



Department of  
**Agriculture**

| Forestry

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# Tennessee Forest Action Plan

## 2011-2015

### Five-Year Review

November 2015



# Implementation Highlights

Since the development and implementation of Tennessee's Forest Action Plan in 2010, the Tennessee Department of Agriculture Division of Forestry (TDF) and our partners have addressed strategies and implemented new actions as well as continued ongoing programs in support of the plan. As a result, all TDF activities have included targeted actions to strengthen our partnerships. Highlights are listed by State and Private Forestry's National Priorities and Objectives below.

*Partner organizations consulted the Action Plan as they developed their own plan.*

Tennessee's Forest Action Plan identified 35 issues that affect sustainability of the services and benefits we expect from Tennessee's forests. Strategies were then developed to address those issues, and goals were established as targets for the strategies. In total, the Plan contains 53 strategies, all directed toward the 35 established goals. The issues and goals fell into seven general categories: Forest Health, Public Benefits, Private Lands, Urban Forestry, Forest Industry, Education and Outreach, and Wildlife.

Most of the activities fell in the Plan's category of Public Benefits, and in particular with Ecosystem Services and Stream Buffer issues. The Forest Health and Private Lands categories also contained some of the more frequently used strategies. It is important to note that all 53 of the plan's strategies have been implemented to some degree. In total, the implemented strategies are positively impacting all 35 issues identified in the Plan through substantive progress towards the respective targeted goals.

Tennessee's FAP emphasizes the role forested watersheds play in conserving, protecting, and enhancing public use water supplies and in partnering with like-minded organizations. One example of this dual focus is the Tennessee Hemlock Conservation Partnership whose focus is to manage hemlock woolly adelgid in riparian hemlock forests throughout middle and east Tennessee.

We discovered that most partner organizations had consulted the Action Plan as they developed their own organization's strategic plan or annual work plan. We also found that several of the strategies were already part of the organizations' work plans prior to receiving the Forest Action Plan. However, several organizations had adopted one or more of the Plan's strategies as new emphasis in their plans. In a few situations the organizations formed partnerships to implement particular strategies.

The Tennessee Forest Action Plan has been an effective tool in giving focus and coordination to forestry activities within the Division and its partners in Tennessee. *We are certain that the three national priorities and eleven objectives have been adequately addressed in our current Action Plan and require no amendments to continue to guide us forward.*

## **1. Conserve Working Forest Landscapes**

### **1.1. Identify and conserve high priority forest ecosystems and landscapes**

The core philosophy of Tennessee's Forest Action Plan was to recognize that conserving working forests is critical to a sustainable economy and a healthy citizenry. By accentuating the values that forests produce for their owners and for society, landowners and stakeholders are more likely to conserve their forests. Therefore, forest owners (public, private or corporate) must have access to information, programs and professionals that help them realize value. The team recognized that all forests have value yet some are especially important.

*Conserving working forests is critical to a sustainable economy and a healthy citizenry.*

From Tennessee Forest Action Plan "...The forest resource benefits, along with the most serious threats and risks to the forest resource, were identified with input from many natural resource professionals working for several different organizations in addition to input from the public. TDF then used spatial analysis to determine locations where threats and risks to the forest resource were most prevalent. The results of the analysis were displayed on the maps.... These areas are the priority areas of the state, and should provide integrated program delivery."

Our action plan identifies priority ecosystems and landscapes, especially those that are threatened by urbanization and parcelization but the plan mostly emphasizes improving water quality by targeting resources that protect watersheds at a local scale.

A survey of Tennessee Action Plan implementation found that the state's various land trust organizations are consulting the Plan's Forest Legacy eligibility layer to identify watersheds to target for conservation easements and protection of unique forested landscapes. These same organizations are seeking favorable tax treatment for forest landowners who commit to keeping their forest as forest, providing numerous off-site benefits to the public.

The Tennessee Forest Legacy Program provides a safety net to protect environmentally significant resources in Tennessee from conversion to non-forestry uses by purchasing conservation easements or title to threatened places. During the 2011-2015 period, we closed on the North Cumberland Conservation area/ Emory River Forest Legacy tract of 5,247 acres that protects reintroduced elk herds, a significant portion of cerulean warbler habitat, Indiana bat habitat and the headwaters of the Emory River, a watershed that supplies water for more than 30,000 Tennesseans. We also closed on the Fiery Gizzard Conservation Easement on 3,282 acres that helps protect the Fiery Gizzard Trail which was called one of the top 25 hiking trails in the United States by Backpacker magazine. Other Legacy projects during the review period included securing conservation easement on Carter Mountain Working Forest-4,000 acres, Sherwood Forest fee Purchase- 4,315 acres, Devil's Racetrack -1,928 acres, and Grassy Cove - 1,000 acres.



