



United States Department of Agriculture

**Forest Service**

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# Hoosier NF Highlights

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## The Value of Forests and Ecosystems



By Gary Dinkel, Ecosystem Program Manager

Vital to our health and well-being, forests create a livable atmosphere, filter our water, and support biodiversity. They also form the foundation of many rural U.S. economies, providing jobs and significant revenue for families and communities as well as contribute to local and state tax coffers. We depend on forests and their ecosystems to provide us with a host of “services.” But these essential natural forest benefits are often overlooked.

Forest products contribute over 9 billion dollars annually to Indiana’s economy. Forest based manufacturing in Indiana provided employment for over 54,000 people and a payroll of over 1.4 billion dollars annually.

In addition to lumber and other saleable forest products, many of the goods and services delivered by forests, traditionally are viewed as free benefits to society, or “public goods.” These services include clean air and water, carbon sequestration, nutrient cycling, wildlife habitat, bio-diversity, recreation, traditional cultural uses and scenery.

Trees clean our air by intercepting airborne particles and absorbing ground level ozone, carbon monoxide, nitrogen oxides, sulfur dioxide and other greenhouse gases. A single tree can absorb 10 pounds of air pollutants a year. One acre of forest annually sequesters, or absorbs, six tons of carbon dioxide, storing it as biomass, and producing 4 tons of oxygen. Carbon sequestration in forests and wood products helps offset carbon dioxide in the atmosphere, from fossil fuel emissions, forest fires, and deforestation. This reduces the level of carbon dioxide in our air.

Sustainable forestry practices can increase the ability of forests to absorb atmospheric carbon while enhancing other ecosystem services such as improved soil and water quality. Improving forest health through thinning and prescribed burning will increase forest carbon storage in the long run. Harvesting and regenerating forests can also result in increased carbon sequestration in wood products and new forest growth.

Forests provide natural filtration and storage of water. Forest vegetation absorbs and filters rain water and snow melt improving aquifer recharge and slowing runoff during rainstorms, reducing soil erosion and pollutants that enter our streams. Trees along streams provide shade to cool the water and plant roots stabilize the banks.

Many species of wildlife depend on forested communities for part or all of their habitat needs. These species also provide recreational opportunities for viewing or hunting. Recreational, spiritual, and traditional cultural uses of forested ecosystems are numerous and have been the subject of many past Forest columns. Studies have also shown that time in the forest can reduce stress, and views of trees can speed the recovery for surgical patients.

Trees and forests provide numerous important services other than wood fiber. These are often perceived to be free and limitless. These public benefits are taken for granted since these services lack formal markets and are traditionally absent from society's balance sheet. As a result, their critical contributions are overlooked in public, corporate, and individual decision making.

Growing human needs and demands have led to greater global consumption of natural resources and the conversion of private forest land to urban uses. The loss of forests to housing and other development is expected to continue. The loss or decline of forests harms our economy, public health, and well-being. Forests that are healthy and capable of adapting to change will continue to be undervalued without public recognition of the important ecosystem services they provide.

For more information on the value of forests and their ecosystems, contact Gary Dinkel at [gdinkel@fs.fed.us](mailto:gdinkel@fs.fed.us) or call 812-547-9237.



Roots of sycamore trees hold the bank firm and prevent erosion in this dry creek bed.



Beaver have knawed this tree and made a den in the background off the backwaters of Monroe Lake.



Hoosier employee Rod Fahl stands next to a 38-inch diameter tree cut on the Forest.



Forest employees plant saplings on a new acquisition on the Forest.