



# Tennessee Forestry Commission FY 2017 Annual Report



Wildfire Management



Forest Business Services



Forest Health & Sustainability



Reforestation



State Forest Management



Forest Data & Technology



Communications & Outreach





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**Actions and Activities for FY2017**

The Tennessee Forestry Commission met 4 times during the 2017 fiscal year. The Commission received reports from citizens, staff, and subject matter experts on various forestry topics and issues affecting forest landowners and the citizens of Tennessee. The Commission discussed and took action on the following matters:

- Toured the Division’s Delano nursery and developed a list of actions the nursery could take to reduce the annual operating loss. Reviewed, discussed and approved the nursery seedling production and pricing.
- Met with Chattanooga’s urban forester to learn how urban forestry activities related to storm water capture, canopy cover analysis and urban forestry health.
- Viewed a presentation on U. S. Forest Service Forest Inventory Analysis that showed Tennessee’s forested area has remained constant over many decades, however the quality of our forest has declined. Oak/ hickory is our most common hardwood forest type and 80% of our forest is privately owned.
- Reviewed the Division of Forestry budget to meet the Governor’s requested goals.
- Received regular updates on forest health including the emerald ash borer (EAB) and the cost in urban areas of dealing with the large numbers of dying ash trees.
- Received regular updates on timber sales from state forests. Although the main purpose of the timber sales program is to maintain a healthy actively growing forest, the annual revenue is important. The timber on state forests is older (especially pine) and regular sales are needed to reduce the age class distribution.
- Received an extensive report on the fall wildfires. Received confirmation the Division of Forestry had the ability and access to resources necessary to contain the wildfires as weather conditions would allow.
- Heard presentation on carbon credits and the economics of forestland owners placing their forest in a carbon sequestration project.
- Participated in the Legislature’s sunset hearing regarding the Forestry Commission.

**Members**

- Bob Qualman,**  
**Chair**  
Brentwood, TN  
Represents owners of less than 500 acres
- Johnny Heard,**  
**Vice-Chair**  
Collinwood, TN  
Represents hardwood manufacturers
- Dottie Mann,**  
**Secretary**  
Clarksville, TN  
Represents conservation organizations
- Charles Daugherty**  
Crossville, TN  
Represents public at large
- Tom Midyett**  
Knoxville, TN  
Represents pulp and paper manufacturers
- Alex Richman**  
Lynchburg, TN  
Represents owners of greater than 500 acres
- Mike Witt**  
Cookeville, TN  
Represents owners of less than 500 acres
- Jai Templeton,**  
**Ex-Officio**  
Commissioner - Tennessee Department of Agriculture
- Ed Carter,**  
**Ex-Officio**  
Director - Tennessee Wildlife Resources Agency
- Robert Martineau, Jr.,**  
**Ex-Officio**  
Commissioner - Tennessee Department of Environment and Conservation





The Division of Forestry was created in 1914 and one of its main purposes was to suppress wildfires. Over 100 years later we see this is still very important. The 2016 fall wildfire season was one of the most challenging the Division has ever experienced. All available employees and equipment were put into service against the fires spanning the eastern half of the state. Although drought and terrain were the reasons the fires were so difficult to contain, after the fires the Division made a large effort to identify and implement ways to improve firefighting when the next large fire occurs.

Although the Division fights wildfires and sustainably manages 168,000 acres on 15 working State Forests, they do much more. They help private forestland owners learn how to better manage their forests, assist with urban forestry, help with forestry economic development, monitor and fight forest insects and invasive plants, help with water quality and much more. Good forestry is very important to Tennessee's economy and our environment. As you read this report you will realize the Division of Forestry is one of the main reasons Tennessee has quality forests and a successful forest products industry.

*Robert S. Qualman*

Robert S. Qualman  
Chairman  
Tennessee Forestry Commission



It's easy to see the impact of forestry on Tennessee. Step outside, glance out a window, or even just view these words on paper—our forests create the landscapes we love and the products we use every day. The Tennessee Department of Agriculture is a proud steward of our state's forestlands.

That stewardship is no small task. In reading this report you will gain an understanding of what it takes to manage our forest resources, fight wildfires, promote forestry-related commerce, and work for the citizens of our state. The Division of Forestry set several goals to support the department's mission, and then surpassed many of those objectives, going above and beyond to provide services that benefit us all.

Strong partnerships drive much of that success. The value of solid working relationships becomes especially clear when faced with a challenging year, as covered by this report. We appreciate the willingness of our local, county, state and federal partners to help when called.

None of this would be possible without the dedicated employees who have committed their lives and livelihoods to improving the forests we appreciate and enjoy. I appreciate them, and you, for your support of the Tennessee Forestry Commission.

*Jai Templeton*

Jai Templeton  
Commissioner  
Tennessee Department of Agriculture



We have all heard the phrase "what a difference a year makes" used in a variety of ways to describe everything from your favorite sports team's improvement or decline over a year's time to the difference in things like personal finances. The context in which I use the phrase in this report is the stark contrast between the fall 2016 versus spring 2017 relative to wildfire occurrence and the destruction fires can cause. The magnitude and cost in terms of lives lost, structures destroyed or damaged, forest resource acres burned and the interruption of business and life is well documented for fall 2016. We experienced a totally different wildfire scenario in the spring of 2017 across the Volunteer State. It was one of the lowest fire occurrence seasons on record. The difference? Weather and the extended and severe drought situations brought on by months and years of below normal precipitation. So, what remained the same? The dedicated women and men of the Tennessee Department of Agriculture Division of Forestry who performed exceptionally throughout the 2016 fire campaign as they put themselves at risk to protect the forest resources of the state, structures threatened by wildfire and, most important, the lives of people caught in harm's way. With the protection of the state's forests still the highest priority, in 2017 their time has been spent more in detecting and monitoring forest pests, making sure water quality stays unhampered by logging operations, managing our 15 state forests, growing quality tree seedlings, training volunteer firefighters and inmates in wildfire suppression tactics and working with private landowners to assist them in making sound forest management decisions. The same workforce, two totally different scenarios, and my respect for appreciation of their work is the same for 2017 as it was for 2016.