**Emory River Forest Legacy Tract**

State Forests are managed for multiple uses by TDF and are public demonstrations of working forests. During this review period Plan 2020: Harvest Plan for Sustainable State Forests was finalized and published, 39 compartment plans (~1,000 acres each) have been approved. Plans included regenerating 105 stands that cover 5,433 acres with a goal of maintaining healthy forests. Managing age class distribution and species composition is facilitated by utilizing science based forest stand regeneration and thinning practices. During the compartment planning process unique areas are identified and are coded with the appropriate management practices to be protected and/ or restored. Also during the compartment plan process, Element of Record (EOR) files are consulted to look for any documented rare or endangered species. If any are found, appropriate action and management is planned. Compartment plans are sent for review to other agencies, mainly State Parks and Tennessee Wildlife resources Agency (TWRA), who work simultaneously with or adjacent to state forest property.


State forests earned FSC re-certification (2002 – 2007) then chose to let the certification expire. TDF staff has been actively researching the appropriate certification organization that best fits with management goals of TDF and one that can be used as an example for private

landowners. We are currently reviewing Sustainable Forestry Initiative (SFI) and American Tree Farm.

Land acquisitions to State Forest properties included 101 acres from Sequatchie LLC to Bledsoe State Forest.

### 1.2. Actively and sustainably manage forests

Almost everything the Division of Forestry and its partners do relates to sustainably managing forests in Tennessee. Reported Landowner Assistance accomplishments over the five year period include conducting 13,300 activities that touched 1.35 million people impacting some 1.2 million acres. In addition to maintaining and improving our core programs we established some new initiatives that included developing and distributing a Plan Writer for improved management plans, increasing partnerships with consulting foresters, and increasing efforts to support vendors capable of helping landowners implement forestry practices. One simple action taken was distributing forest estate planning guides to landowners and providing introductory estate planning training for foresters.



*Conducted 13,300 activities that touched 1.35 million people impacting some 1.2 million acres.*

Forest Certification training sessions were held to educate non-industrial private landowners, corporate landowners, state and federal agency personnel, natural resource consulting professionals and non-governmental organizations on the various aspects and requirements for verifiable certification. Global market demands continue to drive product certification, however, because of their independent nature; southern forest owners have shown a low interest in forest certification. Participants included representatives from the major certification systems as well as a neutral moderator. Additionally we partnered to facilitate Tennessee's American Tree Farm 3rd Party audit that verified program participants met the program requirements and are sustainably managing their forests.

During the review period, ten (10) Tennessee Healthy Hardwoods field days were hosted for some 975 forest landowners. Topics covered include: income opportunities, artificial hardwood regeneration, importance of forested watersheds, forest health and timber sale administration. One legislative tour was conducted. Response to these programs was exceptional with many landowners expressing great thanks for the information and connections.

## 2. Protect Forests from Harm

### 2.1. Restore fire-adapted lands and reduce risk of wildfire impacts

TDF promotes a broad approach to community protection from wildfire, which is called Fire Adapted Communities (FAC). FAC encompass many facets of community wildfire protection, while taking into account the need for restoring or adapting certain landscapes to wildfire and prescribed fire. One part of the Tennessee FAC approach is the FIREWISE program, which educates community members to wildfire hazards.

*Spread of a wildfire was stopped when it reached hazard mitigated homes.*

To promote action within the community to protect itself from wildfire is the Community Wildfire Protection Plan (CWPP). The CWPP becomes the guide for the community to undertake projects to mitigate its wildfire hazards. These projects may be eligible for grant support from the TDF and Resource Conservation and Development Council partnership with funding from the USDA Forest Service.

This approach has demonstrated that it can successfully protect communities. In at least one instance, in the Shagbark Community of Sevier County, the spread of a wildfire was stopped when it reached hazard mitigated homes.

A number of wildfire prevention projects are being done. The Tennessee Wildfire Cooperative sub-committee for Wildfire Prevention is made up of federal and state land management agencies. Its focus is to promote wildfire prevention in public venues such as sporting events.

Another successful wildfire prevention endeavor is the use of mass media by TDF. A dozen outlets of TV and radio are used to promote burn permits, reduce arson fires, and other fire related messages across the state. As a result the number of wildfires decreased by fifty percent over the past decade.

