

2.2 Physiography

Physiography refers to the natural features of the earth's surface, including land formation, climate, currents, and distribution of flora and fauna or the general “look” of the land. A physiographic province is a region of which all parts are similar in geologic structure and climate and which has consequently had a relatively unified geomorphic history; a region whose pattern of relief features or landforms differ significantly from that of adjacent regions.



The West Kill watershed is located in northeast portion of the Appalachian Plateaus Province, which runs along the Appalachian Mountain range from Maine to northern Alabama. This ancient province surface is only structurally a plateau, having been eroded by stream action over millions of years into what is today a region of high relief. Small, narrow valleys (or hollows) twist through the resulting mountains. The older surface is evident in the pattern of hilltops all tending to reach the same elevation. Such an eroded plateau is known as a dissected plateau.

The West Kill mainstem originates in the Spruceton Hollow area of the Town of Lexington, and stretches 9.5 miles to its confluence with the Schoharie Creek, just west of the Lexington hamlet. As the stream winds its way down the valley floor, it drops approximately 2,700 feet in elevation from its origin on the southwest slopes of Hunter Mountain at over 4000 feet in elevation, to its confluence with the Schoharie Creek at approximately 1,320 feet in elevation. Evergreen, Rusk, Westkill, Balsam, Mt Sherrill and North Dome mountains ring the upper watershed. The lower portion of the watershed is bounded by the east facing slopes of Halcott, Vinegar Hill and Vly Mountains. The headwaters are not only the northernmost peaks in the Catskill chain, but also some of the highest elevations in the Catskills. The total watershed area is 31.2 square miles, with an average watershed slope of nearly 29%, the highest of any major Schoharie tributary.

Twelve named tributaries deliver flow from the larger sub-basins to the West Kill; in order from upstream to downstream, they are: Hunter Brook, Pettit Brook, Herdman Brook, Styles Brook, Mink Hollow, Hagadone Brook, Schoolhouse Brook, Bennett Brook, Newton Brook, Condon Hollow (brook), Beach Ridge Brook and Roarback Brook. West Kill also has numerous unnamed tributaries which drain the smaller sub-basins of the watershed. The drainage density of the watershed (using USGS blue line stream length) is 0.0013, and road density is 0.004. Most of the watershed is oriented east-to-west, with significant differences between northfacing and southfacing slopes in terms of drainage patterns and hydrology. The hydrology of the West Kill watershed is discussed in greater detail in Section 2.3, and its geology in Section 2.4.

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