VOLUME 38, NUMBER 1 • WINTER 2024

VIRGINIA FOREST LANDOWNER UPDATE

Events, News, and Information Promoting the Stewardship of Virginia's Forest Resources

INSIDE

1 From the Mountains to the Coast: A History of Fire in Virginia

2 Events Calendar

4 Spotted Lanternfly: Where are We Now?

6 Sponsors & Partners

FIND US ONLINE

VFLEP

VIRGINIAFOREST LANDOWNER EDUCATIONPROGRAM

@VFLEP

FORESTUPDATE.FREC.VT.EDU

Jennifer L. Gagnon, Editor

Address all correspondence to:
Virginia Forest Landowner Update
228 Cheatham Hall (0324)
Blacksburg, VA 24061
540-231-6391
jgagnon@vt.edu
https://forestupdate.frec.vt.edu

Virginia Forest Landowner Update is published four times per year (January, April, July, and October) by the Virginia Forest Landowner Education Program. Circulation 4,000.

Subscriptions are free of charge to citizens of the Commonwealth of Virginia and non-resident Virginia forest landowners. Subscriptions to other non-Virginia residents at the discretion of the publisher. Contact the editor to make your subscription request.

From the Mountains to the Coast: A History of Fire in Virginia

by Julia DeFeo, Virginia Tech

When we think about wildland fire, many of us immediately jump to the high-intensity, high-severity megafires that are splashed all over the news every year. Out west, these fires are typically driven by a deadly combination of hazardous fuel structure, extreme drought, and intense winds. Here in Virginia, where conditions are usually less extreme, many wildland fires are prescribed in order to meet a land management objective. By choosing when, where, and how to burn, fire practitioners can tailor fire effects to specific goals. Decades of fire ecology research in the eastern US and in the Appalachian region support the use of prescribed fire to promote wildlife habitat diversity, maintain fire-adapted plant communities, reduce hazardous fuels, control forest pests and diseases, and improve water quality.

The history of wildland fire in Virginia predates human influence and the modern understanding of prescribed fire. Based on evidence from dendrochronological records, pollen records, and soil charcoal analyses, we know that lightning strikes ignited fires in North America for millions of years, long before humans were present. Without human suppression tactics, the extent of these fires was limited only by natural conditions.

Fire and the First Americans

Between 18,000 YBP and 1600 AD, Native American populations began to spread fire across the landscape. These "First Americans" used fire for a wide variety of reasons, including hunting, acorn harvesting, clearing land for farming, crop management, warfare and signaling, and improving ease of travel. These activities increased fire frequency and extended the timing and length of fire seasons outside the typical range for lightning ignitions. Early English colonists learned about Native fire use firsthand, as soon as they arrived. Original Jamestown settler George Percy wrote about grassland burning observed by Jamestown colonists in 1607:

We marched…into the woods…where we saw great smoakes of fire. Wee marched to these smoakes and found that the [First Americans] had beene there burning downe the grass, as wee thought either to make their plantation there, or else to give signes to bring their forces together, and so to give us battell. (Percy 2003)

As the English colonists spent more time here, they became more familiar with Native American burning customs. In 1634, William Wood of the Massachusetts Bay Colony wrote about dormant season prescribed burning and the early effects of fire suppression:

There is no underwood saving in grounds that are wet…for it being the custome of the Indians to burne the wood in November…it consumes all the underwood and rubbish…there is scarce a bush or bramble or any cumbersome underwood to bee seene… In some places where the [First Americans] dyed of the Plague some foureteene yeares agoe, is much underwood…because it hath not beene burned…hath made it unusefull and troublesome to travell thorow…because it teares and rents the cloathes of them that passe. (Wood 2014)

Many additional settler accounts describe landscapes and ecosystems adapted to frequent fire, even if they do not mention fire directly. In Virginia, explorers wrote about habitats that line up with modern descriptions of fire-maintained ecosystems, like grasslands and savannas. In 1607, explorer John Lederer prepared a map with large areas of "savanae" in the Virginia Piedmont (Lederer 1607). In 1671, Robert Fallam described "brave meadows with grass about a man's height" in the Shenandoah Valley (Batts and Fallam 1929). In 1705, within the Virginia Piedmont, Robert Beverley reported "large spots of Meadows and Savanna's, wherein are Hundreds of Acres without any Tree at all," (Beverley 2006). As noted by William Wood, the absence of fire drives the development of dense forests with thick underbrush, so the existence of so many grasslands in Virginia implies they were maintained by regular fire.

