

FORESTS CLEAN, STORE, REGULATE WATER Terry L. Maddox

**Huntingdon County Extension Director** Forests are important to our wa-

ter supply. They not only receive rain and snow in upland regions, but also store and clean the water as it infiltrates the forest soil.

Forest soils act much like a blotter by filtering microscopic organisms from the water. In fact, the closer natural water is to the forest, the cleaner it is, which explains why municipal reservoirs are located as close as possible to the forest, collecting water at its cleanest point.

The forest also regulates the flow of water. Thanks to trees and woody vegetation, the forest floor becomes an enormous sponge, typically absorbing up to 18 inches of precipitation before gradually releasing it into natural channels and watercourses.

In this way, forests slow the volume of rainwater discharged into streams and rivers immediately after a rainstorm or snowfall. That reduces the harmful "peak" discharge which causes erosion and sedimentation.

Not all watersheds are forested. Any higher elevation land that feeds water into creeks and streams is a watershed. But pasture or farmland watersheds don't rlean, store, and regulate water as

well as forest soils.

Picture the difference between watering your lawn and watering your sidewalk, and you get some idea of the advantages of forested watersheds. Your lawn slowly absorbs the water and holds it as needed; your sidewalk sheds the water in torrents. Much like your lawn, a forest will supply an even flow of water, even in a dry climate with relatively little rainfall. Without the forest, the water would flow all at once after the rain.

Forested watersheds can be as small as the valley enveloping a mountain stream or as large as the Mississippi Valley watershed, which covers much of the middle third of the United States. But whether a watershed is small or large, they all have one advantage: they can be managed to regulate water supply.

By removing small blocks of trees, for example, forest managers can reduce the amount of precipitation used by the trees themselves. This allows more water to pass directly into the forest floor and eventually into streams, rivers, and reservoirs.

Foresters can also build a forest that is relatively water efficient. By planting hardwood trees, which use less water than evergreens, foresters can assure that more water will leave the forest and flow to populated areas badly in need of it.

Foresters can also manage a watershed to influence the timing of water flows. For example, by harvesting trees on a south slope of a hill instead of a north slope, foresters can actually increase stream flow in the early spring and decrease flows in late summer. Sounds lilke hocus pocus? Well, it's really quite logical. Because the sun shines brightest on southfacing slopes, removing trees there exposes the snow to direct sunlight and allows it to melt faster than it otherwise would.

Forestry and watershed management have been intertwined disciplines since as far back as 1500 B.C., when the Chinese altered their forests to regulate stream flow onto irrigated fields.

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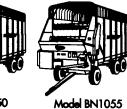
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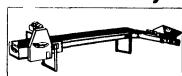
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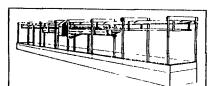
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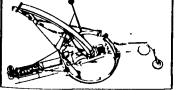
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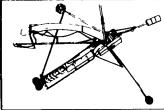
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