

BACKGROUND

WATERSHEDS AND FORESTS

No matter where you live, you live in a **watershed**. A watershed is all the land area that drains water into a common stream, river, wetland, lake, or ocean. It can be as small as a few acres or as large as millions of square miles.

Watersheds are important because they collect the freshwater that people and other living things need to survive. The United States uses more than 322 billion gallons of water per day from watersheds. Most of that water (76%) is from **surface water** that collects on the Earth's surface in streams, rivers, or lakes. The rest (24%) is from **groundwater**, water that accumulates in underground **aquifers** and supplies springs and wells.

Watersheds are home to forests and other natural **vegetation**, which provide a wide range of **ecosystem services** that benefit all forms of life. Such services include generating and renewing soil; managing nutrients and wastes; providing critical habitat for fish and wildlife; providing food, fuel, and building materials; maintaining **biodiversity**; and regulating climate.

One of the most important ecosystem services that forests provide is helping to maintain high-quality freshwater supplies. Forests absorb rainfall, cool and filter water, reduce flooding, refill underground aquifers, and slow storm **runoff**, all of which are vital to clean water.

Forests supply high-quality drinking water partly because forest vegetation has many different layers, including trees, shrubs, and smaller plants. This vegetation provides surface area that collects and slows the flow of water. During storms, as much as 25% of the rainwater clings to branches, leaves, and twigs. Rainfall also collects and forms puddles in depressions on the ground. This collected water can then **evaporate** or filter slowly to recharge lakes, rivers, streams, and aquifers.

In contrast with forests, most parking lots, roads, and rooftops do not store rainfall. These structures can channel water in concentrated runoff that quickly flows into rivers and streams, potentially causing erosion and flooding. Forest loss leads to reduced water quality when the land can no longer regulate the movement of water across the landscape, thus changing the water flow and increasing **sediment**.



FOREST FACT

Healthy forests are vital to clean and abundant supplies of water. The USDA Forest Service estimates that 180 million people in over 68,000 communities rely on forested lands to capture and filter their drinking water. Although forested lands make up only 30% of the total U.S. land area, they provide nearly 50% of the nation's surface drinking water supply.

REFLECTION QUESTIONS

1. What is a watershed?
2. In what ways are forests and watersheds connected?
3. How do forests help provide clean drinking water?