

# Texas Statewide Forest Resource Strategy

A comprehensive strategic plan to address forest-related conditions, trends, threats, and opportunities as identified in Texas A&M Forest Service *September 2008 Texas Statewide Assessment of Forest Resources*

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November 2015 (update of June 2012 edition)

### Produced by

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### Abbreviations Used:

ADCP	Arbor Day Poster Contest
AgriLife	Texas AgriLife Extension Service
AON	Assessment of Need
BMP	Best Management Practices
CCX	Chicago Climate Exchange
CFAA	Cooperative Forestry Assistance Act
CFLA	County Forest Landowners Association
CTCP	Central Texas Conservation Partnership
CWPP	Community Wildfire Protection Plan
DOE	Department of Energy
EOC	Emergency Operations Center
EPA	Environmental Protection Agency
FDD	Fire Department Directory
FEMA	Federal Emergency Management Agency
FEPP	Federal Excess Personal Property
FIA	Forest Inventory Analysis
FLP	Forest Legacy Program
FMAG	Fire Management Assistance Grant
FPM	Forest Pest Management
FPMC	Forest Pest Management Cooperative
FRP	Forest Resource Protection
FSP	Forest Stewardship Program
FTE	Full Time Equivalent
GIS	Geographic Information System
GLO	Texas General Land Office
HARC	Houston Advanced Research Center
ICS	Incident Command System
IMT	Incident Management Team
ISA	International Society of Arboriculture
MOU	Memorandum of Understanding
NADF	National Arbor Day Foundation
NASF	National Association of State Foresters
NFIRS	National Fire Incident Reporting System
NGO	Non-Government Organization
NIMS	National Incident Management System
NIPF	Non Industrial Private Landowner
NPS	National Park Service
NRCE	Natural Resource Conservation Education
NRCS	Natural Resource Conservation Service
NWCG	National Wildfire Coordinating Group
PLT	Project Learning Tree
PMAS	Performance Measurement & Accountability System
PSF	Permanent School Fund
PTAD	Property Tax Assistance Division
RAWS	Remote Automated Weather Station
REIT	Real Estate Investment Trust
RIMT	Regional Incident Management Team

### Acknowledgements & Contributors:

This document was produced with contributions from many program leaders of the Texas A&M Forest Service (TFS). Hughes Simpson led the review and update. Contributors to the Issues and Programs included Brad Barber, Ron Billings, Burl Carraway, Don Galloway, Paul Johnson, Bill Oates, Jim Rooni, and Chris Edgar. In addition to Texas A&M Forest Service leaders, members of the Southern Group of State Foresters (SGSF) and US Forest Service (USFS) R8 provided valuable guidance and suggestions on the development of this Statewide Resource Strategy. Photos provided by Ron Billings and other TFS staff.

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RVFDA	Rural Volunteer Fire Dept. Assistance Program
S&PF	State & Private Forestry
SAF	Society of American Foresters
SAP	Spatial Analysis Project
SFASU	Stephen F. Austin State University
SFLA	Southern Forest Land Assessment
SFMO	State Fire Marshalls Office
SGSF	Southern Group of State Foresters
SMZ	Streamside Management Zone
SPB	Southern Pine Beetle
SRS	Southern Research Station
SSCC	State Stewardship Coordinating Committee
SWFRA	Southern Wildland Fire Risk Assessment
TAES	Texas A&M AgriLife Extension Service
TAMU	Texas A&M University
TAMUS	The Texas A&M University System
TCEQ	Texas Commission on Environmental Quality
TDA	Texas Department of Agriculture
TDEM	Texas Division of Emergency Management
TexFARS	Texas Forest Accomplishment Reporting System
TFA	Texas Forestry Association
TFS	Texas A&M Forest Service
TICC	Texas Interagency Coordination Center
TIFMAS	Texas Intrastate Fire Mutual Aid System
TIMO	Timber Investment Management Organization
TIPPC	Texas Invasive Plant and Pest Council
TISCC	Texas Invasive Species Coordinating Committee
TPWD	Texas Parks & Wildlife Department
TRNN	Texas Regional Response Network
TSSWCB	Texas State Soil & Water Conservation Board
TWAP	Texas Wildlife Action Plan
TWDB	Texas Water Development Board
TWPP	Texas Wildfire Protection Plan
TXFIRS	Texas Fire Incident Reporting System
U&CF	Urban and Community Forestry
UFORE	Urban Forest Effects
USDA	US Department of Agriculture
USFS	US Forest Service
USFWS	US Fish and Wildlife Services
UWI	Urban Wildland Interface
UWISTM	Urban Wildland Interface Stewardship Training Modules
VFA	Volunteer Fire Assistance
VFD	Volunteer Fire Department
WGFTIP	Western Gulf Forest Tree Improvement Program



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## FROM THE STATE FORESTER AND DIRECTOR OF TEXAS A&M FOREST SERVICE



Tom Boggus  
State Forester & Director

The year 2015 marked the 100th anniversary of Texas A&M Forest Service. As we enter the next century of service to Texas, our state looks much different than it did when we started. There are 27 million Texans, and approximately 1,000 more move here every day; Texas is one of the fastest urbanizing states in the nation, and is also in the top three for most natural disasters. This is why every person, every program of this agency is aimed at building the capacity of others. To do this effectively, the agency must lead in a thoughtful, strategic direction. The Texas Statewide Forest Resource Strategy incorporates significant employee and stakeholder input, closely aligns resource allocation with strategic priorities, and supports the vision of the agency's preferred future.

### **Mission Statement**

Texas A&M Forest Service provides statewide leadership to assure the state's trees, forests and related natural resources are protected and sustained for the benefit of all.

### **Vision**

#### ***Conserve***

Texas A&M Forest Service will ensure the state's forests, trees and related natural resources are conserved and provide a sustainable flow of environmental and economic benefits today and for future generations.

#### ***Protect***

Texas A&M Forest Service will be the lead agency for the state for all-hazard responses, including the suppression of wildfires and the management of state disasters.

#### ***Lead***

Texas A&M Forest Service will employ and depend upon a dedicated, well-trained workforce of leaders. We will be recognized as "standard-setters," because many agency employees are selected for key leadership positions in local, state, and national organizations.



## EXECUTIVE SUMMARY

In 2008, the USDA Forest Service (USFS) implemented a “Redesigned” State and Private Forestry Program (S&PF Redesign). It was conceived in response to the combined impacts of increasing pressure on the nation’s forests and decreasing S&PF resources and funds.

Redesign focuses on three national priorities: conserve working forests, protect forests, and enhance benefits from trees and forests. Under S&PF Redesign, each state is required by the Cooperative Forestry Assistance Act (CFAA), as enacted in the 2008 Farm Bill, to analyze its forest conditions and trends and delineate priority rural and urban forest landscapes in a State Assessment.

Based on the State Assessment, a Statewide Forest Resource Strategy, or response plan, is required by each state and will become the foundation for formulating S&PF competitive project proposals and guiding S&PF program direction. These plans are periodically reviewed and updated to ensure issues affecting the forest resources in the state are being adequately addressed.

Texas A&M Forest Service (TFS) completed the final draft of its State Assessment in June 2009. With input from stakeholders, TFS program leaders identified six primary issues for the rural and urban forests of the state. A geospatial analysis was conducted to delineate high priority areas across the Texas landscape where future efforts might be focused for each of the following issues:

1. Population Growth and Urbanization
2. Central Texas Woodlands Conservation
3. Sustainability of Forest Resources in East Texas
4. Water Quality and Quantity
5. Wildfire and Public Safety
6. Urban Forest Sustainability

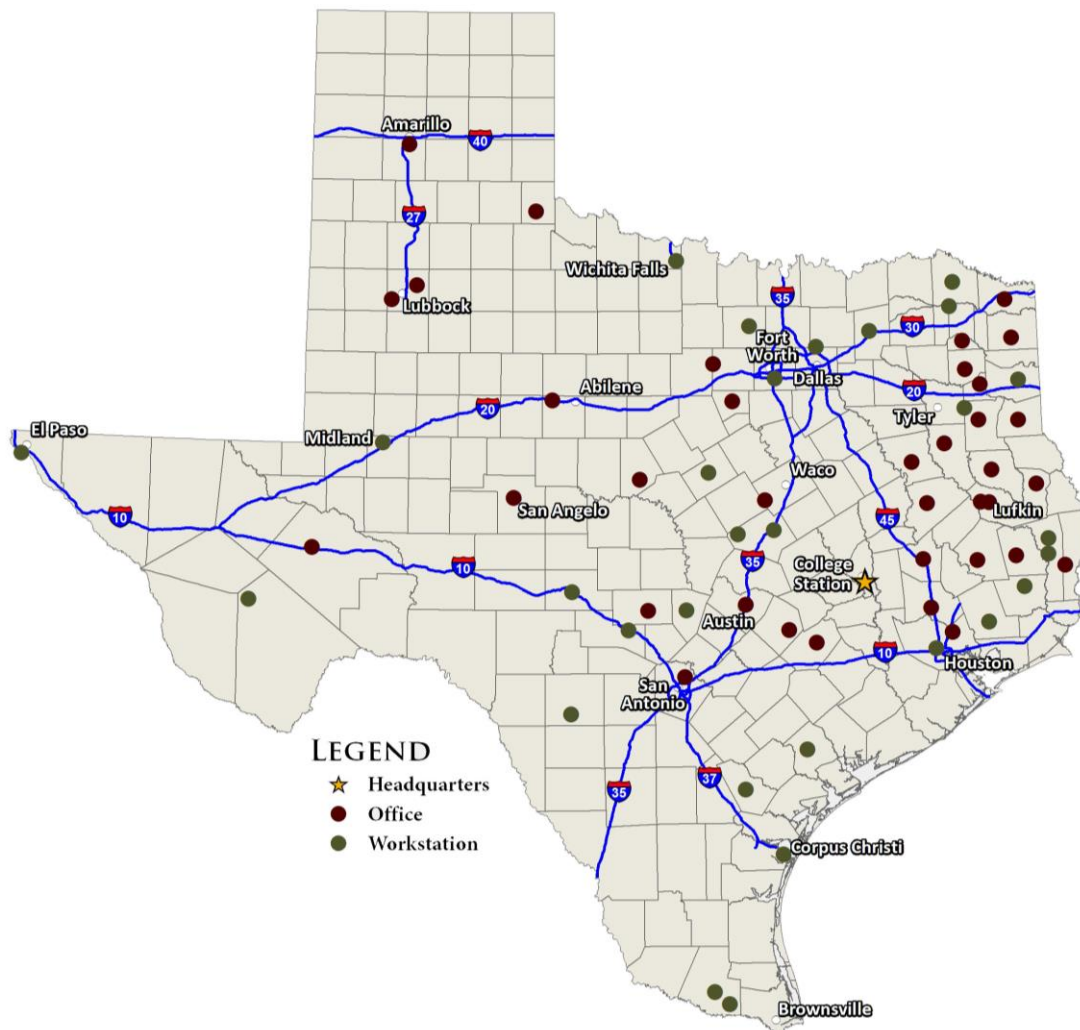
Texas A&M Forest Service’s Statewide Forest Resource Strategy highlights how TFS plans to utilize the S&PF program to address priority issues and areas identified in the Statewide Assessment. The document contains the following elements:

- In response to these issues, the Statewide Forest Resource Strategy has been divided into two sections: Strategic Issues Section and a Programs Section.
- Most of the elements required for the Statewide Resource Strategy by the Farm Bill and USFS Assessment and Strategy national guidance are located in the Strategic Issues Section of this Statewide Forest Resource Strategy document.
- The Programs Section provides a general description of all current TFS programs. More detail is provided for those programs that do not appear individually or specifically in the Issues Section of the document.
- A matrix for the Issue Section and Program Section has been included to demonstrate how the issues and programs tie to national Redesign themes and outcomes.



- Stakeholder and public input was captured three ways:
  1. Presentations at existing stakeholder meetings
  2. Presentations to committees on which TFS employees serve
  3. Web-based public input
- Performance measures in the Issues Section of the document are “outcome” based whereas performance measures in the Program Section are more “activities” based.

Planning for and protecting the forest resources of Texas are multifaceted tasks that are accomplished through coordinated efforts and feedback from representatives of natural resource agencies, organizations, and public and private entities to ensure the successful development and implementation of the Texas Statewide Resource Strategy.







## INTRODUCTION

### **National and Regional Overview of Statewide Forest Resource Strategies**

The purpose of the new approach to USFS State and Private Forestry (S&PF) is to shape and influence use of forest land to optimize benefits from trees and forests for both current and future generations.

The USFS worked closely with the National Association of State Foresters (NASF) to:

- Examine current conditions and trends affecting forest lands
- Review existing S&PF programs to determine how best to address threats to forests
- Develop a strategy for delivering a relevant and meaningful set of S&PF programs and opportunities

The new Redesign approach focuses on three consensus-based S&PF National Priorities:

- Conserve working forest landscapes
- Protect forests from harm
- Enhance public benefits from trees and forests

National and state resource assessments and strategies are used to develop competitive proposals for S&PF funds. To receive federal funding under the S&PF Redesign Program, projects must follow the annual national direction developed by the USFS and directly address one or more of the three National Priorities.

In order to ensure that S&PF resources are being focused on high priority areas with the greatest opportunity to achieve meaningful outcomes, each state, territory, and island works collaboratively with the USFS and other key partners to develop a comprehensive statewide forest resources strategy. The assessment provides a comprehensive analysis of the forest-related conditions, trends, threats, and opportunities in each state. The forest resources strategy is a supplement to the assessment that describes the strategic issues and describes the programs that will be used to address these issues. These plans are periodically reviewed and updated to ensure issues affecting the forest resources in the state are being adequately addressed.

This statewide forest resource strategy was developed on the basis of the state assessments by identifying landscapes and projects where an investment of federal competitive grant funding, called an annual report on use of funds, could most effectively accomplish goals or leverage desired action.

The Southern Group of State Foresters (SGSF) and USFS Southern Region represent 13 southern states and Puerto Rico. More than 5 million private owners control 89 percent of forests in this area. While each state ultimately decides how to approach its own state assessment, members of SGSF elected to collectively create an outline for the state resource strategy document to be used (if desired) by all southern states.



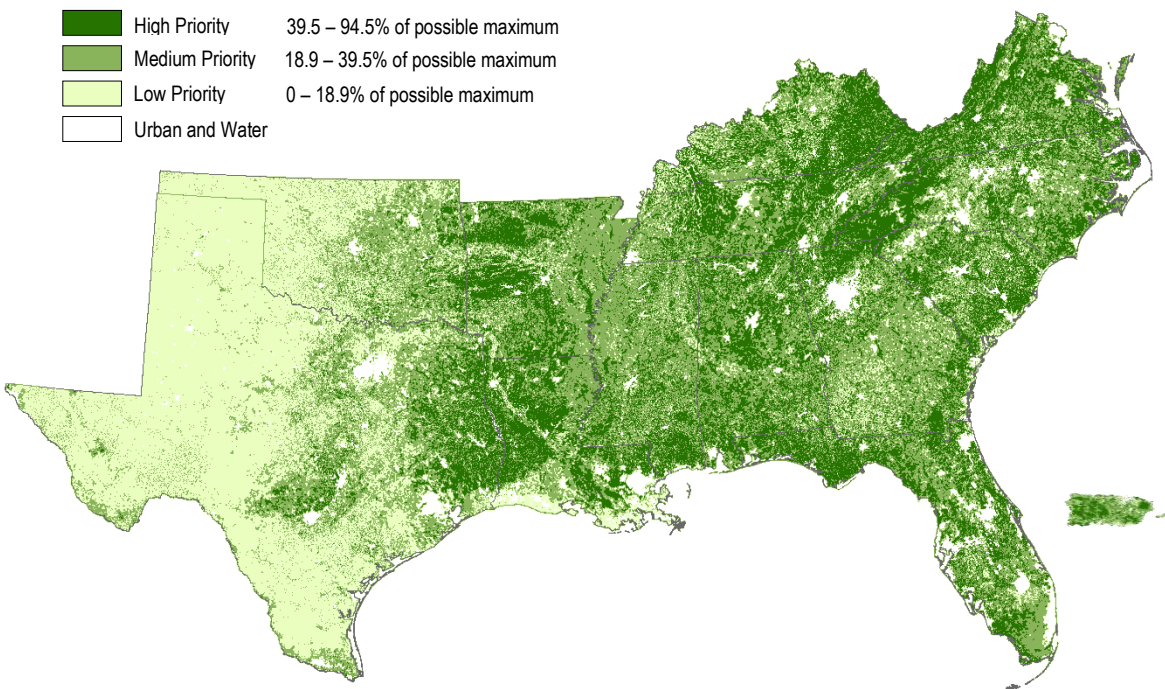
The SGSF and USFS Southern Region have identified the following common set of regional priority issues or opportunities that southern states may want to consider collectively while guiding their own statewide forest resource strategy development process (Figure 1):

- Significant forest ecosystems and landscapes
- Urbanization, fragmentation, and loss of forestland
- Fire
- Forest health
- Water quality protection and watershed management
- Wildlife habitat and species conservation
- Forest resource market opportunities

Each state's Statewide Forest Resource Strategy should:

- Outline long-term strategies and programs to address priority landscapes identified in the State Assessment and the three national priorities
- Describe how the state proposes to invest federal and other funding resources to address priorities
- Include timelines for project and program implementation
- Identify partner and stakeholder involvement
- Identify strategies for monitoring outcomes within priority forest landscape areas and how actions will be revised when needed
- Describe how the state's proposed activities will accomplish S&PF objectives
- Describe how S&PF programs will be used
- Incorporate existing plans required by S&PF programs

**Figure 1. Forest Resource Priority for the Southern Forest Land Assessment**





## **ISSUES SECTION**

- Issue 1: Urban Forest Sustainability
- Issue 2: Central Texas Woodlands Conservation
- Issue 3: Sustainability of Forest Resources in East Texas Forest Service
- Issue 4: Water Resources
- Issue 5: Wildfire and Public Safety





## Issue 1

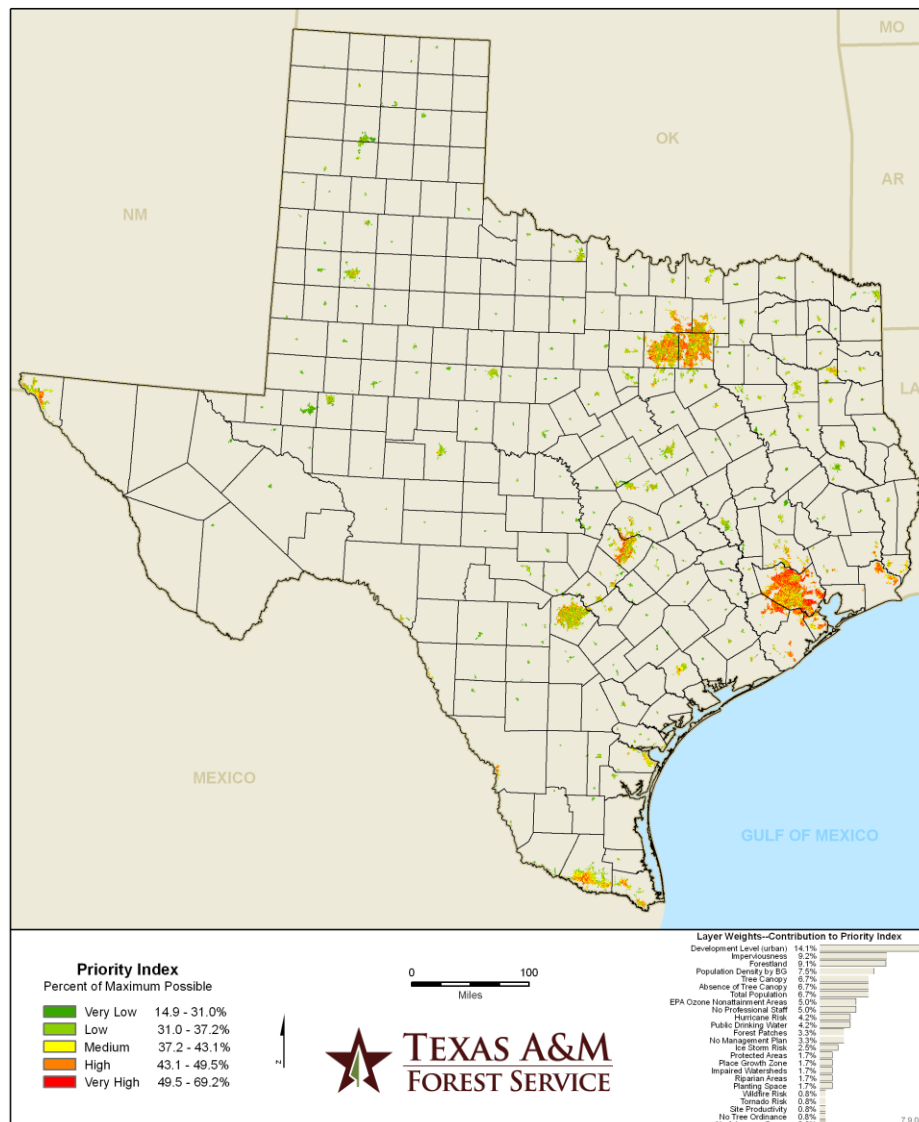
### Urban Forest Sustainability

#### 1. Issue Description

Urban forest sustainability is the measure of how well the network of trees, forests, and related natural resources contribute to human quality of life in cities. Focusing program delivery on places where sustainability is low can help solve landscape-scale problems that affect millions of people: urbanization, air quality, water quality, climate variability, energy consumption, and natural disasters of all types.

#### 2. Priority Areas (Figure 2)

**Figure 2. Priority Areas for Major Metropolitan and Micropolitan Areas of Texas.**







### **3. Goals, Objectives, and Strategies**

#### ***Goal 1: Continue to increase the number of communities with active local urban and community forestry programs***

Objective 1.1: Establish and increase the skills of municipal tree care managers through effective tree care and protection practices.

Strategy 1.1.1: Provide technical and financial support to increase the number of municipal tree managers who are ISA Certified Arborists and Municipal Specialists.

Strategy 1.1.2: Provide opportunities for training workshops and deliver technical assistance to municipal tree managers to increase their effectiveness and enhance performance.

Objective 1.2: Support scientific inventory systems that provide resource data and management plans for local tree care managers.

Strategy 1.2.1: Support community street tree assessments by coordinating sample inventories and preparing reports with management recommendations.

Strategy 1.2.2: Promote community-scale canopy studies to identify the loss/gain of trees over time and recommend plans to enhance forest cover and associated benefits.

Objective 1.3: Support statewide, regional and local tree advocacy and trade groups.

Strategy 1.3.1: Provide education and support to tree boards, tree non-profit groups, and councils.

Strategy 1.3.2: Encourage industry-Certified Arborist and Tree Worker credentialing.

#### ***Goal 2: Promote public awareness of the extent and benefits of trees and forests where people live, work and play***

Objective 2.1: Promote the celebration of Arbor Day in Texas and support significant tree programs.

Strategy 2.1.1: Support official Arbor Day ceremonies and Foundation core programs.

Strategy 2.1.2: Maintain the Famous Trees of Texas website and deliver the Texas Big Tree Registry program.

Objective 2.2: Embrace new technologies to create self-directed learning opportunities for citizens, teachers and students.

Strategy 2.2.1: Maintain the online Texas Tree Planting Guide and the Texas Tree ID websites.

Strategy 2.2.2: Expand the use of social media.

Objective 2.3: Educate and engage leaders and citizens in urban forestry projects and issues.



Strategy 2.3.1: Support programs to teach Citizen Foresters and Citizen Scientists on a variety of urban tree and natural resource issues, including invasive plants and insect pests.

Strategy 2.3.2: Assist local leaders to ensure the elected officials are aware of the importance and value of urban forest resources in their communities and districts.

***Goal 3: Reduce the negative impacts of land-use change, fragmentation, and catastrophic events on urban forest landscapes***

Objective 3.1: Monitor the impact of land-use change on urban forests in Texas.

Strategy 3.1.1: Identify Emerging Communities where land-use change and urbanization are occurring at a rapid pace.

Strategy 3.1.2: Using high-resolution imagery, implement an urban tree assessment program for the major metropolitan areas of Texas.

Objective 3.2: Encourage best practices for protecting high-value forest landscapes in and around urban areas.

Strategy 3.2.1: Support a green infrastructure approach for assessing and prioritizing forest landscapes. Participate in county and regional open space planning efforts.

Strategy 3.2.2: Support local land trusts to locate and protect high-value forest landscapes.

Objective 3.3: Improve disaster preparedness and rapid response following major events affecting trees in a community setting.

Strategy 3.3.1: Assist vulnerable communities with inventory and plan writing for emergency routes; pre-locate debris holding or processing sites.

Strategy 3.3.2: Certify TFS urban foresters and ISA-certified arborists as Strike Team leaders, task specialists, and Public Information Officers.

***Goal 4: Preserve, protect, and improve the quality of life within Texas cities and communities.***

Objective 4.1: Assist communities with tree planting goals and plans.

Strategy 4.1.1: Develop recommendations for using vegetation to break up urban heat islands.

Strategy 4.1.2: Encourage regional efforts to establish canopy cover targets.

Objective 4.2: Support tree planting as an energy-saving practice.

Strategy 4.2.1: Develop partnerships with electric utility providers to fund local programs to plant residential trees as an energy efficiency measure.



Strategy 4.2.2: Strengthen partnerships to advance a trees-for-energy-efficiency program.

Objective 4.3: Support local community and urban forestry water quality programs.

Strategy 4.3.1: Support urban stream restoration programs in local communities.

Strategy 4.3.2: Work with local water utility managers and public works directors on policies that support the contribution of urban trees and forests in water quality and quantity management.

Objective 4.4: Support local, regional, and statewide air quality programs and initiatives.

Strategy 4.3.1: Work with public and private partners to promote the use of vegetation to improve air quality in and around urban areas.

#### **4. Performance Outcomes**

***Deliverable 1:*** Increase the number of Texans living in communities with effective urban and community forestry programs.

***Deliverable 2:*** Increase the awareness of the extent and benefits of trees and forests.

***Deliverable 3:*** Reduce the impacts of land-use change, fragmentation, and urbanization.

***Deliverable 4:*** Minimize the risk and impact of catastrophic events.

***Deliverable 5:*** Mitigate the impact of climate variability on communities.

***Deliverable 6:*** Encourage communities to protect air and water quality through urban and community forestry programs.





## Issue 2

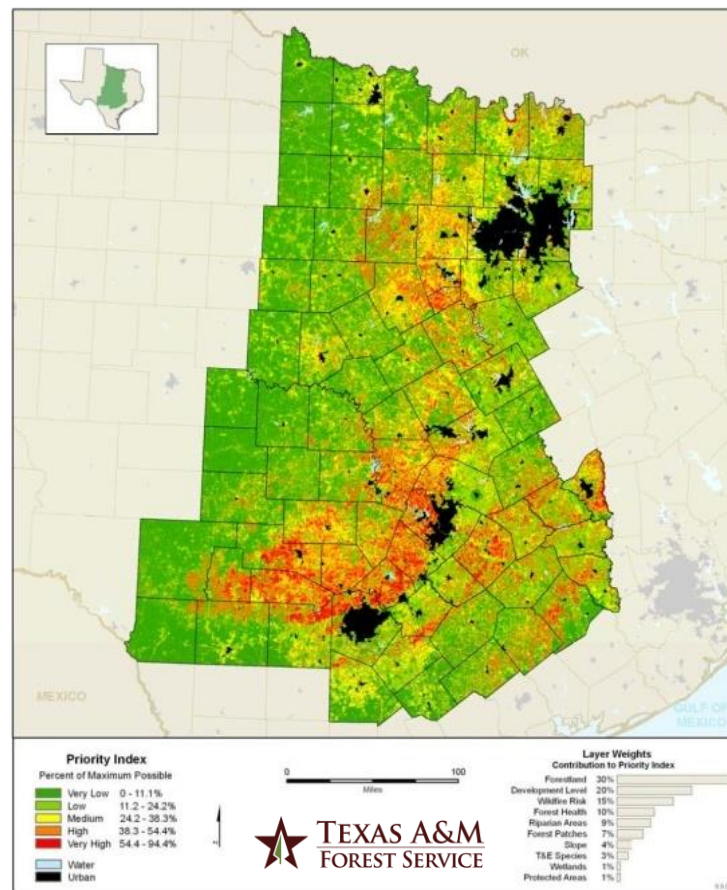
### Central Texas Woodlands Conservation

#### 1. Issue Description

The woodlands of Central and West Texas are valuable resources for shade, recreation, wildlife, environmental, and watershed protection. Yet, these resources are coming under increasing pressure from an exploding population, land fragmentation, wildfires, invasive plants, oak wilt, and other pests. A coordinated program effort among state and federal natural resource agencies and with other stakeholder organizations is needed to identify and educate new interface landowners who are located in or around critical resource areas in Central Texas. This combined Urban-Wildland Interface (UWI) outreach effort will be a key component in successfully protecting and conserving these critical resources if the high quality of life residents have come to expect in these regions of the state is to continue.

#### 2. Priority Areas

**Figure 3. TFS Spatial Overlay Analysis for Woodlands Conservation Priorities in Central Texas**





### **3. Goals, Objectives, and Strategies**

#### ***Goal 1: Improve the health of forests and woodlands in Central and West Texas***

**Objective 1.1:** Identify and mitigate threats to the forest and woodland resources of Central and West Texas with a focus on high-priority and threatened landscapes.

**Strategy 1.1.1:** Develop products to identify trends in land use change.

**Strategy 1.1.2:** Predict, monitor, and mitigate wildfire, biological, climate and weather, and other threats to forest health.

**Strategy 1.1.3:** Facilitate recovery and restoration of damaged forest landscapes.

**Strategy 1.1.4:** Promote healthy forest ecosystem programs through landowner meetings, social media, web sites, news releases, and other outlets.

**Objective 1.2:** Ensure the relevance of forest and woodland resource programs to Central and West Texas.

**Strategy 1.2.1:** Incorporate user needs into program planning and delivery.

**Strategy 1.2.2:** Deliver educational resource programs and professional technical assistance to meet the needs of clientele.

**Strategy 1.2.3:** Work with partners to help deliver effective financial incentive programs.

#### ***Goal 2: Assess and promote the conservation of forests and woodlands in Central and West Texas***

**Objective 2.1:** Analyze the impact of population growth, development, and land fragmentation scenarios on the sustainability of forests and woodlands.

**Strategy 2.1.1:** Communicate the impacts of population growth and changes in land use on forest and woodland resources.

**Strategy 2.1.2:** Maintain knowledge on advancements in policy, technology, assistance programs, and other resources that conserve, protect, and enhance forests and woodlands.

**Objective 2.2:** Support the sustainability of healthy, productive forests and woodlands.

**Strategy 2.2.1:** Promote the use of well adapted, insect, disease and drought resistant planting stock for reforestation, ecosystem restoration, and urban enhancement.





Strategy 2.2.2: Investigate silvicultural / horticultural / agroforestry management options that include the use of non-invasive and climate resilient species.

Strategy 2.2.3: Develop practical approaches for assessing, monitoring, reducing, and mitigating the impacts of invasive plants.

Strategy 2.2.4: Develop and promote programs that address water resource issues on public and private lands.

Strategy 2.1.5: Monitor and assess the impacts of disasters (hurricanes, wildfire, drought, insects, diseases, etc.) on biomass resource.

***Goal 3: Promote and maintain working forests by improving markets for sustainable forest products and services***

Objective 3.1: Identify forest and woodland economic development opportunities.

Strategy 3.1.1: Assess needs of existing forest products industries and opportunities for emerging markets in Central and West Texas.

Strategy 3.1.2: Develop wood supply projections using FIA data and proposed biomass utilization rates.

Strategy 3.1.3: Survey processing facilities for estimates on woody biomass utilization and output volumes to determine harvest rates and product distribution.

Objective 3.2: Promote the development of ecosystem services markets for forest owners.

Strategy 3.2.1: Determine the valuation of ecosystem services in Texas.

Strategy 3.2.2: Include ecosystem services valuation along with forest and woodland products when conducting forest health surveys, stewardship planning, and damage assessments.

Strategy 3.2.3: Project the change in economic value of various ecosystem services from improved forest and woodland health, anticipated climate influence, and land-use change through time.



#### **4. Performance Outcomes**

***Deliverable 1:*** Produce educational materials and programs for private landowners to improve the productivity and health of forests and woodlands in the region.

***Deliverable 2:*** Lead the development and promotion of silvicultural, horticultural, and other sustainable land-use practices that mitigate fuels, conserve water, and reduce the impacts of climate variability on forest / woodland productivity and health.

***Deliverable 3:*** Partner with industry in Texas to promote the use of local / genetically improved plant selections and facilitate the distribution of novel cultivars to tree seed and seedling producers.

***Deliverable 4:*** Conduct forest health assessments and monitor forests and woodlands for invasive insects, diseases, plants, and other potentially harmful pests.

***Deliverable 5:*** Reduce resource losses through education and coordination of prevention and suppression projects for major forest, woodland, and urban tree pests.

***Deliverable 6:*** Conduct rapid damage assessments of natural and man-caused disasters and the impacts on forest/woodland health and productivity.

***Deliverable 7:*** Incorporate ecosystem services valuation information into Forest Stewardship plans, forest health, and damage assessments.

***Deliverable 8:*** Establish and maintain strong relationships with Federal, State, and local partners to insure effective and efficient delivery of collaborative, landscape programs within the high priority landscapes.

***Deliverable 9:*** Promote the importance of Forest Stewardship planning to landowners within high priority landscapes.



## Issue 3

### Sustainability of Forest Resources in East Texas

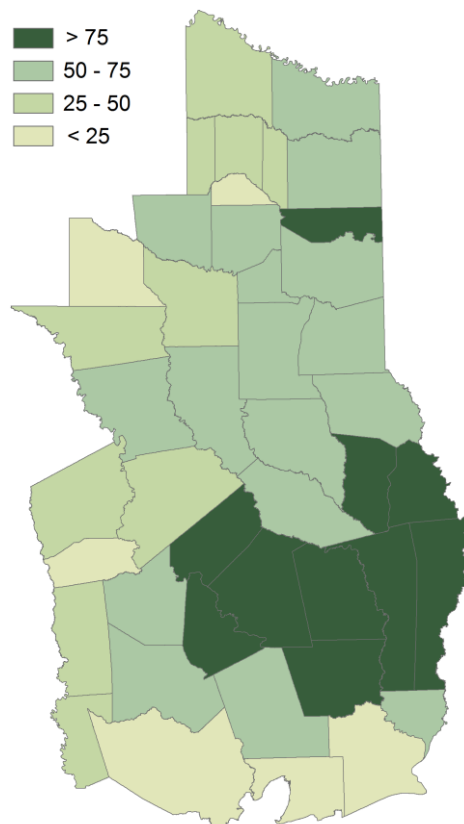
#### 1. Issue Description

Since the 1800s, the forests of East Texas have yielded immeasurable advantages for the state. Employment, financial return, cultural stability, recreational opportunities, economic growth, and environmental sustainability are just a few of the benefits from forest land. The pressure on this resource has grown with the population and is creating a changing landscape. The challenge is to conserve these working forests while at the same time protecting this valuable heritage and enhancing the benefits derived from the resource.