*Jere Jeter*

Jere Jeter  
Assistant Commissioner/State Forester  
Tennessee Department of Agriculture  
Division of Forestry



# 2016 Fall Wildfire Season At-a-Glance

## Tennessee Statistics

- 714 fires burned 66,821 acres between Oct. 1 and Dec. 31, 2016. Those figures represented 43 percent of the fires and 75 percent of the acreage burned for the calendar year.
  - ◊ Comparatively, in 1977, there were 6,662 fires, and, in 1952, over 1 million acres burned.
  - ◊ At the peak on Nov. 7, 2016 there were 97 active fires burning over 9,600 acres.
- The average fire size was the highest ever recorded at 69 acres per fire, not including the outlier and single worst fire in Tennessee's history – Chimney Tops 2 – that burned 17,706 acres and claimed 14 lives and left 2,465 structures destroyed or damaged.
- 4 Incident Management Teams (IMT) deployed to manage fires in support of Division of Forestry (TDF) Area Command in Nashville.
  - ◊ TDF Cumberland IMT - Cumberland District fires
  - ◊ TDF East Tennessee IMT - East Tennessee District fires
  - ◊ Florida Forest Service Type 3 IMT - Flippers Bend/Mowbray/Poe fires near Chattanooga
  - ◊ Southern Area Red Type 1 IMT - Chimney Tops 2/Cobbly Nob fires near Gatlinburg
- 900 personnel resources from all across the United States were called upon to assist with the teams.
- Air support - record use
  - ◊ 160 helicopter water drops @ 96,000 gallons
  - ◊ 60 tanker retardant drops @ 197,418 gallons
- Supported by numerous local, county, state and federal partners



## Burn Bans Activated

Burn bans were activated to call greater attention to the fire ignition threat.

- The first Commissioner's Burn Ban Declaration was issued on November 2 and eventually included 24 counties.
- A Governor's Burn Ban was later added in response to the ongoing drought and destructive wildfires throughout Middle and East Tennessee and to further exemplify the danger of starting any fire in the region. That ban included 51 counties covering the eastern half of the state.



Satellite view of east Tennessee taken on November 7, 2016. On that day, there were 97 wildfires burning over 9,600 acres in Tennessee, along with dozens more across the southeast region.



**Ag Commissioner's Burn Ban** **Governor's Burn Ban**

On Monday, November 14, 2016 Tennessee Gov. Bill Haslam issued a proclamation declaring a regional ban on burning in 51 counties in response to the ongoing drought and destructive wildfires throughout Middle and East Tennessee. In addition, Sumner and Wilson Counties are under a burn ban issued by TDA Commissioner Jai Tompkins. A governor's ban includes municipalities, whereas a commissioner's ban is superseded by municipal ordinances. Both burn bans apply to open-air burning and includes a prohibition of campfires, and burning of brush, vegetation, and construction debris. Generally, the burn ban does NOT apply to cooking grills and other similar lighted devices that are well established in a confined, protected area away from woodlands. However, the disposal of hot grill ashes or coals can be a fire hazard. Grill ashes should be completely cool or better yet, wet, before disposal in all cases. A violation of a burn ban is punishable as a Class A misdemeanor which carries a fine of \$2,500 and/or up to 11 months, 29 days in jail.

All other counties require a state-issued burning permit (see through May 15, 2017) from the Division of Forestry Operations. Open fires, bonfires and stoves which cover other debris burning. Permits will only be issued where and when it is determined by the Division personnel to be safe to do so. Currently, every county across the state and local laws permit local substantial and a license. Please visit [www.burnban.org](http://www.burnban.org) online permit system to see if your area is issuing permits. The system is updated daily.

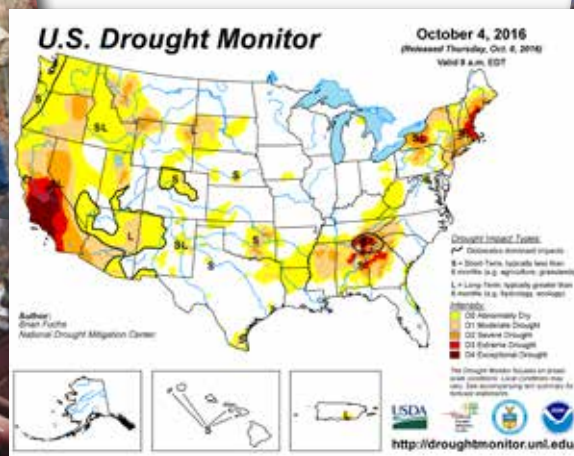


# 2016 Fall Wildfire Season At-a-Glance

## Significant Fires

Fire or Complex Name	County	Acres
<b>Flippers Bend</b>	<b>Hamilton</b>	<b>981</b>
Poe Rd.	Hamilton	712
<b>Mowbray</b>	<b>Hamilton</b>	<b>899</b>
<b>Smith Mountain</b>	<b>Sequatchie</b>	<b>960</b>
<b>Bench Bluff</b>	<b>Bledsoe</b>	<b>1,400</b>
<b>East Miller Cove</b>	<b>Blount</b>	<b>1,504</b>
Stoney Fork	Campbell	1,144
Bald Knob Rd.	Morgan	1,293
Mile Marker 156	Campbell	1,010
Neddy Mountain	Cocke	1,076
Chimney Tops II *	Sevier	17,140
Cobbly Knob *	Sevier	764

**bold = Fire Management Assistant Grant (FMAG) Declarations**  
**\* Presidential Disaster Declaration**



**Rainfall Deficits**

Chattanooga:  
14 inches below normal

Tri-Cities:  
6 inches below normal

Knoxville:  
5 inches below normal



## Improvements Made

- 101 smartphones were purchased as new units or upgraded and are now compatible with newer software application needs.
- A plan was initiated to replace the entire fleet of dozers and transports over the next few years.
- A computer-based dispatch and asset tracking system to better track firefighters and equipment and improve the collection and communication of incident information was identified.
- A division-led Type 3 Incident Management Team is being formed, which will provide faster integrated support for future large incidents.
- Accelerated training for that team, as well as others in the administration, was also planned.



## Wildland Fire Protection

The Division of Forestry is legally tasked to protect Tennessee's forest resources (TCA 11-4-405) and suppress forest fires in Tennessee (TCA 11-4-406). Fire prevention and suppression are the primary responsibilities of the Division, which is uniquely equipped and qualified for this role. Fire occurrence and acres burned in Tennessee have gradually decreased during the past 50 years. Resources have benefited, particularly with improved hardwood timber quality. As the forest landscape constantly changes with influx of homes in the Wildland Urban Interface, the Division's fire role has remained consistent. What has changed is suppression equipment, communication, training, and emphasis on safety, prevention and education.

