



Virginia Statewide Assessment of Forest Resources

*National Priorities Addendum
Update Report*

November 2015





Contents

Executive Summary	3
Overview.....	3
National Priority #1: Conserve and Manage Working Forest Landscapes for Multiple Values and Uses	4
1.1 Identify and Conserve High Priority Forest Ecosystems and Landscapes	4
1.2 Actively and Sustainably Manage Forests	6
National Priority #2: Protect Forests from Threats	8
2.1 Restore Fire-adapted Lands and Reduce Risk of Wildfire Impacts	8
2.2 Identify, Manage, and Reduce Threats to Forest and Ecosystem Health	10
National Priority #3: Enhance Public Benefits from Trees and Forests	12
3.1: Protect and Enhance Water Quality and Quantity.....	12
3.2: Improve Air Quality and Conserve Energy.....	13
3.3 Assist Communities in Planning for and Reducing Forest Health Risks	14
3.4 Maintain and Enhance the Economic Benefits and Values of Trees and Forests	15
3.5 Protect, Conserve, and Enhance Wildlife and Fish Habitat.....	16
3.6 Connect People to Trees and Forests, and Engage them in Environmental Stewardship Activities	20
3.7 Manage Trees and Forests to Mitigate and Adapt to Global Climate Change	21



Executive Summary

Overview

The 2008 Farm Bill, under Title VIII – Forestry, amends the Cooperative Forestry Assistance Act of 1978, to include the requirement that each state develop a long-term, state-wide assessment and strategies for forest resources. These assessments and strategies focused on three national priorities:

1. Conserve and Manage Working Forest Landscapes for Multiple Values and Uses
2. Protect Forests from Threats
3. Enhance Public Benefits from Trees and Forests

Virginia Department of Forestry (VDof) strategic objectives were developed with a comprehensive team of stakeholders to address cross-boundary, landscape scale actions that would be the most efficient activities to address issues of concern developed for the assessment phase of the Forest Action plan.

This document serves as a record of activities taken by all Virginia stakeholders to address strategic actions taken as part of Virginia’s Forest Action Plan. Strategic actions and challenges in implementing each of Virginia’s strategic objectives from the past five years are linked to the national priorities and objectives. Emerging issues since the 2010 publication of the Statewide Assessment of Forest Resources are also included. Only a subset of VDof objectives are used to cross-walk each national objective while retaining their unique VDof-identifying number.

Please note: Supplemental language provided in the 2014 Farm Bill as signed on February 7, 2014 indicates additional coordination requirements. In subsequent reporting, accomplishments with these partners should be included. Section 2A(c)(5) reads; *“as feasible, appropriate military installations where the voluntary participation and management of private or State –owned or other public forestland is able to support, promote, and contribute to the missions of such installations”*.



National Priority #1

Conserve and Manage Working Forest Landscapes for Multiple Values and Uses

National Objective 1.1: Identify and Conserve High Priority Forest Ecosystems and Landscapes

Virginia Objective 2.1: Increase the Amount of Forestland Protected and/or Established in Virginia Watersheds

Strategic Actions and Challenges – Virginia’s 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; shade for the water, and wildlife corridors. Landowners in Virginia 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 2014 was 61 and provided a tax credit of \$334,615 on timber valued at \$1,363,490.



Strategic Actions and Challenges – Significant competition for the very limited amount of Forest Legacy funding has impacted the number of acres VDOF has been able to conserve. In the last five years, Virginia has only received two allocations of funding from the Forest Legacy Program - the latest was awarded in 2015 for a conservation easement along a scenic river. This 1,219 acres of forested property near the confluence of the Rappahannock and Rapidan rivers known as the Ellis Mine Tract will protect the City of Fredericksburg’s water supply as well as historic stone locks of the Rappahannock Canal Company, shafts and pits where gold mining occurred in the late 1800’s, and the site of a historic stamp mill that utilized the gold ore.



Virginia Objective 4.1: Increase the Number of Acres of Forestland Protected from Conversion, Focusing, Where Possible, on Lands Ranked as High in “Forest Conservation Value.”

Strategic Actions and Challenges – The DOF Working Forest Conservation Easement Program eclipsed two significant milestones as the program’s 100th easement was recorded, and eclipsing the 30,000-acre threshold in easement acreage. The DOF now holds easements in 45 counties and the City of Suffolk. The average DOF easement is just over 300 acres, of which 90% is forested.

Strategic Actions and Challenges – VDOF, in collaboration with Virginia Cooperative Extension and other public and private partners, delivered the fifth offering of *Focusing on Land Transfer to Generation “NEXT”*. The in-depth short course provides families the information needed to ensure a smooth intergenerational transfer of their property and ensure continued management of their forest resources, keeping critical forestlands intact. As a result of the workshops, 51,972 acres of land is expected to remain forested and “family owned”.

Virginia Objective 6.2: Provide an Inventory of Forest Natural Resources in Virginia on a Continual Basis.”

