



FORESTRY

Maryland Forests

Providing More Than Just Wood and Recreation

By Ann Hairston-Strang

Forests and water are the bread-and-butter of nature's services. A crucial first step in generating clean water without expensive treatment are forests: Forest canopies moderate hard rainfall, their litter protects the soil surface, their soils develop good porosity so rainfall soaks in quickly, and forest buffers filter nutrients and sediment and other pollutants from the watershed.

From the Tap

It is said that forests are connected to the faucet. The quality of drinking water in a reservoir depends on the number of healthy trees in its watershed. Stormwater pollutants get filtered out and the soil acts as a natural sieve, cleaning it more thoroughly than most any treatment process. It has been estimated that forest soils can absorb up to 50 inches of rainfall per hour, which is then gradually released into groundwater and streams over the next several weeks, free of the sediment that surface runoff generates during heavy rains.

However, years of steady loss of tree cover in the historically forested east have had consequences downstream. The need for healthy forests is clearly reflected in the state of our own Chesapeake Bay, where increases in nutrients and sediment over the last half-century have contributed to chronic water quality problems and declines in aquatic life. Currently, Maryland is approximately 41 percent

forested, substantially less than its neighbors to the south and north, and trends have shown continuing decline during the past two decades.

As forest lands are cleared to make room for the needs of an expanding population, runoff from impervious surfaces like our houses and roads finds its way into our streams, rivers and other waterways. For many years, stormwater laced with vehicle fluids, erosion from agriculture and development, and excess nutrients from fertilizers has taken its toll on the Bay's aquatic life. And in some places, the waters have become too unsafe to enter, let alone drink. This is the culmination of centuries of poor land use practices that went unchecked and have only begun to be reversed.

Over half of Marylanders rely on surface water to provide their drinking water. Maryland's population is estimated at approximately 5.6 million and at the current rate of growth, will increase to 5.9 million by 2010. This growing population places greater demand on the current water supply infrastructure, forcing water treatment costs to increase. As of 2000, there were 257,000 households in Baltimore City alone, with an estimated daily indoor water use of about 19 million gallons per day, a figure that equates to using approximately 60 percent of the average daily water delivered by the Patapsco River. Forests are needed to maintain the basic water quality and supply that have supported us in the past, but are being lost every year.



Trees are Key

Key to reversing the declining health of the Bay and providing clean water to Maryland's ever-increasing population is the protection and establishment of forest lands. A healthy forested watershed is no accident and needs management to maintain vigor in the face of invasive insects and diseases, whose spread is encouraged by the escalating fragmentation of land ownership and globalization of trade. To add to the problem, in many places deer populations have grown so large they are affecting current and future forests, as the animals prefer to browse on native hardwoods. And invasive weeds, unpalatable to native animals and insects, are growing in extent.

To maintain healthy forests, management to encourage young native trees and discourage invasive weeds is essential. Fortunately, trees are masters of multi-tasking, growing good timber at the same time they

provide water and habitat. For the majority of Maryland forests that are in private ownership and subject to normal land management and property tax expenses, salable wood products help the lands pay their way. We count on the extensive public benefits provided by these woodlands, and need to support policies that help maintain both public and private forests in the landscape.

Protecting Reservoir Water Quality

Recently, a number of Maryland Forest Service projects have focused on water quality protection in some of the State's more vital reservoirs. DNR recognizes that the highest water quality comes from both actively and passively managed forests, but also that management practices can emulate (but not necessarily duplicate) forest disturbances.

In 2001, a comprehensive plan was developed for Baltimore City's Liberty, Loch Raven and Prettyboy reservoirs.

This plan focused on preventing erosion on shallow soils and the deep slopes around the reservoirs by planting trees and protecting regeneration, mitigating catastrophic insect damage by promoting diversity among tree species, and thinning densely-populated tree stands at risk to threats such as fire. Studies are currently underway in the same watersheds to determine the affects unregulated deer populations have on forest regeneration, and the fate of future reservoir forests.

Other efforts are now concentrating on reaching private forest owners in watersheds surrounding Maryland's drinking water reservoirs. Most municipalities own small belts of wooded land around reservoirs to provide direct protection to the drinking water supply, while the majority of the remaining watershed is under private ownership. Streams and channels running off these lands can bypass the protective forest belt and enter the reservoir, adding to the



need to mechanically or chemically remove impurities.

Case in point is the afore-mentioned Prettyboy watershed in northern Baltimore and Carroll Counties with a total acreage of 46,400 acres: Approximately 17,400 acres or 37 percent of the watershed is forested but of that, only about 5,400 acres are owned by Baltimore City. This represents just 12 percent of the total land area of the Prettyboy watershed. Clearly, providing private landowners voluntary and incentive-based forest management assistance to address diffuse water quality impairments should be a priority.

In the coming years, DNR will continue to target these private lands for the protection and improvement of our most precious, yet often unappreciated commodity – healthy water resources and the living resources that directly depend upon them. ❖

Ann Hairston-Strang is a Forest Hydrologist with DNR's Forest Service.

Emerald Ash Borer

David Cappaert (3) www.forestryimages.org



The emerald ash borer (EAB) is a serious invasive insect that has been detected in Prince George's County. EAB feeds on and kills ash trees – an important neighborhood and landscaping tree – one to three years after infestation. The Maryland Departments of Agriculture and Natural Resources have partnered to develop and implement an EAB



eradication plan. To assist in this effort and help control its spread, Maryland citizens and visitors are asked to strictly comply with an established quarantine that prohibits the transport of firewood from the infested area to any other area, AND to refrain from bringing firewood into Maryland from other states. If you suspect EAB infestation, please contact the Maryland Department of Agriculture at 410-841-5920. View the quarantine map and learn more at **www.dnr.maryland.gov/dnrnews/infocus/emerald_ash_borer.asp**

The downy woodpecker is a voracious eater of emerald ash borers, offering a natural solution to an invasive species.