### Unit Mission

***The mission of the Wildland Fire Protection Unit is to minimize damage caused by wildfire to forest resources and personal property while giving priority to firefighter and public safety.***

### Objectives for Year

- Develop Community Wildfire Protection Plans (CWPP) and Firewise Communities.
- Conduct a Tennessee Firewise Community workshop.
- Conduct fire suppression training.
- Conduct two Certified Burn Manager training classes.
- Begin screening excess property through the Firefighter Property program (FFP).
- Increase number of burn permits issued on website.
- Coordinate safety inspections of field facilities.
- Provide public with safety information including updates on current situations.
- Investigate accidents and unsafe work practices.

### Major accomplishments for July 1, 2016 – June 30, 2017

- Suppressed 1,266 wildfires that burned 74,816 acres (compared to 17,772 acres in FY 2016).
- Issued 386,793 burn permits, which is 1,415 more than FY 2016.
- 77,566 permits were obtained from BurnSafeTN.org compared to 69,978 issued online in FY 2016.
- Participated in numerous Tennessee Emergency Management Agency exercises and provided resources for the Avian Flu Incident Management Team (IMT) in Lincoln County.
- Provided 40 Firewise programs to a total of 2,425 attendees.
- Recognized 2 new Firewise Communities - Top of the World & Tri-Community.
- Provided 10 Firewise workshops to total of 932 attendees.
- Held the Annual Tennessee Firewise Community workshop with 87 in attendance.
- Held annual TDF Fire Prevention Workshop. Participated in the Wildfire Prevention Working Group and Fire Co-op interagency meetings.
- Provided Southern Wildfire Risk Assessment Portal (SouthWRAP) evaluations to 5 communities (Top of the World, Little Round Top, Laurel Valley, Chalet Village, and Saddle Ridge); see inset on next page.
- Screened and loaned Federal Excess Personal Property (FEPP) Equipment to rural Volunteer Fire Departments. There were 404 pieces of FEPP equipment placed with a total value of \$567,122.00. Excessed 10 pieces of FEPP property with a total value of \$10,238.00 through General Services Administration (GSA) sales.
- Deployed four overhead and one 20 person crew to federal wildfire assignments in California, Idaho, Montana, New Mexico, Oregon, Washington and Utah. One task force of engines and dozers with nine personnel and one strike team of engines with eight personnel were ordered through the Southeastern



## Wildland Fire Protection

States Compact for the Oklahoma Winter Fires in March, 2017.

- Provided 115 cost share grants to volunteer fire departments totaling \$264,368.00.
- Administered the work capacity test to assess fitness among Division firefighters.
- Conducted basic wildfire training academy for 35 full and part time new employees.
- Conducted three Tennessee Certified Prescribed Burn Manager Training Courses, with a total of 60 students in attendance.
- Participated in the 15th annual Tennessee Kentucky Wildland Fire Academy, which offers advanced wildfire training for Division firefighters. 400 firefighters attended training at the Academy this past year.
- Trained firefighters in the use of fire operations in the wildland-urban interface.
- Coordinated First Aid/CPR and Defensive Driving Training.
- Coordinated safety inspections of facilities; Compiled and submitted OSHA Accident and Illness reports.

### SouthWRAP

**Southern Wildfire Risk Assessment Portal**  
[www.southernwildfirerisk.com](http://www.southernwildfirerisk.com)

In response to increasing demand for more accurate and up-to-date wildfire risk information, the Southern Wildfire Risk Assessment Portal (SouthWRAP) was developed as a tool for state agencies, communities and the public across the South to use for wildfire mitigation and prevention.

SouthWRAP can be used to help prioritize areas in the state where tactical analyses, community interaction and education, or mitigation treatments might be necessary to reduce risk from wildfires. In addition, the information provided in the assessment can be used to support the following key priorities:

- Identify areas that are most prone to wildfire.
- Identify areas that may require additional tactical planning, specifically related to mitigation projects and Community Wildfire Protection Planning.
- Provide the information necessary to justify resource, budget and funding requests.
- Allow agencies to work together to better define priorities and improve emergency response, particularly across jurisdictional boundaries.
- Define wildland communities and identify the risk to those communities.
- Increase communication with local residents and the public to address community priorities and needs.
- Plan for response and suppression resource needs.
- Plan and prioritize hazardous fuel treatment programs.







## Forest Business Services

Tennessee's forests provide the raw materials and resources for businesses that sustain billions of dollars of economic activity for our state and employ many thousands of people. These businesses provide markets that are vital for the long-term health and sustainability of the forest. Without these markets, the ability to effectively and efficiently implement silvicultural prescriptions is limited, constraining the opportunity to practice sound forest management. Therefore, promotion of good forestry practices goes hand-in-hand with the promotion of forest products.

The Forest Businesses Services Unit works with any person, company or organization that makes a living from growing, harvesting, utilizing or processing forest resources.

### Economic Development

*Mission: Provide information on the availability and sustainability of the forest resources of the State to landowners, loggers, and industries.*

### Objectives for Year

- Complete forest resource and forest products profiles for the Department of Economic and Community Development Districts.
- Visit 5 mills across the State.
- Recruit 10 new companies to use the Tennessee Wood Products brand.

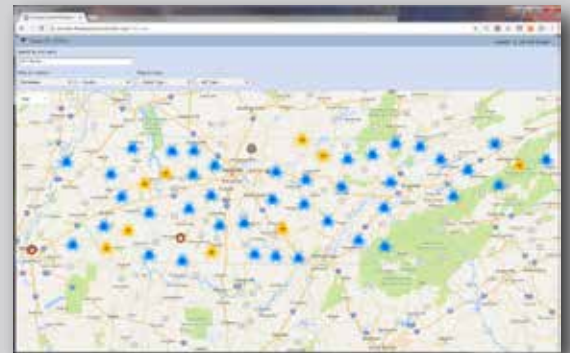
### Major accomplishments for July 1, 2016 – June 30, 2017

- Completed 4 regional resource, mill and forest products profiles.
- Updated the Timber Products Output (TPO) database and made it available to the Primary Forest Products Network. The web service provides an interactive map of mills across the southeast U.S. and is widely used by the international community (see inset).
- Published 1 edition of the Tennessee Forest Products Bulletin to provide information on delivered forest product prices at mills in Tennessee.
- Processed 23 requests for information on forest products pricing and availability, landowner assistance in preparing for timber sales, and help in querying the Forest Inventory and Analysis database.
- Recruited 10 companies to use the Tennessee Wood Products brand as a part of their marketing strategy.
- Conducted one forest and mill tour for Muji Corporation global sourcing manager. Muji is a large Japanese company with stores in cities worldwide, including New York and San Francisco. Muji will be looking for sources for parts for the company's furniture lines.

