

# STATE OF THE FOREST

## 2025

FISCAL YEAR

ANNUAL REPORT ON VIRGINIA'S FORESTS

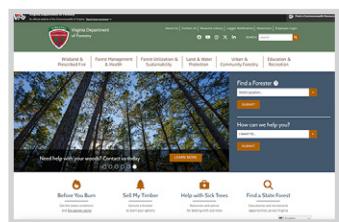


VIRGINIA DEPARTMENT OF  
**FORESTRY**

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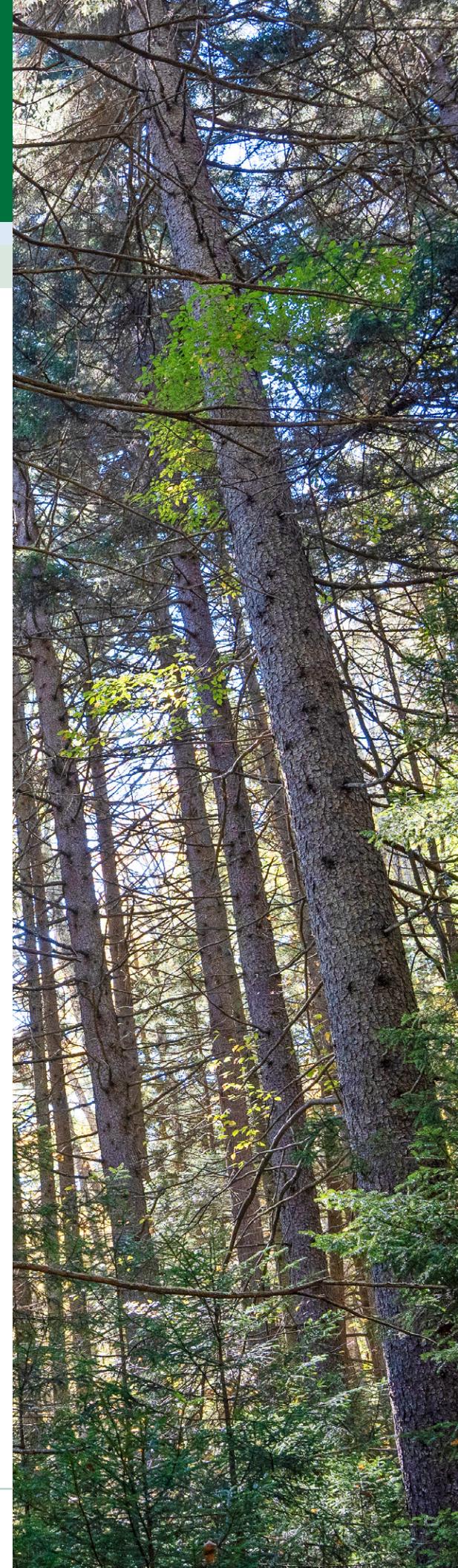
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Find more on the  
DOF website

This annual report provides state fiscal year (July 1, 2024 - June 30, 2025) information unless otherwise noted.

*Cover photo: Goshen Wildland Management Area in Rockbridge County features rugged valleys, cascading streams and lush forests. Public lands, including state forests and wildlife management areas, protect key forestlands and waterways while also increasing recreational access.*



# FROM THE STATE FORESTER



Our State of the Forest Annual Report details the activities and accomplishments of the Virginia Department of Forestry (DOF) – as well as the status of our forest resource – over the past fiscal year. Once again, this publication demonstrates that the work of DOF can vary as much as the species, benefits and challenges within the 16 million acres of forestland found across the Commonwealth.

It may seem like a distant memory for some, but the fall 2023 and spring 2024 fire seasons continue to serve as stark reminders of the critical importance of emergency response preparation and coordination. Following two of the most active periods of wildfire suppression in the last 20 years, I'm pleased to share that FY25 saw a return to average activity in terms of the number of wildfires in the Commonwealth, with a slightly higher than average number of acres burned. To demonstrate the Commonwealth's commitment to effective coordination efforts, last October, Governor Glenn Youngkin signed Executive Order 40 to enhance Virginia's wildfire preparedness and response capabilities. DOF partners with local, state and federal cooperators to ensure all of Virginia's forests – and those who live in and near them – are protected.

Last September, Hurricane Helene hit multiple Virginia counties across DOF's western region with relentless flooding, widespread power outages and thousands of downed trees. DOF quickly responded with 65 personnel clearing fallen trees from hundreds of miles of roads, providing access for other first responders. DOF has worked closely with the Virginia Department of Agriculture and Consumer Services (VDACS) to provide relief, through U.S. Department of Agriculture block grants, to Southwest Virginians who experienced farmland and timber loss due to Helene.

Speaking of funding opportunities, DOF remains in the fortunate position to provide assistance to partners, landowners and localities. In FY25, DOF awarded \$2.5 million from the Forest Sustainability Fund to 70 Virginia localities. The Fund assists localities that provide forest land use taxation as an incentive for landowners to keep their land in forest. In Virginia, 76 localities have forest land use taxation, with an estimate of over 3,000,000 acres enrolled on more than 70,000 parcels. With an average forgone revenue of over \$1.1 million per locality, the proportional distribution averaged \$35,000 per locality.

The Commonwealth adds 7.3 million acres of farms to our 16 million acres of forests to provide Virginians with the food and fiber that sustain us. As you will read several times in this report, agriculture and forestry are key parts of our economy while also offering rustic views, clean air and water, and wildlife habitat. FY25 marked the inaugural year of the Office of Working Lands Preservation (OWL), created in the 2024 session of the General Assembly by merging the Office of Farmland Preservation – formerly housed within VDACS – with DOF's Forestland Conservation program.

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# FROM THE STATE FORESTER

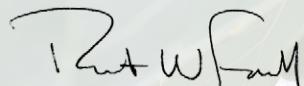
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OWL focuses on the conservation of farms and forestland through federal, state and local partnerships, and outreach to landowners. I want to thank the land conservation community for supporting DOF over the first 20 years of the forestland conservation program. I am proud to share that DOF recently surpassed 100,000 acres protected under conservation easements. As of the end of FY25, the agency holds 234 easements in 64 localities. With the creation of OWL, DOF's open-space easement program also seeks to conserve Virginia's prime agricultural lands and the farm businesses they sustain.

DOF is honored to be charged with developing Virginia's first Forestland and Urban Tree Canopy Conservation Plan mandated by the General Assembly's House Bill 309 (HB309). This isn't just another study, but a comprehensive effort to ensure that Virginians continue to receive the many benefits that trees and forests provide. This study will incorporate not only high-resolution imagery but also harvest data unique to DOF. This analysis will allow us to better understand where canopy is being gained and lost within the Chesapeake Bay region of Virginia, but also throughout the entire state. DOF began hosting Technical Advisory Committee meetings at our Charlottesville Headquarters this year to craft the first five-year plan. We look forward to sharing the final plan, scheduled for completion next fall.

One of our main goals at DOF will come as no surprise...getting more trees in the ground. This year, DOF once again expanded the successful Throwing Shade VA program, which incentivizes Virginians to plant native species that result in water quality benefits, and offer food and habitat for wildlife and pollinators. From March 1 to May 1, retail customers receive \$25 discounts on select native trees and shrubs from participating nurseries. The program has grown every year since its launch in 2023, with plans to expand to more nurseries next year. You will read more about how we support communities and towns with various tree-planting efforts in the pages that follow.

Every day, DOF and our many partners across the Commonwealth offer a wide variety of resources to help landowners, agencies and organizations plant, grow and manage trees and forests. This is important to all Virginians who enjoy the benefits of forests, because conservation requires instruction, mentoring and planning to protect the working lands of the Commonwealth in perpetuity.



Rob Farrell  
State Forester

# VIRGINIA FOREST TRENDS

## Forested Land

For 2025, nearly 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. This includes large areas of land such as the Shenandoah National Park, Virginia State Parks and more. Since 1977, Virginia has lost more than 400,000 acres of forestland, and this loss is projected to continue long term due to conversion to other uses.

## Forest Types

The forests of Virginia are composed of a wide diversity of species. Hardwood and hardwood-pine forest types make up more than 12.4 million acres of the Commonwealth's forest – more than 79%. The area of hardwood forest types has increased steadily since the first forest inventory in 1940, when 8.1 million acres existed. The hardwood forests of Virginia are maturing, with more than half the their acreage in stands 60 years old or older.

Pine forests represent approximately 3.4 million acres (21%) of Virginia's forestland. This is a decline from the 6.2 million acres of pine found during the 1940 inventory. Planted pine plantations now constitute more than 67% of the pine acreage.

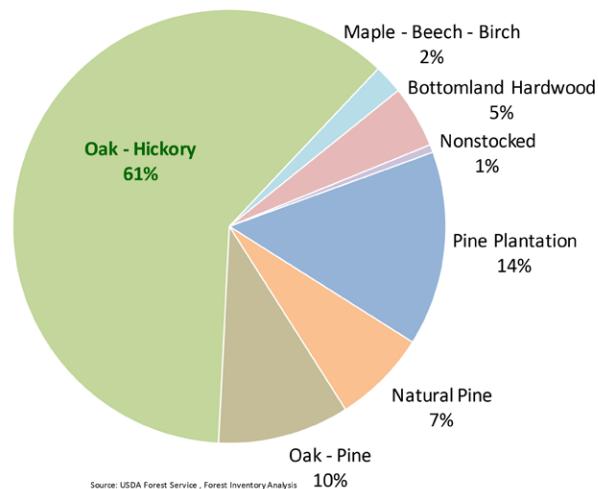
62% Forestland

Almost 16 million acres

79% Hardwood/  
Hardwood-Pine

21% Pine

### Forest Types in Virginia



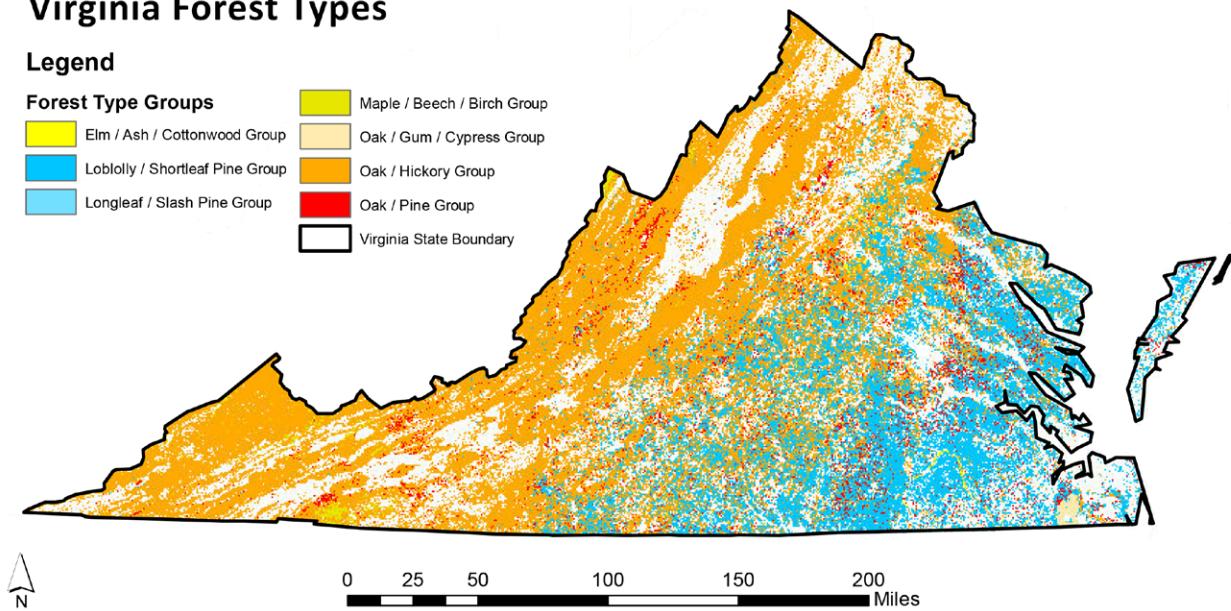
Source: USDA Forest Service, Forest Inventory Analysis

Figures are rounded to the nearest whole percentages.