The post-settlement era

As settlers took control of what would become the eastern US, they initially continued to maintain some indigenous

–FIRE, continued on page 3.

Events Calendar

For a complete listing of natural resource education events, visit the online events calendar at https://forestupdate.frec.vt.edu. Online registration is available at https://forestupdate.frec.vt.edu/onlineregistration.html

SCHEDULED EVENTS - JANUARY - APRIL 2024

DATE	LOCATION / DETAILS	EVENT DESCRIPTION	CONTACT
January 30 - March 5	• Online • Tuesdays • 12:00 -1:00 • Free	**2024 Woodland Stewards Webinar Series: Silvopasture** Learn how to establish, manage, and fund silvopasture systems. Experienced producers will share their experiences.	https://forestrywebinars.net/sponsor-pages/woodland-stewards/
February 10 **February 24**	• Wytheville • Culpeper • 8:30 - 4:30 • $55*/person • $90*/couple	**Landowner Woods & Wildlife Conferences** The Woods & Wildlife Conferences provide information, tools, and personal contacts to help private woodland owners keep their woods, and the wildlife that live in them, healthy and productive. A variety of topics are offered to appeal to owners of both small & large tracts, and both new & experienced owners.	Jennifer Gagnon jgagnon@vt.edu 540-231-6391 Adam Downing adowning@vt.edu 540-948-6881
February 12-13	• Glen Allen • 2/12 8:00 - 5:15 • 2/13 8:00 - 12:15 • $ To be determined	**The Virginia Association of Forest Health Professionals 32nd Annual Conference** Learn about new, emerging, and on-going forest health concerns. Continuing education credits available.	https://www.vafhp.org/
March 7	• Online • 6:30 - 8:30 • $10/Family	**Virtual Generation NEXT: Conservation Tools** Join the Generation NEXT Team for a deep dive into the conservation tools available in Virginia to help you keep your land intact, in forest, and in family as your land passes from one generation to the next.	Karen Snape ksnape@vt.edu 540-231-6494
March 22 - 23	• Appomattox • 3/22 7:15 - 6:00 • 3/23 7:15 - 1:00 • $65*/person • $110*/couple • Onsite lodging available for $20 person/night	**Woodland Management: Beyond the Basics Advanced Woodland Owner Retreat** For woodland owners with experience actively managing their land, this Retreat combines classroom, field trip, and hands-on activities to teach advanced concepts of woodland management.	Jason Fisher jasonf@vt.edu 434-476-2147
March 22 - 24	• Roanoke • March 22, Evening • March 23 & 24, All day • $160* before Jan. 15; • $210 after Jan. 15	**Gather to Grow: A Conference to Honor the Past and Shape the Future** This multi-day Forest Farming Conference will feature learning, networking, and strategic planning programs that will shape the future of forest farming of woodland crops such as botanicals, mushrooms, and decorative products in Appalachia and beyond.	https://www.appalachianforestfarmers.org/2024-conference
April 23 - 25	• Charlottesville • $ Varies	**Virginia Forestry Summit** Join natural resources professionals and landowners for this annual education event.	forestrysummit.com

***fee includes meal(s)**

ONGOING EDUCATIONAL PROGRAMS

Virginia Master Naturalist Volunteer Basic Training

Available statewide. Dates, times, and fees vary.

People who are curious about nature, enjoy the outdoors, and want to be a part of natural resource management and conservation in Virginia are perfect candidates to become Virginia Master Naturalists. Visit www.virginiamasternaturalist.org to find a chapter near you. Michelle Prysby, Statewide Coordinator, 434-872-4580.

Fifteen Minutes in the Forest

Online video series. Every other Friday at 12:15 pm.

