The State of Chesapeake Forests

Virginia at a glance

The forests found throughout the Commonwealth serve a number of vital ecological, economic, and social roles for Virginia residents and are critical to the health of the Chesapeake Bay. As water flows through the 64,000 square mile Chesapeake Bay watershed, sediment, nutrients, chemicals, and other substances, wash off the surrounding land into streams, and eventually find their way to the Bay. The build up of these pollutants, especially nitrogen, from development, agriculture, and many other activities on land have dramatically affected water quality in local streams and the Chesapeake Bay.

Fortunately, large or small scale actions taken to protect and improve the land, and its forests, no matter where they occur, have a cumulative ability to restore the Bay. Gains in forest cover of as little as 10% can decrease nitrogen transported to water bodies by nearly 40%. This is particularly important in Virginia as nearly 30% of the total nitrogen and 50% of the total phosphorus and sediment pollution that is delivered to the Bay originates in the Commonwealth.

Virginia Forests:

- Protect Water Quality
- Offer Habitat for Fish and Wildlife
- Improve Air Quality
- Improve our Quality of Life and Encourage Recreation
- Enhance the Economy

Despite these benefits, forests in the Chesapeake Bay watershed are at risk. Since the mid-1980s, the Bay watershed has experienced a net loss of forestland at the rate of 100 acres each day. Chesapeake forests also lack regionally coordinated forestland conservation, restoration, and stewardship plans, making them more vulnerable to fragmentation, haphazard development, invasive species, and less likely to be well managed.

In September of 2006, The Conservation Fund and the U.S. Forest Service released The State of Chesapeake Forests, a landmark publication characterizing conditions and trends of forestland throughout the Chesapeake Bay watershed. This Virginia focused fact sheet is one of three state profiles that highlight key facts and information from the larger report. Unless stated otherwise, "Virginia" is used to mean the Chesapeake Bay watershed portion of the state. For more information see www.chesapeakebay.net/stateoftheforests.htm.

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Key Findings

Forest Cover Trends

Forests cover 59% of Virginia.

Between 1984 and 2002, Virginia forests declined by 5% or 460,000 acres and nearly 60% of the state's counties lost forestland.

Most of this forest loss occurred in the areas surrounding Richmond, Norfolk, and Washington D.C.

Forestland Important to Water Quality

Forests are the best land use for protecting water quality. Despite covering 59% of Virginia, forests deliver only 1.1 lbs of nitrogen per acre per year—more than 7 times less than the amount that urban and agricultural land uses deliver.

According to recent Chesapeake Bay program data, the most important forests for water quality exist in the southern and southeastern portions of the state.

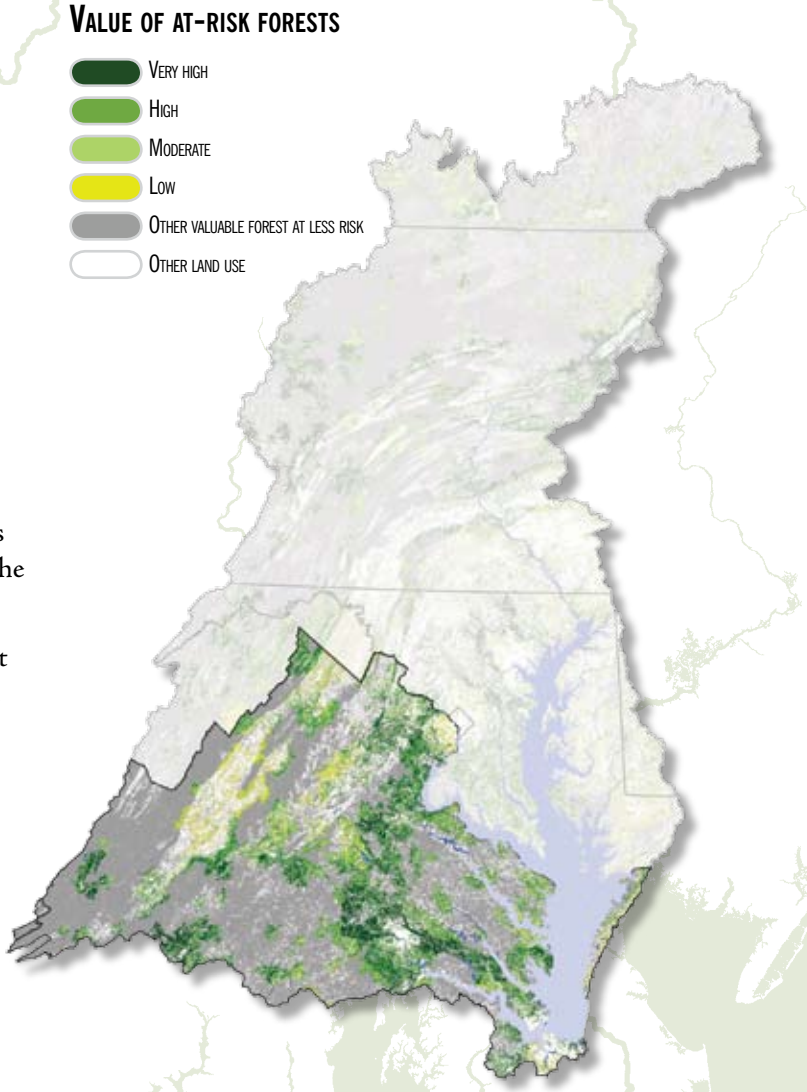
These regions are also highly vulnerable to development. Across the Bay watershed, 31% of forests with the highest value for water quality protection are threatened by development over the next 5 to 15 years. The loss of these high priority forests could severely compromise or degrade water quality and watershed functions.