## Virginia Forest Types

### Legend

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



USDA Forest Service, Forest Inventory Analysis



# VIRGINIA FOREST TRENDS

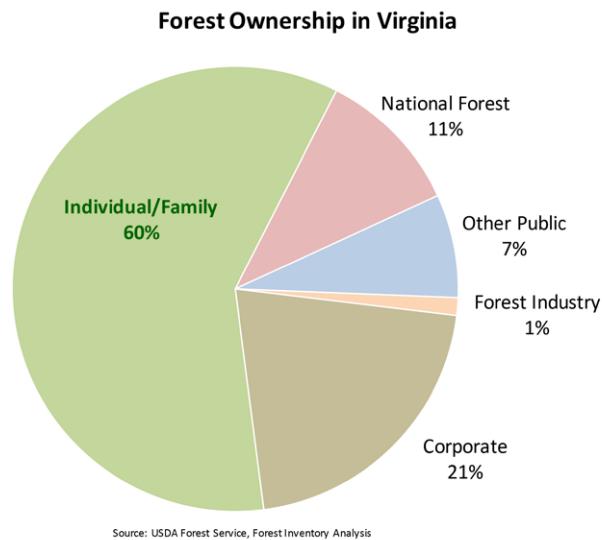
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## Forest Ownership

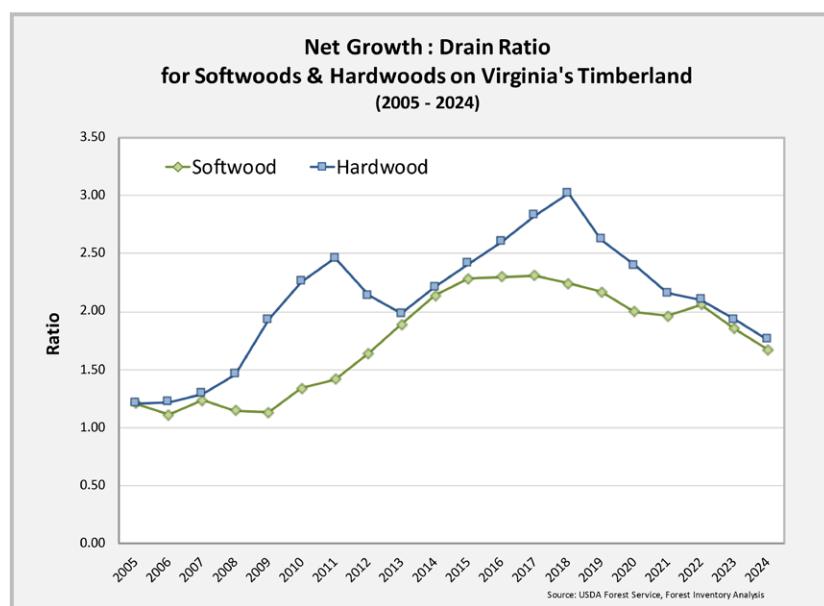
Most of Virginia's forestland is privately owned (more than 13 million acres). Approximately 521,000 individuals and families in Virginia hold a total of approximately 9.5 million acres.

As of 2024, ownership of forestland by forest products firms has stabilized to slightly more than 1% (204,400 acres) of the total forestland area. This is a reduction from 7% in 2001 and 11% in 1992. The balance of Virginia's forestland (18%) is owned by federal, state and local governments – the largest entity being the USDA Forest Service (USFS) National Forest System lands at 1.7 million acres. DOF – through its 26 State Forests – holds 75,200 acres of forestland.



## Forest Sustainability

The ratio of the forest's annual growth compared to harvested volume was 1.67:1 for softwood species and 1.76:1 for hardwood species statewide. For the past 12 years, our forests continue to grow over 1.5 times the wood volume than is harvested. It amounts to an annual surplus of 9 million tons of softwood and 11.5 million tons of hardwood statewide on commercial timberland in 2024.



## By the Numbers

FY25 (07/01/2024 – 06/30/2025)

### Forestland in Virginia

**15,975,324 ↘**  
acres of forestland  
(15,959,867 FY23)

**15,298,751 ↗**  
acres commercial  
timberland  
(15,287,077 FY23)

Forestland capable of producing  
20 cubic feet or more of industrial  
wood per acre annually.

**587,540 ↗**  
acres reserved forestland  
(586,769 FY23)

Forestland that is withdrawn  
from timber utilization by  
legislative regulation, such  
as in state parks, wilderness  
areas and national parks.

**89,033 ↗**  
acres other forestland  
(86,021 FY23)

Forestland incapable of producing  
at least 20 cubic feet of industrial  
wood per acre annually.

\* Data based on latest available Forest Inventory Analysis data (2024)

# FIRE & EMERGENCY RESPONSE



## Wildfire Suppression

Preventing and suppressing wildfires throughout Virginia is one of DOF's founding principles. Each year, the agency suppresses 560 fires that burn 10,663 acres (10-year average).

Additionally, each year, fewer than 70 homes and other structures are damaged or destroyed by wildland fire, and agency suppression efforts are also credited with directly protecting more than 980 homes and 1,570 other structures, collectively worth more than \$124 million (10-year average). Following one of the most active years of wildfire suppression in the last 20 years, FY25 saw a return to average activity in terms

of the number of wildfires in the Commonwealth, with a slightly higher than average number of acres being burned. 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.

## DOF Responds to Catastrophic Hurricane Helene

On Sept. 26, 2024, Hurricane Helene made landfall in Florida with maximum sustained winds of 140 mph. Fueled by abnormally warm waters in the Gulf of Mexico, Helene rapidly intensified into



## By the Numbers

FY25 (07/01/2024 – 06/30/2025)

### Fire Suppression

<b>710 ↗</b> wildfires (595 FY24)	<b>12,108 ↘</b> acres burned (34,762 FY24)
<b>\$5.4 million ↘</b> timber damaged (\$15.1 million FY24)	
<b>104 ↘</b> homes/buildings damaged (129 FY24)	<b>\$3.7 million ↗</b> homes/buildings damaged (\$3.1 million FY24)
<b>1,245 ↘</b> homes/buildings protected (902,485 FY24)	<b>\$161 million ↘</b> homes/buildings protected (\$229 million FY24)

### Fire Statistics

<b>560 ↘</b> average wildfires per year* (based on 10-year average) (590 FY24)	<b>10,663 ↗</b> average acres burned per year* (based on 10-year average) (10,510 FY24)
<b>3,697 →</b> most wildfires in a single year – 1941*	<b>333,023 →</b> most acres burned in a single year – 1930*
<b>386 →</b> fewest wildfires in a single year – 2019*	<b>2,508 →</b> least acres burned in a single year – 2019*

### Firefighter Training

<b>814 ↗</b> firefighters trained (761 FY24)	<b>12,609 ↗</b> hours training (12,176 FY24)
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### Dry Hydrant Grant Program

<b>19 ↗</b> new dry hydrants installed (15 FY24)	<b>35 ↗</b> dry hydrants repaired (29 FY24)
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### Volunteer Fire Assistance Grant Program

<b>123 ↘</b> volunteer fire departments awarded grants (139 FY24)	<b>\$153,249 ↗</b> grant funding awarded (\$281,483 FY24)
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### Suppression Resources Portfolio

<b>160 →</b> 4x4 engines (160 FY24)	<b>14 →</b> wildland brush trucks (14 FY24)
<b>89 →</b> bulldozer/wildland fire plow units (89 FY24)	<b>1,945 ↗</b> dry hydrants (1,926 FY24)

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

# FIRE & EMERGENCY RESPONSE

continued



a powerful Category 4 storm over the next two days, causing deadly inland flooding across the Southeast. Multiple Virginia counties across DOF's western region were hit hard with heavy flooding, widespread power outages and thousands of downed trees. The most severe impacts were unprecedented flooding across the Appalachian Mountains, where up to 30 inches of rain fell in some areas. Many roads were impassable due to high waters and knocked down trees and debris, cutting citizens off from emergency services. That weekend, DOF jumped into emergency response activities with approximately 65 personnel responding to clear more than 2,900 miles of roads so other first responders could get through. Hurricane Helene is considered one of the deadliest and costliest storms in recent U.S. history.

## Virginia Interagency Wildland Fire Academy

DOF hosted the 2025 Interagency Wildland Fire Academy at Longwood University in Farmville in May. During this annual training academy, wildland firefighters and other emergency responders, from various agencies, localities and states, build skills by completing courses in wildfire, emergency and disaster response and management. Nearly 300 attendees from three states attended, tackling courses on bulldozer, engine, pump, tractor, and chainsaw operation, basic wildland firefighting, and more. Effective wildfire response relies on partnerships and the Academy brings firefighters from across the wider region together to improve capabilities and ensure a stronger network of responders. This was the 24th year of the academy, which is the third-largest wildfire training event of its kind in the nation.



## By the Numbers

FY25 (07/01/2024 – 06/30/2025)

### Prescribed Burning Program

**318 ↗**  
prescribed burns  
conducted  
(279 FY24)

**6,964 ↘**  
acres prescribed burned  
(7,756 FY24)

### Firewise USA Community Program Portfolio

**43 ↗**  
nationally-recognized Firewise USA communities  
(41 FY24)

### Firewise Virginia Community Hazard Mitigation Grant Program

**17 →**  
grants provided for  
wildfire risk reduction  
in woodland home  
communities  
(17 FY24)

**\$211,912 ↘**  
grant funding awarded  
(\$239,840 FY24)

# FOREST MANAGEMENT



"Every time you go to the woods, do one thing to make the forest better." This advice was given to DOF employees many years ago by Dr. Tom Fox, former professor of silviculture at Virginia Tech. Today, this adage still holds true. Whether it involves planting trees, providing adequate space for growth, or removing less desirable species, encouraging private landowners and property managers to take action keeps the forests of the Commonwealth healthy, vigorous and productive.

