

State of the Forest

Annual Report on Virginia's Forests

2020







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Welcome to our State of the Forest annual report. It’s interactive! Follow the links to videos, more stories and additional information. The four categories shown below represent the VDOF mission priorities; stories are tabbed with applicable categories to provide additional context.

Protect

Manage

Conserve

Educate



From the State Forester

Virginia forests and the Virginia Department of Forestry (VDOF) were not immune to the challenges this past year brought. Like people worldwide and all agencies in the Commonwealth, we were faced with finding ways to continue to function well under difficult and unprecedented circumstances. Much of what VDOF does is by its very nature socially distanced. Our forestry staff spend most of their time in the forest, of course. So to a great degree things were business as usual for us with added health precautions such as limiting in-person gatherings, adjusting in-office schedules to ensure schedules were staggered appropriately, and providing sound public health guidance for our first responders in emergency situations. With these and other safety measures, VDOF has continued to conduct timber harvest inspections to protect Virginia's waterways, supported landowners with management plans, maintained a robust urban forestry presence, worked with our partners to plant and monitor riparian buffers and conservation easements, met with landowners to develop and implement management plans and sustained our nurseries.

VDOF also stepped into new territory as a result of COVID-19. Our outreach and education efforts went virtual, from career day presentations to Project Learning Tree facilitator training and even events that normally draw crowds, such as Arbor Day. Our staff utilized the gambit of technology to provide resources to educators, parents, partners and communities.

Our most significant contribution to the Commonwealth's COVID-19 response began in March when the VDOF Incident Management Team (IMT) ramped up support for the State Emergency Operation Center. Our folks worked an impressive 134 days virtually and on-site with the Virginia Department of Emergency Management (VDEM) to provide immediate support via a new operational structure that included multiple response agencies across Virginia.

VDOF received significant support for the hardwood management initiative and for our work to create new riparian forest buffers called for in Virginia's Chesapeake Bay Watershed Implementation Program. Funding was included in Governor Northam's budget and approved by the General Assembly for several positions focused on riparian buffers and land conservation. The budget also included funding for a landowner incentive program for hardwood management as well as a statewide coordinator for the hardwood initiative. Unfortunately, the economic impact from COVID-19 prevented those budget items from being enacted but that did not prevent VDOF from continuing to focus on these important initiatives.

If this past year has shown us anything, it is that when we work together, whether that is to manage emergency response to a pandemic or to care for the forests that support our state in so many ways, we can realize benefits that not only address immediate needs but also reach far into the future and touch the lives of generations to come.

The importance of trees and forests for protecting human health and our well-being is gaining greater attention around the world and here at home. Trees are being recognized for their potential to reduce impacts from climate change, make cities more livable, and reduce our dependence on fossil fuels and plastics. The VDOF is committed to helping Virginia capitalize on the great potential of our forests.

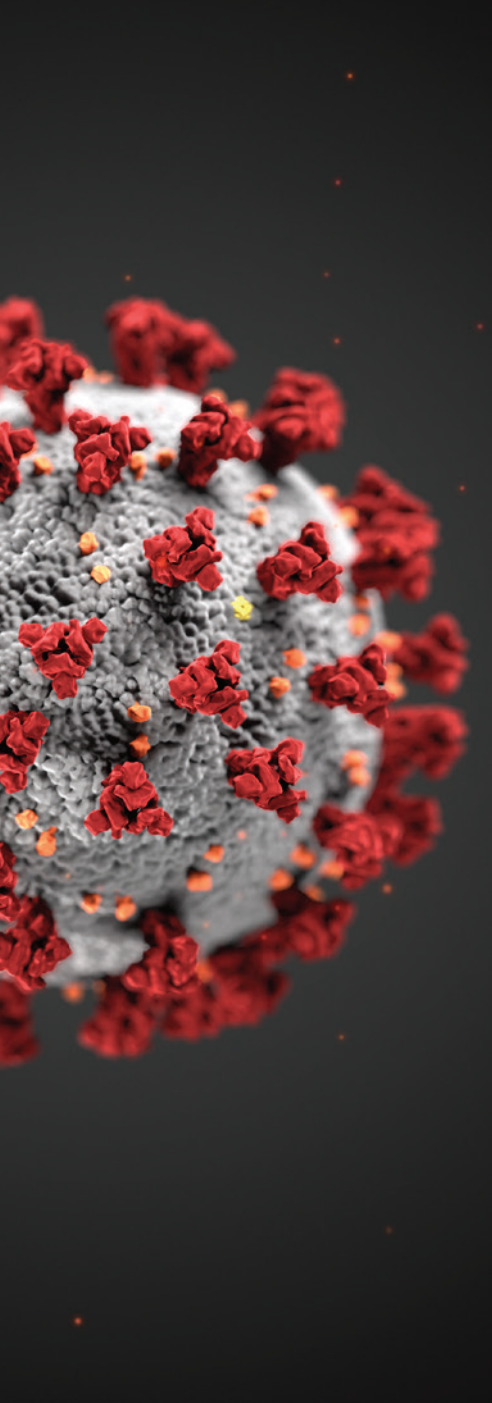
Rob Farrell, State Forester of Virginia



Pause
Plan
Act



Your Forest
Savings Account



A New Paradigm for Statewide Emergency Management

COVID-19 presented unique challenges for emergency managers working to coordinate statewide response activities in Virginia's State Emergency Operations Center (EOC). The Virginia Department of Forestry's (VDOP's) Incident Management Team (IMT) personnel provided immediate support to the Virginia Department of Emergency Management (VDEM) and overcame the significant limitations of working within a COVID-19 environment to establish a completely new way of coordinating the information flow and planning function of all state agencies within the Commonwealth's EOC – all while working within the constraints of a totally virtual environment, for 134 consecutive days. This assistance was so successful that it is now in the process of being adopted as the standard operating procedure for future emergency events.

The team provided a new operational structure pulling together many different response agencies, working mostly in decentralized locations, to manage and direct the operations of the state EOC, effectively supporting both the COVID-19 and 1st Amendment Rights emergencies. This was the first ever IMT deployment to coordinate the planning operations of the state EOC. The success of the VDOP's IMT highlights the impact that the specialized skills of one state agency can have in collaboratively sparking the success of numerous other state agencies, working within the constraints of a global pandemic, for the greater good of the Commonwealth.

VDOP's unique incident management skillset has expanded greatly over the years as it worked to provide incident management experience to other state and federal forestry cooperators across the nation, for all types of natural disasters. When confronted with the challenges of managing the pandemic in a largely virtual environment, VDOP incident managers immediately stepped into action and provided support and expertise to VDEM, providing a capability of the agency that had never before been incorporated into the management of the state EOC. VDOP's incident managers adapted a proven skillset for use in managing state-level operations. The results were remarkable, and highlight the first core value of the VDOP's Strategic Plan - exceeding customer expectations by delivering quality products and services in a responsive, professional manner.