Strategic Actions and Challenges – Virginia lost important progress in the collection and analysis of current forest inventory data for the Commonwealth as the federal budget for Forest Inventory Analysis (FIA) is down nearly 25%. With Virginia’s 25% match, the Commonwealth’s forest inventory data was maintained on a five year minimum cycle until 2014 when the FIA cycle of measurement and analysis was increased from 5 to 7 years. At this level, the data is inadequate for the important work of economic development, business growth and forest sustainability policy.

Looking Ahead:

Emerging Issues – Virginia is identifying critical forest landscapes where VDOF will be working more deeply to bring about meaningful change, and we will take what we learn, replicate it and apply those principles in other places across Virginia. These focus areas are: 1) Healthy Watersheds, 2) Woodbaskets in Southside, 3) Longleaf Pine Restoration in the east. 4) Clinch River in the west, and 5) the Blue Ridge Mountain area. These five focus areas will have a clear vision and a strategy document supporting them and will make us more purpose-driven about what our role is in these areas and what outcomes we hope to accomplish.



National Objective 1.2: Actively and Sustainably Manage Forests

Virginia Objective 3.3: Increase the Amount of Forest Management Assistance on Private Lands in the Commonwealth

Strategic Actions and Challenges– The southeastern United States is the most productive, reliable and sustainable source of wood fiber in the world. Virginia, with its abundant working forestlands, favorable business environment and strong labor force, has the potential to supply an even greater portion of the world’s increasing demand for renewable wood fiber. Accessing those markets will require Virginia to demonstrate the quality and sustainability of our timber resource. Supplying demand will depend on the long-term investments by thousands of individual forest landowners. Those decisions will be based on the incentives available and the guidance provided by VDOF foresters. The value and quality of forest benefits can be greatly enhanced through planning and implementation of good forest management practices. VDOF emphasizes planning and practice implementation on private lands in Virginia as indicated by the following 2015 statistics: 189,039 acres of all forest management plan types achieved; 117,813 acres of forest management projects implemented; 47,097 acres of trees planted.

Strategic Actions and Challenges – The Natural Resources Conservation Service (NRCS) and VDOF have enjoyed a long partnership in conservation. VDOF forest Management staff and NRCS staff recently reviewed the roll out of their most recent joint program – the Regional Conservation Partnership Program (RCPP) which is on target to assist approximately twice the number of landowners per conservation dollars invested. The purpose of the grant is to improve water quality and prevent soil erosion by accelerating the implementation of streamside forested buffers, restore and enhance wildlife habitat, support and advance the State’s progress toward meeting various goals of water quality improvement, and leverage State and Federal resources through this strategic partnership to increase forest buffer implementation. By the end of the project, an estimated 385 contracts will be carried out on 25,700 acres.

Virginia Objective 4.3: Manage the State Forestlands on a Sustainable Basis for Research, Demonstration, Education, and Multiple-use Benefits while Staying within the Allowable Forest Harvest Levels.

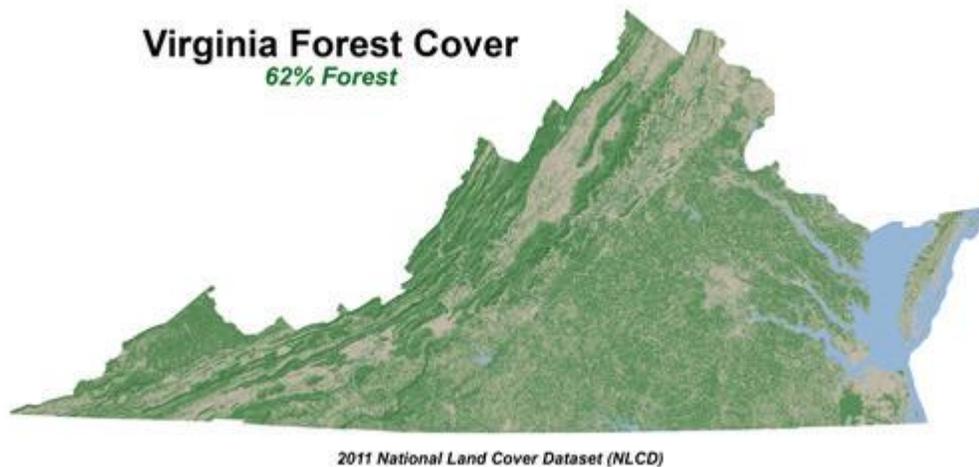
Strategic Actions and Challenges – Virginia’s 24 state forests, totaling 68,625.5 acres, are unique in their purpose, funding and use by the public. State forestlands have multiple objectives and are managed to provide the greatest range of benefits to the citizens of Virginia while remaining self-supporting and protecting or improving the forest ecosystem. Hiking,



hunting, fishing, horseback riding, orienteering, bicycling, and wildlife viewing are frequent activities on the State Forests' extensive trail systems and Virginia's State Forest Use permits are sold on-line. State Forests are increasingly used for educational efforts associated not only with landowner education but for youth education programs; soil and water conservation district programs; demonstrations and continuing education credits for loggers; ecotourism; outdoor laboratories by various college disciplines, and several Extension programs.

