Forest Facts

TREES PROTECT WATER

You probably know that trees do lots of great things: they make oxygen; they shade us from the summer sun; they provide homes for songbirds; they give us fruit and lumber, and they make our yards more beautiful. But did you know that trees also play a role in keeping our water clean and healthy? To understand how this happens, we need to understand a tree's relationship to the land and water.

UNDERSTANDING WATERSHEDS

Water runs downhill and collects at the lowest point – a stream or other body of water. A watershed is land that drains into one particular body of water. Everyone lives in a watershed. Even if you live far from water, much of the rain that falls on your land eventually makes its way to a stream.

You might be surprised at how far "your" water travels once it enters a stream. Small streams usually flow into larger ones, and these flow into larger rivers. Eventually, a large river empties into a much larger body of water, such as an ocean, gulf or estuary (a place where salt and fresh water mix). Thus, a small stream watershed in Virginia is also part of a larger river watershed, which in turn is part of the watershed for a much larger body of water.

QUESTION:

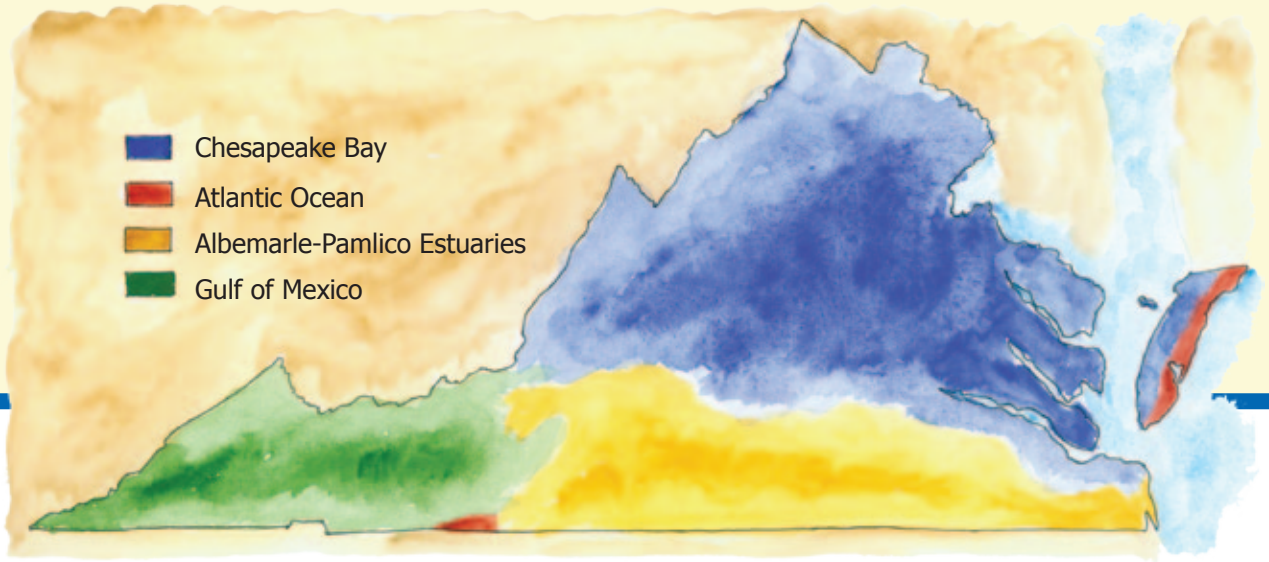
Which watershed do you live in?