#### 2. Priority Areas

For decades, the East Texas Pineywoods have provided timber products, habitat for wildlife, and recreational opportunities for campers, hikers, and hunters. While these activities are still paramount to many, new opportunities for this resource are changing rapidly because of advanced wood producing technologies, changing demographics of landowners, urban sprawl, and other more recent political/social issues. While the Forest Inventory and Analysis (FIA) data (Figure 4) show steady to marginal increases in acres of forest land, greater demands on East Texas forest resources warrant wise management to ensure sustainability.

**Figure 4. Percent of Land in Forest by East Texas County**







### **3. Goals, Objectives, and Strategies**

#### ***Goal 1: Assess and promote the sustainability of East Texas forests***

Objective 1.1: Analyze the impact of management and regeneration scenarios on the sustainability of forests.

Strategy 1.1.1: Assess impacts of various management and regeneration scenarios on long-term wood supply.

Strategy 1.1.2: Maintain knowledge on advancement in regeneration and other silvicultural practices.

Objective 1.2: Support the development of healthy, productive forests.

Strategy 1.2.1: Develop well adapted, insect, disease, and drought resistant planting stock for reforestation, ecosystem restoration, and urban enhancement.

Strategy 1.2.2: Investigate silvicultural management options for climate resilient species.

Strategy 1.2.3: Develop practical approaches for monitoring, reducing, and mitigating invasive species.

Objective 1.3: Identify and mitigate threats to the forest resources of East Texas with a focus on high-priority and threatened landscapes.

Strategy 1.3.1: Develop products to identify trends in land use change.

Strategy 1.3.2: Predict, monitor, and mitigate wildfire, biological, climate, weather, and other threats to forest health.

Strategy 1.3.3: Facilitate recovery and restoration of damaged forest landscapes.

Objective 1.4: Ensure the relevance of forest resource programs in East Texas.

Strategy 1.4.1: Incorporate user needs into program planning and delivery.

Strategy 1.4.2: Deliver educational resource programs and professional technical assistance to meet the needs of clientele.

Strategy 1.4.3: Work with partners to help deliver effective financial incentive programs.



***Goal 2: Maintain working forests by improving markets for sustainable forest products***

**Objective 2.1:** Determine the impacts of additional and closures of wood processing facilities on timber supply.

**Strategy 2.1.1:** Develop timber supply projections based on FIA data and likely wood utilization rates of existing and proposed mills.

**Strategy 2.1.2:** Monitor and assess the impacts of disasters (hurricanes, wildfire, drought, insects, diseases, etc.) on timber supply.

**Objective 2.2:** Quantify the impact of proposed biomass utilizing facilities on timber supply.

**Strategy 2.2.1:** Develop wood supply projections using FIA data and proposed biomass utilization rates.

**Strategy 2.2.2:** Identify alternative, economically viable sources of woody biomass.

***Goal 3: Identify forest economic development opportunities***

**Objective 3.1:** Identify additional forest resource surpluses and deficits.

**Strategy 3.1.1:** Assess needs of existing forest products industries and opportunities for emerging markets.

**Strategy 3.1.2:** Survey mills on wood utilization and timber product output to determine harvest rates and wood product distribution.

**Objective 3.2:** Promote the development of ecosystem services markets for forest owners.

**Strategy 3.2.1:** Determine the valuation of ecosystem services in Texas.

**Strategy 3.2.2:** Include ecosystem services valuation along with forest products when conducting damage assessments.

**Strategy 3.2.3:** Project the change in economic value of various ecosystem services from improved forest health, anticipated climate influence, and land-use change through time.



The goals, objectives, and strategies given above, help to accomplish the S&PF National Priorities. First, strategies to address this issue help to conserve working forest landscapes since the strategies identify how manipulations of the existing forest resource (such as changes in reforestation efforts or the establishment of additional wood-processing facilities) can impact long-term sustainability. Second, strategies to address this issue help to protect the forest from harm because the Sustainable Forestry program identifies those operations/manipulations that can reduce sustainability. Third, strategies to address this issue enhance public benefits from trees and forests because the strategies identify those practices resulting in regional-scale economic development, increases in return on investments by investors and landowners. The program determines the long-term sustainability of the resource ultimately helping others to determine recreational opportunities and habitat for both terrestrial and aquatic wildlife.

#### **4. Performance Outcomes**

##### ***Goal 1***

- Monitor and assess the impacts of hurricanes, drought, other weather events, pests, and wildfire on the forest products manufacturing sector
- Project future fragmentation and resource loss due to real estate development, land conversion, and population growth
- Predict, monitor, and manage threats to forest health, including invasive plant species, insects, disease, wildfire, land conversion, and fragmentation
- Five percent increase annually in the number of landowners who actively and sustainably manage their forest and woodlands
- Re-tool programs and personnel to meet changing landowner needs based on the woodlands owners survey
- Collaborate with steering committees, non-governmental organizations, federal partners, and other cooperators to ensure a synergistic approach to forest health and resource issues

##### ***Goal 2***

- Complete and distribute long-term timber supply and biofuels/bioenergy reports annually
- Provide market and raw material analyses to potential investors in wood-using industries annually

##### ***Goal 3***

- Develop analysis products to advise potential investors in these markets
- Serve as the source for unbiased information on carbon and ecosystem services markets



## Issue 4

### Water Resources

#### **1. Issue Description**

In Texas, most of the freshwater resources originate in the eastern portion of the state, making our forests and wetlands a critical factor in meeting our water needs. Rapidly changing land ownership and objectives in this region may threaten our forests' ability to continue producing clean water upon which we so desperately rely.

The tremendous population growth Texas is experiencing is already placing unprecedented demands on our water resources. Compounding this problem is the associated development and increase in impervious cover in areas once occupied by forests, leading to declines in water quality and quantity. Throughout the state, water supplies are already limited, a condition intensified by recent weather conditions and which may be further impacted by predicted climate variability. Invasive vegetation established along our streams, lakes, and rivers can further deplete available water supplies.

The challenge is to increase awareness of the issue and promote behavioral changes of all Texans through effective, coordinated program delivery that ensures the protection and wise use of this resource.

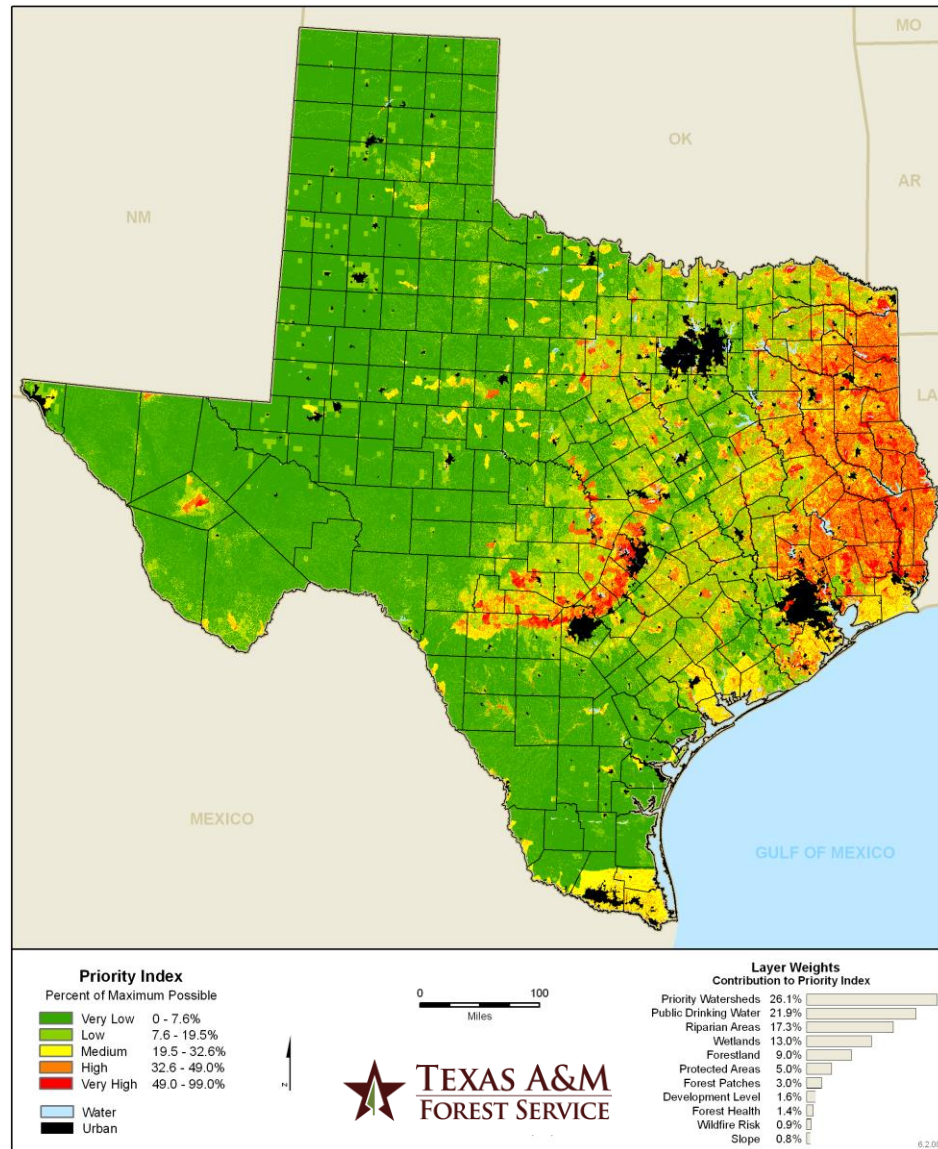
#### **2. Priority Areas**

The geospatial analysis identified two primary areas in which future efforts should be concentrated—East Texas and the Balcones Escarpment region of Central Texas. Focusing attention on watershed issues in these priority areas (Figure 6) can enable people to make decisions that will help sustain the state's water resources, ensuring the high quality of life that Texans enjoy.





**Figure 5. Priority Areas for Water Quality and Quantity in Texas**



### **3. Goals, Objectives, and Strategies**

#### ***Goal 1: Maintain watershed function***

**Objective 1.1:** Promote the importance of Texas forests and natural landscapes in maintaining watershed function.

**Strategy 1.1.1:** Provide technical assistance to landowners in riparian forest establishment, management, and restoration.

**Strategy 1.1.2:** Establish critical partnerships to enhance watershed function.

**Strategy 1.1.3:** Participate in watershed planning efforts in priority watersheds.





Strategy 1.1.4: Where ecologically appropriate, establish forests around drinking water sources.

Strategy 1.1.5: Focus wetland restoration efforts in critical, priority watersheds.

Strategy 1.1.6: Facilitate land recovery/restoration efforts after natural disasters to promote watershed function.

Strategy 1.1.7: Develop ecosystem service markets to keep forests intact to maintain watershed function.

***Goal 2: Protect water quality.***

Objective 2.1: Encourage Best Management Practices (BMP) implementation on forestry operations.

Strategy 2.1.1: Expand innovative, educational efforts to reach new landowners and loggers.

Strategy 2.1.2: Target education, outreach, and technical assistance to deficient areas identified through monitoring.

Strategy 2.1.3: Review BMPs periodically with partners to ensure their continued effectiveness in protecting water quality.

Objective 2.2: Encourage BMP implementation on other land intensive operations.

Strategy 2.2.1: Promote environmental/water resource awareness to landowners and contractors when conducting land intensive operations.

Strategy 2.2.2: Produce educational materials to support these outreach efforts.

Objective 2.3: Work with communities to improve water quality in urban environments.

Strategy 2.3.1: Promote the benefit of forests in mitigating stormwater runoff.

Strategy 2.3.2: Assist in urban stream restoration efforts.

***Goal 3: Enhance water quantity***

Objective 3.1: Protect aquifer recharge zones.

Strategy 3.1.1: Effectively manage vegetation in critical aquifer recharge zones.

Strategy 3.1.2: Minimize disturbances in these areas.

Objective 3.2: Properly manage invasive vegetation along riparian areas.

Strategy 3.2.1: Identify priority areas.

Strategy 3.2.2: Partner with state and federal agencies, academia, and other organizations to assist landowners in the education of invasive vegetation.



### **3. Performance Outcomes**

#### ***Goal 1: Maintain watershed function***

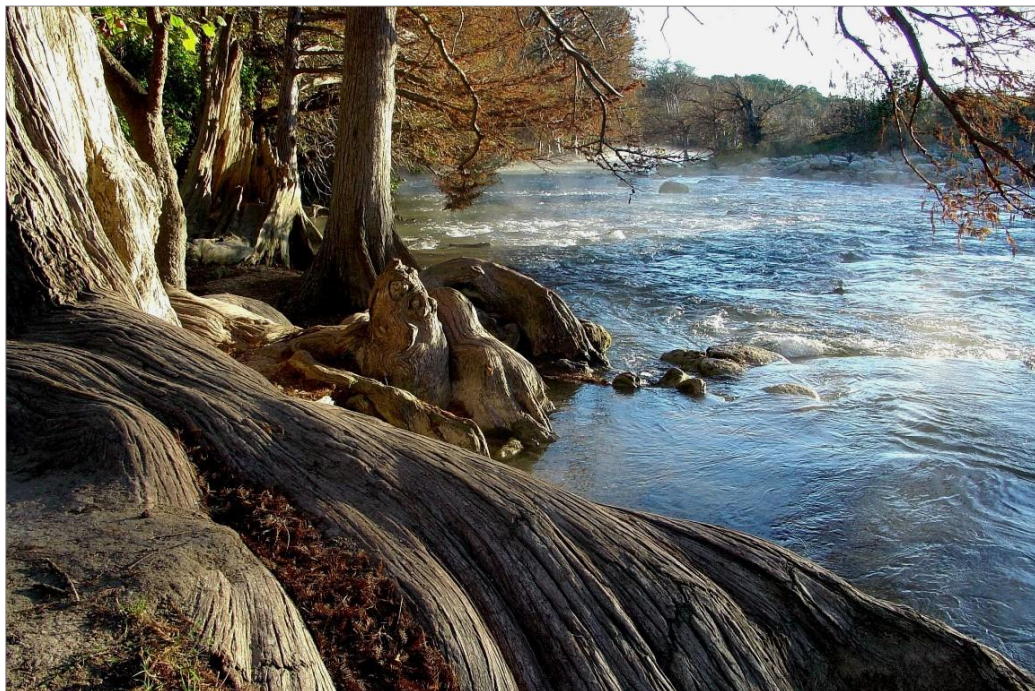
- Create an active Texas Forest and Water Partnership to increase communication and collaboration between the forest and water utility sectors
- Establish sound, technical silvicultural guidelines for the establishment, management, and restoration of riparian forests.
- Develop educational materials and provide technical assistance to landowners in an effort to facilitate restoration/recovery of lands affected by natural disasters (wildfire, floods, hurricanes, tornadoes, etc.) to promote watershed function.

#### ***Goal 2: Protect water quality***

- BMP implementation on forestry operations will increase to 95 percent through an aggressive, targeted, education, outreach, and technical assistance campaign.
- New, innovative, online technology transfer applications will be developed and promoted to increase land stewardship and water resource protection.
- Environmental awareness / water resource protection education, outreach, and training will be developed and delivered to appropriate non-forestry audiences.

#### ***Goal 3: Enhance water quantity***

- Deliver education, outreach, and technical assistance resulting in improved land management within aquifer recharge zones.
- Work closely with numerous partners to manage invasive vegetation along 100 miles of riparian corridors to enhance water quantity by 2015.





## Issue 5

### Wildfire and Public Safety

#### 1. Issue Description

In Texas, wildfire and public safety are growing issues. Wildfire activity has continued to increase over the past two decades. Since 2005, the state has seen over 162,705 wildfires burn over 9.5 million acres. Once primarily a rural issue in East Texas, wildfires are now clearly a statewide threat.

Driven by population growth, changing land use, and increasing drought frequency, the risk and occurrence of wildfires will continue to grow. Analysis of wildfires over the last ten years shows that 79 percent of fires occurred within two miles of a community.

In recent years, wildfires have threatened and, in some cases, burned through small towns and large cities alike, destroying hundreds of homes and businesses. Current spatial analysis from the Texas Wildfire Risk Assessment Portal shows approximately a third of the state's landmass (58.3 million acres) at significant risk for wildland fires.

Non-wildfire disaster response has become commonplace in Texas as well. Along with California and Florida, Texas is one of the top three natural disaster states in the nation. Hurricanes, floods, tornados, and other events requiring state and local disaster response continue to occur with increasing frequency. Over the past ten years, the state has called on Texas A&M Forest Service to provide incident management teams for non-wildfire disasters 36 times. Population growth and land use changes are significant causal factors for these disasters as well.

#### State Response Plan

For the past decade, Texas A&M Forest Service has been developing, using, and refining its operations under the Texas Wildfire Protection Plan (TWPP), a coordinated, interactive effort utilizing multiple components:

- Predictive Services/Assessment and Monitoring
- Mitigation, Prevention, and Reduction of Risk
- Planning and Preparedness
- Local Capacity Building
- Rapid Initial Response and Suppression of Wildfires

The TWPP is a proven interagency emergency response model emphasizing ongoing analysis and aggressive response based on the identified risk factors.





## **2. Priority Areas**

Texas A&M Forest Service remains a small agency with a large and expanding mission. Current spatial analysis from the TxWRAP shows approximately a third of the state's landmass (58.3 million acres) at significant risk from wildland fires.

For the State of Texas and Texas A&M Forest Service, demand for wildfire and all-hazard emergency response will continue to grow with the population.

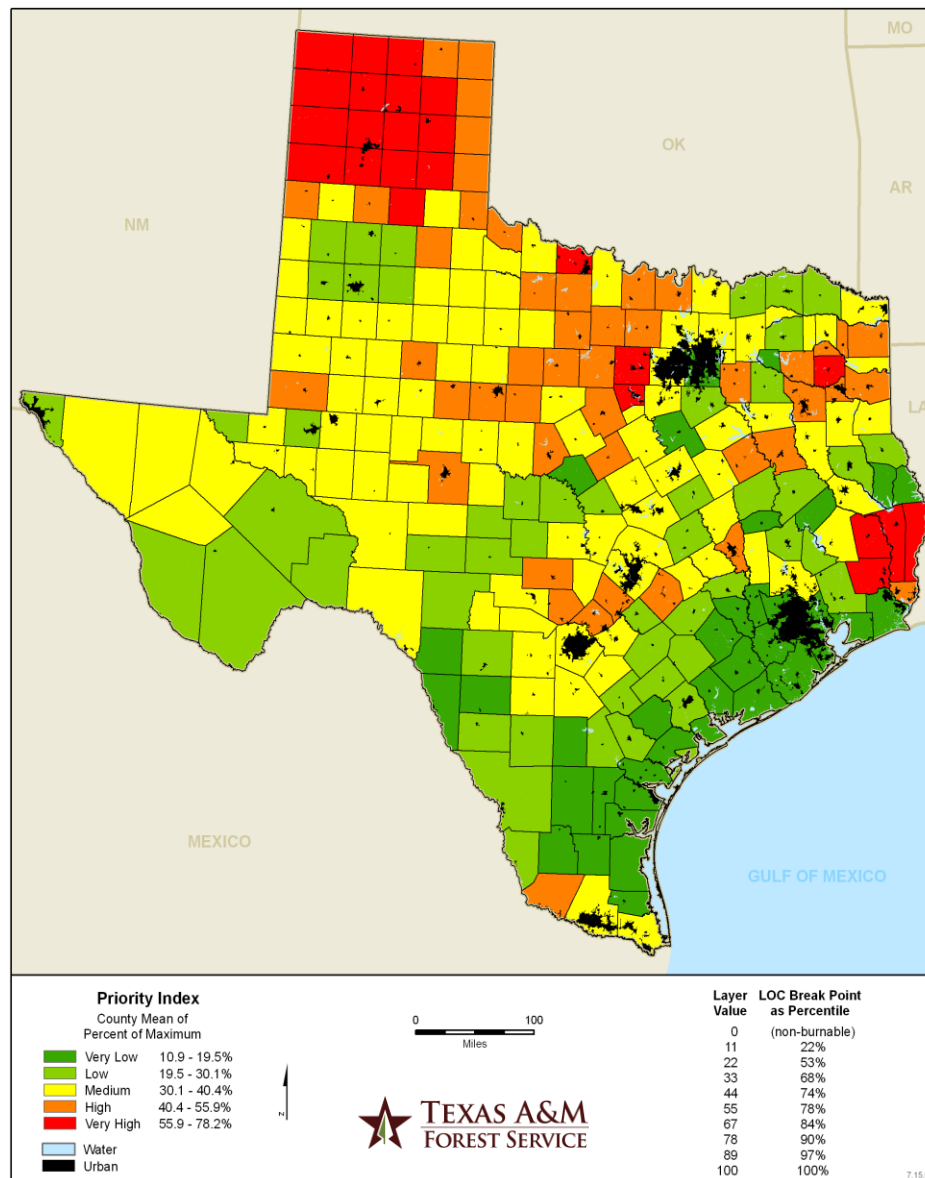
To meet these needs, TFS must continue to implement and develop programs under the Texas Wildfire Protection Plan with an emphasis on:

- Science-based risk and trend analysis to guide development of effective programs and initiatives.
- Prevention, risk reduction/mitigation, rapid response, and other cost-effective, proactive efforts focused on addressing identified causal factors.
- Coordinated state and community-level programs with a broad cross-section of cooperating parties.
- Integrated projects whose results impact multiple priorities.
- Strong local support and ownership that supports transition to a long-term community project with minimal state guidance.
- Public outreach, education, and training.
- Development of response resources and coordinated response efforts.
- Automated and publicly available information and tools.





**Figure 6. Wildfire Risk in Texas**



### **3. Goals, Objectives, and Strategies**

*Goal 1: Analyze current and predicted weather conditions, wildfire occurrence, the development of urban/wildland interface, and the presence and availability of vegetative fuels throughout the year to maintain a continual assessment of wildfire risk at the state, regional, and local level (Figure 6). Agency leadership for this goal has been assigned to the TFS Predictive Services Department.*



Objective 1.1: Determine current and predicted weather conditions throughout the year.

Strategy 1.1.1: Develop and maintain remote automated weather station (RAWS) networks and interagency relationships with the USFS, National Weather Service, and other cooperators.

Objective 1.2: Monitor the condition of wildland fuels and vegetation.

Strategy 1.2.1: Develop and maintain a system and methods to support fuels analysis, including RAWS networks, historic data analysis, live fuel sampling points, FIA data, remote sensing fuels assessments, and GIS analysis capabilities.

Objective 1.3: Calculate current and predicted fire behavior.

Strategy 1.3.1: Develop and maintain necessary personnel, software applications, and historic datasets to support the continuous daily assessment of conditions, expected fire behavior, critical thresholds, and other indicators.

Objective 1.4: Identify and document urban/wildland interface areas and communities at risk.

Strategy 1.4.1: Develop and maintain GIS applications and data layers to support identification on UWI areas and communities at risk, along with the primary causal factors in their development.

Objective 1.5: Track fire occurrence and ignition sources.

Strategy 1.5.1: Monitor TFS online fire reporting applications and incorporate data into analysis.

Objective 1.6: Disseminate assessment information to cooperators, elected officials, and the public.

Strategy 1.6.1: Develop and maintain web-based products and information to provide for the dissemination of wildfire risk and assessment information to citizens, local government, state agencies, and other stakeholders and cooperators.

Priorities:

- Detect the presence and development of communities at risk, urban/wildland interface, and other areas at high risk from wildfires.
- Develop and maintain datasets, systems, and applications to allow analysis of high risk areas to determine primary causal factors and effective mitigation options.
- Work with incident response personnel and field administration units to determine regional staffing recommendations and activation thresholds based on fire risk indices.



***Goal 2: Maintain continuous wildfire mitigation and prevention programs that reduce fire occurrence, hazardous conditions, and the risk of loss from wildfires.*** Agency leadership for this goal has been assigned to the TFS Mitigation Department.

Objective 2.1: Assign a high priority to mitigation and prevention efforts throughout the year.

Strategy 2.1.1: Develop and maintain a full spectrum of fire prevention and wildfire risk mitigation programs that provides employees, communities, and cooperators a broad selection of options that most appropriately reduce the risk to lives and property. This may include:

- Community wildfire protection plans
- Firewise programs
- Firewise community certification
- Fuels and vegetation management/reduction
- Community protection grants
- Smokey Bear programs and activities
- Localized fire prevention programs and materials
- Emerging community's initiatives
- Wildfire case studies

Objective 2.2: Base efforts on local assessment information.

Strategy 2.2.1: Work with predictive personnel to determine areas at risk, causal factors, and provide awareness to community leaders, cooperators, and citizens.

Objective 2.3: Initiate prevention efforts prior to a developing fire season.

Strategy 2.3.1: Monitor fire risk indices and work with predictive personnel to insure initiation of effective fire prevention programs that may ward off large fire occurrences.

Objective 2.4: Involve cooperators in designing and delivering programs.

Strategy 2.4.1: Ensure all wildfire mitigation and prevention initiatives are based on integrating local involvement at the county, city, community, and individual level to produce self-sustaining proactive programs that help Texans help themselves.

Objective 2.5: Strive to empower communities and property owners to mitigate hazards in urban/wildland interface areas.

Strategy 2.5.1: Develop and promote effective, community-based risk reduction programs in UWI areas based on community awareness, education, and directed action to provide communities and local homeowners with the ability to implement homeowner and community-based solutions.



*Urban/Wildland Interface (definition) – As cities, communities and suburbia expand into what was once considered rural Texas, this continuing growth brings people and structures into close proximity with large amounts of vegetation. The mixture of homes in areas with flammable grass, brush and trees is known as the Urban Wildland Interface (UWI), an area extremely vulnerable to wildfire.*

**Objective 2.6:** Work with TPWD and other cooperators to develop and deliver wildland fuel reduction programs.

**Strategy 2.6.1:** Promote the development, use and delivery of hazard reductions activities through vegetation removal including mechanical methods—such as mowing or chopping—or prescribed (controlled) fires under manageable conditions.

Priorities:

- Detect the presence and development of communities at risk, urban/wildland interface, and other areas at high risk from wildfires.
- Prioritize and develop Community Wildfire Protection Plans for these high risk areas.
- Develop and deliver effective fuels/vegetation reduction programs across the state.
- Develop and deliver effective wildfire prevention and public education programs based on fire risk and occurrence.

**Goal 3: *The agency will work across internal and external boundaries to enhance the effective implementation of the Texas Wildfire Protection Plan (TWPP). Personnel will work collaboratively with other agencies, departments, and personnel in planning, developing, implementing, supporting, and evaluating TFS response capabilities and needs.*** Agency leadership for this goal has been assigned to the TFS Planning & Preparedness Department.

**Objective 3.1:** Analyze predictive services and fire occurrence data to determine local and statewide preparedness levels.

**Strategy 3.1.1:** Monitor statewide wildfire occurrence along with TFS and fire department response activity to determine and communicate the appropriate regional and statewide preparedness levels in conjunction with the appropriate Predictive Services and Incident Response staff.

**Objective 3.2:** Ensure prepositioning and availability of resources based on analysis.

**Strategy 3.2.1:** Coordinate the mobilization and demobilization of requested resources at the regional, state, and national level.

**Strategy 3.2.2:** Ensure the collection, evaluation, dissemination, and use of resource and incident information to support strategic decision making, including the repositioning and management of available resources based on current fire risk.



Objective 3.3: Maintain a flexible force structure based on risk and occurrence.

Strategy 3.3.1: Monitor the category, kind and type of resources used and their availability; suggest changes as needed based on availability, operational needs, and cost effectiveness.

Objective 3.4: Involve local, state, federal, and contract resources.

Strategy 3.4.1: Maintain systems, agreements, procedures, and information on incident response resources at the local, state, and national level to ensure agency's capability to respond to wildfires and all-hazard incidents.

Objective 3.5: Maintain readiness of resources.

Strategy 3.5.1: Maintain wildland firefighter and incident response training and qualification records for state and local personnel.

Strategy 3.5.2: Order, maintain, and pre-position essential equipment and supply caches across the state to support wildfire and all-hazard response needs.

Strategy 3.5.3: Ensure that necessary mobilization procedures, response plans, and interagency agreements are developed and maintained to support the mobilization of local, regional, state, and national equipment and personnel.

Priorities:

- Receive and maintain personnel qualifications and training records for Texas-based wildland firefighters and resources in the national dispatch system and expand the training and qualification system to incorporate local resources and responders under specific mutual aid programs [Texas Intrastate Fire Mutual Aid System (TIFMAS) response and Regional Type III Incident Management Teams (RIMTs)]. Maintain the emergency operations center at the agency headquarters in College Station to provide statewide situational awareness, strategic oversight, and management of all TFS emergency response activities.
- Maintain a joint coordination center with the USFS and the Department of the Interior to coordinate the mobilization, demobilization, and tracking of state and federal wildfire resources and personnel.
- Continue to develop the agreements, systems, and procedures to coordinate the regional mobilization, use, and demobilization of local resources under specific mutual aid programs (TIFMAS and RIMTs).

***Goal 4: Local fire departments are the primary initial response resources for wildfire suppression in Texas. The TFS is committed to train, equip, and assist them in support of the TWPP.*** Agency leadership for this goal has been assigned to the TFS Capacity Building Department.





Objective 4.1: Assist in the development of local fire departments as the primary initial attack resource for rural Texas.

Strategy 4.1.1: Ensure that agency personnel develop and maintain a broad knowledge base on all internal and external fire department assistance programs to provide accurate information and timely referrals to all questions.

Strategy 4.1.2: Ensure that local fire department and local government personnel are recognized as our partners in fire prevention and suppression and are treated with the respect they deserve by all agency personnel.

Objective 4.2: Develop and deliver programs committed to training, equipping, and supporting local fire departments and other cooperators.

Strategy 4.2.1: Develop, maintain, and deliver a broad range of assistance programs to provide training, equipment, and other identified needs for Texas fire departments.

Strategy 4.2.2: Design and deliver programs committed to:

- Increasing firefighter safety
- Increasing local response capabilities
- Providing proper stewardship of program resources with a minimum of bureaucracy
- Recognizing the independent nature of local government and fire departments
- Minimizing limits on local decision making

Objective 4.3: Focus TFS fire assistance programs in support of the TWPP.

Strategy 4.3.1: Ensure interdepartmental and divisional input and collaboration when developing and revising applications, procedures, and rating systems to promote unified priorities and ease of use for all assistance programs.

Objective 4.4: Encourage partnerships between all federal, state, and local cooperators.

Strategy 4.4.1: Ensure that departmental staff strives to deliver or work cooperatively with all state and federal assistance programs to achieve the maximum benefit for Texas fire departments.

Priorities:

- Receive, develop, and implement a new fire department assistance program previously operated by the Texas Commission on Fire Protection.
- Increase departmental staffing and capacity to incorporate the \$10 million increase in state funding for the Rural Volunteer Fire Department Assistance Program.



***Goal 5: One of the primary roles of TFS is to ensure the rapid and effective response of appropriate resources as needed to suppress and extinguish wildfires in Texas. In recent years, the agency has also been called upon under the State Emergency Management Plan to provide incident management teams and personnel during all-hazard incidents such as floods, tornados, and hurricanes. Agency leadership for this goal has been assigned to the TFS Incident Response Department.***

Objective 5.1: Provide for the safety of emergency responders and citizens.

Strategy 5.1.1: Ensure agency personnel participate in appropriate training, qualification, and credentialing systems under NIMS ICS, NWCG or other relevant systems.

Strategy 5.1.2: TFS response personnel are assigned to work with and support the fire departments within their geographic regions. This should include knowledge of fire departments' capabilities, training, and equipment.

Strategy 5.1.3: Incident response personnel are expected to know the vegetation, hazards, and risks within their regions, including critical conditions and special tactics or resources that may be required. This knowledge is essential for TFS personnel to establish and lead response operations involving local, state, and national resources.

Objective 5.2: Conduct response operations in a cost-effective and efficient manner.

Strategy 5.2.1: Incident Response personnel, in conjunction with Predictive Services and Planning and Preparedness, will monitor weather, fire occurrence, and fire danger indices to determine appropriate staffing and to release unneeded resources.

Strategy 5.2.2: During elevated operational periods where external resources are being utilized, departmental staff will establish a Finance Section to monitor daily cost of operation and issue cost-saving recommendations such as identifying individual equipment with the highest cost of operation for prioritized demobilization.

Objective 5.3: Coordinating the efforts of cooperators to minimize losses.

Strategy 5.3.1: Ensure the development and communications of incident objectives that clearly identify the response objectives and priorities including life safety, known improvements, and hazards. Where possible, ensure the development of a written Incident Action Plan to include incident objectives, operational tactics, and specific resource assignments.

Strategy 5.3.2: Ensure operational staff members have access to and are briefed on current and expected conditions, potential hazards, and critical thresholds that may be encountered.





**Objective 5.4:** Emphasize aggressive initial attack based on fire behavior to prevent project fires that burn for multiple days and occupy resources needed for initial attack.

**Strategy 1.4.1:** Staff and respond with appropriate resources and tactics to safely suppress fires at a minimal size and duration, preventing large, destructive fires that require long-term resource commitments, resulting in reduced availability of resources for new fires and higher suppression costs.

Priorities:

- Hire, train, and equip approximately 55 new positions recently provided by the Texas Legislature.
- Continue to develop the agreements, systems, and procedures to coordinate the regional mobilization, use, and demobilization of local resources under specific mutual aid programs (TIFMAS and RIMTs).
- Provide nationally-certified wildfire and emergency management training to fire departments and agencies across the state utilizing local classes and regional academies to promote firefighter and fire department development and safety.

#### **4. Performance Outcomes**

##### ***Goal 1***

- Internal, external, and public cooperators have web-based access to the Southern Wildfire Risk Assessment and utilize the tool during decision-making processes.

##### ***Goal 2***

- Communities develop CWPPs and Firewise Communities to plan for and reduce their risks from wildfire.

##### ***Goal 3***

- TFS personnel and RIMT personnel maintain Incident Command System qualifications.

##### ***Goal 4***

- TFS provides fire departments assists, grants, and equipment.

##### ***Goal 5***

- TFS personnel acquire contact hours in firefighter and emergency response training.





## NATIONAL PRIORITIES

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

- Conserve and Manage Working Forest Landscapes for Multiple Values and Uses
- Protect Forests from Threats
- Enhance Public Benefits from Trees and Forests

These documents were developed with a comprehensive team of stakeholders to address cross-boundary, landscape scale actions that would be the most efficient activities to address issues of concern developed for the assessment phase of the Forest Action plan.

This document serves as a record of activities taken by all Texas stakeholders to address strategic actions taken as part of the Texas Forest Action Plan and will be updated annually.

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

### 1. **Conserve and Manage Working Forest Landscapes for Multiple Values and Uses**

***Issue Addressed: Central Texas Woodlands Conservation***

Goal 3: Promote and maintain working forests by improving markets for sustainable forest products and services.

