

STATE OF THE FOREST

2024
FISCAL YEAR

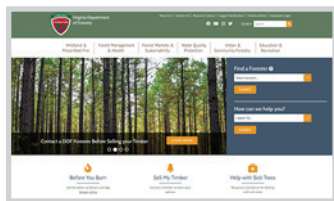
ANNUAL REPORT ON VIRGINIA'S FORESTS



VIRGINIA DEPARTMENT OF
FORESTRY

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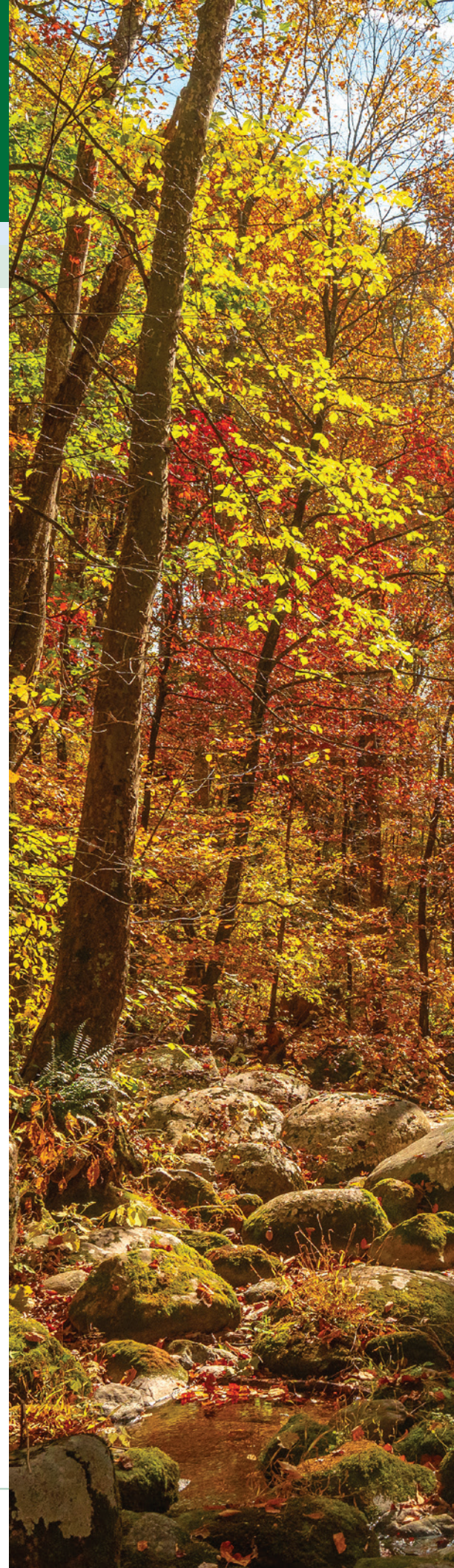
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Find more on the
DOF website

This annual report provides state fiscal year (July 1, 2023 - June 30, 2024) information unless otherwise noted.

*On the cover: The Earlysville Oak, located on the property of the Charlottesville-Albemarle Airport, is a 75-foot-tall, at least 300-year-old white oak (*Quercus alba*). In 2014, the tree was designated as a Landmark Tree by the Charlottesville Area Tree Stewards. The majestic tree remains a favorite of the community, and DOF staff.*



FROM THE STATE FORESTER



Virginia State Forester Rob Farrell

In Virginia, we are blessed with a diverse, resilient and sustainable forest resource. With just over 16 million acres of forestland in the Commonwealth, Virginia's citizens enjoy many advantages provided by forests: environmental health, recreational opportunities, scenic beauty and the economic benefits of Virginia's third-largest industry.

One of our founding principles at the Virginia Department of Forestry (DOF) is to protect the Commonwealth's forest resource, people and property from wildfires. In Fiscal Year 2024 (FY24) we saw historical wildfire activity during both the fall and spring seasons. During the fall of 2023, DOF suppressed 139 wildfires that burned 24,916 acres, and in the spring of 2024, things did not let up, with the agency suppressing 411 wildfires that burned 19,933 acres, the most burned during a spring fire season in the last 30 years.

While there is increasing recognition of the benefits of trees and forests for our collective health, wildfire activity is only one mounting threat that put these benefits at risk. DOF continues to face challenges head on. We are working to address the spread of invasive plants, introduced insects such as spotted lanternfly and emerald ash borer, and increasing mortality of mature oak trees. DOF's Forest Health program surveys Virginia for forest health disturbances, tests and utilizes many pest-control methods, provides technical assistance to landowners and assesses our forests using GIS mapping and even drones.

Given all the challenges facing the forest, we have been fortunate to see unprecedented support at the federal, state and local level. Also, beneficial legislation passed by the General Assembly included creation of the Forest Sustainability Fund and a tax credit for landowners who implement beneficial hardwood management practices.

I am very proud that this year DOF was called on to be the lead agency for the Commonwealth for two important initiatives. DOF is establishing the Office of Working Lands Preservation, combining the Office of Farmland Preservation formerly at the Virginia Department of Agriculture and Consumer Services (VDACS) with our existing forestland conservation program. This change recognizes and builds on the success of our working forest conservation easement program and our partnership with the Virginia Cooperative Extension (VCE) for the award-winning Generation NEXT program.

DOF was also selected as the lead for the multi-agency statewide invasive species management effort. This is a continuation of DOF's collaboration with VDACS, Virginia Department of Conservation and Recreation (DCR) and Virginia Department of Wildlife Resources (DWR) to prevent the introduction of new invasive species and to control the spread of those already introduced.

This summer, DOF incorporated new biomass best management practices (BMPs) into our timber harvest inspection program. In the 2023 General Assembly session, HB2026 and SB1231 amended the Virginia Clean

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FROM THE STATE FORESTER

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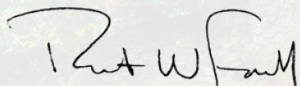
Economy Act to enable woody biomass to continue to be used as a source of electric power generation. The legislation directed DOF to develop BMPs for the sustainable harvesting of biomass.

The legislation directed that the BMPs include a life-cycle carbon analysis, developed in coordination with the Virginia Department of Environmental Quality (DEQ) and relevant stakeholders, that includes all carbon emissions, including supply chain emissions, forgone sequestration and the emissions from burning biomass resources for electricity generation.

This year, we also bid farewell to our 4 p.m. burn law road signs, that are “retiring” after 75 years of service. This sign of the changing times is an adjustment to our methods, but in no way represents a change to our mission. The cost, maintenance and staff safety on busy roads, all combined to propel this decision. Fortunately, DOF has various ways of messaging fire and safety information through various social media platforms, online, by working closely with our news media partners, and through ongoing public education and outreach.

Every day, the men and women of DOF work to protect and conserve our forest resource. Since you are reading this State of the Forest, we count you among the many invested stakeholders that we consider partners in this important mission. Together, we can raise awareness of the diverse forest benefits we – and our future generations – will enjoy.

Rob Farrell



State Forester

VIRGINIA FOREST TRENDS

Forested Land

For 2024, more than 16 million acres – more than 62% of the Commonwealth – qualified as forestland. Of this forestland, 15.3 million acres are categorized as commercial timberland and more than 500,000 acres are categorized as reserved forestland (e.g., Shenandoah National Park, Virginia state parks, etc.). Since 1977, Virginia has lost more than 400,000 acres of forestland and unfortunately, the loss of forestland is projected to continue long term.

62% Forestland

16 million+ acres

79% Hardwood/
Hardwood-Pine

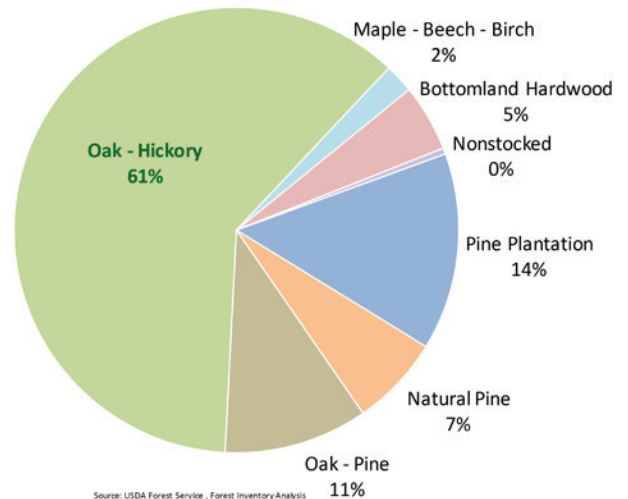
21% Pine

Forest Types

In terms of composition, the forests of Virginia continue to display good diversity. Hardwood and hardwood-pine forest types make up more than 12.7 million acres of the Commonwealth’s forests – more than 79%. The area of hardwood forest types has increased steadily since the first forest inventory in 1940, when 8 million acres existed. The hardwood forests of Virginia are maturing, with more than half of the hardwood acreage appearing in stands 60 years old or older.

Pine forests represent approximately 3.3 million acres (21%) of Virginia’s forestland. This is a decline from the 6.2 million acres of pine found during the 1940 inventory. Pine plantations now constitute more than 68% of the pine acreage.

Forest Types in Virginia

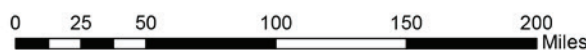
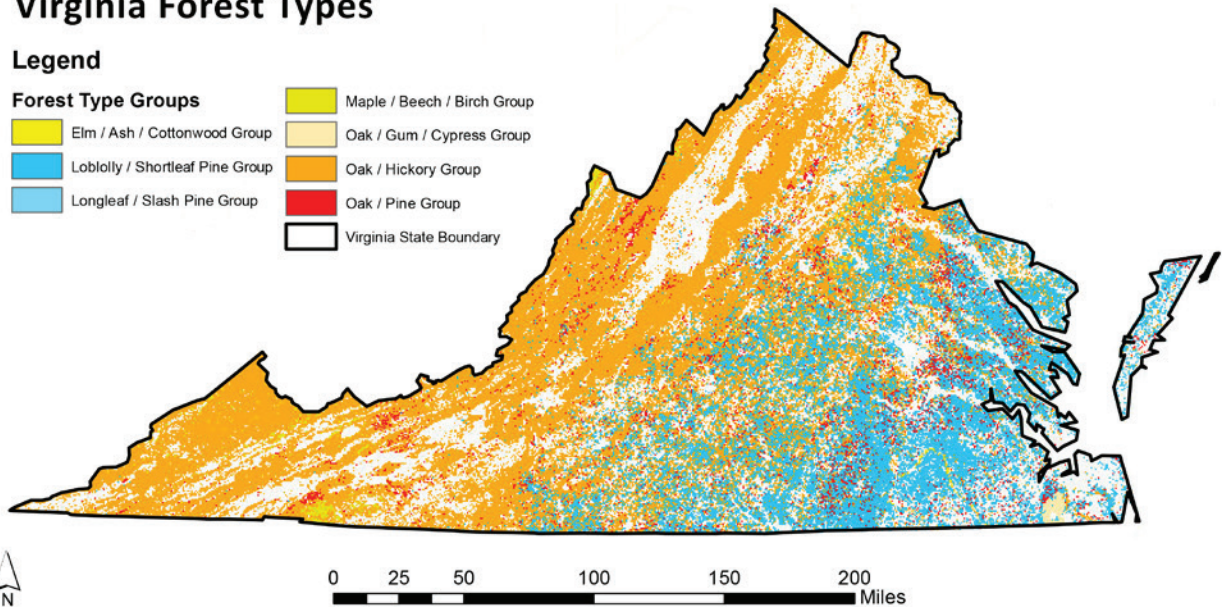


Source: USDA Forest Service, Forest Inventory Analysis
Figures are rounded to the nearest whole percentages.