Every day, DOF's experts work closely with landowners to discuss their properties, hear their goals and objectives, provide technical and financial resources, and of course, develop forest management plans. By working through specific recommendations to carry

out these activities, thousands of Virginia landowners are doing that "one thing" that collectively improves our forests for everyone. Below are more details that demonstrate how DOF accomplished this in FY25.

## Hardwood Initiative

DOF has a long history of working with Virginia Tech's Shenandoah Valley Agricultural Research and Extension Center at McCormick Farm in Raphine. Recently, DOF was asked for additional help managing hardwood forests on the property. Like so many Virginia farms, the forests on McCormick Farm are varied in age, productivity and quality. DOF quickly saw several opportunities to improve tree regeneration and



## By the Numbers

FY25 (07/01/2024 – 06/30/2025)

### Reforestation of Timberlands Program

<b>765 ↘</b> landowners participated (957 FY24)	<b>35,828 ↘</b> acres improved (44,466 FY24)
<b>60,477 ↘</b> practice acres implemented (72,303 FY24)	Note: A single stand may have multiple practices done on the same acres.

### Tree Planting

<b>50,003 ↘</b> acres planted (61,617 FY24)	<b>41,426 ↘</b> acres planted (DOF involvement) (45,564 FY23)
<b>1,209 ↗</b> planting projects (DOF involvement) (1,135 FY24)	

### Forest Stewardship Program

<b>176 ↗</b> forest stewardship plans written (137 FY24)	<b>23,486 ↘</b> acres included in plans (26,611 FY24)
<b>16 ↗</b> properties achieved stewardship certification (12 FY24)	<b>1,985 ↘</b> acres certified (4,799 FY24)

### Other Management Plans

<b>3,763 ↗</b> other management plans written (3,330 FY24)	<b>142,732 ↗</b> acres included in plans (128,092 FY24)
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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

<b>71 ↗</b> shortleaf pine projects (46 FY24)	<b>1,970 ↗</b> acres shortleaf pine projects (1,433 FY24)
<b>30 ↗</b> longleaf pine projects (13 FY24)	<b>592 ↗</b> acres longleaf pine projects (235 FY24)

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

# FOREST MANAGEMENT

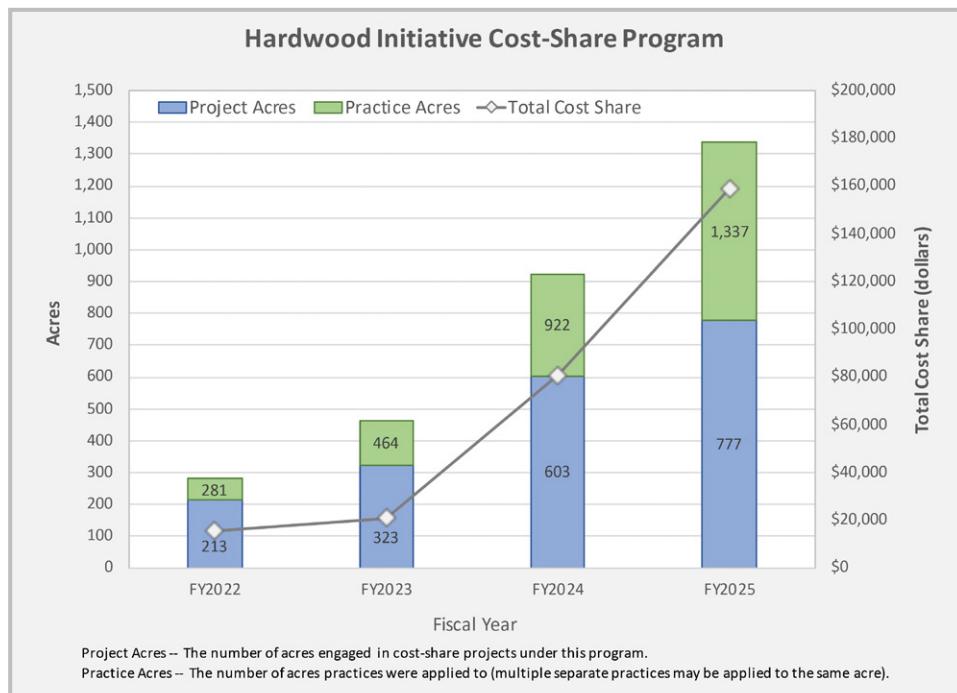
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health by implementing aspects of the agency's Hardwood Initiative.

In FY25, DOF redesigned the innovative Hardwood Assessment Tool and used the forests at McCormick Farm for testing and refinement. A total of 55 acres of forest saw six management practices that each improved the forest. Some were implemented side-by-side to allow for direct comparison, landowner and service provider demonstration, and to provide opportunities for more contractors to be involved and practice hardwood management skills.

Within months of completion, DOF and Extension staff have already made use of these sites for education and training of cooperators and loggers. The success of the projects underscores the value of cooperation and collaboration between agencies for the benefit of Virginia businesses, landowners, and Commonwealth resources. The practices undertaken at McCormick Farm can be carried out on individual landowners' properties too. Every day DOF foresters



assist landowners with forest management advice, recommending contractors to assist with forest management, and providing financial assistance to minimize the burden that can come with improving the Commonwealth's forest resource.

## By the Numbers

FY25 (07/01/2024 – 06/30/2025)

### Hardwood Management Program

225 ↗ projects (89 FY24)	2,913 ↗ acres hardwood projects (1,989 FY24)
22 ↗ hardwood demonstration projects on state-owned lands (17 FY24)	

### Hardwood Initiative Cost-Share Program

49 ↗ projects completed (31 FY24)	778 ↗ acres hardwood projects completed (603 FY24)
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### Hardwood Initiative Tax Credit Program

15 ↗ tax credits issued* (6, TY24)	\$12,880 ↗ tax benefits* (\$2,400 TY24)
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\* Data based on tax year (TY) Jan. 1 - Dec. 31.



# FOREST HEALTH



Forest health is involved in every aspect of forest management, from the establishment of appropriate, healthy trees on productive sites, to careful harvesting that protects standing trees from injury. 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 disturbances, treatment of priority invasive species, and outreach to the forestry community regarding pest identification and forest health concerns.

## 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 FY25, DOF staff treated 92 ash trees to protect them from the emerald ash borer (EAB), and 22 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 450 ash trees and 77 hemlock trees.

## By the Numbers

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

### Forest Pest Treatment Cost-Share Program

#### Emerald Ash Borer Program

**450 ↗**  
ash trees treated\*  
(289 federal FY24)

**99 ↘**  
applicants awarded\*  
(101 federal FY24)

**92 ↗**  
ash trees treated on state lands\*  
(70 federal FY24)

#### Hemlock Woolly Adelgid Program

**77 ↘**  
hemlock trees treated\*  
(193 federal FY24)

**22 ↘**  
applicants awarded\*  
(25 federal FY24)

**22 ↘**  
hemlock trees treated on public lands\*  
(174 federal FY24)

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-APHIS as biological control agents for EAB were released at three sites in Virginia; in total 3,500 parasitoids were released in FY25. Predator beetles of HWA are reared at the Virginia Tech Beneficial Insect Lab. In FY25, DOF released 1,257 predator beetles in hemlock stands for biological control of HWA. DOF's Forest Health staff will work with partner agencies to monitor the survival and impacts of these biological control agents.

## Pine Bark Beetles

The southern pine beetle (SPB) has historically been the most destructive native pest of pines in the Southeast. Every spring, DOF participates in a region-wide trapping program to monitor populations of SPB. In FY25, DOF staff placed 30 traps across 11 counties in high-risk locations in Virginia. While SPB populations generally remain low, elevated numbers were found in traps located in Chesterfield, Cumberland, Charlotte, King and Queen, and Gloucester counties. These areas may experience slightly higher SPB activity within the next year.



### Invasive Species Program

**1,668 ↗**  
acres of invasive plant removal\*  
(1,015 federal FY24)

**7,086**  
acres of invasive pest treatment\*  
(new initiative, no data FY24)

### Pine Bark Beetle Pre-Commercial Thinning Cost-Share Program

**2,185 ↘**  
acres of pine thinned\*  
(2,463 federal FY24)

### Aerial Forest Health Survey Program

**874,942 ↘**  
acres surveyed\*  
(2,734,607 federal FY24)

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

# FOREST HEALTH

continued



DOF, in cooperation with the USFS Southern Pine Beetle Program, administers a Pine Bark Beetle Prevention program that provides cost-share assistance to landowners and loggers for thinning practices that reduce a pine stand's susceptibility to pine bark beetles. In FY25, a total of 2,185 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 75,000 acres of pine have been thinned with cost-share assistance.

## Beech Leaf Disease

Beech leaf disease (BLD) is an emerging disease in Virginia that causes leaf discoloration and wilting, canopy thinning, and eventually tree mortality. BLD has already spread through northeastern U.S.; Virginia is currently the leading edge of BLD distribution with the southernmost detections. In FY25, DOF established five BLD long-term monitoring plots on public land with significant populations of American beech trees. All plots will be remeasured annually to gain a better understanding of disease progression.

## Spongy Moth Suppression

DOF monitors population levels of established invasive species such as the spongy moth. This pest feeds on foliage of oak trees and other hardwood species, and can cause significant forest damage during outbreaks. Trees may recover from one year of defoliation, but multiple years of spongy moth feeding will eventually lead to tree decline and mortality. After documenting significant spongy moth damage in the Shenandoah Valley from 2022 to 2024, DOF implemented a suppression program in 2025.

DOF coordinated treatment on state land and awarded grants to Shenandoah and Page counties for treatment on private forestland. In May 2025, 7,086 acres were treated for spongy moth with aerial application of the biopesticide *Bacillus thuringiensis kurstaki* on state and private land. Additionally, USFS treated areas on nearby National Forest land. Pesticide application was timed with spongy moth caterpillar emergence to minimize damage, but there was still some spongy moth activity on untreated land. In

# FOREST HEALTH

continued



June 2025, DOF staff conducted an aerial survey to map spongy moth damage. During this flight, more than 15,000 acres with damage were mapped, which is significantly less than the previous two years.

## Invasive Species Program

DOF's Invasive Species Program began in 2023 with a federal grant and has continued with Virginia invasive species state general funds. The program works to support the objectives outlined in the Virginia Invasive Species Management Plan to mitigate the negative impacts of invasive plants, pests and pathogens in Virginia's forests. DOF provides statewide coordination of invasive species management in Virginia, working with other state agencies and in collaboration with relevant stakeholders. Program priorities include suppression of priority invasive species, creation of "invasive-free" demonstration sites, landowner assistance, support for Partnership for Regional Invasive Species Management (PRISM) organizations, and outreach and education.

This year, in addition to the spongy moth treatment, DOF coordinated treatment of invasive wavyleaf grass over 466 acres and treatment of other invasive plants on 408 acres in state forest demonstration sites. These demonstration sites were thoroughly surveyed for invasive plants, which are now being treated to create "invasive-free" zones that will showcase proper invasive species management and native species restoration to the public. One novel treatment method employed in FY25 at a demonstration site was goat grazing. Goats can be an effective method of removing invasive vegetation if follow-up treatment is planned for long-term control.