### Unit Mission

***The mission of the Forest Business Services Unit is to improve the utilization and conservation of Tennessee's forest resources by making available information and analysis that will aid landowners, resource managers, and businesses in making informed decisions.***

### Primary Forest Products Network



The Primary Forest Products Locator website (<http://primary.forestproductslocator.org/>) is provided by the Southern Group of State Foresters to assist buyers with locating primary wood product manufacturing companies. These companies produce renewable products by converting recently harvested trees from managed forests to lumber, wood panels, paper, and many other forms of primary products.

Forest managers and landowners may also find ForestProductsLocator.org useful in locating potential buyers for standing timber in their area.

The site provides the contact information for primary forest product companies by selecting icons on the Mill Map page or by searching within the Mill List page. Users may search for forest products by wood type, mill type, state, county, or mill name.





## Forest Business Services

### Forest Inventory & Analysis

*Mission: Monitor the sustainability of Tennessee's forest resource by measuring the species, size, and health of trees.*

Forest Inventory and Analysis is a continuous census of forest resource use, health, volumes, growth, and removals of forests. The program also conducts a census of private and public landowners who manage the resource and gathers information from loggers and manufacturing facilities in the State that utilize the wildlife, water, recreation and wood produced by forests. Much of this information is collected from continuous inventory plots that have been re-measured for decades, beginning in the late 1940s.

#### Objectives for Year

- Obtain tree measurements on approximately 580 plots (7-year sampling cycle). Collect data on 18 felled tree studies.

#### Major accomplishments for July 1, 2016 – June 30, 2017

- Measured 520 plots for the year.
- Collected data from 48 felled tree study (Timber Products Output) locations.



## Forest Business Services

### Water Quality

*Mission: Improve the quality of surface and sub-surface water using forest cover as a filter and buffer for industrial, urban, and agricultural point and non-point pollution sources.*

Water is a valuable product of the forest. While benefits are difficult to measure, changes in quality and quantity are usually easily observed. Forests act as buffers and filters that can reduce the damage caused by other land uses and protect stream banks from erosion caused by flooding. Since the mid-1980s the Division of Forestry has been providing leadership to ensure timber harvesting operations do not pollute our creeks, streams, and rivers. Encouraging implementation of Forestry Best Management Practices (BMPs) is the foundation of the Division's water quality program. We assist the forestry community with forestry BMP implementation through three major program areas: technical assistance, water quality complaint investigations, and forestry BMP implementation monitoring.

#### Objectives for Year

- Increase the number of logging checks in counties in proportion to the number of logging operations.
- Provide Master Logger training related to the Division's Water Quality Program.
- Provide monthly water quality site visit reports.

#### Major accomplishments for July 1, 2016 – June 30, 2017

- Conducted 857 BMP harvesting site inspections with landowners, foresters, and loggers with 277 follow-up visits, 7 pre-harvest assists, and 29 other contacts for a total of 1170 contacts.
- Investigated and made recommendations on 23 water quality complaints in cooperation with the Department of Environment and Conservation (TDEC) and 47 without TDEC involvement, for a total of 70 complaint investigations.
- Prepared 1,008 written BMP recommendations for forest landowners in forest management plans and through timber sale assistance by Area Foresters.
- Presented 405 classes in conferences and workshops for 18,336 participants where forest water quality and BMPs were an important part of the discussion.
- Presented 19 BMP sessions in cooperation with the Tennessee Forestry Association for the Tennessee Master Logger Program, training 382 loggers with funding received through the Tennessee Agricultural Enhancement Program.



## Forest Health & Sustainability

The health of a forest directly influences all aspects of forestry and is a part of every Unit within our Division. Not limited to insects and diseases, forest health is also influenced by abiotic events, invasive plants, improper silvicultural prescriptions, harvesting damage to residual stand, air and water quality, soil compaction, wildfire and much more. Forest health is considered in all settings, and can include forest in an urban environment or a riparian strip between two agricultural fields.

This focus on forest health provides the Unit with a holistic and sustainable approach to all forest management. It demonstrates the connectivity among forest health, the human interface, and the benefits all forests provide.

### Unit Mission

***The mission of the Forest Health & Sustainability Unit is to protect and enhance the health and productivity of Tennessee's forests.***

### Forest Health

*Mission: Enhance the health of Tennessee's forests and minimize forest resource losses caused by forest pests through effective prevention, detection, evaluation, suppression, and technical assistance measures.*

Forest health programs involve monitoring, detecting and managing and/or suppressing both native and non-native damaging forest health issues statewide. The major forest health issues managed within this unit are: gypsy moth, hemlock woolly adelgid, southern pine and other bark beetles, and invasive plants. Other threats to Tennessee's forest are addressed through consistent off-plot monitoring by way of aerial detection, ground detection, and current technology including satellite imagery. A significant component of this unit is education and outreach that places emphasis on current and imminent threats and their transportation vectors (i.e. firewood).

### Objectives for Year

- Promote the health of Tennessee's forests through monitoring, management, internal trainings to TDF, technical consulting, and outreach.
- Improve the collection, analysis, and sharing of data internally and externally in order to enhance customer relationships.
- Facilitate the improvement of the health and sustainability of Tennessee's forest resources by implementing a statewide gypsy moth monitoring and eradication program.
- Collaborate with Gypsy Moth Slow the Spread Foundation to contract gypsy moth trapping operations in Johnson, Carter, and Sullivan counties.
- Facilitate the improvement of the health and sustainability of Tennessee's forest resources by implementing effective forest health monitoring programs.
- Provide guidance to newly formed hemlock woolly adelgid (HWA) strike team.

### Major accomplishments for July 1, 2016 – June 30, 2017

- Detected 54 southern pine beetle (SPB) in the 8 monitoring traps deployed by TDF personnel in Chester, Wayne, Marion, and Rhea Counties.
- Recorded 30 acres of SPB impacted pine in 4 counties - Bradley, Meigs, Polk, and Rhea.
- Activated a TDF HWA strike team which treated 582 acres of public land, installed 1 field insectary for biocontrol, and held 3 private land owner workshops.
- Monitored Tennessee for gypsy moth via the placement of 9,112 gypsy moth traps in all counties.
- Detected 47 male gypsy moths in 14 counties in Tennessee in 2017.
- Held 4 forest health trainings for TDF personnel, 1 in each district.
- Reported no new counties for emerald ash borer (EAB). However, TDA deployed 959 traps in 36 unquarantined counties.