A VDEM Planning Staff member had the following to say about VDOP's IMT:

"I wanted to take a moment to say thank you...to acknowledge what you accomplished - you developed, maintained and sustained an Incident Command System structure in the virtual environment while combating a global pandemic. This has never been done before. What you accomplished is nothing short of amazing."

Education During A Pandemic

VDOF's quest to protect and develop healthy sustainable forest resources begins with educating Virginia's citizens, young and old. Education and outreach became even more important during COVID-19.

Forestry field staff took precautions as they continued to work with landowners and groups. Changes included social distancing, wearing masks and interacting more often by computer and phone. Agency-wide, staff got creative in program delivery with videos, social media and resources on a special COVID-19 web page.

In-person workshops shifted to virtual learning during the COVID-19 isolation. VDOF created and posted videos to social media. Examples of the diverse topics included a tour of the VDOF headquarters arboretum to celebrate Arbor Day; an in-the-field look at the career of a forest technician; outdoor tree identification sessions; pesticide applicator recertification training; and demonstration of learning activities for children.

Numerous resources on the agency's website are available for use by families and children for learning at home. These include fact sheets, activity suggestions and links to other forest-related sites. The agency's Field Notes blog informed citizens about important events and relevant research, as well as providing timely natural history observations that inspired people to spend time outdoors.

This year, VDOF continued to collaborate with partners to offer distance learning, such as Generation Next workshops, training webinars for Master Naturalists, the annual Waynesboro Tree Workshop, and demonstrations such as proper tree planting and shiitake mushroom log inoculation. Recognizing that COVID-19-related financial hardship might lead more landowners to consider selling timber, the agency worked with Extension and the Virginia Forestry Association to encourage owners to "pause, plan, and act" responsibly in undertaking such an important activity.

In the nine months prior to COVID-19, Project Learning Tree® (PLT) provided environmental education professional development workshops to 555 formal and non-formal educators, including pre-service teachers. COVID-19 led to cancellation of all in-person workshops, but PLT State Coordinator, Page Hutchinson embraced a virtual learning format to continue the program's success. She implemented blended workshops that included both virtual meetings and self-directed online training. In the summer of 2020, 85 educators participated in these blended workshops. Four colleges and universities that use PLT in their courses adopted this blended model, and Virginia PLT provided 70 pre-service teachers with access codes to the online course.

PLT also worked with a teacher and several seniors at Louisa High School to create a blended workshop for a high school PLT module, Focus on Forests. There was no online course for this module, and the students volunteered to be filmed simulating and demonstrating the activities in the module for an online course.

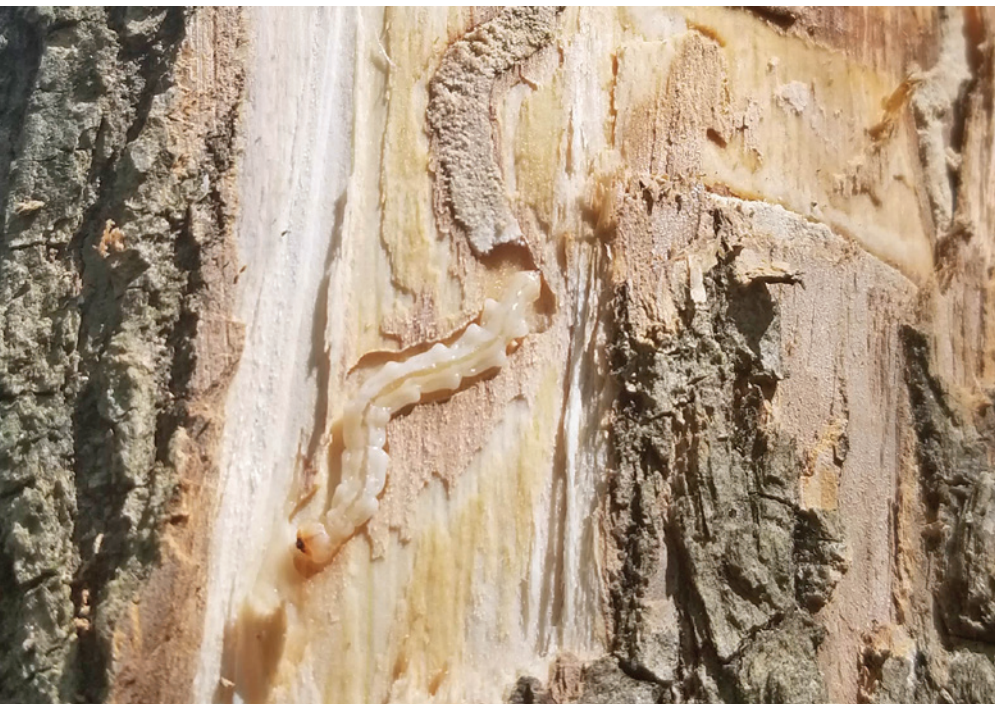
VDOF staff not only facilitated virtual learning this year – they also participated in it. Through online training, multiple employees could attend trainings for a fraction of the cost of sending just one or two people to an in-person workshop. For example, nearly twenty foresters attended a virtual seminar led by researchers from Bent Creek Research Station in Asheville, NC. Forester Sarah Parmelee observed, "It was really good that a bunch of folks were able to attend, because now we can take those ideas that we learned about and bounce them off each other."



Virtual
Career Day



Virginia Project
Learning Tree



Protecting Ash Trees

During the spring and summer of 2020, VDOF participated in the Centennial Challenge put forth by the National Association of State Foresters (NASF) to celebrate their 100th anniversary.

For the challenge, VDOF committed to treating 100 ash trees to protect them against emerald ash borer (EAB), an invasive wood-boring beetle that's pushing Virginia's native ash (*Fraxinus*) trees to the brink of extinction. Individual trees are typically treated through trunk injection of insecticide to kill existing EAB and prevent further infestation.

Despite the challenges presented by COVID-19, there was little doubt VDOF would meet the Centennial Challenge goal. This season, the agency treated every species of ash found in Virginia – from the white and green ash commonly found in urban settings to rare pumpkin ash in the wetlands of southeastern Virginia. Treatment spanned all corners of the state, from city properties to wilderness forestland. By July, at least 110 trees had been treated, with dozens more scheduled for treatment by autumn.

Several stories of notable ash treatments were shared on the department's blog and social media platforms, including the story of blue ash treated on steep forestland in southwestern Virginia.

Beyond the ash treated on public land, many trees on private property also received treatment, thanks to the EAB cost-share program. "Ash trees are an important part of our landscape in Virginia. By treating high-value ash on an individual-tree basis, and by supporting landowners who want to treat trees on their private property, we're helping to protect a whole genus of trees against this forest health threat. When we offer cost-share support to landowners and managers, we're quantifying the environmental, economic and social benefits that trees provide," said Lara Johnson, urban and community forestry program manager.