TDF has also promoted the use of fire in Tennessee. The Division helped create the Tennessee Prescribed Fire Council. The Council promotes and protects the appropriate use of fire. A product of this effort is the Tennessee Prescribed Burn Act which provides liability protection for individuals who are Tennessee Certified Prescribed Burn Managers. To become a Burn Manager one must successfully complete the twenty hour training course. Since its inception over two hundred people have become Tennessee Certified Prescribed Burn Managers.

The Tennessee Prescribed Fire Council will be involved in promoting the use of prescribed fire in the establishment of shortleaf pine and other fire dependent species.

TDF also established a new on-line burn permit system giving permit writers ability to issue burn permits statewide. The new system was able to handle issuing 15,000 permits on a single day.

Vacant radio communications positions were filled and radio microwave system upgraded from analog to digital components to provide consistent radio traffic operations.

## 2.2. Identify, manage, and reduce threats to forest and ecosystem health

To address the needs of the public for forest health & threat information, we established and promoted ProtectTNforests.org. This website seeks to minimize resource losses from forest insects and diseases by

informing and educating its targeted audience – homeowners and forest landowners – about forest pests and what they can do to help protect Tennessee’s trees and forests. Partners in forest health also created and held its first Tennessee Forest Health Council. This group consists of representatives from all agencies and organizations involved in promoting and improving the health of our forests. Their goals are to gather and disseminate accurate and timely forest health information, advise state and federal agencies, NGOs, and others and to promote consistent outreach to the public.



In 2011 foresters identified, delimited and developed strategies to manage the Thousand Cankers Disease (TCD Action Plan) and Emerald Ash Borer. As a result we initiated our ‘Don’t Move Firewood’ campaign. Additionally, we implemented the Hemlock Woolly Adelgid Strategic and Management Plan in partnership with the Nature Conservancy and other non-government organizations such as the Tennessee Exotic Pest Plant Council, and conducted southern pine beetle population surveys. Efforts to reduce threats from gypsy moth included; incorporating newer maps, establishing immediate trap response system feedback, egg mass surveys and aerial treatment of gypsy moth infestations.

A major accomplishment during this review time was the development & implementation of a more efficient, timely, and accurate monthly forest health occurrence reporting system and incorporation of the use of current technology such as Forest Disturbance Mappers and real

time satellite imagery. These actions led to launching a public reporting system through [www.protecttnforests.org](http://www.protecttnforests.org) and EDD Maps.

Additional actions that reduced threats include:

- Developed & implemented the Rapid Forest Health Assessment (RaFHA) report writer, a quick and informative report geared to inform landowners of the condition and threats to their forests much quicker than time waiting on a more comprehensive Stewardship plan.
- Conducted frequent public outreach events to create awareness of current forest health issues & share information on appropriate management strategies.
- Facilitated the detection and removal of non-native invasive plants in several parks and natural areas around Metro Nashville.
- Partnered with the NRCS and the USFS on the Two Chiefs Initiative to address water quality and forest health issues in southeastern Tennessee.
- Developed an on-line burn permit system to quickly assist landowners in getting a burn permit and inform them of weather conditions.
- Launched Healthy Trees, Healthy Tennessee in partnership with the Nature Conservancy; an initiative that aims to improve the health of city trees by engaging people in early detection, tree health monitoring, tree planting and stewardship.
- Piloted online firewood vendor directory – FirewoodScout.org – in addition to promotion of “Don’t Move Firewood” messaging; the online directory, developed by the Nature Conservancy and the Southeast Michigan RC&D Council, is a proactive effort to connect firewood consumers with local and/or certified heat-treated firewood producers.



### **3. Enhance Public Benefits from Trees and Forests**

#### **3.1. Protect and enhance water quality and quantity**

Emphasis was placed on the importance of streamside management zones during TDF educational programs within the last five years. Water quality BMP education was made available to all TDF personnel, and particularly new hires. This resulted in greater confidence in dealing with water quality issues and increased participation. One hundred six (106) BMP education classes were facilitated for 2,201 loggers, foresters and others during the review period. Additionally TDF assisted TDEC in 4 Notices of Violation and 1 Director's Order to mitigate stream pollution due to improper logging. TDF completed the next round of the BMP implementation survey.

Tennessee Healthy Hardwoods landowner field days provided training to landowners on the value of BMP's and protecting streamsides. TDF's water quality forester and staff attended various storm water conferences in order to network with personnel from those agencies, and got acquainted with techniques involved in that work. Our agency sought the aid of the Tennessee Storm Water Association in order to develop water resource standards for urban forestry and to better provide outreach materials for Municipal Separate Storm Sewer Systems (MS4s).

