trevorton in the valley between Big and Little Mountains, flows through the entire length of the valley before entering Mahanoy Creek near the village of Hunter. South of Trevorton a large mine discharge flowing through a gap in Big Mountain drains an elevated basin between Big and Mahanoy Mountains. Mining in the elevated basin has resulted in one of the most severely disrupted subwatersheds in the study area. A large mine discharge draining the mine pools in the area enters Zerbe Run at the western end of Trevorton. From Trevorton downstream to its confluence with Mahanoy Creek, Zerbe Run is seriously polluted by mine drainage.

The Lower Basin (42.7 sq mi) consists of the area drained by Mahanoy Creek downstream from its confluence with Zerbe Run. Mouse Creek and Schwaben Creek (clean streams) combine to contribute a significant volume of water to Mahanoy Creek in this basin. Schwaben Creek's headwaters are on the south side of Line Mountain, four miles east of Gowen City, and drains the area between Line and Hooflander Mountains. Mouse Creek originates in a narrow valley between Hooflander Mountain and Fisher Ridge, and flows west until it breaks through Hooflander Mountain. It then flows north and enters Schwaben Creek, which in turn enters Mahanoy Creek northwest of Red Cross. Except for that portion of Mahanoy Creek which remains polluted by mine drainage, all streams in the basin are unpolluted and sustain a wide variety of aquatic life. The Lower Basin is dominated by hilly farm land and numerous intermittent streams.

All of the streams in the watershed follow a relatively direct course. The Mahanoy meanders slightly in a stretch around Gordon and Lavelle, and again just before it enters the Susquehanna River. For purposes of classification, the watershed drainage patterns identified in the field range from trellis and dentretic to an angular pattern.