Objective 3.1: Identify forest and woodland economic development opportunities.

Strategy 3.1.2: Develop wood supply projections using FIA data and proposed biomass utilization rates.

**Strategic Action:** TFS developed the *Forest Distribution* application on the Texas Forest Information Portal. This website calculates biomass (dry tons) by forest type for 50, 75, and 100 mile radii of user-defined points based on FIA data.

Objective 3.2: Promote the development of ecosystem services in Texas.



Strategy 3.2.1: Determine the valuation of ecosystem services in Texas.

**Strategic Action:** TFS published the Texas Statewide Assessment of Forest Ecosystem Services in 2013. This information is also presented in a web application, Forest Ecosystem Values, on the Texas Forest Information Portal.

### ***Issue Addressed: Sustainability of Forest Resources in East Texas***

Goal 1: Assess and promote the sustainability of East Texas forests

Objective 1.2: Support the development of healthy, productive forests

Strategy 1.2.2: Investigate silvicultural management options for climate resilient species

**Strategic Action:** TFS updated the *Timberland Decision Support System* with new East Texas growth and yield data. This application also includes a new silvicultural decision support system for forest thinning and herbicide use and can be accessed through the Texas Forest Information Portal.

Objective 1.4: Ensure the relevance of forest resource programs in East Texas

Strategy 1.4.2: Deliver educational resource programs and professional technical assistance to meet the needs of clientele.

**Strategic Action:** TFS developed the *Map My Property* application for the Texas Forest Information Portal. This tremendously popular application, averaging 1500 sites visits per month, allows users to quickly locate, map, and annotate, and print custom areas of interest.

Strategy 1.4.3: Work with partners to help deliver effective financial incentive programs

**Strategic Action:** TFS created the Texas Longleaf Conservation Assistance Program to restore and enhance longleaf pine within the Longleaf Ridge and Big Thicket Significant Geographic Areas. This program is administered on behalf of the Texas Longleaf Implementation Team and resulted from grants received from the National Fish and Wildlife Foundation.

Goal 2: Maintain working forests by improving markets for sustainable forest products

Objective 2.1: Determine the impacts of additional and closures of wood processing facilities on timber supply.

Strategy 2.1.1: Develop timber supply projections based on FIA data and likely wood utilization rates of existing and proposed mills.

**Strategic Action:** TFS developed the *Timber Supply Analysis* application on the Texas Forest Information Portal. This website calculates forestland area, volume, growth, and removals by



forest type and product class for a 50, 75, or 100 mile radius of a user-defined point based on FIA data.

Goal 3: Identify forest economic development opportunities.

Objective 3.1: Identify additional forest resource surpluses and deficits.

Strategy 3.1.1: Assess needs of existing forest products industries and opportunities for emerging markets.

Strategic Action: TFS developed the *Forest Products Directory* application on the Texas Forest Information Portal. Users are able to quickly search various forest product industries and companies by several attributes. TFS also conducted an extensive study into the contribution of the 2012 Texas Forest Sector, the impacts of the 2008 economic downturn, and developed a new application, *Economic Impact*, to summarize economic impact data (output, jobs, and income).

### ***Issue Addressed: Water Quality and Quantity***

Goal 2: Protect water quality

Objective 2.1: Encourage Best Management Practices (BMP) implementation on forestry operations.

Strategy 2.1.1: Expand innovative, educational efforts to reach new landowners and loggers

Strategic Action: TFS developed the *Plan My Land Operation* application on the Texas Forest Information Portal. This website enables users to map custom areas, identify sensitive features (streams, wet areas, steep slopes), add custom buffers to streams, and generate planning reports with BMP recommendations based on the site characteristics of the mapped area.

Objective 2.2: Encourage BMP implementation on other land intensive operations.

Strategy 2.2.1: Promote environmental/water resource awareness to landowners and contractors when conducting land intensive operations.

Strategic Action: TFS developed a new training workshop targeting land operations outside of East Texas. Ranchers and contractors that clear vegetation to improve range, aesthetics, wildlife habitat, or to mitigate wildfires now are able to learn about BMP principles and concepts tailored to their specific region.



## 2. **Protect Forests from Threats**

### ***Issue Addressed: Urban Forest Sustainability***

Goal 3: Reduce the negative impacts of land-use change, fragmentation, and catastrophic events on urban forest landscapes

Objective 3.3: Improve disaster preparedness and rapid response following major events affecting trees in a community setting.

Strategy 3.3.2: Certify TFS urban foresters and ISA-certified arborists as Strike Team leaders, task specialists, and Public Information Officers

**Strategic Action:** TFS has trained personnel to serve as Urban Strike Team leaders and developed a mobile app, *Level 1 Tree Risk Assessment*, to help perform visual tree assessments, map trees with obvious defects, and identifies treatment options.

### ***Issue Addressed: Central Texas Woodlands Conservation***

Goal 1: Improve the health of forests and woodlands in Central and West Texas.

Objective 1.1: Identify and mitigate threats to the forest and woodland resources of Central and West Texas with a focus on high-priority and threatened landscapes.

Strategy 1.1.2: Predict, monitor, and mitigate wildfire, biological, climate and weather, and other threats to forest health.

**Strategic Action:** Texas A&M Forest Service conducted a statewide drought assessment following the historic 2011 drought, provided technical assistance to affected landowners, and created a new application, *Forest Drought*, for the Texas Forest Information Portal to help monitor and mitigate future weather patterns.

Strategy 1.1.3: Facilitate recovery and restoration of damaged forest landscapes.

**Strategic Action:** TFS was a leader in the Lost Pines Recovery Task Force following the 2011 Bastrop Wildfire Complex, the most devastating fire in Texas history. TFS played key roles in assessing resource damage, providing short and long term guidance for affected landowners, growing seedlings from native seed, and coordinating the restoration process.

TFS is also very active in restoring Ponderosa pine in the Davis Mountains of West Texas. Wildfires and drought have taken a toll on this unique ecosystem. TFS, partnering with The Nature Conservancy, mapped and evaluated the affected area, marked dead and diseased trees for removal, collected native seed, and began growing seedlings at the West Texas nursery.





TFS assessed resource damage, provided technical guidance, and is working with cooperators to implement a riparian restoration program following the Memorial Day flood events in Central Texas.

***Issue Addressed: Sustainability of Forest Resources in East Texas***

Goal 1: Assess and promote the sustainability of East Texas forests

Objective 1.2: Support the development of healthy, productive forests.

Strategy 1.2.3: Develop practical approaches for monitoring, reducing, and mitigating invasive species.

Strategic Action: TFS is actively monitoring Emerald Ash Borer and Chinese tallow. TFS supports the invasive species website, [www.texasinvasives.org](http://www.texasinvasives.org)

***Issue Addressed: Wildfire and Public Safety***

Goal 1: Analyze current and predicted weather conditions, wildfire occurrence, the development of urban/wildland interface, and the presence and availability of vegetative fuels throughout the year to maintain a continual assessment of wildfire risk at the state, regional, and local level.

Objective 1.6: Disseminate assessment information to cooperators, elected officials, and the public.

Strategy 1.6.1: Develop and maintain web-based products and information to provide for the dissemination of wildfire risk and assessment information to citizens, local government, state agencies, and other stakeholders and cooperators.

Strategic Action: TFS developed the Texas Wildfire Risk Assessment Portal (TxWRAP), a web based GIS application that allows local governments and the public to identify and map wildfire risk throughout the state. As a result of the success of TxWRAP, TFS led the effort to expand this functionality across the southern region (SouthWRAP).

Goal 2: Maintain continuous wildfire mitigation and prevention programs that reduce fire occurrence, hazardous conditions, and the risk of loss from wildfires.

Objective 2.2: Base efforts on local assessment information

Strategy 2.2.1: Work with predictive personnel to determine areas at risk, causal factors, and provide awareness to community leaders, cooperators, and citizens



**Strategic Action:** TFS uses information and reports from TxWRAP to develop Community Wildfire Protection Plans (CWPPs). During CWPP development, TFS mitigation specialists also work to identify potential treatment areas on public lands (primarily local government ownership) where critical fuels reduction projects can be performed (by TFS mitigation staff and wildland firefighters) to help improve community protection and generate enthusiasm for additional, locally-led efforts.

**Goal 3:** The agency will work across internal and external boundaries to enhance the effective implementation of the Texas Wildfire Protection Plan (TWPP). Personnel will work collaboratively with other agencies, departments, and personnel in planning, developing, implementing, supporting, and evaluating TFS response capabilities and needs.

**Objective 3.1:** Analyze predictive services and fire occurrence data to determine local statewide preparedness levels.

**Strategy 3.1.1:** Monitor statewide wildfire occurrence along with TFS and fire department response activity to determine and communicate the appropriate regional and statewide preparedness levels in conjunction with the appropriate Predictive Services and Incident Response staff.

**Strategic Action:** TFS developed online wildfire reporting systems for fire departments and agency resources. These systems provide improved fire occurrence information for both short-term planning and feed into the national dataset for further analysis.

**Goal 4:** Local fire departments are the primary initial response resources for wildfire suppression in Texas. TFS is committed to train, equip, and assist them in support of the TWPP.

**Objective 4.2:** Develop and deliver programs committed to training, equipping, and supporting local fire departments and other cooperators.

**Strategy 4.2.1:** Develop, maintain, and deliver a broad range of assistance programs to provide training, equipment, and other identified needs for Texas fire departments.

**Strategic Action:** TFS has delivered critical fire department assistance programs such as the Rural Volunteer Fire Department Assistance Program (\$12.8 million/year) and Texas Intrastate Mutual Aid System (\$1 million/year). TFS also administers a state/local equipment donations program and two federal property programs (FEPP and FFP). Collectively these grant and equipment programs provide about \$20 million per year in grants and equipment to Texas fire departments.

**Goal 5:** One of the primary roles of TFS is to ensure the rapid and effective response of appropriate resources as needed to suppress and extinguish wildfires in Texas. In recent years, the agency has also been called upon under the State Emergency Management Plan to provide incident management teams and personnel during all-hazard incidents such as floods, tornados, and hurricanes.



Objective 5.1: Provide for the safety of emergency responders and citizens

Strategy 5.1.1: Ensure agency personnel participate in appropriate training, qualification, and credentialing systems under NIMS ICS, NWCG or other relevant systems.

**Strategic Action:** TFS developed and has implemented the Emergency Responder Academy, a 12 week program where new agency employees receive training in ICS, wildfire suppression tactics, and natural resource management.

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

#### ***Issue Addressed: Urban Forest Sustainability***

Goal 1: Continue to increase the number of communities with active local urban and community forestry programs

Objective 1.1: Establish and increase the skills of municipal tree care managers through effective tree care and protection practices.

Strategy 1.1.2: Provide opportunities for training workshops and deliver technical assistance to municipal tree managers to increase their effectiveness and enhance performance.

**Strategic Action:** TFS developed the online Model Public Tree Care Ordinance Tutorial. This website provides information on what makes certain clauses effective and provides a fillable public tree care ordinance available for download.

Objective 1.2: Support scientific inventory systems that provide resource data and management plans for local tree care managers.

Strategy 1.2.1: Support community street tree assessments by coordinating sample inventories and preparing reports with management recommendations.

**Strategic Action:** TFS completed the first ever, urban FIA project in Austin. Data analysis is in progress and a new online application summarizing the results is in development. Field crews are now measuring urban plots in Houston.

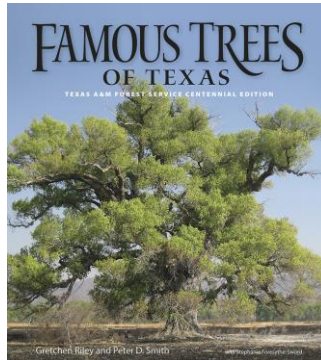
Goal 2: Promote public awareness of the extent and benefits of trees and forests where people live, work, and play

Objective 2.1: Promote the celebration of Arbor Day in Texas and support significant tree programs.

Strategy 2.1.2: Maintain the Famous Trees of Texas website and deliver the Texas Big Tree Registry program.



Strategic Action: TFS published a new book, Famous Trees of Texas, created a story map, and updated the website to commemorate the agency's centennial year.



*Famous Trees of Texas (2015) was recently updated for the agency's centennial year.*

Objective 2.2: Embrace new technologies to create self-directed learning opportunities for citizens, teachers, and students.

Strategy 2.2.1: Maintain the online Texas Tree Planting Guide and Texas Tree ID websites.

Strategic Action: TFS maintains the online Texas Tree Planting Guide and Texas Tree ID websites. A new application, *Texas Tree Trails*, was developed for the Texas Forest Information Portal. This website focuses on conservation education and helps students learn about tree related topics such as tree structure, function, health, and the benefits of trees.

Strategy 2.2.2: Expand the use of social media.

Strategic Action: TFS effectively uses Twitter, podcasts, and YouTube to promote the importance of trees in urban and community areas.

Goal 3: Reduce the negative impacts of land –use change, fragmentation, and catastrophic events on urban forest landscapes

Objective 3.1: Monitor the impact of land-use change on urban forests in Texas

Strategy 3.1.2: Using high-resolution imagery, implement an urban tree assessment program for the major metropolitan areas of Texas.

Strategic Action: TFS has conducted Urban Tree Canopy (UTC) assessments for many areas throughout the state. An online application, *Urban Tree Canopy*, was developed for the Texas Forest Information Portal. This website enables users to view predicted urban growth areas, UTC, and modeled future UTC based on management policy (neglect, status quo, or targeted).

Goal 4: Preserve, protect, and improve the quality of life within Texas cities and communities.

Objective 4.2: Support tree planting as an energy-saving practice.



Strategy 4.2.1: Develop partnerships with electric utility providers to fund local programs to plant residential trees as an energy efficiency measure.

**Strategic Action:** TFS has developed a tremendous partnership with electric utilities across the state. Oncor Electric Delivery, CenterPoint Energy, TXU Electric, and other utilities sponsor programs for customers to receive free trees for planting.

Objective 4.3: Support local community and urban forestry water quality programs.

Strategy 4.3.2: Work with local water utility managers and public works directors on policies that support the contribution of urban trees and forests in water quality and quantity management.

**Strategic Action:** TFS, working with USDA Forest Service, conducted a pilot project using iTree – Hydro to model stormwater runoff in the Vince Bayou watershed under different UTC scenarios.

### ***Issue Addressed: Water Quality and Quantity***

#### **Goal 1:** Maintain watershed function

Objective 1.1: Promote the importance of Texas forests and natural landscapes in maintaining watershed function.

Strategy 1.1.2: Establish critical partnerships to enhance watershed function.

**Strategic Action:** TFS established the *Texas Forest and Water Partnership* after hosting a state partnership forum. This partnership consists of forest owners and water utilities collaborating for clean water.

#### **Goal 2:** Protect water quality

Objective 2.3: Work with communities to improve water quality in urban environments.

Strategy 2.3.1: Promote the benefit of forests in mitigating stormwater runoff

**Strategic Action:** TFS, working with numerous partners, is establishing a coalition focused on increasing urban forest canopy in Houston to reduce stormwater runoff and enhance water quality flowing to the Gulf of Mexico.







## TEXAS A&M FOREST SERVICE PROGRAMS SECTION

### Guide to Agency Programs

The following section includes seventeen programs the Texas A&M Forest Service (TFS) delivers within its two divisions; the Division of Forest Resource Development & Sustainable Forestry (FRDSF) and the Division of Forest Resource Protection (FRP).

Those programs included in detail in the Issues Section are described briefly in this section. For those programs that are not described specifically or in detail in the Issues Section, a more detailed description and more information about that program are included in this section.

### Forest Resource Development & Sustainable Forestry

- East Texas Program Delivery
- West Texas Program Delivery and West Texas Nursery
- Tree Improvement Program and Western Gulf Forest Tree Improvement Cooperative
- Sustainable Forestry Programs
  - Forest Inventory and Analysis
  - Ecosystem Services
  - Water Resources
  - Forest Taxation
  - Forest Economics and Resource Analysis
- Urban Forestry and Community Forestry Program
- Forest Health Program and Forest Pest Management Cooperative
- Stewardship Programs
  - Rural Forestry Assistance and Forest Stewardship Program
  - Forest Legacy Program
  - Conservation Education
  - State Lands Management

### Wildfire & Public Safety Programs

- Predictive Services
- Mitigation and Prevention
- Planning and Preparedness
- Local Capacity Building
- Incident Response
- Law Enforcement



## East Texas Program Delivery

### 1. Program Description

East Texas Program Delivery consists of operations that serve as the implementation mechanism in the field offices for all TFS programs in East Texas listed in this report. District offices serve as the point of contact for landowners, communities, fire departments, and other stakeholders. As of 2015, a total of 166 employees in East Texas delivered programs of both the Resource Development and Resource Protection Divisions of the agency. Activities of these programs are divided into four broad functional areas: landowner assistance, district level emergency response, community forestry, and outreach.

Landowner assistance: District-level staffs provide technical expertise, education, and consultation to private property owners to help them maintain healthy forests and develop and implement long-term forest management plans that reflect their goals and address the needs of the forest. Activities include:

- Diagnosing and recommending treatments for tree- and forest pests.
- Identifying potential wildfire hazards and where these hazards can be mitigated.
- Providing technical assistance regarding timber theft.
- Maintaining lists of private forestry vendors, consultants, and arborists that perform recommended practices.
- Consulting with landowners to develop forest management plans (known as Forest Stewardship Plans) that are specific to each landowner's forest and include detailed descriptions for the current forest and other cover types, soils descriptions, commercial producing capacity of the forest, referrals to private vendors, educational materials on wildlife, water, and aesthetics management, reforestation recommendations, maps, helpful information sources, and recommended practices to improve the forest.
- Assist landowners with participating in available cost share programs. Without these programs many landowners would be unable to implement Forest Stewardship Plans and the management activities needed to maintain their forests and the receive benefits they provide.

Emergency response: District level activities include rapid local response to wildland fires and non-fire emergencies. TFS field foresters and resource specialists respond to emergency calls in their local districts as well as dispatch zones statewide, work with VFDs, and promote fire prevention. Activities include the following:

- Maintaining active fire prevention campaigns in the field through Smokey Bear appearances, media releases, and school and civic presentations.
- Sustaining trained and equipped local personnel in order to maintain a high level of readiness.
- Recruiting and retaining seasonal firefighters to provide backup to full-time wildland fire fighters.
- Monitoring local wildfire conditions and supporting burn ban decisions.
- Maintaining working relationships among local firefighting organizations (Department of Public Safety, Volunteer Fire Departments, forest industry firefighters, and municipal fire departments).



Community Forestry: Activities include educating East Texas communities to recognize the importance and value of trees and forests and helping them build urban forestry programs. Activities include:

- Working with local leaders and interest groups on tree planting projects to ensure the establishment, care, protection, and perpetuation of urban forests.
- Assisting local governments in the development and strengthening of urban forestry policies.
- Assisting communities to meet the National Arbor Day Foundation's Tree City USA qualifications.
- Consulting with individual homeowners and neighborhoods regarding tree health and maintenance.

Outreach activities: Local level conservation education programs educate and inform the public about the wise use and sustainability of forests and natural resources. Activities include:

- Working with County Forest Landowner Associations (CFLAs) who are interested in managing forests for timber production, wildlife, and environmental services.
- Providing news articles and news releases about forestry issues and events to local media.
- Providing presentations for local civic groups and organizations about proper forest management.
- Providing school programs for students using national initiatives such as Project Learning Tree, the Arbor Day Foundation's poster contest, and locally-organized Forest Awareness Tours that are hands-on, interdisciplinary, and meet Texas Education Agency requirements.

## **2. Priority Areas**

East Texas Program Delivery will occur in all counties in East Texas. Priority of a county depends on the issues. See Issues Section for issues.

## **3. Goals, Objectives, and Strategies**

The agency is responding to changes in the goals of a new group of landowners that has emerged, often referred to as non-traditional family forest owners. While the traditional goals of timber production, wildlife, and soil and water conservation remain their priorities, these non-traditional owners have additional goals. New goals include increased emphasis on aesthetics, privacy, non-traditional forest product production, outdoor recreation, and protection of the natural resources on a landscape scale. TFS has trained the agency field staff and external non-TFS natural resource managers in a USFS curriculum tailored for Texas called *Changing Roles: a Wildland Urban Interface Professional Development Program*. Conservation education and outreach consequently have received more emphasis over the last few years.

East Texas Program Delivery activities impact all East Texas citizens and affect a significant number of citizens in Texas residing outside of East Texas. The effect is realized in the



agency's advocacy of the proper and appropriate management of the natural resources of Texas. The resulting effect can be seen in the better management of commercial timber, improved air and water quality, and improved forest health and wildlife habitat. These actions create and maintain jobs in timber operations, processing, lumber production, manufacturing, transportation, and support industries such as equipment dealers, mechanics, parts dealers, recreational equipment and services, and others who receive a direct benefit from the perpetuation of healthy private forests. All landowners with an interest in sustaining their forest land are eligible for all of the TFS landowner assistance programs. The general public is welcome to attend all TFS outreach and community forest programs.

- Generally, a district office is comprised of a District Forester (DF), four to five Resource Specialists (RS), and in most cases an Office Associate (OA). District Foresters provide leadership, supervision, administration, and fiscal stewardship for each of the local districts. They are involved in community events, are recognized leaders in all forestry concerns, respond to emergencies, and are responsible for the delivery of all TFS programs in East Texas.
- Resource Specialist duties include preparation of tract/stand maps, collecting property and soils data, direct interaction with clientele, reforestation and management planning, and delivery of forest health and fire protection outreach programs including the Southern Pine Beetle Prevention Program, VFD capacity building, conservation education, fire prevention, and special projects. Each RS also serves as a wildland firefighter and/or emergency responder who also operates heavy firefighting equipment and uses hand firefighting tools.

#### **4. Performance Measures**

The efficiency of East Texas Program Delivery activities is captured when district staff report activities through a TFS reporting system called TexFARS (Texas Forest Accomplishment Reporting System) and a USFS reporting system called PMAS (Performance Measure and Accountability System). Examples are presented below:

- Number of Stewardship Plans written.
- Number of acres included in Stewardship Plans.
- Number of professional forester assists to landowners.
- Number of Certified Forest Stewards recognized.
- Number of referrals made to private forestry consultants or arborists.
- Number of reforestation assists to landowners.
- Number of Southern Pine Beetle prevention applications prepared and implemented.
- Number of CFLA meetings in East Texas.
- Number of Project Learning Tree workshops conducted.
- Number of forestry awareness tours conducted.
- Number of Arbor Day poster contest participants.
- Number of East Texas individual urban assists.
- Number of government organization urban assists.
- Number of non-government community organization urban assists.
- Number of volunteer fire department assists.



## West Texas Program Delivery & West Texas Nursery

### 1. Program Description

There are an estimated 32 million acres of cropland in the state of Texas. More than 40 percent (12.8 million acres) of this cropland has soils that are classified as “highly erodible.” As a result, the state loses an average of 14 tons of topsoil per acre each year. This makes Texas one of eight states having the worst soil erosion rates in the nation. In response, TFS established the West Texas Nursery, and has assigned area regional foresters to serve the landowners and communities of this region. The intent of the agency is to aggressively promote “agro-forestry” and forestry-based “windbreaks” and other applicable conservation and tree planting applications. These are programs designed to conserve topsoil and support the booming agricultural market in this region of Texas. In addition, TFS has assumed a lead role in the promotion and delivery of urban and community forestry programs in this region. The goal of the TFS urban and community program is to empower Texas communities to improve the quality of life for citizens living in both urban centers and/or small communities throughout the High Plains region.

### 2. Program Priority Areas

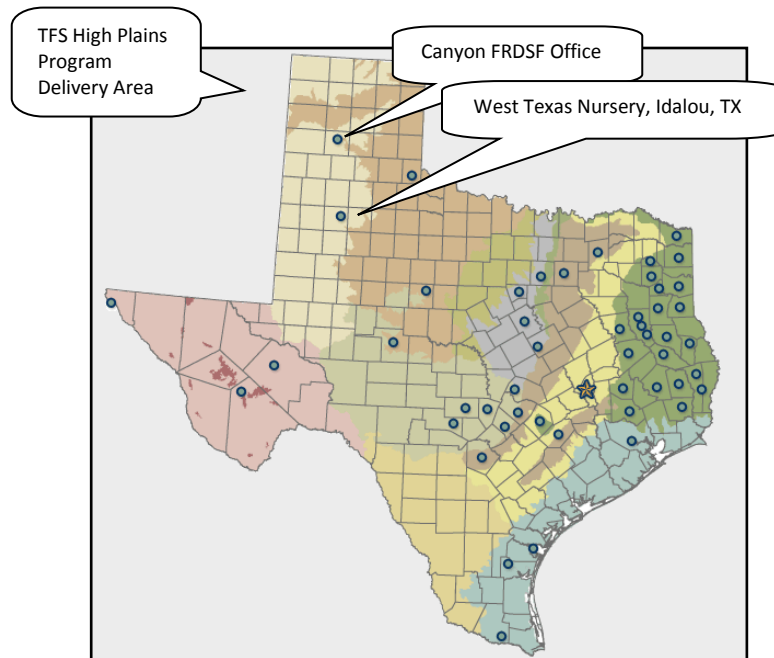
All programs delivered by the TFS in the Texas High Plains region are developed to meet the interests of private non-industrial landowners, non-profit organizations, cities, counties, and municipal governments located within the defined program delivery area.







**Figure 7. Delivery Area for Texas A&M Forest Service High Plains Program**



### **3. Goals, Objectives, and Strategies**

In 1971 the TFS employed a Forest Silviculturalist in Lubbock. In 1973, the West Texas Nursery opened for business at the Texas Agricultural Experiment Station north of Lubbock.

The intent of this new forestry position and nursery was to provide a source of low cost, local tree resources and technical assistance for landowners in the region to properly establish windbreak and conservation planting schemes for the protection of their land. In 1973 the role of this forestry position was further expanded to address urban and community forestry issues in surrounding cities and communities.

Since their introduction into the High Plains region in 1971, TFS operations and landowner/community support programs have steadily expanded to meet the growing demands within this region of the state. Significant changes and advancements over the last 41 years have included:

- Staff size has grown to five full-time nursery employees.
- New (2004) nursery facility was established in Idalou, TX. This facility features over 40 acres of field compartments for growing bare root hardwood stock, accompanied by an office facility and a state-of-the art greenhouse, lathe house, and packing facility to accommodate production of standard evergreen windbreak species. The nursery has participated in various types of custom contract growing operations for various ecological/environmental restoration projects located throughout the state.





- Foresters were located in Idalou and Canyon to promote agro-forestry/reforestation, and forestry-based land conservation programs, while also providing assistance to private landowners, cities, and communities who are seeking technical information and support for both rural and urban/community forestry practices.

Program function and oversight for the TFS West Texas Program, which includes both the West Texas Nursery Operation and Technical Assistance Program, are provided by the Central Texas Operations Department Head of FRDSF who operates out of the Austin Regional Office. Management of the West Texas Nursery is provided by the on-site Nursery Operations Coordinator. Technical landowner and community assistance is provided by Staff Foresters from the Idalou and Canyon FRDSF offices.

Various collaborative outreach endeavors, technical assistance, and conservation awareness projects involving other local, state, and federal agencies are a common, and strongly encouraged, practice for TFS program staff in the High Plains Region. Cooperating agencies include: Texas AgriLife Extension Service, Texas Soil and Water Conservation Districts, National Resource Conservation Service, U S Fish and Wildlife Service, Texas Parks and Wildlife Department, U S Army Corp of Engineers, City of Austin Wildland Preservation Program, Texas Nature Conservancy, Lubbock Ag Council, Texas Department of Transportation, and the Cities of Idalou, Lubbock, and Amarillo, along with over fifty additional communities in the program delivery region.

#### **4. Performance Measures**

The effectiveness and efficiency of TFS conservation programs in the High Plains can best be conveyed by quantifying the “on-the-ground” impact of the products provided by the West Texas Nursery, and the conservation program support provided by the foresters in the region. In the period from 2001 to 2010, the West Texas Nursery provided area landowners with more than 1.5 million low-cost windbreak and conservation seedlings. These seedlings have provided critical erosion control and other associated environmental benefits to an estimated 750,000 acres of property in the High Plains region. In addition, it is estimated that an additional 75,000 acres of wildlife habitat have directly benefited from the planting of conservation and custom wildlife seedling packets provided by the West Texas Nursery.

While promoting the benefits of windbreak and conservation plantings in the High Plains, the regional staff also promotes the substantial benefits of implementing forestry-based programs in growing urban areas and also smaller communities.



## **Tree Improvement Program & Western Gulf Forest Tree Improvement Cooperative**

### **1. Program Description**

TFS conducts tree breeding programs for reforestation, Christmas tree production, and urban plantings. Programs for reforestation are conducted both independently and as a part of the Western Gulf Forest Tree Improvement Program (WGFTIP). These programs field test trees for adaptation, disease resistance, stem quality, and growth rate. Our cooperators then use these trees to produce seedlings that are sold to landowners through private nurseries. Other small programs improve Virginia pine for the Texas Christmas tree industry and various hardwood species for street trees.

The WGFTIP provides technical leadership for similar regional programs. The WGFTIP is a collaborative effort supported with dues and in-kind contributions from four state forestry agencies (Arkansas, Oklahoma, Louisiana, and Texas) and seven commercial concerns. These 11 organizations produce approximately 300 million seedlings used to reforest 500,000 acres annually. Because of TFS and the WGFTIP, all of the planted loblolly and slash pine seedlings since the 1950s in the Western Gulf Region of the United States have been genetically improved.

The genetic improvement of southern pines was initiated in 1952 by TFS. This program was the first of its kind and served as a model for silvicultural research cooperatives subsequently organized around the world. The TFS program is both an independent effort and a part of the regional WGFTIP effort. A unique part of the TFS effort is the Urban Tree Improvement Program that tests local sources of native species for use in Texas cities.

Plant breeding programs in agronomic crops have traditionally been funded by the US Department of Agriculture (USDA) and conducted through the university experiment stations. For historic reasons, improvement of forest trees has always been conducted through the state forestry agencies working in collaboration with major landowners.

### **2. Program Priority Areas**

Outstanding trees identified in the TFS program are transferred to commercial partners who then make seedlings available to both non-industrial private and commercial forestland owners. Landowners benefit directly from more lucrative harvests. The regional economy benefits as an improved resource base supports primary and secondary manufacturing, supporting businesses and taxing authorities. Positive environmental impacts include more disease resistant and better adapted forest plantations that store more carbon and relieve harvest pressure on ecologically-sensitive areas.



### **3. Goals, Objectives, and Strategies**

The Tree Improvement Program functions as a part of the FRDSF division. The program is directed by the WGFTIP Geneticist who oversees two Research Specialists at Magnolia Springs Seed Orchard in Jasper County. The lead Research Specialist, in turn, oversees a Resource Specialist located at the Magnolia Springs Seed Orchard. Operational direction is provided by the WGFTIP Geneticist to carry out the independent TFS Tree Improvement Program and to meet the obligations that result from participation in the WGFTIP. The technical direction of the WGFTIP is provided by staff employed by TFS. The Project Leader has a joint appointment with TAMU to promote effective cooperation with university plant breeders. The WGFTIP operates under the guidance of an Executive and Steering Committees representing the membership of the WGFTIP. The Executive Committee, comprised of a representative from each member, meets annually to obtain a report of progress. TFS, in addition to serving as the hosting organization, has a representative on the Executive Committee. A Steering Committee meets three times per year to provide periodic oversight.

TFS coordinates its Tree Improvement Program with similar and complementary programs operated by the forestry agencies in the states of Oklahoma, Arkansas, and Louisiana.

### **4. Performance Measures**

Tree breeding captures an average of 0.5- to 1.0-percent improvement in growth rate each year. Cumulative benefits have resulted in >30-percent improvement in growth rate. Potential growth rates of 5.75 tons per acre per year for unimproved planting stock have been increased to 7.5 tons for increases in marginal Net Present Values of \$150 to \$300 per acre. This represents a current value increase of \$75 to \$150 million in the regional wood supply. Improved growth also impacts carbon sequestration, biofuels, and forest health.





## **Sustainable Forestry Programs**

### **Sustainable Forestry Program: Forest Inventory & Analysis**

#### **1. Program Description**

The Forest Inventory and Analysis (FIA) Program supports the overall mission of the agency by providing objective and scientifically-credible information about the growth, extent, composition, and mortality of the state's forests and woodlands. The FIA program works in cooperation with the Southern Research Station (SRS) of the USFS. The inventory, which is like the Census for trees, is conducted through a series of approximately 28,000 permanently-established plots which are re-measured on a 5-year cycle in the 43 timber-producing counties of East Texas and on a 10-year cycle in the remaining 211 Central and West Texas counties. Each plot represents approximately 6,000 acres with 20 percent of the plots measured each year in East Texas and 10 percent measured each year in Central and West Texas. Results from the inventory are available through an online data query system and reports published by TFS and SRS.

#### **2. Program Priority Areas**

The FIA program has been conducted in the 43 timber-producing counties of East Texas since the 1930s. Initially, the program was administered solely by the USFS and plots were measured periodically by federal crews with state and local assistance. These inventories were conducted during 1935, 1955, 1965, 1975, 1985, and 1992. The 1998 Farm Bill altered the program nationally in many ways which positively affected the Texas inventory process. The inventory methods were mandated to become standardized nationally and the inventory was changed from periodic to annual to provide more real-time data through use of a rolling average. The inventory was also expanded to include all forested lands of the United States regardless of their timber-producing capability. The USFS was encouraged to enter into cooperative relationships with state agencies to better facilitate collection of the data on an annual basis.

TFS entered into a cooperative relationship with the USFS Southern Research Station in 2001. Due to the need for current data on the forest resource, the decision was made to expedite the survey from its prescribed five-year cycle to a two-year cycle, then perform all future measurements on the five-year measurement cycle. TFS began collecting data for the seventh inventory of the 43 East Texas counties in June of 2001 and completed the measurement in August 2003. Measurement of the eighth inventory was begun in October 2003 and has continued on the five-year cycle since.

TFS initiated the inventory of the 211 Central and West Texas counties which were previously unmeasured in January 2004. The inventory of these counties will be done on a 10-year cycle, measuring 10 percent of the plots per year. As of 2015, TFS is about to start re-measuring plots in this region.



### **3. Goals, Objectives, and Strategies**

Data provided by the FIA program is utilized by federal, state, and local government as well as private companies that utilize or produce forest products. The USFS utilizes the data to determine distribution of federal money based on amount of forested land and ownership patterns. TFS utilizes the data to identify program needs such as targeting reforestation efforts and economic development opportunities and local governments use the data to assess status of the forest resource following disasters such as fire, drought, and hurricanes. Forest industry utilizes the data when making business decisions such as where to locate new mills based on wood availability.

The FIA program is in the FRDSF Division and is administered through a Department Head and Program Coordinator and 11 crews, consisting of one Staff Forester and one Resource Specialist, located in field offices throughout the state. Program administrators develop operational protocol based on program goals, TFS administrative procedures, and national FIA technical protocols. The Program Coordinator serves as the point of contact between the field crews and USFS Southern Research Station. Field work is performed by 11 field crews in ten strategically-located offices.