Invasive species education and landowner assistance was accomplished through a variety of outreach initiatives. A training was held for state agency staff that manage or give management recommendations for invasive plant control. DOF, Virginia Department of Conservation and Recreation (DCR), VDACS and Virginia Department of Wildlife Resources (DWR) staff learned about invasive plant identification and appropriate treatment methods. DOF's invasive plant video series is also a resource for forest landowners and professionals.



### Virginia's Least Wanted Plants

by ForestryTV • Playlist • 10 videos • 620 views

Learn how to tackle invasive plant species through our ...more

[Play all](#) [Bookmark](#) [Share](#) [More](#)

The [invasive plant video series](#) highlights invasive plant identification, control methods and different types of herbicide:

- ◆ Invasive Species Explained
- ◆ Wavyleaf Grass
- ◆ Methods for Treating Invasive Plants with Chemicals
- ◆ Callery Pear
- ◆ Tree of Heaven
- ◆ How to Mix Herbicides
- ◆ Triclopyr Herbicides Explained
- ◆ Privet
- ◆ Glyphosate Herbicides Explained

# APPLIED RESEARCH



For more than seven decades, DOF's Forest Research program has quietly grown in both size and collaboration. To address forest management questions that landowners, foresters, scientists – and yes, sometimes DOF staff too – face in Virginia, DOF pursues scientifically literate methods for activities across a wide range of areas. These include herbicide application in loblolly pine stands, breeding parameters for diminished trees, and planting standards for hardwood and pine. DOF plays an active role in three different forestry cooperatives including the Tree Improvement Program (TIP), the Forest Productivity Cooperative, and the Forest Modeling Research Cooperative. In addition to applied research, our program has become invested in statewide restoration of diminished tree species and forest types.

## Ongoing Research and Monitoring

### Pine Forests

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. New technologies have great potential to improve pine management cost-effectiveness, efficiency and environmental impacts. For example, DOF is in the second year of a drone herbicide study predicted to finish out at the end of this year. This study will provide insight on appropriate volumes for aerial drone herbicide application for site preparation in loblolly pine plantations. An emerging technology rapidly gaining traction in modern forestry as well as at DOF, drones are allowing the agency to utilize higher precision, lower impact aerial application of herbicides. Drones could also offer a high-precision option for harder to reach tracts that need to have competition controlled prior to planting.

### Hardwood Forests

While pine forests contribute greater volumes of wood to the industry, hardwood dominated forests make up more than 75% of Virginia's total forestland. Thus, they represent another priority for research at DOF. Across seven state forests, DOF continues to collect and analyze long-term data on crop tree release studies, multi-species herbicide interaction studies, and variable harvest regeneration sites. We implemented the second (of three) installations of our chestnut-oak-shortleaf pine mixed species planting at Whitney State Forest. The results from these plantings will provide growth and survival trends among hybrid chestnuts in our modern forest ecosystems.

This year, DOF's forest health, forest research and urban forestry programs collaborated to design and install a beech leaf disease pilot study at Montpelier in Orange County. Beech leaf disease is a novel threat to our forests which causes leaf banding, curling and eventual death. As of August 2025, it has been detected in 10 Virginia counties. The first of its kind, this pilot study will inform a strategy for beech leaf disease treatment for forest-type trees rather than yard trees.

### Tree Improvement Program

Last year, DOF nurseries sold over 16.5 million loblolly pine seedlings, a direct result of the fruitful TIP program. For 60 years, loblolly pine genetics and performance have been selectively bred in partnership with N.C. State University and other regional collaborators. TIP boasts a \$50-\$300 per acre net increase for landowners when planting these improved genetics. This year, DOF planted the 13th progeny test and is making selections and beginning grafts for our fourth-

## By the Numbers

FY25 (07/01/2024 – 06/30/2025)

### Research Studies Portfolio

56 ↗ active research studies (55 FY24)	148 → research reports (148 FY24)
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### Seed Orchards

2,579 pounds improved loblolly seed (new data track, no data FY24)	150 ↗ bushels longleaf cones (140, FY24)
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# APPLIED RESEARCH

continued



generation seed orchard. Additionally, in cooperation with the southeastern states' Tree Improvement Co-Op, DOF has begun new measurements on progeny tests including wood density and stiffness. In DOF orchards this year, 2,579 pounds of loblolly pine seed was collected that will grow into Virginia's future forests.

While tree improvement has historically been focused on conifers due to their shorter lifespan and predictable seed sourcing, hardwood tree seed

sourcing and genetic improvement have garnered new interest. The research program at DOF joined the University of Kentucky's White Oak Genetics and Tree Improvement Program to collect and sow 50 parent white oaks from across Virginia and neighboring states. These seedlings will be grown in the nursery and eventually put into a progeny test/seed orchard where selections for the best genetics can be carried out.

## Diminished Species

A significant objective for DOF, restoring and protecting diminished tree species is focused on several species including the American chestnut, longleaf pine, shortleaf pine and red spruce. The American chestnut breeding program continues to grow thanks in large part to the work of The American Chestnut Foundation (TACF). In conjunction with TACF and the Matthews Foundation, Matthews State Forest in Galax has been selected as the site for a Wild Type American Chestnut Germplasm Conservation Orchard that will have capacity to hold as many individual genotypes as can be collected and stored.

Longleaf pine restoration has been a long-term project for DOF along with the agency's other active partners. The combined efforts of the collaborators in the American Longleaf Restoration Initiative completed management work on 9,178 acres to date. At DOF's longleaf orchard located at the Eastern Regional Office, 150 bushels of cones were collected.

A fire-adapted species, shortleaf pine was over-harvested in the past. 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. Shortleaf orchard expansion efforts continue as well as the search for new shortleaf genetics to include in this optimal selections program.

Red spruce grows only in certain high-altitude locations in Virginia. A germination study demonstrated the ability of red spruce to be grown in plugs at DOF's southern nursery, which bodes well for future restoration planting demand.



# URBAN & COMMUNITY FORESTRY



Trees help make cities livable...providing shade, clean air, clean water and other useful benefits for human and environmental health. The Urban and Community Forestry team works with Virginia's neighborhoods, towns and cities, fostering partnerships between nonprofit organizations, government agencies, businesses and academic institutions to ensure community trees receive care long into the future. DOF provides assistance in several ways – education, community engagement, tree selection and essential grants – to localities, community groups and partners for tree planting and local program development. As populations in Virginia's cities and towns continue to grow, creating and caring for green infrastructure (like trees) is increasingly important.

## Strike Team Deploys to Southwest Virginia

The Urban Forest Strike Team (UFST) assisted the towns of Abingdon and Damascus after Hurricane Helene by completing tree risk assessments along the Virginia Creeper Trail and in Damascus. The UFST is made up of self-contained teams of professionally trained, certified arborists from state forestry agencies, other state and municipal agencies, and USFS that are specifically trained to assess risks on storm-damaged trees. The team assessed 322 trees and recommended 299 for removal because of trunk-related issues. DOF was able to provide grants to both communities to support necessary tree removals via federal funding from USFS. At the time of this report, both grants are in process, and more than 200 trees have been removed to keep the trail open – and safe – for more than 200,000 annual visitors.



## By the Numbers

FY25 (07/01/2024 – 06/30/2025)

### Urban & Community Forestry Grant Program

<b>0 ↘</b> grants awarded*	<b>\$0 ↘</b> grant funding awarded* (\$3,384,162 federal FY24)
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Note: No new grants were issued in federal FY25 due to federal funding cuts. However work continued on grant projects awarded in federal FY24.

### Virginia Trees for Clean Water Program

<b>47 ↗</b> grants*	<b>\$1,103,936 ↗</b> awarded* (\$919,968 federal FY24)
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### Urban & Community Forestry Volunteer Time

<b>21,847 ↘</b> volunteer hours logged on all Urban & Community Forestry grants*	
(37,411 federal FY24)	

### Educational Programs and Events

<b>551 ↘</b> participants*	
(720 federal FY24)	

### Throwing Shade VA Program

<b>7,782 ↗</b> native trees and shrubs (5,593 FY24)	<b>\$217,896 ↗</b> reimbursed to 15 participating nurseries (\$151,011, 10 nurseries, FY24)
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### Tree City/Campus/Line USA Programs Portfolio

<b>66 ↗</b> Tree City USA Communities (65 FY24)	<b>New Communities</b> Town of Strasburg Fort Eustis
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<b>Fairfax County</b> Largest Tree City USA (pop. 1,148,433 FY23)
<b>Bluemont</b> Smallest Tree City USA (pop. 275 FY23)

<b>9 ↘</b> Tree Campus USA Schools (10 FY24)	<b>5 ↗</b> Tree Line USA Utilities (4 FY24)
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Note: Tree City, Campus and Utilities are awarded in the year following the calendar year of their accomplishments. Communities receive awards in FY25 for calendar year 2024 accomplishments.

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

# URBAN & COMMUNITY FORESTRY

continued



## Urban and Community Forestry Grant Program

Despite the reductions in federal funding this year and not being able to onboard new grants, DOF continued work with the federal funding received from USFS in FY24 to create healthy, diverse and accessible community forests.

### Grantee Highlight:

#### *Norfolk's Teens with Purpose*

Teens with Purpose (TWP) is a youth empowerment organization that provides a safe space for Hampton Roads teenagers to learn, create and grow. Purpose Park is the organization's community garden located in the heart of Norfolk's Young Terrace District, an under-resourced community with one of the highest heat island ratings in the region. The Chesapeake Bay Foundation (CBF) applied for the Urban and Community Forestry grant and partnered with TWP to mitigate the heat island in and around Purpose Park. One of the main ways heat is diminished in developed spaces is through the planting of trees. Upon making a site visit to Purpose Park, DOF foresters advised that the soil be completely remediated using the "scoop and dump" method prior to planting. This methodology includes digging 18 inches down with a backhoe and incorporating a mix of biochar and compost into the parent soil. This not only improves soil quality but also breaks up the structure to mitigate compaction. A total of 27 shade trees were planted after soil rebuilding on the park grounds.

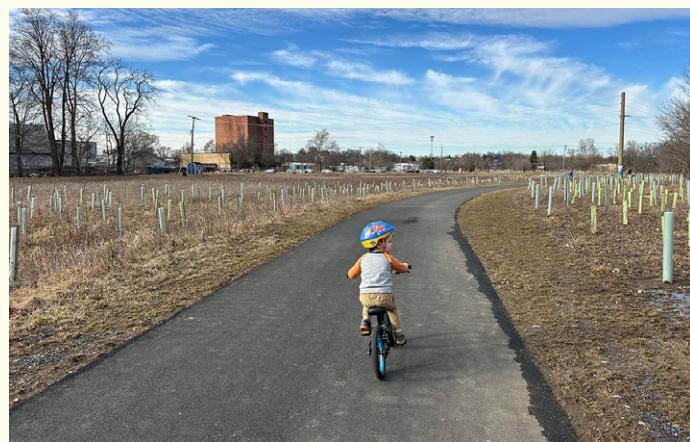


*Photo credit: Sue Mangan Photography*

### Grantee Highlight:

#### *South River Preserve in Waynesboro*

The 16-acre project involved the removal of approximately 6 acres of asphalt from city-owned property and included a streambank restoration project along 900 linear feet of Rockfish Run, a tributary of the South River. Both the stream banks and former parking lot were planted with 5,100 native trees along a greenway to create a floodplain forest, funded by Urban and Community Forestry grants. The plantings consisted of a mixture of live stakes, seedlings/tubelings, small containers, and ball and burlap. The South River Greenway, a highly visited shared-use path, meanders through the site. The 60,000 annual visitors to the project make this a highly visible demonstration project that not only removed unnecessary asphalt but also improved the water quality of the South River and provided wildlife habitat.



