



## Ohio River Basin Character Statement

Where two rivers meet, the Ohio begins. At the confluence of the Allegheny and Monongahela Rivers in Pittsburgh, the Ohio River embarks on its 981 mile journey to empty into the Mississippi at Cairo, Illinois. The three rivers have related, but distinct personalities. All were named by the American Indians who first knew them: Allegheny (fair waters), Monongahela (high, crumbling banks), and Ohio (beautiful river). These rivers have each played a part in opening the west to a flow of people in search of new land and opportunities.

The Ohio River Basin drains over 204,000 square miles, an area the size of France, in portions of 15 states. It supplies freshwater to over 21.7 million residents and discharges over 281,000 cu. ft. /sec. or 180 billion gallons into the Mississippi daily. Although only 10% of the entire basin is in Pennsylvania, it is the second largest basin in the state.

### Geology

The entire Pennsylvania portion of the Ohio River Basin lies in the Appalachian Plateau. Broad, rounded ridges of tilted sandstones and shales that are intricately dissected by valleys characterize this area. The northwestern part of the basin is filled with wide valleys and rounded uplands that were flattened by glaciers. The highest elevations occur in the southern mountain areas.

Due to our geologic history, and long before people were here to remember it, the rivers in Pennsylvania's Ohio Basin underwent a dramatic change. Before the last Ice Age, the major rivers in the basin flowed northwesterly and emptied into what is now Lake Erie. The Monongahela ruled the area, while the Ohio was simply a tributary of it. The Allegheny of today was three separate rivers. When the glaciers moved into northwestern Pennsylvania, the massive ice sheets blocked the northern flow of the rivers and formed lakes. The lakes eventually overflowed and actually reversed the flow of the rivers. They have flowed southward since then and eventually found their way to the Mississippi River.

Before the Ice Age, the shallow river valleys resembled a coastal plain. Large quantities of sand, silt, and clay were deposited by the glaciers and transported by the rivers. As the glaciers retreated, the land surface rose upward, while the rivers cut deeper into the bedrock leaving terraces of the old valley floor high above them. The rivers eventually carved deeper and wider valleys that were 250 feet below the original river valley.

### History

The extensive waterways of the Ohio Basin played a major role in the settlement patterns and travels of many people. The first people known to inhabit the Ohio Valley were the Mound Builders. It is believed the Allegheny was named after a people known as the Allegwie, but little is known of them. In time, many American Indian cultures, including the Iroquois, Shawnee, and Delaware, traveled through or resided in the basin.



The first Europeans to use the rivers were probably fur traders. The French geographer, Robert Cavalier de La Salle, reportedly traveled the rivers from Canada to the Mississippi in 1669.

In the early eighteenth century, the French and British collided over trading rights and ownership of the land and rivers in the basin. Territorial claims were largely responsible for the French and Indian War (1754-1763), and several battles were fought on the banks of the three rivers near Pittsburgh. Fort Pitt was constructed at the site by the British victors.

By the late 1700's, a rush began to settle the huge area between the Mississippi and the Rocky Mountains. Pittsburgh became known as the "Gateway to the West" and funneled settlers down the Ohio. People generally traveled the rivers in flatboats, which floated with the current and were steered with poles. With the launching of Robert Fulton's steamboat, the "New Orleans," in 1811, traveling became faster and return trips simpler. In summer or times of drought, the waters of the Ohio could be measured in inches in places, and boats on the Monongahela could run aground. Congress passed the Inland Waterways Improvement Act in 1824, which required the U.S. Army Corps of Engineers to keep the Ohio navigable. Construction on the first lock and dam began in 1878, just south of Pittsburgh at Davis Island on the Ohio.

On May 31, 1889, the deadliest inland flood in the nation's history occurred in Johnstown, Pennsylvania. The South Fork Dam, one of the largest earthen dams in the world, had been poorly maintained. After unusually heavy rains, it finally gave way, releasing 20 million tons of water from Lake Conemaugh. In less than an hour, a 36 foot wall of water traveling 40 miles per hour engulfed the town. Over 2,200 people were killed. Survivors said the approaching water had sounded like a "roar of thunder" and "crushed houses like eggshells" as it rolled through the town.

## **Problems and Solutions**

During the great westward expansion, Pittsburgh and the three rivers that fed it became the industrial hub that supplied travelers' needs. The presence of coal further spurred industrial growth. The industries of iron and steel, boatbuilding, saltworks, cotton mills, gas and oil drilling, and coal soon covered Pittsburgh with smoke and had a heavy impact on the rivers. While the rivers provided a source of water and transportation for the industries' products, they also received their waste. Untreated municipal and industrial waste, mine drainage, and other toxic pollutants led to poor water quality and epidemics of water-borne disease.

Today, due to the construction of sewage treatment facilities, reduction of mine drainage, and the regulation of industrial discharges, the quality of the rivers has greatly improved. Many fish species driven out by pollution began to return during the late 1970's, and recreational use of the rivers grew. In 1948, less than 2% of the discharges to the Ohio River received any treatment at all. By 1995, all Ohio River communities discharging to the river provided both primary and secondary treatment. Problems still exist and acid mine drainage continues to be the biggest source of pollution in the basin. Nutrients, pesticides, and volatile organic compounds (VOC's) from urban and agricultural runoff also affect water quality and aquatic life. However, realization that the economic and cultural value of the rivers is directly linked to their environmental health has led to continued efforts to improve water quality.