NASF
Centennial
Challenge



Saving
Pumpkin Ash

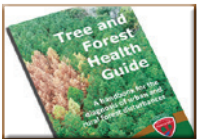
Hemlock Woolly Adelgid

This year, the forest health team saw an increase in calls and questions about hemlock woolly adelgid – an invasive sapsucking insect causing mortality in eastern North American hemlock stands. “It may have been an especially bad year for the hemlock woolly adelgid because we had a mild winter. It’s also possible that people were home or outdoors more this year due to COVID-19 quarantines and were more aware of the trees around them. Signs of the adelgid can be pretty noticeable on the branches,” said Lori Chamberlin, forest health manager. Hemlock woolly adelgids look like small white cotton balls on the underside of the branch.

This fiscal year, the forest health division received funding to treat hemlocks on public lands. Although COVID-19 meant staff had to take extra precautions in the field (socially distancing and wearing masks), it didn’t stop them from treating more than 135 hemlocks on Paul and First Mountain State Forests, protecting them from this damaging pest.

Forest Health Field Guide

The forest health and urban and community forestry teams worked with the public information office to produce a comprehensive Tree and Forest Health Guide for VDOF field staff (and other forestry professionals) to use when identifying common tree health conditions and possible treatment options. The 152-page guide contains detailed descriptions and color photos of the pests, diseases and common scenarios that may threaten Virginia’s forests. The publication was created with input from other partners in the Southeast, including Clemson University Extension and the U.S. Department of Agriculture.



Tree and Forest
Health Guide





For a Healthy Bay, Trees are the Answer



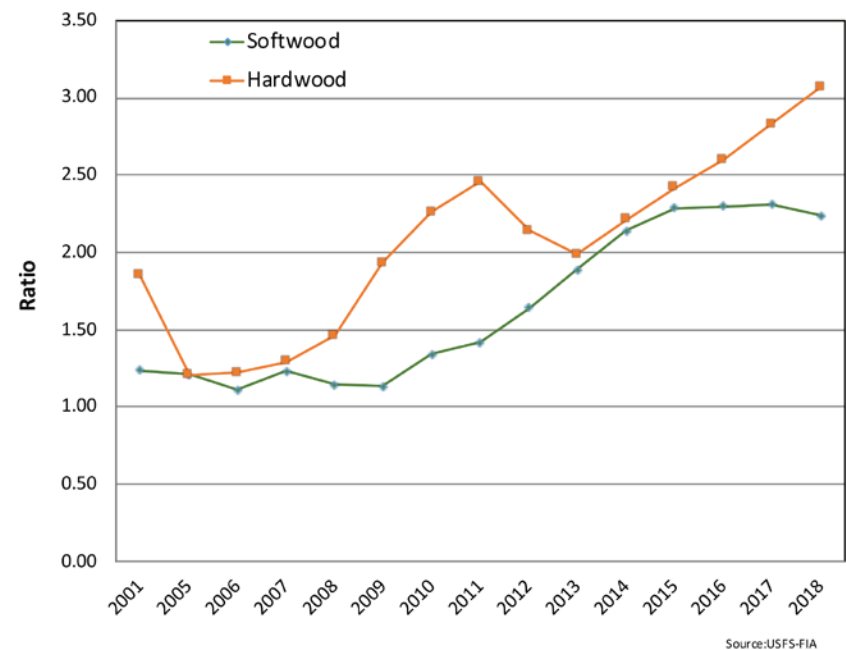
Agricultural-Forestal Districts in Louisa County

Forests are the Future

Virginia's forestry community has long demonstrated foresight and vision for the future of forests. In the 1970s, they protected timberlands and supported reforestation. Now, industry and landowners recognize how sustainable forest management is critical for carbon sequestration, water quality protection, habitat connectivity and coastal resiliency.

Stakeholders from varied sectors recognize the key role of forests in our nation's climate change response. While landowners have many reasons to own forestland – recreation, income, heritage – we know that economics significantly influence most management decisions. Providing landowners with multiple options for generating income from their forestland can ensure that forests remain intact to support our economy, the environment and public health.

Statewide Net Growth to Drain Ratio for Softwoods and Hardwoods on Timberland



Virginia's Hardwood Management Initiative

The Virginia hardwood management initiative garnered tremendous support last year. Governor Northam and Virginia's legislature recognized the importance of the hardwood forest resource and the need to take action to safeguard and grow it. Last year's approved budget included new funding for a hardwood coordinator position at VDOF and \$350,000 for a hardwood incentive program to get management work implemented. This amount is equal to the average annual amount paid by the forest industry for the hardwood portion of the Forest Products Tax. Unfortunately, those new budget items were rescinded due to the fiscal impacts from COVID-19.

COVID-19 has impacted Virginia's hardwood management initiative in multiple ways. Working from home and remote schooling caused a dramatic drop in consumption of office paper. This sudden drop, on top of previous long-term declines, has resulted in a loss of markets for wood chips made from low-quality hardwood trees. This reduces our ability to improve hardwood forests by removing inferior trees. COVID-19 restrictions have also reduced professional training opportunities as well as education and outreach events.

But work has not stopped altogether – VDOF has used this time to further develop the hardwood assessment tool and to identify the hardwood management practices that we will focus on implementing. About twenty VDOF foresters were able to participate in an excellent hardwood silviculture online training provided by the USDA Forest Service Bent Creek Research Station in NC.

VDOF and our many partners are currently pursuing grants to advance the hardwood initiative until state funding is available. VDOF foresters are also identifying sites across the state to develop as demonstration areas. Like the hardwood trees themselves, Virginia's hardwood initiative is maintaining slow but steady growth.





Arbor Day Goes Virtual

Arbor Day is a big deal for VDOF. It's a day dedicated to one of the things we do best – plant trees! Virginia's Arbor Day is the last Friday in April, which is a good time to plant trees across much of the state (though some towns in eastern Virginia celebrate in the fall when their climate is better suited for planting.)

Normally, VDOF staff celebrate Arbor Day with their communities by planting trees. But this year, COVID-19 precautions meant that events planned by groups across the state had to be cancelled.

The urban and community forestry (U&CF) team didn't want to miss the chance to celebrate Arbor Day entirely, so they moved the celebration online! Lara Johnson (U&CF program manager) and Molly O'Liddy (U&CF partnership coordinator) led a virtual tour of the arboretum at VDOF's headquarters office in Charlottesville. They introduced viewers to a few of the native tree species on the property, including sassafras and American chestnut.

Tree Planting Continued

Although public tree planting events were largely cancelled due to COVID-19, other planting projects continued with limited staff or volunteer support and social distancing precautions in place. Riparian buffers were installed and timberlands were replanted, despite the challenging circumstances.

One such planting took place on Arbor Day at Powhatan State Park. A riparian buffer installation training scheduled in the Chesapeake Bay watershed was cancelled, and although the trainees could no longer attend, the trees still needed to be planted. VDOF staff partnered with staff from the Virginia Department of Conservation and Recreation to complete the installation – socially distanced, of course. The project inspired the creation of a guide for volunteers about tree planting projects during the pandemic.