# URBAN & COMMUNITY FORESTRY

continued



Photo credit: Amya N. Matthews

## Virginia Trees for Clean Water Grant Program

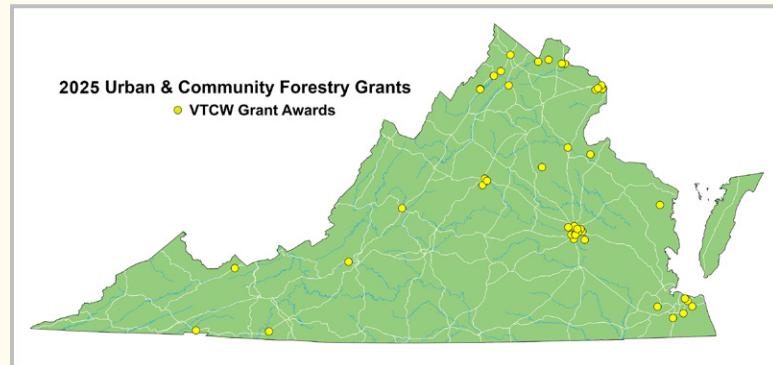
In FY25, with funding from the state water quality improvement fund, DOF announced the Virginia Trees for Clean Water (VTCW) Grant Program. This grant is designed to improve water quality by encouraging tree-planting efforts while raising awareness of their benefits. DOF awarded \$1.1 million to 47 grantees.

### Grantee Highlight: *Capital Trees and Henrico County*

In the spring of 2025, Capital Trees and Henrico County Parks staff collaborated to further their vision for a thriving community space available to all. This phase of the project involved transforming the existing outdoor space from an underutilized grass field into an oasis of native plants and trees. Twenty-two community volunteers joined staff to install 28 trees around the property, all funded through the VTCW Grant Program. Not only will these trees provide aesthetic value, but they help mitigate stormwater and provide shade for visitors during Virginia's hot summer months. Volunteers were taught how to properly plant trees, soil remediation techniques and the benefits of trees in community spaces. The group and organizing staff are now one step closer to creating a vibrant and thriving space of native trees.



Photo credit: Shelly Parsons



### Grantee Highlight: *Roanoke Valley Arbor Day Celebrations*

The Roanoke Valley-Alleghany Regional Commission (RVARC) is an expert at bringing folks together to celebrate trees. This past Arbor Day, with the help of the VTCW Grant Program, RVARC helped localities host three events throughout the Roanoke Region that engaged and educated area youth on the importance of trees. In just one week, RVARC co-hosted events with the Town of Vinton, Roanoke County and the City of Salem at libraries and schools. Events included activities such as story times for little ones, poem readings and appearances by the one and only Smokey Bear. When it was all said and done, volunteers had planted 32 trees that will serve as a living, enduring reminder of these festivities – and what they stand for – for years to come.



Photo credit: Amya N. Matthews

# URBAN & COMMUNITY FORESTRY

continued



## Boot Brush Stations

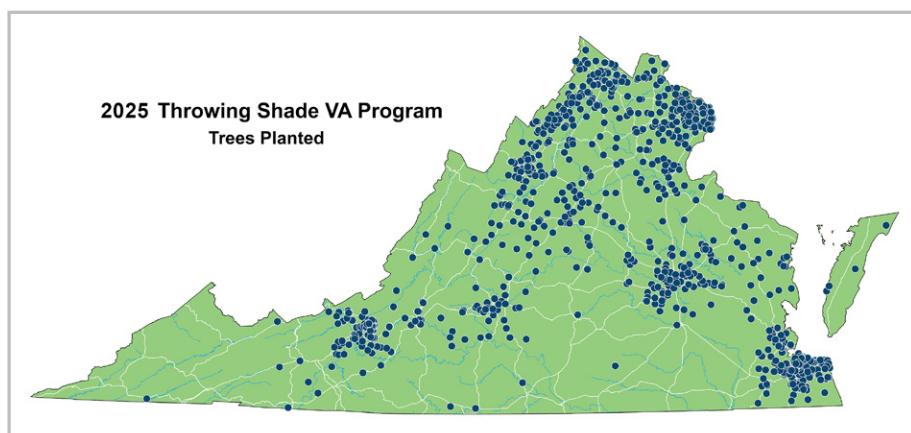
DOF led an effort to install 17 boot brush stations in fall of 2024 in different localities across Virginia. Boot brush stations serve two functions: educating outdoor recreationists about invasive species and providing an efficient way to clean shoes in hopes of preventing – or at least slowing – the spread of invasive seeds. Support from numerous DOF staff and different municipalities across the state made the installation of all the stations possible in these public spaces. Boot Brush Stations were installed in the following locations:

- Staunton High School Nature Trail – Staunton, VA
- Heritage Park – Blacksburg, VA
- Lauren Mountain Preserve – Bassett, VA
- Donaldson Run Park – Arlington, VA
- Suzanne R. Kane Nature Preserve – Purcellville, VA
- Embry Trail – Fredericksburg, VA
- Deep Run Park – Richmond, VA
- The Wetlands – James River Park System – Richmond, VA
- Virginia State University, Randolph Farm Nature Trail – Petersburg, VA
- Legends Park – Petersburg, VA
- Appomattox River Trail – Colonial Heights, VA
- DeJarnette Park – Ashland, VA
- Deep Bottom Park – Henrico, VA
- Wahrani Nature Trail – New Kent, VA
- Hidden Rock Park – Goochland, VA
- Lawrence Lewis Jr Park – Charles City, VA
- Kenbridge Town Park – Kenbridge, VA

## Throwing Shade VA

Throwing Shade VA, DOF's native tree and shrub discount program, expanded to partner with 15 retail nurseries across the Commonwealth in spring 2025. The discount program offers customers native trees and shrubs at a discount of \$25 off \$50 or more. DOF monitored the number of trees purchased and locations planted through a QR code survey submitted by customers, which helps keep track of the

Commonwealth's progress towards statewide watershed improvement goals. In FY25, 7,782 native trees and shrubs were purchased and planted through the program, and more than 3,000 individual customers benefited. A total of \$217,896 was reimbursed to partner nurseries during the 2025 campaign.



# WORKING LANDS PRESERVATION



## Office of Working Lands Preservation

FY25 was the inaugural year of DOF's Office of Working Lands Preservation (OWL). Created in the 2024 session of the General Assembly by merging the Office of Farmland Preservation – formerly housed within VDACS – with DOF's Forestland Conservation program, OWL focuses on the conservation of farms and forestland through federal, state, and local partnerships, and outreach to landowners.

### Conservation

The Commonwealth's 16 million acres of forestland and 7.3 million acres of farms provide Virginians with the food and fiber that sustain us in body, mind and spirit. Agriculture and forestry are a key part of the

Commonwealth's economy while also contributing pastoral views, cleaner air and water, and wildlife habitat.

Now under the increasing threat of conversion from growth of data centers and solar utility development, Virginia's working lands – and approaches to address loss – are one of DOF's priorities. The Generation NEXT program, Century Forest and open-space easement programs are three of DOF's strategies to preserve the rural economy. Working with Virginia Cooperative Extension (VCE), a partnership established in 1914 between Virginia's two land grant universities Virginia Tech and Virginia State University and other partners, DOF helps landowners keep their land "in farm & forest" through education, management and estate planning.



## By the Numbers

FY25 (07/01/2024 – 06/30/2025)

### Conservation Easement Program

5 ↘	2,181 ↘
easements added (10 FY24)	acres added in easements (3,126 FY24)
1 ↘	133 ↘
easements added in the Chesapeake Bay watershed (7 FY24)	acres added in easements in the Chesapeake Bay watershed (1,254 FY24)
<b>1,882 ↘</b>	
forested acres added in easements (2,831 FY24)	
<b>11.09 ↘</b>	<b>0.33 ↘</b>
miles of watercourses added in easements (15.92 FY24)	miles of watercourses added in easements in the Chesapeake Bay watershed (5.94 FY24)

### Century Forest Program

67 ↗	18,543 ↗
properties with Century Forest designation (59 FY24)	acres with Century Forest designation (17,625 FY24)

### Legacy Estate Planning Workshops

**142 ↘**  
participants trained in legacy planning  
(221 FY24)

### Conservation Easement Portfolio

<b>234 ↗</b>	<b>64 ↗</b>
properties under conservation easements (229 FY24)	counties/cities containing easements (63 FY24)
<b>99,850 ↗</b>	<b>91,205 ↗</b>
acres in easements (97,669 FY24)	forested acres in easements (89,323 FY24)
<b>140 ↗</b>	<b>35,449 ↗</b>
properties under conservation easements within the Chesapeake Bay watershed (139 FY24)	acres in easements within the Chesapeake Bay watershed (35,316 FY24)
<b>500 ↗</b>	<b>177.33 ↗</b>
miles of watercourses in easements (489 FY24)	miles of watercourses in easements in the Chesapeake Bay watershed (177 FY24)

# WORKING LANDS PRESERVATION

continued



DOF and our partners offer resources to help landowners take the essential first steps toward long-term farm and 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 working lands in perpetuity.

## Generation NEXT

Since 2009 DOF and VCE have collaborated to offer the Generation NEXT program, which provides landowners with proven tools and strategies to keep their properties intact, in farm and forest, and in the family. The program encourages farm and forestland owners to plan for intergenerational land transfer and through thoughtful planning, equips 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. Farm and forestland owners 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, 142 participants attended legacy estate planning workshops held across the state.



## Century Forests

The Virginia Century Forest Program recognizes those individuals and families who have made a long-term commitment to enhancing the environment and protecting quality of life for their fellow Virginians through forestry. The Century Forest designation is an honorary recognition for landowners of at least 20 contiguous acres of forest with a documented history of owning and managing their forest for 100 years or more. Since its inception in FY17, 67 family properties have been designated as Century Forests.

## Open-Space Easements

Open-space easements are a powerful way to permanently conserve Virginia's farms and forests. These voluntary perpetual agreements between landowners and a qualified easement holder limit subdivision and development, while maintaining private ownership and rural uses such as forestry or farming. Since 2004, DOF's open-space easement program has prioritized conserving large and connected expanses of managed forestlands. These efforts helped the agency maintain wildlife habitat and water quality, prevent flooding and support the Commonwealth's forest products economy. With the creation of OWL, DOF's open-space easement program also seeks to conserve Virginia's prime agricultural lands.

