



ACTIVITY 1

ACTIVITY OVERVIEW

Geography of the Chesapeake Bay

Activity Description

Students will identify the states, the rivers, and the location of their homes on a map of the Chesapeake Bay watershed. They will create a diagram to illustrate the difference between groundwater and runoff.

Materials

Locate the Chesapeake Bay Watershed

- Student worksheet

Map the Rivers

- Student worksheet
- Atlas or map of mid-Atlantic states

Groundwater vs. Runoff

- Student worksheet

Teacher Background

See the Student Reading on page 4.

STUDENT READING

The Chesapeake Bay

At the end of the last Ice Age the land around the Chesapeake Bay was covered with forests. The trees were mostly evergreens (fir, spruce, and hemlock). There were lush meadows and marshes on what is now the Chesapeake Bay. Large plant-eating mammals roamed the area. Bison, moose, elk, elephant-like mammoths, and mastodons were among them. These animals either died out or moved north as the climate changed. Fossil bones and teeth have been found on the bottom of the Bay and shoreline to prove this.

As the Susquehanna River Valley became flooded, it formed an estuary. An estuary is a somewhat closed body of water where fresh water mixes with salt water. An estuary opens into the ocean, which is the source of the salt water. The fresh water comes from rain or snow that falls onto the land and then drains away in streams, or it comes from springs that bring groundwater to the surface. Both join to form rivers that flow into the estuary.

Delaware and the eastern parts of Maryland and Virginia enclose the Chesapeake Bay. On the western side are rolling hills and, farther away, the Appalachian Mountains. The Bay opens into the Atlantic Ocean in southern Virginia. The fresh water for the Bay comes from many rivers, which drain about 64,000 square miles, spread over six states. The land that drains into the Chesapeake is called its watershed. Anything that gets into the water anyplace in the watershed of the Chesapeake Bay can eventually end up in the Bay.

Two things may happen to rain and snow that fall on the Chesapeake Bay watershed. Some of the water runs over the land directly into streams and rivers and is called runoff. The rest of the water soaks into the soil and moves down through rock and soil until it reaches the

groundwater where the spaces in the rock layers are full of water. When the groundwater meets the surface of the earth, the water runs out as springs, which also flow into streams and eventually into the Bay. People tap into the groundwater when they drill wells for their homes.

Both runoff and groundwater pick up sediments and natural chemicals or nutrients from the soil that dissolve into the water. Streams and rivers carry it all into the Bay. Farming and the rapid growth of cities and suburbs have caused an abundance of nutrients and sediment to run off into streams and rivers and end up in the Chesapeake Bay

How does this impact the Bay? Algae grow and sediment clouds the water. Sunlight is not able to reach the underwater grass beds (SAV's = submerged aquatic vegetation) where Bay creatures find food and shelter. The beds disappear, and animals lose valuable habitat. In 1983, key states in the Bay watershed joined together to reduce sediment and nutrients in runoff and restore the Chesapeake Bay.

Chesapeake Bay Fun Facts

- The Chesapeake Bay is North America's largest estuary and the world's third largest.
- The watershed is home to approximately 15 million people and is expected to increase by 2.6 million persons by 2020.
- The Bay supports 2,700 species of plant and animal life, including 200 species of fish.
- From north to south the Bay is 195 miles long.
- The narrowest point of the Bay is four miles wide near Annapolis. The widest point is 30 miles wide.
- The Bay has an average depth of 21 feet.
- The deepest 'hole' in the Bay is 174 feet deep.