The TFS FIA Program is the only program that provides objective and scientifically credible information about the growth, extent, composition and mortality of the state's forests that accounts for all ownerships and is nationally standardized.

The TFS FIA Program works primarily with the Southern Research Station of the USFS. TFS has entered into a cooperative agreement with the SRS where TFS collects all data from the plot locations and SRS performs the data analysis.

### **4. Performance Measures**

- Number of plots re-measured in East Texas.
- Number of panels completed in Central and West Texas.
- Above average quality assurance scores.







## **Sustainable Forestry Program: Ecosystem Services**

### **1. Program Description**

The Ecosystem Services program supports the overall mission of TFS by working to create marketable value for the numerous benefits forests provide, such as clean air, clean water, wildlife habitat, flood control, and aesthetics. Marketing these services allow landowners to generate additional revenue from their forestland, reducing the likelihood they will convert it to another land use unable to provide these same environmental benefits. To date, wetland and stream mitigation banking has garnered the most interest from Texas landowners, though there is increasing promise in payment for watershed services.

The program's objective is accomplished through the development of market expertise and an effective education/technical assistance/outreach campaign.

The Ecosystem Services Program was established in 2005 as a pilot project with the USFS and Forest Trends, a nonprofit organization, as a way to "Keep Forests in Forests." The idea came from the release of the Southern Forest Resource Assessment in 2002, a report that identified urban sprawl as one of the biggest threats to southern forests.

In November 2006, private carbon credit aggregation firms entered Texas to enroll forest landowners in the Chicago Climate Exchange (CCX) forest carbon offset program. These landowners turned to TFS for assistance. At the request of our cooperators, TFS became the first and only state forestry agency to be approved as an authorized verifier for the CCX.

TFS conducted verification on the initial group of Texas landowners that enrolled in the CCX forest offset program in 2008, certifying that a total of 210,000 carbon credits followed all market rules and procedures. Required annual and final pool verifications were conducted through 2010, when CCX was converted to a carbon registry.

### **2. Program Priority Areas**

The Ecosystem Services Program ultimately has an effect on all Texans based on its objective to "keep forests in forests," enabling the public to continue enjoying the numerous environmental benefits this resource provides. Developing these markets is one of the most promising solutions for forestland conservation. This program has focused efforts on the more than 200 thousand East Texas family forest owners in an effort to help them generate additional revenue from their lands, enabling them to afford to keep their forestland. If these markets become established, landowners throughout the state may be able to participate, further expanding expected environmental benefits. Companies and organizations will have additional ways to demonstrate their commitment to environmental stewardship and sustainability.





### **3. Goals, Objectives, and Strategies**

The goal of the Ecosystem Services program is to “Keep Forests in Forests” through the development of marketable values for the numerous benefits our forests provide. This is accomplished through the development of market expertise, and education/technical assistance.

Texas A&M Forest Service strives to stay informed on the latest developments in ecosystem services markets. Without this knowledge, these opportunities would develop at a much slower rate in Texas. In order to sustain this expertise, personnel closely monitor market protocols and transactions, maintain strong professional networks, stay abreast of research/pilot projects, and track potential legislation that may impact these markets.

Education and technical assistance are critical to achieving the goal of this program. Ecosystem services markets are complex in nature, and without an aggressive outreach program, landowners will not engage. Texas A&M Forest Service, through the development of market expertise, can assimilate this information into an understandable format, create tools that facilitate market participation, and host workshops that distribute this information.

This program works closely with federal and state units of government to effectively coordinate efforts to carry out its mission. As these markets continue to develop, TFS will look to develop key partnerships with the Texas Parks and Wildlife Department, Texas Commission on Environmental Quality (TCEQ), Environmental Protection Agency, Natural Resource Conservation Service, academia, and non-governmental organizations.

### **4. Performance Measures**

The effectiveness of this program can partially be measured through the participation of Texas landowners in these new, emerging voluntary markets. To date, 129 landowners have enrolled, registered, verified, and marketed carbon credits generated on approximately 15,000 acres of their forestlands.

Another measure of the effectiveness of this program will be how other states establish similar programs. The TFS program is recognized as a model for the nation, and as such, the agency has been inundated with information requests from around the country regarding these markets and how other organizations can get involved. TFS has conducted numerous presentations and participated in training sessions on this subject across the country.



## Sustainable Forestry Program: Water Resources

### 1. Program Description

The Water Resources Program works to protect, maintain, and enhance the quality of the state's water resources. This objective is accomplished through the development of science-based, non-regulatory conservation measures, or Best Management Practices (BMPs), effective coordination with numerous partners, an aggressive education/technical assistance/outreach campaign, and a monitoring program designed to measure the implementation and effectiveness of these practices.

The TFS Water Resources Program was developed after the passage of the Federal Clean Water Act of 1987, which directed all states to take measures to reduce nonpoint source (NPS) water pollution. The Texas Legislature assigned responsibility for abating and mitigating NPS pollution from agricultural and silvicultural operations to the Texas State Soil and Water Conservation Board (TSSWCB). TSSWCB, in turn, began contracting with TFS to coordinate the silvicultural aspect of this responsibility.

In 1989, the *Texas Forestry Best Management Practices Handbook* was developed, published, and widely distributed throughout the forestry community. A FY 1990 Clean Water Act Section 319 (h) grant from the Environmental Protection Agency through TSSWCB provided additional funding to support the mission of the program. Strategic monitoring of forest operations began in 1991 to evaluate the level of BMP implementation, and ultimately the effectiveness of the educational program, with the first report being published in 1992. Subsequent reports have been published in 1996, 1998, 2000, 2002, 2005, 2008, and 2011.

Results from the initial report of BMP implementation monitoring led to the revision of the *Texas Forestry Best Management Practices Handbook*. This handbook was also revised in 1995, 2004, and 2010. In an effort to improve BMP implementation, TFS developed a logger training BMP workshop in 1995. To date, more than three thousand loggers have attended this workshop, and account for approximately 90 percent of the timber harvested annually in Texas. Major forest products companies now include this training in their mandatory requirements before loggers are able to deliver wood to their facilities.

In 1998, TFS began coordinating Sustainable Forestry Initiative (SFI) sponsored landowner workshops around the state. These workshops focused on sustainable forestry, with topics such as BMPs, wildlife, and reforestation. Since their inception, more than 40 workshops have been conducted reaching more than five thousand landowners.

The 77th Texas Legislature also showed support for the TFS Water Resources Program. The Texas Reforestation and Conservation Act of 1999 (SB 977) provided property tax incentives for landowners choosing to protect water quality by implementing buffer strips, or streamside management zones (SMZs), on their property.

In 2003, the Water Resources Program began an intensive, highly technological stream monitoring project designed to test the effectiveness of BMPs in protecting water quality.



After four years of data collection, the results prove that Texas BMPs, when applied properly, are effective in protecting water quality.

Program efforts were expanded in 2011 to address water resource issues throughout the state. Major initiatives focusing on vegetation management, riparian management/restoration, wildfire rehabilitation, urban stormwater management, and land stewardship will further protect critical water resources.

## **2. Program Priority Areas**

While the Water Resources Program ultimately has an effect on all Texans, historically the focus has been in the commercial timberlands region of East Texas, where the majority of Texas' freshwater resources are located. Researchers predict that by 2050, Texas will not have enough water to meet demand, prompting the state and individual metropolitan areas to make long range water plans focusing on the water rich area of East Texas. Protecting water quality in this region is critical, and the implementation of BMPs is the most efficient and economical way to accomplish this goal.

Based on the success this program has had in East Texas, and the challenges facing the state with regard to water, a clear need exists for program delivery to occur throughout Texas. As such, efforts have been expanded into Central and West Texas to address new opportunities (biomass, ecosystem services) and concerns (population growth, land fragmentation, invasive species, climate variability, wildfire, resource recovery). This broadened focus has positioned the Water Resources Program to provide much needed assistance to landowners and communities in these regions.

## **3. Goals, Objectives, and Strategies**

The goal of the Water Resources Program is to protect, conserve, and enhance our water resources through the sustainable use of our forests. This is accomplished through the development of sound environmental principles, an aggressive education/training/technical assistance effort, and a thorough monitoring approach designed to identify future target areas. Effective coordination of project efforts with key partners is critical to ensure program success.

Forestry BMPs have been revised over the years to account for new research, operational methods, and concerns identified through monitoring. These practices have been empirically shown to be effective at protecting water resources time and time again. Future strategies include modifying these practices to address water quantity issues, other land intensive operations, and activities outside of the traditional commercial timber belt.

The education and technical assistance component of this project continues to develop innovative ways to promote BMPs and water resource protection. This proactive approach has led to the agency receiving many regional and state environmental awards from EPA, USDA, and TCEQ. However, with rapidly changing landscapes, ownership, and objectives,



an expanded educational effort is paramount to the sustainability of this resource. Monitoring results can help identify areas to target these efforts.

Coordinating project efforts is a key aspect of an effective program. Texas A&M Forest Service works closely with the forest sector, state and federal agencies, academia, and other non-governmental organizations. In an effort to promote project collaboration, the Water Resources Program hosts meetings for cooperators to discuss current activities, issues, and potential partnership efforts regarding forests and water resources. New partnerships and cooperators will have to be developed to continue to address the water issues facing Texas. Potential partners include local governments, water suppliers, energy companies, land developers, and other organizations collaborating on diverse strategies, including watershed planning, ecosystem services marketing, source water protection, and stormwater management.

#### **4. Performance Measures**

The effectiveness of this program is primarily measured through BMP implementation monitoring, a statistically sound, objective method in which personnel evaluate the degree at which BMPs are implemented on forest operations. Monitoring results provide a clear assessment of the effectiveness of the education, technical assistance, and outreach efforts of this program, and identify areas that the program needs to target for improvement. Currently, overall BMP implementation on forest operations is 94.1 percent representing a 20-percent increase since the monitoring program began in the early 1990s. Other key measures of the Water Resources Program are as follows:

- Number of loggers trained in BMPs.
- Number of annual logger training contact hours.
- Percent of wood harvested by BMP trained loggers.
- Logger training course recommendation rate.
- Number of landowner workshops.
- Number of landowner training contact hours.





## Sustainable Forestry Program: Forest Taxation

### 1. Program Description

TFS Forest Taxation Program is one of the official sources of data for timberland valuation mandated by the Texas Tax Code. The program provides stumpage prices, timberland management costs, and timber growth data to the Property Tax Assistance Division (PTAD) of the State Comptroller's Office of Public Accounts to determine timberland appraised value for their annual Property Value Study. The Forest Taxation Program is also responsible for assisting the Director of Texas A&M Forest Service with designating qualified timberland as Aesthetic Management Zones – Special or Unique and issuing determination letters of restricted-use forest zone applications upon request from District Chief Appraisers and taxing units, pursuant to the Tax Code, §23.9806 and §23.9801(1)(B).

The Forest Taxation Program also provides assistance on administrative rules and training on forest zone determination in accordance with the Tax Code, Chapter 23, and Subchapter H. In addition, the program staff monitors timberland tax appraisals, conducts timberland property tax research and seminars and federal income tax seminars, and provides assistance to the general public on timber tax issues on a daily basis.

### 2. Program Priority Areas

The Forest Taxation Program mainly affects private timberland owners, county appraisers, forestry professionals, and tax professionals. However, due to local governments' heavy dependence on property tax, the program may affect a wide array of the population throughout the state, especially in the 43 East Texas counties.

The data provided to the State Comptroller's Office is used to develop timberland productivity value for property tax purposes. There are approximately 200,000 private non-industrial (family forest) owners in East Texas. Since forestry professionals and tax professionals provide technical assistance to timberland owners, the program can affect them as well.

The TFS Forest Taxation Program has regularly published the *Texas Timber Price Trends* since 1983. Originally, the publication was intended to give timber growers access to market prices and trends. In 1996, the Comptroller's Office adopted a revised manual for the appraisal of timberland, which expressly refers to the publication as a "readily available and official source of stumpage price data" for use in timberland appraisal for property tax purposes.

Since 1996, the program has had an annual interagency cooperation contract with the Comptroller's Office to deliver the Timberland Management Cost Study. The study estimates the average annual timberland management costs of a prudent, profit-seeking private timberland owner in East Texas using a cost model approach.

SB 977, passed by the 76th legislature in 1999, amended the Tax Code by adding Subchapter H to Chapter 23 for restricted-use timberland appraisal. The Forest Taxation Program was directed to adopt an administrative rule governing the requirements for land to qualify as





being in special forest zones. The act mandated that, before a Chief Appraiser can deny an application for restricted-use timberland appraisal based on aesthetic management, critical wildlife habitat, and or streamside management zones, TFS must determine the validity of the zone. TFS's determination is conclusive. In addition, landowners are required to ask for a determination letter from TFS first before they apply to the Chief Appraiser if they are applying for a Unique or Special Aesthetic Management Zone designation.

SB 1646, passed by the 78th legislature in 2003, mandated that the timber growth and stumpage prices reported by the program should be expressed in tons and dollars per ton, respectively. In addition, the act required inclusion of small pine saw logs as a product, including cutting contract and gate wood sales (wood purchased by a contractor and delivered to a mill) to estimate average stumpage prices, and merging northeast and southeast Texas into one region.

### **3. Goals, Objectives, and Strategies**

#### ***Stumpage Prices***

A database is maintained to collect stumpage prices of timber sales in East Texas. Data is from actual timber sales reported by as many as 60 voluntary cooperators active in East Texas timber markets. Every two months, a survey form is sent to the reporters for their timber sale information during the previous two months. Data from the returned surveys is collected and compiled by the Forest Taxation Program staff. Average stumpage prices by forest product and region are reported in the bimonthly publication, the *Texas Timber Price Trends*. In early February each year, annual average stumpage prices by forest product are estimated based on timber sales information in the preceding year and reported to the Comptroller's Office.

#### ***Timberland Management Cost Study***

Program conducts a survey of accountants, independent contractors, surveyors, and forestry consultants, asking for unit costs of services and stand management practices, such as tax preparation, consulting, surveying, and building and maintaining boundary lines, fire lines, and roads. Every five years, the program surveys major corporate timberland owners (TIMOs and REITs) in East Texas for their timberland management styles by timberland type. A cost model approach is adopted to estimate management costs associated with management regimes typical of prudent landowners in the region based on the unit cost and management practices information from the surveys. The program prepares a Timberland Management Cost Study report for the Comptroller Office's by early December each year.

#### ***Timber Growth***

The Forest Taxation Program updates annual timber growth data upon its availability. The Manual adopted by the Property Tax Division mandates the USFS as the official source of the growth data.

TFS conducts the FIA program, a continuous survey in cooperation with USFS which determines, among other things, growth of the state's forest resources.



### ***Special Forest Zone Determination***

Before a Chief Appraiser can deny a restricted-use application, the appraiser must first request a determination letter from TFS as outlined in Chapter 215, Title 4 of Texas Administrative Code. To apply for a designation of timberland as Aesthetic Management Zone–Special or Unique area, the applicant must apply to the TFS first supplying required information.

### ***Tax Seminars***

The Forest Taxation Program regularly conducts seminars on timberland property tax valuation. Occasionally, our specialists are invited to make presentations on this subject for various groups such as professional associations, landowners, and District Appraisers. Each year, the program, in cooperation with the USFS, hosts timber income tax seminars. National timber taxation specialists are invited to be instructors along with our specialists.

## **4. Performance Measures**

Qualified forestland is appraised at its timberland productivity value instead of market value, which is usually much higher. This is intended to promote timber production and encourage landowners to keep timberland forested.

SB 977, passed by the 76th legislature, allows qualifying timberland to be appraised at its restricted-use value, which is normally half of the timberland productivity value, to encourage reforestation, wildlife management, and stream water protection. The act authorizes TFS to adopt administrative rules and determine certain special forest zones upon request.

The program publishes a bimonthly publication, *Texas Timber Price Trends*, showing stumpage prices received in East Texas since the 1980s. It is used widely as a guide to general timber prices in the region by landowners, forestry professionals, and business. There are approximately 150 subscribers. The publication is also posted on the web free of charge. Statistics show that on average it is visited and downloaded more than 8,000 times each year.

The following activities serve as benchmarks for the program:

- Collecting and compiling stumpage price data from actual timber sales in the East Texas timber market, publishing a bi-monthly stumpage price report, *Texas Timber Price Trends*, and providing annual average stumpage prices to the PTAD (define) of the Comptroller's Office.
- Conducting the annual Texas Timberland Management Cost Study.
- Providing timber growth information to PTAD of the Comptroller's Office
- Periodically conducting timberland property tax seminars for appraisal districts, landowners, forestry professionals, and tax professionals.
- Conducting federal income tax seminars in cooperation with the Forest Taxation Program of the USFS to landowners, forestry professionals, and tax professionals each year.
- Conducting research on and analyzing fiscal impacts of potential changes related to timberland property taxation providing advice to the Comptroller's Office.





## **Sustainable Forestry Program: Forest Economics & Resource Analysis**

### **1. Program Description**

It is the mission of TFS Forest Economics and Resource Analysis Program to provide factual information and in-depth analysis of the resources and economics of the Texas forest sector in the development of forest-based markets as well as methods to utilize the woody resources of Texas. It works with local economic development professionals, forest products industries, and landowners on various economic development initiatives to expand current and attract new businesses that utilize forest resources wisely, and it promotes the wise, efficient, and sustainable harvesting, utilization, and marketing of woody vegetation and wood products.

TFS Forest Economics and Resource Analysis Program has three primary sections: Resource Analysis, which conducts assessments of the woody resources within the state; Forest Economics, which performs analyses to enhance the economics of the Texas forest sector; and Wood Utilization and Marketing, which conducts studies and leads initiatives that promote the wise, efficient, and sustainable harvesting, utilization and marketing of woody vegetation and wood products.

The USFS also conducts timber supply analysis and produces publications that are similar in nature to those developed by this program. However, their analyses and publications are regional and national in scope. The information they collect and disseminate is not specific to Texas. The Forest Economics and Resource Analysis Program works closely with the Texas AgriLife Extension Service to provide information to forest landowners in Texas, those interested in managing natural resources in Texas, and those interested in establishing wood-processing facilities in the State.

The staff of TFS Forest Economic and Resource Analysis Program, partners with local, regional, and federal units of government. They occasionally work with local governments to determine the economic impact that the addition of wood-processing facilities may have on their local economy. Recently, the State Legislature asked TFS to examine wood waste biomass supply for the use of this resource to generate energy. Other agencies contact the program for help in valuing woody resources, determining optimal harvesting methods, utilizing trees, and assessing wood supply. Our damage assessment documents developed after major hurricanes and wildfires are used by local, state, and federal agencies to determine extent of damage.

To avoid duplication of projects with the USFS, our assessments are limited in scope to only those forests existing in Texas and those companies wanting to establish wood-processing facilities in Texas. Since our assessments are Texas specific in scope rather than regional or national, we avoid duplicating their resource and economic analyses. By working closely with individuals associated with the Texas AgriLife Extension Service, duplication of effort is avoided. In fact, the two programs often work together on projects. Unlike members of universities, who usually conduct their assessments to develop new methods of analyzing data, our purpose is to apply existing methods to address a need and to disseminate knowledge about existing methods.



## **2. Program Priority Areas**

In 2013, the wood-based industry employed more than 60,900 people and was one of the top 10 manufacturing sectors in the state. In 33 of 43 East Texas counties, the forest sector was one of the two largest manufacturing employers. The value of timber ranked tenth in 2013 among Texas' top agricultural commodities. There are approximately 200 thousand private non-industrial timberland owners and dozens of corporate owners (TIMOs and REITs) with 11.9 million acres of timberland in East Texas.

However, almost all people within the State of Texas are indirectly affected by this program. For example, the attraction of industries to develop and maintain forest product facilities or to generate electricity impacts almost all people within the state, especially when local jobs are created. By promoting the wise and efficient harvesting of woody products, this program helps to increase the long-term productivity of forestlands, enhance water quality and reduce soil erosion, and to provide habitat for animals and fish which ultimately affects all Texans.

## **3. Goals, Objectives, and Strategies**

Major program activities include the following:

- Estimating the amount of available woody biomass for energy in Texas.
- Determining the potential long-term sustainability of market-driven resources.
- Monitoring the demographics of forest landowners and their desires.
- Annually publishing a report quantifying the amount of wood harvested and produced within Texas.
- Conducting growth/drain projections that quantify the amount of woody volume removed versus the amount of volume grown.
- Determining the feasibility of adding wood processing facilities throughout the state.
- Quantifying the economic impact of events, such as hurricanes and wildfires, that affects the woody resources of the state.
- Determining trends in wood-based markets and identifying new markets that can utilize resources obtained from forestlands in Texas.
- Identifying and promoting innovation and new technologies in support of ongoing and new forest-based economic activities.
- Providing up-to-date information and assistance to Texas landowners, manufacturers, distributors, and the public on the utilization of wood and the manufacturing and marketing of wood products.
- Assisting in the conservation of Texas' forests and the retention and recruitment of the forest products industries in Texas.

## **4. Performance Measures**

Forest Economics and Resource Analysis Program receives numerous requests for assessments of woody resources in the State. Its publications are routinely used as guides in developing policy and when public and private entities make investment and management decisions. Additionally, other state agencies contact program staff to conduct assessments of the impact that large-scale operations may have on the availability of woody resources.



A variety of organizations and entities use the program's forest economic assessments. Organizations interested in establishing wood-based facilities such as those for producing timber, plywood, oriented strand board (OSB), paper, and those for producing energy from biomass and those interested in producing biofuels, routinely contact this program's staff to conduct assessments of resource availability and the potential economic returns from such investments.

Two biomass-to-electricity plants are operational in East Texas, one in Nacogdoches County and one in Tyler County. Another initiative, in Woodville, produces wood pellets for export.

The program established a Rapid Damage Assessment Protocol to assess forest resource damage from hurricane and other natural disasters within days of the occurrence. The protocol integrates weather data, historical damage information, aerial reconnaissance, plot survey, and Forest Inventory and Analysis (FIA) data to produce timely, high quality forest resource damage information for assisting disaster relief and salvage operations. The program produced a timber damage assessment report 6 days after Hurricane Rita in 2005 and 4 days after Hurricane Ike in 2008. The hurricane reports are widely used and cited by federal, state, and local governments to determine policy related to utilizing woody resources following such disasters. The Rapid Damage Assessment Protocol was widely recognized as setting the bar for other states in terms of accuracy, detail, credibility, and speed. During the 2010/2011 fire season, the Rapid Damage Assessment Protocol was extended to include assessments of major fires in timber areas within a few days of containment.

Forest Economics and Resource Analysis staff also conducts economic assessments of internal programs. For example, TFS provided reforestation assistance on 22,174 acres of private forest land in the 2010 planting season. The Forest Economics and Resource Analysis Program determined that the annual direct economic impact of the TFS-assisted reforestation was estimated to be \$15.0 million over a typical 25-year rotation.





## Urban Forestry & Community Forestry Programs

### **1. Program Description**

The objective of the Texas A&M Forest Service Urban and Community Forestry (U&CF) Program is to lead communities in developing sustainable urban forestry and tree care programs that enhance the social, economic and environmental benefits that healthy trees and forests provide.

U&CF does this by assisting communities with the:

- Development of professionally-based resource assessments and management plans.
- Establishment and training of professional staff.
- Development and review of tree ordinances and policies.
- Establishment or improvement of the effectiveness of advocacy/advisory organizations.
- Education of citizens, businesses, agencies, and groups on proper tree planting, care, removal, and protection.

Texas was an early national leader in urban forestry. In the early 1970s, TFS realized that rapid urbanization was leading to loss of valuable forest resources and their economic, social and environmental benefits. TFS opened offices in Houston and Dallas/Fort Worth to assist communities and citizens with urban forest resource issues. In 1978, the Cooperative Forestry Act provided a small amount of financial assistance to Texas. In the 1990 Farm Bill, the USFS authority was expanded to include urban forestry and funding to states was significantly increased. As the Texas population has almost doubled since 1970, the U&CF has added more resources to assist communities. However, almost all of the additional resources added have been from federal funding via the USFS since state funding for the program has remained fairly constant for over a decade. While the number of communities served has grown over time with the increase in federal funding, the mission to help local communities manage and protect their forest resources has remained the same.

### **2. Program Priority Areas**

The U&CF Program seeks to leverage its resources to serve the greatest number of Texans possible. It does this by primarily providing technical forestry services to groups, including cities, counties, regional Councils of Governments, environmental non-profit organizations, schools; “green” trade groups, and others.

There are no qualifications or eligibility requirements for anyone unless they are participating in the Partnership Grants Program. When these grant monies are made available, communities must meet the eligibility requirements established by the USFS. This program requires that they be a not-for-profit organization and that they provide a 50-percent cost-share match in addition to other specific program requirements.

The U&CF Program is in the FRDSF Division. It is administered by an Urban Forestry Program Manager and an Urban Forestry Partnership Coordinator. These positions are



stationed in Austin and College Station, respectively, and are required by the USFS under their program guidelines.

The program is decentralized to better serve customers with regional offices in Houston, Dallas, Fort Worth, Canyon, Austin, El Paso, San Antonio, Conroe, Longview and Weslaco. Houston has two Regional Urban Foresters on staff and all the other offices have one. In addition, there are several TFS Staff Foresters in offices around the state who have urban forestry responsibilities as a minor part of their jobs.

### **3. Goals, Objectives, and Strategies**

The goals, objectives, and strategies of the U&CF program are described in detail in the Issues Section of this document.

### **4. Performance Measures**

The Federal guidelines for the U&CF Program detail activities and measurements. State funding is competitive and based on these measurements including outcome, outputs, demands and efficiency measures. These are reported nationally each year in the Federal community:

- Percent of population living in communities managing programs to plant, protect, and maintain their urban and community trees and forests.
- Percent of population living in communities developing programs and/or activities to plant, protect, and maintain their urban and community trees and forests.
- Number of people living in communities provided educational, technical, and/or financial assistance.
- Number of people living in communities that are developing programs/activities for their urban and community trees and forests.
- Number of people living in communities managing their urban and community trees and forests.
- Number of communities with active urban and community tree and forest management plans developed from professionally-based resource assessments/inventories.
- Number of communities that employ or retain through written agreement the services of professional forestry staff who have at least one of these credentials: (1) degree in forestry or related field and (2) ISA certified arborist or equivalent professional certification.
- Number of communities that have adopted and can present documentation of local/statewide ordinances or policies that focus on planting, protecting, and maintaining their urban and community trees and forests.
- Number of communities with local advocacy/ advisory organizations, such as active tree boards, commissions, or non-profit organizations that are formalized or chartered to advise and/or advocate for the planting, protection, and maintenance of urban and community trees and forests.
- Number of hours of volunteer service logged. (An agency-wide consistent methodology is to be developed to track volunteer hours).
- State-offered community grant program in current fiscal year.
- Number of communities receiving financial assistance awarded during the Federal FY 2009 through a state-managed community grant program.
- Amount of Federal (USFS) funding to States.
- Federal (USFS) dollar cost or expenditure per capita in community assisted.





## Forest Health and the Forest Pest Management Cooperative

### 1. Program Description

The Forest Health Program (FHP) is responsible for maintaining the health of rural and urban forests and woodlands throughout Texas. The program has its headquarters in College Station, a field staff in Lufkin, and regional forest health specialists in Austin (for Central and West Texas) and Longview (for East Texas). The Forest Health Program, previously known as the Forest Pest Control Section, was established in 1963 in response to a severe outbreak of the southern pine beetle (SPB) in East Texas. The program has expanded in recent decades to address all forest pests throughout the state. The FHP staff currently consists of two professional entomologists, four staff foresters, one research specialists, an office associate, and 1–3 seasonal employees.

The FHP staff is charged with organizing and delivering a forest health program for the entire State of Texas. Traditionally, major pests have included the southern pine beetle and oak wilt. In recent years, the Forest Health Program has been expanded to include other native insect and disease pests, as well as invasive insects, diseases, and plants. FHP personnel are charged with training TFS field personnel on pest identification and management as well as responding to public inquiries on pests of trees and forests in both residential and rural areas. Typical activities include monitoring forest pest activity on nonfederal forest lands throughout the state, organizing and delivering prevention and suppression programs on major pests, including federal costs shares, documenting losses to forest pests, and increasing public awareness of forest health issues. Federal pest suppression and prevention projects (e.g., oak wilt and southern pine beetle) are administered by FHP entomologists, but delivered in the field by TFS foresters and resource specialists in Central and East Texas.

In 1996, FHP initiated the Forest Pest Management Cooperative (FPMC), with headquarters in Lufkin. The FPMC is supported by funds from TFS, dues-paying members which include the USFS and various Timber Investment Management Organizations (TIMOs) and Real Estate Investment Trusts (REITs), and by research grants. The goal of the FPMC is to provide practical pest management options through applied research and technology transfer for insect and disease pests affecting pine seed orchards, pine and hardwood plantations, woodlands, and urban forests. Currently, the FPMC has 12 members and research is focused on developing prevention and control methods for the Texas leaf-cutting ant, Nantucket pine tip moth, pine bark beetles in high value trees, invasive pests of high-value trees, and insect pests of pine seed orchards.

### 2. Program Priority Areas

Priority areas for forest health in Texas, as identified in the state assessment, are a) southern pine beetle b) oak wilt, c) invasive nonnative insects, and d) invasive nonnative plants.

### 3. Goals, Objectives, and Strategies

***Southern Pine Beetle Goal: To develop and make available practical tools, training and public awareness campaigns for the prevention and suppression of SPB infestations in East Texas.***





## SPB Objectives

- Increase public awareness of SPB and how to prevent and/or control infestations.
- Provide training to Texas A&M Forest Service field personnel and other nonfederal stakeholders in East Texas on SPB identification and management.
- Monitor SPB hazard conditions at a landscape scale in East Texas.
- Deliver information and federal cost shares when available for the prevention of SPB infestations.
- Monitor SPB activity and predict pending SPB outbreaks in East Texas.
- Implement an effective SPB suppression program when an SPB outbreak occurs in East Texas.
- Develop practical methods of direct suppression of SPB infestations.

## SPB Strategies

- Prepare and publish periodic articles on SPB management for presentation on the TFS web page and publication in newsletters and other forestry outlets in East Texas; provide workshops for stakeholders on SPB identification, prevention, and control; promote SPB awareness and prevention at landowner meetings and forestry events in Texas.
- Train TFS foresters and technicians, as well as other nonfederal stakeholders, on SPB identification and management by means of periodic workshops. If infestations become available in Louisiana, Mississippi, Alabama, or Georgia before they occur in East Texas, provide “on-the-spot” training on aerial detection, ground evaluation, and direct control methods by taking new foresters to these states during summer months. Update TFS publications on SPB management as needed.
- Update the SPB grid block hazard map periodically using satellite imagery and/or protocols developed by the USFS Forest Health Technology Enterprise Team. Focus SPB prevention priorities on high hazard areas.
- Continue to administer and deliver the SPB Prevention Project. Meet periodically with the SPB Technical Advisory Board to review cost share rates and progress in the SPB Prevention Project. Give high priority to promote thinning on private forest lands adjacent to beetle-prone National Forests in Texas.
- Conduct annual spring trapping surveys in key East Texas counties to predict SPB infestation levels and trends, following the protocol developed by FHP and used across the South and Northeast. Continue to compile SPB data from prediction surveys conducted annually in 16 states of the South and Northeast. Post results on the TFS web page.
- Update the SPB Strategic Plan for responding to the next SPB outbreak. Contribute to the development and implementation of an Internet-based system for reporting SPB detection, ground check, and control information. Conduct aerial survey flights over a



portion of each TFS District at least once per year to detect new SPB infestations during years when SPB populations are expected to occur at damaging levels. Train TFS crews on aerial detection, ground check, and control protocols.

- When SPB activity resumes in East Texas, pursue research and development of new and practical direct control methods for SPB infestations. Cooperate with University and State entomologists in Texas and other states to develop and field test new approaches to control. During the interim, update the SPB Strategic Plan for suppression of SPB on nonfederal forest lands in East Texas.

***Oak Wilt Goal: Provide the leadership and support required to deliver an effective oak wilt management program in Central Texas.***

#### Oak Wilt Objectives

- Accelerate public education and awareness of oak wilt in Texas.
- Provide detection and notification of oak wilt centers in Central Texas.
- Prevent local spread of infection centers by mechanical methods, using federal cost shares when available as an incentive for affected private landowners.
- Selectively deaden or remove infected red oaks.
- Inject threatened live oaks with fungicide.
- Continue to administer and develop the oak wilt web page. [www.texasoakwilt.org](http://www.texasoakwilt.org)
- Train Oak Wilt Specialists consisting of Master Gardeners, Master Naturalists, and Certified Arborists with interest in oak wilt management.

#### Oak Wilt Strategies

- Continue efforts to inform the public of the extent and nature of oak wilt and provide general information on available prevention and control methods. This is being accomplished by a staff of experienced TFS field foresters stationed throughout Central Texas and by means of collaboration with the cities of Austin and Lakeway, Master Gardeners and Master Naturalists, and the Texas Chapter of the International Society of Arboriculture.
- Assess recent aerial imagery of selected counties known to harbor the disease and map existing areas of mortality believed to be oak wilt infection centers. Respond to property owner concerns by providing disease diagnosis and specific control recommendations.
- Create a barrier to underground disease spread by use of a trench to sever interconnected root systems in live oak stands, combined in certain cases with mechanical removal and elimination of infected and threatened oak trees inside the trench perimeter. The trench, at least 4 ft deep, is placed a minimum of 100 feet in front of trees with the most recent symptoms of oak wilt in order to encompass all infected root systems. Federal cost shares, when available, are offered to affected landowners to help offset the cost of trenching and to encourage control of expanding oak wilt centers that meet specific Project requirements.
- Reduce long distance spread of the fungus by selectively treating oak wilt-infected Texas red oaks with an EPA-approved silvicide or by girdling or removing them to



prevent fungal mat formation and to reduce the potential for long-distance spread of the disease. Federal cost shares, when available, will continue to be offered for treatment or removal of infected red oaks.

- Individual high value live oaks in the path of expanding oak wilt infection centers may be treated with the fungicide Alamo™ or similar formulations of propiconazole to reduce the likelihood of oak wilt infection. Fungicide injection provides protection in most cases for up to two years, but does not halt fungal transport to untreated trees. The preferred approach is to first install a barrier trench around the infection center to halt disease spread, and then inject healthy oaks within the trench perimeter.
- Develop, update, and maintain an Internet web page ([www.texasoakwilt.org](http://www.texasoakwilt.org)) that deals specifically with the diagnosis and management of oak wilt in Texas. This web page was developed through a partnership grant with the Houston Advanced Research Center (HARC) and is currently being maintained by the Texas A&M Forest Service.
- Selected groups of Master Gardeners, Master Naturalists and Certified Arborists (International Society of Arboriculture) are being offered an intensive 1 or 2 day training session on oak wilt diagnosis, prevention, suppression and long-term management. Upon successful completion, each participant receives a diploma as an “Oak Wilt Specialist” and will support the Suppression Project by increasing public awareness about oak wilt.