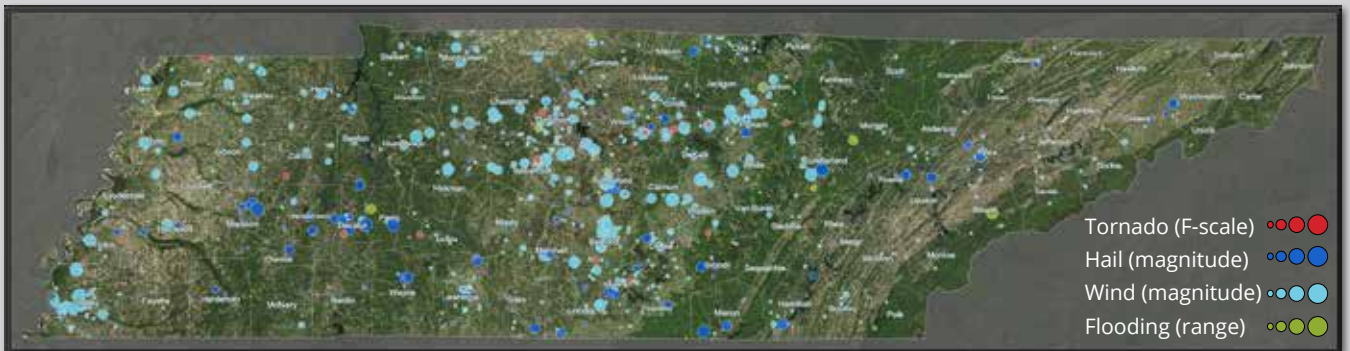
## Forest Health & Sustainability

- Reported no new thousand cankers disease (TCD) during the report period. However, TDA deployed 60 walnut twig beetle traps (WTB), and caught 160 beetles in Sequatchie, Cumberland, Knox, Marion, Monroe, and Roane counties.
- Reported storm damage in 12 counties totaling 870 acres of forest damage, while 34 reports of tornado damage and 643 reports of wind damage were reported by the National Weather Service (see inset below).
- Reported 500 acres of defoliation by variable oakleaf caterpillar and yellownecked caterpillar in McNairy, Chester, and Hardeman counties.
- Reported 482 acres of defoliation by fall webworm in Claiborne, Cocke, Hamilton, Hardin, Jefferson, Overton, Roane, Wayne, Van Buren, and White counties.
- Co-led, along with the Tennessee Nature Conservancy, 3 firewood kiln workshops promoting the development of a private sector firewood industry.
- Monitored 95 counties for forest health issues and reported an average of 111 occurrences per month.
- Provided grants to eradicate exotic invasive plants at Radnor Lake State.

### Storm Damage Takes Toll on Forest Resources

Across the state, 34 reports of tornado damage and 643 reports of wind damage were reported by the National Weather Service. TDF personnel reported significant storm damage over 12 counties totaling 870 acres. Major flooding also occurred along the Mississippi river in the spring of 2017.

Severe storms expose trees to a combination of many of the most destructive atmospheric stress agents in a short period of time. It is not uncommon for trees to experience heavy rains, saturated soils, strong winds, snow, ice, hail, and/or lightning during a single storm event. Severe damage or mortality often cannot be avoided during the worst storms, but proper tree care starting with the right species selection for the site, appropriate stocking density, and/or pruning when appropriate can minimize damage during less severe events.





## Forest Health & Sustainability

### Rural Forest Management

*Mission: Encourage and assist landowners to implement forest management practices that yield healthy, productive forests.*

Family forest owners are the key to keeping Tennessee's forests productive and healthy. They play an important role in providing all Tennessee citizens with forest products, clean water, wildlife habitat and natural beauty. Many of these landowners are unaware of the role forest management plays in maintaining healthy and productive forests. This lack of awareness has quite often resulted in activities that leave forests less productive or at risk to insect, disease and water quality problems.

The Division of Forestry provides forest management planning and financial assistance to encourage landowners to manage their forest resources in a manner that increases productivity, maintains forest health, and protects water quality. Forest management planning assistance is provided as individualized management plans, published materials, and/or group presentations. Financial assistance is offered through various federal and state funded cost-share programs.

#### Objectives for Year

- Focus on providing excellent customer service to Tennessee's forest landowners.
- Optimize cost-share funding utilization.
- Expand cost-share options to become more relevant and responsive to our customers' needs.
- Continue to update program policies and manuals.
- Train Division foresters on GIS ArcPro software and develop a customized ArcPro project specifically for landowner assistance.

#### Major accomplishments for July 1, 2016 – June 30, 2017

- Continued our partnership with D'Addario's Promark Company, where the Division's nursery provided 81,000 seedlings to 29 landowners at no cost.
- Conducted six classroom style ArcPro training sessions and numerous weekly WebEx forums to train Division foresters on the software and customized projects for landowner assistance.

#### Forest Management Planning

- Wrote 88 Stewardship plans addressing 13,241 acres.
- Recognized implementation of 5 Stewardship plans improving 1,454 acres.
- Wrote 920 other forest management plans addressing 88,893 acres.

#### Forest Stand Prescription Planning

- Wrote 352 prescription plans improving 13,995 acres.

#### Forest Stand Prescription Implemented

- Assisted 213 landowners in other forest management activities on 8,717 acres that included hardwood and softwood tree planting, site preparation and release activities, prescribed burning, wildlife habitat improvement, stream crossings, and erosion control.

### Forest Stewardship Program



The Forest Stewardship Program (FSP) provides assistance to owners of forest land where good stewardship, including agroforestry practices, will enhance and

sustain multiple forest resources and contribute to healthy and resilient landscapes. The program also helps create jobs in rural communities by sustaining local markets for forest products and increasing demand for qualified private forestry consultants and state field foresters.

The Forest Stewardship Program focuses on three main areas:

- Assisting landowners to actively manage their land and related resources
- Keeping land in a productive and healthy condition for present and future owners
- Increasing the economic benefits of land (timber harvesting, for example) while conserving the natural environment

There are currently more than 25 million acres being managed under Forest Stewardship Plans nationwide.





## Forest Health & Sustainability

### Urban and Community Forestry

*Mission: Assist and encourage municipalities and private urban landowners to establish, improve, and maintain healthy urban forest resources.*

Urban and Community Forestry programs provide both technical and financial forest and tree management assistance to communities and municipalities statewide. Technical assistance can be offered at the tree board or city planning level, through rapid on-site forest or tree assessments, or communication through outreach events or individual inquiries. Financial assistance is offered to cities, municipalities, or non-profit groups through a competitive proposal process. These proposals range from ball and burlap plantings to urban riparian restoration projects. The urban forestry programs also include nationally recognized programs that allow cities, utilities, and centers for higher learning to promote their urban forest status and bring awareness to the importance of urban trees.