In This
Together,
Apart



Arbor Day
2020

Urban Forest Strike Team Deployed

VDOF has long been a leader in emergency and disaster response, and it's no surprise when the agency spearheads innovative approaches to protect our forest resources. Such was the case in February, when VDOF supported an Urban Forest Strike Team (UFST) deployment in Winchester, Virginia for rapid data collection on an invasive pest – the spotted lanternfly (SLF).

The Urban Forest Strike Team consists of certified arborists who are specially trained to assess risk on storm-damaged trees. These teams were created in 2007 to provide trained professionals to assess tree damage after major weather events. Since 2008, UFST teams have been deployed nationally to more than 40 incidents to assist communities in post-storm recovery efforts.

The SLF invasion was an emergency of a different kind, requiring a new plan of action. The UFST protocol was amended to address trees affected by the introduction of SLF – a major threat to Virginia's forests. The SLF-infested area in Virginia is limited to eastern Frederick County, parts of the City of Winchester and Clarke County. During this winter deployment, the UFST identified and marked tree-of-heaven (*Ailanthus altissima*), SLF's preferred host, throughout the SLF-infested area. The data was incorporated into a treatment program to slow the spread of SLF in Virginia and other states.

The UFST deployment was conducted in partnership with USDA Forest Service, USDA-APHIS, the Virginia Department of Agriculture and Consumer Services and the Virginia Department of Transportation. VDOF contributed valuable expertise in forestry, technology systems, emergency response and forest health. This pioneering strategy sets the stage for future responses to forest health threats on a national scale.





Forest Industry Stands Strong

In response to the unforeseen COVID-19 pandemic, the forest industry was designated an essential service due to critical public need for forest products – lumber for home renovation and new construction, paper products for sanitizing and personal care, fiber for diapers, chips and pellets for energy, and many more essential products for everyday life.

Virginia's forest industry and service providers faced the challenges of the pandemic head on and continued to meet the timber and forest product needs of our communities. Their steadfastness during the pandemic response would not have been possible without the longstanding support from our partners at the Virginia Department of Agriculture and Consumers Services. Through assistance from programs such as the Governor's Agriculture and Forestry Industries Development (AFID) Fund, some businesses and segments of the industry were able to expand their capacity this year, resulting in increased jobs and economic opportunities in our rural communities, and buffering against some of the COVID-19 fallout.

The AFID program was established in 2012 by Governor Bob McDonnell as a discretionary, performance-based economic development incentive specifically for agriculture and forestry value-added or processing projects. The grant amount and terms are determined by the Secretary of Agriculture and Forestry and approved by the Governor. In FY20, the Commonwealth assisted the forest industry by awarding \$380,000 in AFID grants to assist with \$42.75 million dollars in capital investment in rural communities, and establishing 118 new jobs.

Wood Use During COVID-19

Early during the pandemic, many businesses were closed and the demand for consumer products declined. But as thousands of people found themselves at home with time on their hands, home improvement and landscaping projects soon surged, creating a high demand for wood products.

Wood sales for landscape timbers, wood fencing products, and outdoor decking materials increased greatly during the late spring and summer of 2020. There was even a shortage of treated pine lumber, which is usually easy to find in the larger home supply store chains, and a corresponding increase in its price.

VDOF contacted some local and urban wood producers across Virginia, and learned they had been busy completing backlogged orders and receiving new ones. Two of the businesses started marketing do-it-yourself wood project kits that proved very popular in suburban/urban areas.



Urban & Small
Woodlot
Forestry Business
Directory

Coastal Resiliency

Virginia has the second most vulnerable coastal population in the U.S., second only to New Orleans¹. As sea levels rise, leaders have to find innovative ways to build coastal resiliency into communities.

As forest experts, VDOF knows that trees play an important role in tackling climate change issues – trees stabilize soil, cool air temperatures, and mitigate flooding from rising sea levels. The agency is focusing resources to identify and implement forestry projects that will protect our coastal watersheds and communities.

One of the things VDOF does best is put trees in the ground – but planning tree planting projects for vulnerable coastal regions presents unique challenges. Project leaders must select trees that are well-adapted to the salty, wet and windy environment. This means looking to native species thriving in surrounding areas – often these species include red cedar, wax myrtle or bald cypress.

VDOF forester Robbie Lewis has guided work on a number of projects to bolster the Commonwealth's coastal resiliency, funded through a Landscape Scale Restoration (LSR) grant. These projects include a collaborative effort with the Green Infrastructure Center to build a long-range plan for communities in the York River watershed. Project leaders are working with citizens and city officials, as well as producing forest models to assess existing canopy and forest type in the watershed to inform planning efforts. The team hopes to implement plans in the coming year and expand the model to other coastal communities.

¹ NOAA. (n.d.). Hampton Roads' Sea Level Rise Adaptation Advances on Multiple Fronts. National Oceanic and Atmospheric Administration. Retrieved from <https://coast.noaa.gov/states/stories/sea-level-rise-adaptation-advances-on-multiple-fronts.html>

Chesapeake Bay Data

- ◆ VDOF reported a 96.9% BMP implementation rate on timber harvest operations within the Bay Watershed.
- ◆ There are 117 working forest easements totaling 30,230 acres in the Bay watershed.
- ◆ In FY20, VDOF allocated \$172,946 on 28 tree planting projects through the Virginia Trees for Clean Water Program. More than 53,000 trees have been planted during 178 projects since the program's inception.

In FY20, VDOF supported dozens of planting projects in Virginia's watersheds, primarily through the Virginia Trees for Clean Water program. One such project took place in February on Saxis Island along the Chesapeake Bay.





Protecting Water Quality

Forests are vital for preserving and improving water quality; in fact, forest conservation is one of the most effective measures to protect our water resources. VDOF is tasked with promoting and enforcing the Virginia Silvicultural Water Quality Law (Code of Virginia §10.1-1181.1 through §10.1-1181.7), developing best management practices (BMPs) for forest harvesting operations, and working cooperatively with agencies and landowners throughout the Commonwealth to manage and preserve riparian buffers and protect water quality.

