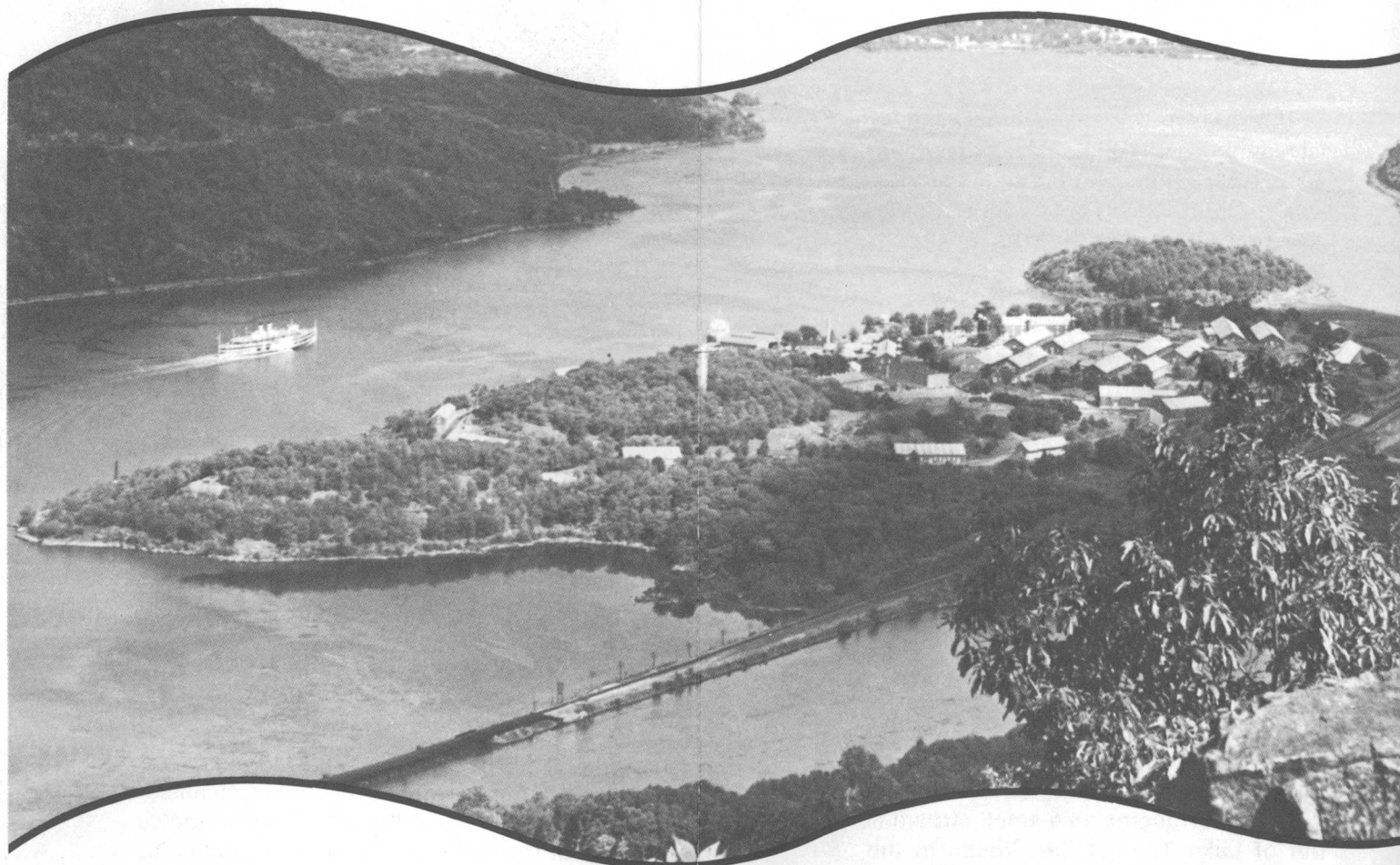


As the Nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering the wisest use of our land and water resources, protecting our fish and wildlife, preserving the environmental and cultural values of our national parks and historical places, and providing for the enjoyment of life through outdoor recreation. The Department assesses our energy and mineral resources and works to assure that their development is in the best interests of all our people. The Department also has a major responsibility for American Indian reservation communities and for people who live in Island Territories under U.S. administration.



## River Basins of the United States:

# The Hudson



## River Basins of the United States: The Hudson

This leaflet, one of a series on the river basins of the United States, contains information on the Hudson River Basin, including a brief early history, a description of the physical characteristics, and other statistical data. At present, other river basins included in the series are The Colorado, The Columbia, The Delaware, The Potomac, and The Wabash.