Looking Ahead:

Emerging Issues – Virginia's working lands, forests and farms are under increasing pressures to provide an array of critical services to its citizens and the nation. The most obvious benefits are those which serve as a base for productive jobs, strong communities and excellent environmental health. They include clean water, air, bio-energy, the basis for economies, habitat, and buffers for climate change and increasing carbon levels. These lands are largely held by small private owners who are challenged in many ways to hold and maintain these lands that produce these enormous public benefits. Of the nation's total forestland, approximately sixty six percent are owned and managed by private landowners. In Virginia, private landowners own and control 80% of the forestlands which cover 62% of the state. Of the 245 million acres of southern forest, 89% of these forests are owned by private citizens. Our focus is equipping forest landowners with the information and knowledge to sustainably manage their forests for current and future generations through technical assistance which results in a healthy economy, robust water quality and a healthy environment.





National Priority #2 Protect Forests from Threats

National Objective 2.1: Restore Fire-adapted Lands and Reduce Risk of Wildfire Impacts

Virginia Objective 1.1: Reduce the Forestland Burned by Wildfires

Strategic Actions and Challenges – A key to reducing the forestland burned by wildfires is a well-trained workforce. VDOF is a recognized national leader in its delivery of wildfire suppression, incident management and personnel development training for emergency responders. In June of this year, the VDOF held its 15th annual statewide Interagency Wildfire Academy. This academy, one of the four largest in the nation, provided training to almost 300 students representing more than 7,000 hours of total training. The event hosted responders from various state and federal agencies across the Commonwealth, responders from three surrounding states and representation from more than 44 Virginia Volunteer Fire Departments. On a more local basis, VDOF personnel provide at least one regionally based academy every year as well as numerous county-based training opportunities in an effort to further develop the expertise of Virginia's fire service.



Virginia Objective 1.2: Provide Available Financial Resources to Rural Volunteer Fire Departments for Training and the Acquisition of Small Equipment and Wildland Fire Personnel Protective Equipment



Strategic Actions and Challenges – The Volunteer Fire Assistance Program continues to increase the fire protection capability in Virginia. This is accomplished through financial assistance to rural volunteer fire companies to provide additional training and the acquisition of small equipment and wildland personal protective equipment (PPE). Since the 1975 inception of this program, 5,452 grants have been made providing a total of \$3,775,455 in matching grant funds. This VDOF program is part of a grant that improves the capability and effectiveness of America’s 26,000 Rural Volunteer Fire Departments – 580 of them in Virginia – to protect lives and other rural investments. The purpose of this program is to provide financial, technical and other assistance to State Foresters and other appropriate officials to organize, train and equip fire departments in rural communities. In 2015, 145 rural volunteer fire departments in the Commonwealth received \$307,541 in Volunteer Fire Assistance funds made available to Virginia. Requests for support continue to greatly exceed the available funding – last year’s assistance requests totaled \$800,000.

Virginia Objective 1.3: Continue Long History of Proactive Fire Prevention Efforts, Particularly in Identified High-risk Areas.

Strategic Actions and Challenges – Firefighters in the wildland/urban interface (any area where wildland fuels threaten to ignite combustible homes and structures) must overcome severe challenges. There just aren’t enough resources to protect every home threatened by wildfire. Everyone in the vicinity of such a fire is at risk, and the risk is greatly increased in areas that aren’t prepared. The main goal of FireWise is to educate homeowners in the wildland/ urban interface on how to design, construct, landscape and maintain their homes and property to avoid destruction during a wildfire. Virginia has an expanding wildland/ urban interface and a significant wildfire problem. The VDOF has been a leader nationally in the promotion and expansion of FireWise Program. Virginia has 61 nationally recognized FireWise USA communities, making Virginia one of the top 10 states nationally in terms of communities recognized under the program. There is little doubt that the problem of high-risk homes in a woodland environment is expanding, and the VDOF is aggressively working to reduce the total threat to Virginia’s communities.

Strategic Actions and Challenges – Southeastern states have worked together for the last 15 years to incorporate GIS-based risk assessments into their overall planning efforts in an attempt to objectively evaluate wildfire risks across state and regional level planning areas. GIS-based assessment methodologies have provided an effective way to better identify and quantify the overall problem as well as to provide a mechanism to better focus mitigation efforts. South WRAP is an online GIS-based tool that incorporates the latest land cover and fuel-type data layers into a tool that is publicly available. The 13 southeastern states are unique in the fact that wildfire risk is now able to be evaluated objectively and equally across the entire region. Equally assessing the risk of wildfire throughout an entire USFS region provides unique opportunities to better focus limited grant funding and targeted wildfire hazard mitigation work in the areas offering the highest return on investment.