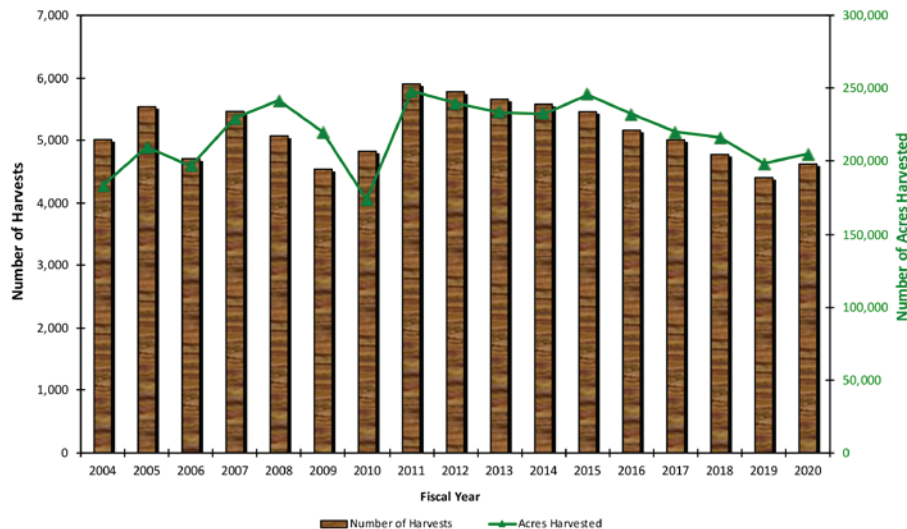
Studies have shown that the cleanest water comes from forested watersheds. These watersheds are critical sources of pure drinking water, they provide habitat for important fisheries and wildlife and are treasured for their recreational value and contributions to our quality of life. This is especially important when considering the Total Maximum Daily Load (TMDL) and Watershed Improvement Plan (WIP) developed for the Chesapeake Bay.

Two of VDOF's performance measures involve water quality. One focuses on BMPs on forest harvesting operations and protecting streams from sediment. The other focuses on protecting and improving watersheds through forest management and land conservation.

VDOF has played an important role in the protection of our forested watersheds since the early 1970s when the first set of Forestry BMPs for Water Quality were developed. VDOF utilizes the fifth edition of those guidelines that were published in 2011. The backbone of the agency's water quality efforts is the harvest inspection program that began in the mid-1980s. This program provides one-on-one contact between VDOF staff and the harvest operators and offers unique opportunities to educate the operators about BMPs and the latest techniques in water quality protection.

During FY2020, VDOF field personnel inspected 4,623 timber harvest sites across Virginia. These inspections included 20,197 site visits (an average of 4.4 visits per site) on 204,878 acres – a slight increase in both the number of harvests and the number of acres harvested from the previous year.

**Timber Harvests in Virginia
(2004-2020)**



**20,197
Site Visits**

on 4,623 Harvests

Protecting Water Quality, continued...

Logger education is another key focus area of the VDOF water quality program. Since the development of the first BMP Manual for Virginia, VDOF staff have helped provide harvesting contractors with water quality protection training ranging from harvest planning and map reading, to using GPS units to implement forestry BMPs. This training is offered through agency-sponsored events as well as through the agency's participation in the Sustainable Harvesting and Resource Professional (SHARP) Logger training – a Sustainable Forest Initiative program. Since 1997, the SHARP Logger program has allowed VDOF to help train 10,317 harvesting professionals who have participated in 347 programs related to water quality protection. During FY20, 21 training programs were offered with a total of 604 participants. This is extraordinary given the constraints working around the COVID-19 pandemic.

In 2019, VDOF launched the Forest and Drinking Water Forum in conjunction with the Southeast Partnership for Forests and Water. This initial engagement brought together water utilities, conservation organizations, government agencies and forest landowners to identify opportunities to collaboratively strategize about the utilization and protection of Virginia's forest resource that provide clean drinking water for all of the Commonwealth's citizens. Since then, working with the Southeastern Partnership for Forests and Water and the Southern Group of State Foresters Water Resources Committee, VDOF has assisted in the development of an infographic detailing the relationship of forests to drinking water.

In July 1993, the General Assembly, with the support of the forest industry, enacted the Virginia Silvicultural Water Quality Law (Code of Virginia §10.1-1181.1 through §10.1-1181.7). The law authorizes the State Forester to assess civil penalties to those owners and operators who fail to protect water quality on their forestry operations. Virginia is the only state in the southeastern United States that grants such enforcement authority to the state's forestry agency. During FY20, VDOF handled 120 water quality actions initiated under the law – a decrease of 31 percent from FY19. Of these actions, none resulted in a Special Order nor the issuance of an Emergency Special Order (Stop Work Order) for violations of the law. There were also 29 Failure to Notify violations.

A statewide audit system has been in place since 1993 to track trends in BMP implementation and effectiveness. Results from calendar year 2019 data showed that the BMP harvest median implementation rate of 240 randomly selected



tracts was 95 percent; the harvest median score is the best judge of central tendency of the tract score. The audit results also showed that 100 percent of the sites visited had no active sedimentation present after operation close-out. The information compiled using this audit process forms the basis of reporting for the Watershed Implementation Plan in response to the TMDL for the Chesapeake Bay. Since the information is captured through GIS technology, this information is compiled spatially for reporting those forestry operations occurring within the Bay watershed boundaries. For calendar year 2019, the BMP implementation rate harvest median score for forest harvesting within the Bay watershed was 96.9 percent. The entire BMP implementation monitoring effort has been automated over the past several years to be compatible with VDOF's enterprise database system known as IFRIS (Integrated Forest Resource Information System), and field data collection tablets have been added to facilitate accurate data entry this year.