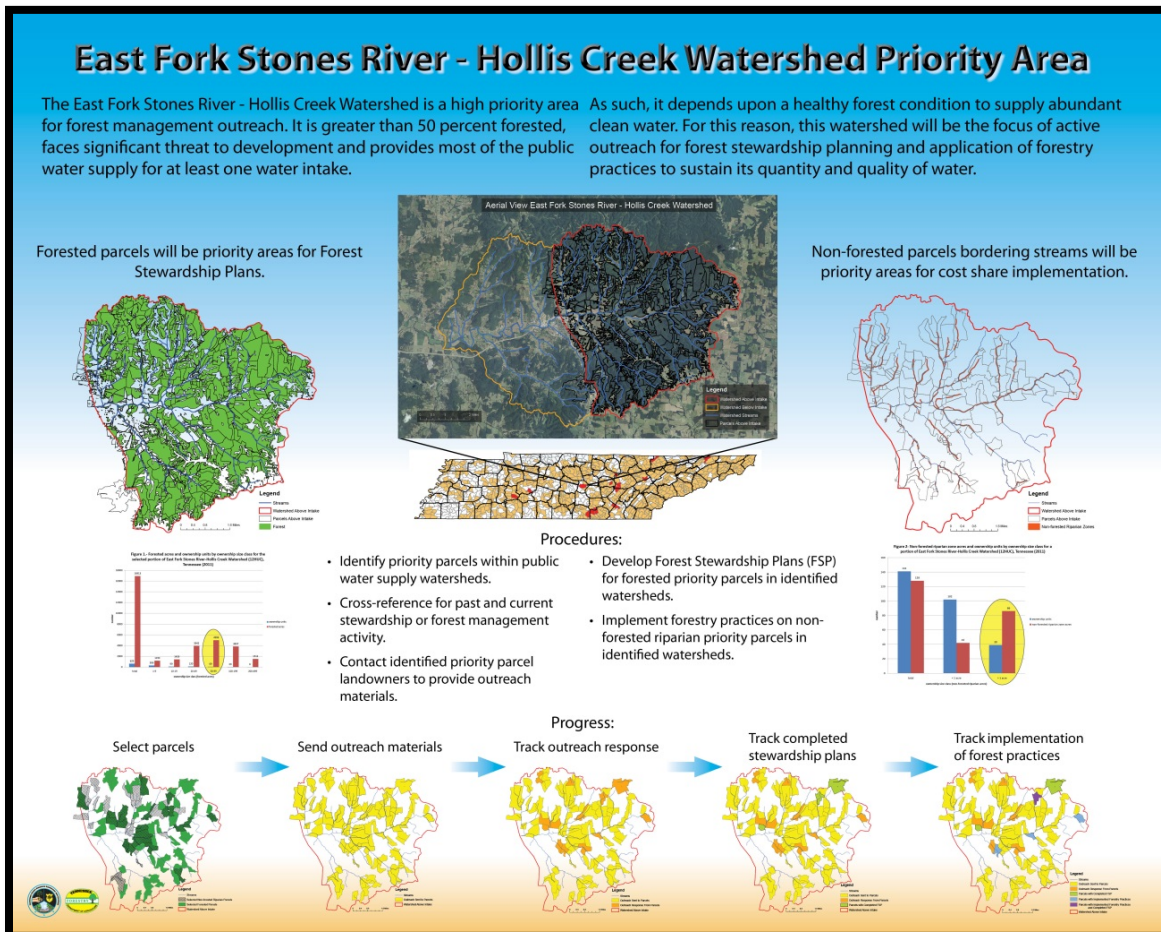
The Division implemented a 'priority watershed' initiative, where good forest management and buffers were used to protect watersheds that contain public water supply intakes, especially by reaching out to landowners owning lands in those specific forested watersheds. NRCS partnered in this initiative by providing cost share for forest management practices and for installing the buffers.

The goal of this project seeks to conserve, protect, and enhance priority public use water supplies through active forest management planning and implementation of sound forestry practices on private lands. Following is a description of how priority watersheds and landowners were identified to allow prioritization of limited technical and financial resources.

*'Priority watershed' initiative - where good forest management and buffers were used to protect watersheds that contain public water supply intakes.*

Fourteen priority watersheds were identified at the 12 hydrological unit code (HUC) level. The resolution offered by 12 HUC watersheds (25,000 to 50,000 acres) helped clarify planning, mapping, communicating, and implementing project priorities and activities. Characteristics of priority watersheds identified included: 1) vegetation exceeding 50% forested, 2) significant threat to development, and 3) provide public water supply with at least one water intake.