Looking Ahead:

Emerging Issues – The National Cohesive Wildland Fire Management Strategy is a strategic push to work collaboratively among all stakeholders and across all landscapes, using best science, to make meaningful progress towards the three goals of: creating resilient landscapes, creating fire-adapted communities, and providing a safe and effective wildfire response. The national strategy is a focused effort established through the collaboration of all stakeholders over several years at a regional level, to not only define a unifying set of objectives for wildland fire management and suppression but to help target America’s limited wildfire resources to efforts that will have the most effect. The National Cohesive Strategy has four primary themes: managing vegetation and fuels; protecting homes, communities and other values at risk; managing human-caused ignition; and effectively and efficiently responding to wildfire. State forestry agencies are key to the success and implementation of the National Cohesive Strategy because the state forestry agencies provide the linkage between national level federal priorities and key local and state level wildfire suppression entities, as well as the individual property owners whose protection of their homes and natural resources are the focus of these programs.

National Objective 2.2: Identify, Manage, and Reduce Threats to Forest and Ecosystem Health

Virginia Objective 3.4: Implement Actions to Protect Virginia’s Forest Resource from Species Loss and from the Impacts of Detrimental Native and Invasive Plants and Pests

Strategic Actions and Challenges – DOF is highly engaged in restoring native longleaf pine to the landscape of southeast Virginia, which had been nearly exterminated over time. Significant accomplishments including: harvesting cones from the last remaining longleaf stand, producing seedlings, establishing a new seed orchard, addition of the new 266 acre South Quay State Forest, and collaborative work with others. Through this, longleaf pine has grown from only a few hundred trees to more than 4,000 acres. On-going research is also being conducted on shortleaf pine and the American chestnut; American chestnut research has been on-going since 1969.

Strategic Actions and Challenges – Invasive plants, such as tree of heaven and kudzu, are crowding out or killing a number of native species of trees. These invasive species are not desirable, in most cases, for use as forest products, so as they continue to expand and displace species that are in demand, the economic impact of forestry will suffer. In addition to the threats posed by invasive plants, invasive pests are negatively impacting hundreds of thousands of trees. The hemlock wooly adelgid is killing a large proportion of the hemlock trees in its range in Virginia. The emerald ash borer has already killed hundreds of acres of ash trees and has the potential to kill every single one of them. Gypsy moth, the European wood wasp and Southern pine beetle are just a few of the many other serious threats facing Virginia’s



forests. The loss/eradication of several important tree species in Virginia would be catastrophic to forest landowners and to forest industry.

Virginia Objective 5.3: Manage the Nurseries to Provide the Best Quality Seedling Types Demanded by the Customer

Strategic Actions and Challenges – VDOF grows and sells 27 million tree seedlings each. Two Virginia forest tree seedling nurseries produce hardwood and softwood tree seedlings for reforestation and general conservation. Seedlings are available for sale to private landowners and industry owners to help with their reforestation needs and providing future forest products' raw materials. Virginia's genetically improved loblolly pine seedlings are in high demand and are the result of more than a half century of research. DOF has established 150 acres of third generation loblolly pine seed orchards and it will be more than a decade before all 150 acres of seed orchard will produce seed for nursery production. In addition VDOF is establishing a resistant American Chestnut seed production area on the Matthews State Forest which will complement the ongoing breeding work on the American Chestnut at the Lessees State Forest.

Looking Ahead:

Emerging Issues – More emphasis will be placed on prescribed fire with its critically important role in controlling competing vegetation and the establishment of suitable seedbed conditions for successful longleaf pine restoration and natural regeneration. Likewise, prescribed burn is used in VA to restore native warm season grasses (NWSG) to enhance the habitat for bobwhite quail in the Shenandoah Valley. Longleaf pine and native grasslands are some of the most endangered ecosystems in Virginia and coordination with landowners to reestablish these species through site preparation and maintenance burning will increase in the coming years.





National Priority #3 Enhance Public Benefits from Trees and Forests

National Objective 3.1: Protect and Enhance Water Quality and Quantity

Virginia Objective 2.2: Protect and Enhance Water Quality by Increasing Compliance with Best Management Practices on Forest Harvest Sites.

Strategic Actions and Challenges – DOF is the leader in the statewide logging inspection audit program in the South and is supporting a Southeastern Regional attempt to provide consistent auditing of logging jobs across state boundaries. The Virginia Department of Forestry monitored 5,578 timber harvests to ensure voluntary best management practices are working for the benefit of all. The inspections conducted by DOF water quality specialists demonstrate a very high compliance rate among the loggers.

Virginia Objective 3.1: Increase the Number of Forest Management Projects Implemented on Private Land and Promote Cost-sharing Funding for all Appropriate Projects.

Strategic Actions and Challenges – New and refocused assistance programs are emphasizing the critical role forests play in the health of the Bay and all those who rely on or use this treasured place. By providing valuable, unbiased, third-party, scientifically-based technical assessments and recommendations, DOF directly impacts the success of Virginia landowners who strive to sustainably manage their forest resources for the greatest possible economic gain.



Looking Ahead:

Emerging Issues – The Chesapeake Bay is among the world’s largest estuaries and it is the most shallow of them all. This makes it very hard to keep it healthy. As a Commonwealth we must ensure that we are responsible stewards of the Bay so that future generations can enjoy this natural treasure as much or more than we can. The Bay provides recreation for Virginians and visitors, billions of dollars in economic activity, and tremendous numbers of jobs and products. We are working with all of the other states in the Chesapeake Bay watershed, along with the federal government and the District of Columbia, to improve the Bay’s water quality and wildlife.