Some landowners are able to donate an open-space easement on their land and enjoy the federal and state tax incentives for charitable donations of perpetual easements. In other instances, federal and state grant funds can help purchase open-space easements. The USFS Forest Legacy Program (FLP) provides funding for the partial purchase of open-space easements. From FY21 through FY24, DOF was awarded \$45.8 million to conserve 21,503 acres by open-space easement. This year DOF was awarded the largest FLP funding in a single year for Virginia: \$23.875 million for the partial purchase of 12 open-space easements in four counties that will permanently conserve 22,278 acres.

DOF also partners with Virginia's localities to help establish and certify Purchase of Development Rights (PDR) programs by helping localities create model PDR policies and practices. Localities with certified PDR programs are eligible to receive state matching grants for the purchase of open-space easements. In FY25, six counties have active PDR programs.

# WORKING LANDS PRESERVATION

continued



## Small Renewable Energy Permit by Rule Regulations

The permit-by-rule (PBR) regulations to mitigate for the loss of forestland and prime agricultural soils due to solar energy development went into effect at the end of the fiscal year. Solar energy projects that are eligible to be permitted through the PBR process must mitigate significant impacts to contiguous forestland and prime agricultural soils within the project area by permanently conserving forestland or prime agricultural soils off-site at the ratio established by the regulations.

Solar developers have the option of locating an appropriate mitigation property and providing a conservation easement on that property. DOF will review the mitigation easements provided by developers to ensure they conform to DOF's Guidelines for Forest and Agricultural Conservation.

As an alternative, solar developers can pay an in-lieu fee for the future purchase of an easement to mitigate the significant impacts to forest and prime agricultural soils. DOF will act as the trustee for those in-lieu payments and utilize those funds to acquire mitigation easements on properties with important forestal and agricultural conservation values.



# WATER QUALITY PROTECTION



## Watershed Forestry

More than half of Virginia's freshwater resources come from forested areas within the state. Forests within watersheds play an important role in improving water quality as they allow for better infiltration and groundwater recharge than any other land use, and in some cases may help with reducing drinking water treatment costs. In addition to promoting sustainable forest management, DOF's Watershed team also focuses on increasing riparian forest buffers across the Commonwealth. Simply defined, riparian forests are areas adjacent to a body of water such as a stream, river, pond, or lake, and function as a "buffer" between the water and the adjacent non-forested land.

Agricultural and urban lands generate excess pollutants and sediment that make their way into streams and rivers...negatively impacting water quality. Riparian forest buffers prevent this pollution from entering waterways, which improves water quality both locally and downstream. Establishing riparian forest buffers through tree planting or natural regeneration can be a cost-effective management tool when it comes to protecting and improving water quality. In addition to creating cleaner water, riparian forest buffers provide many other benefits including mitigating flooding impacts, providing wildlife habitat, improving habitat for in-stream aquatic life, enhanced aesthetic value, and recreational opportunities such as swimming, boating, and fishing.

## By the Numbers

FY25 (07/01/2024 – 06/30/2025)

### Riparian Buffer Establishment Program

**337 ↗**  
riparian buffer  
establishment projects  
(229 FY24)

**1,036 ↗**  
acres established  
(722 FY24)

**197 ↗**  
riparian buffer  
establishment projects  
in Chesapeake Bay  
watershed  
(117 FY24)

**460.3 ↗**  
acres in Chesapeake  
Bay watershed  
(333.6 FY24)

### Riparian Forests for Landowners Program

Made possible via funding from the State Water Quality Improvement Act and the Inflation Reduction Act via USFS, DOF established the Riparian Forests for Landowners Program (RFFL) in FY25.

The RFFL program is intended to fill gaps in riparian buffer establishment not met by other cost-share assistance programs. Participating landowners agree to keep buffers in place for a period of 15 years, and the program covers site preparation and tree planting costs, as well as one year of maintenance. RFFL projects include a diversity of land types, ranging from rural to urban/suburban sites, most of which were not eligible for agricultural cost-share assistance programs.

RFFL is implemented through partnerships with contractors who are already undertaking riparian restoration work within several major river basins in the Commonwealth, primarily within the Chesapeake Bay watershed. Partners were responsible for landowner outreach and project implementation and included the Alliance for the Chesapeake Bay, Friends of the Rappahannock, York River Steward, the James River Association, and Watershed Restoration Solutions, LLC. Projects occurring in the river basins of Chowan, Albemarle Sound, the Eastern Shore, most of Roanoke, and most of the lower James, were implemented by DOF staff in conjunction with a sub-contractor. A



### Riparian Forests for Landowners Program

**85**  
Riparian Forest for  
Landowners projects  
(new initiative, no data FY24)

**168.4**  
acres established  
(new initiative, no data FY24)

**69**  
Riparian Forest for  
Landowners projects  
in Chesapeake Bay  
watershed  
(new initiative, no data FY24)

**110.7**  
acres in Chesapeake  
Bay watershed  
(new initiative, no data FY24)

# WATER QUALITY PROTECTION

continued



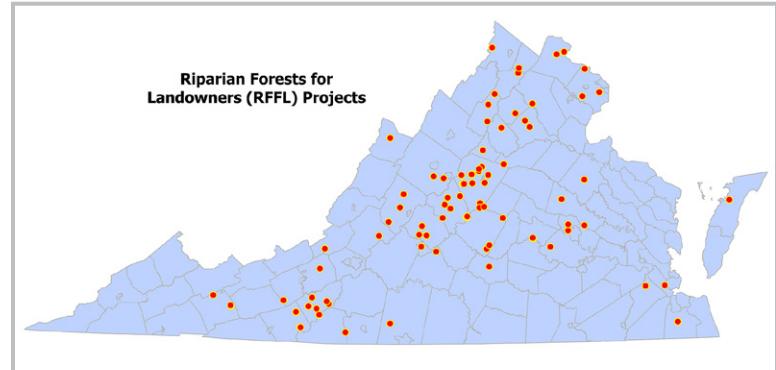
proven success in its first year, RFFL is poised to help even more landowners. DOF has secured funding to continue the program for FY26.

DOF's grant period with Virginia Environmental Endowment, which supports the agency's James River Buffer Program, ended in 2023 and DOF has sunset this initiative. However, select projects established under the program continued to receive maintenance support. In FY25, DOF provided funding for buffer maintenance in the form of competition control, including invasive species management, and replanting areas with low survival within the Middle James River watershed on 22 projects covering 40 acres.

## Virginia Security Corridor Partnership

The Virginia Security Corridor (VSC) is a local, state and federal partnership created to help the Commonwealth protect critical military infrastructure through various environmental initiatives. Program coordinators for the Potomac (PSL) and Tidewater Sentinel Landscapes (TSL) work with partners to prevent encroachment and protect critical infrastructure by maintaining and conserving working lands, utilizing nature-based solutions such as shoreline stabilization, and protect threatened and endangered species habitat through conservation and sustainable forest management. In FY25, DOF made significant strides through targeted outreach, strategic planning and regional coordination. Stakeholder meetings allowed partners to connect with local organizations and collaboratives to strengthen connections and identify opportunities. Through steering committees, members came together to refine goals and shape a shared vision.

VSC coordinators participated in several national training programs to learn strategies implemented in other security corridors around the country, such as the Conservation Finance Bootcamp at Yale University, which covered innovative funding solutions, and a trip to Avon Park Air Force Range in Florida for a meeting of the Sentinel Landscapes Partnership. The latter allowed coordinators to share updates and successes, meet with landowners and tour the Avon



Park Sentinel Landscape managed to maintain military readiness while preserving habitat for wildlife.

### Potomac Sentinel Landscape

Potomac Sentinel Landscape supported the three military installations within its boundaries — Marine Corps Base Quantico, Fort A.P. Hill and Fort Lee — through Readiness and Environmental Protection Integration programs. These efforts are projected to conserve more than 1,000 acres over the next 18 months, directly benefiting both mission readiness and long-term natural resource protection. The first implementation plan and website updates to reflect evolving priorities and partner input are under way. A central outcome will be a prioritized list of "shovel-ready" projects to enable swift action when funding and acquisition opportunities arise.

### Tidewater Sentinel Landscape

The Norfolk District has officially been designated a U.S. Army Corps of Engineers Engineering With Nature Proving Ground thanks to a regional push led by the City of Norfolk. Located in the heart of Hampton Roads — one of the most climate-vulnerable regions in the country — this designation will put Norfolk at the forefront of nature-based innovation. With its unique blend of tidal rivers and urban-rural landscape, the district is perfectly positioned to lead the way in designing and testing cutting-edge coastal resilience solutions.

Langley Air Force Base and the City of Hampton received an award of \$845,000 under the National Fish and Wildlife Foundation National Coastal Resilience Fund to develop a suite of nature-based solutions to enhance

# WATER QUALITY PROTECTION

continued



resilience in the Back River Estuary. It aims to restore and strengthen natural infrastructure, such as coastal marshes and wetlands, to mitigate impacts of storms and flooding. This initiative will benefit the local community, military and wildlife by improving habitat quality and providing natural buffers against environmental threats.

## 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). The agency

develops best management practices (BMPs) for forest harvesting operations and works cooperatively with agencies and landowners throughout the Commonwealth to protect water quality. DOF staff inspect every harvesting operation within 20 days of the notification date and every 45 days thereafter through harvest completion. By providing one-on-one contact between agency professionals and the harvest operators, DOF offers unique opportunities to educate operators about BMPs and the latest techniques in water quality protection.



## By the Numbers

FY25 (07/01/2024 – 06/30/2025)

### BMP Audit Implementation

<b>95% →</b> BMP implementation rate* (95% CY24)	<b>96.5% ↗</b> BMP implementation rate in the Chesapeake Bay watershed* (95.6% CY24)
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### Harvest Inspections

<b>3,232 ↘</b> harvest sites (3,535 FY24)	<b>147,656 ↘</b> acres harvested (161,364 FY24)
<b>13,886 ↘</b> harvest inspections (15,799 FY24)	<b>4.5 →</b> average inspections per harvest (4.5 FY24)
<b>132 ↘</b> harvest inspectors (135 FY24)	
<b>607 ↗</b> pre-harvest assistance provided (605 FY24)	<b>248 ↗</b> pre-harvest plans provided (187 FY24)
<b>178 ↗</b> during or post-harvest assistance provided (151 FY24)	

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

### Water Quality Law Enforcement

<b>77 ↘</b> law enforcement actions (108 FY24)	<b>3 ↗</b> special orders issued (2 FY24)
<b>0 →</b> emergency special order issued (0 FY24)	<b>23 ↘</b> failure to notify violations (25 FY24)

### Logger BMP Cost-Share Program

<b>38 ↘</b> projects (46 FY24)	<b>\$347,080 ↘</b> awarded to loggers (\$393,637 FY24)
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### USFS Temporary Water Crossing Cost-Share Program

<b>15</b> projects (new initiative, no date FY24)	<b>\$109,425</b> awarded to loggers (new initiative, no date FY24)
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### Sharp Logger Training

<b>15 ↘</b> training sessions (19 FY24)	<b>499 ↘</b> loggers trained (694 FY24)
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### Riparian Buffer Tax Credit Program

<b>46 ↘</b> tax credit applications** (47 TY23)	<b>759 ↘</b> acres of buffers retained during timber harvests** (964 TY23)
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<b>\$263,550 ↘</b> tax benefits** (\$419,056 TY23)	<b>\$1,563,369 ↘</b> buffer value retained** (\$1,961,432 TY23)
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\*\* Data based on tax year (TY) Jan. 1 - Dec. 31.