Direct mailings, individual personal communications, participant/partner meetings, and other strategies were used to encourage priority landowners to participate in activities that maintain forests in priority watersheds. Many of these landowners were made aware of the role their forestland plays in protecting local water supply and received information or attended a meeting on the services/programs available through natural resource management agencies/organizations that would help them “keep forests as forests, plant and/ or protect trees along creeks, and implement forestry best management practices when harvesting timber”.

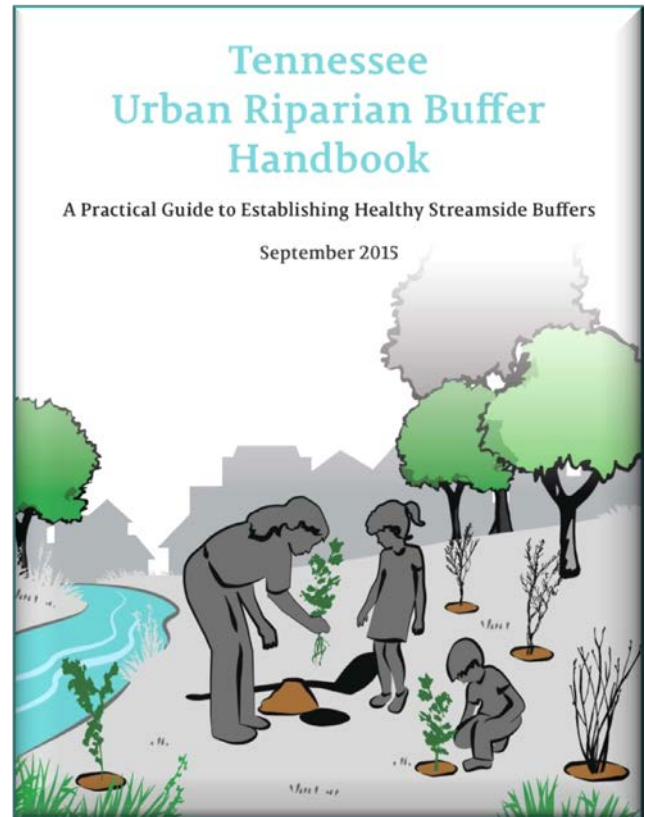


**Priority Watershed Initiative Example**

TDF partnered with Nashville metro government and local non-profit organizations to implement a “Clean Water from Urban Forests” project that planted native trees on public and private properties along streams in 8 priority watersheds in Davidson County. This successful project involved 2,800 volunteers, who spent 7,700 hours in planting 28,000 trees on 30,400 feet of buffer. The Tennessee Urban Riparian Buffer Handbook was also created as a guidebook for other municipalities to follow.

A separate riparian forest buffer initiative is being directed toward impaired streams, and is being led by NRCS. Tennessee Wildlife Resources Agency (TWRA), Tennessee Department of Environment and Conservation (TDEC), and TDF are partnering with NRCS in this initiative. In this program, NRCS planted trees on 30,004 acres under the Wetlands Restoration Program from 2010-2014.

Various land trust organizations are consulting the Tennessee Forest Action Plan’s Forest Legacy eligibility layer to identify watersheds to target for conservation easements and protection of unique forested landscapes.



### **3.2. Improve air quality and conserve energy**

Air quality and energy conservation issues were addressed within our Urban Forestry program. Besides the ongoing efforts to increase Tree City and Tree Line outreach, our partners have been focused on surveying and improving urban canopy and increasing the understanding that the urban forests play in mitigation of pollution and storm water runoff. The Tree Line program requires utilities to include tree related energy efficiency information to their communities. TDF surveyed canopy cover in Memphis, the Tri-State area, and eleven other cities. An urban partnership between foresters and city planners has begun correlating increased flooding with reduced canopy cover in certain sectors of one city.

### 3.3. Assist communities in planning for and reducing forest health risks

Partnering with Tennessee communities increased during the review period in the form of community wildfire prevention planning, forest health quarantine meetings and canopy analyses for Livingston, Tullahoma, Johnson City, Lakeland, Pigeon Forge, Bristol, Brentwood, Martin, Parsons, Memphis and Knoxville. Increased efforts in working with arborists and utility companies resulted in Tennessee having the highest number of utilities being recognized as Tree Line USA. The Tree Campus USA program in Tennessee certified six campuses across the state. Urban Foresters also contributed to University of Tennessee brochures on tree care, selection, values, and maintenance through grants and participated in community seminars and educational booths at community functions across the state. Urban foresters utilized the Webster Urban Forest Index Form in several local communities to identify fragmented urban forests and Wildland Urban Interface issues.