Virginia Forest Types

Legend

Forest Type Groups	
	Elm / Ash / Cottonwood Group
	Loblolly / Shortleaf Pine Group
	Longleaf / Slash Pine Group
	Maple / Beech / Birch Group
	Oak / Gum / Cypress Group
	Oak / Hickory Group
	Oak / Pine Group
	Virginia State Boundary



USDA Forest Service, Forest Inventory Analysis

VIRGINIA FOREST TRENDS

continued



Forest Ownership

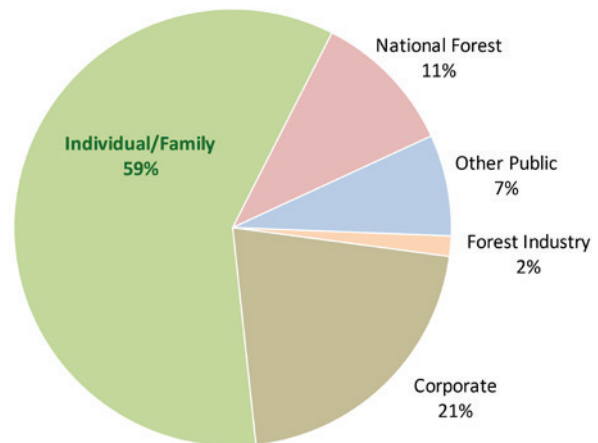
Most of Virginia's forestland is privately owned (80%, more than 13 million acres). Approximately 521,000 individuals and families in Virginia hold a total of approximately 9.5 million acres of the Commonwealth's forests.

As of 2022, ownership of forestland by forest products firms had stabilized to approximately 2% (239,300 acres) of the total forestland area. This is a reduction from 7% in 2001, and 11% in 1992.

The balance of Virginia's forestlands (18%) is owned by federal, state and local governments, the largest entity being the USDA Forest Service National Forest System lands at 1.7 million acres.

DOF, through 26 state forests, holds acres of forestland.

Forest Ownership in Virginia

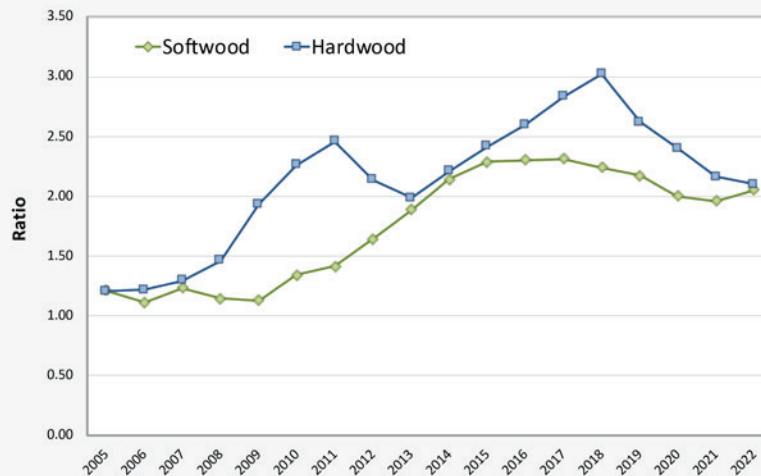


Source: USDA Forest Service, Forest Inventory Analysis

Forest Sustainability

As of 2022, the ratio of the forest's annual growth compared to harvested volume was 2.05:1 for softwood species and 2.10:1 for hardwood species. This amounts to an annual surplus of 11.7 million tons of softwood and 14.9 million tons of hardwood statewide on commercial timberland.

Net Growth : Drain Ratio for Softwoods and Hardwoods on Virginia's Timberland (2005 - 2022)



Source: USDA Forest Service, Forest Inventory Analysis

THE FOREST RESOURCE

FIRE & EMERGENCY RESPONSE



Wildfire Suppression

Preventing and suppressing wildfires throughout Virginia is one of DOF's founding principles. Each year, the agency suppresses 590 fires that burn 10,497 acres (10-year average). Additionally, each year, fewer than 60 homes and other structures are damaged or destroyed by wildland fire, and agency suppression efforts are also credited with directly protecting more than 740 homes and 1,380 other structures, collectively worth more than \$119 million (10-year average).

Fiscal year 2024 was marked by significant outbreaks of wildfire in both the fall and spring seasons. During the fall of 2023, DOF suppressed 139 wildfires that

burnt 24,916 acres and in the spring of 2024, the agency suppressed 411 wildfires that burnt 19,933 acres. While the wildfire activity of the last year has been especially taxing on the agency, it is interesting to note that the Commonwealth has experienced both spring and fall fire seasons with even higher number of wildfires and greater acreages burned, with multiple extreme events occurring within just the last 10 years.

DOF is unique in the fact that all agency responders serve as combined firefighters, public safety officers and land management professionals. These distinctive skills, working in alignment with local fire departments, help ensure an efficient and effective fire suppression organization in the Commonwealth.



By the Numbers

FY24 (07/01/2023 – 06/30/2024)

Fire Suppression

595 ↘
wildfires
(596 FY23)

34,762 ↗
acres burned
(6,916 FY23)

\$15.1 million ↗
timber damaged
(\$4.2 million FY23)

129 ↗
homes/buildings damaged
(59 FY23)

\$3.1 million ↗
homes/buildings damaged
(\$1.6 million FY23)

902,485 ↗
homes/buildings protected
(2,007 FY23)

\$229 million ↗
homes/buildings protected
(\$99.5 million FY23)

Historic Fire Statistics

590
average wildfires per year*
(based on 10-year average)

10,510
average acres burned
per year*
(based on 10-year average)

3,697
most wildfires in a
single year – 1941*

333,023
most acres burned in a
single year – 1930*

386
least wildfires in a
single year – 2019*

2,508
least acres burned in a
single year – 2019*

Firefighter Training

761 ↘
firefighters trained
(783 FY23)

12,176 ↗
hours training
(10,444 FY23)

Dry Hydrant Grant Program

15 ↘
new dry hydrants installed
(21 FY23)

29 ↗
dry hydrants repaired
(12 FY23)

Volunteer Fire Assistance Grant Program

139 ↗
volunteer fire departments
awarded grants
(138 FY23)

\$281,483 →
grant funding awarded
(\$281,483 FY23)

Suppression Resources Portfolio

160 →
4x4 engines
(160 FY23)

14 →
wildland brush trucks
(14 FY23)

89 →
bulldozer/wildland
fire plow units
(89 FY23)

1,926 ↗
dry hydrants
(1,903 FY23)

* Data based on calendar year (CY) Jan. 1 - Dec. 31.

FIRE & EMERGENCY RESPONSE

continued



Through a well-established national compact agreement to share resources, DOF also provides assistance to other state forestry agencies. These opportunities help responders gain invaluable experience managing large wildfire incidents and provide Virginia with out-of-state resources in the event of a serious

wildfire situation. Under this agreement, states are reimbursed for all related expenses. During the last two decades, DOF response personnel have assisted with wildfire suppression in 29 other states, coordinated hurricane response across the southeastern U.S., assisted with flooding emergencies, downed aircraft incidents, and lost and stranded citizen rescue.

DOF provides wildfire suppression and emergency incident management training to agency firefighters and collaborators to increase the state's overall capacity for wildland fire suppression. DOF's success in this area is only possible through a coordinated approach that relies heavily on the resources of Virginia's rural fire services.

Dry Hydrant Program

The dry hydrant program provides state-level funding available through the Virginia Fire Programs Fund to install and repair dry fire hydrants throughout Virginia to aid firefighting activities. Dry hydrants draft water from adjacent water bodies (such as ponds and streams) in areas without conventional water mains and hydrants. DOF uses 100% of this funding to either repair existing hydrants or install new ones based on requests from local fire departments. Virginia has 1,926 dry hydrants across the state, which improves the available water supply, increases the Insurance Services Office (also known as ISO) rating of fire departments, and decreases the rates insurance companies charge for homeowner's insurance.

One new initiative in FY24 with Virginia's Dry Hydrant program includes a more targeted effort to ensure that all dry hydrants installed under the program over the last 25-plus years remain fully operational. Thanks to supplemental grant funding through the USDA Forest Service, DOF began a strong push to repair existing non-operational dry hydrants. This effort resulted in repairs to 29 dry hydrants during FY24, representing a 141% increase in the previous year's repairs and helps to ensure a reliable rural water supply for the Commonwealth's fire service.



DOF Forest Technician Aaron Altice leads a Pennsylvania Department of Conservation and Recreation - Bureau of Forestry crew away from the fire line after a long day fighting the Tuggle's Gap Fire in Patrick County (November 2023).

Photo courtesy of John Hecker, District Manager, Moshannon State Forest, Pennsylvania Department of Conservation and Recreation - Bureau of Forestry

FIRE & EMERGENCY RESPONSE

continued



4 p.m. Burn Law Signs Retire

A sign of the changing times took place this year as DOF retired its 4 p.m. burn law signs after 75 years of roadside messaging. The agency sees this as a change in our methods...but not our mission. While this does mark the end of an era, the cost, upkeep, maintenance and requirement to put staff in harm's way along busy roads combined to influence this decision. The agency has various ways of messaging fire and safety information through social media platforms, online, working closely with news media partners and through public education and outreach.



Wildfire Prevention

DOF has a long-placed emphasis on wildfire prevention based on the proven theory that focusing resources on prevention early reduces the need for suppression resources later. The agency's prevention education focuses on helping citizens understand how to prevent a wildfire from starting and spreading. Wildfire prevention actions are typically focused on preventing

debris-burning fire escapes...Virginia's leading cause of wildfires. DOF supports careful outdoor burning completed in a safe and lawful manner.