***Nonnative Forest Insects and Diseases Goal:*** *To address the detection, monitoring, prevention and control on invasive nonnative forest insects and diseases in a timely and effective manner.*

#### Invasive Insect Objectives:

- Monitor the presence of invasive, nonnative forest pests in Texas.
- Increase public awareness for prevention and detection of invasive insect and disease pests that threaten trees in Texas.
- Increase collaboration among state agencies and other stakeholders involved with invasive pests in Texas.
- Conduct field studies to increase knowledge of distribution, biology, and seasonal habits of invasive insect and disease pests affecting trees in Texas.

#### Invasive Insect and Disease Strategies:

- Determine the current distribution of soapberry borer (*Agrilus prionurus*) in Texas by contacting field personnel with TFS, county extension agents with Texas AgriLife Extension Service, Texas Parks and Wildlife Department, certified arborists, and other knowledgeable contacts. Contribute to preparation of a preparedness plan for emerald ash borer and other invasive insects likely to eventually occur in Texas.
- Prepare and distribute fliers and news releases on the invasive insect pests currently in or threatening to enter Texas. Continue to support the new web page at [www.texasinvasives.org](http://www.texasinvasives.org) with information of interest to the general public on invasive insects and diseases. Contribute talks to the Texas Invasive Plant and Pest Conference, held every two years in Texas, and other outlets (East Texas Forest Entomology Seminar, Southern Forest Insect Work Conference, etc.).



- Continue to represent Texas A&M Forest Service on the Texas Invasive Species Coordinating Committee (TISCC), Texas Invasive Plant and Pest Council (TIPPC), and similar groups involved with increasing collaboration among invasive species stakeholders in Texas.
- Currently, the principal invasive pests of concern are the emerald ash borer (*Agrilus planipennis*) and its relative, the soapberry borer (*Agrilus prionurus*). The former has been detected in Missouri and Kentucky, but not yet in Texas, while the latter is well distributed in Texas. The distribution of soapberry borer in Texas, biology, host species, and number of generations per year will be investigated.

***Invasive Plants Goal: Take a leadership role in the detection, prevention, and management of invasive plants affecting forests and woodlands in Texas.***

#### Invasive Plants Objectives

- Increase public awareness of invasive plants affecting forests and woodlands in Texas.
- Collaborate with other state agencies and organizations involved with invasive plants in Texas.
- Support the detection and reporting of invasive plant species in Texas.
- Contribute to efforts to eradicate invasive plants on public and private lands in Texas.

#### Invasive Plant Strategies

- Continue to contribute support and information to the Texas invasive species web page at [www.texasinvasives.org](http://www.texasinvasives.org). Prepare and publish articles on invasive plants in the Texas Forestry newsletter *Texas Forestry* and other suitable outlets. Contribute talks to the Texas Invasive Plant and Pest Conference held every two years in Texas, and other outlets (East Texas Forest Entomology Seminar, Southern Forest Insect Work Conference, etc.).
- Continue to represent Texas A&M Forest Service in the Texas Invasive Species Coordinating Committee (TISCC), Texas Invasive Plant and Pest Council (TIPPC) and similar groups involved with increasing collaboration among invasive species stakeholders in Texas.
- Continue to train Citizen Scientists on detecting and reporting invasive plants throughout Texas, in cooperation with the Lady Bird Johnson Wildflower Center. Train TFS foresters and field resource specialists on recognizing, reporting, and managing invasive plants.
- Contribute to the treatment and eradication, where feasible, of invasive plants that have yet to become well established in Texas, such as cogongrass, Japanese climbing fern, and kudzu. Cooperate with other agencies in invasive species eradication efforts.
- Apply approved herbicides as directed on the label to control invasive plants.
- Give priority to treatment of invasive plants on the State Forests as demonstration sites.



## **4. Performance Measures**

### ***Performance Measures for SPB***

- Acres of SPB high hazard stands treated per year with federal cost shares. Prevention practices will be focused on high hazard areas, as identified by SPB hazard maps.
- Pheromone traps will be used to annually monitor SPB population levels and to detect increasing SPB populations.
- Percentage of SPB spots detected on state and private lands that are ground checked within 3 weeks of detection.
- Losses from active infestations on non-federal lands will be reduced by 75 percent by recognizing and treating expanding SPB infestations soon after detection.

### ***Performance Measures for Oak Wilt***

- Thousands of feet of containment trenches implemented per year in Central Texas with federal cost shares.
- Number of training sessions for Certified Arborists, Master Gardeners and/or Master Naturalists offered per year to train oak wilt specialists.
- Number of USGS quadrangles assessed using aerial imagery per year to update oak wilt detection maps.

### ***Invasive Insect Performance Measures***

- Complete one preparedness plan per year for an invasive pest not yet in Texas, if deemed worthy.
- Number of news articles prepared and published on invasive pests per year.

### ***Invasive Plant Performance Measures***

- Number of Citizen Scientist groups trained per year on detecting and reporting invasive plants.
- Prevent cogongrass from becoming established in Texas.
- Number of informational fliers prepared and distributed per year on invasive plants affecting forests and woodlands in Texas.
- Number of TFS field staff trained per year on invasive plants.





## **Stewardship Program: Stewardship, Forest Legacy, Conservation Education, & State Lands**

The Forest Stewardship Program in Texas currently consists of four function areas. Because TFS is fortunate in that each function area is a stand-alone program managed by individual program managers, they are described here as separate programs within the suite of the overall Stewardship Program. The programs are delivered by the two delivery programs discussed earlier; East Texas Program Delivery and Central/West Texas Program Delivery.

### **Stewardship Program: Rural Forestry Assistance and Forest Stewardship Program**

#### **1. Program Description**

Authorized by the Cooperative Forestry Assistance Act of 1978, the Forest Stewardship Program (FSP) provides technical assistance, through state forestry agencies, to non-industrial private forest (NIPF) owners to encourage active long-term forest management. Texas A&M Forest Service works closely with the USFS Region 8 office in Atlanta, GA and the USFS Washington Office to guide funding formulas and develop program guidelines. See Appendix B.

A primary focus of the FSP is to work with NIPF landowners to develop comprehensive, multi-resource management plans that provide landowners with the information they need to manage their forests for products and services.

NIPF Landowner Assistance activities include:

- Facilitating the State Stewardship Coordinating Committee (SSCC) which provides direction and guidance for ensuring that a balanced and effective program reaches landowners statewide and includes West Texas ranchers, East Texas tree farmers, and Hill Country ranchette owners. The SSCC meets at least once per year and consists of members from state, private, and natural resource conservation organizations.
- Recognizing landowners for exemplary efforts through our Certified Forest Steward Program.
- Enrolling landowners in the Safe Harbor program under the Red-cockaded Woodpecker Habitat Conservation Plan which encourages East Texas landowners to undertake actions that will benefit this endangered species.
- Providing rural forestry technical assistance to landowners including forest management plans, reforestation, marketing and promotion, surveys of tracts to determine treatment needs, measurements of treatment areas, seedling procurement, training and certification of private vendors, and inspection of plantings to certify compliance with technical guidelines.
- Working closely with county forest landowner associations, including associations for absentee landowners and Central Texas regional and county-level conservation groups.

While the goal of the Stewardship Program has remained the same, new and innovative ways of reaching landowners and delivering services have been developed to meet the needs of both traditional landowners and new types of landowners. Events such as the Texas Wildlife and Woodland Expo, a variety of demonstration practices on TFS state lands, the use of





conservation easements in the FLP, and Conservation Education programs for adults and children are a few examples.

A significant change in the Stewardship Program occurred in 1989 when the program went from primarily an East Texas program to one that was offered to landowners and workshop participants statewide. At that time, Central and West Texas landowners became eligible to participate in Stewardship Programs and “absentee landowner associations” were created in large municipalities to serve the function of county forest landowner associations for landowners who owned forestland in East Texas but resided in a metropolitan area of Texas.

Priorities now include conserving and restoring native forest ecosystems in Central and West Texas such as live oak woodlands and savannahs, hardwood forested slopes, mixed juniper/hardwood forests, the cross timbers forest, and the post oak savannah. Specific to West Texas panhandle region, priorities include establishing trees and shrubs for windbreak purposes to reduce soil erosion and establishing wildlife habitat shelterbelts for pollinators, birds, and game animals. In addition, effort is being made to reestablish longleaf pine in its historic range in Texas.

Any forest landowner is eligible to participate in the FSP. While TFS, NRCS, Texas AgriLife Extension Service, and TPWD have the goal of landowner assistance, conservation education, and protecting Texas’ natural resources, each agency commonly coordinates with the other agencies at local, state, and national levels to reduce duplication of efforts. Specifically, TFS is jointly funding two positions with Texas AgriLife Extension—a program coordinator and a geneticist. TFS has a cooperative agreement with TPWD to provide statewide wildlife expertise for preparation of Forest Stewardship Plans and to provide training and other educational opportunities to TFS foresters and Texas landowners.

TFS currently has several Memorandum of Agreements (MOUs) with NRCS including (1) a contribution agreement with NRCS along with a state-level MOU that mirrors a national MOU that was signed by NRCS, NASF, and USFS in 2008; (2) an MOU that allows for a TFS employee to office in the state office and provide forestry expertise to NRCS programs to ensure forestry remains relevant within NRCS programs; and (3) an MOU in which NRCS provides funds to TFS for promoting the Longleaf Pine Initiative and working with local NRCS field offices to enroll landowners into the program in an effort to increase the number of acres devoted to longleaf pine in Texas.

TFS has a formal agreement on cultural resources with the Texas Historic Commission, the USFS, and the National Advisory Council on Historic Preservation. TFS employs a part-time archeologist to review cultural resource survey forms and provide archeological training for new and veteran TFS foresters to ensure that TFS complies with the programmatic agreement.

NRCS, Texas AgriLife Extension Service, and TPWD manage natural resource conservation programs that provide environmental, societal, financial, and technical benefits. As these entities focus on research, recreation, and agriculture, TFS coordinates with them at the local, state, regional, and national level to supply the forestry and wildland fire protection components to their programs.



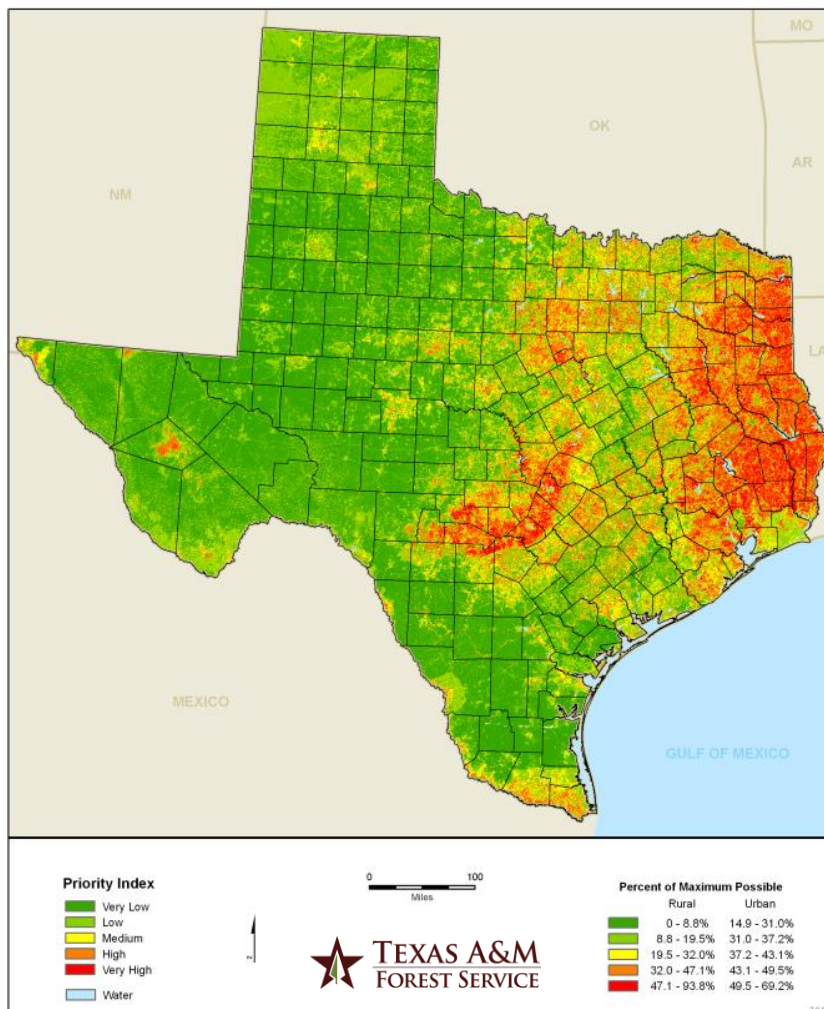
Because of the federal requirements of the program to form the SSCC, TFS works frequently at the state level with all of the natural resource conservation and related agencies in the state. TFS field staff coordinates landowner services and programs with the field offices of the other natural resource conservation related agencies in the state.

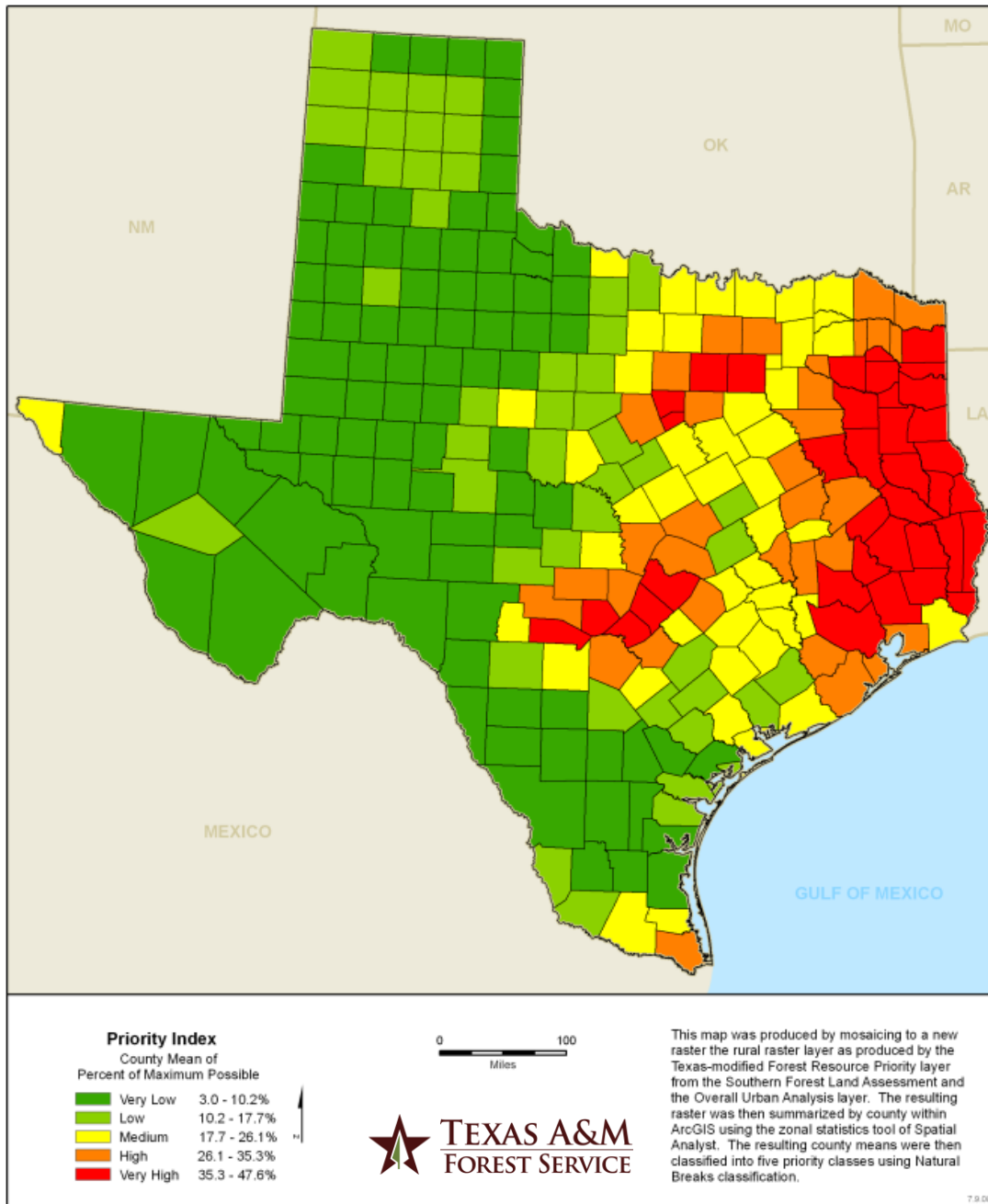
The current updated versions of the Texas Statewide Assessment of Forest Resources along with the Texas Statewide Forest Resources Strategy will serve as the Texas Statewide Stewardship Plan. It is intended that this section and Appendix B serve to meet the requirements of an updated plan.

## **2. Program Priority Areas (Figure 10)**

Priority areas for Forest Stewardship are currently defined by the Spatial Analysis Project (SAP), which in the South took the form of the Southern Forest Lands Assessment (SFLA). However, the State Assessment process identified additional areas in Central & West Texas that are now considered priority areas depending on the issue and that also contribute to meeting the broad national themes listed in the Farm Bill.

**Figure 8. Two Texas Maps Identifying Forest Stewardship Priority Areas in the State, One by Location and One by County**







### **3. Goals, Objectives, and Strategies**

***Goal 1: Ensure the Forest Stewardship Program is viewed by partners and the public as a core program for private land forest management planning.***

Objective 1.1: Engage each primary partner organization for stakeholder input about Forest Stewardship program implementation and their role in it.

Strategy 1.1.1: Hold annual meetings of the SSCC, where issues and roles are discussed; engage members to encourage ownership in the program; ensure roles of each partner are substantive and understood.

Strategy 1.1.2: Produce a quarterly newsletter for stakeholders.

Objective 1.2: Engage traditionally underserved groups and landowners in priority areas.

Strategy 1.2.1: Work closely with TFS communications and conservation education program to create marketing material that peaks the interests of non-traditional NIPF landowners.

Objective 1.3: Build on existing partnerships and create new ones with stakeholder organizations.

Strategy 1.3.1: Develop new and follow existing MOUs and Contribution Agreements with partner agencies such as NRCS, TPWD, Texas AgriLife Extension Service, and State Historical Commission.

***Goal 2: Ensure that the Forest Stewardship Program remains relevant and useful to non-industrial private landowners and the forest resource.***

Objective 2.1: Ensure that the Forest Stewardship Program is useful to NIPF landowners.

Strategy 2.1.1: Forest Stewardship Plans are up to date and relevant to meet landowner needs statewide.

Strategy 2.1.2: Work with partner agencies such as NRCS, TPWD and Tree Farm Foundation to develop Forest Stewardship management plans that are useful to all partners.

Strategy 2.1.3: Continue to recognize landowners as Certified Stewards when status is obtained.

Strategy 2.1.4: Work with Texas Land Trust Council to educate landowners on the use of conservation easements.



Objective 2.2: Ensure that landowners have access to TFS field staff and contractors.

Strategy 2.2.1: Continue to work with county landowner associations and Texas Forestry Association to host workshops and field tours about forestry practices.

Strategy 2.2.2: Maintain a well-trained field staff statewide.

Objective 2.3: Continue to offer interest-specific programs to landowners.

Strategy 2.3.1: Continue RCW and Safe Harbor programs for endangered species.

Strategy 2.3.2: Provide guidance to with landowners on non-traditional programs such as ecosystem services, biomass utilization, and other programs that promote sustainable management.

Strategy 2.3.3: Develop sub-committees of the Stewardship Committee to focus on specific issues as needed such as longleaf pine restoration in East Texas.

Strategy 2.3.4: Coordinate with Central Texas staff, Water Resources staff, and Woodlands Conservation and Emerging Community initiatives to conserve and protect live oak woodlands and savannahs, hardwood forested slopes, mixed juniper/hardwood forests, the cross timbers forest, and the post oak savannah.

***Goal 3: Ensure that the Forest Stewardship Program remains relevant and useful as a statewide program.***

Objective 3.1: Continue to strive for a well-funded program.

Strategy 3.1.1: Work with Region 8 (R8) and the Washington office of the USFS to ensure equitable funding formulas for Texas.

Strategy 3.1.2: Continue to submit project proposals when competitive funding is available.

Strategy 3.1.3: Enforce the monitoring program and make adjustments in guidance as needed.

Strategy 3.1.4: Submit required reports to USFS R8 before deadlines.





Strategy 3.1.5: Build partner support for the Stewardship program locally and nationally by demonstrating results quantitatively and telling success stories qualitatively.

Objective 3.2: Coordinate efforts between TFS, NRCS, and other state headquarter offices.

Strategy 3.2.1: Within MOUs and Contribution Agreements, place staff in other agency headquarter offices to serve as liaison for forestry programs and provide technical assistance to those offices.

Strategy 3.2.2: TFS will serve on the wildlife and forest working groups of the State Technical Committee.

#### **4. Performance Measures**

In the field, the reporting requirements such as number of acres under FSP management, number of landowners served, are listed in East Texas Program Delivery and are used to gauge performance. At a higher level, the effectiveness of the Stewardship Program is reflected in the USFS funding formula and consequential allocations to Texas. Texas' ability to receive substantial funding from the USFS reflects the effectiveness of the program.

- Number of new or revised Forest Stewardship Management Plans completed.
- Number of new or revised Forest Stewardship Management Plans completed in important forest resource areas.
- Number of acres covered by current Forest Stewardship Management Plans (cumulative).
- Number of acres in important forest resource areas covered by current Forest Stewardship Management Plans (cumulative).
- Number of landowners receiving Forest Stewardship Program technical assistance.
- Number of landowners participating in Forest Stewardship Program educational programs.
- Total number of acres in important forest resource areas being managed sustainably, as defined by a current Forest Stewardship Management Plan through a monitoring program.
- Number of new Certified Forest Steward awards.





## Stewardship Program: Forest Legacy Program

### 1. Program Description

The Forest Legacy Program (FLP), a Federal program in partnership with States, supports State efforts to protect environmentally-sensitive forest lands. Designed to encourage the protection of privately-owned forest lands, FLP is an entirely voluntary program. To maximize the public benefits it achieves, the program focuses on the acquisition of partial interests in privately-owned forest lands. FLP helps the States develop and carry out their forest conservation plans. It encourages and supports acquisition of conservation easements, legally binding agreements transferring a negotiated set of property rights from one party to another, without removing the property from private ownership. Most FLP conservation easements restrict development, require sustainable forestry practices, and protect other values.

The Forest Legacy Program complements private, Federal, and State programs focusing on conservation. In Texas, the FLP focuses on supporting efforts to acquire working forest conservation easements. In Texas, the easement rights will be held by the Texas A&M Forest Service or another state agency as directed by the State Forester (Director of the Texas A&M Forest Service). FLP-funded acquisitions serve tangible public purposes agreed to by the landowner such as recreational use as well other public benefits such as ecosystem services as identified in the Issues Sections of this document. Participation in Forest Legacy is limited to private forest landowners. To qualify, landowners are required to prepare a multiple resource management plan as part of the conservation easement acquisition. The federal government may fund up to 75 percent of project costs, with at least 25 percent coming from private, State, or local sources.

The US Forest Service administers the Forest Legacy Program in cooperation with State partners. FLP also encourages partnerships with local governments and land trusts, recognizing the important contributions of landowners, communities, and private organizations. In a September 2003 letter, Governor Rick Perry designated TFS as the lead agency for the FLP in Texas. Texas completed its first FLP Assessment of Need (AON) in 2004. The required five-year update to the AON, due in 2009, was incorporated into the Texas State Assessment and this Statewide Resource Strategy.

The Forest Legacy Committee, a seven member sub-committee of the State Forest Stewardship Coordinating Committee, provides input, governance and program guidance, reviews and selects projects for submission, and provides support for the program locally and nationally. The Forest Legacy Committee includes a diverse set of stakeholders that represents conservation organizations, land trusts, other state natural resource agencies, USFS, and non-industrial private landowners.

The Forest Legacy Program in Texas follows the National Forest Legacy Program guidelines (see Appendix B). This includes the annual monitoring of each project, spatial reporting of accomplishments, and public involvement in the process of developing program priorities and project criteria.



As of 2015, there are three funded Forest Legacy Tracts in Texas: Burleson Wetlands (2,907 acres in Smith County), Turkey Creek Phases I and II (10,729 acres in Tyler and Woodville Counties), and Longleaf Ridge (4,790 acres in Jasper County). Longleaf Ridge Phase II (4,848 acres in Jasper County) and Bobcat Ridge (7,017 acres in Anderson County) are in progress.

## **2. Program Priority Areas (Figure 9)**

The AON includes 59 East Texas counties; roughly 33 million acres. As State & Private Forestry programs are concentrating on focusing and prioritizing resources and demonstrating outcomes, it was suggested that the Texas Forest Legacy Program Area align with the “high” and “very high” priority areas as determined in the Texas Statewide Resource Assessment.

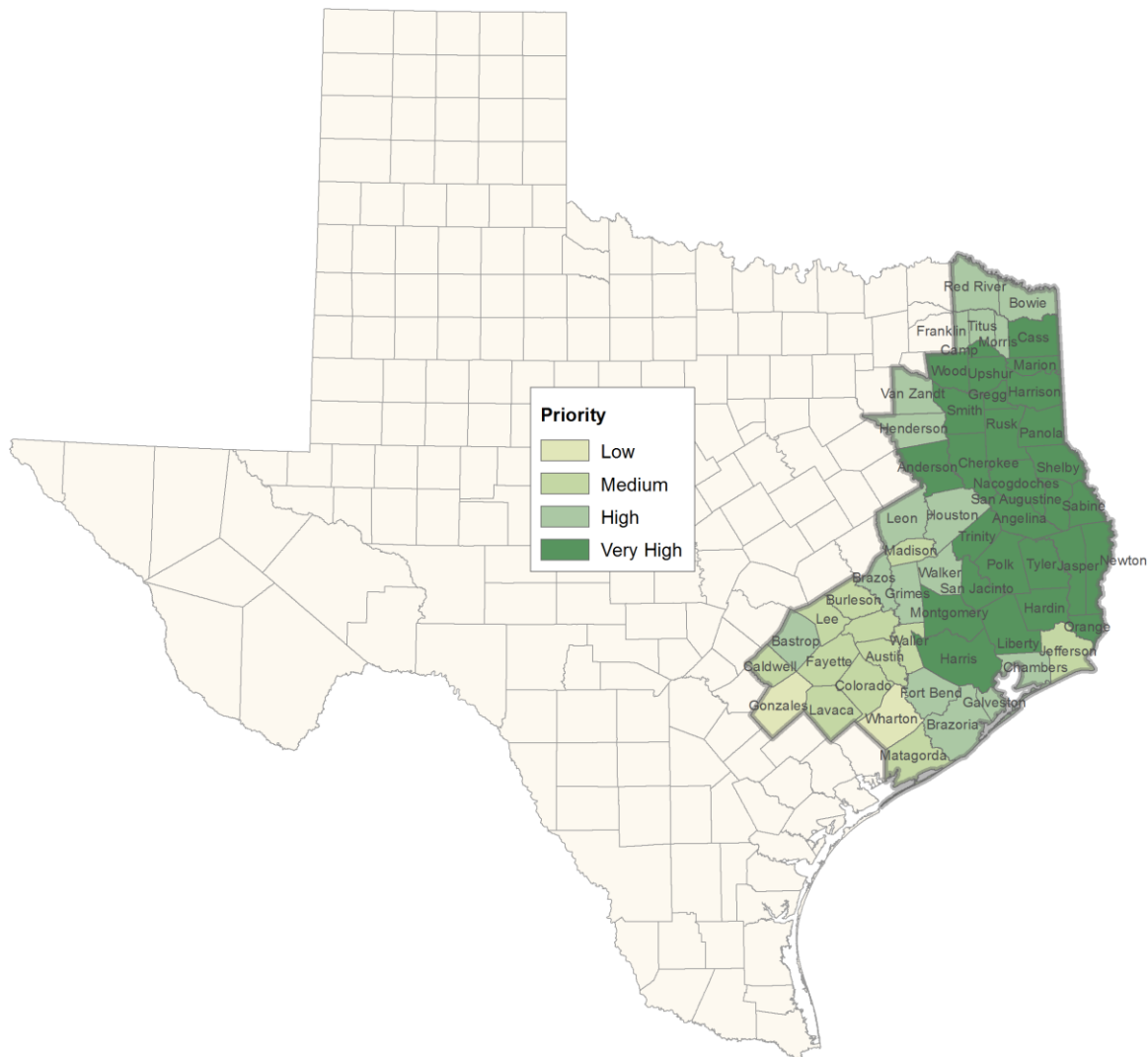
Based on the goals of the program listed below, the focus on East Texas sustainability, and the “high” and “very high” priority counties identified in the Statewide Resource Assessment, the Forest Legacy Area will remain the same from 2009-2014. However, when multiple projects are submitted in one year, priority will be given to a project located in one of the 45 counties with a “high” or “very high” priority value as indicated in the Texas Statewide Assessment.

The Forest Legacy Committee also works with the Longleaf Sub-Committee of the State Stewardship Coordinating Committee to identify possible Legacy projects that include longleaf pine restoration. Other interest-specific committees may form to focus on projects with other interest specific attributes.

### **Forest Legacy Program Area**

<b>Priority</b>	<b>Number of Counties</b>	<b>Million Acres</b>
Very High	28	15.0
High	17	8.7
Medium	12	5.9
Low	2	1.4
<i>TOTAL</i>	59	30.9



**Figure 9. Texas Forest Legacy Program Area**

The Forest Legacy Area is consistent with the goals of the program in Texas. The FLP in Texas focuses on protecting large blocks of forest land from parcelization and fragmentation in areas that are important for forest products industry, promoting ecological benefits, providing watershed protection, and offering open space for public value. Smaller properties that are either connected or contain key features associated with larger land protection projects will also be a priority. After determining the goals of the Texas FLP based on the benefits the program strives to protect as well as the trends it attempts to prevent, the TFLC established the area of Texas that would most effectively achieve those goals.

The FLA boundary is formed by county boundaries. Priority area delineations within the FLA are also determined by county boundaries. While forests in other areas of Texas possess significant attributes and threats, no other area provides all of the benefits or faces all of the threats as do these 59 East Texas counties. Most notably, when compared to the rest of the state, these 30.2 million acres are most reliant on the timber industry and face the gravest threat of fragmentation—two of the driving forces behind the FLP.



According to National FLP Guidelines, criteria for a FLA should be based upon the FLP purpose to protect environmentally-important forest areas that are threatened by conversion to non-forest. FLA boundaries must encompass forestlands with significant environmental- and other resource-based values. Areas may also include non-forested areas such as farms and villages if they are an integral part of the landscape and are within logical boundaries. Since FLA boundaries may not correspond to property boundaries, tracts located partially within the geographically-defined FLA are eligible for the FLP upon approval of a boundary adjustment by the USFS Region.

Indian reservations and tribal lands, such as the Alabama-Coushatta Indian Reservation, may have important features on the forested landscape. Indian tribes and states are encouraged to collaborate and to consider only non-trust allotment lands for projects. Other tribal lands are already protected through the trust relationship between the U.S. Department of the Interior and the tribe and are ineligible for the FLP.

The following criteria are used to set priorities for eligible projects:

- Degree of threat: Priority is given to projects on properties that have proof of a high degree of threat of development or parcelization.
- Forest resource economic benefits: Priority is given to properties that are likely to have significant forest resource economic benefits.
- Public benefits: Priority is given to properties that are likely to have direct and indirect scenic, outdoor recreation benefits, and/or other public benefits.
- Water quality and watershed protection: Priority is given to properties that are likely to have significant water quality and watershed protection benefits.
- Ecological/cultural environmental education benefits: Priority is given to properties that are likely to have significant ecological, cultural, and environmental education benefits.
- Proof of readiness: Priority is given to projects that have community support, identified matching funds and partnership involvement.
- Strategic Initiative 1: Priority is given to projects that are in counties with “high” or “very high” priority ratings as identified in the Statewide Forest Assessment.
- Strategic Initiative 2: Priority is given to projects that fit within a larger conservation plan, strategy, or initiative, and connect to or lead to additional conservation investments in the region.
- Clear title and free of encumbrances.
- Landowner is willing to allow access for annual monitoring.
- More than one attribute that can be protected by a Conservation Easement such as cultural resources or outstanding geographic features.
- Conservation Easement will provide for the continuation of working forestland.

The Forest Legacy Committee is responsible for evaluating and prioritizing projects. All interests in lands are made in accordance with Federal appraisal and acquisition standards and procedures. The acquired interests in lands entered into the FLP are adequate for FL purposes and are perpetual. These interests in lands will be managed and administered for goals consistent with FL conservation purposes declared by the state lead agency. Except for special situations requiring written agreements with partnering state agencies, the TFS will be



responsible for all monitoring and management of conservation easements on land that has entered into the FLP to which the agency holds title.

As the state lead agency, TFS prefers to hold interests in lands in the form of title to conservation easements rather than ownership of land. In special situations, it will be at the discretion of the State Forester as to whether or not the state will utilize FLP funding to make fee simple purchases with FLP funding through the State Grant Option.

TFS also prefers to act as the sole titleholder of lands or interests in lands that enter into the FLP. However, at the discretion of the State Forester, other state government entities may either hold title to conservation easements or be allowed to own land that has entered into the FLP. For example, there may be projects adjacent to previously protected lands managed by another state agency. In this case, it would be more cost effective for that state agency to monitor the property in conjunction with existing management strategies. Should this occur, it would be expected that the partnering entity will be responsible for monitoring and enforcement of the easement and language in the easement title will define and reflect these agreements.

Projects are selected and funded on a voluntary and competitive basis. Interested landowners will submit a non-binding application that gives pertinent information on the property's resources and expected value.

Landowners who wish to participate in the program may be asked to provide the following information:

- Name, address, and phone number of applicant landowner.
- All other owners of record for this tract, and their addresses.
- Name, address, and phone number of authorized agent representing landowner(s), if applicable.
- Location of property.
- State-approved landowner Forest Management Stewardship Plan or multi-resource management plan.
- List of the significant scenic, natural, recreational, wildlife, timber and other resource values contained on the property.
- Identification of all dams, dumps, or waste disposal sites on the property.
- Signed statement giving the USFS and State lead agency permission to enter the property for review and appraisal purposes.
- Legal description.
- List any encumbrances or liens existing on the property including, but not limited to contracts, leases, or outstanding rights not of record.
- Copy of plat or survey map of the property, if existing. If only a portion of the property is being offered, identify it on a plat showing the portion offered in the context of the entire tract.
- Tract acreage and total number of acres of forests and cleared/open land.



- List of existing permanent improvements on the tract, including houses, barns, lakes, ponds, dams, wells, roads, and other structures, and total number of acres occupied by improvements.

Projects meeting third party certification, projects with limited or full public access, projects that build upon already invested federal funds, projects that have already been appraised, and projects exceeding the 25-percent minimum private cost-share match will more likely rank higher in the project selection process at both the state and national levels as this certification shows the landowner's commitment to sustainable forest management.