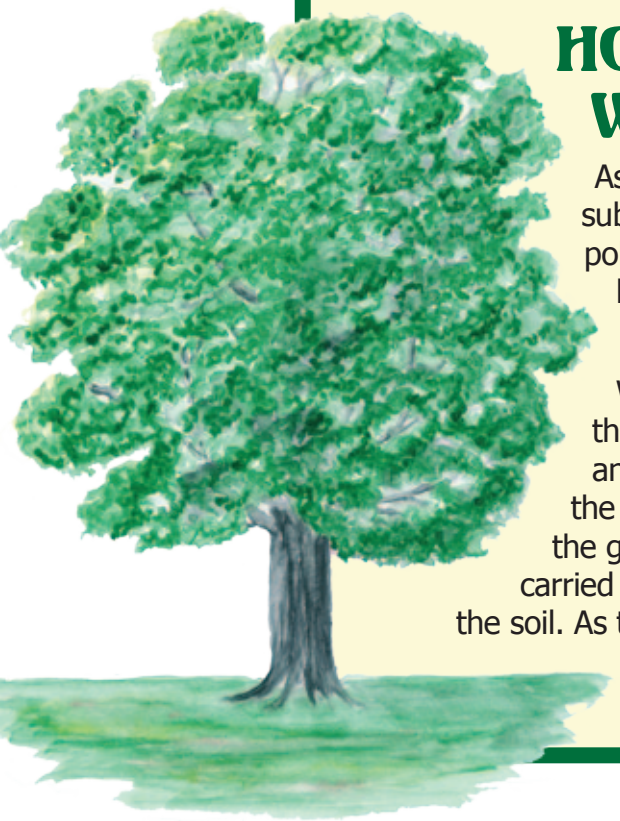
ANSWER:

Visit http://cfpub.epa.gov/surf/locate/index.cfm and type in your zip code to find your watershed.

SPOTLIGHT ON THE CHESAPEAKE BAY WATERSHED

The map shows where Virginia's streams complete their watershed journeys. As you can see from the map, much of Virginia is in the Chesapeake Bay watershed. Parts of six states make up this watershed, and over 16 million people live within it. The Chesapeake Bay is the largest estuary in all of North America! Many species of wildlife live in the Bay and its surrounding wetlands. Young fish and crustaceans find the food and shelter they need in its marshes and tidal creeks. Waterfowl, such as ducks and geese, spend the winter feeding in shallow Bay waters. People use the Bay for recreation, and some earn a living by catching fish and shellfish there. Because so much life depends on the Bay, keeping it clean and healthy is very important. Virginia's forests play a big part in protecting the health of the Chesapeake Bay.