Firewise Virginia

Agency prevention efforts also focus on helping homeowners in wildland urban interface areas take steps to reduce potential damage to their homes. This program, called "Firewise Virginia," works to target the agency's limited resources on the highest-risk woodland home communities in the Commonwealth. Through outreach and education, DOF empowers homeowners to take steps to limit wildfire damage in high-risk areas.

Good Fire

One of the most effective tools for the management of Virginia's forests, grasslands and endangered species is "prescribed burning," which involves setting intentional, controlled fires with specific management goals. Putting more than a century of fire management experience, knowledge, expertise and skills to good use, DOF provides prescribed burning education and assistance to landowners to encourage this valuable tool for reducing the potential for wildfires and enhancing fire's ecological benefits. By removing dead and overgrown vegetation, prescribed fires help prevent larger, more intense and increasingly dangerous incidents that destroy communities, cost billions of dollars in damages and response resources...and claim lives.



By the Numbers

FY24 (07/01/2023 – 06/30/2024)

Prescribed Burning Program

279 ↘ prescribed burns conducted (351 FY23)	7,756 ↗ acres prescribed burned (6,819 FY23)
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Firewise USA Community Program Portfolio

41 ↘
nationally-recognized Firewise USA communities
(44 FY23)

Firewise Virginia Community Hazard Mitigation Grant Program

17 ↗ grants provided for wildfire risk reduction in woodland home communities (15 FY23)	\$239,840 ↘ grant funding awarded (\$257,480 FY23)
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FOREST MANAGEMENT



How does DOF provide the proper guidance to ensure the forests of the Commonwealth remain healthy and vigorous, while landowner objectives, not to mention those of the overall society, are met? That weighty question drives the work of the agency’s Forest Management program, which tackles one of our agency’s core principles.

Every day, DOF staff provide direct technical assistance, guidance and resources to forest landowners, partners, localities and other agencies on sound forest management practices, research and projects.

Hardwood Initiative

One area of renewed focus has been on Virginia’s hardwood forests. With the Hardwood Initiative, DOF is focused on improvement through intentional management. Comprising 79% of all Virginia’s forestland, hardwood forests are Virginia’s forestland. Managing them well, so each private landowner achieves their ownership objectives, also helps the Commonwealth achieve its goals. Whether landowners are interested in wildlife, aesthetics, commercial harvesting or some combination, DOF staff, consulting foresters and loggers with specialized knowledge in hardwood forestry can help landowners improve their forest.



By the Numbers

FY24 (07/01/2023 – 06/30/2024)

Reforestation of Timberlands Program

957 ↘ landowners participated (1,081 FY23)	44,466 ↘ acres improved (50,190 FY23)
72,303 ↘ practice acres implemented (81,646 FY23)	Note: A single stand may have multiple practices done on the same acres.

Tree Planting

61,617 ↘ acres planted (78,539 FY23)	45,564 ↘ acres planted (DOF involvement) (55,595 FY23)
1,135 ↘ planting projects (DOF involvement) (1,515 FY23)	

Forest Stewardship Program

137 ↘ forest stewardship plans written (181 FY23)	26,611 ↘ acres included in plans (30,234 FY23)
12 ↗ properties achieved stewardship certification* (6 federal FY23)	4,799 ↗ acres certified* (1,044 federal FY23)

Other Management Plans

3,330 ↘ other management plans written (3,478 FY23)	128,092 ↗ acres included in plans (115,917 FY23)
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Note: Plans included are alternate management plans, cost-share plans, pre-harvest plans, prescribed burn plans, stand plans, tract plans (county land, land use, state lands, state lands (non-DOF) and Tree Farm plans.)

Diminished Species Restoration

46 ↗ shortleaf pine projects (28 FY23)	1,433 ↗ acres shortleaf pine projects (884 FY23)
13 → longleaf pine projects (13 FY23)	235 ↘ acres longleaf pine projects (685 FY23)

Note: Data includes both planting acres and prescribed burning practices.

* Data based on federal fiscal year (FY) Oct. 1 - Sept. 30.

FOREST MANAGEMENT

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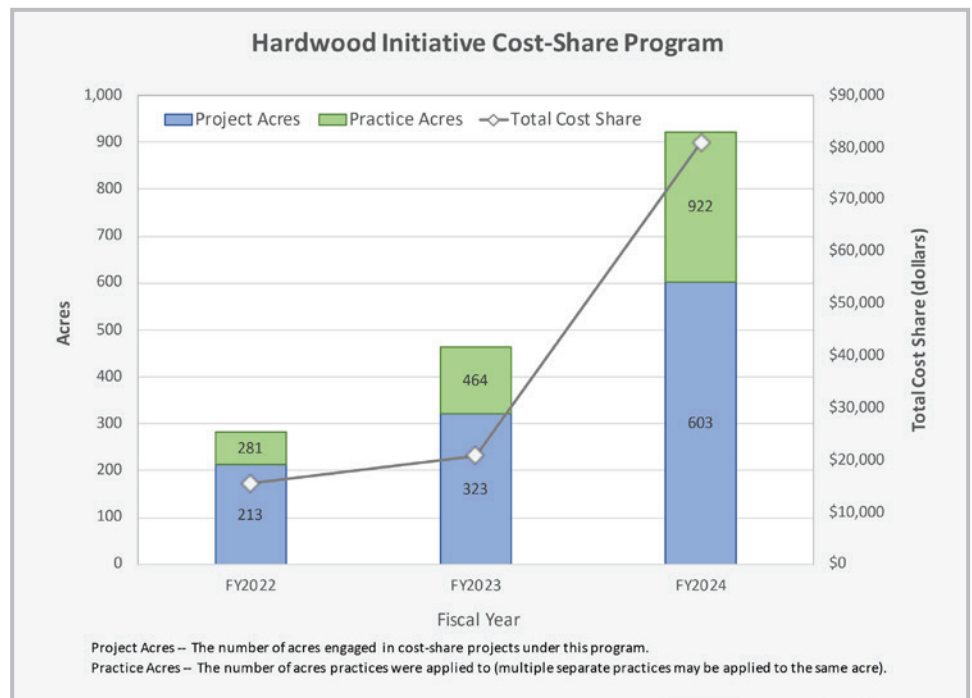


In FY24, forest landowners implemented hardwood management practices including pre-commercial thinning, timber stand improvement, crop tree release and prescribed burning. Some energetic landowners are undertaking the work themselves while others are hiring forestry service businesses. Anticipating an increased demand for businesses to perform forest management work, DOF utilized grant funding to hire a business development specialist in May 2024 to help forestry service businesses start or grow.

Many landowners benefitted from financial assistance to perform hardwood management and were able to do more because of it.

Landowners utilized financial assistance through Virginia and USDA programs. Virginia's Hardwood Initiative Cost Share provided four times more assistance to landowners this year than last, with more than \$80,000 of cost-share funds used to improve 603 acres. Interested landowners can apply for cost share to improve their

forestland through DOF or a trained consulting forester. In the first year of the Hardwood Initiative Tax Credit (for individuals), six individuals made use of it to offset \$2,400 of expenses. As word spreads about these great opportunities, additional projects are expected.



By the Numbers

FY24 (07/01/2023 – 06/30/2024)

Hardwood Management Program

89 ↗
projects
(73 FY23)

1,989 ↗
acres hardwood projects
(1,126 FY23)

17 ↗
hardwood demonstration projects
on state-owned lands
(16 FY23)

Hardwood Initiative Cost-Share Program

31 ↗
projects completed
through the Hardwood
Initiative Cost-
Share Program
(17 FY23)

603 ↗
acres hardwood projects
completed through the
Hardwood Initiative
Cost-Share Program
(323 FY23)

Hardwood Initiative Tax Credit Program

6 ↗
tax credits issued*
(new initiative, no data TY22)

\$2,400 ↗
tax benefits*
(new initiative, no data TY22)

* Data based on tax year (TY) Jan. 1 - Dec. 31.



FOREST HEALTH



Forest health is involved in every aspect of forest management. This includes the establishment of appropriate, healthy trees on productive sites, proper forest management practices that favor vigorous growth of the best trees, reduction of losses due to insect and diseases, and well-planned, careful harvesting that protects standing trees from injury and protects streamside forests.

Severe weather events, non-native plants, insects and diseases can compromise the health of forests and disrupt forest processes. DOF's Forest Health program works to protect and improve Virginia's forest resource through prevention and detection of major forest pests, pathogens, invasive plants and other disturbances. Through surveys, monitoring and data collection, DOF makes sound recommendations to land managers based on unbiased scientific data. Forest Health staff and partners provide technical assistance, training and outreach to the forestry community regarding pest identification and forest health concerns.



Aerial Survey

Aerial surveys are conducted to monitor Virginia's forest for large-scale forest disturbances. In FY24, 2,734,607 acres of forestland was surveyed for damage using national aerial survey standards. During these aerial surveys, 85,116 acres of damage caused by the spongy moth was mapped. The spongy moth is an invasive insect that feeds on foliage of oak trees and other hardwood species. Heavy defoliation occurred in the Shenandoah Valley from Frederick County down to Augusta County. In many locations, trees were completely defoliated, spongy moth caterpillars were visible crawling along tree trunks, and frass (caterpillar excrement) was heard falling to the ground. This type of caterpillar feeding causes significant stress to trees, especially if trees are already weak from other factors. With oak decline already prevalent in the Shenandoah Valley, and drought conditions causing additional stress to trees this year, spongy moth damage may lead to oak mortality in some areas.



By the Numbers

federal FY24 (10/01/2023 – 09/30/2024)*

Forest Pest Treatment Cost-Share Program

Emerald Ash Borer Program

289 ↗
ash trees treated*
(261 federal FY23)

101 ↗
applicants awarded*
(58 federal FY23)

70 ↘
ash trees treated on state lands*
(119 federal FY23)

Hemlock Woolly Adelgid Program

193 ↗
hemlock trees treated*
(new initiative, no data FY23)

25 ↗
applicants awarded*
(new initiative, no data FY23)

174 ↗
hemlock trees treated on public lands*
(173 federal FY23)

Non-Native Invasive Plant Program

1,015 ↘
acres of invasive plant removal*
(1,615 federal FY23)

Pine Bark Beetle Pre-Commercial Thinning Cost-Share Program

2,463 ↘
acres of pine thinned*
(2,609 federal FY23)

Aerial Forest Health Survey Program

2,734,607 ↗
acres surveyed*
(1,586,750 federal FY23)

* Data based on federal fiscal year (FY) Oct. 1 - Sept. 30.



