



Delaware River Basin Character Statement

The Delaware River begins its mighty journey beneath Point Mountain near Hancock, New York. A river of ancient majesty, it reflects the natural beauty and history of four states as it travels to join the tidal waters of Delaware Bay and onward to the Atlantic Ocean. Flowing a distance of about 330 miles, the longest un-dammed river east of the Mississippi, it is a river of great richness and significance for its beauty, historic itinerary, social contributions, and value to wildlife, communities, and industry.

The Delaware River is said to be one of the smallest of the major rivers in the United States. The 13,539 square mile watershed is only about 0.4 percent of the U.S. land area, and yet it serves approximately 5% of the country's population with water. The basin itself is home to about 7.8 million people but contributes directly to providing water to nearly 15 million people.

Nearly 50% of the river basin's total land area lies in Pennsylvania (about 6,422 square miles). Smaller portions of the basin are in New Jersey (23.3 %), New York (18.5 %), and Delaware (7.9 %). It provides all of the water supply for Philadelphia, Trenton, and Easton and approximately one half of the water for the New York City area. Surface-water diversions supply water to about 7 million people in New York City and northeastern New Jersey, many of whom reside outside the watershed.

Geology

Flowing across five physiographic provinces, the Delaware begins in the Appalachian Plateau, which is characterized by rugged hills of gently tilted sandstone and shale. Limestone influences begin downstream of Stroudsburg in the Bangor area. It then carves its way through the Ridge and Valley Province past forests and farmlands, small historic towns, and major industries and transportation routes. In the Ridge and Valley Province resistant sandstone produces long, narrow ridges separated by long valleys underlain by shale and limestone. The Delaware River travels briefly through the New England Province of igneous and metamorphic rocks to the Piedmont province, which is dominated by rolling lowlands and broad highlands and ridges. It reaches the Coastal Plain Province which is underlain by a wedge of unconsolidated sediments deposited in recent geologic time.

History

Long before Henry Hudson sailed into the Delaware Bay in the 1600's, banks of the estuary and the river were occupied by American Indians who called themselves Lenape, which means "original people" or "Grandfather," a term referring to their antiquity. They camped and hunted along the shores, fished for shad and sturgeon, and traveled in dugout canoes. The Lenape called the Delaware River *Lenape Lahitok* or *Wihittuck* (gift of the Lenape). *Delaware* was the English name given to the river as a tribute to honor the rescuer of Jamestown, Lord de la Warr. It was applied to the Lenape people who became known as the Delawares.

There are many important American Indian archeological sites located along the river. One identified site is the Trenton-Hamilton Marsh, which was occupied in 6000 BC or earlier (Abbott Farm National Landmark). Another significant site is in the Pocono Plateau and contains Clovis points of the Paleo-Indian Epoch (12,000 BC or earlier).



Henry Hudson was accredited with discovering the river basin for the Europeans, and the Dutch, Swedes, and English established early settlements. Scottish-Irish settled in the highlands and the Germans claimed the valleys.

Problems and Solutions

The Delaware River is recognized as one of the premier water pollution cleanup success stories in the United States. Since the 1600's the river has had to tolerate the use and abuse that comes with growth and industrialization. By World War II, pollution had peaked with reports of sailors and dockworkers sickened by odors. There were extensive fish kills and the river was declared dead in many areas. Due to regulatory efforts and cooperation among the four states, the Delaware River is highlighted as a success story directed at the restoration of the American shad and striped bass.

Two major kinds of nonpoint source pollution impair waters in the basin, runoff and abandoned mine drainage. One of the silent but significant problems is sediment loading due to nonpoint sources. Over 491,000 tons of sediment wash into the river annually due to poor agricultural practices, resource extraction, and soil erosion. Certain resource extraction practices have caused acid runoff in abandoned mines, mine lands, and refuse piles. Water reacts with pyrite in coal and surrounding rocks and forms acids, which are transported into streams. Acidity and metal toxicity caused by abandoned mine drainage seriously degrades water quality.

The threat of pollution includes such problems as discharge of toxic pollutants and combined sewer overflows. Industrial discharges, resource extraction, pesticides, municipal point sources, overloaded sewage treatment plants, and unchecked runoff continue to challenge the environment. There are several identified toxic pollutants, which include solvents used in the manufacture of chemicals and in the dry cleaning business. State-mandated fish consumption advisories have been issued and monitoring continues.

There are about 1,250 permitted wastewater discharges into the Delaware River, which include 360 municipal sewage treatment plants. Major utilities located in the basin, each with generating plants, utilize 5,682 million gallons of water per day(mgd) to produce the enormous amount of energy needed in the eastern United States. While it has a low consumptive loss rate (1.6%), the sheer volume of water used results in a large water loss (90 mgd) to the hydrologic system through evaporation.. It is important to note that reduced river and stream flow from industrial and domestic withdrawals magnifies the negative impacts of pollutants and reduces critical aquatic habitats.