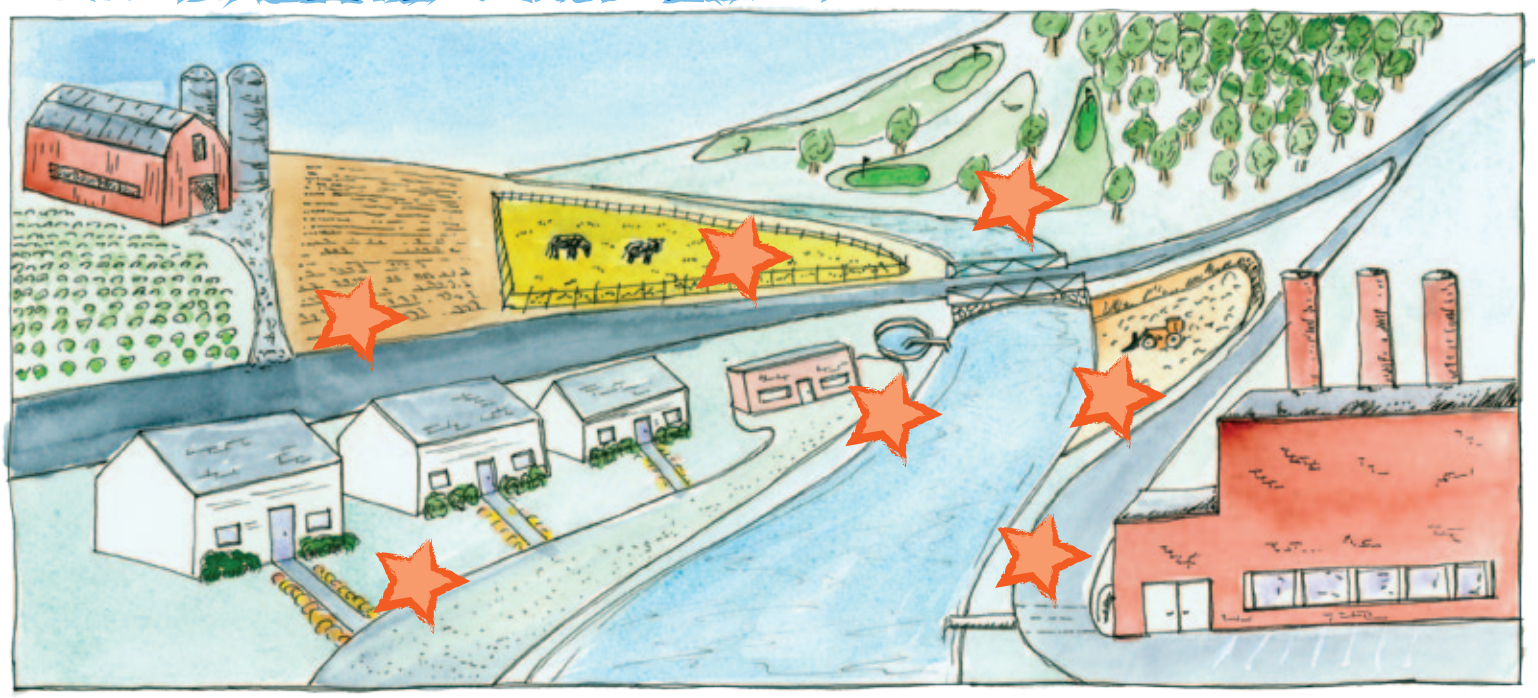


HOW DO TREES PROTECT WATERSHEDS?

As water moves across the landscape, it can pick up pollutants – substances that do not belong in a healthy stream. Examples of pollutants include fertilizers from farm fields, pesticides from home lawns, oil and chemicals from roadways and parking lots, and even soil from new construction sites.

Watersheds with lots of trees have some natural protection from these harmful substances. Heavy rains are less likely to disturb and carry away soil in a forested watershed. This is because the raindrops slow down when they hit tree leaves and drip to the ground. The trees also act as filters for many of the pollutants carried in water. Tree roots absorb much of the water as it sinks into the soil. As trees use water, they remove pollutants before releasing water back into the air. Fortunately, almost two thirds of Virginia's land is forested – that is, covered by trees.