Integrated Pest Management

DOF strives to employ a variety of methods to protect threatened tree species with an integrated pest management approach. The Forest Health program uses both chemical and biological control to protect ash and hemlock trees on state lands. In FY24, DOF staff treated 70 ash trees on state land to protect them from the emerald ash borer (EAB), and 174 hemlock trees to protect them from the hemlock woolly adelgid (HWA). In addition, DOF's Forest Pest Treatment Cost-Share program provided financial assistance to landowners for the treatment of 289 ash trees and 193 hemlock trees. While chemical treatment will provide short-term protection, biological control has the potential to provide long-term protection for threatened tree species. Parasitoid wasps that have been approved by USDA Animal and Plant Health Inspection Service as biological control agents for EAB were released at 5 sites in Virginia; in total, 4,600 parasitoids were released in FY24. Predator beetles of HWA are reared at the Virginia Tech Beneficial Insect Lab. In FY24, DOF released 500 HWA predator beetles in hemlock stands for biological control of HWA. DOF's Forest Health staff will work with other partner agencies to monitor the survival and impacts of these biological control agents.

Pine Bark Beetles

Historically, the southern pine beetle (SPB) has been the most destructive native forest pest in the Southeast. SPB, and several other native pine bark beetles, can cause significant damage to our pine resource. DOF, in cooperation with the USDA Forest Service Southern Pine Beetle program, administers a Pine Bark Beetle Prevention Program which provides cost-share assistance to landowners and loggers for thinning practices that reduce a pine stand's susceptibility to pine bark beetles. In FY24, a total of 2,463 acres of pine were thinned with financial assistance from DOF's pre-commercial thinning cost-share program. Since the program's inception in 2004, more than 70,000 acres of pine have been thinned with cost-share assistance from this Pine Bark Beetle Prevention Program.

Every spring, DOF participates in a region-wide trapping program to monitor populations of the southern pine beetle. In FY24, DOF staff placed 30 traps across 12 counties in high-risk locations in Virginia. The most SPB were found in traps located in Chesterfield, Cumberland and Dinwiddie counties; these counties may experience slightly higher SPB activity within the next year. Another DOF trapping program in FY24 was the Early Detection Rapid Response (EDRR) survey for non-native bark and ambrosia beetles that are a serious threat to our nation's urban and rural forests. Thirty EDRR traps were placed at high-risk locations such as ports, mills, distribution centers and popular highway rest areas. All trapped insects have been sent to an insect taxonomist for identification. The purpose of this EDRR survey is to detect potentially destructive invasive species before they become established so that eradication is possible.

Invasive Plant Initiative

DOF's invasive species program is committed to suppressing and slowing the spread of priority species such as wavyleaf grass, a Tier 2 species on Virginia's Noxious Weed List. Efforts to control wavyleaf grass are focusing on Virginia state land and wavyleaf populations on trails and other heavily trafficked areas. In FY24, 1,397 acres were surveyed for wavyleaf grass, and 363 were treated. Public outreach is another important component of DOF's invasive species program. DOF piloted an outreach campaign in FY24 that targets Callery pear, an invasive tree that is commonly planted in urban landscapes but is rapidly spreading in our natural areas where it displaces beneficial native tree species.

In April 2024, DOF hosted the first Virginia Callery Pear Exchange. Virginia residents were encouraged to remove Callery pear on their property and replant with a native replacement. Landowners that pre-registered and attended the DOF Callery Pear Exchange event were given a free native tree. The program was met with an incredibly positive response and the 300 native replacement trees were quickly claimed. Multiple TV, newspaper and radio interviews about the program helped spread the message that while Callery pear spring flowers may be admired by some, the negative impacts of the invasive tree make it one that we should all work together to remove.

APPLIED RESEARCH



DOF addresses forest management questions that landowners, foresters and scientists alike face in Virginia through meticulous research. This effort was started approximately 70 years ago in pursuit of scientifically literate methods for agency activities including herbicide application in loblolly pine stands, breeding parameters for diminished trees, and planting standards for hardwood and pine.

Over these last seven decades, DOF's program has grown in both size and collaboration. DOF plays an active role in three different forestry cooperatives including the Tree Improvement Program, the Forest Productivity Cooperative and the Forest Modeling Research Cooperative. In addition to applied research, DOF's research program has become invested in statewide restoration of diminished tree species and forest types.

Ongoing Research and Monitoring

Pine forests represent a large lumber source for the timber industry in Virginia. They provide a wide range of forest products from sawtimber to biomass fuel. This year, the research program continued multiple long-term studies including a multi-product loblolly pine planting study and a shortleaf study with varying planting densities.

Forest markets are dynamic with constantly shifting trends. Plantings of trees offering wood for multiple types of products offer security in future markets and sustained profits over the life of the stands. Several new studies have been established this year with a focus on pine forests. The first is in cooperation with the Forest Productivity Cooperative of North Carolina State University in Raleigh, and private company Funga. This study involves the addition of

mycorrhizae, small beneficial soil microbes, to the planting holes of loblolly pine seedlings. A drone herbicide application study was also initiated this year. An emerging technology rapidly gaining traction in modern forestry and by DOF is the use of drones in aerial herbicide application. Drones could offer a high-precision option for harder-to-reach tracts that require competition control prior to loblolly pine planting.

Hardwood Forests and Chestnuts

While pine forests contribute greater volumes of wood to the industry, hardwood-dominated forests make up 79% of Virginia's total forestland, making them another top priority for research at DOF. Across seven state forests, agency staff collects and analyzes long-term data on crop-tree release studies, multi-species herbicide interaction studies, and variable harvest regeneration sites. DOF has also begun the first phase of a mixed oak-chestnut planting demonstration to observe the early stand dynamics of planted chestnut and white oak, the results of which will prove valuable as the agency gears up to reintroduce blight resistant chestnuts to their native range.

Tree Improvement Program

Last year, DOF nurseries sold more than 17 million loblolly pine seedlings, a direct result of our fruitful Tree Improvement Program (TIP). For 60 years, the genetics and performance of loblolly pine has been selectively bred in partnership with NC State and other region-wide collaborators. TIP boasts a \$50-\$300 per acre net increase for landowners by planting these improved genetics. This year, DOF planted the 12th progeny test and preparations for the 4th generation seed orchard are underway.



By the Numbers

FY24 (07/01/2023 – 06/30/2024)

Research Studies Portfolio

55 active research studies (new data track, no data FY23)	148 research reports (new data track, no data FY23)
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Specifically chosen for the northern region of loblolly pine, these orchard tree selections will focus attention on cold hardiness and high production yields.

Diminished Species

Restoring and protecting our diminished tree species is a significant objective for DOF. The agency works with multiple species including the American chestnut, longleaf pine, shortleaf pine and red spruce. Our American chestnut breeding program continues to thrive. This year, we partnered with the American Chestnut Foundation to genotype more than 525 trees at the Lesesne and Matthews state forests. This genotype data will be analyzed for best-by-best crosses with the ultimate goal of an orchard that contains all prime selections curated over the last 55 years.

Longleaf restoration has been a long-term project for DOF and other active partners. The combined efforts of the collaborators in the American Longleaf Restoration Initiative completed prescribed burns on 6,944 acres and management work on 2,748 acres. At the DOF longleaf orchard in New Kent County, we collected 140 bushels of cones from 130 trees, a new record for this site. Shortleaf pine is a fire-adapted species that was once over-harvested. With current management practices, shortleaf is not a dominant competitor in most forest types. Thus, shortleaf has been a focal species for DOF in terms of plantings and reforestation. A shortleaf seed production site was completed at Appomattox-Buckingham State Forest this year that will assist with meeting seedling demand for the Commonwealth.

In response to the rising demand of restoration spruce seedlings, the Research program has also established a nursery study to determine the viability of red spruce grown in plugs or beds locally. Red spruce was once a sought-after timber species in the Appalachian Mountains, but was sadly unsustainably logged, resulting in fragmented populations today.

Growth and Yield

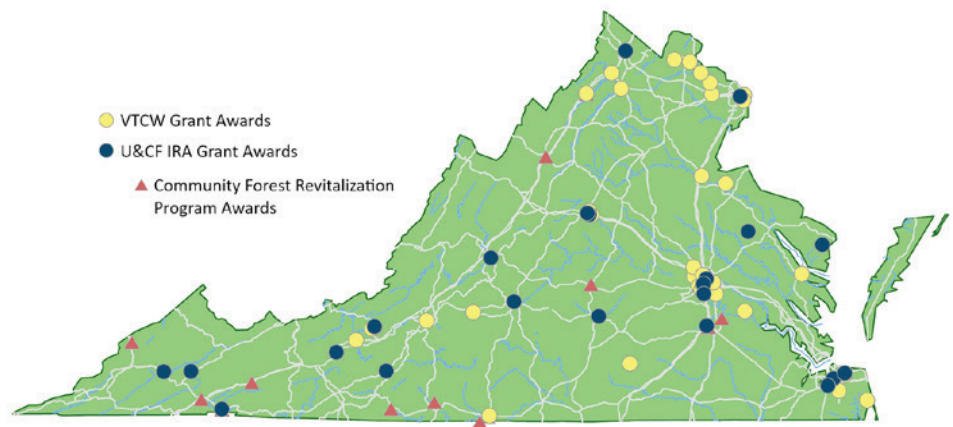
Growth and yield monitoring have become a beneficial tool in forest management. Like the majority of these types of models, they are based on extensive, long-term data. Hosting multiple growth and yield studies, DOF furthers the advancement of these models in partnership with Virginia Tech and their Forest Modeling Research Cooperative (FMRC). DOF joined the FMRC team for measurements of intensively managed loblolly pine studies and installed new plots for post-thinning treatments. Both studies will add to the growing body of loblolly pine modeling.

URBAN & COMMUNITY FORESTRY



The Urban and Community Forestry program represents DOF's team on the ground in Virginia's communities and towns, fostering partnerships between nonprofit organizations, government agencies, businesses and academic institutions to ensure community trees receive care long into the future. DOF provides indispensable assistance in several ways: education, community engagement, tree selection, and grants for tree planting and local program development.

Urban and Community Forestry Grants



By the Numbers

FY24 (07/01/2023 – 06/30/2024)

Urban & Community Forestry Grant Program

26 →
grants awarded*
(26 federal FY23)

Note: Of 26 grants awarded, 4 support the Community Forest Revitalization Program carrying out 13 community projects for the most in-need areas of the Commonwealth.

\$3,384,162 ↗
grant funding awarded*
(\$476,574 federal FY23)

Note: Substantial increase is due to the Inflation Reduction Act.