Drinking Water Supplies

Virginia forests supply 49 drinking water source watersheds that meet the needs of 4.4 million people.

The public and policymakers alike often overlook the fact that safe, clean, and cheap water begins with the management and conservation of forested watersheds. A recent survey of water suppliers showed that treatment costs for drinking water go down when the amount of forest and wetlands goes up.

Vulnerability of Forests Important to Water Quality



Fragmentation

Roads, housing subdivisions, farms, and other human uses divide 74% of forests in the York River basin into disconnected fragments surrounded by other land uses. Sixty-seven percent of forests in the Rappahannock River, 57% in the Potomac River, and 51% in the James River basins are fragmented.

Fragmentation reduces total habitat area and isolates animal and plant populations. It also introduces negative influences—known as edge effects—to nearby forestland, leaving it more vulnerable to invasive species and sources of wildfire. The increase of forest stressors and nearby human populations makes forest management increasingly difficult, particularly for invasive species and forest products.

Ownership

Private landowners own nearly 80% of all forestland in the Bay watershed.

Family forest owners and their heirs will ultimately decide whether forests are managed sustainably, converted to other land uses, or left alone. Currently, more than 900,000 family forest owners hold 64% of all forestland in the Bay watershed.

In the past decade alone, the Bay watershed has experienced a 25% increase in the number of family forest owners. Their numbers will continue to rise in the near future, in part because more than 70% of family forest owners are more than 55 years old.

Sustainable Management

The use of sustainable management on family owned land is lacking in many portions of the Bay watershed. As an indicator, only a third of family forestland owners have sought professional advice on land management questions and even fewer have developed forest stewardship plans.

Landowners that do decide to utilize their land for wood products or other uses often do not seek out and use professional assistance and can end up damaging the long-term economic and environmental value of their forest.

By removing the biggest, best, and most valuable trees, a short-term management practice called "high grading" leaves poorer quality trees to regenerate the forest, eliminates wildlife food sources and nesting sites, and reduces the long-term economic value of the forest.

Ecological Value

Despite the decline of forests, there are still extensive forests with high ecological value in Virginia. According to recent Chesapeake Bay program data, the forests with the most ecological value occur in the Appalachian and Blue Ridge Mountains.

Forty-five percent of the Bay watershed's network of forests and wetlands is vulnerable to development over the next 5 to 15 years.

Overabundant Deer

In portions of Virginia, overbrowsing by white-tailed deer has essentially eliminated the tree seedling, sapling, and shrub layers, reducing the vertical structure of forests. Between 1994 and 2003, 30% of Virginia counties supported high densities of deer.

Historically a forest species, deer are now most abundant at the nexus of farmland (food source), forestland (protective cover), and areas with enough human population to preclude hunting.

Overbrowsing is a leading factor in the shift from expansive and diverse oak forests to a more homogenous forest dominated by red maple.

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Insects and Diseases

Invasive forest pests and associated diseases will continue to alter forest conditions in Virginia. Some past introductions such as chestnut blight, Dutch elm disease, southern pine beetle, and gypsy moth have had long-term, devastating impacts on Virginia's forests.

Though not currently known to affect Virginia forests, sudden oak death is expected to spread to this area in the future. Since the mid-1990s, the fungus-like organism has caused mortality in numerous oak species and other plants.

Ecosystem Services

Based on a study published by the Audubon Society, which considered only carbon sequestration, flood control, wildlife habitat, and recreation, the annual ecoservice value of Chesapeake forests ranges from $10 to $48 billion, with a conservative estimate of $24 billion per year. Since this analysis does not include water quality, air quality, water storage, and other valuable services, this range is a considerable understatement of the total value of Chesapeake forests.