### Objectives for Year

- Provide urban and community forestry assistance to cities and towns and to green industries (arborists, grounds managers, landscape architects, and others) that impact the management of urban forests.
- Administer the Tennessee Agricultural Enhancement Program (TAEP) tree planting grants and the federal Urban & Community Forestry grants, the Tree City USA program, the Tree Line USA program, the Tree Campus USA program, the Champion Tree and related programs, and project administration.
- Complete tree canopy cover analyses for Tennessee communities.

### Major accomplishments for July 1, 2016 – June 30, 2017

- Continued support of 3 city forester positions with federal Urban & Community Forestry (U&CF) grant funds for Cookeville, Crossville, and Memphis.
- Completed 12 TAEP community tree planting grants that planted 102,750 trees.
- Completed canopy cover analyses for the communities of Brownsville and Morristown and reported the findings to each community.
- Partnered with the Tennessee Urban Forestry Council (TUFC) to host the statewide Urban Forestry Conference in Murfreesboro, the State Tree Climbing Championship in Nashville, and outreach to city officials at the Tennessee Municipal League (TML) conference in Murfreesboro. Assisted TUFC with the statewide arboretum certification program that included city parks, institutions of higher learning from elementary schools through colleges and universities, businesses, and cemeteries.
- Recognized 45 cities and towns as Tree City USA communities. Tennessee's state arbor day ceremony was held in Crossville on March 3.
- Recognized 19 utility companies as Tree Line USA utilities (15 municipal utilities and 4 cooperatives). Tennessee is ranked #1 in the nation for Tree Line USA utilities.
- Recognized 8 institutions of higher learning as Tree Campus USA (6 universities, 1 college, and 1 community college).
- Attended regional meetings of Tennessee Stormwater Association (TNSA) and presented information on programs available to assist cities and towns. Partnered with the TNSA for the Annual Nashville Urban Runoff 5K and supplied tree seedlings for winners in each running category.
- Assisted with the 100K Tree Day statewide seedling giveaway with the Tennessee Environmental Council.
- Attended the Partners in Urban and Community Forestry Conference sponsored by the Arbor Day Foundation in Indianapolis, Ind.
- Conducted 33 training sessions with 985 hours of instruction.



## Reforestation

### Seedling Nursery

*Mission: To provide high quality conifer and hardwood seedlings to the state's landowners at a competitive price.*

The Division of Forestry's East Tennessee Nursery (ETN), located in Delano, produces forest seedlings that are available for sale to landowners in Tennessee. These seedlings are adapted to growing conditions found in the state and are used primarily for reforestation and forest conservation projects. Approximately one-half of the 80 acres available for seedling production at the nursery are used for this purpose each year. The remaining seedbed area is planted in cover crops to ensure the long-term productivity of the nursery soil.

#### Objectives for Year

- Generate \$695,000 of revenue from seedling sales.
- Seek new venues to market Division seedlings.
- Engage District personnel in seedling marketing.
- Work with District offices to ensure that seedling applications are delivered to natural resource agency/ organization offices in their areas.
- Contact new agencies/organizations to market seedling purchasing opportunities offered by the Division.
- Visit field staff periodically to discuss current seedling quality, use and dissemination.
- Achieve a customer satisfaction rating of 95% or greater.
- Develop new value-added seedling opportunities.

#### Major accomplishments for July 1, 2016 – June 30, 2017

- Sold 5.2 million tree and shrub seedlings to generate sales revenue of \$702,000. This revenue exceeded the target by 1%. The number of seedlings sold was 1,261,000 (32%) higher than the number sold the previous season.
- Achieved a customer satisfaction rating of 92% based on the results of our annual customer satisfaction survey.
- Worked with other TDF employees to compose and send out thank you letters to large volume seedling customers. Also sent samples of our hardwood seedlings to several prospective new customers and customers who had not ordered from us recently.
- Published advertisements for the nursery in the TFA Membership Directory, the TWRA Fall Hunting Guide, Tennessee Home and Farm Magazine, and Tennessee Magazine.
- Staffed a display at National Wild Turkey Federation Annual Convention to promote our seedlings.
- Worked with District personnel and Nashville office staff to ensure that seedling order forms were distributed to all natural resource agency/organization offices in the state.
- Provided presentations and other information and materials to TDF personnel for use in promoting seedling sales and the Division's reforestation programs at state and local fairs and other events.
- Worked with the Tennessee Environmental Council to provide and distribute 60,000 seedlings for the Council's 100K Tree Day. Cooperating agencies and partners planted 100,000 seedlings in a single day during this event.
- Conducted two webinars with District personnel to share information and get feedback pertaining to seedling quality, distribution and delivery.

### Unit Mission

***The mission of the Reforestation Unit is to provide high quality, affordable seedlings (genetically improved where feasible) to Tennessee landowners and to optimize genetic improvements to increase the productivity of the state's forest resource.***



D'Addario's ProMark staff shot drone footage of the nursery for a new website promoting the Play. Plant. Preserve program. [playplantpreserve.com](http://playplantpreserve.com)





## Reforestation

### Tree Improvement

*Mission: To genetically improve the forest plantations of Tennessee through a program of breeding, testing, selection, and orchard management for important tree species and to provide the state nursery with genetically improved seed from these orchards.*

The Division of Forestry manages 141 acres of seed orchards and seed production areas and 69 acres of progeny tests at various locations across the state. Currently, the Division is actively working with six hardwood and four conifer tree species. The Division is also a member of the North Carolina State University Cooperative Tree Improvement Program (NCSU-CTIP) and the Tennessee Tree Improvement Cooperative. Membership in these organizations allows accelerated breeding and establishment of genetically superior seed orchards. Seed produced from these orchards is used to grow seedlings tailored for survival and fast growth on Tennessee's landscape.

### Objectives for Year

- Install NCSU-CTIP loblolly pine 4th-Cycle progeny test at the West TN Tree Improvement Center (TIC).
- Thin the 2.0 generation loblolly pine seed orchard at the ETN and the #5 and #6 loblolly pine seed orchards at the Pinson Reforestation Complex (PRC).
- Continue breeding 4th-Cycle selections in the loblolly pine breeding orchard at the ETN.
- Collect pollen from loblolly pine orchards for use in the tree breeding programs of the NCSU-CTIP.
- Continue conversion and development of the shortleaf pine progeny test at Scott State Forest for future seed production.
- Maintain, monitor, and manage orchards to promote healthy trees.
- Harvest seed from producing orchards and seed production areas as needed by the nursery program.