Join Virginia Cooperative Extension's Forestry Team for videos about natural resource-related topics. Connect/find past videos:

- **YouTube:** https://www.youtube.com/c/VirginiaForestLandownerEducationProgram
- **Facebook live:** www.facebook.com/VFLEP

FIRE, *continued from page 1.*

burning practices. Europeans used fire to clear land for agriculture and build permanent settlements. In the northeast, the practice of burning fell out of favor relatively quickly: land was commonly dominated by fire-intolerant hardwoods and burning was perceived as a threat to a valuable timber resource. Thus, fire suppression contributed to landscape-scale development of closed-canopy forests. However, in the southeast, many landowners continued to burn:

In the pinewoods large herds were tended from horseback, and controlled burning opened up the landscape, allowing better access and visibility. Other reasons for burning included reducing the hazard of wild fire to turpentine woods, reducing the risk of rattlesnake (Crotalus spp.) bite, and controlling ticks… Controlled burning was often a community affair. (Johnson and Hale 2002)

Writing of his travels through the southeast, William Bartram described ecosystems that were once commonplace in southeast Virginia:

[T]hrough high, open Pine forests, green lawns and flowery savannas…having been lately burnt, but now overrun with a green enamelled carpet, checquered with hommocks of trees of dark green foliage, intersected with serpentine rivulets, their banks adorned with shrubberies of various tribes… (Bartam 2001)

The pine forests that Bartram observed might have looked something like this:

Native pine stands like this one used to be commonplace in southeastern Virginia, the northernmost region of longleaf pine's native range. Longleaf pine has unique adaptations to fire that help it thrive under a high-frequency fire regime. Frequently burned longleaf stands, like this one at Blackwater Ecological Preserve, Zuni, VA, also often host diverse communities of rare plants and shrubs. Virginia is also home to a variety of other plant and animal species with recognized adaptations to fire, like wild turkey, Table Mountain pine, and Peter's Mountain mallow, a wildflower endemic to Giles County, VA.

In 1882, U.S. Division of Forestry chief Franklin B. Hough compiled his third Report on Forestry, after surveying correspondents across the country for information on forests, timber, and wildland fire. For the 1880 fire season, Hough reports frequent occurrences of wildland fire across Virginia, varying in terms of cause, extent, seasonality, and severity. Agriculture was a popular motivator, such as in Bland County, where "[f]ires occurred in April upon the mountains, as they do every year, being often set to improve the pasturage for cattle," and as in King George County, where "[f]ires occur more or less every year, generally in April, in preparing the ground for corn." A correspondent from Shenandoah County shared that "[n]inety-five percent of the fires in the woods are caused by persons who want to range cattle in the mountains… Every few years our large mountains are fired…by parties who put cattle into pasture." In Amelia County, "from early March til late in the summer…fires could be seen most of the time in two or three directions… Attempts have been made to prosecute…but…witnesses have been readily found to aid in the defense." Intentional burning was illegal in Virginia by this time, but these accounts indicate that agricultural benefits outweighed the risk of punishment. Fires were often attributed to negligence, like in James City County, where "[t]he most destructive fires that have been known for years occurred in March, April, and May…mostly started from carelessness in the burning of brush, and by sparks from saw-mills".

Hough and his correspondents were primarily concerned about the danger that fire and intentional burning posed to timber resources, but his report compiles first-hand accounts of prescribed fires and wildfires in Virginia as late as 1880, long after the widespread presence of Native Americans was diminished. Based on these records, we know that by this time, prescribed burning was still implemented across the entire Commonwealth, in the mountains, in the piedmont, and on the coastal plain.

The future of fire in Virginia

Following the creation of the U.S. Forest Service in 1905, fire exclusion became more common. In 1910, a fire known as the Big Blowup burned over 3 million acres of virgin forest across Washington, Montana, and Idaho. This event led to the development of the "10 a.m. policy", wherein efforts would be made to control fires by 10 a.m. the morning after they were reported. In the 1960s, the benefits of prescribed fire became more commonly understood and the National Park Service began implementing their first prescribed burns. In the decades since, burning has become an accepted practice for agencies and landowners across the country. In Virginia, prescribed fire use has become a popular tool for landowners and state agencies alike.

Throughout history, fire has played a key role in the maintenance of natural resources and biological diversity. In the modern era, fire continues to serve as a critical tool for the management of forest resources, wildlife, and natural areas. Based on the historical record, we know that fire regimes and forest ecosystems in Virginia have changed dramatically in the time since the First Americans. Most forest land in Virginia today is privately owned, which means the future of fire in the Commonwealth depends on landowners and their objectives. If you are interested in learning more about prescribed fire, guidelines for burning, or fire laws, there are many resources that may help.

–FIRE, continued on page 5.

