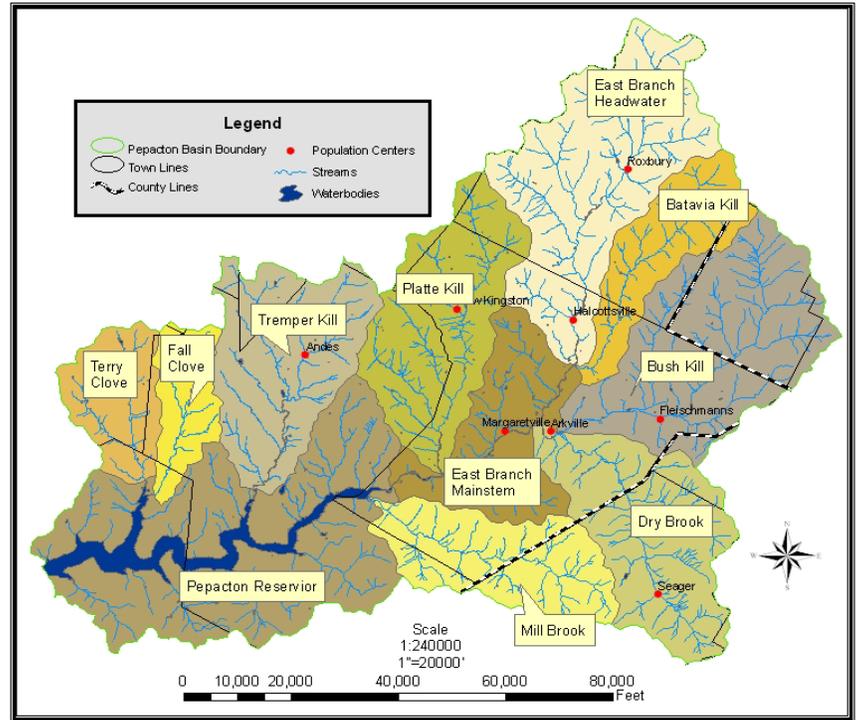


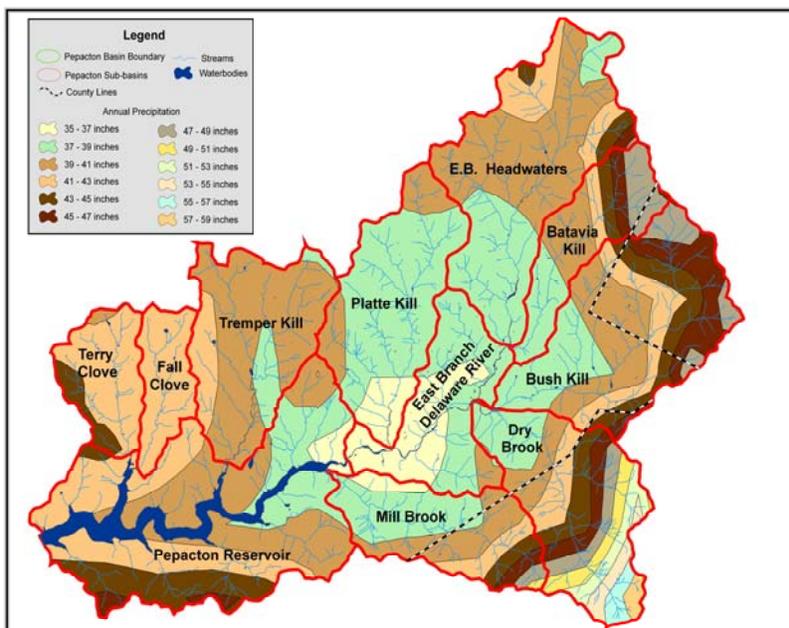
Although the East Branch Delaware River Management Plan will not be complete until December 2007, please read on for a brief description of the watershed.

## Watershed Overview

The East Branch of the Delaware River is located principally in Delaware County on the eastern portion of the Allegheny Plateau physiographic province. The upper portions of the East Branch Delaware River with its eight tributaries contribute water to the Pepacton reservoir, part of the New York City water supply system operated by NYC Department of Environmental Protection. The total drainage area of the East Branch Delaware River watershed above the reservoir is 371 square miles with 644.4 total stream miles. The watershed includes land within eleven townships and three counties. While the majority of the watershed is contained within Delaware County, sections of the headwaters are found in the western Catskill mountains of Ulster and Greene County.



**The East Branch Delaware River basin and major sub-basins**



The watershed has long been a summer vacation destination for NYC residents. The summers are cool, with relatively few hot days. Mean daily temperatures range from the highs in the upper 60's (F) in summer to the low 20's in winter. Dairy farming once dominated the landscape, but has given way to small holder farms, second homes and managed forest cover. Forests cover between 60 and 90 percent of the landscape for the tributary sub-watersheds. The map below shows the average annual

rainfall distribution for the entire watershed. Mean annual rainfall corresponds with elevation and is lowest in the valley near Margaretville and highest in elevated headwater areas in the southeastern portions of the Mill Brook and Dry Brook tributaries (USGS, 2004).