### Major accomplishments for July 1, 2016 – June 30, 2017

- Harvested 140 bushels of 3rd-Cycle loblolly pine cones at the ETN which produced 100 pounds of pine seed.
- Harvested 160 bushels of 2.0 generation loblolly pine cones at the ETN which produced 108 pounds of seed.
- Harvested 150 bushels of Sawtimber Elite Loblolly Pine cones at the ETN which yielded 110 pounds of seed.
- Harvested 1,051 pounds of chestnuts from the Hybrid Chestnut seed production area at the ETN.
- Harvested 1,518 pounds of acorns from the Sawtooth Oak seed production area at the ETN.
- Collected 732 pounds of white oak acorns from wild trees at the ETN.
- Collected wild type plums at the ETN that yielded 27 pounds of seed.
- Harvested 84 pounds of seed from various other wild type species at the ETN.
- Completed the process of converting the shortleaf pine progeny test at Scott State Forest to a shortleaf pine seed production area.
- Marked the #6 loblolly pine seed orchard at the PRC for thinning.
- Made several controlled crosses in the loblolly pine seed orchards at the ETN to continue our work on the NCSU-CTIP's 4th-Cycle breeding program.
- Collected, processed and submitted loblolly pine pollen from families requested by the NCSU-CTIP.
- Prepared the site and planted seedlings to establish the 2017 NCSU-CTIP loblolly pine 4th-Cycle full-sibling progeny test at the TIC.



## State Forest Management

Tennessee's 15 State Forests range from mountain coves to bottomlands along the Mississippi River. State Forests are managed for a mix of natural resources including game and non-game wildlife, and large, high-quality timber. State Forests do not feature inns, golf courses or restrooms. However they offer hunting, hiking, bird watching and tranquility.

Many State Forest lands were in poor condition when acquired, either eroded or heavily timbered. Some were planted with trees to control erosion; others regenerated naturally into hardwood forest. Since then they have been carefully protected and managed.

Following decades of restoration, conservation, and careful management, Tennessee's State Forest system now contains an abundant supply of high-quality timber and other forest products. Timber harvested from some of these forests helps support local forest products industries. Money spent by consumers in the pursuit of recreational opportunities on the forests also supports local merchants. State Forests are sites for field sessions demonstrating application of sustainable forestry practices that maintain and/or enhance multiple use values. Sites have also been established to demonstrate how forestry best management practices maintain, protect and enhance water quality. State Forests also provide data to characterize the resources and values provided to local communities and local economies.

### Unit Mission

***The mission of the State Forest Management Unit is to provide for the multiple use management of all resources on State Forest lands such that those resources are protected and utilized in the combination that best meets the long-term needs of the people of Tennessee.***

### Objectives for Year

- Complete 15 Compartment Plans.
- Hold 2 demonstrations, tours, or field days.
- Harvest and regenerate 1,214 acres of timber.
- Complete State Forest Inventory Cycle 2 data analysis.
- Begin initial audit for Sustainable Forestry Initiative (SFI) 3rd-party accreditation.
- Generate \$3.1 million in timber sales revenue.
- Complete timber sales and Compartment Plan writing training.



### Major accomplishments for July 1, 2016 – June 30, 2017

- Approved 4 Compartment Plans.
- Successfully administered 26 timber sales totaling 1,213 stand acres yielding 12.02 million board feet. Timber sale revenues applied toward FY 2017 totaled \$3,336,776.62, the largest sales total in state forest history (see picture).
- Completed state forest road maps and designations for public use.
- Completed one two-day training session for the timber sales and compartment plan writing for state forest foresters.
- Conducted pre-audit gap analysis for SFI 3rd-party accreditation.

Natchez Trace State Forest is the largest and most productive forest in the system.



## Forest Data and Technology

The Forest Data and Technology Unit seeks out and implements relevant technology. The Unit is also responsible for maintaining relevant databases and presenting data for further analysis. Critical work areas include updating information systems and getting new mapping and remote sensing technology into the hands of field personnel. Adopting such technology will lead to better communications, increased efficiency, and strengthened credibility.

### Objectives for Year

- Work with Strategic Technology Solutions (STS) on projects and system requirements.
- Work with Forestry Core Businesses to determine information system needs and uses.

### Major accomplishments for July 1, 2016 – June 30, 2017

- Procured 101 smartphones for division personnel to better meet wildfire suppression and prevention application needs.
- Changed credit card vendor from NIC to FIS for Nursery Online Seedling sales.
- Conducted Citrix and server study that led to bandwidth increase (100Mbps to 500Mbps) to TDF office in Nashville.
- Moved IQS & burn permit server and files to shared server environment.
- Updated information system databases including forester contacts, landowner assistance, and nursery.
- Deployed 34 replacement laptops.
- Networked e-Isuite Database statewide for wildfire tracking.
- Automated GIS files update to District Offices for periodic file updates.

### Radio Communications

#### Objectives for Year

- Install digital microwave in West TN and Highland Rim.
- Install IP adapters on Quantar Repeaters.
- Evaluate radio codeplug frequency programming.

#### Major accomplishments for July 1, 2016 – June 30, 2017

- Installed 30+ truck radios.
- Installed generator at Sharp's Ridge.
- Moved base station radios at 3 TDF offices.
- Fixed grounding issues at Lexington Office.
- Installed culverts and gravel at Frozenhead Radio Site.
- Connected IP adapters to 20+ tower radio repeaters to monitor and update through the microwave system.
- Installed and activated new 4RF digital microwave in West TN.
- Installed and activated new 4RF digital microwave in remaining northern half of Highland Rim.
- Ordered the last 6 digital microwave paths needed to complete Forestry's statewide conversion.

### Unit Mission

***The mission of the Forest Data and Technology Unit is to facilitate the development and utilization of technology to meet the needs of the Division's core businesses. The Forest Data and Technology Unit has the responsibility to implement state-of-the-art technology, manage and compile data, and administer the Division's Forest Inventory and Analysis and Geographic Information Systems programs.***





## Forestry Communications & Outreach

The Forestry Communication and Outreach Unit strives to inform and educate audiences by providing them a better understanding of forestry as a discipline and the role that the Division plays in maintaining a healthy and productive forest resource. A successful effort leads to an enhanced appreciation for the state's forest resources, which, in turn, leads to an informed citizenry who recognize the benefits of conserving, protecting and enhancing the resource. As a result, our society receives a stream of essential ecological benefits. The Unit also helps foster communication within the Division, a critical function of a healthy organization.