Urban Forests: The Forests Where We Live

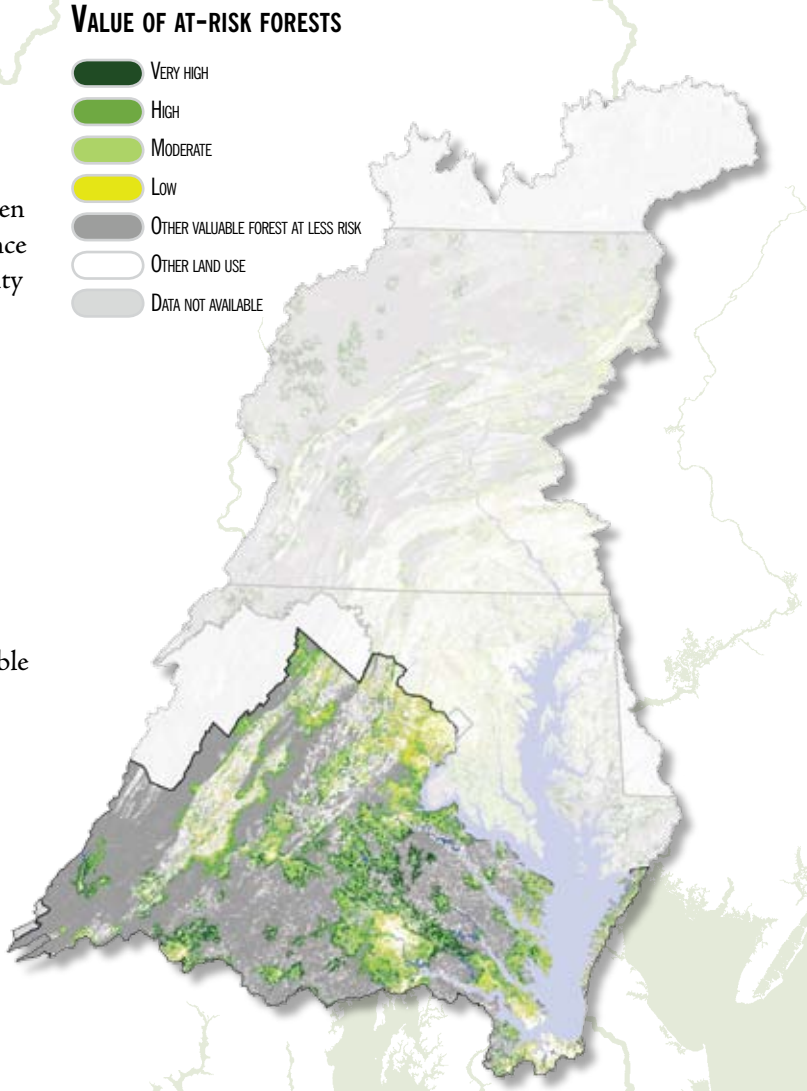
Urban forests are especially important to the health and quality of life of Bay watershed residents as more than 80% of people live in urban areas. Urban forests provide substantial benefits to communities, including recreational opportunities, temperature reduction, and air pollutant removal.

The average urban area in the Bay watershed has 35% of its area covered by forests equaling approximately 1.2 million acres of urban forests in the watershed.

Forest Products Industry

The Chesapeake Bay Program has identified the locations of economically important forestland across the Bay watershed. According to the model, the highest valued forest in Virginia occurs in the south-central and southeastern portions of the state. These regions have large amounts of commercially valuable oak, pine, and in particular loblolly pine. These regions have been long-valued for their timber production and have low population densities, allowing the industry to remain viable.

Vulnerability of Forests Valuable for Forest Products



The forest products industry watershed ranks first in manufacturing jobs in the state. According to the economic model, IMPLAN, the portion of the industry in the Bay watershed employs more than 36,000 people contributing more than $1 billion in income and around $6.6 billion in total sales annually to the economy.

STRATEGIES FOR FORESTLAND PROTECTION, RESTORATION, AND STEWARDSHIP

Many of these strategies are still emerging and will require new funding sources, creative approaches, and diverse partnerships. They do not represent the only means to achieve each goal identified, but they do represent real and innovative ways to sustain healthy forests. Perhaps most critical is realizing no one strategy will ensure forest sustainability. The strategies described here should be used in combination with each other to best protect forest habitats, drinking water sources, jobs and income, and public health.

Goals

1. Set regional forestland protection goals to retain and expand the Chesapeake's exceptional forest resources.
2. Improve and sustain the health and diversity of Chesapeake forests.
3. Manage Chesapeake forests to enhance ecological services and public health benefits.
4. Increase public appreciation for the value of Chesapeake forests and track their condition over time.

Key Strategies

1. Encourage strategic and large-scale forestland conservation practices by identifying, conserving, and restoring forests that have the highest values for water quality, local economies, wildlife habitat, and public recreation.
   - Set acreage goals for forest conservation using the best available tools, such as the Resource Lands Assessment, to identify where retention and expansion of forests are most needed.
2. Direct land-use planning and development practices to reduce forest loss and fragmentation.
3. Recognize the public benefits of private forestland by identifying ways that planning, regulations, incentives, funding, and other programs can be used to protect native biodiversity, improve economic return, and enhance sustainable management and stewardship.
4. Develop innovative programs to increase awareness about the public's dependence on Chesapeake forests