# WATER QUALITY PROTECTION

continued



This year, 132 DOF staff completed 13,886 harvest inspections, with a staggering 95% of these conducted by only 74 staff, and 90% administered by 60 employees. One recent example of time savings has been the use of drones to assist with harvesting inspections. A typical harvest inspection can be conducted in a quarter of the time with a drone compared to walking the entire site. One of the most valuable BMPs for water quality is the unharvested, or partially harvested, streamside management zone. This voluntary measure ensures undisturbed forest ground cover near the stream, shade for water, and wildlife corridor preservation. In addition, through DOF's Riparian Buffer Tax Credit Program, landowners 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, they agree to leave the buffer 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 on their 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 a downward trend in enforcement actions has emerged, directly attributable to the forestry community who is invested in protecting the waters of the Commonwealth, and a DOF workforce 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 process. The requests range from assistance with one stream crossing to a pre-harvest plan for an entire harvest. Pre-harvest planning is one of the most important BMPs. Researching and planning – covering items such as the location, maintenance, and close out of haul roads, landings, skid trails, stream crossings, and streamside management zones – is critical for a successful operation. Many requests deal with the location and

type of stream crossing, which might be temporary or permanent, and can be a culvert, ford or bridge.

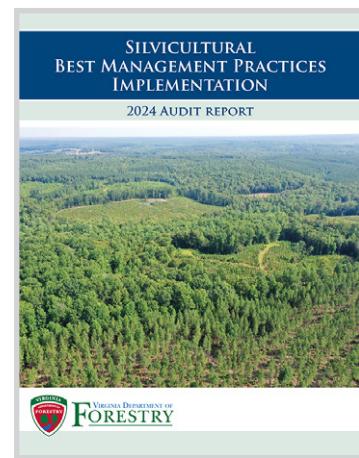
## Public Education

Logger education is another key focus area of the DOF Water Quality program. Since the development of the first BMP Manual for Virginia, DOF staff have helped provide timber harvesters 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 DOF-sponsored events and participation in the Sustainable Forestry Initiative Sustainable Harvesting and Resource Professional (SHARP) logger training program. Since 1997, DOF has helped train more than 12,400 harvesting professionals through 419 programs featuring water quality protection education.

## Silvicultural BMP Implementation

Since 1993, a statewide audit system has been in place to track trends in BMP implementation and effectiveness. DOF monitors 240 harvested tracts each year. Sixty tracts per quarter are selected randomly from harvests that received a DOF final inspection two quarters prior to 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 planting and weed control.

The definition of significant risk describes a water quality concern observed on an audit tract that, due to a lack of BMPs, is causing or is likely to cause, pollution. When a significant risk is noted during an audit field visit, the



Read the full BMP Implementation Report

# WATER QUALITY PROTECTION

continued



auditor also determines if active sedimentation is occurring.

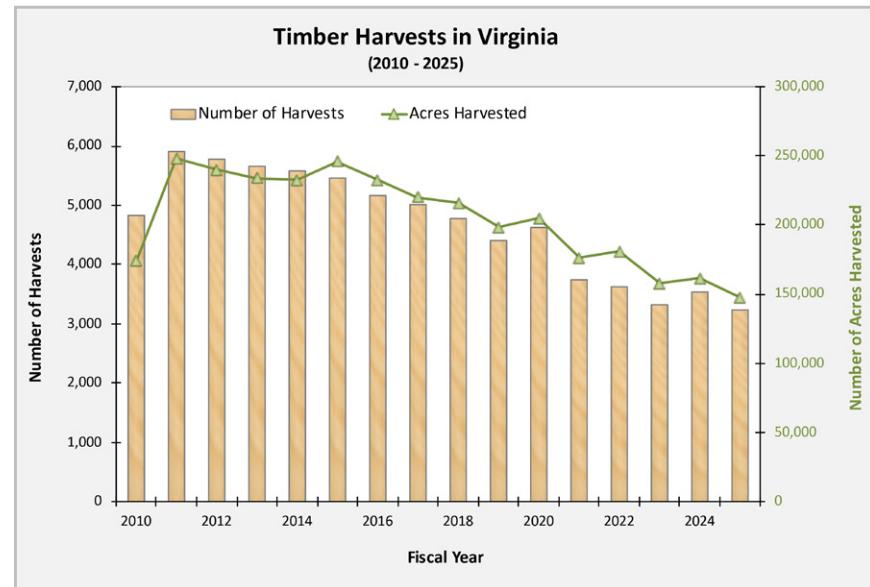
The 2024 audit results showed that out of the 240 tracts in this audit cycle, five (2.1%) of the sites visited had significant risk and two (0.83%) had an active sedimentation concern present after operation close-out. The information compiled using this audit process forms the basis of reporting for Virginia's Phase III Watershed Implementation Plan (WIP III) in response to the total maximum daily load (commonly called TMDL) for the Chesapeake Bay.

DOF assisted with several Virginia Department of Environmental Quality (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 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 DOF. The program is open to forest harvesting operators who are trained under the SFI SHARP Logger Program administered by Virginia Forestry Association (VFA) 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/or installation of forestry BMPs associated with approved stream crossings. This would include such costs as culvert purchase, equipment time for



installation of BMPs plus operator, and material such as grass seed, lime, fertilizer, silt fence, etc.

For FY25 and FY26, DOF received \$1 million in funding, the most the program has ever received. At the end of FY25, 38 projects were funded for a total of \$347,080. The remaining funding has been allocated.

## USFS Temporary Bridge Program

DOF received funding from USFS 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 (BIL).

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 result in less impact to the stream channel and banks. For FY25, 15 projects were completed for a total of \$109,425. The remaining funding has been allocated.

# FOREST PRODUCTS UTILIZATION & MARKETS



Forestry is an economic powerhouse that generates more than \$23 billion in revenue and employs more than 108,000 people as Virginia's third-largest industry. Forest products and the associated markets support rural economies across the state and are vital to helping landowners keep their land in forests.

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 innovations in this area include biochar, urban wood, mass timber products and sustainable aviation fuel. The biochar utilization projects include urban soil remediation and tree plantings, two research projects at the DOF nurseries, and ammonia reduction mitigation in commercial poultry houses.

## Urban Wood Education Project

DOF continues to partner with the Urban Wood Education project, which exposes university students to the use of local, urban wood resources 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: University of Virginia, Virginia Commonwealth University, James Madison University, William and Mary, Virginia Tech, University of Mary Washington, and Mountain Gateway Community College. Working in partnership with the universities, the program has also grown to include high school students.

Forest Utilization and Marketing was also honored to partner with DOF's Urban and Community Forestry group and Saunders Lumber of Suffolk for the acquisition and delivery of a large cypress log to the Nansemond Indian Tribe at Mattanock Town. The log, which is 16 feet long and almost 10 feet in circumference, will be used for the Tribe's dugout canoe outreach education programs.

## Forestry Business Development

Utilization and Marketing provided information for an ever-increasing number of forest resource and products inquiries during the 2024-25 program year. The team also conducted the annual Timber Products Output Survey for Virginia sawmills, in cooperation with the U.S. Forest Service. 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 two

## By the Numbers

FY25 (07/01/2024 – 06/30/2025)

### Harvested Stumpage Value\*

**\$253,097,365 ↘**  
harvested stumpage value  
(\$264,689,601 CY23)

### Harvested Volume\*

**16,327,000 ↘**  
tons  
(16,908,000 CY23)

Note: DOF is now providing Harvested Stumpage Values and Harvested Volumes. Forest Products Tax Collected data is no longer available.

### Business Assistance

**49 ↗**  
assistance responses  
(36, FY24)

### Forest Inventory Analysis Program

**693 ↘**  
inventory plots evaluated  
(783 FY24)

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

# FOREST PRODUCTS UTILIZATION & MARKETS

continued



new forest product businesses. Since 1997, DOF and USFS have provided annual forest data through the Forest Inventory and Analysis program to support sustainable industry planning in Virginia.

## Forest Inventory

Since 1997, DOF has partnered with USFS – Southern Forest Inventory and Analysis unit to conduct annual monitoring of the statewide network of forest inventory plots. This data is processed, updated and made available to users annually.

This information provides updates on land-use trends, ownership and composition, forest inventory, growth, and drain of Virginia's forest resources. This information is vital to forest industry entities who are planning to expand current operations or locate new operations to the state by helping assess the sustainability of the required forest resources.

## Commonwealth Celebrates Forest Products Week

Each year, DOF celebrates Forest Products Week, which highlights Virginia's working forests, thousands of professionals and partners who work in them, and the environmental benefits and sustainable products they provide for all of us. Proclaimed as Forest Products Week in Virginia by Governor Glenn Youngkin, this official recognition commends more than 100,000 people working in Virginia's forest industry, and their contributions and commitment to ensuring these resources are available for future generations. As our third-largest private industry in the Commonwealth, forestry is a vast economic driver, providing the raw materials to create products we use every day.

DOF participated in several events as part of Virginia's Forest Products Week in 2024. DOF leadership from Headquarters and the field joined Virginia Forest Products Association representatives for a visit to Charles City Forest Products in Providence

Forge to meet with owner Thomas Evelyn and staff to discuss operations and the unique products – certified playground mulch, timber bridges, timber mats and log exports – the company offers. Deputy State Forester Ed Zimmer and Central Region Forester Robbie Talbert joined industry professionals and officials including Secretary of Agriculture and Forestry Matt Lohr for a National Bioenergy Day event hosted by Northern Virginia Electric Cooperative at its biomass electric generating facility in Halifax County. Secretary Lohr presented Governor Youngkin's Forest Products Week proclamation and spoke about the importance of forestry and bioenergy to the Commonwealth. Zimmer and Eastern Region Forester Bryant Bays also joined Deputy Secretary of Agriculture and Forestry Travis Rickman to tour Dominion Energy's biomass electric generating facility in Southampton, the biomass logging operation of C.K. Greene, and Virginia's newest forest products production facility, Restoration Bioproducts biochar production operation in Waverly. Secretary Lohr and Zimmer also met with consulting forester Glen Worrell of F&W Forestry and discussed adding value for landowners and the supply chain.



# STATE LANDS



While assisting private landowners is a huge part of what DOF does every day, the agency also plays a vital role on state-owned lands. Encompassing more than 15,000 acres of forested land across more than 110 properties in Virginia, 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.