Virginia Trees for Clean Water Program

34 ↘
grants*
(58 federal FY23)

\$919,968 ↗
awarded*
(\$852,749 federal FY23)

U&CF Volunteer Time

37,411
volunteer hours logged on all U&CF grants*
(new data track, no data FY23)

Educational Programs and Events

720 ↗
participants*
(611 federal FY23)

Throwing Shade VA Program

5,593 ↗
native trees and shrubs
(1,555, FY23)

\$151,011 ↗
reimbursed to 10
participating nurseries
(\$41,985, 3 nurseries, FY23)

Tree City/Campus/Line USA Programs Portfolio

65 ↗
Tree City USA Communities
(61 FY23)

Fairfax Co.
Largest Tree City USA
(pop. 1,148,433 FY23)

Bluemont
Smallest Tree City USA
(pop. 275 FY23)

10 →
Tree Campus USA Schools
(10 FY23)

4 ↘
Tree Line USA Utilities
(5 FY23)

Note: Tree City, Campus and Utilities are awarded in the year following the calendar year of their accomplishments. Communities receive awards in FY24 for calendar year 2023 accomplishments.

* Data based on federal fiscal year (FY) Oct. 1 - Sept. 30.

URBAN & COMMUNITY FORESTRY

continued



Urban and Community Forestry Grant Program

DOF received an influx of additional funding when the agency was awarded \$6.6 million as part of the Inflation Reduction Act (IRA) via the USDA Forest Service to support the creation of healthy, diverse and accessible community forests.

For a significant part of this year, staff have been developing new programming including Riparian Forests for Landowners (RFFL), Community Forest Revitalization Program and a grant request for applications package that will support the Commonwealth's underserved and disadvantaged communities over the next five years.

After a competitive ranking process, 26 grants were awarded totaling \$3,384,162. All projects awarded will work towards the goal of increased and equitable access to canopy through broadened community engagement in local urban forest planning, management and maintenance practices.

Of these 26 awarded grants, four are supporting the Community Forest Revitalization Program that are carrying out 13 community projects for the most in-need portions of the Commonwealth including southwest and southside Virginia. This unique program is being used to develop actionable steps to ensure that the benefits of community forests are made available to all, especially those with the greatest need, and at no direct cost to them.

Virginia Trees for Clean Water Grant Program

In FY24, with funds from state water quality improvement funds, DOF announced the availability of approximately \$1 million in grant funding through the Virginia Trees for Clean Water (VTCW) Grant Program. Supported by the Virginia Water Quality Improvement Fund, the VTCW Grant Program is designed to improve water quality by encouraging tree-planting efforts where they are needed most, while raising awareness of their benefits. The recommended funding range for proposals is between \$1,000 and \$50,000 per project, and funds

are distributed on a reimbursement basis. Grants are awarded to volunteer groups, civic groups, tribal organizations, communities, local governments, non-profit organizations, neighborhood associations, public educational institutions and state agencies.

Grantee Highlight: *Outdoor Learning Space at Keister Elementary*

Keister Elementary School is a Title 1 school located in Harrisonburg. Staff and students have been increasingly excited about engaging in outdoor learning and, with DOF funding and support, added multiple outdoor learning spaces in close proximity to each building wing to be more accessible to all members of the school community. Each learning space was optimized to meet the unique developmental needs of the grade level. Features include a living willow fence, sensory learning stations, native landscaping, a "Goal Garden," custom live-edge oak picnic tables, a hammock haven for reading, a stone labyrinth and a circular seating area to create a micro forest close to the school. These spaces introduce students to trees and nature, and allow them to create their own interest in nature. These learning spaces provide real-world experience with the great outdoors, and stimulate learning, focused concentration and overall education.



URBAN & COMMUNITY FORESTRY

continued



Grantee Highlight: *Surry Food Forest*

Surry County Public Schools established the “Cougar Food Forest” in April 2024 to create a sustainable food source and learning opportunity to teach the youth and community members about the origins of their food. Students planted 24 trees of various fruit and nut varieties and will learn to grow, harvest and preserve the bounty these trees provide as they mature. The community-wide planting event fostered a sense of unity by involving 84 volunteers from Surry County public schools and community groups who worked closely with DOF. Surry County High School agriculture students continue to work to maintain the food forest as it grows into a sustainable source of community food.



Grantee Highlight: *Releaf Cville NeighborWoods Tree Planting*

With a VTCW award, Releaf Cville canvassed low-canopy neighbors in Charlottesville to increase tree cover in the city. Since 2004, Charlottesville’s tree canopy coverage declined significantly from 50% to 38% today. Unfortunately, 12 of Charlottesville’s 19 neighborhoods are below 40% tree canopy. A total of 129 trees were planted (61 on private property and 68 on public property). In addition, the group recruited and trained 10 new members for the high-school student group, the “Green Team.” A program that recruits rising 9th, 10th and 11th graders for a two-week training program about the value of trees, climate change impacts, tree maintenance and tree planting, the Green Team helps canvas neighborhoods and take on one of DOF’s primary goals: get more trees into the ground.



Grantee Highlight: *Pretlow Library Planting Project*

In November 2023, as part of our direct billing option of VTCW, DOF staff assisted the Ocean View Civic League and the Mary D. Pretlow Library in Norfolk to plan and conduct a tree planting around the public library. Goals included creating more shade in the area, beautifying the community and involving local youth to help maintain the new plantings. The community requested a few fruit trees and shrubs to further involve young people in the care of the trees and the fruits they will produce in time. DOF staff assisted partners and other volunteers in planting highbush blueberry, persimmon, live oak, white fringetree and Little Gem magnolia. Tree diapers and mulch were placed around all trees to help with adequate moisture while trees become established in their new environment.

URBAN & COMMUNITY FORESTRY

continued

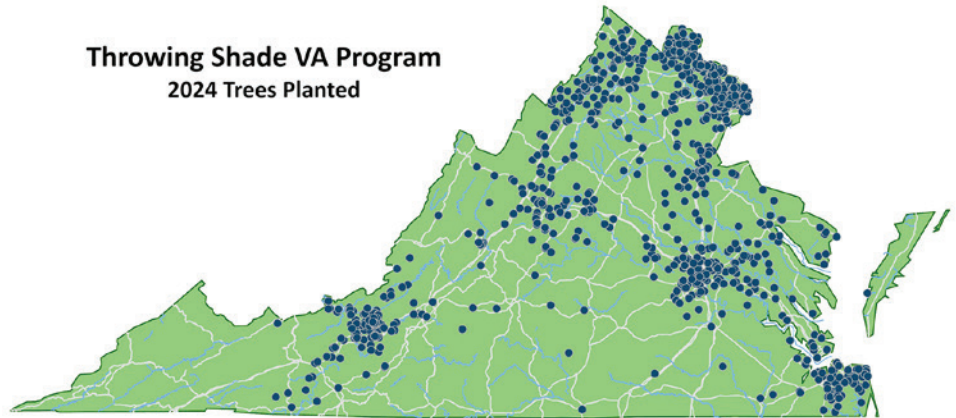


Throwing Shade VA

Throwing Shade VA, DOF's native tree and shrub discount program, expanded to partner with 10 retail nurseries across the Commonwealth in spring 2024. The discount program offers customers native trees and shrubs at a discount of \$25 off \$50 or more. Throwing Shade VA aims to provide more Virginia residents the opportunity to plant trees while educating the public on the many benefits of choosing to plant natives including increased water quality and wildlife habitat.

DOF monitored the number of trees purchased and locations planted through a QR code survey submitted by customers. In FY24, 5,593 native trees and shrubs were purchased and planted through the program, and more than 1,900 individual customers benefitted. A total of \$151,011 was reimbursed to partner nurseries during this year's program.

Throwing Shade VA Program
2024 Trees Planted



FORESTLAND CONSERVATION



Conservation

With more than 16 million acres of forestland in the Commonwealth, Virginia’s citizens enjoy many advantages provided by forests: environmental health, recreational opportunities, scenic beauty and the economic benefits of Virginia’s third-largest industry. However, forestland losses due to population growth in exurban (areas farther out, beyond the suburbs) and rural areas, in addition to increasing data center and solar utility development, place forests and their many benefits at risk.

DOF uses several approaches to address the loss of forestland. DOF’s Generation NEXT program, Century Forest and open-space easement programs represent three of the agency’s strategies for keeping Virginia forested. The Forestland Conservation team, our

partners at the Virginia Cooperative Extension (VCE) at Virginia Tech, and other partners help landowners keep their land “in forest” through education, management and estate planning. DOF and our partners offer resources to help landowners take the essential first steps toward long-term forestland retention...primarily by creating plans. This is important to all Virginians who enjoy the benefits of forests, because conservation requires instruction, mentoring and planning to protect forests in perpetuity.



Generation NEXT

For 15 years, DOF and VCE have collaborated to offer the Generation NEXT program. These public education seminars help prevent the loss



By the Numbers

FY24 (07/01/2023 – 06/30/2024)

Conservation Easement Program	
10 ↗ easements added (6 FY23)	3,126 ↘ acres added in easements (4,113 FY23)
7 ↗ easements added in the Chesapeake Bay watershed (1 FY23)	1,254 ↗ acres added in easements in the Chesapeake Bay watershed (370 FY23)
	2,831 ↘ forested acres added in easements (3,798 FY23)
15.92 ↘ miles of watercourses added in easements (19 FY23)	5.94 ↗ miles of watercourses added in easements in the Chesapeake Bay watershed (2.4 FY23)
Legacy Estate Planning Workshops	
221 ↗ participants trained in legacy planning (108 FY23)	

Century Forest Program

59 ↗ properties with Century Forest designation (56 FY23)	17,625 ↗ acres with Century Forest designation (17,249 FY23)
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Conservation Easement Portfolio

229 ↗ properties under conservation easements (219 FY23)	63 → counties/cities containing easements (63 FY23)
97,669 ↗ acres in easements (94,817 FY23)	89,323 ↗ forested acres in easements (86,175 FY23)
139 ↗ properties under conservation easements within the Chesapeake Bay watershed (132 FY23)	35,316 ↗ acres in easements within the Chesapeake Bay watershed (33,603 FY23)
489 ↗ miles of watercourses in easements (474 FY23)	177 ↗ miles of watercourses in easements in the Chesapeake Bay watershed (171.4 FY23)

FORESTLAND CONSERVATION

continued



of forestland and other working lands in Virginia by providing landowners with proven tools and strategies to keep their properties “intact, in forest and in the family.” The goal of the program is to encourage forest landowners to plan for intergenerational transfer and the future of their forests through thoughtful planning and to equip them and their families to have frank and at times, difficult conversations.

Landowners are guided through workshops co-facilitated by natural resource professionals, attorneys and financial planners. Forest landowners learn about conservation, available legal resources and financial tools, and the complicated yet rewarding process to complete an estate plan (also known as a “legacy plan”). This year, DOF and VCE welcomed 221 participants to legacy estate planning workshops held across the state.