Under Federal land acquisition requirements, an independent appraisal of the real property or interests in real property in the form of conservation easement must be completed and reviewed. The landowner must be informed of the outcome of that process.

Project proposals are accepted from January 1 to August 31. Once a year in September, the TFS reviews applications and the Texas Forest Legacy Committee ranks projects based on their ability to satisfy the objectives of the program. Proposed projects are then evaluated against other projects in the USFS Southern Region and then nationally. Should the national process timeline change, the lead agency will adjust the timeline for submission accordingly.

### **3. Goals, Objectives, and Strategies**

The Issues Sections of this document define environmentally-important areas, threats to conversion to non-forest uses, and identify traditional forest uses. Additionally, the Sustainability of East Texas section identifies forestland ownership patterns, size of tracts, trends, and projected future forestland ownership patterns in the Texas Forest Legacy Area specifically.

Based on the benefits Texas forests provide as well as the threats they currently face, the Texas Forest Legacy Committee has identified four overall goals of the FLP in Texas that address critical issues as identified by the State Assessment.

#### ***Goal 1: Support Texas rural communities, traditional land uses, and cultural heritage.***

Objective 1.1: Maintain large privately-owned working forest landscapes managed according to sustainable best management practices.

Strategy 1.1.1: Work with land trusts to identify potential Legacy projects and promote the FLP.

Strategy 1.1.2: Work with forest landowners to identify potential Forest Legacy tracts.

#### ***Goal 2: Promote conservation of biological diversity.***

Objective 2.1: Protect habitat connectivity, unique ecosystems, and endangered species.

Strategy 2.1.1: Work with conservation organizations to align FLP work with partner conservation initiatives.

Strategy 2.1.2: Work with a longleaf subcommittee of the Stewardship committee to identify projects inclusive of longleaf restoration.





**Goal 3: *Promote watershed protection.***

Objective 3.1: Enhance water quality and quantity and to protect aquatic habitats

Strategy 3.3.1: Work with Texas Statewide Resource Issue Leaders focusing on the Water Quality & Quantity Issue.

Strategy 3.3.2: Work with other state natural resource agencies.

**Goal 4: *Support open space initiatives***

Objective 4.1: Decrease forest fragmentation and reduce negative effects of urban sprawl

Strategy 4.1.1: Promote FLP program and program concepts in high and very high priority counties identified in State Resource Assessment

Objective 4.2: Protect unique habitats and/or ecological features.

Strategy 4.2.1: Work with conservation organizations and landowners to identify potential Legacy projects with unique habitats or ecological features

Strategy 4.2.2: Tours to promote such projects and partnerships

**4. Performance Measures**

- Successful administration of the State's Forest Legacy Program.
- Acceptance, review, and prioritization of Forest Legacy applications.
- The coordination of easement acquisitions or interests in land which include but are not limited to gathering the baseline documentation report, Forest Stewardship Management Plan, surveys, appraisal, review appraisal, and final easement language.
- Coordinated acquisition process within State Government.
- Coordination of State Forest Legacy Committee.
- Annual monitoring of completed Forest Legacy Projects.

NOTE: The first Forest Legacy Program Assessment of Need (AON) was approved by USDA in 2004. At that time, states were directed to update their AONs every 5 years. With changes in national guidance and the 2008 Farm Bill, it was determined that states may include the Forest Legacy Program in their State Assessments and State Strategies in lieu of completing new or revised AONs. It is intended that this section meet the requirements and be approved as Texas' five-year update to the 2004 AON.

The primary change from the 2004 AON to this updated program description is the prioritization of the counties in the Forest Legacy Area. Public and stakeholder input affirmed that the Forest Legacy Area counties remain the same. However, with the analysis from the SFLA, and program direction to prioritize resources, the Forest Legacy Area counties have been ranked "low, medium, high, and very high." Projects submitted from "very high" priority counties will receive additional consideration by the Forest Legacy Committee when ranking equal projects. No other significant changes were made to the 2004 AON.



## **Stewardship Program: Conservation Education & Outreach**

### **1. Program Description**

Conservation Education and Outreach Programs within the agency focus on underserved populations and new types of forest landowners and develop youth outreach programs.

### **2. Program Priority Areas**

- Changing Roles is a professional development curriculum for natural resource professionals to address changes occurring in the Wildland-Urban Interface (WUI) where rural forestry and urban expansion are occurring simultaneously as well as in rural areas where non-traditional landowners are becoming more prevalent. Developing new partnerships and updating natural resource professionals are the two main goals of Changing Roles.
- Project Learning Tree (PLT) is an environmental education curriculum that is sponsored nationally by the American Forest Foundation and in Texas by Texas Forestry Association (TFA) and TFS. A major goal of PLT is to provide students with the awareness, appreciation, understanding, skills, and commitment to address environmental issues. This goal is achieved by training educators and facilitators to lead workshops for teachers across the state
- Nature Challenge is a statewide summer and fall competition for families to decode clues, discover local parks, forests, historic sites, and recreation areas across Texas and participate in fun activities and challenges for a chance to win prizes. Nature Challenge is a partnership among TFS, Texas AgriLife Extension Service, and organizations, parks and natural areas across the state. The goal of Nature Challenge is to provide families with outdoor opportunities through a fun competition and thereby develop a basic awareness of local nature areas.
- NatureLIVE, Diversity through Nature is a diversity and community outreach team that addresses adult and youth education in the greater Houston area, focusing especially in the Hispanic community. The team has generated partnerships with the USFS, Friends of the National Forests and Grasslands in Texas, Texas Master Naturalists, local landowners, and school districts. The community-driven focus of the team is demonstrated in their participation in a variety of outreach activities with a variety of community groups:, providing school education field trips, organizing field days that focus on Jones State Forest Restoration after the drought, offering teaching and learning tools for traditional and diverse landowners, working with Hispanic visitors at USFS Scott's Ridge and their on-site service projects, becoming involved in the National Environmental Education Foundation's Children in Nature Health Initiative, and creating sustainable and collaborative partnerships with local and regional Hispanic organizations.

### **3. Goals, Objectives, and Strategies**

In order to maximize and leverage the effectiveness of conservation education within the State of Texas, TFS has MOUs with Texas Parks and Wildlife Department (TPWD) to support the



Changing Roles program and the American Forest Foundation and TFA to support Project Learning Tree.

Both PLT and NADF have Texas chapters of the national programs to work with Texas public, private, and home school systems. Nature Realized and Changing Roles programs coordinate activities and provide joint workshops with local and state staff with AgriLife, Houston Wilderness, TPWD's Master Naturalist Program, and private forest industry consultants.

Texas Forestry Association (TFA) employs a conservation educator part time to co-administer PLT with TFS. The TWPD offers wildlife-based conservation education. The USFS employs a conservation education coordinator. Its program focuses on minorities and the underserved specifically and exclusively on federal lands.

#### **4. Performance Measures**

Performance measures reflecting accomplishments in Conservation Education efforts include:

- Project Learning Tree number of teachers trained
- Nature Realized number of participants
- Changing Roles number of participants

Additionally in 2008, TFS hosted its first "Forest Expo" in Conroe attracting over 3,000 people from the Greater Houston Area. Forest Expo is a mega conference that includes forestry vendors, exhibitors, landowner workshops, children's booths, and is open to the general public.







## Stewardship Program: State Lands Management

### 1. Program Description

The State Lands Management Program oversees TFS-owned and TFS-managed state lands. TFS owns and manages five state forests totaling 7,314 acres. The primary purpose of each state forest is to demonstrate sustainable forest management practices and provide conservation opportunities for landowners and visitors. Two of the state forests, W. Goodrich Jones and I.E. Fairchild, are home to the federally-endangered and protected Red Cockaded Woodpecker. The state forests also offer day-use recreational opportunities to visitors including bird watching, hiking, horseback riding, picnics, wildlife viewing, and biking. All forests owned by TFS are working forests and public examples of sound forest management, land stewardship, and sustainability.

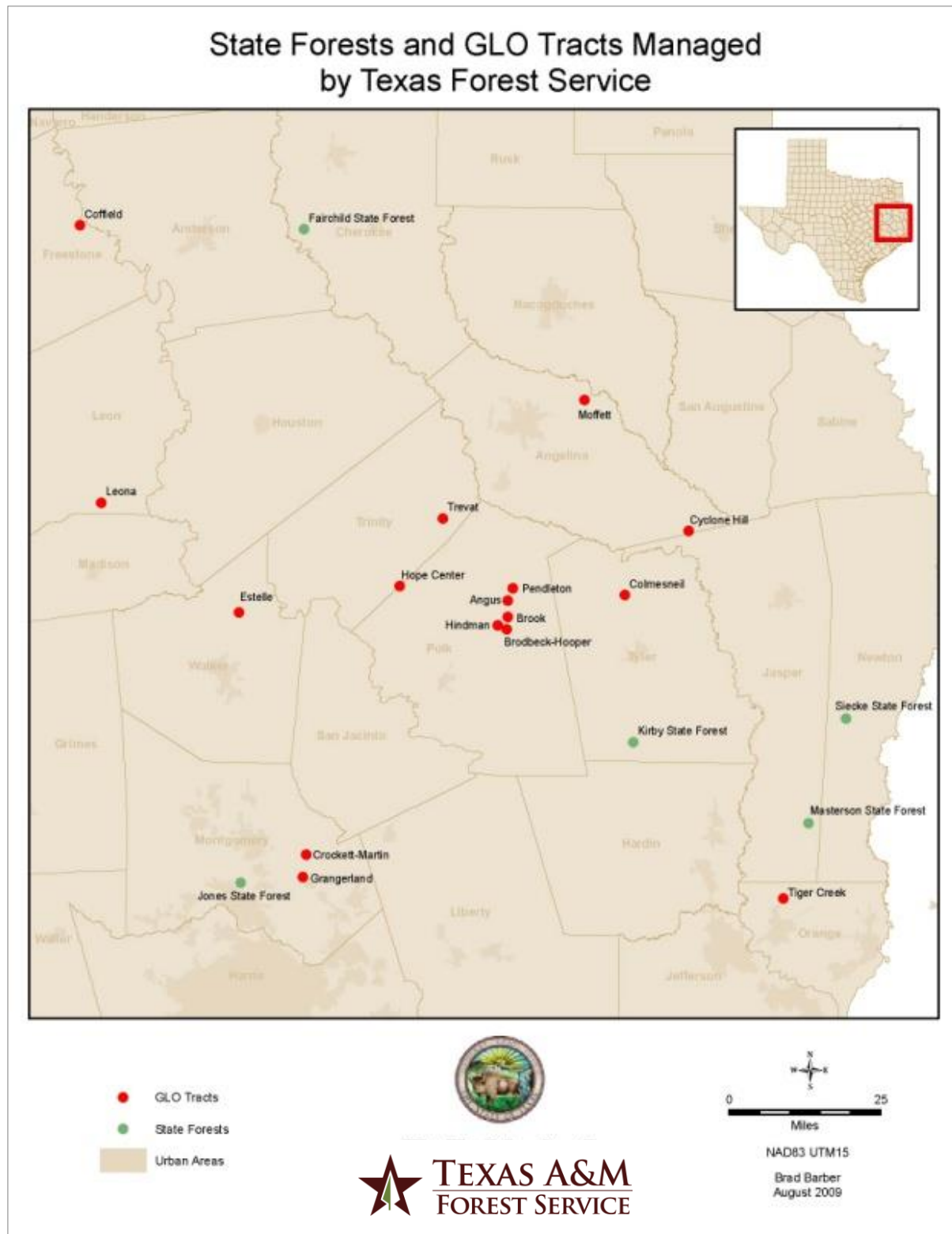
### 2. Program Priority Areas

Included under State Lands Management are tracts of land owned by the Texas General Land Office (GLO) and tracts owned by the Texas A&M Forest Service as state forests (Figure 12). Texas A&M Forest Service manages 16 GLO tracts totaling 5,754 acres and is in charge of overseeing and executing the total management of these lands. TFS East Texas District Offices oversee the day-to-day management of these lands. TFS is contracted by GLO for these services to ensure that these lands support healthy, thriving, and productive forests while providing revenue for the Texas Permanent School Fund (PSF).





**Figure 10. Map of Texas State Forests  
and GLO Tracts Managed  
by Texas A&M Forest Service**







### **3. Goals, Objectives, and Strategies**

While some recreational day use occurs on state forests owned by TFS, the primary reason the state forests were purchased by TFS was to provide areas where forestry practices could be demonstrated to landowners.

### **4. Performance Measures**

The effectiveness of the State Lands Management Program can be seen through the current condition of Texas State Forests and GLO properties. Each state forest and GLO property serve as demonstration areas for good examples of sound forest management and management regimes including prescribed burning, forest thinning operations, herbicide applications, site preparation, invasive species management, and reforestation activities.







## Wildfire & Public Safety

Much of the TFS fire program has been discussed in detail in response to Issue #5 in the Issues Section of this document. However, a general overview of each of the programs within TFS's Division of Forest Resource Protection has also been included in this section.

### Wildfire & Public Safety: Predictive Services

#### 1. Program Description

TFS analyzes current and predicted weather conditions, wildfire occurrence, and the presence and availability of vegetative fuels throughout the year to maintain a continual assessment of wildfire risk at the state, regional, and local level. Utilizing this information, agency staff develops daily and seasonal forecasts, as needed, to assist the state and local government entities in preparing for and responding to periods of elevated fire danger (i.e., fire seasons). Where possible, this information is made available to state and local cooperators and the public.

Predictive services (fire weather forecasts, fire behavior forecasts, vegetation and fuels analysis) are standard functions during emergency wildfire response operations. Following the 1998 fire season, TFS established Predictive Services as a permanently staffed unit to provide short- and long-term forecasts and analysis. This was based on increased need and reliance on the Predictive Services' products by TFS and by other state and local entities. It also satisfies legislative requirements for the agency to provide drought-determination information for county government as part of fireworks restrictions (beginning in 1997, HB 2049) and county burn bans (beginning in 1999, HB 2620).

This program produces information and products that are utilized at the national, state, and local level by firefighters, elected officials, and public administrators. Most of the products (daily fire danger, drought indices, and fuel dryness) have been developed as automated, online, and publically available resources through a partnership with the TAMU AgriLife Spatial Sciences Laboratory.

At the state level, these analyses are used to guide several program areas within the TFS, including wildfire response staffing, pre-positioning and mobilization of resources, fire prevention, risk identification, and mitigation. At the state and federal level, Predictive Services provide a number of decision support products to TDEM to support requests for state and federal disaster declarations, activation of the state emergency response plan, and the activation of other state and federal agency fire suppression and support resources. Fire behavior information is also provided to support federal Fire Management Assistance Grant (FMAG) requests seeking Federal Emergency Management Agency (FEMA) declarations on individual wildfires.

At the county and local level, support information is also provided for counties considering burn bans, fireworks restrictions, or county-level emergency declarations.



Predictive Services is administered as a Department within the Forest Resource Protection Division of the Texas A&M Forest Service. The department produces both internal and external products. The majority of products and services are standardized reports and graphics which are made available statewide. Occasional regional products or analysis are produced as needed based for existing or expected fire danger.

**Federal Wildland Fire Agencies:** TFS Predictive Services is a member of a national community of state and federal predictive services units. The department maintains a cooperative relationship with these agencies (USFS, USF&WS, etc). Efforts primarily include the exchange of information and alerts on existing and expected fire danger.

**State:** At the state and federal level, Predictive Services provides a number of decision support products to TDEM to support requests for state and federal disaster declarations, activation of the state emergency response plan and the activation of other state and federal agency fire suppression and support resources. Fire behavior information is also provided to support federal FMAG requests seeking FEMA declarations on individual wildfires.

**County Government:** At the county level, support information is also provided for counties considering burn bans, fireworks restrictions, or county level emergency declarations.

More TFS Predictive Services' products and information can be accessed at:

<http://ticc.tamu.edu/predictiveservices.htm>

## **2. Program Priority Areas**

### **Remote Automated Weather Stations (RAWS)**

Essential in the creation of this capability is the development of a remote, automated weather station network and its integration into geographic information systems, spatial analysis tools, and web-based information products. These weather stations complete with satellite uplink capabilities; provide crucial information to the state and national datasets.

### **Web-Based Information Products**

One of the primary roles of Predictive Services is the dissemination of information to citizens, local government, state agencies, and other stakeholders and cooperators. Tremendous effort has gone into the development of web-based information products allowing local officials and firefighters access to all fire danger, drought, weather, and fire behavior information. Wildfires pose a critical life-safety risk to firefighters and citizens whether state resources are deployed on a fire or not. Web-based products and information are one of the primary conduits for making this information available to all. The continued development and advertisement of these products remains a significant priority for the agency.

### **Southern Wildfire Risk Assessment (SWRA)**

The SWRA is a GIS-based wildfire risk assessment tool developed by the thirteen southern states. The four-year project was lead by the TFS Predictive Services Department and included production of publications; acquisition, creation and conversion of data; analysis and



creation of the risk model; and implementation of and training on the GIS application. Change detection and data updates are ongoing, but the system has already provided the ability to quantitatively assess wildfire risk across the state with the ability to analyze risk and causal factors at the local level.

### Texas Wildfire Risk Assessment Portal (TxWRAP)

TxWRAP is the primary mechanism for the TFS to provide the risk information and tools developed from the SWRA to the public, local community groups, government officials, professional hazard-mitigation planners and wildland fire managers across the state. It includes a suite of applications that provide the information needed to identify and manage wildfire risk reduction and prevention efforts at a community, city, county or individual level. The online application can be found at <http://www.texaswildfirerisk.com>

## **3. Goals, Objectives, and Strategies**

- Determining current and predicted weather conditions throughout the year.
- Monitoring the condition of wildland fuels.
- Calculating current and predicted fire behavior.
- Identifying and documenting Urban/Wildland Interface areas.
- Tracking fire occurrence and ignition sources.
- Disseminating assessment information to cooperators, elected officials, and the public.

## **4. Performance Measures**

The TFS Predictive Services Department's products are regularly used and requested by cooperators at the state, county, and local level. TFS Predictive Services staff and products are used by the Governor's staff to determine the need for wildfire disaster declarations. The Texas Division of Emergency Management (TDEM) frequently requests short- and long-term assessments of fire danger for the state or for specific areas. County officials also utilize Predictive Services' products when considering county burn bans or firework restrictions. In fact, TFS was specifically selected by the state legislature as the source for drought information utilized by county officials when considering outdoor burn bans and fireworks restrictions (Local Government Code Sections 352.081 and 352.051).





## Wildfire & Public Safety: Mitigation & Prevention

### 1. Program Description

Texas is experiencing “high-velocity” change through rapid population growth and development. According to the Texas State Data Center, at the University of Texas at San Antonio, the population of Texas has doubled since 1970 and rapid population growth will continue to occur in Texas over the next twenty-five years. Throughout Texas, the majority of the state’s new development growth is encroaching on undeveloped wildland areas. As cities, communities, and suburbia expand into what was once considered rural Texas, this continuing growth and encroachment bring people and structures into close proximity with large amounts of vegetation. The junction in which homes and structures intersect with undeveloped wildland areas that contain flammable grass, brush, and trees is known as the Urban Wildland Interface (UWI). The placement of people, homes, and structures within the UWI renders them extremely vulnerable to wildfire. Texas is prone to wildfires due to development and population increases within the UWI, climate conditions, and changes in agricultural, forest, and ranch land use. Wildfire occurrence statistics in Texas show that over 95 percent of all the wildfires are caused by people and that between 80-85 percent of all the wildfires in Texas occur within two miles of an established Texas community. Continued rapid population-and development growth within the UWI, climate conditions and changes in land use, directly correlates into a sharp increase in the total number of Texans at risk to wildfires.

TFS is committed to continuous wildfire mitigation and prevention programs that reduce hazardous conditions, which lower the risks from wildfires. TFS’s wildfire mitigation and prevention initiatives are based on integrating local involvement at the county, city, community, and individual level which produce self-sustaining proactive programs that help Texans help themselves.

These programs have gained importance over the last fifteen years with the recognition that they are essential for the agency to address the significant causal factors that lead to the development of large, damaging wildfires that destroy homes and threaten the citizens of the state. One significant programmatic change that has taken place is the realization that the state, through the TFS, cannot directly deliver these services on a citizen-by-citizen or acre-by-acre basis. To successfully impact a population and area the size of Texas requires program delivery at a community or county-based level with interactive local cooperators.

The first fire prevention team was mobilized in Texas in 1997 in the panhandle area of Texas. Prevention teams were again successfully utilized during the 1998 fire season. These activities were lead by existing TFS staff as assigned additional duties. During this same time frame, the danger inherent in unmanaged population growth into UWI areas, where vegetation is a source of fuels, was gaining prominence as an issue for Texas and the nation.

This program produces information and educational products that are utilized by citizens, home owners and land owners, local associations, community planners, fire departments, local governmental entities, elected officials, and public administrators. Many of the basic



informational products are publicly available online. Direct assistance by agency personnel is also available statewide.

Mitigation and Prevention is administered as a department within the Forest Resource Protection Division of Texas A&M Forest Service. The department produces both internal and external products. Products are normally informational in nature and based on public or community requests. Detailed assessments and analyses are also produced as needed. Most departmental services are based on public or community requests. Department personnel, utilizing existing risk assessment tools, also work to identify communities at risk across the state and initiate pro-active contact with community leaders in these areas.

The Texas Department of Insurance State Fire Marshal's Office (SFMO) is engaged in fire prevention programs. The similarities are that the SFMO and the TFS Mitigation and Prevention Department are both engaged in advocating, promoting and presenting proactive programs related to fire to citizens. The differences are that the SFMO proactive fire programs are aimed at home, school and commercial fire safety and burn prevention. The focus is on preventing ignition sources inside the home, school or commercial business and teaching people how to plan and conduct exit drills and modifying behavior factors within the home, school or workplace to prevent structure fires. Burn prevention programs are aimed at preventing all types of burns—from direct flame contact to hot liquids.

TFS' focus is on preventing wildfires from occurring based on behavior factors outside of the person's home and on teaching people how to make their homes and property safe from wildfire through on-going practical Firewise programs and the Firewise Communities USA program and to have local governmental entities adopt a CWPP in their county or city to address wildfire and UWI issues. In addition, TFS is actively engaged in fuel mitigation work.

The SFMO conducts an annual conference with the Texas Fire Marshal's Association each October in Austin. At this annual conference, a wide array of courses is presented, ranging from fire investigation and fire protection systems to fire prevention programs. TFS is invited and participates each year presenting our different programs. Through this conference and both agencies' involvement with the Texas Fire Chiefs' Association and the State Fireman's and Fire Marshals' Association, and Texas' fire services are aware of the differences among scopes of the fire prevention programs that each agency provides. There are no formal or informal MOUs or interagency contracts in place.

**Federal Wildland Fire Agencies:** The TFS Predictive Services Department maintains a cooperative relationship with the federal wildland agencies (USFS, USF&WS, etc). Efforts primarily include the exchange of information and alerts on existing and potential treatment areas. Where CWPPs impact areas adjacent or near federal lands, representatives from the federal agencies are brought in to the plan development process.

**State Agencies:** Where CWPPs impact areas adjacent to or near state lands, representatives from the state agencies are brought in to the plan development process.





TFS provides subject matter expertise services to the TPWD and GLO regarding fuel mitigation and reduction efforts. The TFS provides fuel reduction work for the State of Texas Adjutant General's Department-Texas National Guard-managed properties.

**County/City Government:** County and local government entities are primary cooperators in prevention and mitigation efforts. TFS employees work as subject matter experts and catalysts to bring local and community leaders together to address identified problems, issues and communities at risk. Decision support information is also provided for counties considering burn bans, fireworks restrictions, or county level emergency declarations. The major focus is to engage local government towards approving CWPPs.

## **2. Program Priority Areas**

### **Community Wildfire Protection Plans (CWPP)**

A CWPP is a plan developed by a local government entity at either the county or municipal level in an area at risk from wildfire. The CWPP development process is collaboration among the local government entity, stakeholders, individuals, and various agencies interested in reducing wildfire risk.

### **Firewise Programs**

There are two major Firewise programs. The first type of Firewise program is an on-going, practical program aimed at educating and empowering property owners, stakeholders, and individuals located in the UWI to mitigate wildfire hazards themselves and modify their landscaping and land use so that it will be fire adaptive. This Firewise program includes Firewise landscaping, the Citizen Wildfire Ecology Specialist Certification (targeting Master Naturalists and Master Gardeners), the Community Wildfire Preparedness Library (provides Firewise reference materials to public libraries), and UWI training for fire departments and community planners.

The second type of Firewise program is the Firewise Community/USA program which is aimed at small communities, community associations, and master-planned communities to assess risk and to create a network of cooperating homeowners, organizations within the community, and the community's fire department. The community identifies and implements local solutions to address mitigating wildfire hazards. The community can be recognized by Firewise Community/USA as a nationally-recognized Firewise Community. Being recognized as a Firewise Community requires that the community has an on-going commitment towards mitigating wildfire hazards within their community.

### **Ready, Set, Go Program**

Preparing for wildfire at an individual level is critical to the success of mitigation efforts. The Ready Set Go (RSG) program offers Texans the information needed to implement a personal wildfire preparedness plan. TFS has conducted 375 RSG workshops for 27,362 Texans and provided 32 RSG train-the-trainer sessions to 84 fire departments.





## Fuel Reduction – Mitigation

One of the tools in hazard reduction efforts is the removal of heavy vegetation growth under controlled conditions to reduce the fuels available to future wildfires. Vegetation is generally removed using mechanical methods—such as mowing or chopping—or prescribed (controlled) fires under manageable conditions. Removal of the excess vegetation will aid in wildland fire suppression in treated areas for years to come. TFS completes fuel reduction mitigation programs as a result of the development of established CWPP, Firewise Communities and working with state and federal cooperators. The Mitigation and Prevention Department manages the Community Protection grant program in Texas. The Community Protection grant program provides grants to private sector certified burn managers who have been contracted by private landowners adjacent to USFS forests

## Wildfire Prevention Programs

Wildfire prevention programs are either campaign-based or ongoing proactive education programs. Campaign wildfire prevention programs are aimed at preventing fires at the area, regional, or the statewide level, where there are emerging conditions that will increase the number of wildfires or are conducted during a recognized wildfire season. The long-term solution towards preventing wildfires is proactive education programs aimed at children (e.g., Smokey Bear's Only You Can Prevent Wildfires).

## Emerging Communities Initiative

As the state population continues to grow, many Texas communities are experiencing high velocity change and development. TFS's participation in the Emerging Communities Initiative helps small communities with high growth potential prepare and plan in order to alleviate the potential wildfire problems that will be created as they grow. The Emerging Communities' focus is issues related to enhancing quality of life that are connected to land management, stewardship, and preserving and creating an urban tree canopy; however, UWI issues are directly affecting Texas' emerging communities. The Mitigation and Prevention Department works directly with these Texas emerging communities in completing their CWPPs and presenting on-going practical Firewise programs.

## Wildfire Case Studies

Following the Cross Plains Fire in December of 2005, that burned through the town of Cross Plains, destroying 116 homes and taking two lives, TFS mitigation staff performed a detailed assessment of the fire area, homes lost, and homes remaining. The resulting case study was compiled to help guide future risk mitigation programs and activities based on the specific lessons learned from the homes saved and lost in the Cross Plains Fire. Since the Cross Plains report, five other studies have been completed following large, destructive fires in different areas of the state.

## **3. Goals, Objectives, and Strategies**

- Reduce wildland fire threat to citizens, home/land owners and communities,



particularly in high risk wildland urban interface areas.

- Reduce hazardous wildland fuels in areas of significant risk.
- Prevent fire occurrence and fire loss.

Current activities in these areas include:

- Involving cooperators and stakeholders in designing and delivering programs.
- Engaging, encouraging, and leading counties and municipalities to develop and adopt Community Wildfire Protection Plans (CWPP).
- Educating and empowering property owners, stakeholders and individuals located in the UWI to mitigate hazards through delivering practical Firewise programs. Guiding and encouraging unincorporated communities to achieve Firewise Community/USA recognition status.
- Supporting counties, municipalities, and communities in mitigating wildland fuels identified through the completion and on-going process of a CWPP or recognized Firewise Community/USA.
- Assisting individuals, stakeholders, state and federal cooperators to develop and deliver fuel reduction programs. Managing the Community Protection Grant program supporting private sector burn managers in conducting prescribed fires adjacent to USFS National forests.
- Serving as a subject matter expert for individuals, stakeholders, state and federal cooperators in the area of prescribed fire.
- Promoting and delivering Smokey Bear wildfire education programs to Texans.
- Initiating wildfire prevention campaigns before and during a fire season through assessing weather and fuel conditions.

#### **4. Performance Measures**

More than 95 percent of wildfires in Texas are caused by human activity:

- Active wildfire prevention campaigns targeting areas that have an increased risk of wildfires or that are experiencing a wildfire season have been proven to reduce local fire occurrence by 60 to 70 percent.
- Proactive fire prevention programs aimed at young children are the most effective in the long term. According to the US Fire Administration and the National Fire Protection Association, proactive fire prevention programs lead to lower fire occurrence through sustained behavior modification.

Eighty to eighty-five percent of wildfires in Texas occur within two miles of a community. Properly implemented vegetation (wildland fuels) management treatments can significantly reduce or eliminate the risk of large catastrophic fires that burn through and destroy communities. Effectiveness of the program is reflected in the following achievements:

- Sixty-six communities have achieved and maintain Firewise Community/USA recognition status.
- These 66 Firewise Communities represent a total local investment of \$24,691,578 in



implementing and maintaining Firewise programs in their communities.

- Sixty-six CWPPs have been completed since 2006, with 17 of these being county-wide plans. The total population covered includes 6,671,184 people.
- Since 2006, there have been a total of 775 on-going practical Firewise programs presented statewide to 33,828 Texans.



## Wildfire & Public Safety: Planning & Preparedness

### 1. Program Description

The TFS Planning & Preparedness Department works across agency boundaries to enhance the effective implementation of the Texas Wildfire Protection Plan (TWPP). Department staff works collaboratively with other agencies, departments, and personnel in planning, developing, implementing, supporting, and evaluating TFS response capabilities and needs.

Planning personnel work in conjunction with TFS Predictive Services to monitor conditions and determine the needed preparedness levels. Based on this analysis, resources are mobilized and pre-positioned in areas of the state deemed to be at risk. The response resources utilized must be flexible, based on the current fire risk and occurrence, and involve the most appropriate available local, state, federal, and contract resources. The Incident Response Department coordinates placement and daily management of assigned fire resources. In turn, the Planning & Preparedness Department manages availability, qualification determinations, ordering, tracking, mobilization, and demobilization of personnel.

In Texas, even a moderately-sized wildfire may involve from two to 10 fire departments, numerous pieces of county equipment, local law enforcement, emergency medical services, and resources from TFS, Texas Department of Public Safety, Texas Department of Transportation, Texas National Guard, TDEM, and multiple out-of-state cooperators. All of these responders need to be organized before the fire starts in order to maximize safety and effectiveness.

Statewide, a fire season can easily involve hundreds of pieces of equipment and thousands of firefighters. Good planning and preparedness allow for a more effective and faster response, thereby reducing both losses and suppression costs.

Although primarily focused on wildfire response, these functions must also support the agency's roles in the State Emergency Management Plan for all-hazard emergencies such as hurricanes, floods, tornados, and other domestic incidents.

In 1993, the 73rd Legislature passed HB 842, making TFS responsible for the "coordination of the response to each major wildfire or potentially major wildfire in the state" and directing TFS to establish a statewide fire coordination center.

In 1998 the TICC was established by TFS, the US Fish & Wildlife Service, USFS, the National Park Service, the Bureau of Indian Affairs, and the Nature Conservancy to serve as a single coordination and support center for wildland fire agencies in Texas.

In 1998, Texas experienced a statewide fire season that lasted more than six months. For the first time, web pages, email distribution, and online file transfer sites were incorporated into daily fire response operations to provide the necessary information flow on fire conditions, fire occurrence, and suppression resources across the state. Following the 1998 fire season, Planning & Preparedness was identified as one of the key components of the TWPP.



The TFS Emergency Operations Center (EOC) was opened as a permanent, dedicated facility in March of 2005 to provide and maintain statewide situational awareness, strategic oversight, and management of TFS fire and emergency operations. Prior to the EOC, this function was usually established as needed in temporary facilities such as training rooms. Since its establishment, the EOC has been fully activated and staffed 75 percent of the time.

In 2007, the EOC and the state mobilization functions at TICC (define) were combined into the Planning & Preparedness Department.

Planning & Preparedness is administered as a department within the Forest Resource Protection Division of the Texas A&M Forest Service.

In all cases, the mobilization of fire and emergency response resources must be authorized by the appropriate authority at the state or national level before proceeding. Mobilization agreements and authorities include:

- The State Emergency Management Plan
- USFS Cooperative Agreement
- USFS Annual Operation Agreement
- USFS Southwest/Southern Regions Memorandum of Understanding
- South-Central Forest Fire Compact
- Department of Interior Memorandum of Understanding
- Texas Parks and Wildlife Memorandum of Understanding

State and federal resources are ordered and tracked through the Resource Ordering and Status System (ROSS). More information on this system is available at <http://ross.nwcg.gov/>. Mobilization Guides and Procedures utilized include:

- National Interagency Mobilization Guide
- Southern Area Mobilization Guide
- Texas Fire Response Handbook
- TIFMAS Mobilization Guide

More information on Texas Interagency Coordination Center is available online at:

<http://ticc.tamu.edu/>

## **2. Program Priority Areas**

The Planning and Preparedness Department primarily works within the wildfire and emergency response community at the state and federal level. At the state and federal level, these programs provide situational awareness of resource availability, fire occurrence, and catastrophic events to responders and decision makers. This program area also maintains, mobilizes and demobilizes supplies, resources, and personnel across the state as needed to support emergency response operations.

At the regional, county, and local level, the department coordinates the mobilizations systems for TIFMAS with the Texas Fire Chiefs Association and the RIMT programs.



In all cases, the mobilization of fire and emergency response resources must be authorized by the appropriate authority at the state or national level before proceeding.

#### Texas Interagency Coordination Center (TICC)

TFS maintains a joint coordination center with the USFS and the Department of the Interior to coordinate the mobilization, demobilization, and tracking of state and federal wildfire resources and personnel. The center receives and maintains personnel qualifications and training records for Texas-based firefighters and resources in the national dispatch system. Additionally, TFS personnel also maintain the records system and ordering for supply and equipment caches located across the state.

#### Emergency Operations Center (EOC)

TFS maintains an emergency operations center at the agency headquarters in College Station to provide statewide situational awareness, strategic oversight, and management of all TFS emergency response activities. The EOC continually monitors fire risk, state, and local fire occurrence, and the availability and utilization of firefighting resources, equipment, and personnel across the state.

### **3. Goals, Objectives, and Strategies**

- Analyze assessment and monitoring data to determine preparedness levels.
- Collaborate with internal and external sources to determine emergency response conditions, needs, and maintain appropriate response capabilities.
- Involve local, state, federal, and contract resources.
- Maintain readiness of resources.
- Provide intelligence to internal and external customers to promote safety and efficiency.