State funded Tennessee Agricultural Enhancement Program (TAEP) cost sharing for urban plantings was initiated during this review period to facilitate support of community tree plantings, which is critical to increasing citizen understanding of the value of trees and mitigating forest health risks.

TDF increased the level of advertising and conversations about our tree nursery's commitment to grow seedlings tailored for survival and fast growth of Tennessee's landscape.

### 3.4. Maintain and enhance the economic benefits and values of trees and forests

The Tennessee Department of Agriculture established an Agriculture/Forestry Task Force to address forest industry marketing opportunities and initiated a "TN Wood Products" branding initiative. The goal of the TN Wood Products brand is to increase visibility and enhance marketing opportunities for our wood products industry. A primary benefit is to connect consumers to Tennessee producers through the use of the logo that signifies common values and attributes of Tennessee's abundant, sustainable and quality forest resources, the talented and skilled human resources that service the industry, and the wide diversity of products produced and used in our everyday lives.

*Developed regional forest resource analysis profiles to promote business opportunities in Tennessee.*

The division assisted the Hardwood States Export Group Trade Show, promoted the BCAP program, published the Tennessee Forest Products Bulletin, and sent delegates to local

sawmills to promote state forest wood products. During this survey period, we completed 2 rounds of Tennessee Forest Industry Survey to identify the users of forest products produced in Tennessee.

Additionally we developed regional forest resource analysis profiles to support the Department of Economic and Community Development's programs to promote business opportunities in Tennessee. TDF partnered to analyze the impact of closing International Paper's Courtland, Alabama mill on the forest landowners and loggers in the 13 county region affected. A feasibility study was developed to investigate potential sites for a mill in south-central Tennessee to utilize pine sawtimber resources.

TDF professionals acted as liaison between State Tree Farm Committee and SFI Committee to determine the amount of support, especially monetary, for pursuing Tree Farm Certification. We also have a project to educate forest landowners about certification being led by UT Extension Forester David Mercker. Division personnel developed many of the Tree Farm Plans and inspections across the State. The Tree Farm State Committee recently voted to choose the certified Tree Farm option so that all Tree Farms in the State will be third party certified.

### **3.5. Protect, conserve, and enhance wildlife and fish habitat**

During 2014 and then again in 2015 forestry leaders from TDF held two day field trip meeting with NRCS and TWRA biologists to better understand conservation practices from the differing viewpoints and identify opportunities to enhance soil and wildlife conservation practices. These 'Saws and Claws' meetings were a great incubator for cooperative ideas. During the review period the Kentucky-Tennessee SAF hosted a conference on bat habitat and management to understand and conserve the host of species bats represent.

### **3.6. Connect people to trees and forests, and engage them in environmental stewardship activities**

TDF partnered with Nashville metro government and local non-profit organizations to implement a "Clean Water from Urban Forests" project that planted native trees on public and private properties along streams in seven watersheds in Davidson County. This successful project involved 2,800 volunteers, who spent 7,700 hours in planting 28,000 trees on 30,400 feet of buffer. The Tennessee Urban Riparian Buffer Handbook was also created as a guidebook for other municipalities to follow.

*"Play, Plant, Preserve."  
connects people to trees  
and music to engage  
them in environmental  
stewardship.*

One creative connection that was implemented during our review period was the establishment of a 5k Urban Runoff race in association with a Water Quality festival to engage people with environmental benefits of forestry.

“Play, Plant, Preserve.” tree planning cost share program is an initiative aimed at ensuring the hardwood resource used for making drumsticks and mallets in ProMark’s Prospect, TN sawmill is sustainable. The goal of the ProMark funded program is to provide an avenue for planting five trees for every one that ProMark uses on an annual basis. The newly established program connects people to trees and music to engage them in environmental stewardship.



### **3.7. Manage trees and forests to mitigate and adapt to global climate change**

During the review period TDF and partners co-hosted the Central States Forest Soils Workshop at Natchez Trace State Forest and co-hosted two Global Climate Change PLT workshops for educators. Additionally we established and expanded seed production orchards that will produce seed adapted to Tennessee’s climate and geography.

## **Summary**

Tennessee Forest Action Plan has been an effective tool in giving focus and coordination to forestry activities by the Division and its partners in Tennessee.

The Plan was developed in collaboration with partner organizations that also influenced the development of their own strategic and work plans. Follow up queries have determined that most partner organizations have implemented some strategies in the Plan and many organizations have adopted one or more strategies as a new emphasis in their plans. More importantly, new partnerships have been formed to implement particular strategies.