### Early Exploration and Settlement

The Hudson was discovered in 1524 by Giovanni da Verrazano, an Italian sailor. In 1609, Henry Hudson, an English sea captain working for the Dutch East India Company, was first to explore the river upstream. Indians living on the banks called it "Shatemuc"; Hudson called it "Great River of the Mountains"; his Dutch employers named it officially "River of Prince Mauritius"; later it bore the name "North River"; and eventually was named Hudson after Henry Hudson. The Iroquois, Mohican, Delaware, and Wappinger Indians were the first known inhabitants of the basin. In 1614, Dutch traders built Fort Nassau (near Albany). When it was destroyed in 1617, they constructed a trading center at Fort Orange (now Albany). Colonists were settled in 1624 and about this time the Dutch established New Amsterdam on Manhattan Island.

### Headwaters

The River begins as a small stream flowing out of Lake Tear of the Clouds in the Adirondack Mountains, Essex County, N.Y.



### Mouth

The mouth of the Hudson is in the Upper New York Bay. The approximate latitude is 40°42' N. and the approximate longitude is 74°02' W.

### Major Tributaries

The Mohawk, Schroon, Sacandaga, Hoosic, and Wallkill Rivers; the Schoharie, Kinderhook, and Rondout Creeks are major tributaries of the Hudson.

### Course

From its source 4,322 feet above sea level in the wildest part of the Adirondacks, the river winds more than 100 miles irregularly south-southeast to Corinth, then east to Glens Falls and to the neighboring Hudson Falls. From there it flows 45 miles almost directly south to the head of the tide at the Federal Dam at Troy, 150 miles above its mouth. Below Troy, the river passes through a farming and industrial area and enters colorful Highlands region about 60

miles south of Albany. For 16 miles, it winds through a narrow valley with high and rocky shores of great beauty that is sometimes called the "Rhine of America," because the rocks resemble huge castles on banks of the Rhine. Continuing south, the river is bordered by majestic cliffs, called "Palisades," before it widens into the upper New York Bay at the southern tip of Manhattan Island.

