
IV-B: Watershed History

When the first settlers came to the Batavia Kill watershed in the late 1780's, they came upon a wilderness of virgin timber, abundant wildlife and excellent sources of water power. The first settlers in the valley included George Stimson and his family, later followed by Deacon Lemuel Hitchcock. Stimson was the herdsman for the Livingston family, who owned the Hardenburg Patent. Stimson established a homestead in the area across from the present day site of GNH Lumber (Hitchcock, 1993).



Photo courtesy of Larry Tompkins

Stimson had been sent to the area by the Livingstons, who wanted to experiment with the European tradition of taking their livestock to high country pasture during the hot summer months (Thorn, 1994). In the fall of 1894, a Deacon named Lemuel Hitchcock and his son hiked to the low notch, between Windham High Peak and Ridge Plateau, and discovered a big broad valley which was enclosed except for a small opening on its western end. By the spring of 1895, Hitchcock and his son set to work and laid out a square mile of land with the Batavia Kill in the middle (Hitchcock, 1993). The

Hitchcock's established their homestead at the same location as the Big Hollow stream restoration project to be constructed by the GCSWCD. The homestead extended from the area of the present C.D.Lane Park to the Leon MacGlashen property.



Figure IV-3: Maintaining the bridge at Red Falls, circa 1910.
Photo by Everett Arnold Conine

While the first settlers to the Batavia Kill Valley may have come for herding animals and the pursuit of morality, it was not long before the influences of the growing tanning industry, located

below the valley on the Schoharie River, began to move into the watershed. Records show that as early as 1802, tanning of hides had been introduced in the Jewett area, but it was not until Zadock Pratt established his tannery in Prattsville in 1824 that the business grew to a large scale in western Greene County (Millen 1995). Tanneries quickly became an important industry in the mountaintop area in the early to mid-1800's due to the abundance of hemlock for its bark and other trees for fuel. Records show that hides from locations as far away as Puerto Rico, Venezuela, Argentina, Mexico and California were tanned in the Catskills (Thorn, 1994).

Pratt's tanneries were thought to be the largest in the world and they were also renowned for the quality of their product. By the 1840's, the surrounding mountains had been stripped bare of hemlock, and Pratt closed his tannery in 1845 having removed every hemlock tree in a 10 square square mile range (Thorn, 1994). The last known tannery on the mountaintop, operated by George Robertson, was located in the Big Hollow area of the Batavia Kill. It closed in the late 1860's when all of the hemlock was cleared in that remote section of the watershed (Hitchcock, 1993).



Figure IV-4: Conine sawmill located on bank of the Batavia Kill below Red Falls, circa 1930.
Photo by Everett Arnold Conine

As the tanning industry's appetite for bark cleared the mountains, the newly opened forest was easily converted to agricultural uses. Pratt, having realized the need to promote new uses of these cleared forests, developed a model dairy farm in the Prattsville area to demonstrate the suitability of these lands for farming. Farming in the watershed today has decreased dramatically due to steep slopes, rocky soils, and the impact of a general decline in family farms in this country over the years. This has allowed some of the land to return to its original forested state.

Whether on a farm or in a village, the people in the watershed led a peaceful life, something that people from the city desired, making this area a destination for summer visitors. From 1890 to 1930 the region was a popular destination for vacationers. Many hotels and boarding houses sprang up in the area during this time. The Leon MacGlashen farm in Big Hollow and the Mair Farm in Ashland are both examples of such former boarding homes (Hitchcock, 1993). The tourist industry is still important today, with Ski Windham bringing in up to 4,000 visitors a day in the winter and various resorts bringing in 3,500 guests a day in the summer.

Historically, flooding has been a problem in the Batavia Kill watershed. Main Street, in the Hamlet of Windham, is at the confluence of the Batavia Kill and Mad Brook, and has been the site of significant flooding. There are many floods on record, including floods in the years 1869, 1874, 1885, 1893, 1926, 1933, 1938, 1950, 1960, 1980, 1996 and 1999 (USGS Gage Data from Prattsville Gage on Schoharie Creek). Two lives were lost in these floods, and hundreds of thousands of dollars in damage was done to the Hamlet of Windham and surrounding areas (**Figure IV-5**).



Figure IV-5: Flood damage to barn along NYS Route 23 circa 1961.

The first life was lost in the 1893 flood. A crowd of people gathered on the Church St bridge to watch the waters of the Batavia Kill rise. The bridge was swept away when a tree struck it, along with the people on it. Most of the people made it safely to shore, but Mrs. Ella Merritt drowned. The second life was lost in 1960. Ashland Fire Chief Paul Alle was swept away by the rushing waters of the Batavia Kill. Three flood control structures built in the late 1960's and 1970's have greatly reduced the amount of damage from floods in the watershed.