### Objectives for Year

- Raise awareness about important and timely forest resource issues.
- Educate our youth on the importance of trees and forests in our rural lands and within our communities.

### Major accomplishments for July 1, 2016 – June 30, 2017

- Held 3,132 educational outreach activities reaching 88,767 children and adults statewide.
- Facilitated the 68th annual Forestry Camp for 59 Future Farmers of America high school students.
- Conducted tree trail conservation education programs at the Tennessee Governor's Residence at the request of the First Lady's office.
- Facilitated Tennessee Governor's Residence Arboretum certification. A 100% tree inventory was tallied to determine a total of 177 individual trees representing 27 families and 63 species. This number of species qualified the residence as a Level II Arboretum as certified through the Tennessee Urban Forestry Council (see picture).
- Produced 13 news releases pertaining to relevant topics including forest pests, wildfire danger, burn permit requirements, employee awards, tree planting, and urban forestry.
- Gave multiple radio and television interviews addressing Division programs and topical issues.
- Promoted Division services and outreach campaigns across multiple media outlets. This included advertising campaigns for wildfire prevention, forest health, Tennessee Wood Products, and tree seedlings.
- Maintained the fire prevention website [BurnSafeTN.org](http://BurnSafeTN.org). The site had 617,572 page views from 311,661 visits.
- Maintained the forest health website [ProtectTNForests.org](http://ProtectTNForests.org). The site had 11,594 page views from 7,116 visits.
- Maintained the Division's YouTube channel. Video views totaled 17,111.
- Posted status updates related to forestry on the Department's Facebook and Twitter accounts.
- Managed Project Learning Tree Program, conducted workshops, trained facilitators and participated in TN Environmental Literacy Team.

### Unit Mission

*The mission of the Forestry Communications & Outreach Unit is to communicate clearly and accurately to Tennessee's residents forestry information necessary to accomplish the Division's mission, and to optimize in-house communications.*



## Administration

Spread across the state and administered from four district offices and one reforestation office, more than 306 employees of the Department of Agriculture's Forestry Division have responsibilities in nine separate programs. Effective planning, priority setting, and communication within the Division are crucial to organizational effectiveness. Assistant State Foresters and the Budget and Planning Unit Leader work with staff to refine systems that improve customer services and operational efficiencies.

### Objectives for Year

- Manage federal grants.
- Maintain databases on employees, facilities, vehicles, and equipment.
- Plan and allocate budget reports.
- Maintain TDF partnerships.

### Major accomplishments for July 1, 2016 – June 30, 2017

- Wrote specs for replacing dozers and transport trucks.
- Assembled costs for fall fires.
- Modified standards for Work Capacity Test.
- Purchased smartphones for technicians to improve fire line capabilities.
- Reduced the number of "buy back" vehicles in our fleet.
- Employed change management consultant to teach TDF administrators how to effectively manage an ever-changing work environment.

### Forest Legacy

*Mission: Protect environmentally important, private forestlands threatened with conversion to non-forest uses.*

The Forest Legacy Program identifies and protects environmentally important private forestlands that are threatened by conversion to non-forest uses. Program emphasis is to maintain well-managed, working forests on the landscape.

### Objectives for Year

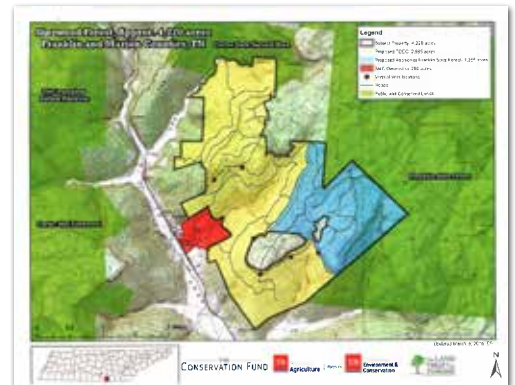
- Close on Sherwood Forest in Franklin and Marion Counties.
- Secure funding for Karst Forest at Grassy Cove in Cumberland County.

### Major accomplishments for July 1, 2016 – June 30, 2017

- Closed on the Sherwood Forest property in Franklin and Marion Counties (see inset). This was a project in collaboration with The Conservation Fund, USFWS, Open Space Institute (OSI) and TDEC. This was a 4,257 acre purchase with approximately 1,200 going to Franklin State Forest and the remainder to TDEC. Total project cost was \$5.1 million with Forest Legacy providing \$2.9 million.
- Received Forest Legacy funding for the Karst Forest at Grassy Cove project in Cumberland County. This 1,000 acre project will become part of the Cumberland Trail. The total project cost is \$1.9 million with Forest Legacy providing \$1.35 million with the remainder being funded by OSI.

### Unit Mission

***The mission of the Administration Unit is to assist the State Forester in increasing the effectiveness of management, the quality of customer services, the efficiency of operations, and the cost effectiveness of Division programs.***



The Sherwood Forest Project will protect nearly 4,300 acres of critically valuable forestland in the South Cumberland region of Tennessee. The region is one of the most biologically important areas for both aquatic and terrestrial wildlife habitats in the southeast U.S. The property contains 30% of the world's population of painted disc snails, a federally threatened species. The property also contains a federally listed plant species and adjoins over 20,000 acres of protected forestland, including a state forest and two state natural areas.

Acquisition of the property by the State will ensure that sustainable forest management practices are expanded. Failure to protect the property would have resulted in the landowner selling for residential development as outlined in the 200-lot subdivision plan.

### ***Forestry Commission Duties and Functions***

The Tennessee Forestry Commission was established by the legislature under T.C.A. 11-4-201 to:

1. Nominate candidates for State Forester.
2. Review, approve and submit the annual budget of the Forestry Division to the Commissioner of Agriculture.
3. Make an annual report to the Governor, Commissioner of the Department of Agriculture and the Senate Energy, Agriculture, & Natural Resources Committee and the House Agriculture & Natural Resources Committee.
4. Recommend to the General Assembly legislation to protect, conserve and develop the forest resources of the state.
5. Approve the Division's comprehensive long-range plan for the state's forest resources.
6. Establish state forestry policies that will enable the Division to manage its programs.
7. Include in budget recommendations those goals and objectives necessary to implement state forestry policies.

### **The State of Tennessee policy of non-discrimination**

Pursuant to the State of Tennessee's policy of non-discrimination, the Tennessee Department of Agriculture does not discriminate on the basis of race, sex, religion, color, national or ethnic origin, age, disability or military service in its policies or in the admission or access to treatment or employment in its programs, services, or activities.

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