

Module 10: Resources and Virginia Geology


Topic 5 Content: Pollution in the Chesapeake Bay Notes

Introduction

Pollution in the Chesapeake Bay

- Runoff
- Nutrient Pollution
- Sediment Pollution
- Decline in SAV
- Toxins
- Invasive Species

Introduction



Pollution is having a major impact on the health of the Chesapeake Bay. In this activity, click each of the tabs to learn about the different sources of pollution affecting the Chesapeake Bay.

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Runoff

Pollution in the Chesapeake Bay

Runoff

Runoff



All of the water that runs along the Earth's surface either soaks into the ground or runs along the surface until it reaches rivers and streams. Water that flows along the surface of the ground is called runoff. Runoff water can pick up material that it passes over. This includes fertilizer, animal manure, oil, or litter. This polluted water can then end up in rivers and streams.

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Nutrient Pollution

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Nutrient Pollution



The worst environmental problem facing the Chesapeake Bay today is nutrient pollution. Nutrients are carried into the water by runoff, or by discharge from sewage treatment plants. The main nutrients, nitrogen and phosphorus, are found in soaps, detergents, fertilizers. They are also found in human sewage and animal wastes, particularly from poultry farming. When nutrients are used properly, they help plants grow. Unfortunately, fertilizer intended for lawn and farmland use runs into the storm drains or directly into the water. Sewage treatment plants also release nutrient-rich water into local waterways.

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Sediment Pollution

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Sediment Pollution

Much of the land around the Chesapeake Bay is agricultural. As farmers plow the land, the soil can blow or wash into the water. The soil remains suspended in the water for a period of time. It blocks the sunlight from reaching the plants and animals at the bottom and may even completely cover some bottom grasses. Sediment pollution kills these plants and animals from lack of sunlight. The image shows sediment pollution after a tropical storm produced heavy rains over a period of several days.



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Decline in SAV

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Decline in SAV



SAV stands for submerged aquatic vegetation. This includes all of the plants that grow on the bottom of the Chesapeake Bay. These important plants filter polluted runoff while providing habitats for many species of organisms. SAVs are an important indicator of aquatic health. There are several different important SAV species in the Bay, including eel grass, widgeon grass, and wild celery. Different types of plants grow in different levels of

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Toxins

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Toxins



Toxic chemicals continually enter the Chesapeake Bay and affect the plant and animal species that live there. Some of these chemicals come from factories that are found along the shoreline or along the rivers that feed into the Chesapeake Bay. Some chemicals may come from paint and other materials that are used on boats.

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Invasive Species

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Invasive Species



Sometimes, a species of animal or plant will end up outside of its natural habitat. These are called non-native, or invasive, species. Zebra mussels were first introduced into the Great Lakes when a European ship released water into the lakes that contained zebra mussels. They quickly spread throughout the United States, including into the Chesapeake Bay, where they grew so quickly they began to displace the native species of oysters. Phragmites, the type of marsh plant shown in the image, is another invasive species causing serious harm to the Chesapeake Bay by replacing natural grasses that provide better

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