# Provide a brief summary of implementation challenges discovered over the past five years

The Tennessee Forest Action Plan implementation challenges include a sobering awareness that several of our own staff and those of our partners have never read nor have they used the document. While we struggle to partner and be aware of the central issues and strategies outlined, we tend to manage our programs in silos. Another challenge we have rediscovered is that forest protection is primary to and preparatory for forest management or enhancement. Protecting our forests from threats is the most important job of governmental agencies and partners.

*Protecting our forests from threats is the most important job of governmental agencies and partners.*

At times, vacancies in key positions prohibited work planning and implementation. Forest landowners requesting information exceeds the resources we have available to develop management and harvesting plans. Adequately planning for public events without adequate staff to assist in logistics was an implementation challenge revealed. We have also recognized that existing technology gaps and inadequate information systems slow processes and limit success. Lack of adequate professional development training for personnel to keep abreast of current issues and relevant technology is a challenge.

Additionally we recognize limitations with outreach technology that includes a consistent communication portal that reaches all interested parties effectively.

Water quality training for urban foresters, and landowner acceptance of the importance of well-managed riparian areas are also challenges that we discovered.

# Identify the implementation focus for the next five years

Focus for TDF and many of our Forest Action Plan partners during the next five years generally leans toward increasing technology that helps us understand and manage shifting environmental stresses and developing or expanding sustainable markets that maintain or improve the health of our forest resources and support our forest landowners and the public. We also expect to focus on communication strategies that increase recognition of ecosystem values that forests and/or trees produce. Target audiences for this increased awareness include landowners, lawmakers and urban citizens. One major goal is to improve continual information exchange to both internal and external parties via traditional and social media networks. We recognize that our employees need ongoing training and improved connectivity, in some cases, to meet these challenges.

*Improve continual information exchange to both internal and external parties via traditional and social media networks.*

## ***Internal focus:***

1. Collect, analyze, and distribute more forest inventory and health data to be used in forest industry recruitment, planning and operations
2. Integrate forest health components into all aspects of forestry
3. Continue to treat hemlock woolly adelgid chemically while installing and operating functional predator beetle field (insectaries)??
4. Continue to detect and eradicate the gypsy moth from TN
5. Improve annual training curriculum by incorporating more webinars and self-paced learning opportunities
6. Increase internal technology capacity, knowledge, and skills
7. Develop information to assist landowners make harvesting decisions such as benefits consulting foresters can provide, stand regeneration and online mill location and market information.
8. Ensure that our current levels of program training, and funding are maintained and that program cross-training is increased
9. Expand and/or enhance channels of communication to better connect messages with our multiple targeted audiences.

