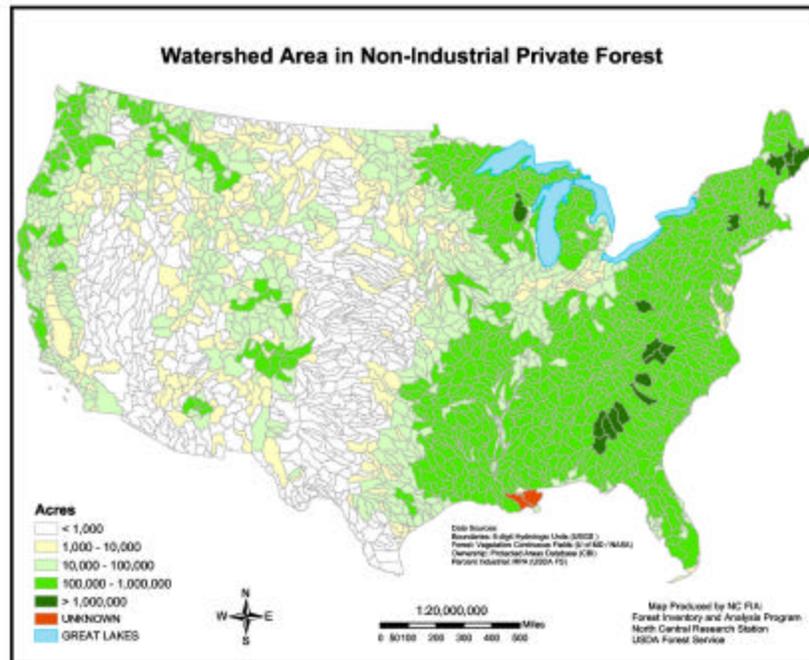


## Forests & the Environment

*Forests are essential  
to clean water –  
our most precious natural resource*



*About two-thirds of the nation's scarce water resource originates on forests which cover about one-third of the nation's land area.*

Healthy watersheds are the basic building blocks of sound natural resource stewardship. Without healthy watersheds, habitat deteriorates for all living things, including people. Forests play a critical role in watershed health; however, the link between forests, watershed condition, and water quality and quantity is often not recognized.

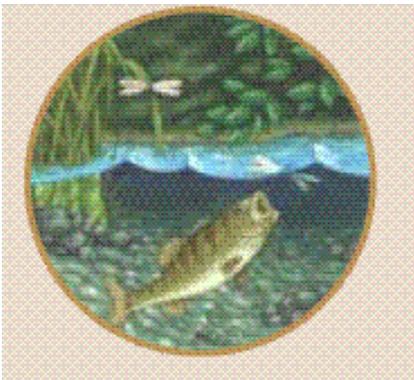
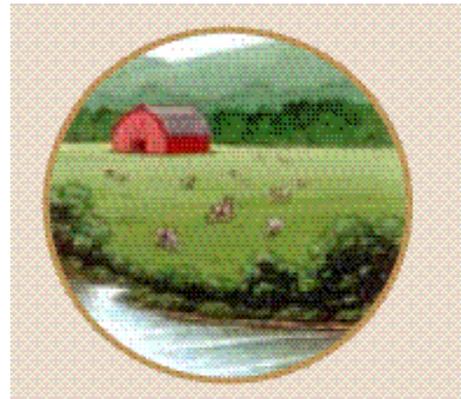
## Forests: A Critical Component of the Watershed



**WATER FLOW:** A dense forest can intercept up to 25% of rainfall by its leaves and branches; this slows the speed at which the rain hits the ground, reduces erosion, and allows precipitation to seep into the soil - nourishing plants and replenishing groundwater. During heavy rainstorms, the highly absorbent forest floor intercepts runoff and reduces flooding. In dry periods, rainfall that soaked into the soil and entered the groundwater table is released to streams to maintain a steady flow. A Chesapeake Bay area study

<http://www.americanforests.org/resources/urbanforests/analysis.php> } found a 24% decrease in forest cover during the years 1973-1997 resulting in a 19% increase in runoff. The cost of treatment systems to intercept this additional runoff is estimated at \$1.08 billion.

**WATER QUALITY:** Rainfall picks up sediments, pesticides and fertilizers from lawns and farms. It collects metals, oils, and gasoline from roadways and pollutants from the air. Precipitation can then quickly transport these pollutants directly into streams. A forest buffer strip planted along streams and lakes can help filter out pollutants before they enter waterways. Research studies have shown that forest buffers can actually reduce fertilizer, pesticide, and sediment runoff into our streams by as much as 90%.



**WILDLIFE HABITAT:** Streamside forests are a source of food and shelter for aquatic and other wildlife. Branches falling into a stream provide an important fish habitat. Insects falling from trees and plant leaves provide food. In the summer, shade from the forest canopy helps maintain the cooler stream temperature that trout and other aquatic organisms require. In addition, tree roots bind the soil in stream banks to promote stream channel stability and permanence of habitat structures.

**AIR QUALITY:** By using carbon dioxide in the photosynthesis process and storing carbon in its leaves and woody matter, trees remove large amounts of one of the major greenhouse gases. Ongoing studies indicate that trees planted in strategic locations can be an effective tool in managing industrial and livestock odors and can reduce vehicle road noise by as much as half. Through the evaporation process and the effect of shading, trees can lower daytime temperature conserving energy thus decreasing power plant emissions. Trees absorb small particulates reducing pollution levels.