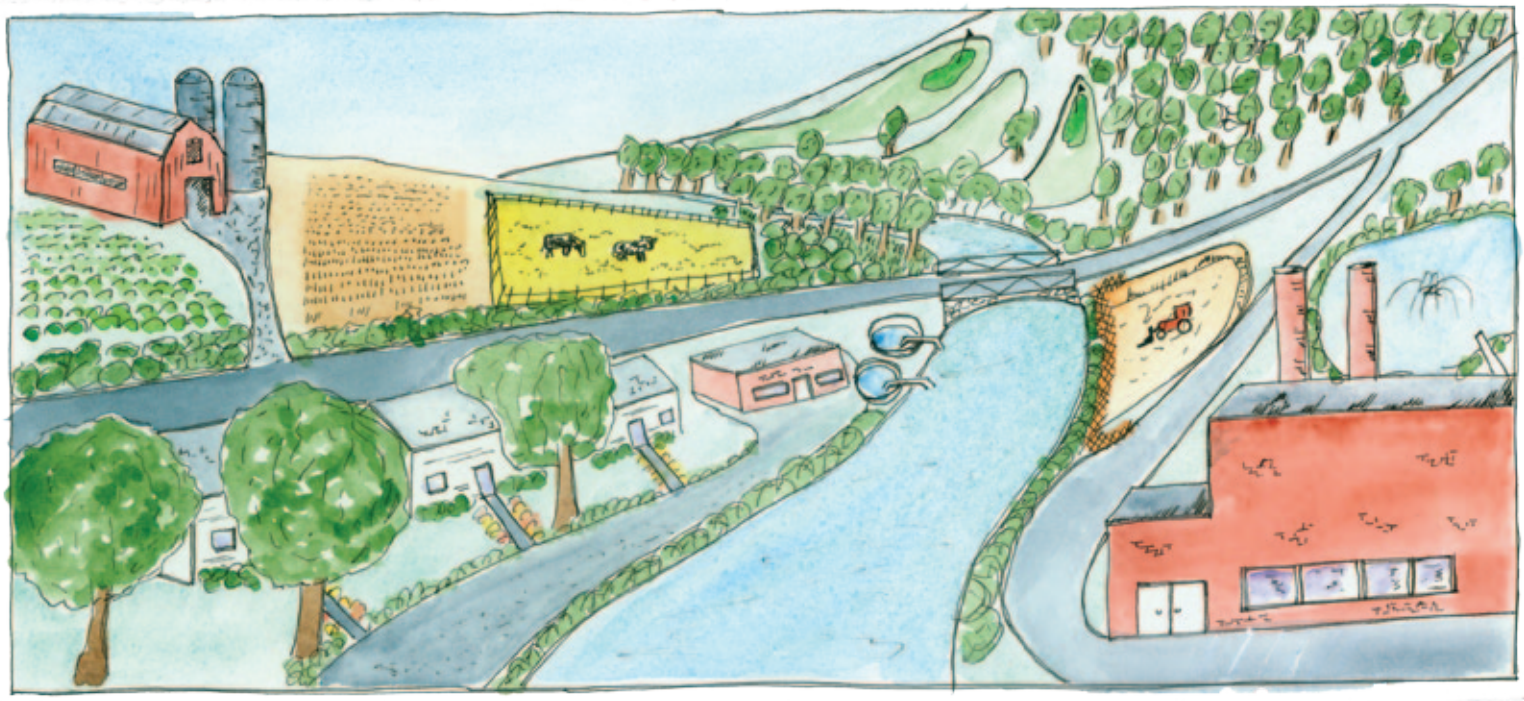
BEFORE



CAN YOU SPOT THE CHANGES?

The **Before** picture shows many activities and land-use practices that can pollute water. The **After** picture shows a landscape that protects water quality. Look at the areas with orange stars to see the improvements this community made. (For a hint, think green!) What other differences do you notice between the two pictures?

AFTER



IN THE ZONE

Trees are especially important in the area right next to a stream or other body of water. This area is called a riparian zone. Trees and other plants growing along the water protect the stream from human activities that could harm it. These activities include building, farming and logging. If good practices are not followed, these activities can be sources of water pollution.

Trees in the riparian zone provide many benefits to the environment:

- Shading keeps water cool. Cool water holds more oxygen for fish and other animals, such as insects, mussels and other invertebrates.
- Leaves and other organic matter dropped by the trees provide both food and shelter for many creatures that live in the stream.
- Tree roots hold soil in place, keeping the bank from washing away and keeping sediment out of the water.
- Tree roots absorb excess water and may protect nearby areas from flooding.
- Along with water, tree roots may absorb pollutants dissolved in the water, keeping many of these pollutants out of the stream.
- Riparian forests provide habitat for wildlife, as well as travel lanes for wildlife to move from place to place.
- Forests provide beautiful scenery and places for people to hike and enjoy other kinds of recreation.

PLANT A TREE!

Could your yard, school or neighborhood use more trees? Find out if you can plant some. Garden centers are sometimes willing to donate trees for kids' planting projects. You can get information about planting and caring for trees from this website: http://www.dof.virginia.gov/mgt/trees-101.htm. The more trees we have in our watersheds, the healthier our water will be. And we all need clean water!

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To see how much you learned, check out the crossword puzzle at www.dof.virginia.gov/edu/resources/puzzle_Trees-Protect-Water.pdf.