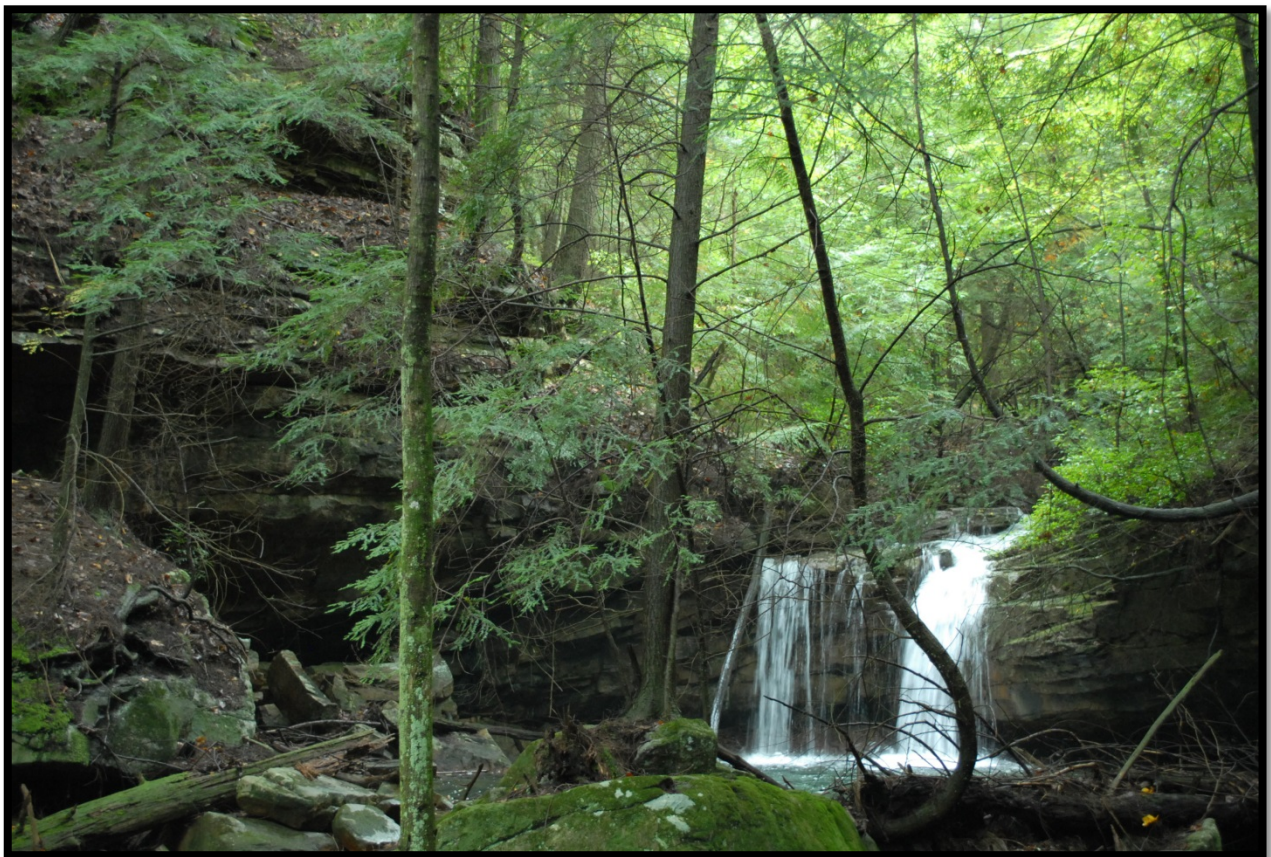


### ***External focus:***

During the next five years we aspire to nurture a culture of managing forest health issues as collectives or groups and engage more partners including RC & D Councils in forest health initiatives.

Additionally we will focus on continuing to improve BMP compliance so that point source and non-point source pollution is minimized, and public awareness is heightened, thereby perpetuating compliance. We would benefit from informing the public of our accomplishments in water quality, and the impact on drinking water, aquatic habitat, upland and riparian habitat, aesthetics, etc. There is an opportunity to show how all of these things can be enhanced while land resources are managed for many multiple objectives.

More emphasis, energy and funding oriented towards developing new and sustaining current forest products will facilitate 'Keeping working forests as forests'.



# Identify data needs or new issues revealed since the FAP was completed (to inform future updates)

Since drafting the Tennessee Forest Action Plan, both Thousand Cankers Disease and Emerald Ash Borer were discovered in our state. The more we attempt to delimit and communicate the significance of these infestations, the more we are aware of the resources necessary to communicate. Increased amounts and types of data are necessary to effectively communicate appropriate messages to targeted audiences. So as we get more data we need more technology to interpret and communicate appropriate information. We have updated our website, public pest reporting portal, mass communication capabilities and have increased partnerships to address forest health issues. We anticipate forest health issues (the management of harmful insects, diseases and exotic invasives) to spearhead our efforts toward sustainable, quality forests in Tennessee for years to come.

*Forest health issues [will] spearhead our efforts toward sustainable, quality forests in Tennessee for years to come.*

The same data, technology and communication spiral exists for our water quality program as well. We have started to use remote sensing techniques to identify harvest sites for selecting sample plots for the BMP implementation survey. This should yield more accurate and unbiased survey results. The use of remote sensing tools requires more recent, high resolution aerial photography. We also need to develop a better database of all currently active loggers statewide. This will allow better estimates of timber removal volumes than presently provided by FIA data on a county scale

Efficiency for both time and accuracy of data can be improved by having data recorders and proper recording and volumetric software. Data recorders and/ or volumetric software will require training of personnel to use them.

Lidar data will soon be available for the entire State. Combined with extraction of canopy data from aerial photographs, this will allow estimates of timber volumes to be derived for forest landowners.

# Conduct informal “check-in” with stakeholders regarding plan implementation

On September 30, 2015 the State Forest Stewardship Coordinating Committee was convened to review Tennessee Forest Action Plan accomplishments. Conclusions from the meeting included a collective desire to continue this dialogue, an understanding that markets need to be strengthened in order to support healthy forests, and a realization that ‘we need to rethink the way we think’.

Questions the group suggested tackling include:

- What are people thinking when they refer to *forests*?
- What is the external cost impact of losing forestlands?
- What are forest landowners’ primary concerns and understandings?
- What issues are likely to emerge in the next 20-30 years?
- What should be our priorities and options for mitigating invasives?
- What is the level of understanding and support for forest conservation, protection and enhancement by elected officials?