

The Hudson River Estuary



ABOUT

The Hudson River Estuary stretches from Troy, New York, south 246 kilometers (153 miles) to the New York Harbor, where it empties into the Atlantic Ocean. It is a tidal estuary, meaning it is under the influence of ocean tides. Tides are the movement of ocean water due to the gravitational pull of the moon and sun. Salt water from the ocean mixes with freshwater from inland sources. This mixing circulates nutrients and oxygen along the estuary, which helps sustain organisms living in the river. The region supports a diverse ecosystem with a variety of fish, birds, and mammals.

HUMAN IMPACTS

Throughout the past century, industry and urban sprawl have changed the shape of the land surrounding the Hudson River Estuary. One of the most notable impacts came from General Electric. Between 1947 and 1977, two of the company's plants located north of Albany, New York, dumped 0.6 million kilograms (1.3 million pounds) of polychlorinated biphenyls (PCBs)—a possible human carcinogen formerly used in many products—into the Hudson River. Other activities have also left chemicals, garbage, and sewage behind. The legacy of contamination is far from over. Runoff from rain and storm surge is enough to wash pollutants from many locations back into the river. These concerns have become amplified as the climate warms and storms intensify.

IMPACTS TO WILDLIFE

PCBs are chemicals that were once used in various products, especially electrical equipment. In humans, the compound is thought to cause cancer. It is also harmful to animals. PCBs accumulate in the bodies of fish when they eat contaminated insects or smaller fish and are passed along the food web. In addition to fish, PCBs also affect turtles, frogs, birds, and small mammals. Even in low concentrations, PCBs are dangerous to animals. They can affect the health of animals by disrupting normal immune function and by affecting the reproductive, nervous, and endocrine systems. Between 2009 and 2015, because of a decree from the Environmental Protection Agency, General Electric cleaned a portion of the upper Hudson by removing sediment contaminated with PCBs. Unfortunately, a 2018 study conducted by New York's Department of Environmental Conservation reported that there were still unsafe levels of PCBs in fish.

MAPPING

Create a map that shows the Hudson River Estuary and its watershed. Mark the states that impact the estuary and any major cities. Use Google Earth to explore the satellite image of the region. What signs of human impact do you see? These might include a wall or fence, lights, active construction, roads, traffic, human settlements (towns, houses/buildings). Determine which human impacts exist in this area and add these to your map. Make sure to include a key on your map so that people looking at your map will know what your symbols and lines mean.