Open-Space Easements

One way to preserve Virginia’s forests is through the implementation of open-space easements, voluntary perpetual agreements between landowners and a qualified conservation organization or public entity that limits development, while allowing private ownership and rural use such as forestry or farming. Created in 2004, DOF’s open-space easement program specializes in the stewardship of parcels that conserve relatively large and connected expanses of managed forestlands. These efforts help the agency maintain wildlife habitat and water quality, prevent flooding and support the Commonwealth’s forest products economy.

Office of Working Lands Preservation

The 2024 session of the General Assembly moved the Office of Farmland Preservation from VDACS to DOF. The new Office of Working Lands Preservation (OWL) will focus on the conservation of farms and forestland through outreach to landowners. OWL will provide and communicate relevant information to landowners on intergenerational land transfer, operating the Farm Link website to help pair aspiring farmers with landowners, administering the Purchase of Development Rights funding, and accepting open-space easements on working lands.

Virginia Land and Easement Acquisition Partners

DOF initiated a working group of colleagues from the DCR, DWR, Virginia Department of Historic Resources, and Virginia Outdoors Foundation. Meeting quarterly, the group shares knowledge and strategies to further the land conservation goals of each partner agency. In FY24, members helped each other successfully pursue federal funding for real estate acquisitions and create efficiencies in the Commonwealth’s processes for land and easement acquisitions.

Forest Sustainability Fund

Passed by the 2022 session of the General Assembly and increased in the 2024 session, the Forest Sustainability Fund assists localities that offer land-use taxation to forest landowners. Land-use value assessment is the method of taxing real estate based on its current use in agriculture, forestry, horticulture or open space, rather than on a property’s market value. This results in lower real estate property taxes and encourages landowners to keep their land as forests or farms. While properties that qualify for land-use valuation require fewer county services, less revenue is received by local governments. Counties can apply for an allocation to offset forgone tax revenue from properties in forest land use. DOF, participating localities, associations and Virginia Tech collaborated to develop the process and methodology to distribute money from the Fund.

In FY22-23, the \$1 million allocation was distributed among 68 localities, with an average amount of \$14,706. The funds are being used for public education, outdoor recreation and forest conservation projects. The funds from this program help localities continue land use as an important tool for forest landowners and farmers to keep their land in production. While there was no additional funding in FY24, \$2.5 million is anticipated for FY25, with funds to be distributed in early 2025.

WATER QUALITY PROTECTION



Watershed Forestry

DOF's Watershed program guides the agency's work on protecting and improving water quality through tree planting and sustainable forest management. The Watershed team focuses on increasing riparian forest buffer establishment across the Commonwealth. Simply defined, riparian forest buffers are trees growing near waterways. These trees act as filters, slowing and capturing nutrients (primarily nitrogen, phosphorus and sediment) before they reach the water. By keeping these nutrients on land, these buffers prevent excess nutrients from accumulating downstream. In addition to creating cleaner water, riparian forest buffers provide other benefits including mitigating erosion, providing wildlife habitat, reducing flooding and many more.

Riparian Forests for Landowners Program

To further expand riparian buffer coverage, in FY24 the Watershed team launched the RFFL program, statewide flexible funding available to landowners with no-cost riparian buffer installation and one year of maintenance. With expanded eligibility requirements, RFFL provides a funding option for landowners who previously did not qualify for cost-share assistance. RFFL is an expansion of the James River Buffer Program, which offers the same services within a smaller geography. DOF is currently accepting projects and looks forward to planting the first RFFL trees in spring 2025.

Virginia Security Corridor Partnership

The Watershed program also leads the agency's involvement with the Virginia Security Corridor Sentinel Landscapes. The Virginia Security Corridor is a local, state and federal partnership that serves to help the Commonwealth protect critical military infrastructure while building on established environmental initiatives. The Sentinel Landscapes partnership focuses primarily on three priority areas: preventing encroachment by maintaining working lands, building resilience against natural hazards, and supporting threatened and endangered species habitat.

Simply put, this initiative seeks to identify threats to military readiness such as nearby development of working lands, flooding and wildfires, and provides nature-based solutions such as conservation easements, shoreline stabilization, and sustainable forest management. These projects allow our military partners to maintain operations while enhancing natural resources for the benefit of all Virginians.

Virginia received its designations in 2023 and DOF has since hired two coordinators to advance this work. These coordinators are building a network of military, non-governmental organizations, and governmental partners to identify priority issues and shepherd solutions to address them.



By the Numbers

FY24 (07/01/2023 – 06/30/2024)

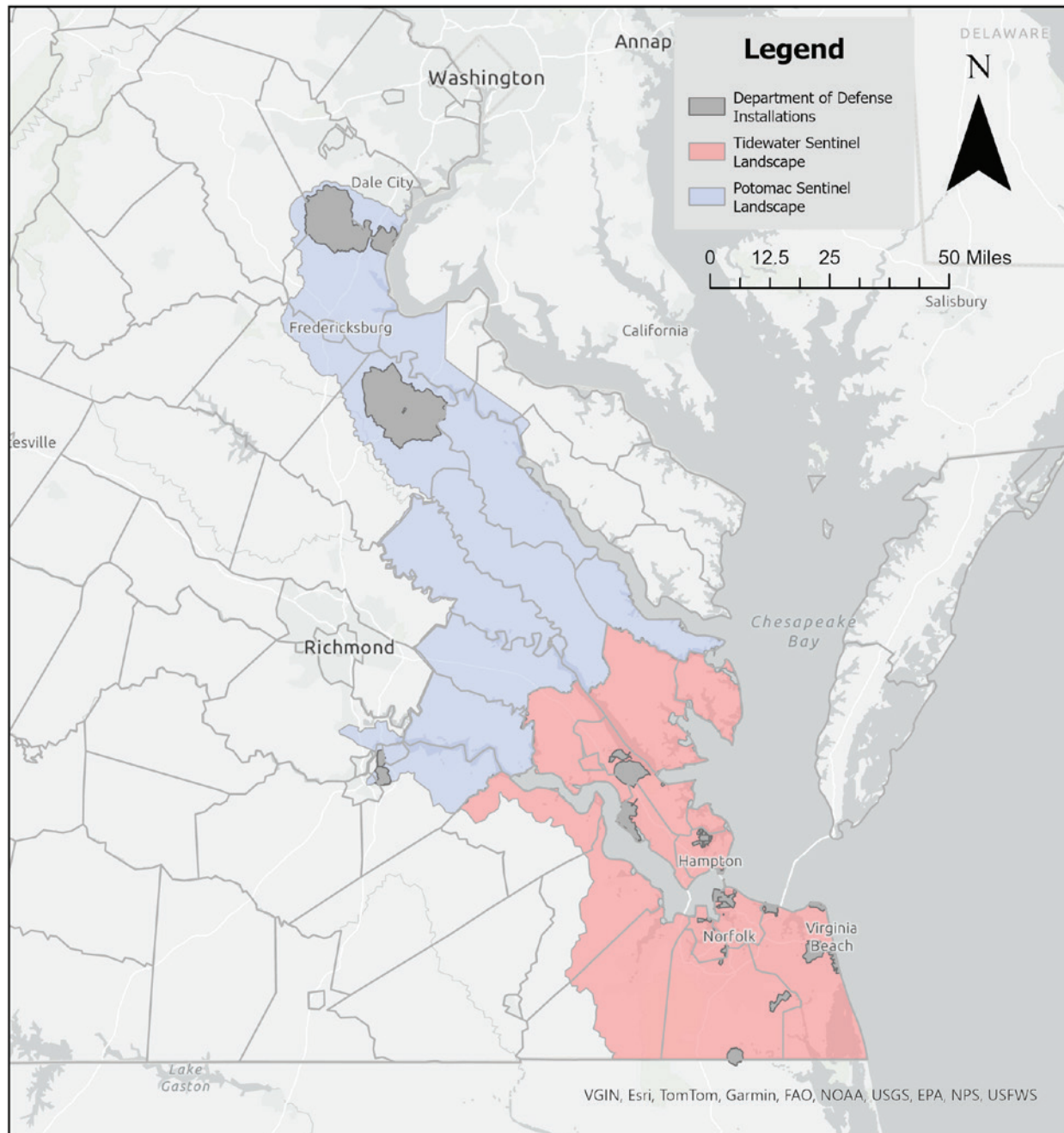
Riparian Buffer Establishment Program	
229 ↘ riparian buffer establishment projects (285 FY23)	722 ↘ acres established (817.4 FY23)
117 ↘ riparian buffer establishment projects in Chesapeake Bay watershed (179 FY2)	333.6 ↘ acres in Chesapeake Bay watershed (469.6 FY23)

James River Buffer Program	
8 ↘ riparian buffer establishment projects (39 FY23)	86.7 ↘ acres established (114 FY23)

* Data based on federal fiscal year (FY) Oct. 1 - Sept. 30.



Virginia Security Corridor Tidewater and Potomac Sentinel Landscapes



Data Sources: Esri Living Atlas, Maryland Department of Planning and MD iMAP, Virginia Department of Emergency Management, & US Census Bureau

WATER QUALITY PROTECTION

continued



Protection During Timber Harvesting

DOF is responsible for promoting and enforcing the Virginia Silvicultural Water Quality Law (Code of Virginia §10.1-1181.1 through §10.11181.7). To protect water quality, the agency develops best management practices (BMPs) for forest harvesting operations and works cooperatively with agencies and landowners throughout the Commonwealth. DOF staff inspects every harvesting operation within 20 days of the notification date and every 45 days thereafter through harvest completion. This program provides one-on-one contact between DOF staff and the harvest operators offering unique opportunities to educate operators about BMPs and the latest techniques in water quality protection.

In FY24, 135 DOF staff completed 15,799 harvest inspections. Ninety-five percent of these inspections were conducted by 76 staff and 90% were conducted by 63 staff. The use of drones to assist with harvesting inspections, has proven to be an innovative process improvement. Using drones, typical harvest inspections can be conducted in a quarter of the time.

One of the most valuable BMPs for water quality is the unharvested or partially harvested streamside management zone. This voluntary measure assures an unbroken forest ground cover near the stream, reducing soil erosion, providing shade for water and preserving wildlife corridors. Through the Riparian Buffer Tax Credit Program, landowners



By the Numbers

FY24 (07/01/2023 – 06/30/2024)

BMP Audit Implementation	
95.0% ↘ BMP implementation rate* (96.8% CY23)	95.6% ↘ BMP implementation rate in the Chesapeake Bay watershed* (97.7% CY23)
Harvest Inspections	
3,535 ↗ harvest sites (3,319 FY23)	161,364 ↗ acres harvested (157,586 FY23)
15,799 ↗ harvest inspections (14,673 FY23)	4.5 ↗ average inspections per harvest (4.4 FY23)
135 ↗ harvest inspectors (133 FY23)	
605 ↘ pre-harvest assistance provided (680 FY23)	187 ↘ pre-harvest plans provided (270 FY23)
151 ↘ during or post-harvest assistance provided (192 FY23)	

* Data based on calendar year (CY) Jan. 1 - Dec. 31.