Clean Water
Grows on these
Trees

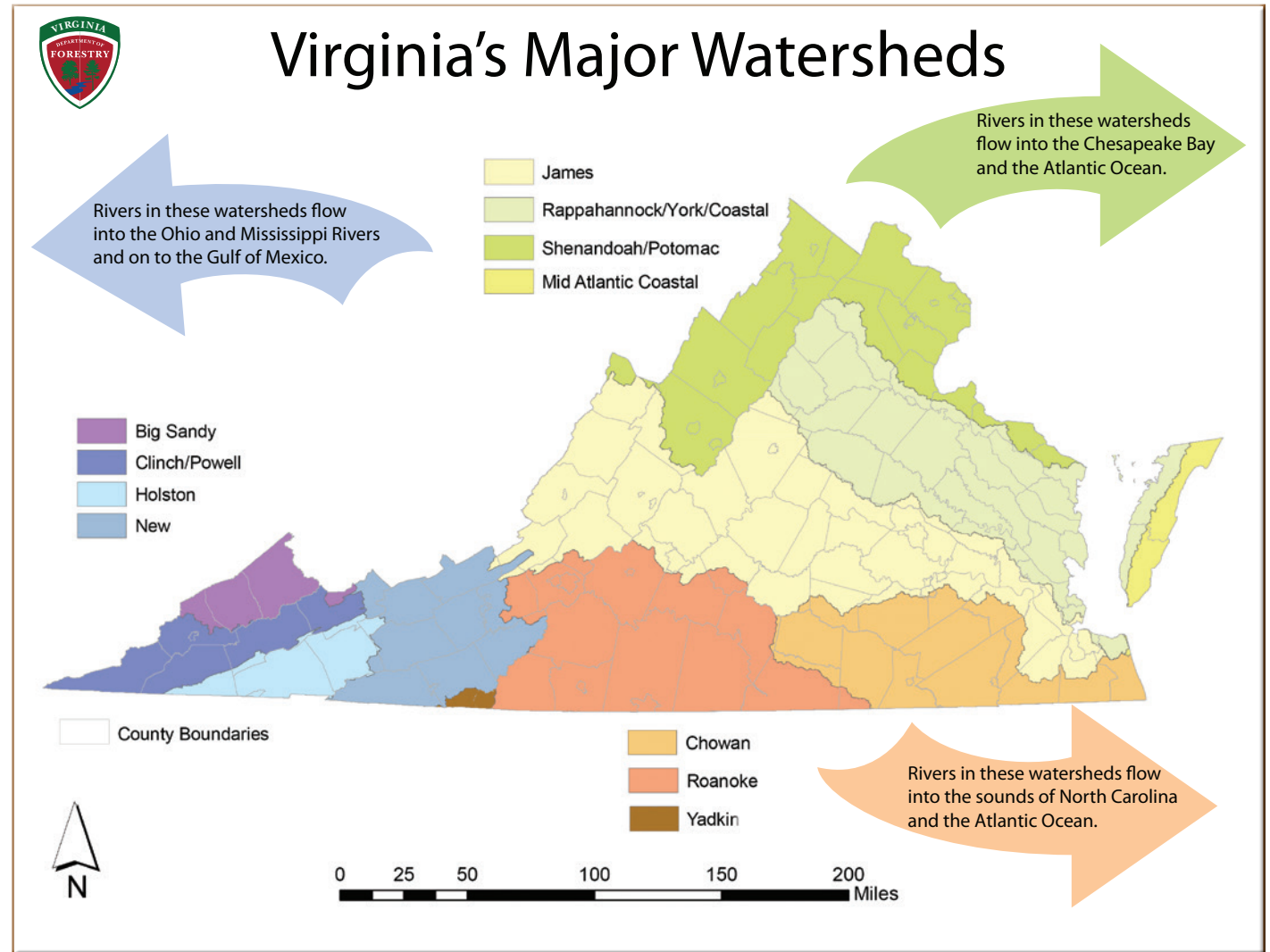


BMP
Implementation
Report

Watershed Protection

Because forests provide the best protection for watersheds, increasing the amount of forestland conserved, protected and established in Virginia's watersheds is one of the Department's goals. This goal focuses on practices that will benefit water quality the most; specifically, guarding water quality on land that is permanently protected by a conservation easement; establishing and maintaining riparian buffer zones; planting trees on non-forested open land; and increasing the urban forest canopy by planting trees. All of these activities are closely related to meeting water quality goals associated with Virginia's southern river watersheds and the Chesapeake Bay restoration. FY20 proved to be an active year for the VDOF easement program, as the agency reviewed harvest plans and inspected for BMP compliance on nine VDOF-held easements.

Virginia's forestry BMPs that address harvesting have been highly successful. One of the most valuable BMPs for water quality is the uncut or partially cut streamside management zone. This voluntary measure assures an unbroken forest groundcover near the stream, provides shade for water and preserves wildlife corridors.

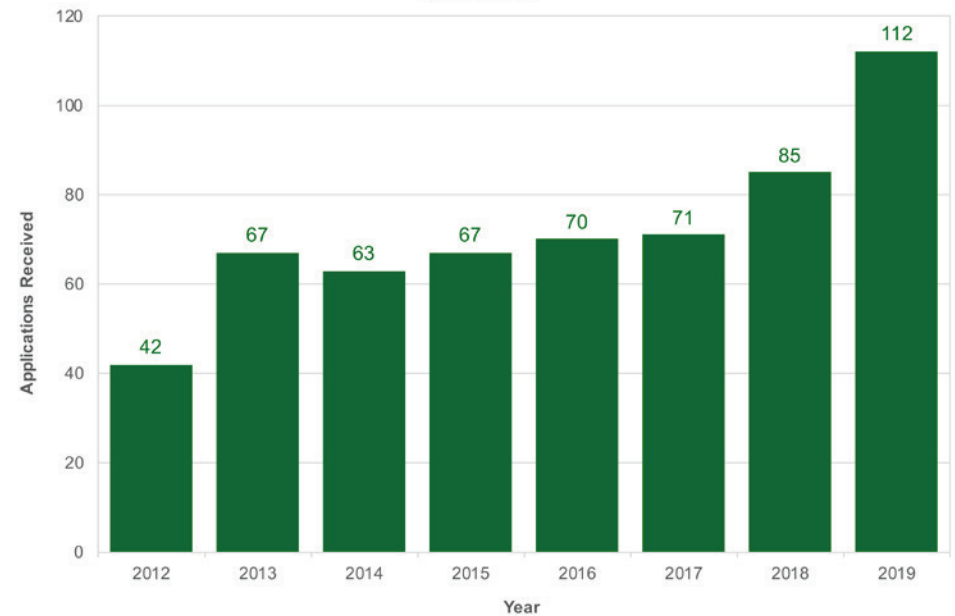


Protecting Water Quality, continued...

Landowners can elect to receive a state tax credit for a portion of the value of the uncut trees in the buffer. By doing so, they agree to leave the buffer undisturbed for 15 years. The number of landowners electing this option in Tax Year 2019 was 112, an increase in the number of applications from the previous year. This watershed protection option provided a tax credit of \$738,721 on timber retained in the streamside riparian areas and valued at \$3,258,227 constituting an increase in both the value of buffer retained and the tax credit issued.