Spotted Lanternfly: Where are We Now?

by Eric Day, Virginia Tech

Spotted lanternfly egg masses on the bark of a tree (left) and an immature stage of the spotted lanternfly, known as a nymph (right). Nymphs are at first black with contrasting white spots and later add a red pattern. Photos by Eric Day, Virginia Tech.

The warmth from the bonfire burning infested tree-of-heaven branches felt good that cold January morning in 2018 in Winchester, Virginia. A few days earlier, a Virginia Department of Agriculture and Consumer Services employee found dead spotted lanternflies (*Lycorma delicatula*) and their egg masses at the base of the now-burning trees. On the drive up the day of the burn, the entomologists in the car talked about how we hoped that maybe it would just be confined to one or two trees and easily eradicated. Later, as we walked along the rail lines near the site, it was obvious it had spread. Almost 6 years have passed since we saw firsthand that the spotted lanternfly had established in Virginia. Since that time, we have learned a few things.

History and spread

Spotted lanternfly is native to China and Vietnam. It spread to South Korea in 2006, Japan in 2009, and the United States in 2014. Spotted lanternflies prefer to feed and lay eggs on tree-of-heaven, but if that host is not available, it will lay egg masses on other host trees or on non-plant sites such as rocks, concrete, and rusty metal. Humans tend to move these non-plant sites and, unintentionally, the eggs laid on them. This pathway is considered the most likely way spotted lanternfly was brought to the United States and moved from state to state.

This human-aided dispersal factor alone is the reason that spotted lanternfly is considered such a good hitchhiker. In September 2014 spotted lanternfly was detected in Berks County, Pennsylvania, the first find in North America. Multiple educators with Virginia Tech and Virginia Cooperative Extension started reaching out and warning growers to be on the lookout. After the 2018 spotted lanternfly detection in Virginia, this outreach ramped up considerably. Virginia was not the only state to join "Club Lycorma." In 2018, both Delaware and New Jersey detected spotted lanternfly. Currently, it can be found in 19 states and the District of Columbia.

Within Virginia, the spotted lanternfly has spread from 1 square mile in Frederick County in January 2018 to 34 counties and 17 independent cities in 2023. As the map on page 5 indicates, most of the spread has been along interstates, rail lines, and other transportation corridors.

Biology

Spotted lanternfly has one generation per year in its current distribution in the United States, including the most southern detection in North Carolina. It overwinters in the egg stage and the eggs hatch from mid-April to early May. The immature stages, known as nymphs, are active from hatch until late July. The nymphs are at first black with contrasting white spots and later add a red pattern. The adult spotted lanternflies start emerging in mid-July. The adults are gray and, when at rest, hold their wings in a tent-like manner. The wings have a spotted pattern on the upper section and a brick-and-mortar pattern on the lower section.

Although they are in a group of insects known as "lanternflies" they do not glow and entomologically are not true flies. They are a type of Planthopper with piercing sucking mouthparts. Over two months pass between adult emergence in mid-July and the beginning of egg laying in mid-September. When egg laying begins, the female lays at least 2 masses of 30-50 eggs laid in a row and covered with a grayish mud-like substance made by glands in the female's abdomen. Then overwintering begins.

Natural dispersal

Unintended human-aided dispersal will always be a factor in the expansion of the range of spotted lanternflies, but they do a pretty good job on their own. All nymphal stages jump or hop from host plant to host plant, up to several hundred yards in a couple of months. Adult spotted lanternflies make repeated migratory flights, depending on conditions and food sources. In Virginia, dispersal occurs for the 70 days between first observed adult and first observed egg mass. Through a combination of walking, jumping, and flying, spotted lanternflies can travel up to 3 or 4 miles in a single season.

Host range and damage

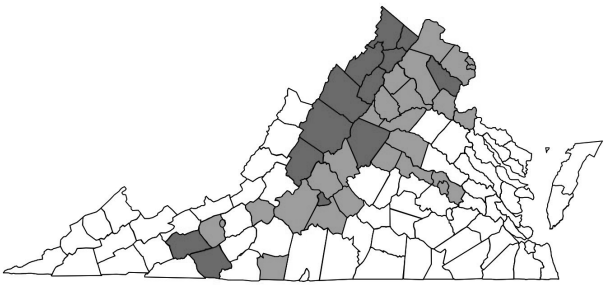
From a forest landowner perspective, the host list for the spotted lanternfly may look daunting. Keep in mind that this insect is not known to seriously damage forest trees in the United States. As of 2023, its impact is minimal in forested areas. In Virginia, there are currently 49 known host tree species.