Water Quality Law Enforcement	
108 ↗ law enforcement actions (106 FY23)	2 → special orders issued (2 FY23)
0 → emergency special order issued (0 FY23)	25 ↗ failure to notify violations (11 FY23)
Logger BMP Cost-Share Program	
46 ↘ projects (88 FY23)	\$393,637 ↘ awarded to loggers (\$736,305 FY23)
Sharp Logger Training	
19 ↗ training sessions (14 FY23)	694 ↗ loggers trained (504 FY23)
Riparian Buffer Tax Credit Program	
47 ↘ tax credit applications** (63 TY22)	964 ↘ acres of buffers retained during timber harvests** (1,222 TY22)
\$419,056 ↘ tax benefits** (\$554,535 TY22)	\$1,961,432 ↘ buffer value retained** (\$2,654,919 TY22)

** Data based on tax year (TY) Jan. 1 - Dec. 31.

WATER QUALITY PROTECTION

continued



can elect to receive a state tax credit for a portion of the value of the unharvested trees retained in the buffer. By doing so, the buffer is left undisturbed for 15 years.

Water Quality Enforcement

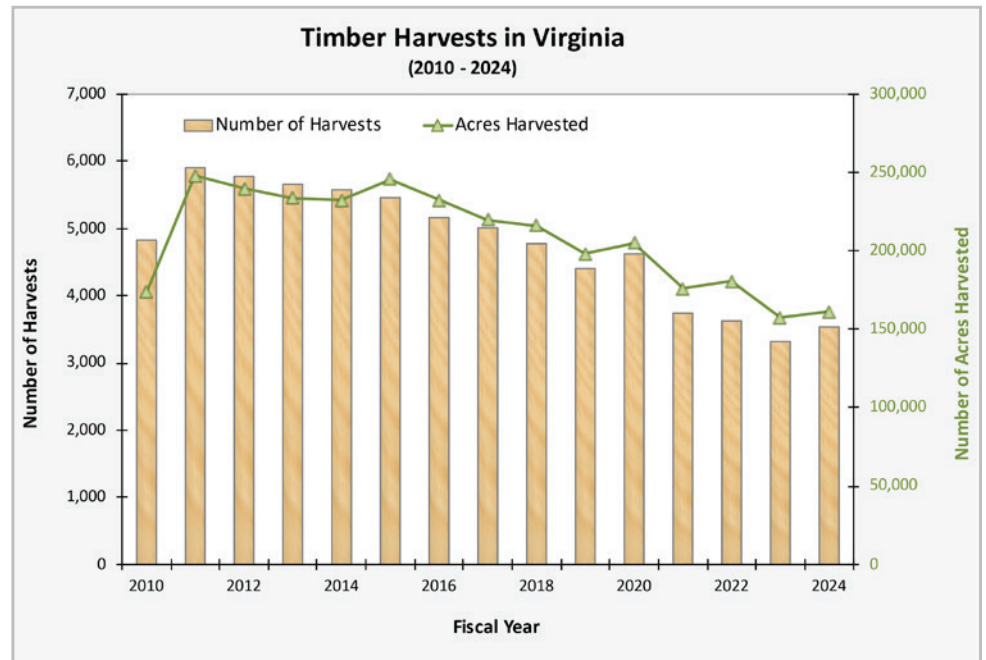
The Virginia Silvicultural Water Quality Law authorizes DOF's State Forester to assess civil penalties to owners and operators who fail to protect water quality during forestry operations. Virginia is the only state in the southeastern U.S. that grants such enforcement authority to the state's forestry agency. Over the past several years, DOF has seen a downward trend in enforcement actions, which is attributable to a forestry community invested in protecting the waters of the Commonwealth and DOF staff who are proactive with pre-harvest assistance and planning.

Pre-Harvest Planning and Pre- and Post-Harvest Assistance

Throughout the year, DOF staff receive many requests for pre-harvest assistance and planning as well as requests for assistance during the harvest and completion. The requests range from assistance with one stream crossing to a pre-harvest plan for the entire harvest. Pre-harvest planning is one of the most important BMPs. Researching and planning a harvest is critical for a successful operation. Assistance and planning cover items such as the location, maintenance and closeout of haul roads, landings, skid trails, stream crossings and streamside management zones. A lot of requests are related to the location and type of stream crossing. Stream crossings may be temporary or permanent and can be a culvert, ford or bridge.

Public Education

Logger education is another key area of the DOF Water Quality program. Since the development of the



first BMP Manual for Virginia, DOF staff have helped provide harvesting contractors with water quality protection training ranging from harvest planning and map reading, to using GPS units to implement forestry BMPs. This training is offered through agency-sponsored events and the agency's participation in the Sustainable Forestry Initiative SHARP (Sustainable Harvesting and Resource Professional) Logger training program. Since 1997, DOF has helped to train more than 12,000 harvest professionals through 404 programs featuring water quality protection education.

Silvicultural BMP Implementation

A statewide audit system has been in place since 1993 to track trends in BMP implementation and effectiveness. DOF is monitoring 240 harvested tracts each year, with 60 tracts selected randomly each quarter from harvests that received a DOF final inspection two quarters before the audit quarter. This allows approximately three to six months between BMP implementation and the audit field visit. This timing allows for an assessment of how BMP integrity changes over time and provides for a modest sampling of silvicultural practices, such as site preparation, tree

WATER QUALITY PROTECTION

continued



planting and weed control. The definition of significant risk describes a water quality concern that is observed on an audit tract that, due to a lack of BMPs, is causing or is likely to cause pollution. When a significant risk was noted during an audit field visit, the auditor also determined if active sedimentation was occurring. The audit results showed none of the sites visited had significant risk or active sedimentation present after operation closeout. The information compiled using this audit process forms the basis of reporting for Virginia's Phase III Watershed Implementation Plan (also known as WIP III) in response to the total maximum daily load (commonly called TMDL) for the Chesapeake Bay. DOF assisted with several DEQ TMDL meetings providing harvesting and BMP audit data. This information is also valuable for educational purposes. Each individual question in the audit process is also tracked over time to determine which issues in the BMP Manual need improvement and which issues need to be addressed during the SHARP Logger training programs.

Logger BMP Cost-Share Program

The Logger BMP Cost-Share Program has been around since 2006. Funding for the program is from the Virginia Water Quality Improvement Fund, provided by DCR to the DOF. The program is open to forest harvesting operators who are certified under the SFI SHARP Logger Program administered by Virginia Forestry Association and Virginia Tech (or equivalent if not in Virginia), have no current debt for either civil penalty or past due bills owed to DOF, and do not have an active water quality impairment (water quality recommendations, special orders or emergency special orders) open on any tracts on which they are currently operating.

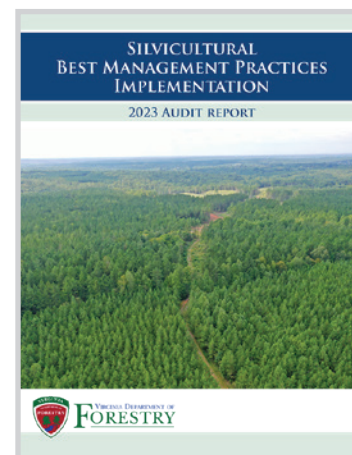
Eligible cost-share practices include the purchase of a portable bridge to be used at the site of the stream crossing and installation of forestry BMPs that are associated with approved stream crossings. This would include such things as culvert purchase, equipment time for installation of BMPs plus operator, and materials such as grass seed, lime, fertilizer, silt fence, etc.

For FY23 and FY24, the DOF received \$1 million in funding, the most the program has ever received. At the end of FY24, 46 projects were funded for a total of \$393,637. All this funding has been allocated.

USDA Forest Service Temporary Bridge Program

DOF received funding from the USDA Forest Service through the Temporary Water Crossing Program. One of six southern states to apply for and receive funding, DOF received the funds through the Bipartisan Infrastructure Law.

The funding (\$350,000) supported temporary water crossings for skidders and heavy forestry equipment through the implementation of a cost-share bridge program very similar to our current program. The increased use of portable bridges and mats mitigated water resource damage and prevented water quality degradation. Bridge crossings are preferred over culvert and ford crossings as they span the entire stream channel, thus resulting in less impacts to the stream channel and banks. For FY24, 16 projects were completed for a total of \$141,120. The remaining funding has been allocated.



[Read the full BMP Implementation Report](#)

FOREST PRODUCTS UTILIZATION & MARKETS



Forestry is Virginia’s third leading industry, an economic powerhouse that generates more than \$21 billion dollars in revenue and employs more than 108,000 people. Forest products and the markets for those products support rural economies across the state and are vital to helping landowners keep their land in forest.

DOF’s Forest Utilization and Marketing team supports the needs of the Commonwealth’s traditional forest industry while continuously exploring new sustainable forest products to diversify and expand Virginia’s forest economy. New and expanding innovation areas include biochar, urban wood, mass timber products and sustainable aviation fuel. The biochar utilization projects included an informational webinar, urban riparian buffer planting, and an ammonia reduction mitigation in commercial poultry houses.

Urban Wood Education Project

DOF continues to partner with the Virginia Universities Urban Wood Education project, which exposes students to the use of local, urban wood in practical applications such as building construction, furniture creation and wood products research. Skills taught through this program include sawmilling, wood drying, solar kiln construction, wood identification and design-build

applications. The program is designed for architecture, industrial design and natural resource students. Six universities and one community college currently participate in the program. They include the University of Virginia, Virginia Commonwealth University, William and Mary, Virginia Tech, and Mountain Gateway Community College. Working in partnership with the universities, the program has also grown to include the high school level.

Forestry Business Development

Utilization and Marketing provided information for an ever-increasing number of forest resource and forest products inquiries during the 2023-24 program year. The team also conducted the annual Timber Products Output Survey for Virginia sawmills. Information gathered from this survey is critical for understanding how forest resources are being utilized, and to highlight the importance of this vital industry sector locally, regionally and globally.

This year, DOF also provided support to VDACS and the Virginia Economic Development Partnership with the expansion and recruitment of seven new forest product businesses.



