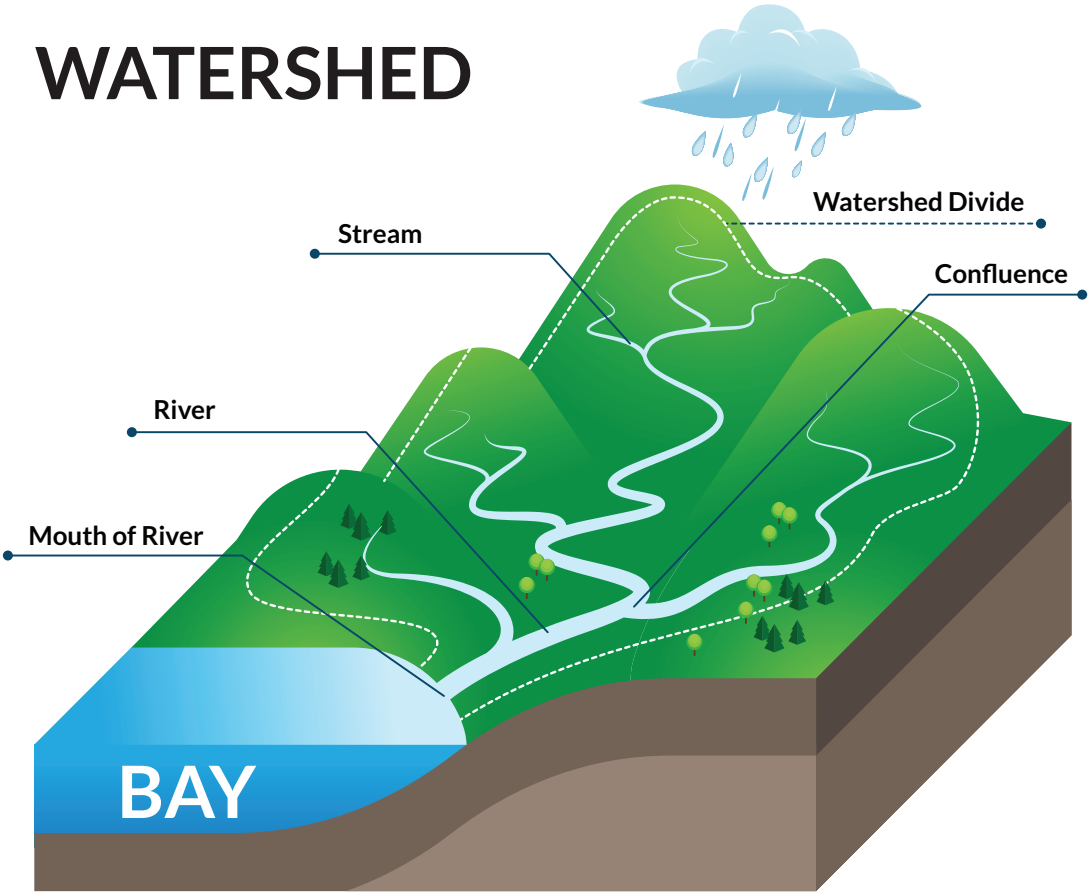
WATERSHEDS:

How does the land affect the water?

To help prepare for this investigation, watch the video *The Watershed Journey of a Raindrop.*
cbf.org/news-media/multimedia/video/cbf-education-videos/the-watershed-journey-of-a-raindrop.html

Introduction

Watersheds are areas of land that drain into a particular body of water. High points in the land, typically mountain ranges, mark the edge of a watershed. Rain that falls within the boundaries flows to the lowest point. Eventually, all the rain water in our watershed collects in the Bay.



Water moving through a watershed does not remain pure. As water falls through the air (in the form of precipitation) and flows across the land, it picks up pollutants. Our watershed naturally tries to slow water down, spread it out, and allow the earth to filter it. Unfortunately, in the modern world, water is piped and flushed away from homes, businesses, and farms as fast as possible. Continuing to pollute and limiting water's access to natural filters worsens water quality. The key to protecting our waterways is to first, reduce pollution overall; second, slow the water down so the land can filter it; and third, provide plenty of natural and manmade filters for water to pass through along its journey.