Current activities in these areas include:

- Working with agency administrators, departmental staff, and agency personnel to identify critical information needs and insure the timely availability of data, including the development and support of technological solutions, as needed.
- Ensuring the collection, evaluation, dissemination, and use of resource and incident information to support strategic decision making, including the repositioning and management of available resources based on current fire risk.
- Monitoring state and local wildfire occurrence and fire causes.
- Developing and maintaining information systems and databases for state, regional, and local emergency response equipment and resources.
- Maintaining wildland firefighter training and qualification records for state and local personnel.
- Ordering, maintaining, and pre-positioning essential equipment and supply caches across the state.
- Coordinating the mobilization and demobilization of agency and interagency resources





and equipment at the regional, state, and national level.

- Coordinating the regional mobilization and demobilization of local resources under specific mutual aid programs [Texas Intrastate Fire Mutual Aid System (TIFMAS) response and Regional Type III Incident Management Teams (RIMT's)].
- Developing and maintaining agency and interagency mobilization procedures, response plans, and interagency agreements.
- Serving as a primary point of contact for federal, state, and local agencies and cooperators.

#### **4. Performance Measures**

The Planning & Preparedness Department maintains the training and qualifications records for 762 firefighters and emergency responders. All of these personnel require annual training and fitness testing.

The department also maintains a number of information products that are regularly utilized by the agency and cooperators at the state and local level.

- During periods of elevated fire activity, the TFS EOC coordinates a daily statewide operational briefing that includes assessments on weather, expected fire behavior, safety measures, a review of current operations, public information efforts, and administrative issues. For state and interagency personnel, this is conducted as a statewide conference call with online, interactive graphics. A link to these graphics is also distributed to interested fire departments and cooperators via an email listserv account.
- Since 2005, TFS has maintained an online fire reporting system for fire departments to better capture wildland fire occurrence and costs of suppression across the state. This is a voluntary system with a minimum of information collected, such as fire name, date, location, acres, cause, homes threatened and saved, injuries, and fatalities. The system also allows responders to submit equipment and personnel hours to generate a FEMA-based suppression cost. Information entered into the system is immediately visible to all system users and cost estimates can be counted by the state towards meeting the required thresholds for federal assistance. Currently, the FD Fire Reporting system contains 584,058 reports submitted by 1,548 fire departments. This system has also been utilized by FEMA as the standard reporting system for local reimbursements on federally-declared fires. Since its launch, the TFS system has been responsible for \$8 million in federal and state response reimbursement payments to Texas fire departments.
- In 2007, TFS was tasked by the Texas Legislature with the development of a fire department listing for the state. The Fire Department Directory (FDD) was created in response to HB 1915 and includes information of fire departments membership, equipment and incorporates the fire reporting system (developed in 2005). The Directory is an online application that is available to all Texas fire departments, agencies, and associations. Currently, the directory lists information on 1,8



## Wildfire & Public Safety: Local Capacity Building

### 1. Program Description

Local fire departments are the primary initial response resources for wildfire suppression in Texas. TFS is committed to train, equip, and assist them in support of the TWPP.

The TFS Capacity Building programs were initiated to help increase fire protection capabilities at the local and community level across the state, with an emphasis on smaller or rural communities. Program funding and operation are intended to assist locally formed and operated fire departments with essential or key needs, thereby raising their capacity to respond and protect their communities.

Program eligibility is usually defined by state legislation or by federal program regulations. For the assistance programs initiated prior to 2001, eligibility is limited to volunteer fire departments (i.e., a department run by its members on a not-for-profit basis). This includes both volunteer and combination departments (volunteer departments with some paid personnel). The Rural Volunteer Fire Department Assistance Program and the Rural Fire Department Insurance Program are legislatively limited to volunteer or combination departments with 20 or fewer paid members. The Rural Volunteer Fire Department Insurance Program has the added stipulation that the department participate in a firefighter certification program under the Texas Commission on Fire Protection, the State Fireman's and Fire Marshals' Association of Texas or the National Wildfire Coordinating Group.

TFS does award some federal source funds under the Volunteer Fire Assistance program that carry the additional stipulation that the receiving department must be compliant with the National Incident Management System.

Equipment received through the Federal Excess Personal Property program may also be placed with county firefighter associations and fire training facilities, within certain restrictions.

Based on our most recent information, there are 1,871 fire departments in Texas. Almost all of these fire departments (92%) have received some type of assistance from TFS.

Over the past three years, TFS Fire Department Assistance Programs have collectively provided an average of 3,723 assists to Texas fire departments each year. This includes an average of \$21 million per year in grants and equipment provided.

Capacity Building is administered as a department within the Forest Resource Protection Division of TFS. The department is responsible for the delivery of the TFS fire department assistance programs.

Authority for program administration is usually placed with the TFS Director/State Forester by state legislation or federal program regulations. Oversight and administration of the programs are delegated to the Capacity Building Department Head, with designated staff responsible for day to day program delivery.



Federal agencies: VFA and FEPP are federal programs, delivered by Texas A&M Forest Service, under agreement with the USFS. These programs must operate in compliance with federal program guidelines and are subject to federal audit and review.

Local government: The TFS Capacity Building programs work with volunteer or smaller combination fire departments across the state.

More information on the TFS Capacity Building programs can be accessed at:

<http://texasforestservice.tamu.edu/main/article.aspx?id=1536>

<http://ticc.tamu.edu/firedepartment.htm>

## **2. Program Priority Areas**

### **Rural Volunteer Fire Department Assistance Programs (RVFDAP)**

Created by the 77th Texas Legislature (HB 2604) RVFDAP provides grants to volunteer fire departments for fire and rescue equipment, training tuitions, tankers, brush trucks, vehicle chassis', slip-on units, protective clothing, dry hydrants and computers.

#### **Volunteer Fire Assistance**

Volunteer Fire Assistance is a federal-source program delivered through the TFS. Currently these funds are being utilized in conjunction with the Rural Volunteer Fire Department Assistance program to provide grants to fire departments for wildland protective clothing, structural protective clothing, and firefighter training.

#### **Rural Volunteer Fire Department Insurance**

The Rural VFD Insurance Program was also created by the 77th Texas Legislature (HB 3667) to provide grants for volunteer firefighters to obtain workers compensation and death and disability insurance.

#### **Helping Hands**

Created by the 75th Texas Legislature (HB 680) the Helping Hands Program provides liability relief to industry, business, cities and others to donate surplus fire and emergency equipment to TFS. Donated equipment can then be distributed by Texas A&M Forest Service to fire departments around the state.

### **Federal Excess Personal Property (FEPP) and Firefighter Protection Program (FFP)**

FEPP and FFP are federal-source surplus equipment programs that allow TFS to acquire excess federal vehicles and equipment and assign the equipment to fire departments. Departments are responsible for the care and maintenance of all assigned property. Under FEPP, the federal government maintains title to all assigned equipment. Under the newer FFP program, title on military equipment is assigned to the receiving fire department.



### Firesafe

The Firesafe Program helps to provide low-cost wildland and structural protective clothing to rural and small community fire departments. New gear is purchased in volume by the agency and then resold, with the savings being passed along to the fire department. Through this program, eligible fire departments can get quality protective clothing at savings of 30 to 40 percent.

### Fire Quench

Through the Fire Quench program, fire departments can purchase low-cost Class A foam concentrate, a specialized surfactant that increases the effectiveness of water in extinguishing fires. Fire Quench is produced by Texas Correctional Industries.

### Volunteer Fire Department Vehicle Liability Insurance (Riskpool)

The Riskpool program was created by the 74th Texas Legislature (SB 1232). Through the program, TFS provides low-cost vehicle liability insurance to volunteer fire departments at the greatly reduced cost of \$200 per vehicle per year.

## **3. Goals, Objectives, and Strategies**

- Enhance local fire department capabilities through the development and delivery of assistance programs to eligible fire departments.
- Maximize the effectiveness of TFS capacity building programs through proper stewardship and minimal bureaucracy.

## **4. Performance Measures**

The Capacity Building Department of TFS administers a number of fire department assistance programs. Cumulatively, these programs provide assistance to Texas fire departments 3,723 times each year (based on a three year average). While this number will include multiple assists to a single department (a department insured through the vehicle liability program, funds for the purchase of a truck, a set of donated breathing apparatuses, a training grant to send firefighters to a regional school, etc.), there are very few eligible departments in the state who have not received some assistance from TFS.

The Rural VFD Assistance Program (or HB 2604) provides grants for training, tankers, brush trucks, chassis, slip-on units, fire and rescue equipment, protective clothing, training tuitions, computers, dry hydrants, and communications equipment. Annual program delivery costs range from 5 to 7 percent of program funds. Since the program began operation in 2002, RVFDAP has funded 1,557 fire trucks, 3,916 equipment grants, 68,738 sets of PPE and training tuitions for 62,683 students.

The Rural VFD Insurance Program (or HB 3667) provides grants for Texas firefighters to obtain workers compensation and death and disability insurance. Currently this program funds insurance coverage for over 11,000 firefighters per year.





## Wildfire & Public Safety: Incident Response

### 1. Program Description

Since its inception, one of the primary missions of TFS has been the suppression and extinguishing of forest fires. Beginning in 1915, the agency was instructed to “Take any action deemed necessary...to prevent and extinguish forest fires.” In 1993, the mission was expanded to include “Coordination of the response to each major or potentially major wildland fire in the state...” The role of the Incident Response Department of Texas A&M Forest Service is to ensure the rapid and effective response of appropriate resources, as needed, to suppress and extinguish wildfires in Texas. Rapid initial response to wildland fires is essential to suppress wildfires during high fire danger conditions, limit losses, and provide for the safety of emergency responders and citizens. The task is to do so in a cost-effective and efficient manner.

Texas uses a tiered approach to wildfire response and suppression. Local fire departments and counties are the first responders, with state response being activated as fires or conditions exceed the local ability to control. TFS is the lead state agency for wildfire response in Texas. As the suppression resources of TFS and other state agencies are depleted, out-of-state resources are brought in, under state control, to meet essential needs. TFS works with local fire departments under a unified incident command system to coordinate the efforts of all cooperators and minimize losses. Safe, but aggressive initial attack is emphasized, based on forecasted fire behavior. Rapid response and the utilization of appropriate resources are also essential in preventing project fires – large, destructive fires—that burn for multiple days and tie up resources needed to respond to new fires that may occur. To ensure safe and effective operations requires a coordinated effort well before the fire starts, including programs such as common training and certification, common communications and command structure, full situational awareness, utilization of predictive services information, constant analysis of needs, risk, available resources and response times, and the utilization of a flexible force structure with appropriate kinds and types of resources.

In addition to the firefighting mandate, TFS is routinely called upon under the State Emergency Management Plan to assist during all-hazard emergencies such as hurricanes, floods, tornadoes, oil spills, and domestic situations that need to be managed by an incident command staff. The incident command system provides a means to coordinate and manage personnel, equipment, facilities, and communications to effectively accomplish emergency response operational requirements at incident sites.

Wildfire activity in Texas has continued to increase over the past two decades with significant fire seasons occurring in nine of the last fourteen years requiring the extended mobilization of additional resources into high risk areas. Significantly elevated wildfire activity in 1996, 1998, 1999, 2000, 2001, 2005, 2006, 2008, 2009, 2011, and 2015 forced the agency to mobilize, manage, and support fire operations across hundreds of miles of territory involving thousands of firefighters.





Additionally, because of the agency's experience in managing large and complex wildfire operations utilizing the Incident Command System (ICS), TFS began to receive requests for incident management personnel to supplement state responses in other disasters or all-hazard incidents. With the adoption of NIMS ICS as the national response model following "9/11", the utilization of agency Incident Management Teams and personnel by the state has continued to increase.

TFS has designated roles in the State Emergency Management Plan under Annex F (Fire) and Annex N (Command and Control). The agency also has support roles in 9 other annexes. This includes lead or supporting roles for incidents ranging from wildfires, industrial/petrochemical fires, floods, hurricanes, tornados, bio-terrorism, the Strategic National Stockpile, the Regional Strategic Stockpile, and foreign animal disease. The Incident Response Department works cooperatively with the other state agencies and cooperators involved under the state plan.

One recent innovation to the state's response has been the increased use of local resources. Over the last nine years, TFS and TDEM have been working to make statewide use of local fire and emergency management resources. Utilizing Texas emergency responders and equipment from unaffected areas of the state, TDEM and TFS are creating the capacity to meet essential emergency response needs while reducing the state's reliance on out-of-state resources. The Texas Intrastate Fire Mutual Aid System (TIFMAS) and the Regional Incident Management Team (RIMT) programs are clear examples of Texans helping Texans.

In 2003, HB 2650 created the Public Safety Radio Communications Council to oversee the implementation of a statewide, integrated radio communications system for public safety and homeland security purposes. TFS was named as a council member. This program area works with fire departments, county governments, Texas agencies, and national cooperators to coordinate the response to each major or potentially major wildland fire in the state. This includes wildfire response activity on state and private lands.

Training programs and academies presented by the Incident Response Department are open enrollment courses aimed at firefighters, emergency responders, local officials, and decision makers at all levels.

Incident Response is administered as a Department within the Forest Resource Protection Division of TFS. Field operations are divided into geographical areas and managed by administrative regions. Training and communications are coordinated on a statewide basis. During wildfire and emergency response, operations personnel will work within assigned roles under the NIMS ICS structure.

The TFS Incident Response Department maintains a cooperative relationship with the federal wildland agencies (USFS, USF&WS). Efforts primarily include the sharing of equipment and personnel for wildfire suppression and emergency response. During state response operations, command and control of all resources are maintained by TFS under standard incident management protocols.



The Incident Response Department works cooperatively with local fire departments, counties, and emergency responders under a unified incident command system to coordinate the efforts of all cooperators and minimize losses from wildfires and other disasters.

## **2. Program Priority Areas**

### **Cooperative Response and Resource Management**

Wildfire suppression in Texas is a cooperative effort. TFS response personnel are expected to know, work with, and support the fire departments within their assigned regions. This should include knowledge of each fire department's capabilities, training and equipment. Response staff should also serve as the local point of contact and information on TFS Capacity Building (and other) programs for both fire departments and TFS staff at the state program level. Incident response personnel are expected to know the vegetation, hazards, and risks within their regions, including critical conditions and special tactics or resources that may be required. These networks and knowledge are essential for TFS personnel to establish and lead response operations involving local, state, and national resources.

### **Incorporating Local Priorities into Wildfire Response on Private Lands**

Wildland fire response operations must be based on a defined set of objectives and priorities to be effective. During both initial attack operations and extended project fires, a defined set of objectives and priorities should be used to guide all strategic and tactical decisions. Reflecting both jurisdictional responsibilities and land management goals, these objectives may vary considerably between different landowners and jurisdictional authorities.

To better identify and respond to local priorities and objectives (particularly during large fire operations) TFS is working with Texas A&M AgriLife Extension, Texas and Southwestern Cattle Raisers Association and Texas Sheep and Goat Raisers Association to ensure quick and meaningful communications are in place.

### **Training**

TFS also provides nationally-certified wildfire and emergency management training to fire departments and agencies across the state. TFS provides local classes and regional academies to promote firefighter and fire department development and safety. Wildfire and emergency management training is coordinated under the Incident Response Department and primarily conducted by Incident Response personnel, to ensure "what we teach" is "what we do."

### **Radio Communications**

Accurate and clear communication is an essential function during emergency response. This can be particularly problematic when utilizing a mix of response resources from multiple departments and agencies. Personnel within the TFS Incident Response Department maintain the radio systems, towers, and communications plans that are essential to response operations. Activities in this area include participation on the State Communications Coordination Group,



the Texas State Interoperability Executive Committee, and the establishment of three statewide fire mutual aid frequencies for use by local, state, and national resources.

### Texas Intrastate Fire Mutual Aid System (TIFMAS)

In cooperation with the Texas Fire Chief's Association, TFS has developed the capability to mobilize local (Texas) fire suppression resources to provide regional mutual aid during large-scale disasters. Under TIFMAS, local, in-state suppression resources are utilized to meet emergency response needs in other areas of the state.

### Regional Type III Incident Management Teams (RIMTs)

TFS is also working with the TDEM to develop RIMTs as an added component to wildfire and all-hazard response. These teams are formed by personnel from local and municipal entities that are trained and mobilized by TFS to provide support as needed. The RIMT program was initiated in 2006 by Governor Rick Perry's Executive Order RP57 and is delivered by the TFS with program funding by TDEM.

These teams work under the direction of the TFS Lone Star State IMT to support impacted communities in managing security and continuity of government issues, assessment of critical infrastructure, and restoration of essential services following a catastrophic incident. There are 466 RIMT members statewide, representing all first responder disciplines.

## **3. Goals, Objectives, and Strategies**

- Provide for the safety of emergency responders and citizens.
- Conduct response operations to minimize losses and large, multi-period fires.
- Conduct response operations in an efficient and cost-effective manner.
- Support state and federal disaster operations by providing all-hazard incident management personnel and response teams.
- Provide leadership in delivering wildland fire and incident management training.

## **4. Performance Measures**

Texas is considered a private property rights state. With a 261,797 square mile land area, less than 2 percent of the land falls under federal ownership. TFS is the only state agency authorized to prevent and suppress wildland fires throughout the state. Its employees are authorized to enter upon any privately-owned lands in the performance of their fire suppression duties, which are under the direction of the State Forester (TFS Director).

Wildfire activity in Texas has continued to increase over the past two decades with significant fire seasons occurring in eleven of the last nineteen years. Since TFS's role is to assist local responders as fires or conditions exceed their ability to suppress, the agency traditionally responds to 10-15 percent of the wildfires that occur. However, these fires are usually the "worst of the worst" and account for approximately 65-70 percent of the acreage burned.



TFS is also routinely called upon under the State Emergency Management Plan to assist during all-hazard emergencies such as hurricanes, floods, tornadoes, oil spills, and domestic situations. By providing state and regional incident management teams and personnel, the agency helps to coordinate emergency response personnel, equipment, facilities, and communications at incident sites.

The Incident Response Department also coordinates the TFS wildfire and emergency response training program to provide National Wildfire Coordinating Group (NWCG) and National Incident Management (NIMS) Incident Command System (ICS) training. Courses are offered at the local, regional, and state level with a strong emphasis on four regional training academies that occur annually.





## Law Enforcement

### 1. Program Description

Since its inception in 1915, one of the primary missions of Texas A&M Forest Service has been to “enforce all laws pertaining to the protection of forests and woodlands and prosecute violations of those laws.”

To accomplish this, the Director “may appoint not to exceed 25 employees of the Texas A&M Forest Service who are certified by the Commission on Law Enforcement Officer Standards and Education as qualified to be peace officers to serve as peace officers under his direction in executing the enforcement duties of that agency.” “Any officer commissioned under this section is vested with all the powers, privileges, and immunities of peace officers in the performance of his/her duties. The officer shall take the oath required of peace officers.”

One of the primary rolls of TFS law enforcement is to provide wildfire arson investigation and training as requested by TFS personnel, local fire departments, the State Fire Marshal’s Office, or other law enforcement agencies. TFS law enforcement officers work both misdemeanor and felony investigations. This program includes two arson tracking dogs. The Department also maintains an arson hotline to enable reporting of suspected wildland arson.

TFS law enforcement officers also work with timber theft cases both by direct investigation and by serving as subject matter experts for other state or local law enforcement units. The agency maintains a Timber Theft Hotline to enable public reporting of suspected of timber theft activity.

For most of the agency’s history, law enforcement activities have centered on the investigation of wildfire causes and origins, for both misdemeanor (escaped fires) and felony (arson) cases. Prior to 1990, the agency had one full-time law enforcement officer/supervisor with the other commissioned personnel performing law enforcement duties as needed. With the sharp rise in timber prices in the early 1990s and the predominance of absentee landowners, timber theft became a significant issue for law enforcement in East Texas, forcing the agency to expand its services and support of local law enforcement in this area.

In 1995, with the passage of HB 1232, the agency initiated the VFD Motor Vehicle Self-Insurance program and incorporated agency law enforcement into field verification / investigation of accidents on vehicles insured under the program. In 1999, under HB 722, the State Legislature increased the number of allowable TFS law enforcement officers to 25.

In 2007, the agency acquired, by donation, an AKC–registered bloodhound to initiate an arson tracking program. Currently this program maintains two bloodhounds to support arson tracking. These dog teams have also assisted with search and rescue tracking when requested.

As demand for these services has increased, the agency has slowly converted more of its officers to full-time law enforcement duties. Today, the agency has ten full-time law enforcement (LE) officers, with the others still serving as “additional duty LE officers.”



Law Enforcement is administered as a Department within the Forest Resource Protection Division of TFS. Field operations are divided into geographical areas and managed by administrative regions. Agency law enforcement personnel include officers that perform law enforcement duties full-time and employees that serve multiple program areas, including law enforcement duties on an “as needed” basis.

## **2. Program Priority Areas**

This program works with local, state, and federal law enforcement, prosecutors, and the public. Agency law enforcement officers provide direct investigation and services and serve as subject matter experts in the fields of wildland arson and timber theft. Assistance is provided as requested or as enforcement needs are identified.

## **3. Goals, Objectives, and Strategies**

- Enforce laws relating to wildland fires, including wildfire cause determination and arson investigation.
- Enforce laws relating to timber theft.
- Support agency law enforcement needs, including security and investigation of activity on state forests and agency property.
- Missing property investigations for federal excess property assigned to fire departments.
- Accident investigation on vehicles insured through the VFD Vehicle Liability Insurance Program.

## **4. Performance Measures**

- Misdemeanor fire offense reports.
- Reported arson investigations.
- Timber theft investigations.

In general terms, about 50 percent of the misdemeanor offenses reported do not produce sufficient evidence to prosecute. Approximately 30 percent of the cases result in warnings or dismissals and 20 percent result in convictions, fines or penalties. Resolution statistics for arson and timber theft investigations can vary significantly from year to year. However, approximately 40 percent of the timber theft cases reported to the TFS are resolved without litigation following involvement by the Law Enforcement Department.





## MULTI-STATE PROJECTS, PROGRAMS & INITIATIVES

TFS is already involved in or plans to develop several multi-state projects or programs that are of regional priority. Below is a list and short description of some of these initiatives.

**Longleaf Task Force**—TFS and USFS National Forests and Grasslands in Texas have joined together with Louisiana Forestry Commission, National Forests in LA, Texas A&M University Institute of Renewable Natural Resources, and Fort Polk in LA to begin a multi-stakeholder effort to support longleaf pine restoration. TFS and USFS NFS agreed to oversee a multi-organizational effort, *TX/LA Longleaf Restoration Task Force*, to describe the collective and ongoing longleaf restoration activities in the East Texas and Western Louisiana. TFS, USFS, and other agencies/partners share the common goals to accelerate longleaf ecosystem restoration on private forestlands adjacent to federal lands, and to better position the state for program funding that provides assistance to rural landowners. The *TX/LA Longleaf Restoration Task Force* will serve to support the larger, range-wide *America's Longleaf Restoration Initiative*, whose purpose is to increase longleaf pine acreage from 3.4 to 8.0 million acres in the next 15 years. A Range-wide Conservation Plan for Longleaf Pine serves to guide actions and strategies of the Initiative. Within the Conservation Plan, sixteen “Significant Geographic Areas” or SGAs have been identified to spatially target longleaf restoration; at least half of the targeted acreage from Conservation Plan’s goal is identified in these SGAs. In Texas and Louisiana, there are four SGAs centered on the following public lands: (1) Sabine/Angelina National Forests, (2) Big Thicket National Preserve, (3) Fort Polk, and (4) Kisatchi National Forest.

**Southern Pine Beetle Prediction**—TFS entomologists developed a reliable means to forecast outbreaks of the southern pine beetle (SPB) (*Dendroctonus frontalis*), the most destructive insect pest of commercial pine forests in the South. This prediction system involves deploying pheromone-baited survey traps in pine-forested areas for 4 weeks during March and/or April each year. Based on numbers of adult SPB and its major predator (clerid beetle, *Thanasimus dubius*) captured in the traps, the infestation trend and level is predicted for the remainder of the year. This system has been adopted by 16 states in the South and Northeast extending from Texas to New Jersey where SPB is a major pest. Trap data from each state are submitted annually to the Texas A&M Forest Service and TFS entomologists compile the region-wide data to make predictions for all cooperators. Survey results and predictions are posted on the TFS webpage. The system, in use since 1986, has predicted SPB outbreaks or declines with nearly 80 percent accuracy, providing useful information for improved management of this important forest pest.

**Southern Pine Beetle Portal**—TFS entomologists are collaborating with entomologists from other southern states and the US Forest Service, Forest Health Technology Enterprise Team to develop and implement a standard method for reporting and mapping southern pine beetle (SPB) infestations and related resource losses. This Internet-based system relies on a few standard core values required by all state cooperators (infestation number, location, date of detection, acreage affected, timber volumes and values affected). In addition, each state will be able to record any other specific information needed to manage outbreaks of this destructive forest pest. Data submitted is used to generate up-to-date maps of existing



outbreaks and record economic losses throughout the range of this pest in the South. This represents the first standardized reporting system for southern pine beetle shared by all state and federal agencies involved with SPB management.

**Cogongrass Collaboration**—Cogongrass (*Imperata cylindrica*) is an aggressive invader of natural and disturbed areas throughout the Southeast. It disrupts ecosystem functions, displaces native forest plants, and increases the severity of wildfires. Texas represents the western extension of this invasive weed and to date only two counties are known to harbor cogongrass infestations (Tyler and Brazos County). But the potential for spread within the state and increased economic impact are of major concern. Accordingly, The Texas A&M Forest Service is contributing to a multi-state effort to eradicate this noxious, invasive weed. Other partners in this campaign include state and federal agencies in Florida, South Carolina, Georgia, Alabama, Mississippi, Tennessee, and Louisiana. Detection and mapping of all known infestations followed by treatment with prescribed fire and herbicides to eventually eradicate this invasive plant from the South are the goals of this collaborative program.

**Timber Supply**--Texas A&M Forest Service annually produces a publication entitled Harvest Trends that reports the amount of wood purchased by primary product mills in Arkansas, Louisiana, and Oklahoma from Texas forests and the amount of wood purchased by Texas mills from forests in those states. We are also examining the amount of biomass supply available for proposed bioenergy facilities in Texas, and if announced at some point in the future, nearby counties of surrounding states. Additionally, at some point, facilities may be established in Texas that will sell wood pellets or chips to states in regions outside of the Western Gulf and around the World such as Europe. Conducting these analyses helps us determine timber supplies in Texas but also helps us identify supply from nearby states for Texas mills.

**Urban Forestry Trees for Energy**-This project is a multi-state project to research and develop programs that will demonstrate the use of trees as an energy efficiency technology that can mitigate climate variability and conserve energy. Coalitions will be formed in each state and incentive programs developed that will be used to plant trees to shade residential structures. These coalitions will vary slightly in each state but will be made up of utility regulators, tree non-profits, municipal governments, foundations, neighborhood groups, nursery and landscaper professionals and citizens. The focus of these groups will be to create systems that can plant thousands of trees for energy efficiency for both investor owned and municipal utilities. Trees for Energy Efficiency and Savings will provide a national model that will demonstrate how S&PF programs can use trees to address critical national issues of energy conservation, climate variability, economic development, and job creation.



## NEEDED RESOURCES: AGENCY & ORGANIZATIONAL ROLES MATRIX, CORRELATION TO PROGRAMS & CORRELATION TO NATIONAL PRIORITIES

The following matrix indicates:

- A role of a program or organization to work cooperatively on implementing strategic activities given the Strategic Issue and state forestry agency program.
- How a given Strategic Goal and Program is meant to address a USFS S&PF National Priority.
- The relationship between Issues and S&PF Programs.

	S&PF Programs										Organizations										
	National Priorities																				
Goals, Objectives, Strategies	Fire Mgmt Program	Forest Health Program	Forest Legacy Program	Forest Stewardship Program	U & C Forestry Program	Outreach & Other S&PF	USFS National Forest Systems	USFS Research & Other USFS	NRCS/FSA & Other USDA	Other Federal Agencies	Texas Parks & Wildlife	Other State Agencies	Land Trust, Wildlife & Conserve. Orgs.	Universities & Schools	Texas Forestry Assoc. & CFLA's	Other Forestry Organizations	Municipalities & Cities	Fire Departments: VFD & Cities	Protect	Conserve	Enhance
Issues, Goals, Objectives & Strategic Actions																					
Issue 1: Population Growth & Urbanization																					
Goal 1: Identify areas of the state that will experience significant urban growth in the next 30 years																					
Objective 1.1: Focus agency programs into identified communities expected to grow																					
Strategy 1.1.1: Utilize GIS technology	X	X			X	X		X		X	X	X		X		X	X	X	X		
Strategy 1.1.2: Analyze/utilize SWFRA	X	X			X			X		X	X	X		X		X	X	X	X		
Goal 2: Educate and prepare community leadership for change																					
Objective 2.1: Conserve, protect, enhance natural resources prior to population growth																					
Strategy 2.1.1: Assistance network	X	X			X	X				X	X	X	X	X		X	X	X	X	X	X
Strategy 2.1.2: Develop outreach	X	X			X	X				X	X	X	X	X		X	X	X	X	X	X
Strategy 2.1.3: Deliver outreach	X	X			X	X				X	X	X	X	X		X	X	X	X	X	X
Issue 2: Central Texas Woodlands Conservation																					
Goal 1: Identify multi-county areas where resource threats (development, wildfire, pests) will most likely threaten/negatively impact natural resources																					
Objective 1.1: Prioritize/focus program delivery and agency resources																					
Strategy 1.1.1: Interface change maps	X	X		X		X			X	X	X	X	X	X		X	X	X	X	X	X
Strategy 1.1.2: Projected fragmentation	X	X		X		X			X	X	X	X	X	X		X		X	X	X	X



	S&PF Programs													Organizations							
	National Priorities																				
Goals, Objectives, Strategies	Fire Mgmt Program	Forest Health Program	Forest Legacy Program	Forest Stewardship Program	U & C Forestry Program	Outreach & Other S&PF	USFS National Forest Systems	USFS Research & Other USFS	NRCS/FSA & Other USDA	Other Federal Agencies	Texas Parks & Wildlife	Other State Agencies	Land Trust, Wildlife & Conserve. Orgs.	Universities & Schools	Texas Forestry Assoc. & CFLA's	Other Forestry Organizations	Municipalities & Cities	Fire Departments: VFD & Cities	Protect	Conserve	Enhance
Goal 2: Prioritize current landowner assistance and partnership programs and associated personnel																					
Objective 2.1: Comprehensive leadership in Central& West Texas multi-county areas																					
Strategy 2.1.1: Expand job descriptions	X	X			X																
Strategy 2.1.2: Steering committees	X	X		X					X	X	X	X	X	X		X		X	X	X	X
Strategy 2.1.3: Develop website	X	X		X		X		X	X	X	X	X	X	X	X	X		X	X	X	X
Strategy 2.1.4: Foster & train partners	X	X		X		X		X	X	X	X	X	X	X	X	X		X	X	X	X
Strategy 2.1.5: Training modules	X	X		X		X		X	X	X	X	X	X	X	X	X		X	X	X	X
Strategy 2.1.6: Incentives to employ staff	X	X		X							X	X	X	X		X		X	X	X	X
Strategy 2.1.7: Public workshops	X	X		X		X		X	X	X	X	X	X	X	X	X		X	X	X	X
Issue 3: Sustainability of Forest Resources in East Texas Forests																					
Goal 1: Determine the impacts of additional wood processing facilities on East Texas timber supply																					
Objective 1.1: Evaluate how new mills will impact long-term timber supply of Southeast Texas forests																					
Strategy 1.1.1: Timber supply report						X		X													X
Strategy 1.1.2 : Monitor impact of hurricanes						X		X													X
Objective 1.2:																					
Strategy 1.2.1: Results report of supply						X		X													X
Strategy 1.2.2: Other sources of biomass				X		X	X	X	X	X	X	X	X	X	X	X	X		X	X	X
Goal 2: Monitor the sustainability of Northeast Texas																					
Objective 2.1: Analyze how improved regeneration scenarios can impact the sustainability of Northeast																					



	S&PF Programs										Organizations										
	National Priorities																				
Goals, Objectives, Strategies	Fire Mgmt Program	Forest Health Program	Forest Legacy Program	Forest Stewardship Program	U & C Forestry Program	Outreach & Other S&PF	USFS National Forest Systems	USFS Research & Other USFS	NRCS/FSA & Other USDA	Other Federal Agencies	Texas Parks & Wildlife	Other State Agencies	Land Trust, Wildlife & Conserve. Orgs.	Universities & Schools	Texas Forestry Assoc. & CFLA's	Other Forestry Organizations	Municipalities & Cities	Fire Departments: VFD & Cities	Protect	Conserve	Enhance
Texas forests																					
Strategy 2.1.1: Regeneration scenario report						X		X											X	X	X
Strategy 2.1.2: Knowledge base						X		X	X	X	X	X		X	X	X					X
Objective 2.2: Monitor regeneration activities within Northeast Texas forests																					
Strategy 2.2.1: Survey of land owners				X		X		X						X					X	X	X
Strategy 2.2.2: Survey of industries				X		X		X						X		X			X	X	X
Strategy 2.2.3: Survey of nurseries						X								X	X	X			X		X
Objective 2.3: Determine harvest rates within Northeast Texas																					
Strategy 2.3.1: Survey of mills & product rates						X		X								X					X
Strategy 2.3.2: Summary report								X								X					X
Goal 3: Determine the potential of carbon markets to forest landowners																					
Objective 3.1: Increase the ability of landowners to analyze how carbon markets can impact their economic investments																					
Strategy 3.1.1: Software program						X								X						X	X
Strategy 3.1.2: Landowner education						X								X						X	X
Objective 3.2: Conduct an analysis determining the economic feasibility of managing resources for carbon markets																					
Strategy 3.2.1: Report on projections						X								X						X	X
Strategy 3.2.2: Present reports at meetings						X		X	X					X	X	X				X	X
Goal 4: Monitor the demographics of forest landowners and their desires																					
Objective 4.1: Determine the range in age, salaries, and interests of East Texas forest landowners																					