National Objective 3.2: Improve Air Quality and Conserve Energy

Virginia Objective 5.2: Increase Awareness of Ecosystem Services Provided by Forestland and Urban Forest Tree Canopy to Foster Market Development and Incorporation into Land-use Planning

Strategic Actions and Challenges – Virginia developed an important program to determine a community's existing Urban Tree Canopy (UTC), and to help the communities set goals to increase it despite anticipated growth and development. 26 communities have received GIS data estimating the percent tree canopy, non-tree vegetation, building impervious, non-building impervious, and water. Communities have developed implementation plans to achieve these goals. Guidance documents are available to assist other communities in developing their implementation plans. The interactive maps, of the UTC of the selected communities are available at <http://www.utcmapper.frec.vt.edu/>. UTC provides many benefits to communities including improving water quality, conserving energy, lowering city temperatures, reducing air pollution, enhancing property values, providing wildlife habitat, facilitating social and educational opportunities, and providing aesthetic benefits.

Virginia Objective 5.5: Promote Stakeholder Cooperation in Growing Virginia’s Green Energy Sector

Strategic Actions and Challenges – The bioenergy sector continues to be a strong growth area in Virginia and includes 10 wood pellet mills for both domestic and foreign markets, five biomass and one hybrid coal/biomass electrical generation plants and several biomass energy plants providing both heat and energy to industrial, commercial and public operations.



VDOF continues to work with the Center for Natural Capital and other partners on the community wood energy program in Virginia. The goal of the program is to help local schools, communities and industry reduce energy costs and improve job and economic opportunities by converting to biomass energy systems that use local resources and producers, while developing markets for low-quality and waste wood that can improve forest management, forest health and waste reduction. Several resources, including the website [http:// www.woodenergyva.org/](http://www.woodenergyva.org/) , education materials, project ranking and evaluation tools and technical assistance, have been developed. This initial work has led to the recent awarding of a USDA Forest Service grant to develop a State Wood Energy Team.

Looking Ahead:

Emerging Issues – Market opportunities for carbon sequestered through tree planting and improved forest management are beginning to emerge. Other emerging market opportunities include planting trees to enhance water quality. For example, in Virginia’s Nutrient Credit Trading Program, tree planting projects on open land are recognized as a management practice that generates saleable credits. The plantings reduce nitrogen and phosphorus loading and, therefore, enhance water quality. The VDOF played a key role in getting recognition for existing forest cover into the Chesapeake Bay Phase II Watershed Implementation Plan (WIP). The VDOF is now working with partners (George Washington Regional Commission, Rappahannock River Basin Commission, The Nature Conservancy, EPA and the Virginia Department of Environmental Quality) on an EPA pilot project that demonstrates the positive gains to protecting water quality that forest conservation provides. In addition to carbon sequestration and water quality, other forest ecosystem services, such as providing biodiversity and air quality, are extremely important. Those who manage our forests and plan for the development of Virginia’s landscape need to consider these values.

National Objective 3.3: Assist Communities in Planning for and Reducing Forest Health Risks

Virginia Objective 3.2: Increase Urban Forest Management in Virginia Communities, Particularly State and Local Capacity to Address Urban Forestry Issues and Concerns.

Strategic Actions and Challenges – The concept for Urban Forest Strike Teams to respond to natural disasters that extensively destroy and damage urban forest was initiated and developed by Virginia and North Carolina Urban Forest Coordinators along with United States Forest Service staff from Urban Forestry South. The program has now spread across the South and into the Northeast Regions of the USFS. In Virginia, we have 31 trained members (21 from VDOF), 11 of which are team leaders. Virginia team members have been deployed in response to ice storms, hurricanes and tornados across the South and here at home in Virginia. <http://www.ufst.org/>



Looking Ahead:

Emerging Issues – Building healthy and resilient communities is important to VDOF. Virginia is a state with wonderful open spaces: rolling hills, mountains, wetlands, coastal plains, farmland, forestland, and many other diverse landscapes. Currently 83% of Virginia’s population resides in urban or urbanizing areas. As our population and our development expand, it’s important that we manage that expansion in a responsible way that protects and preserves the diversity of the Commonwealth’s landscapes. Virginia’s Governor is committed to preserving a mixture of culturally significant lands, historic properties, ecologically significant lands, forested and working lands, publicly accessible and private wildlife refuges, in tracts large or small.