Always written with consideration of the landowner's objectives, DOF creates and updates management plans for each property every 10 years (at a minimum). Funding for the program is derived from the sale of timber and is 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

FY25 (07/01/2024 – 06/30/2025)

### Forest Management

**4 ↘**  
forest management  
plans completed  
(8 FY24)

**\$428,859 ↗**  
timber sale revenue  
(\$138,094 FY24)

**\$46,044 ↘**  
spent on forest  
management projects  
(\$68,044 FY24)

Note: Costs include  
contracted services  
and seedling costs;  
does not include DOF  
time and expenses

**129.58 ↘**  
acres reforested  
(216 FY24)

**\$21,935 ↘**  
revenue returned to  
special fund properties  
(\$97,612 FY24)

**\$2,200 ↘**  
spent on riparian buffer  
projects in the Chesapeake  
Bay Watershed  
(\$39,162 FY24)

### Forest Health

**0 ↘**  
acres treated for  
invasive species  
(6 FY24)

Note: No State Lands Program  
treatment projects in FY25.

**92 ↗**  
ash trees treated  
on state lands\*  
(70 federal FY24)

Note: Forest Health  
Program initiatives.

**\$0 ↘**  
spent on invasive  
species treatments  
(\$6,480 FY24)

Note: Funding received from  
Forest Health grants and  
State-Owned Lands Fund.

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

# STATE LANDS

continued



## Good Neighbor Authority

Since 2018, DOF has partnered with USFS in the Good Neighbor Authority (GNA) program. GNA allows DOF and other participating states to assist USFS in the implementation of forest management on federal lands through Supplemental Project Agreements (SPAs). The benefits are many: increased capacity for the USFS to complete more on-the-ground projects, work opportunities for private industry, and increased 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 USFS George Washington and Jefferson National Forest. These include Round Mountain West (Bland County), Ewing Mountain (Carroll, Wythe and Grayson counties), Potts Creek (Allegheny County) and Green Hill Flats/ Blacks Creek/Moore's Creek State Forest (Rockbridge County). Additionally, another two GNAs were signed: one with USFS, State and Private funding and one with the use of Wyden Infrastructure Funds.

An additional GNA was signed in 2024 – the Forest Restoration Services agreement – for use on federal lands and nearby state and private lands, which was awarded \$1.2 million. This new GNA will be used along with our partner The Nature Conservancy to complete \$700,000 of treatment (prescribed burning and invasive species control) on USFS land, and approximately \$500,000 to be used on State Forest lands (First Mountain State Forest and Moore's Creek State Forest). The 23 GNA-funded projects include: road restoration on USFS lands in Rockbridge County (\$11,618), culverts on USFS lands in Rockbridge County (\$3,083), mulching of old roads/trails on Moore's Creek State Forest (\$8,250), and road restoration work on USFS Smith Flats timber sale (\$8,063).

## Mountain Valley Pipeline Mitigation Funding

In late 2023, DOF was awarded \$113,600 of Mountain Valley Pipeline (MVP) Mitigation Funding for use on Moore's Creek State Forest and surrounding USFS lands encompassing the Black's Creek and Green Hill/Smith Flats area. The project funds \$39,960 on the state forest and the balance on federal lands that DOF will administer over the next four years. MVP Funding spent was \$20,000 on the Black's Creek GNA timber sale on USFS lands.

## By the Numbers

FY25 (07/01/2024 – 06/30/2025)



### Good Neighbor Authority - Federal Lands

5 ↘  
forest management  
projects on federal lands  
(7 FY24)

\$138,639 ↘  
timber sale revenue  
(\$256,131 FY24)

\$98,661 ↗  
expenditures on  
federal lands\*  
(\$41,451 FY24)

### Good Neighbor Authority - State and Private Lands

4 ↗  
forest management  
projects on state  
and private lands  
(2 FY24)

\$67,885 ↗  
expenditures on  
state and private lands\*  
(\$11,044 FY24)

\*Expenditures do not include DOF time.

# STATE FORESTS



Virginia's state forests currently consist of 26 properties covering approximately 75,200 acres, the majority of which are certified sustainable to both the Sustainable Forestry Initiative® (SFI) and American Tree Farm System® (ATFS) standards. Virginia's state forests are self-supporting, meaning DOF receives no taxpayer funds for their operation. Operating funds are generated from the sale of forest products, the purchase of state forest use permits, and Virginia's income tax check-off system. DOF's state forests program follows sustainable, science-based forestry practices that increase value while improving health and productive capacity. The state forest program added 231 acres this year with an additional purchase of land for Charlotte State Forest in Charlotte County.

While the number of state forest use permits sold decreased slightly in FY25, DOF continued to see robust demand for recreational activities in the form of hiking, biking, hunting, fishing and horseback riding. Education, training and tours increased this year. The Virginia Cooperative Extension, Master Naturalists, high school and college students, and other groups continue to seek out and take advantage of the state forests as outdoor classrooms.

State forest infrastructure improvements continued in FY25. This included progress on repairs to the access bridge to First Mountain State Forest in Rockingham County, and the reopening of an access road into Moore's Creek State Forest in Rockbridge County, both made possible through cooperation with USFS. DOF received a grant award of \$250,000 from the Recreational Trails Program administered by DCR with funding provided through the National Highway Administration. The grant will help pay for replacement of a swinging bridge over the Willis River in Cumberland County on the Cumberland State Forest, which provides recreational access to more than 700 acres.

This year, DOF expanded the new shortleaf pine seed orchard on the Appomattox-Buckingham State Forest. Establishing a regional seed source for Virginia shortleaf pine will help DOF nurseries produce viable seedlings of this diminished tree species for the future forests of Virginia. The state forests continued to serve as testing and training grounds for implementation of the agency's Hardwood Initiative, which promotes quality management to advance healthy hardwood forests.

## By the Numbers

FY25 (07/01/2024 – 06/30/2025)



### State Forests

<b>26 →</b> state forests (26 FY24)	<b>75,200 ↗</b> acres state forest land (74,969 FY24)
	<b>74,882 ↗</b> acres state forests SFI-certified (74,882 FY24)

### State Forest Use Permits

<b>13,385 ↘</b> state forest use permits sold (13,511 FY24)	<b>\$200,770 ↘</b> state forest use permits net revenue (\$202,660 FY24)
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### Forest Management

<b>\$1,758,220 ↗</b> timber sale revenue (\$1,724,586 FY24)	<b>\$315,216 ↘</b> paid to counties where revenues were generated (\$356,147 FY24)
<b>733 ↗</b> acres site prepared for reforestation (660 FY24)	

# STATE FORESTS

continued



The state forests worked closely with DOF's Research team to study the viability of site preparation herbicide application via drones. This research could lead to reduced costs and chemical use, and facilitate more efficient reforestation for all of Virginia. In addition to improving our forests, activities that facilitate tree regeneration are often beneficial to wildlife.

The state forests are cooperating with Virginia Tech and the Virginia Gray Fox Project to provide research areas in almost all of the Commonwealth's state forests. DOF continues to work closely with the U.S. Fish and Wildlife Service and DWR to identify the best means to minimize impacts to the northern long-eared bat – and other endangered species – while continuing to practice sustainable forestry.



# NURSERIES



Using more than 60 years of production research and experience as a guide, DOF's nurseries continue to produce high-quality seedlings well-suited to Virginia's diverse climates. DOF serves a wide customer base in the Commonwealth (and beyond) that includes landowners, private nurseries and the general public.

## Public Sales

In FY25, online public sales increased by 6.75%, despite an overall 7.63% decline in total seedling sales. This decrease is likely due to a slowdown in large-scale pine planting projects influenced by broader economic conditions. Looking ahead to FY26, DOF anticipates continued growth in hardwood seedling sales.

## Virginia's Acorn and Nut Collection

Each year, DOF collaborates with citizens in a statewide acorn and nut collection campaign. This fun, interactive and educational effort is a hit with families, student groups, community partners and tree enthusiasts of all ages. The donations are important to DOF, as they ensure a high-quality seed crop for the agency's Augusta Nursery, which focuses on growing hardwood species. As weather conditions significantly influence factors such as pollination, seed development, viability, and animal predation, variations in yearly acorn and nut yields come with the territory. The 2024 fall collection campaign was a strong year for acorns, increasing by 60% (0.9 tons) thanks to the absence of late spring frosts. However, DOF saw a severe decline in black walnut collection (47%, or 4.5 tons) due to drought

conditions. Public contributions this year support the production of an additional 155,000 seedlings, resulting in cost savings for DOF of approximately \$23,000.

## Increasing Species, Inventory and Studies

The demand for hardwood seedlings in the U.S. continues to far outpace current production levels. One of the primary challenges limiting hardwood seedling availability is sourcing high-quality, viable seeds suitable for sowing. In response, DOF is actively working to expand capacity by increasing planting acreage, the total number of hardwood seedlings grown, and the diversity of species produced. As part of this expansion, the Augusta Nursery is entering the warm stratification market by planting select species during the summer intended to germinate the following spring. Current trials include species such as arrowwood viburnum, blackhaw, Carolina silverbell, and white fringetree. Plans are under way to broaden this effort by incorporating additional species like holly and beautyberry, which show promise for future production.

In addition to diversifying species, the Augusta Nursery is focused on expanding production of two-year-old hardwood seedlings to meet demand for more mature planting stock. Target species in this effort include white oak, red maple, pawpaw, and sugar maple, species valued for their ecological benefits and long-term forest health contributions.

## By the Numbers

FY25 (07/01/2024 – 06/30/2025)

### Sales

**19,807,90 ↘**  
seedlings sold  
(21,445,370 FY24)

**3,892 ↗**  
seedling orders  
(3,572 FY24)

### Inventory

**52 ↗**  
hardwood species grown  
(49 FY24)

**9 →**  
conifer species grown  
(9 FY24)

### Acorn and Nut Collection

**2.4 tons ↗**  
acorns  
(1.5 tons FY24)

**5 tons ↘**  
nuts  
(9.5 tons FY24)

**7.4 tons ↘**  
total acorns/nuts collected  
(11 tons FY24)

**155,000 ↘**  
seedlings (based on  
anticipated germination)  
(315,000 FY24)

# NURSERIES

continued



A significant area of focus at Augusta is white oak, a keystone species in both ecological and forestry applications. Progeny testing is underway, with selected seedlings being planted in a new on-site seed orchard. This orchard will serve as a long-term source for seed collection, genetic monitoring, and future research into improved white oak growth and adaptability.

## Live Oak Orchard

In 2022, a live oak seed nursery was established in fallow areas at the Sussex Nursery. The goal of the seed orchard is to provide a healthy, easily accessible site for collecting live oak acorns – a species that has significantly declined – to replace dying live oaks along the coastal regions of Virginia. The initial acorns were sourced from native live oak trees in coastal Mathews County.

Additional plantings took place in 2023 and 2024 using acorns collected by DOF's county and community foresters, with support from Virginia Beach-based The Friends of Live Oaks. The acorns were planted, overwintered and cared for at DOF's Waverly office before being transplanted to the nursery.

Currently, the nursery houses 69 live oaks, with a survival rate of 96%. Nursery staff aim to increase the number of live oaks each year, depending on the size, health and germination success of the acorns collected. All acorns are sourced exclusively from native live oaks along the Virginia coast. Through these initiatives, DOF is playing a critical role in strengthening hardwood seedling availability and ensuring the long-term sustainability of Virginia's forests.





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

**[www.DOF.Virginia.gov](http://www.DOF.Virginia.gov)**



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