

Over 13 million people live, work, and play there. One way or another, pollutants from all of these people wind up in the bay's waters.

So, what if a homeowner in the Chesapeake area overfertilizes his or her lawn? That extra fertilizer eventually washes into the Chesapeake Bay. The same goes for the road salt used after a snow storm. And what about the acid rain caused by industry, homes, and cars? Where do you think it goes?

What Is a Watershed?

An area of land whose waters all drain into the same place is a **watershed**. You could think of your terrarium as the watershed for your aquarium. The Chesapeake Bay's watershed is huge. As you can see from the map, it drains water from six states (Maryland, Delaware, Pennsylvania, Virginia, West Virginia, and New York) and the District of Columbia. It covers 64,000 square miles between Vermont and North Carolina.

It's All Downhill

Think about this. The land in this watershed slopes toward the bay the way the inside of a bathtub slopes toward its drain. So, much of the water that runs off this land flows down the slope, toward the bay. Just imagine industrial waste pouring out of Baltimore's factories, puddles of motor oil on the highway, extra fertilizer and pesticides from lawns in Virginia and Delaware, muddy runoff from construction sites in Maryland, acid runoff from mines in West Virginia, cow manure from Pennsylvania dairy farms, and sewage from 13 million people's toilets. Sooner or later, it all flows toward the bay.

With all this human-made pollution, no wonder the bay is in trouble.

A Problem: Too Much Goes into the Bay, Too Much Comes Out

The ecological problem in the Chesapeake Bay has two main causes: people are putting too many pollutants into the bay; and people

are "overharvesting," or taking too much seafood out of the bay.

Let's take a closer look at each cause. How does each affect the bay and all the living things in it?

Too Many Pollutants

From your team's ecocolumns, you know that pollutants in an ecosystem can set off a chain of events. For example, what happens when pollution kills plants? You may also have predicted that if there were animals in your team's ecocolumns, the animals—who depended on those plants—would have starved. This has happened in the Chesapeake.

Too many nutrients from human sewage, cow manure, and fertilizer are overloading the bay. This causes **algae blooms**. Too many algae cloud the water and keep light from reaching the grass below. What's the result? Underwater grass beds are dying fast.

The Importance of Grass

The grass beds are essential to the bay's health. When nutrients wash in, the grasses take them in and use them to grow. Also, the roots of the grasses help hold down the bay's muddy bottom. That way, mud doesn't get stirred up, cloud the water, and block the sunlight.

Grass beds near the shoreline help absorb the pounding of the waves. This helps keep the soil there from washing away. When the grass beds do their job, the water stays clearer, sunlight pours in, and other aquatic plants thrive.

Animals need underwater grasses, too. Ducks, geese, swans, snails, isopods, worms, muskrats, beavers, sea slugs, and other animals of the bay depend on the grasses for food. In the bay's grass beds, baby fish, shrimp, crabs, seahorses, and even turtles stay safe. What will happen to these animals if the grass beds disappear?