National Objective 3.4 Maintain and Enhance the Economic Benefits and Values of Trees and Forests

Virginia Objective 5.1: Promote Diversification of Forest Markets and a Healthy Forest Industry to Keep Forests in Forests

Strategic Actions and Challenges – In 2013, Virginia Tech’s College of Natural Resources & Environment chartered the creation of the Center for Natural Resource Assessment & Decision Support (CeNRADS). CeNRADS has stakeholders in forestry industry, the environmental community and government (including the Virginia Department of Forestry) and is engaged in developing models to predict the sustainability of various components of the forest resource. In 2015, CeNRADS released a base-line assessment of Virginia’s wood supply. According to this report, Virginia’s private forests annually grow 86 percent more wood than is harvested, leading to increasing inventories and ongoing carbon sequestration in excess of what is used for products and energy. This surplus of growth over harvest is considered a key indicator of sustainability and carbon neutrality of the wood used for energy production in Virginia and abroad. However, the assessment indicated pressure on the younger, smaller-diameter softwood trees commonly used for manufacturing paper, wood pellets and some wood composites. Trees in these smaller size classes, termed pulpwood, experienced harvests exceeding growth by 2.4 million tons annually. Most of the pulpwood growth harvest imbalance occurred in the southeastern portion of the state. VDOF is working with forest landowners and forest industry to ensure the long-term sustainability and health of this important resource.

Strategic Actions and Challenges - Virginia’s forest industry is continuing to see improvement as both the domestic and international economies continue to recover from the “great recession.” This is good news for the Commonwealth as we are seeing industry expansion and



improving markets that are increasing the more than \$17 billion of annual economic output and several billion more in other benefits, such as recreational activities, wildlife habitat and environmental and other services. Employment is also increasing beyond the more than 103,000 jobs reported in the 2013 Economic Impacts of Agriculture and Forest Industries in Virginia Study. As the economy continues to improve and we see both domestic and international markets for Virginia's forest products grow, we still need to be aware of challenges and issues that impact our forests and forest industries. While some international markets are improving, the strong U.S. dollar and weak economies in other countries are changing product demands and where they go. On the domestic side, housing (a key indicator of wood demand) is still recovering more slowly than expected; at the same time, changes in demographics and forestland ownership; forestland loss and fragmentation, and changing product demands are increasing concerns on forest resource sustainability. The latest timber harvest information shows that we are now harvesting record amounts of pine sawtimber and pulpwood and that hardwood sawtimber is also recovering to pre-recession levels. While these increased harvests are very positive to Virginia's private forestland owners and the economy, we need to be sure that we continue to actively monitor our resource availability and sustainability to ensure that we can continue to receive all the benefits that we depend on from our forests.

Looking Ahead:

Emerging Issues – VDOF will work with the University of Virginia's Weldon Cooper Center to conduct an updated economic study and hope to incorporate a return on investment (ROI) analysis that will be able to be used to show landowners and decision-makers the economic value of reforestation in Virginia with a ROI productivity measure.

National Objective 3.5 Protect, Conserve, and Enhance Wildlife and Fish Habitat

Virginia Objective 2.3: Mitigate the Water Quality Impact of Urban and Suburban Stormwater and Impervious Surfaces by Reducing the Rate of Forest Conversion

Strategic Actions and Challenges – Virginia's forests provide a range of important ecosystem service benefits and are critically important for protecting water quality, an important issue in both the Chesapeake Bay and Southern Rivers watersheds. Forests excel at absorbing water-borne contaminants resulting from stormwater runoff from impervious surfaces. They contribute the lowest nutrient and sediment loadings to Virginia's waterways of any type of land cover. In addition, forests are the best land cover for intercepting precipitation required for the recharge of groundwater aquifers. These functions speak to the value of forests and confirm that the maintenance of forest cover is very important - a fact recognized in numerous state and federal statutes and executive orders. Through Virginia's environmental impact review process, VDOF reviews approximately 200 proposed infrastructure development projects per year and provides recommendations to the Department of Environmental Quality, the State Corporation Commission and the Virginia Department of Transportation that approve, permit, license, or construct projects. VDOF's responsibility in evaluating proposed projects is



to identify the forest resources that may be impacted and provide recommendations and comments pertaining to forest health, conservation, management and mitigation needs aimed at conserving Virginia's forest resources.

Virginia Objective 3.3: Increase the Amount of Forest Management Assistance on Private Lands in the Commonwealth

Strategic Actions and Challenges - Virginia Department of Forestry has partnered with Virginia Department of Game and Inland Fisheries (DGIF) to improve quail habitat through forestry projects on private lands. Through this Quail Habitat Recovery Program, cost assistance is provided to landowners in 15 focus counties to implement good forestry practices that also enhance habitat for quail. Examples are early- and mid-stage improvement thinning; prescribed burning, and establishing shortleaf or longleaf pine.

Strategic Actions and Challenges – VDOF and DGIF are working together on a grant-funded project to compare and work together on the State Forest Action Plan and the Wildlife Action Plan. The committee has met and planned training sessions for field personnel in both agencies to increase awareness of the Plans and common goals. Additionally, a final component of the initiative will be to implement at least three field-based projects that demonstrate cooperation with shared goals and visions.

Virginia Objective 4.4: Promote a Larger, Connected Forest Landscape

Strategic Actions and Challenges – VDOF was instrumental in creating the Virginia Forest Conservation Partnership (VFPC). This partnership was forged to better leverage agency and organization missions; forest conservation and forest mitigation initiatives, and available conservation financing. The VFPC provides a more collective, stronger voice for the need to conserve Virginia's forests and is another way VDOF's commitment to ensuring that forest cover and the many functions and values provided by forests remain critical in ensuring that forests remain an integral part of the Commonwealth's landscape.