By the Numbers

FY24 (07/01/2023 – 06/30/2024)

Forest Products Tax*

\$2,413,576 ↘

forest products tax collected
(\$2,552,039 CY23)

Business Assistance

110 ↘

assistance responses
(150, FY22)

Forest Inventory Analysis Program

783 ↗

inventory plots evaluated
(776 FY23)

* Data based on calendar year (CY) Jan. 1 - Dec. 31.

STATE LANDS



DOF doesn't just assist private landowners, but also plays an important role on state-owned lands. These areas make up approximately 15,000 to 20,000 acres of forested land across more than 110 properties across Virginia, such as those owned by other state agencies and academic institutions. Working closely with state agencies, departments and institutions, DOF develops forest management plans for state-owned lands to address management, sale and harvest of timber, and reforestation (§10.1-1122 A).

Agencies and institutions whose properties fall under this program include all Virginia community colleges and state-supported four-year colleges. State agencies include the Virginia Department of Behavioral Health and Developmental Services, Virginia Department of Corrections, Virginia Department of Juvenile Justice, Virginia Department of Transportation,

Virginia Department of Veteran Services, Virginia State Police, Virginia School for the Deaf and Blind, Virginia Department of General Services, Virginia Department of Historic Resources, Virginia Department of Military Affairs, Richard Bland College, and the Woodrow Wilson Rehabilitation Center.

DOF creates and updates management plans for each property (at least every 10 years). Plans are written with consideration of the landowner's management objectives. Funding for the program is derived from the sale of timber and used to carry out management projects that maintain the health of forests, help improve water quality, and ensure Virginia's state-owned lands are sustainably managed for the long term. Per the Code of Virginia, some funding is returned to property owners whose properties were not purchased with General Fund monies.



By the Numbers

FY24 (07/01/2023 – 06/30/2024)

Forest Management

8 ↗ forest management plans completed (3 FY23)	216 ↗ acres reforested (154.3 FY23)
\$138,094 ↘ timber sale revenue (\$190,058 FY23)	\$97,612 ↘ revenue returned to special fund properties (\$99,172 FY23)
\$68,044 ↘ spent on forest management projects (\$91,856 FY23) Note: Costs include contracted services and seedling costs; does not include DOF time and expenses	\$39,162 ↗ spent on riparian buffer projects in the Chesapeake Bay Watershed (new initiative, no data FY23)

Forest Health

6 ↘ acres treated for invasive species (35 FY23)	\$6,480 ↘ spent on invasive species treatments (\$19,000 FY23) Note: Funding received from Forest Health grants and State-Owned Lands Fund.
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STATE LANDS

continued



Good Neighbor Authority

Since 2018, DOF has partnered with the USDA Forest Service in the Good Neighbor Authority (GNA) program. GNA allows DOF (and other participating states) to assist the USDA Forest Service in the implementation of forest management on federal lands through Supplement Project Agreements (SPAs). The benefits are many: increased capacity for the USDA Forest Service to complete more on-the-ground projects, work opportunities for private industry, and increases the amount of available forest products for harvesting and milling in majority-Virginia mills. Recognizing that forest health and wildlife management concerns cross ownership boundaries, the Commonwealth of Virginia expanded the use of GNA to other agencies such as DWR in 2020. Increasing the capacity to accomplish more in Virginia’s forests helps the overall management of the state’s forested resources.

Currently, there are four geographic areas with agreements in place between DOF and the USDA Forest Service George Washington and Jefferson National Forest. These include Round Mountain West (Bland County), Ewing Mountain (Carroll, Wythe, and Grayson), Potts Creek (Allegheny County) and Green Hill Flats/ Blacks Creek/Moore’s Creek State Forest (Rockbridge County). Additionally, another two GNA’s were signed – one with USDA Forest Service, State and Private funding and one with the use of Wyden Infrastructure Funds.

An additional SPA was signed in September 2023 – the Infrastructure, Prescribed Fire and Recovery, and Restoration and Revegetation agreement – for use on federal lands and nearby state and private lands, which was awarded \$302,000. This newest SPA has already funded three projects: 1) culvert replacement on USDA Forest Service lands (\$9,892 + installation cost), 2) spraying project on Devils Backbone State Forest for a spongy moth infestation (\$5,586), and 3) hardwood planting and invasive control project on McCormick Farms – a Virginia Tech Agricultural Research and Extension Center property that is a part of the State-Owned Lands program (\$5,458).

Mountain Valley Pipeline Mitigation Funding

In late 2023, DOF was awarded \$113,600 of Mountain Valley Pipeline Mitigation Funding for use on Moore’s Creek State Forest and surrounding USDA Forest Service lands encompassing the Black’s Creek and Green Hill/ Smith Flats area for project work that would fund \$39,960 on the state forest and the balance on federal lands that DOF will administer over the next four years.



By the Numbers

FY24 (07/01/2023 – 06/30/2024)

Good Neighbor Authority - Federal Lands		Good Neighbor Authority - State and Private Lands	
7 ↗	\$256,131 ↘	2 ↗	\$11,044 ↗
forest management projects on federal lands (4 FY23)	timber sale revenue (\$436,095 FY23)	forest management projects on state and private lands (new initiative, no data FY23)	expenditures on state and private lands* (new initiative, no data FY23)
	\$41,451 ↗		
	expenditures on federal lands* (\$0 FY23)		

*Expenditures do not include DOF time.

STATE FORESTS



Currently consisting of 26 properties covering approximately 74,969 acres (the majority of which are certified sustainable to both the Sustainable Forestry Initiative (SFI) and American Tree Farm System standards), DOF’s State Forests program follows sustainable, science-based forestry practices that increase the value of the resource while improving health and productive capacity.

In FY24, the state forests continued to see more visitors and increased demand for recreational activities in the form of hiking, biking, hunting, fishing and horseback riding. One example of increased demand was the RVA 100k/50K gravel bike race held at Cumberland State Forest. More than 120 riders took part, many of whom were first-time visitors to the state forest. Education, training and tours also continued to rebound in FY24. Virginia Cooperative Extension, master naturalists, K-12 students, college students and other groups are once again taking advantage of the state forests as outdoor classrooms and to conduct forest management demonstrations.

The state forests continue to help improve the forestlands of the Commonwealth. FY24 saw the establishment of a new shortleaf pine seed orchard on the Appomattox-Buckingham State Forest. Shortleaf

pine is a diminishing tree species in Virginia and providing a local seed source will help DOF nurseries produce viable seedlings for our future forests.

The state forests continued to serve as testing grounds for implementation of the agency’s Hardwood Initiative, which promotes quality management to advance healthy hardwood forests today and tomorrow. In FY24, the state forests were used for training DOF staff and consulting foresters interested in the hardwood management program. The initial crop tree release projects were remeasured to determine improvement to the stands. In addition to improving our forests, activities that facilitate tree regeneration are often beneficial to game and other wildlife. DOF is currently working with the Rough Grouse Society on a 60-acre hardwood release project on Channels State Forest (covering 4,836 acres in Washington and Russell counties).

Since the listing of the northern long-eared bat as an endangered species, DOF has needed to modify the timing on some forest management practices. DOF is working closely with the U.S. Fish and Wildlife Service and DWR to identify the best means to minimize impacts to the bats and other endangered species while continuing to practice sustainable forestry.



By the Numbers

FY24 (07/01/2023 – 06/30/2024)

State Forests		Forest Management	
26 → state forests (26 FY23)	74,969 → acres state forest land (74,969 FY23)	\$1,724,586 ↘ timber sale revenue (\$2,101,769 FY23)	\$356,147 ↘ paid to counties where revenues were generated (\$422,605 FY23)
	74,882 → acres state forests SFI-certified (74,882 FY23)	660 ↘ acres site prepared for reforestation (669 FY23)	
State Forest Use Permits		0 ↘ hardwood demonstration projects (3 FY23)	0 ↘ acres hardwood demonstration projects (43 FY23)
13,511 ↗ state forest use permits sold (11,626 FY23)	\$202,660 ↗ state forest use permits net revenue (\$174,390 FY23)		

NURSERIES



DOF’s nurseries continue to provide high-quality tree seedlings suitable for Virginia climates for a wide customer base of landowners, nurseries and the public. In FY24, even though DOF saw a decrease in the total number of seedlings sold, increased engagement on social media has increased the online sales (public) orders by 29.3%. The overall decrease could be attributed to the downturn in the economy for large-scale pine planting jobs. In the future, these opportunities may increase due to cost-share for landowners.

Record Walnut Collection

Every year DOF works with citizens of Virginia to help collect acorns and nuts to assure a high-quality crop at the Augusta Nursery. Every year varies in agency collection totals due to weather, pollination, seed development, seed viability and wildlife activity. The 2023 fall collection season was a down year due to late spring frost and summer drought conditions. However, on the brighter side it was a record year for black walnut collection in Virginia at 9.5 tons (a 90% increase). The record black walnut collection represents a huge cost savings to DOF of \$47,000.

Increasing Capacity

DOF’s Augusta nursery is implementing expansion efforts in hardwood production. In FY24, the nursery’s efforts to expand was helped by General Assembly allocation of funding to help purchase new equipment including tractors, seedling lifting machines, ground tillage equipment, mulch spreaders and irrigation supplies.

The demand for hardwood seedling production far exceeds the number of seedlings grown in the U.S. One of the limiting factors is finding suitable seed to sow. DOF’s Augusta Nursery is continuing to increase available acreage, the total number of hardwoods and species planted, while deferring a portion of southern pine acreage to the Sussex Nursery in Courtland.

Enhanced Operations – New Seedling Lifter

This year, the Sussex Nursery was able to invest in the agency’s tree growing operations by purchasing a new LOVE seedling-lifting machine. The new lifter replaces a 20-year-plus machine, uses less manpower and lifts more linear bed feet per hour compared to the old lifter. This integral investment increases efficiency in the field and allows Nursery staff to address other necessary tasks such as assisting in the grading room.



By the Numbers

FY24 (07/01/2023 – 06/30/2024)

Sales		Acorn and Nut Collection	
21,445,370 ↘ seedlings sold (27,417,280 FY23)	3,572 ↗ seedling orders (2,762 FY23)	1.5 tons ↘ acorns (3 tons FY23)	9.5 tons ↗ nuts (5 tons FY23)
Inventory		11 tons ↗ total acorns/nuts collected (8 tons FY23)	315,000 ↘ seedlings (based on anticipated germination) (1.5 million FY23)
49 ↘ hardwood species grown (52 FY23)	9 ↗ conifer species grown (8 FY23)		



For more information about services or programs in your area, contact your local DOF office:

www.DOF.Virginia.gov



Virginia Department of Forestry

900 Natural Resources Dr., Suite 800
Charlottesville, VA 22903

Phone: (434) 977-6555 ; VDOF@DOF.Virginia.gov

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