Worldwide, it feeds on over 100 different host plants. Tree-of-heaven is its preferred host and is the most likely place to find it in an infested area. It shows a strong preference for grape, walnut, and maple. Unfortunately, even heavily infested tree-of-heaven rarely shows any damage or mortality. On grapes and in backyards, it's a different story. Grapes in both backyards and vineyards can show severe damage and grapevine mortality has been reported. Maples in backyards can develop high populations. As spotted lanternflies feed, they produce large amounts of a clear sugary substance called honeydew. In areas with high populations, the honeydew that drops from many spotted lanternflies feels like a light rain.

-SLF, continued on page 5.

SLF, *continued from page 4*

COLLEGE OF AGRICULTURE AND LIFE SCIENCES
ENTOMOLOGY
VIRGINIA TECH.
Insect Identification Lab



Known distribution of spotted lanternfly populations in Virginia as of October, 2023. Darkly-shaded counties are under quarantine by the Virginia Department of Agriculture and Consumer Services; lighly-shaded counties have small infestations or localized populations and are not currently under quarantine.

This overabundance of honeydew provides an excellent growth medium for black sooty mold on leaves, bark, and the ground. When high amounts fall on the ground, it ferments, and these sites often have a vinegar smell. Backyards with high populations are no longer pleasant to be in and thus it becomes a quality of life issue.

Control

Although it is relatively easy to control, spraying for spotted lanternfly in forested areas is not justified, due to the limited damage that they cause to forest trees. For vineyards and backyards, there are several very effective insecticides, but due to the high mobility of this species, dead spotted lanternflies are quickly replaced by others that move in after the insecticide wears off. Contact your local Cooperative Extension Office for recommended insecticides.

Impact on transportation

Spotted lanternflies are good hitchhikers and can be moved by infested plants, cut logs, and the vehicles that move them (conveyances). It is, in fact, such a good hitchhiker, that it can move on conveyances that do not have any plant material. This can become an issue when logs with spotted lanternfly egg masses are moved out of infested counties. Due to its pest status, it is understandable that other states do not want spotted lanternfly. Several states have placed external quarantines on material conveyances from Virginia; this in turn has driven the Virginia quarantine for spotted lanternfly. Trucks loaded with logs and forestry equipment in infested locations need to be checked before moving to an area not infested by spotted lanternfly.

Now what?

Efforts to develop biological control for spotted lanternfly are underway. It is hoped that once these are in place they will provide some control. In the meantime, it is important for forest landowners to monitor for the presence of this and other invasive pests that may impact their woodlands.

Many spotted lanternfly resources are available online: ext.vt.edu/spotted-lanternfly

Eric Day is the Manager of the Insect ID Lab, ericday@vt.edu, 540-231-4899.

FIRE, *continued from page 3.*

• **Beyond the Bonfire** is an educational booklet published by the Virginia Prescribed Fire Council to educate landowners on prescribed fire, with primers on fire ecology, Virginia's laws, burn operations, and burn weather parameters. Access the booklet at https://www.vafirecouncil.com/.

• **Introduction to Prescribed Fire in Southern Ecosystems**. "The Black Book" is published by the USDA Forest Service, Southern Research Station. This is a useful guide for learning about fire ecology and effects, the importance of weather, firing techniques, the planning phase, and best practices. You can access the guide at https://www.srs.fs.usda.gov/pubs/su/su_srs054.pdf.

• **Certified Prescribed Burn Manager Program**. Landowners who want to learn how to use fire as a management tool in Virginia can participate in the Certified Prescribed Burn Manager Program offered by the Virginia Department of Forestry. Landowners who complete the program become Certified Prescribed Burn Managers. For more information about the Program and other resources for prescribed burn managers, visit the Virginia Department of Forestry at https://dof.virginia.gov/wildland-prescribed-fire/prescribed-burning/certified-burn-managers-program/.

• **Fire Contractors**. If you are interested in hiring a contractor to help burn your land, the Virginia Prescribed Fire council maintains a list of fire contractors in the region that may be accessed at https://www.vafirecouncil.com/fire-contractors.