The dendritic drainage pattern (a branching, tree-like form) is typical of watersheds in the Catskill Mountain region. Runoff varies from 22 inches per year in the Margaretville area to over 40 inches per year in the headwaters of Dry Brook and the Batavia Kill (USGS, 2004). Peak runoff occurs typically between April and June and streams reach base flow by August. Winter rain on snow storm events and hurricane influenced summer storms are responsible for most major flood events with the record flood event occurring in January 19, 1996.

The United States Geological Survey (USGS) maintains seven continuous-recording stream *gages* in the East Branch watershed. These gages measure the stage, or height, of the water surface at a specific location, updating the measurement every 15 minutes.

Station ID	Station Name	Drainage Area (Mi <sup>2</sup> )	Period of Record
01413088	East Branch Delaware River at Roxbury	13.5	June 2000 - present
01413398	Bush Kill Near Arkville NY	46.7	Oct 1997 - present
01413408	Dry Brook at Arkville NY	82.2	Dec 1996 - present
01413500	East Branch at Margaretville NY	163	Feb 1937 - present
01414000	Platte Kill at Dunraven NY	34.9	Oct 1941 - Sept 1962, Dec 1996 - present
01414500	Mill Brook Near Dunraven NY	25.2	Feb 1937 - present
01415000	Tremper Kill Near Andes NY	33.2	Feb 1937 - present

The Pepacton reservoir has a capacity of 140.2 billion gallons which makes this reservoir the largest reservoir in New York City system by volume. Completed in 1955, the reservoir contributes more than 25% of the total daily water flow to the City. The Pepacton reservoir, while not designed for flood control, provides for the management of downstream water levels through established release schedules established under the Delaware River Basin Compact and monitored by the Delaware River Basin Commission (DRBC).

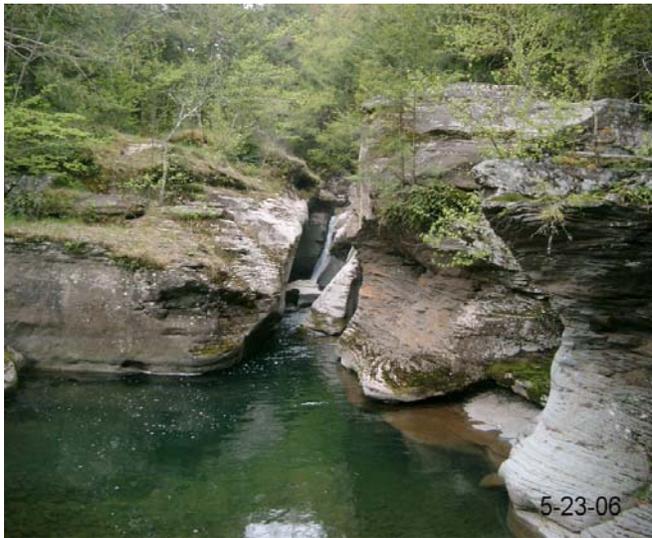
Bounded by the Catskill high peaks, the East Branch Delaware and its tributaries drain the landscape from a maximum of approximately 3,500 feet at the peaks in the east to 1300 feet at the mouth of the reservoir below Margaretville. Hillsides along the East Branch valley tend to be asymmetric, with steeper slopes facing north and gentler slopes facing south. Tributary streams typically occupy very narrow valleys, or “hollows”, that generally intersect the main stem at right angles. The bedrock geology is conglomerate overlying siltstone and shale. Glacial advance and retreat resulted in the formation of rounded hill tops, a U shaped central valley covered by an outwash alluvial floor composed of sands, gravels, silts and clays and adjoined by stony glacial till uplands.

Soils in the valley bottoms are generally adequate for crop production grading in decreasing fertility and depth and increasing coarseness as elevation increases. When compared with the Esopus and Schoharie watersheds, the limited presence of glacial lake clays has not been found to be a significant problem for water quality in the East Branch Delaware River system.

Stream stability and sediment transport processes are a significant issue for landowners and managers of the resource in the basin. While the mainstem of the East Branch Delaware River has a stream bed that is composed largely of gravel and fine sediments, the tributaries are cobble bed streams that often move large amounts of bedload during high flows. The mobilization and deposition of this bedload in large gravel bars is a significant management concern for stream managers, highway superintendents and landowners in the basin.



**An example of channel migration and gravel deposition on a tributary.**



**An example of a stream down-cutting through a bedrock outcrop.**

The occurrence of bedrock also directly affects streams wherever the stream channel contacts bedrock instead of stream deposits. In such places, rates of stream channel downcutting, bank instability and lateral migration are dramatically reduced.

Recreational opportunities include fishing and canoe/kayaking on the East Branch Delaware and its tributaries. The spring fed waters of the tributaries are an excellent habitat for native brook trout and a favorite destination for anglers.

The Delaware County Soil and Water Conservation District together with the County Planning Department are preparing a stream management plan for the basin due for final release in December 2007.