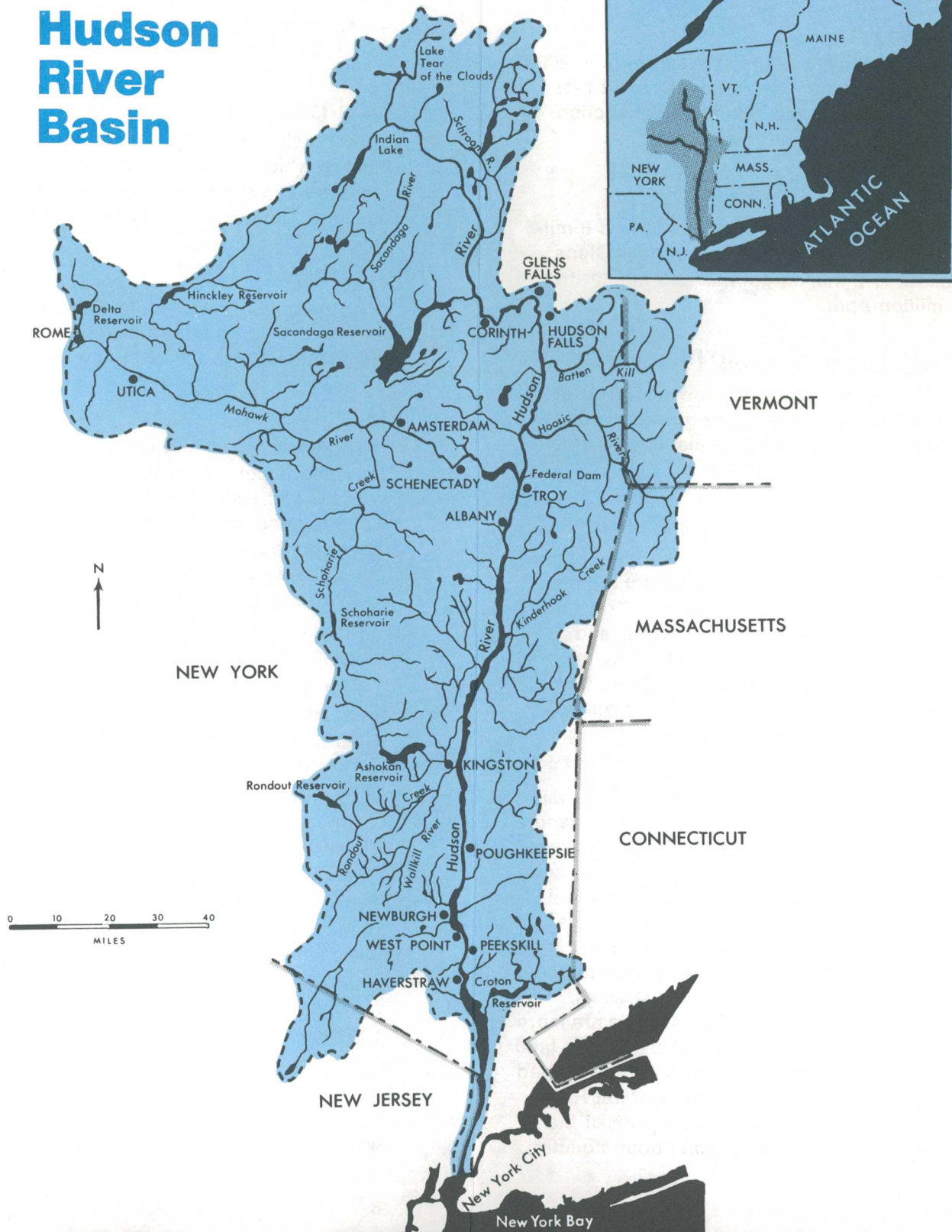
### Length

The Hudson River is approximately 306 miles long, entirely within New York State. It ranks 71st among 135 U.S. rivers that are more than 100 miles long.

### Width

The river is about 3½ miles wide at Haverstraw Bay; it is seldom more than 1,000 feet wide near its midpoint at Troy; and it is approximately 1 mile wide at its mouth.

# Hudson River Basin





## Depth

The deepest point near West Point is 200 feet; a navigable channel depth of 32 feet is maintained in the 143-mile tidal section between Albany and New York City.

## Rate of Flow

Near Troy the river's rate of flow is 6 million gallons per minute (gpm); near Glens Falls it is 2 million gpm; at the mouth it is 9 million gpm.

## Highest and Lowest Flow

The highest recorded flow occurred at Albany in 1913, during the greatest flood since 1846. The lowest annual flow in at least 44 years occurred in 1965.

## Dams, Reservoirs, and Canals

The Croton, Rondout, Ashokan, Schoharie, Sacandaga, Hinckley, Delta, and the Indian Lake Reservoirs' Federal Dam at Troy. Erie Canal is still used between Rome and Albany and Champlain Canal between Albany and Fort Edward near Glens Falls. Both are part of New York Barge Canal.

## Geologic Setting

The Hudson River Basin lies in six physiographic provinces: Piedmont, New England, Valley and Ridge, St. Lawrence, Adirondack, and Appalachian Plateau. The basin has been covered one or more times by continental glaciers, and valleys are floored with deposits of glacial sand, gravel, and clay. The northern part of the basin is densely forested and contains many lakes and streams. Several Adirondack Mountain peaks are more than 5,000 feet high. Below Albany, the land becomes open country except where rugged hills of the Catskills and the Hudson Highlands cut through the valley. South of the Highlands, the basin is again open country,

except along igneous outcrops which form the high cliffs of the Palisades.

## Drainage Area

The basin area is 13,370 square miles, most of which lies within New York State. Small parts extend into Vermont, Massachusetts, Connecticut, and New Jersey.

## Average Rainfall

An average of about 35 to 40 inches of rain falls annually in the northeast to about 50 inches annually in the west and south.

## Quality

The water is fresh in the estuary south of Troy and becomes brackish below Poughkeepsie and saline below Peekskill. The water is generally soft and slightly alkaline. The upper basin requires minimum treatment, but many areas need full treatment because of industrial and municipal pollution.

## Major Cities

Part of the New York City metropolitan area, Newburg, Poughkeepsie, Kingston, Albany, Schenectady, Troy, Glens Falls, Amsterdam, Utica, and Rome are major cities of the Hudson River Basin.

## Municipal and Industrial Water Use

About 3 million people use approximately  $\frac{1}{2}$  billion gallons of surface water each day. About 1 million people on farms, in small towns, and in suburbs use 100 million gallons of ground water each day.

## Commercial Water Use

Shipping in the estuary, barge traffic on the upper Hudson, and hydroelectric power generation are some of the ways in which water from the basin is used commercially.

## Agriculture

Agricultural products which come from the basin are: dairy products, poultry and livestock, general truck farming, specialty fruits and vegetables, and maple sugar and syrup.

## Industry

Industry in the basin includes: textiles and wearing apparel, food and food products, machinery and metal products, transportation equipment, primary metals, and pulp and paper.

## Minerals

Minerals found in the basin are: clays, limestone, sand and gravel, zinc, iron, garnet, and titanium.

## Water Data

The Hydrologic Data Network, maintained by the U.S. Geological Survey in cooperation with the individual States, is the chief source of basic data on water in this country. In cooperation with other agencies, the U.S. Geological Survey maintains 16,500 gaging stations that measure high and low flow of rivers, lakes, and streams; 27,500 observation wells that collect data on levels and pumpage of ground water; and 8,200 stations that measure water quality.

This publication is one of a series of general interest publications prepared by the U.S. Geological Survey to provide information about the earth sciences, natural resources, and the environment. To obtain a catalog of additional titles in the series "Popular Publications of the U.S. Geological Survey," write:

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