References

• Bartram, William. 2001. Travels Through North & South Carolina, Georgia, East & West Florida, the Cherokee Country, the Extensive Territories of the Muscogulges, or Creek Confederacy, and the Country of the Chactaws; Containing An Account of the Soil and Natural Productions of Those Regions, Together with Observations on the Manners of the Indians. Embellished with Copper-Plates: Electronic Edition, 303-304.1st ed. Documenting the American South. Chapel Hill, NC: University of North Carolina. https://docsouth.unc.edu/nc/bartram/bartram.html.

• Batts, Thomas, and Robert Fallam. 1929. "The Expedition of Batts and Fallam: A Journey from Virginia to beyond the Appalachian Mountains, September, 1671." In Annals of Southwest Virginia, 1769-1800, edited by Lewis Preston Summers, 1. Abingdon, VA. https://www.carolana.com/Carolina/Explorers/batts_and_fallam_expedition_1671.html.

• Beverley, Robert. 2006. "The History of the First Settlement of Virginia, and the Government Thereof, to the Present Time." In The History and Present State of Virginia, In Four Parts: Electronic Edition, 8-9. Chapel Hill, NC: University of North Carolina. https://docsouth.unc.edu/southlit/beverley/beverley.html.

• Hough, Franklin B. 1882. "Forest Fires." In Report on Forestry Submitted to Congress by the Commissioner of Agriculture, 166-69. Washington, D.C. https://hdl.handle.net/2027/hvd.32044102819224?urlappend=%3Bseq=184.

• Johnson, A Sydney, and Philip E Hale. 2002. "The Historical Foundations of Prescribed Burning for Wildlife: A Southeastern Perspective." General Technical Report NE-288. Proceedings: The Role of Fire for Nongame Wildlife Management and Community Restoration: Traditional Uses and New Directions. Northeastern Research Station: U.S. Department of Agriculture, Forest Service.

• Lederer, John. 1607. "A Map of the Whole Territory Traversed by John Lederer in His Three Marches." https://collections.library.yale.edu/catalog/2000250.

• Percy, George. 2003. "Document No. AJ-073." In Observations by Master George Percy, 1607, edited by Lyon Gardiner Tyler, 10-11. Original Narratives of Early American History. Wisconsin Historical Society. https://content.wisconsinhistory.org/digital/collection/aj/id/4809.

• Wood, William. 2014. In New Englands Prospect: A True, Lively, and Experimentall Description of That Part of America, Commonly Called New England: Discovering the State of That Countrie, Both as It Stands to Our New-Come English Planters; and to the Old Native Inhabitants, 15-16. Project Gutenberg. https://www.gutenberg.org/files/47082/47082-h/47082-h.htm.

Julia DeFeo is a Ph.D. Student in the Department of Forest Resources & Environmental Conservation, jdefeo@vt.edu.

VIRGINIA FOREST LANDOWNER UPDATE
WINTER 2024

Virginia Cooperative Extension
Department of Forest Resources &
Environmental Conservation (0324)
Virginia Tech
Blacksburg, VA 24061

NON-PROFIT ORG.
U.S. POSTAGE
PAID
RICHMOND, VA
PERMIT #320

Return Service Requested

Connect with Virginia's Natural Resource Agencies and Sponsors of the Virginia Forest Landowner Education Program:

Virginia Department of Forestry
900 Natural Resources Drive, Ste 300
Charlottesville, VA 22903
434-977-6555
www.dof.virginia.gov

Virginia Tech Department of Forest Resources & Environmental Conservation and Virginia Cooperative Extension
228 Cheatham Hall 0324
Blacksburg, VA 24061
540-231-6391
https://frec.vt.edu

USDA Forest Service
Forest Stewardship Program
1400Independence Ave SW
Washington, D.C. 20250
212-205-0929
www.fs.usda.gov/managing-land/private-land/forest-stewardship

Virginia Forestry Association
3808 Augusta Ave.
Richmond, VA 23230
804-278-8733
www.vaforestry.org

Virginia Sustainable Forestry Initiative SIC
3808 Augusta Ave.
Richmond, VA 23230
804-278-8733
virginiasfi.org

Virginia Tree Farm Foundation
757-354-6721
www.vtff.org

This publication is supported by matching grant funds from the Virginia Forest Stewardship Program administered by the Virginia Department of Forestry in cooperation with the USDA Forest Service.

VT/000800/1-01-24/3000/24WH1