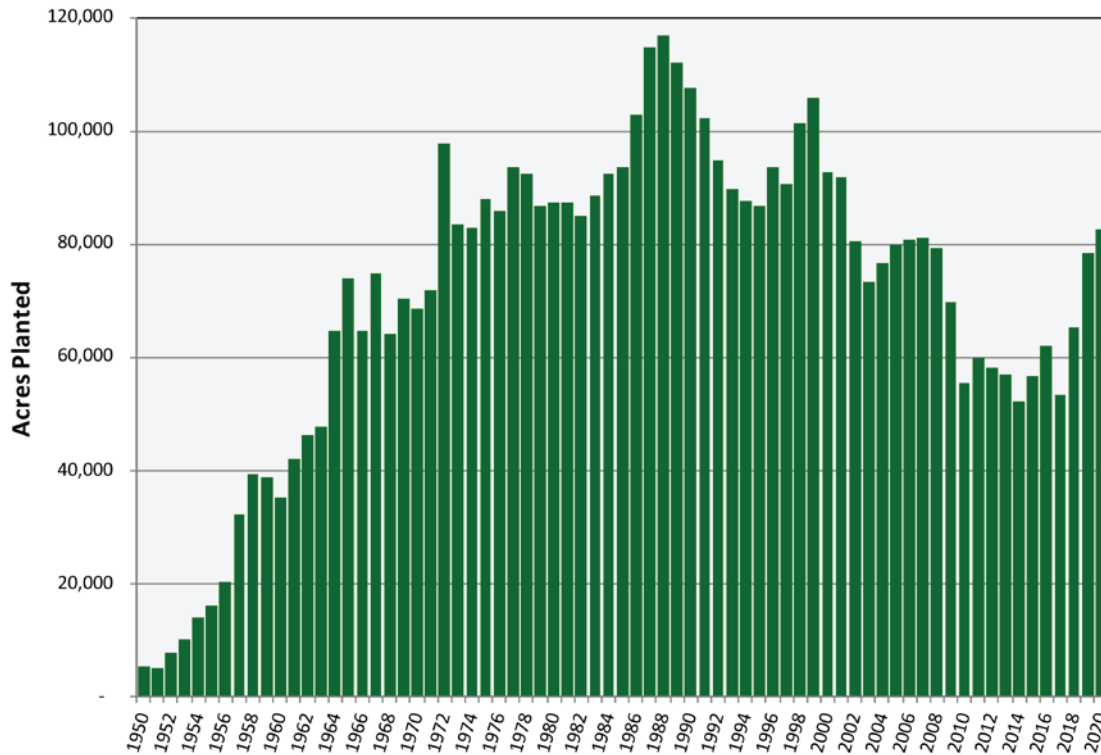


Riparian Buffer Tax Credit Applications
(2012-2020)



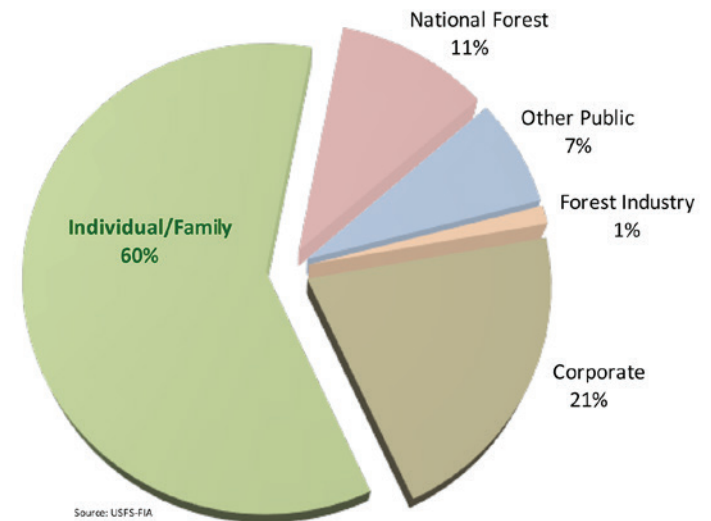
Virginia's Reforestation History and Forest Ownership in Virginia

Virginia's Historic Planting Acres



Virginia continues to maintain a strong reforestation effort while meeting the economic needs of the state. As the *Forest Ownership in Virginia* chart indicates, the majority of forestland in Virginia is privately owned so it is thanks to the cooperative efforts of Virginia landowners, organizations, assistance programs and VDOF, our forest resource continues to be managed for sustainability.

Forest Ownership in Virginia



Forest Inventory Analysis Program

VDOF maintains an ongoing inventory program to ensure that our forests are being managed sustainably. VDOF, in cooperation with the USDA Forest Service, conducts a forest inventory analysis (FIA) which is a primary source of statistics for the forestland in Virginia. The inventory collects and analyzes information on forest growth, forestland area, land use changes, ownership trends, and natural and human impacts to the forest.

Virginia Forest Cover and Types

62%
Forestland
16 million+ Acres

22%
Pine

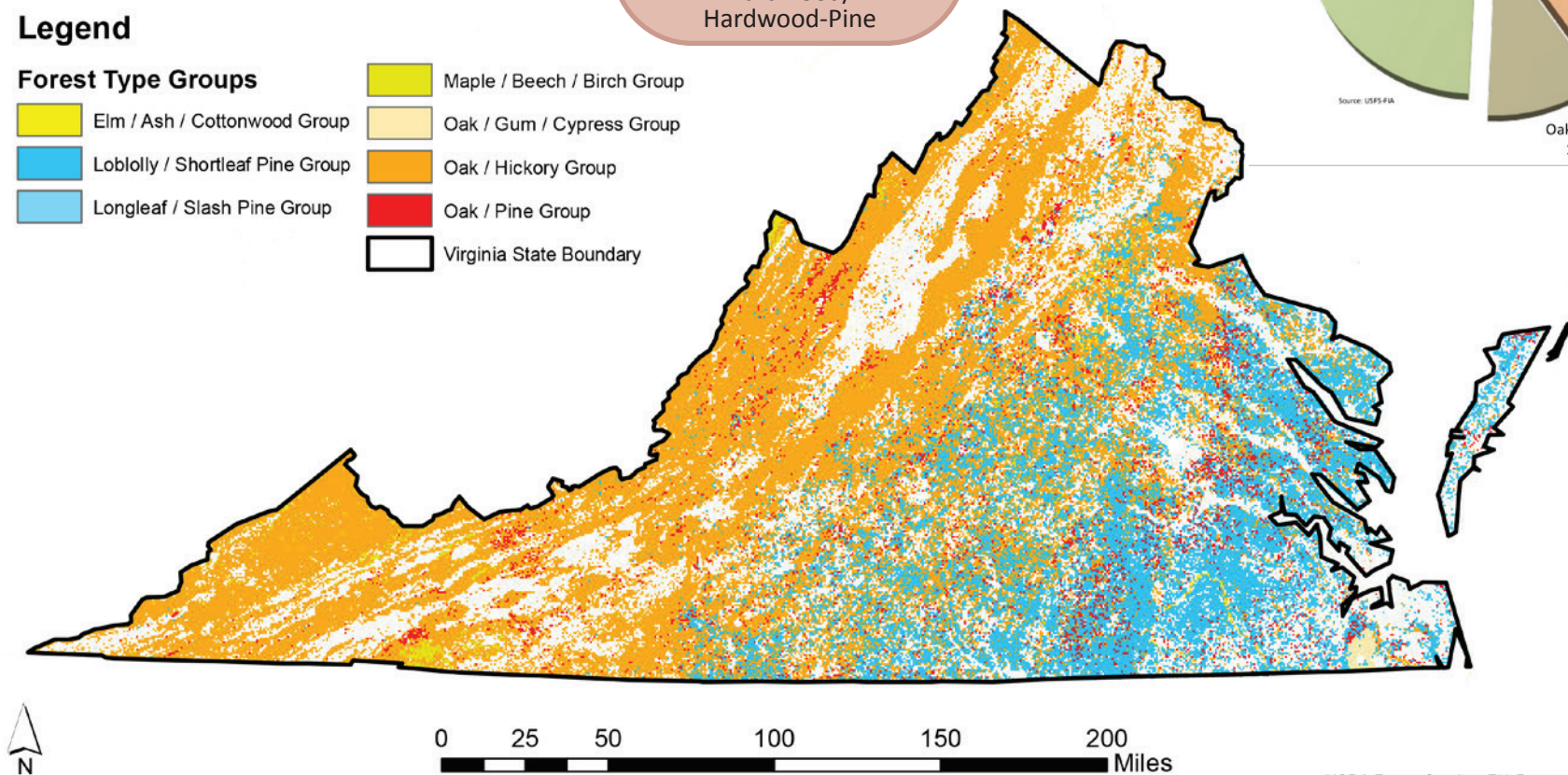
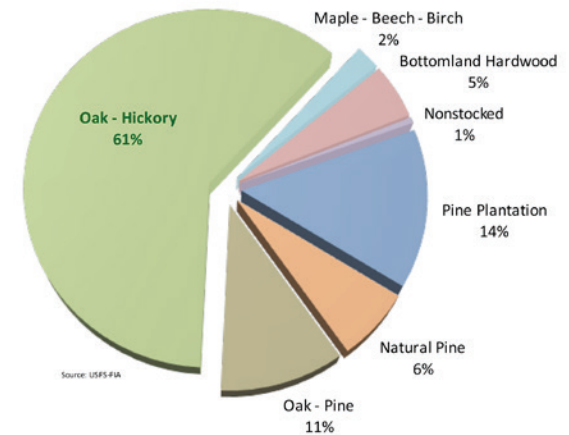
78%
Hardwood/
Hardwood-Pine