Strategic Actions and Challenges – In collaboration with our partners, Virginia has created a web-based application InFOREST to provide the metrics for valuing the ecosystem services provided by forestland. This portal provides the user with the ability to estimate carbon sequestration, air quality, nutrient and sediment loading, and the biodiversity provided by forest cover. Expanding the use of this ecosystem calculator will be on-going now that it is available to the general public.



Looking Ahead:

Emerging Issues: Meeting Virginia's forest related commitments under the 2014 Chesapeake Bay Watershed Partners Agreement

The new Bay Agreement calls for a **Protected Lands Outcome** of conserving 695,000 additional acres of forest land of highest value for maintaining water quality across the Chesapeake Bay Watershed by 2025. (using 2010 as a baseline year). It further calls for a **Land Use Methods and Metrics Development Outcome** by 2016, of having in place a Chesapeake Bay watershed-wide methodology and local-level metrics for characterizing the rate of ... forest... conversion, measuring the extent and rate of change in impervious surface coverage and quantifying the potential impacts of land conversion to water quality, healthy watersheds, and communities. Lastly, the Agreement's **Land Use Options Evaluation Outcome** calls for the Bay signatories by the end of 2017 to work directly with local governments or their representatives to evaluate policy options, incentives, and planning tools that could assist them in continually improving their capacity to reduce the rate of conversion of agricultural lands, forests and wetlands as well as the rate of changing landscapes from more natural lands.

Strategic Actions and Challenges: Forestland is identified in Virginia's WIP II guidance as the best land use for meeting Total Maximum Daily Load (TMDL) requirements mandated to restore the Chesapeake Bay. Retaining forestland represents, especially in rapidly urbanizing areas, a potentially significant management strategy for meeting the Bay Agreement desired outcomes as well. However, feedback from the stakeholder community has consistently noted that unless a locality gets credit in the TMDL model for taking steps to retain forestland, other activities will be of higher priority in resource allocation decisions. It is therefore very important that increased attention be given to the retention of forests while simultaneously focusing on reduction of critical pollutants by identifying a way to factor forestland conservation into TMDLs.

VDOF is leading a Virginia government agency/NGO team funded by EPA and the Chesapeake Bay program that is piloting a new, adaptive management approach pilot project- one that considers forestland retention as a non-traditional, programmatic BMP whose benefit is not as a load reduction practice to determine whether a TMDL credit is economically and environmentally feasible. The initiative's hypothesis has been that the value of retained forestland from a water quality impact perspective is in its ability to alter and reduce future projected land use loadings. If a forestland conservation action permanently reduces development, it reduces load and the locality/state that conserves the forestland should get credit for the action. Phase I of the project has now been completed. Four alternative growth scenarios were modeled using EPA's TMDL model 6.0 methodologies and real time data provided by four counties and a city in the pilot area to emulate what the economic and environmental possible benefits would be if forestland was retained. The project successfully demonstrated that forestland retention actions taken now could offset up to \$125M in expected costs to localities in the pilot region (compared to current 2025 TMDL model projections). In Phase II, the project team will engage local leaders in the Rappahannock River Basin to develop a toolbox of land-use planning and policy actions and incentives to accompany a TMDL credit and at the request of EPA will also invite Pennsylvania to join the partnership.



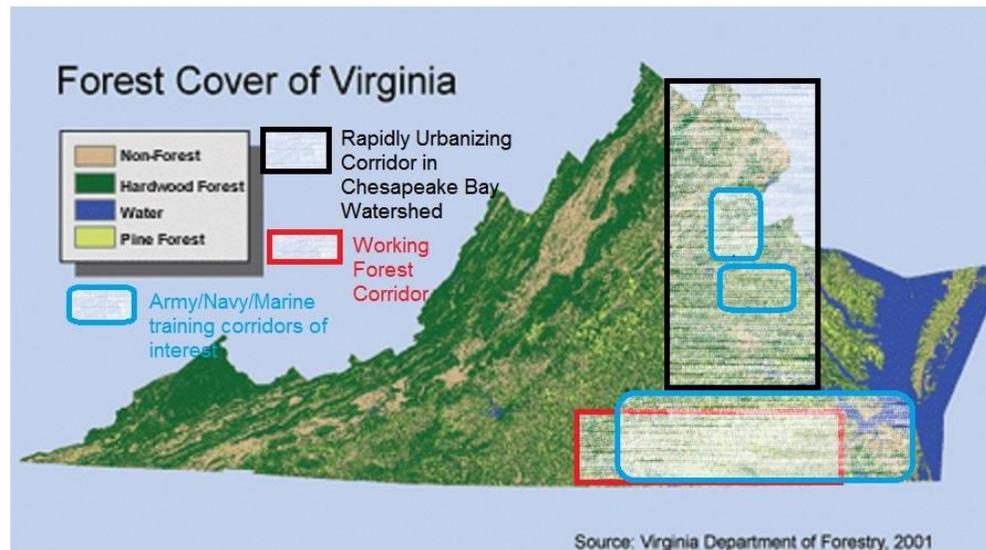
Emerging Issues: Greater Retention of Forestland to Meet Vital National Defense Needs

Virginia ranks among the highest states in the nation in terms of the number of U.S. military installations it has within its borders. The importance to the Commonwealth's economy and the criticality of the installations to our national defense is very significant. The continued retention of forestland and low density development around those installations where combat training is the primary mission is critical yet growing development pressure around the installations puts those training missions at risk.