DIVE DEEPER:

❑ **Learn More: Chesapeake Bay Program**
Chesapeake Bay Program

❑ **Check Out Some Watershed Maps**
U.S. Geological Survey

❑ **Explore How to Reduce Runoff**
Alliance for the Chesapeake

Take It Further

From your window or yard, draw or take a photo of three things that might harm or hurt waterways. Be sure to explain your reasoning.

Build a Model

Using aluminum foil, build a watershed on a cookie sheet. Include parts of your community in your model (schools, a grocery store, a farm, a factory). Use sprinkles, cocoa powder, Jell-O mix, soy sauce, and other items to represent pollutants. Use fabric, tape, or other materials to represent fields, forests, and other habitats. Once your watershed model is complete, simulate a rainstorm by pouring water over the model. You can see an example here.

Map It

Using any mapping application, find your location. Consider the different types of land use in your community. Identify three things that might harm your community's water quality.

Has your community made any efforts to improve water quality for your immediate area and for everyone downstream?

Check for Understanding

1. What is a watershed?

2. How many states are in the Chesapeake Bay watershed?

   Are there parts of your state that are not in the Chesapeake Bay watershed?

   Bonus: Where does that water go?

3. What geographic features create the Chesapeake Bay watershed boundary?

   What is the name of the geographic feature that makes up the western border of the watershed?

   Bonus: What is the western boundary of the Mississippi watershed?

4. What are some sources of pollution in our watershed?

   What are some habitats or critters that help filter water in our watershed?

   Bonus: What natural water filters exist in your community?

What is a watershed?

A watershed is all of the land whose water and rainfall will eventually drain into a particular river, lake, bay, or other body of water.

The Chesapeake Bay watershed is 64,000 square miles and has 11,600 miles of tidal shoreline, including tidal wetlands and islands. The watershed encompasses parts of six states: Delaware, Maryland, New York, Pennsylvania, Virginia, and West Virginia, as well as Washington D.C. Approximately 18 million people live in the watershed; about 10 million people live along its shores or near them.

THE CHESAPEAKE BAY WATERSHED

Natural History

Formed about 12,000 years ago as glaciers melted and flooded the Susquehanna River valley, the Chesapeake Bay is North America's largest estuary and the world's third largest. An estuary is a semi-enclosed area where freshwater from rivers and streams mixes with saltwater from the ocean to form brackish water.

Fifty major tributaries pour water into the Chesapeake every day. The Susquehanna River alone drains 42 percent of the Bay watershed. There are more than 100,000 miles of streams, creeks, and rivers in the Chesapeake Bay watershed.

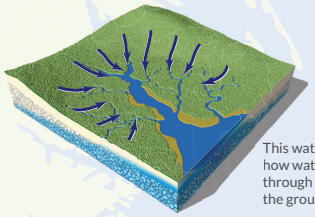
Even though we all don't live along the shores of the Bay, virtually everyone in the watershed lives within a 15 minute walk to a stream or river that flows into it.

Fragile Habitat

The Chesapeake Bay is shallow. Nearly 200 miles long and 20 miles wide, the Bay only averages 21 feet deep. As a result there are large shallow areas where sunlight can penetrate to the bottom creating ideal places for underwater grasses to grow. Underwater grasses make excellent spawning and nursery grounds for many Bay animals. The Bay supports 3,600 species of plant and animal life, including more than 300 fish species and 2,700 plant types.

Unfortunately, being so shallow also means the Chesapeake Bay holds a relatively small volume of water, limiting its ability to dilute pollutants.

The main sources of these pollutants include sewage, runoff from urban and suburban areas, commercial agriculture, and air pollution from automobiles, factories, and power plants. What we do on the land affects water quality for all communities living downstream.



This watershed model shows how water moves downhill through streams, rivers, and the ground toward the Bay.

CHESAPEAKE BAY FOUNDATION
Saving a National Treasure