FLOODING HISTORY

Since flood events and the response of communities to these events have been the driving force behind the management of the Batavia Kill for over fifty years, the GCSWCD felt that it was important to take a closer look at the flooding history in the watershed. While little has been written about early floods, the nature of the watershed and the water regime of the area would lead us to suspect that floods have been a common occurrence on the Batavia Kill since the first settlers moved to the valley.

More recently, the impact of floods on the watershed is evident during the period 1950 to 1960, with the occurrence of major runoff events in November 1950, August 1955, October 1955, and September 1960 (Soil Conservation Service, 1965). In most instances, these flood events were related to major hurricane systems which had taken an inland track from the south to the northeast. The hurricane season, from August to November, has the potential to produce storms in the Catskill Mountain Region that are characterized by intensive rainfall and rapid runoff from the mountains which surround the stream systems.



Figure IV-6: Flood damage to South Street Bridge, hamlet of Windham circa 1961.

Unfortunately, the lack of historic long term meteorological data on the Batavia Kill makes it difficult to track earlier flood events in the watershed. To gain some idea of the frequency and scope of past floods, a USGS Stream gaging station on the Schoharie Creek in Prattsville, which has a 96-year period of record, can be used to identify significant flood events in the Schoharie Basin. The drainage area contributing to the Prattsville gage on the Schoharie Creek is 237 square miles, with the Batavia Kill sub-basin contributing approximately

74 square miles (32%) to this total. Flood frequency analysis of the Schoharie Creek at the Prattsville gage indicates a 50-year flood event of 50,000 cubic feet per second (cfs) and a 100-year flood event of 72,000 cfs. Based on GCSWCD's experience with more recent floods (1987, 1996, 1999), runoff events which exceed ~ 40,000 cfs at the Schoharie gage are typically associated with significant flooding and erosion in the Schoharie sub-basins. The official flood stage at the Schoharie gage is 12 feet, or a flow of approximately 20,800 cfs. Based on the highest flows for each year on record, this threshold has been exceeded in 24 of 95 years, as shown below.

1910 [21,500 cfs]	1924 [29,000 cfs]	1926 [43,300 cfs]	1933 [39,000 cfs]
1935 [27,400 cfs]	1936 [38,500 cfs]	1937 [29,800 cfs]	1938 [45,000 cfs]
1950 [49,500 cfs]	1951 [21,800 cfs]	1952 [28,200 cfs]	1955 [51,600 cfs]
1957 [31,000 cfs]	1960 [49,900 cfs]	1972 [27,400 cfs]	1972 [24,900 cfs]
1974 [24,800 cfs]	1978 [30,600 cfs]	1980 [39,600 cfs]	1981 [22,200 cfs]
1984 [29,500 cfs]	1987 [47,600 cfs]	1996 [52,800 cfs]	1999 [42,800 cfs]

While many floods have caused damage in the Batavia Kill watershed, the event of September 1960 associated with Hurricane Donna is generally considered to be the most damaging on record. Donna was devastating to the town, producing in excess of \$750,000 in damage (1960 dollars). The storm resulted in damage to over 75 residences (\$100,000), 27 businesses (\$130,000) and state, county, and town roads (\$425,000). In addition, damages occurred to the Windham Country Club, two churches, Windham Ashland School and utilities. During the event, seven bridges in the watershed were lost. The flood also contaminated the Windham water system resulting in a period of boil water advisory (Soil Conservation Service, 1965).

In the watershed study completed by the Soil Conservation Service for justification of the Batavia Kill Flood Control Project (Soil Conservation Service, 1965), it was found that storms with as small as a five year recurrence interval resulted in significant flood damages, and that out-of-bank damage was occurring with 2 year flood events. The watershed report listed Hurricane Donna as a 25-year event, during which the Schoharie Reservoir, a few miles downstream of the confluence of the Batavia Kill



Figure IV-7: Washout of NYS Route 23 just west of GNH Lumber location.

and Schoharie Creeks, rose over 33 feet in 18.5 hours. Rains associated with Hurricane Connie (a 20-year flood event) in 1955 also produced significant damage.

A 1987 storm event caused significant damages in the Batavia Kill watershed. Further downstream, a NYS Thruway Bridge over the Schoharie Creek was lost. The C.D. Lane flood control structure filled, and for the first time since its construction, the emergency spillways carried the excess flow from the headwaters. While the emergency spillways were damaged, the structure worked extremely well and damages were limited to deep erosion in the spillways. The washouts were filled, compacted and re-vegetated. This same damage occurred in September 1999 when Tropical Storm Floyd visited the watershed. In January 1996 and September 1999, the watershed was hit by flood events which caused some damage and significant instability in certain sections of the stream system.

In summary, documentation of past flood events, as well as recent experiences, show that short, intensive flood events continue to produce damage to transportation infrastructure, erosion of streambanks, and nuisance basement flooding. Rain or snow related events can substantially increase the expected damages on both the smaller, uncontrolled tributaries as well as the Batavia Kill itself.