Legend

Forest Type Groups



Forest Types in Virginia



USDA Forest Service, FIA Program

Facts at a Glance



Forest Management

Fiscal Year 2020

- ◆ 42 Riparian Buffer Establishment projects took place on 257 acres in the Chesapeake Bay watershed
- ◆ 1,136 landowners with 50,737 acres participated in the Reforestation of Timberlands Program.
- ◆ 83,118 acres were planted with trees.
- ◆ VDOF staff wrote:
 - 2,012 Stewardship Plans on 33,523 acres
 - 58 Natural Resources Conservation Service Conservation Activity Plans on 12,706 acres
 - 19 Tree Farm Plans on 4,368 acres

Program Statistics

- ◆ Since its inception, 51,323 landowners with 1,968,851 acres participated in the Reforestation of Timberlands Program.



Forest Products and Marketing

Fiscal Year 2020

- ◆ Forest Products Tax collected was \$2,389,534.



Forest Health

Fiscal Year 2020

- ◆ VDOF staff treated 156 ash trees against emerald ash borer on state lands.
- ◆ 147 applications were approved to receive reimbursement through the emerald ash borer cost-share program, which will result in the treatment of 490 trees.



Forestland Conservation

Fiscal Year 2020

- ◆ VDOF permanently protected 27,868 acres of open space and more than 118 miles of water courses through 10 conservation easements. Four of the easements comprising 1,789 acres were within the Chesapeake Bay watershed.

Program Statistics

- ◆ VDOF holds 194 conservation easements in 60 counties and the City of Suffolk that permanently protect more than 84,000 acres of vital forestland. Of these, 117 easements consisting of 30,230 acres lie within the Chesapeake Bay watershed.
- ◆ Status: 47 properties have received Century Forest designation, including 16,016 acres.



Fire & Emergency Response

Fiscal Year 2020

- ◆ 475 wildfires burned 5,038 acres.
- ◆ VDOF conducted 283 prescribed burns on 7,704 acres.
- ◆ VDOF provided more than 2,800 hours of training to 193 firefighter students.
- ◆ 107 rural volunteer fire departments received \$221,733 in Volunteer Fire Assistance funds.
- ◆ 22 new dry hydrants were installed and nine were repaired.

Program Statistics

- ◆ 96 percent of wildfires in Virginia are human-caused, most commonly from debris burning.
- ◆ VDOF responds to nearly 700 wildland fires that burn approximately 9,500 acres annually (based on a 10-year average, 2010 – 2019).
- ◆ VDOF's wildfire response fleet is comprised of 160 4x4 engines, 14 specially-equipped wildland brush trucks, and 89 bulldozer/wildland fire plow suppression units.
- ◆ With 49 nationally recognized Firewise USA communities, Virginia is one of the top 10 states nationally.
- ◆ Since the 1975 inception of the Volunteer Fire Assistance program, 6,091 grants have been made providing a total of \$4,870,648 in matching grant funds.
- ◆ The Dry Hydrant program has now installed a total of 1,806 dry hydrants.

Facts at a Glance



Urban & Community Forestry

Fiscal Year 2020

- ◆ The Virginia Trees for Clean Water program allocated \$172,946 on 28 projects in 25 HUC12 watershed units.

Program Statistics

- ◆ Virginia has 59 Tree City USA Communities. The largest is in Fairfax County with a population of 1,152,873 and the smallest is Surface Combat Systems with a population of 342.
- ◆ Virginia has 10 Tree Campus USA Higher Education Colleges and Universities.
- ◆ Virginia has 4 Tree Line USA Utilities.
- ◆ VDOF has 38 ISA Certified Arborists on staff.
- ◆ 178 projects funded by the Virginia Trees for Clean Water program have planted more than 53,000 trees.

James River Buffer Program

- ◆ 9 buffer projects have been planted on 130 acres with 78,701 trees

Riparian Forest Buffer Tax Credit Program

- ◆ 112 Applications
- ◆ 1,795 acres of buffers retained during timber harvest
- ◆ Tax benefit of \$738,721 on buffers valued at \$3,258,227.



Water Quality

BMP Implementation

- ◆ FY19 BMP Audit Results show a 95% BMP implementation rate on harvest operations statewide and a 96.9% on harvest operations within the Chesapeake Bay Watershed.
- ◆ On all sites monitored during the period, no active sedimentation was observed.

Fiscal Year 2020

- ◆ 204,877 acres were harvested – a 5.3% increase from FY19.
- ◆ VDOF staff performed 20,197 inspections on 4,623 timber harvest sites – an average of 4.4 inspections per harvest. This inspection rate has remained relatively steady during recent years.
- ◆ 120 Silvicultural Water Quality Law Enforcement Actions were taken – a 27% reduction from FY19. None of these actions resulted in a Special Order or Emergency Special Order.
- ◆ The logger cost-share program funded 40 projects directly related to stream crossings on timber harvest operations.
- ◆ During 21 programs, 604 timber harvesting professionals learned about BMPs.

Program Statistics

- ◆ 10,319 logging professionals have been trained since 1997 during 347 logger training programs.



State Forests & State Lands

Fiscal Year 2020

- ◆ Good Neighbor Agreements for Commonwealth management of forested resources on USDA Forest Service Property in Virginia generated more than \$45,000 in gross revenue.
- ◆ Virginia's State Forests generated \$1,327,131 in gross proceeds from timber sales, resulting in total payments of \$199,567 to various counties in lieu of taxes for revenue generated.
- ◆ Management of Forested Properties under the State-Owned Lands Program generated timber sale gross revenues in excess of \$670,000.

Program Statistics

- ◆ Virginia has 25 State Forests, including 69,441 acres, of which 69,288 acres certified sustainable.



Nurseries

Fiscal Year 2020

- ◆ VDOF nurseries sold a total of 30,222,986 seedlings of 56 tree varieties (including 51 species).