Strategic Actions and Challenges:

Forestland provides a buffer from development for Army and Navy training needs at Fort Pickett and the corridor along the Nottoway River from Ft. Pickett to Norfolk, Army training needs at Fort A.P. Hill, and Marine Corp training needs at MCB Quantico. Fort A. P. Hill Regional Training Center (76,000 acres) is the largest military installation on the East Coast bordered by largely unfragmented forest that has a number of exemplary ecosystems. MCB Quantico is the Marine Corps primary training facility for turning Marine recruits into officers but that mission is threatened by the Base's location in one of the most rapidly developing regions of Virginia. Realistic training requires realistic training environments. The ability to field and use advanced military technology is fundamental to U.S. warfare. Modern weapons and tactics require increasingly large battlespaces. Readiness is perishable – Skills must be maintained through regular training.

VDOF currently has a close working relationship with the military services in Virginia. The Department works with installations on land conservation efforts through easement holdings. It provides forest management technical services to those installations engaged in timber operations and reviews and comments on installation integrated natural resource management plans and proposed development projects. As development pressures and Chesapeake Bay TMDL requirements continue to tighten greater collaboration and partnering will be required. The map below shows that overlapping geographic priorities create win/win opportunities for VDOF/DoD collaboration to support, promote, and contribute to forestland retention effort to meet DoD and DOF mission requirements and Chesapeake Bay/TMDL goals and objectives.





National Objective 3.6 Connect People to Trees and Forests, and Engage them in Environmental Stewardship Activities

Virginia Objective 4.2: Increase Awareness of the Importance of and Need for Forestland Conservation among Landowners and Local Governments

Strategic Actions and Challenges – More than 1,200 formal, non-formal and in-service educators took part in the 60+ Virginia Project Learning Tree workshops held in 2014. Thousands of schoolchildren were exposed to hundreds of SOL-based environmental education programs delivered by VDOF staffers. Seventy teenagers participated in our week-long residential Forestry Camp and hundreds of adults attended our forest landowner workshops across the state. And a new program (Virginia Women Landowners) was launched in partnership with American Farmland Trust. This network of landowners and the associated workshops is an outgrowth of the successful program (Women and Land) created several years ago by a VDOF area forester.

Virginia Objective 5.6: Facilitate Opportunities for Forest Certification among Private Forest Landowners

Strategic Actions and Challenges – Working with various, agencies, partners and stakeholders, VDOF continues to seek and leverage resources for programs and activities to ensure that forest landowners and industry continue to have markets for their products now and in the future. As part of our efforts to maintain sustainable working forests, we continue to work with partners to improve landowner access to forest certification programs and certified wood markets. As demands for documenting the sustainability of forest products increases, it is important that our landowners and industry can provide those assurances.

Looking Ahead:

Emerging Issues – Working with various, agencies, partners and stakeholders, VDOF continues to seek and leverage resources for programs and activities to ensure that forest landowners and industry continue to have markets for their products now and in the future. As part of our efforts to maintain sustainable working forests, we continue to work with partners to improve landowner access to forest certification programs and certified wood markets. As demands for documenting the sustainability of forest products increases, it is important that our landowners and industry can provide those assurances.



National Objective 3.7 Manage Trees and Forests to Mitigate and Adapt to Global Climate Change

Virginia's current strategic plan does not have any objectives relating specifically to climate change; however, several objectives and accomplishments are related to this national objective:

- VDOF's efforts with loblolly pine tree improvement have resulted in the deployment of seedlings that grow between 40 and 90 percent better than wild seedlings, providing a significantly increased carbon storage capacity.
- As noted previously, VDOF is promoting restoration of species that are better-adapted to warmer and drier conditions – longleaf and shortleaf pine, and American Chestnut.
- In particular, in 2013-15, DOF emphasized afforestation of previous open lands for multiple resource benefits. One of these projects was in cooperation with a non-profit organization to offset greenhouse gases.

Looking Ahead:

Emerging Issues – Virginia boldly embraces the opportunity to demonstrate why and how trees and forests are the answer to some of the most pressing economic, ecological and social challenges facing us and future generations. We plan to seize the opportunity to advance the relevance of forests and forestry. Under this vision – teamwork, integration and collaborative partnerships are the framework upon which our future success will depend. By staying focused on our mission of protecting and managing healthy, sustainable forest resources for all Virginians, we can move the needle in the direction of positive change and have a meaningful impact. Our vision for the future revolves around five goals - all of which point to the larger issue of climate change.

1. Protecting Healthy Watersheds,
2. Ensure a Sustainable Wood Supply,
3. Restoring Diminished Ecosystems,
4. Building Healthy and Resilient Communities, and
5. Preserving Our Cultural Heritage