	S&PF Programs												Organizations								
	National Priorities																				
Goals, Objectives, Strategies	Fire Mgmt Program	Forest Health Program	Forest Legacy Program	Forest Stewardship Program	U & C Forestry Program	Outreach & Other S&PF	USFS National Forest Systems	USFS Research & Other USFS	NRCS/FSA & Other USDA	Other Federal Agencies	Texas Parks & Wildlife	Other State Agencies	Land Trust, Wildlife & Conserve. Orgs.	Universities & Schools	Texas Forestry Assoc. & CFLA's	Other Forestry Organizations	Municipalities & Cities	Fire Departments: VFD & Cities	Protect	Conserve	Enhance
Strategy 4.1.1: Survey of characteristics						X		X											X	X	X
Strategy 4.1.2: Forestry meetings						X		X	X		X		X	X	X	X			X	X	X
Objective 4.2: Educate the forestry community about landowner demographics																					
Strategy 4.2.1: Reports on survey						X		X					X	X	X		X		X	X	X
Strategy 4.2.2: Present results at meetings						X											X				X
Issue 4: Water Quality and Quantity																					
Goal 1: Protect water quality																					
Objective 1.1: Encourage BMP implementation on forestry operations																					
Strategy 1.1.1: Expand education		X	X	X		X	X		X	X	X	X	X	X	X	X				X	X
Strategy 1.1.2: Target deficiencies				X		X			X	X		X		X	X	X				X	X
Objective 1.2: Encourage BMP implementation on other land operations																					
Strategy 1.2.1: Non-traditional BMPs					X	X			X	X		X	X	X	X		X		X		X
Strategy 1.2.2: BMP Education			X		X	X			X	X		X	X	X	X		X		X		X
Objective 1.3: Promote the importance of forests to water quality																					
Strategy 1.3.1: Develop eco-markets				X		X		X	X	X	X	X	X	X	X	X	X			X	X
Strategy 1.3.2: Watershed planning	X	X	X	X	X	X			X	X	X	X	X	X	X		X		X	X	X
Strategy 1.3.3: Establish forests			X	X		X			X	X	X	X	X	X	X		X				X
Strategy 1.3.4: Restore wetlands			X	X		X			X	X	X	X	X	X	X		X				X
Goal 2: Enhance water quantity																					





	S&PF Programs												Organizations								
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Objective 2.1: Protect aquifer recharge zones																					
Strategy 2.1.1: Establish forests				X	X	X			X	X	X	X	X	X	X		X				X
Strategy 2.1.2: Minimize disturbances			X	X	X	X			X	X	X	X	X	X	X		X		X		X
Objective 2.2: Properly manage invasive vegetation along riparian areas																					
Strategy 2.2.1: Identify priority areas		X		X		X			X	X	X	X	X	X	X				X		X
Strategy 2.2.2: Work with landowners		X		X		X			X	X	X	X	X	X	X				X		X
Issue 5: Wildfire & Public Safety																					
Goal 1: Analyze current and predicted weather conditions, wildfire occurrence, development pressure, and fuels																					
Objective 1.1: Determine current and predicted weather conditions throughout the year																					
Strategy 1.1.1: Weather station networks	X									X				X					X		
Objective 1.2: Monitor the condition of wildland fuels and vegetation																					
Strategy 1.2.1: System to support info	X									X				X					X		
Objective 1.3: Calculate current and predicted fire behavior																					
Strategy 1.3.1: Maintain people & data	X									X				X					X		
Objective 1.4: Identify and document Urban/Wildland Interface areas and communities at risk																					
Strategy 1.4.1: Maintain GIS applications	X									X				X					X		
Objective 1.5: Track fire occurrence and ignition sources																					
Strategy 1.5.1.: Online fire reporting	X									X				X					X		
Objective 1.6: Disseminate assessment information to cooperators, elected officials, and the public																					
Strategy 1.6.1: Web-based information	X									X				X					X		
Goal 2: Continuous wildfire mitigation and prevention programs																					
Objective 2.1: Assign high priority to mitigation and prevention efforts throughout the year																					



	S&PF Programs													Organizations							
	National Priorities																				
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Strategy 2.1.1: Fire prevention programs	X									X				X					X		
Objective 2.2: Base efforts on local assessment information																					
Strategy 2.2.1: Predictive personnel	X						X			X	X	X		X			X	X	X		
Objective 2.3: Initiate prevention efforts prior to a developing fire season																					
Strategy 2.3.1: Monitor fire risk indices	X						X			X	X	X		X			X	X	X		
Objective 2.4: Involve cooperators in designing and delivering programs																					
Strategy 2.4.1: Integrate local involvement	X						X			X	X	X		X			X	X	X		
Objective 2.5: Strive to empower communities and property owners to mitigate hazards in Urban/Wildland Interface areas																					
Strategy 2.5.1: Risk reduction in UWI	X						X			X	X	X		X			X	X	X		
Objective 2.6: Work with cooperators to develop and deliver wildland fuel reduction programs																					
Strategy 2.6.1: Vegetation removal	X						X			X	X	X		X			X	X	X		
Goal 3: Work across internal and external boundaries to implement the Texas Wildfire Protection Plan																					
Objective 3.1: Analyze predictive services and fire occurrence data to determine local and statewide preparedness																					
Strategy 3.1.3: Monitor wildfires	X						X			X	X	X		X			X	X	X		
Objective 3.2: Ensure preposition and availability of resources based on analysis																					
Strategy 3.2.1: Coordinate resources	X						X			X	X	X		X			X	X	X		
Strategy 3.2.2: Coordinate strategic resources	X						X			X	X	X		X			X	X	X		
Objective 3.3: Maintain a flexible force structure based on risk and occurrence																					
Strategy 3.3.1: Monitor resources used	X						X			X	X	X		X			X	X	X		



	S&PF Programs										Organizations										
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Objective 3.4: Involve local, state, federal, and contract resources																					
Strategy 3.4.1: Maintain agreements	X						X			X	X	X		X			X	X	X		
Objective 3.5: Maintain readiness of resources																					
Strategy 3.5.1: Maintain qualifications	X																X	X	X		
Strategy 3.5.2: Pre-position equipment	X						X										X	X	X		
Strategy 3.5.3: Mobilize equipment	X						X			X		X					X	X	X		
Goal 4: Train, equip, and assist local fire departments in support of the Texas Wildfire Protection Plan																					
Objective 4.1: Assist local fire departments as they are the initial attack resource for rural Texas																					
Strategy 4.1.1: Knowledge base	X									X		X							X		
Strategy 4.1.2: Recognize fire departments	X						X			X	X	X							X		
Objective 4.2: Develop and deliver programs committed to training, equipping, and supporting local departments																					
Strategy 4.2.1: Assist training programs	X									X		X					X	X	X		
Strategy 4.2.2: Commit to VFD safety	X									X		X					X	X	X		
Objective 4.3: Focus TFS fire assistance programs in support of Texas Wildfire Protection Plan																					
Strategy 4.3.1: Unified priorities	X									X		X					X	X	X		
Objective 4.4: Encourage partnerships between all federal, state, and local cooperators																					
Strategy 4.4.1: Multi-agency cooperation	X									X		X					X	X	X		
Goal 5: Ensure rapid and effective response of appropriate resources to suppress and extinguish wildfires																					
Objective 5.1: Provide for the safety of emergency responders and citizens																					
Strategy 5.1.1: Agency	X									X									X		



	S&PF Programs													Organizations							
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training																					
Strategy 5.1.2: Assign personnel	X											X					X	X	X		
Strategy 5.1.3: Know local conditions	X									X		X					X	X	X		
Objective 5.2: Conduct response operations in a cost-effective and efficient manner																					
Strategy 5.2.1: Monitor conditions	X									X		X					X	X	X		
Strategy 5.2.2.: Financial section	X						X			X		X					X	X	X		
Objective 5.3: Coordinate the efforts of cooperators to minimize losses																					
Strategy 5.3.1: Response objectives	X						X			X		X					X	X	X		
Strategy 5.3.2: Operational staff access	X						X			X		X					X	X	X		
Objective 5.4: Emphasize aggressive initial attack based on fire behavior to prevent fires that burn for days																					
Strategy 1.4.1: Appropriate response	X						X			X		X					X	X	X		
Issue 6: Urban forestry sustainability																					
Goal 1: Reduce the impacts of land-use change, fragmentation, and urbanization on forest landscapes																					
Objective 1.1: Monitor land-use change in Texas																					
Strategy 1.1.1: Emerg comnty coordination	X			X	X	X		X						X			X		X	X	X
Strategy 1.1.2: measure urban canopy	X	X	X	X	X	X		X	X	X		X		X		X	X				X
Objective 1.2: Encourage “best practices” for protecting high-value forest landscapes in and around urban areas																					
Strategy 1.2.1: Green Infrastructure		X	X	X	X			X						X	X	X	X				X
Strategy 1.2.2: Technical assistance					X											X	X				X
Strategy 1.2.3:			X															X		X	



	S&PF Programs											Organizations									
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Support land trusts																					
Strategy 1.2.4: Outreach efforts	X	X	X	X	X	X		X									X	X		X	X
Goal 2: Moderate the impacts of catastrophic events																					
Objective 2.1: Improve disaster preparedness at the state and local level in include trees and tree issues																					
Strategy 2.1.1: Prepare communities	X				X			X									X	X	X	X	X
Strategy 2.1.2: Tree risk management					X			X									X	X	X		
Strategy 2.1.3: Monitor forest health		X			X													X	X		
Objective 2.2: Respond quickly and effectively following any major event that damages trees in a community setting																					
Strategy 2.2.1: TFS certified strike teams	X				X			X		X							X	X	X		X
Strategy 2.2.2: Urban forester ICA PIO's	X				X														X		
Strategy 2.2.3: Urban foresters & FEMA	X				X					X							X		X		
Objective 2.3 Establish a program or fund to supply significant numbers of new trees to communities affected by disaster																					
Strategy 2.3.1: State replanting funds					X	X							X			X	X			X	X
Strategy 2.3.2: Delivery of tree planting projects				X	X	X		X				X				X	X			X	X
Goal 3: Protect and improve air quality																					
Objective 3.1: Participate in process to write or update State Implementation Plans for nonattainment areas in Texas																					
Strategy 3.1.1: Inventory with UFORE					X			X						X		X	X			X	



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Strategy 3.1.2: Language to prevent loss					X			X		X							X		X	X	
Goal 4: Protect and improve water quality																					
Objective 1: Mitigate impaired waterways within urban areas																					
Strategy 4.1.1: Urban stream restoration		X	X	X	X													X	X	X	X
Strategy 4.1.2: Coord with Land Trusts			X		X													X	X	X	X
Objective 4.2: Analyze cumulative impact of impervious surfaces within urban watersheds																					
Strategy 4.2.1: Impervious surfaces					X			X			X						X	X		X	X
Strategy 4.2.2: Storm water run off					X			X			X						X	X		X	X
Strategy 4.2.3: BMP's for imperviousness					X			X			X						X	X	X	X	X
Goal 5: Mitigate climate variability and conserve energy																					
Objective 5.1: Help communities establish large-scale tree planting goals and plans																					
Strategy 5.1.1: Support "Tree Print"					X			X						X		X	X				X
Strategy 5.1.2: Prioritize tree planting					X			X						X		X	X				X
Strategy 5.1.3: Tracking tool					X									X		X	X				X
Strategy 5.1.4: Info to City Mayors					X											X	X			X	X
Strategy 5.1.5: BMP's to break up heat islands					X			X									X		X	X	X
Objective 5.2: Support tree planting as an energy efficiency practice																					
Strategy 5.2.1: Electric utility providers					X			X		X		X		X		X		X	X		X
Strategy 5.2.2:					X						X				X	X	X				X





	S&PF Programs												Organizations								
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Use Dallas model in other areas																					
Strategy 5.2.3: Work with DOE and EPA					X					X						X	X				X
Strategy 5.2.4: Public awareness		X			X											X	X			X	X
Goal 6: Build U&CF program capacity at the local level																					
Objective 6.1: Establish professional urban foresters and arborists in Texas communities																					
Strategy 6.1.1: Grants for staff in communities		X			X											X	X			X	X
Strategy 6.1.2: Increase CMS through ISA					X											X	X				X
Objectives 6.2: Support scientific inventory systems to provide resource data to develop management plans for local managers																					
Strategy 6.2.1: Grants for inventories					X											X	X			X	X
Strategy 6.2.2.: Support iTree projects					X										X	X	X			X	X
Strategy 6.2.3: Workable manage plans					X											X	X			X	
Objective 6.3: Promote effective tree care and tree protection ordinances and policies																					
Strategy 6.3.1: Model for Tree City USA					X											X	X				X
Strategy 6.3.2: Develop model ordinances		X			X										X	X	X			X	X
Objective 6.4: Support local tree advocacy groups																					
Strategy 6.4.1: Citizen Foresters					X											X	X				X
Strategy 6.4.2: Local tree					X											X	X			X	X



Goals, Objectives, Strategies	S&PF Programs																Organizations				
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boards																					
<b>Objective 6.5: Support private-sector nursery and arboriculture firms</b>																					
Strategy 6.5.1: Texas Tree Conference					X							X		X		X	X				X
Strategy 6.5.2: Worker safety classes					X											X	X				X
Strategy 6.5.3 TNLA coordination					X											X					X
<b>TFS Programs</b>																					
East TX Prog. Delivery	X	X	X	X	X	X			X	X	X	X	X		X	X	X	X	X	X	X
W/C TX Prog. Delivery	X	X		X	X	X			X	X	X	X	X				X	X	X	X	X
Tree Improvement		X				X		X		X			X			X				X	
FIA				X		X	X	X	X						X	X				X	
Ecosystem Services		X	X	X		X		X	X	X	X	X	X	X	X	X	X			X	X
Water Quality		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X
Forest Taxation				X		X	X		X		X			X	X					X	X
Economic & Resource Anal.						X		X	X	X		X		X	X	X			X	X	X
Urban & Community		X			X	X				X	X	X	X			X	X		X	X	X
Forest Pest Management		X		X	X	X	X			X	X	X		X	X	X	X		X	X	
Stewardship Program	X	X	X	X		X	X		X	X	X	X	X		X	X			X	X	X
Legacy Program			X	X			X		X		X		X						X	X	
Conservation Education	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X		X	X	X
State Lands	X	X				X					X	X							X	X	X
Predictive Services	X					X	X	X	X	X		X						X	X		



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Mitigation & Prevention	X	X		X	X	X	X	X	X	X		X						X	X		
Planning & Preparedness	X				X		X	X	X	X		X						X	X		
Local Capacity Building	X						X			X		X					X	X	X		
Incident Response	X						X			X	X						X	X	X		
Law Enforcement				X		X						X			X				X		



## PROCESS OVERVIEW & COORDINATION WITH OTHER AGENCIES

### Process Overview

Texas' Statewide Assessment of Forest Resources was completed in September 2009. That process was used as a model for other southern states to follow on a voluntary basis. The document effort was lead by the TFS GIS coordinator as the process involved spatial analysis and FIA inventory synthesis.

Texas' Statewide Forest Resource Strategy is based on the Assessment, additional public and stakeholder input gathered during meeting and committee presentations throughout 2009, and landowner surveys that were completed after the completion of the Assessment. The document effort was lead by the TFS Planning and Forest Policy coordinator as the process involved the inclusion of TFS's Texas A&M University Strategic Plan, other S&PF 5-year planning documents, the Forest Legacy AON, and other state legislature requirements.

Once a draft of the Strategy document was completed, it was posted on the web for public feedback for six week in April and May of 2010. Stakeholders were again notified to view both documents again to provide feedback.

### Coordination with State Stewardship Coordination Committee

The Texas State Stewardship Coordinating Committee began submitting comments to guide the Assessment and Strategy process when changes in S&PF first began to emerge as a possibility.

October 11, 2007--Lady Bird Johnson Wildflower Center, Austin  
Presented upcoming changes in S&PF programs and initiated discussion about a statewide forest assessment and strategy.

October 28, 2008--Texas A&M Forest Service HQ, College Station  
Presented draft framework for the State Assessment for review and comment.

October 8, 2009--Texas A&M Forest Service HQ, College Station  
Presented final draft of Assessment and draft framework for Strategy for review and comment.

Additionally, the members were notified by email when both the Assessment and Strategy documents were posted for stakeholder and public comment on the TFS website.

### Stakeholder and Public Input Process

TFS gathered stakeholder and public comments on the Strategy document the following four ways:

1. Meetings/Committees.
2. East Texas: Texas Forestry Association Member Survey.
3. Central Texas: Emerging Communities Woodland Owners Survey.
4. Web Based Input.



### Meetings/Committees

The following spreadsheet documents meetings where TFS staff presented or committees on which TFS staff hold appointments where the Strategy document was discussed and feedback gathered throughout 2009 and the first part of 2010:

<b>Name of Meeting or Committee</b>	<b>Date</b>	<b>Location</b>	<b>Number of Participants</b>	<b>Audience</b>	<b>Presenter</b>
The LBJ Wildflower Center	6/9/2009	Austin	6	Natural resource professionals	JBR
University of Texas at Austin	6/9/2009	Austin	6	Natural resource professionals	JBR
Natural Resource Conservation Service	8/20/2009	Austin	2	NRCS staff	JBR
Texas Parks and Wildlife Department	8/20/2009	Austin	2	biologists	JBR
National Meeting for Wildlife Agencies	9/15/2009	Austin	50	Natural resource professionals	JKD
National Meeting for Wildlife Agencies	9/16/2009	Austin	20	Forestry committee members	JKD
Land Trust Alliance Training	9/25/2009	Austin	30	Land Trust professionals	JKD
State Stewardship Coordinating Committee	10/8/2009	College Station	55	Natural resource stakeholders in Texas	JKD
TFA Annual Meeting Member Survey	10/21/2009	Nacogdoches	# rcvd	East Texas family forest owners and foresters	TFA
TFA SFI State Implementation Committee	11/10/2009	Lufkin	16	TFA members	HSS
USFS National GIS/Planners Meeting	11/18/2009	Denver, CO	15	Breakout session with other planners	JKD
SGSF Management Chief Meeting	12/16/2009	Nashville, TN	15	Breakout session with management chiefs	JKD
TFA Environmental and Regulatory Affairs	1/14/2010	Lufkin	15	TFA members	HSS



USFS Chief's Meeting with USDA Chief & USFS WO Staff	1/15/2010	Washington, DC	20	USFS and USDA WO staff	TGB
USFS NFS in Texas staff meeting	1/22/2010	Lufkin	10	USFS Supervisor and staff	JKD
SFA College of Forestry staff meeting	1/22/2010	Nacogdoches	15	Forestry professors	JKD
Trinity County FLOA	1/30/2010	Trinity	15	Family forest owners	JKE
Texas House Ag Committee	2/3/2010	Austin	3	Legislative staff members	TGB
Public Forestry Council meeting	3/9/2010	Lufkin	8	Public agency natural resources leadership	JKD
USFS Region 8 meeting with program coordinators	3/15/2010	Atlanta, GA	5	USFS R8 Program Coordinators	JKD
Wetland/BMP Coordinating Committee	3/31/2010	Palestine, TX	17	Natural resource professionals	HSS
NRCS State Conservationist & State Forester	3/31/2010	Temple	3	NRCS staff leadership	JKD
East Texas Forest Entomology Seminar	4/23/2010	Kurth Lake	20	Entomologists	BB
Central Texas Landowner Surveys	4/30/2010	Central Texas	# rcvd	Central Texas woodland owners	JBR
TPWD policy analyst crosswalk with State Wildlife Action Plan	5/25/2010	College Station	5	TPWD biologists and policy analyst	JKD
International Society of Arboriculture, Texas Chapter	02/1/2010 04/23/2010	College Station	15	Board of Directors	JPG
Texas Urban Forestry Council	01/08/2010 04/01/2010	Austin	12	Board of Directors	JPG
Web based stakeholder input	4/5/2010 to 05/25/2010	Website statewide	# rcvd	Public stakeholders	Web based





### East Texas: Texas Forestry Association Members Survey

In October of 2009, at Texas Forestry Association's annual meeting in Nacogdoches, members divided into round table groups to discuss the issues they feel are the most critical or of the most concern for forestry in Texas. TFA membership represents landowners, industry, loggers, and natural resource professionals. Their comments were taken into consideration as the Strategy document began to evolve. The following is a summary of their comments. The full set of comments can be found in Appendix A.

#### MODERATOR'S SUMMARY OF BREAKOUT SESSIONS

##### Our Strengths

- We are "passionate" about how we manage, protect and conserve our forest resources in a sustainable way.
- Capacity to grow and manage productive forests (our growth exceeds harvesting, both for pine and hardwoods).
- Adequate labor force (except for logging).
- Good infrastructure, including shipping ports.
- Favorable political environment.
- Texas economy statewide is better than many states (recovery may occur more quickly here).
- Water availability for manufacturing.
- Strong forestry organization with diverse membership and strong leadership (TFA).
- Good resource data (forest inventory and analysis program).
- Emerging biomass markets (electricity generation and pellets).

##### Weaknesses

- Need new markets for timber.
- Diminishing logging force.
- High forest land prices due to development (southeast Texas).
- Fragmentation of forest land (urban sprawl).
- Lack of value-added hardwood markets.
- Poor job of communicating "our story."
- Rural areas are becoming less represented in the legislature.
- Lack of capital (money).
- Forestland taxes.

##### Strategies

- Recruit a variety of new wood processing mills (utilize Texas Economic Development office and other partners).
- Create a process/mechanism for "one-stop" shopping for prospective forest businesses. (Work in cooperation with TDA, Government Office for Economic Development, universities, TFS and TFA.)
- Retain and strengthen existing mills.
- Provide reliable and stable jobs for loggers and mill employees (includes training programs).
- Develop and expand community outreach and education programs (especially in public schools).
- Promote Texas forest products through TDA (Example: use Texas wood products in all state building projects).
- Provide equity between forest land and agricultural land taxes.
- Simplify and shorten process required for water and air permits (through TCEQ).
- Actively market our products (develop co-ops).
- Outreach programs to educate landowners re: ecosystem services, cost share programs, co-ops, etc. ("stackable services").
- Improve "branding" of what we do. ("Partnerships" mentioned a lot; cooperation with anyone who can help us—work together.)

### Central Texas: Woodland Owners Survey

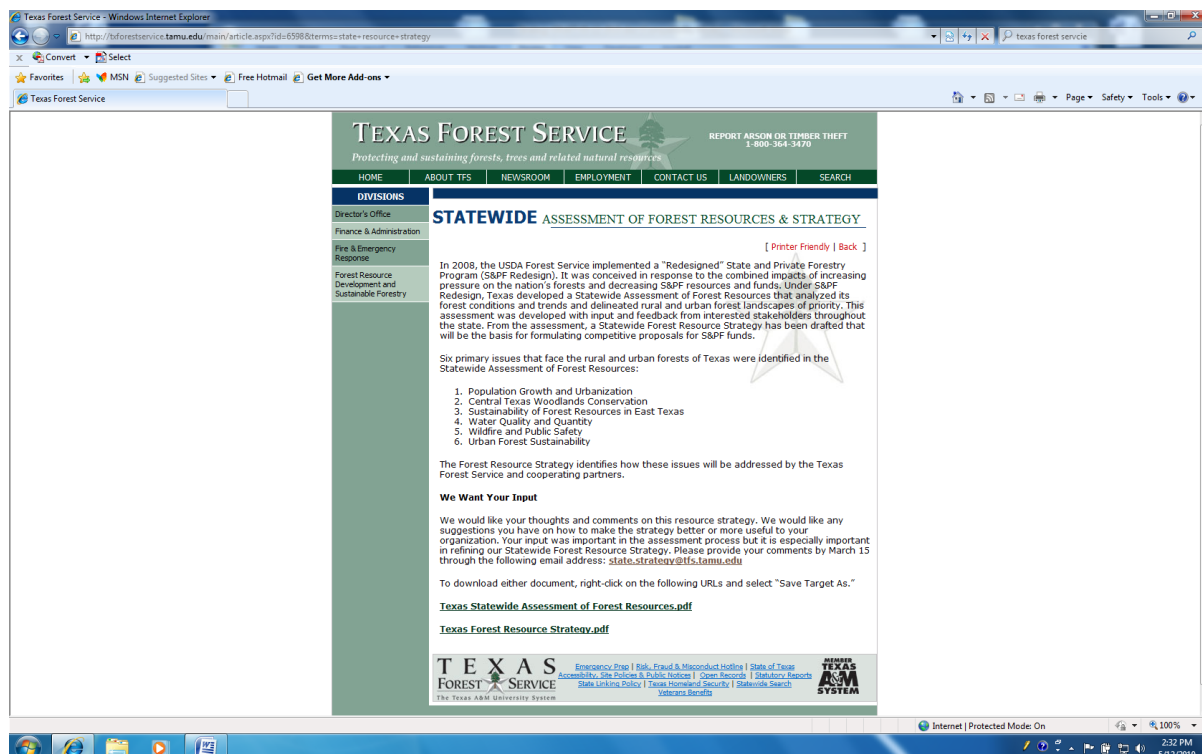


As a part of one of Texas' "Redesign" competitive project awards, Central Texas Conservation Partnership, woodland owners in Central Texas were surveyed about their values and objectives for owning their woodlands. The project focuses on the needs of new "interface" landowners in an 84 county region of Texas. Results from four counties expected to face high levels of land fragmentation in the next fifteen years were taken into consideration during the Strategy development process. An example of the complete results from one county from the surveys can be found in Appendix A. The following is a summary of some interesting finding from the results from all four counties that illustrate a differing set of landowner objectives than from East Texas surveys:

- Maintaining trees and plants during a drought made the top five list in three of the four counties.
- Native grasses vs. improved grasses—the merits of each, brush management, and pond/tank construction and management—water for livestock and humans all about tied for 1<sup>st</sup>-3<sup>rd</sup> place in all four counties.
- Managing ponds, streams, and drainages for wildlife, landscaping with native plants, and establishing native grasses all rose to the top 10 list in all four counties.

### Web Based Input

Finally, as with the Assessment process, the Strategy development process included web based public and stakeholder input. Both documents were placed on the TFS websites for six weeks in April and May of 2010. Although there was very little feedback through the response form on the website, the posting of the document prompted some to provide comments through phone calls, meetings in person, and separate emails not associated with the website process.





## Coordination with USDA Forest Service

### USFS State & Private Forestry

TFS produced an Assessment in a very short amount of time to serve as a model that other USFS R8 state could follow on a voluntary basis. The agency also produced a companion document that explained the methodology of the Assessment. Because the Assessment was completed in September, 2008 the agency was able to begin the process of producing the Strategy before the other states.

TFS allowed the first draft of the Strategy to a) be used by USFS R8 to begin developing the process by which they will review all of the R8 Assessments and Strategies and b) to allow other states to continue to learn lessons from the TFS examples and process.

USFS R8 developed a 14 point required elements framework by which all of the R8 Program Coordinators could judge the sections of the documents as having met requirements or not and to provide additional input and direction for the documents. This trial run was both beneficial to the other states and to Texas. Texas met all but four of the 14 elements in the practice review making it easier for the state to meet the remaining requirements in this final document. The complete review of the first draft is found in Appendix A.

### USFS National Forests & Grasslands in Texas

TFS coordinated with USFS National Forests & Grasslands in the following ways:

Texas Forestry Council—In the fall of 2009, leadership within TFS and USFS National Forests & Grasslands in Texas along with several other government agency heads created the Texas Forestry Council; public agencies working together to sustain and enhance the forest resources in Texas. Two of their first meeting were devoted to a review of the Assessment and Strategy. A complete set of the Council's bylaws can be found in Appendix A.

Additionally, TFS staffed requested input and briefed USFS National Forests & Grasslands lead staff on several occasions as to the progress of the documents. The following letter of support from the Texas Forest Supervisor recognizes this collaboration:





United States  
Department of  
Agriculture

Forest  
Service

National Forests and Grasslands  
in Texas  
Supervisors Office

415 S. First Street, Suite 110  
Lufkin, TX 75901-3801  
Phone 936-639-8501  
TDD# 936-639-8560

File Code: 3900-1

Date: May 17, 2010

Tom G. Boggus  
State Forester & Director  
Texas Forest Service  
John B. Connally Building  
301 Tarrow, Suite 364  
College Station, TX 77802-7896

Dear Tom,

We have been pleased to collaborate with you and your staff on the Texas State-wide Assessment of Forest Resources and the Texas State-wide Forest Resource Strategy over the past several years. You are to be commended for being chosen as the pilot state by the Southern Group of State Foresters executive team to develop the first state-wide assessment in the southern United States. We appreciate the opportunity we were given to provide input in identifying issues facing the state's forest and tree resources. Key members of my staff and I attended annual Forest Stewardship Coordinating Committee state meetings in College Station in October 2008 and October 2009 to review progress on both the State-wide Assessment of Forest Resources and the State-wide Forest Resource Strategy. It was evident at those meetings that your staff had worked hard to reach out to stakeholders as the meetings were well attended by members of non-governmental organizations, federal agencies and other state agencies.

Being the second-largest state in terms of both population and size presents numerous challenges and opportunities in managing the state's resources, and the Texas Forest Service has done and continues to do a tremendous job in protecting those resources and ensuring that they are sustained for generations to come.

Sincerely,

LINDA C. BRETT  
FOREST SUPERVISOR

cc: Kent Evans



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## **Coordination with NRCS & State Technical Committee**

TFS requested input and briefed the NRCS State Forester and State Resource Conservationist on several occasions. The following letter of support from the NRCS State office recognizes this collaboration.

In March of 2010, TFS and NRCS Texas state office signed a state level MOU to further recognize collaborative efforts which include TFS placing a forester in the NRCS State office next to the NRCS State Forester. A copy of the signed MOU can be found in Appendix A.

NRCS coordinated the requests for input into the Assessment and Strategy from the State Technical Advisory Committee. Also, TFS chairs the Forestry Committee of the State Technical Committee. The Committee approved the documents with no further input.

## **Coordination with State Wildlife Agency-Texas Parks & Wildlife Department**

TFS coordinated with the State's Wildlife Agency, Texas Parks & Wildlife Department, at several levels; both in the field and at the state office level.

At the field level, TFS and TPWD have a shared employee within the Stewardship Program. This biologist and his supervisor serve on the State Stewardship Coordinating Committee as well as assist TFS field foresters with technical service regarding endangered species and wildlife habitat. Several TPWD staff including the TPWD lead for the revision of their Statewide Wildlife Action Plan reviewed the Strategy and provided comments that are included in a matrix found in Appendix A.

Because TPWD is undergoing the revision of its own State Wildlife Action Plan, at the state level, the Planning and Policy Coordinator for TFS and the lead for the TPWD State Wildlife Action Plan have worked simultaneously to provide guidance during the development of both Plans as to where these Plans may complement each other. TFS has attended several of the TPWD State Wildlife Action Plan listening sessions. Additionally, TPWD lead staff have served on the Forest Legacy Committee since its inception.

Each TFS issue leader revisited each issue section and incorporated many of the ideas and suggestions where TPWD provided comments. Additionally, TFS met with TPWD lead staff on May 25, 2010 to review where TFS made changes in the document per TPWD suggestions. The following letter documents this coordination:



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Peter M. Holt  
Chairman  
San Antonio

T. Dan Friedkin  
Vice-Chairman  
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Mark E. Bivins  
Amarillo

Ralph H. Duggins  
Fort Worth

Antonio Falcon, M.D.  
Rio Grande City

Karen J. Hixon  
San Antonio

Dan Allen Hughes, Jr.  
Beeville

Margaret Martin  
Boerne

S. Reed Morian  
Houston

Lee M. Bass  
Chairman-Emeritus  
Fort Worth

Carter P. Smith  
Executive Director

March 11, 2010

Ms. Jan Davis  
Legacy and Heritage Forest Coordinator  
Texas Forest Service  
John B. Connally Building  
301 Tarrow  
College Station, TX 77840

Dear Ms. Davis:

The purpose of this letter is to provide input into the Texas Statewide Forest Resources Strategy (TSFRS) draft document. We appreciate the opportunity to provide comment on this document and commend your team on their effort. This plan was reviewed by numerous Texas Parks and Wildlife Department (TPWD) staff to ensure that a broad range of perspectives and points of view were captured. The general consensus is one of support for the overall TSFRS concept. However our staff members have noted some overlooked opportunities to include specific forest-related wildlife conservation actions. We feel that more attention needs to be focused on wildlife issues and we hope the comments provided with this letter can be incorporated into the TSFRS.

As you know, the Texas Wildlife Action Plan (TWAP) serves as the statewide conservation and management plan for species of greatest conservation need and the habitats on which they depend. In addition to specific species information, broad scale habitat information was compiled based on habitat types by ecoregion. The TWAP is intended to help conservation practitioners address problems, build local partnerships, and take conservation actions associated with those habitats. Initiated in 2005, the TWAP is currently undergoing revision and the final version will be completed in 2010. Representatives from the Texas Forest Service (TFS) and other resource managers have been invited to participate in this effort. We feel the TWAP and the TSFRS should be integrated companion documents, working together to achieve compatible goals of resource protection and management. The TWAP provides several strategies related to species of greatest conservation need, habitats at risk, watershed priorities, research, restoration and protection activities that align with and could be meshed with the goals, objectives and strategies outlined in the TSFRS. In our opinion, terrestrial and aquatic resource protection could be better integrated into the Forest Stewardship Strategy through connectivity with particular TWAP strategies and/or a general strategy to allow TFS programs to contribute to the TWAP revision process in 2010 and its updated implementation for 2011 through 2015.

After review, staff compiled comments into one table (attached) for your ease of use and uniformity. These comments highlight areas where we feel you have the best opportunity to incorporate wildlife and habitat conservation activities into this strategy. The overriding theme of our comments is the identification of terrestrial and aquatic resources at risk, regionally specific threats, and threat remediation. The biggest threat to forests and wildlife are urbanization, fragmentation, and changing land uses. The strategy does a great job of addressing wildfire threats but

To manage and conserve the natural and cultural resources of Texas and to provide hunting, fishing and outdoor recreation opportunities for the use and enjoyment of present and future generations.

4200 SMITH SCHOOL ROAD  
AUSTIN, TEXAS 78744-3291  
512.389.4800  
[www.tpwd.state.tx.us](http://www.tpwd.state.tx.us)





Ms. Jan Davis  
Page Two  
March 11, 2010

does not address the threats from direct loss of forests and fragmentation or the impacts of these to terrestrial and aquatic wildlife, recreation, and water quality. Several of the urban strategies in the TSFRS draft document correlate with the goals and strategies of our urban wildlife program.

Thank you again for the opportunity to provide input to this worthwhile endeavor. TPWD looks forward to working with your agency to incorporate our thoughts and comments into the TSFRS. We welcome the opportunity to discuss these issues further and would be happy to meet with you or your staff at any time. For more information, please contact Rusty Wood, TPWD's Forest Stewardship Biologist, at (936) 462-1111 or [rusty.wood@tpwd.state.tx.us](mailto:rusty.wood@tpwd.state.tx.us).

Sincerely,

Clayton Wolf  
Director, Wildlife Division

CW:NG:ne

Attachment





## APPENDIX A: STAKEHOLDER INPUT DOCUMENTS

Complete results from Texas Forestry Association Member Survey from October 2009 Annual Meeting held in Nacogdoches, Texas.

### *TFA Annual Meeting, October, 2009 - Roundtable Discussion Results*

Topic	Idea	Keywords
Strengths	Resource.	
	Experienced labor force.	
	Good markets.	
	Mill facilities.	
	Good logistics.	
	Great trade organization (TFA).	
	Population concentration.	
	Transportation system.	
	East Texas economy.	
	Tax structure.	
	Agencies work well together.	
	Predictable climate.	
	Location in pine belt.	
	Well informed public.	
	Value private property rights.	
	Good infrastructure (roads).	
	Good research.	
	Abundance of professional foresters.	
	Strong political support.	
	Favorable federal legislator.	
	Facility infrastructure.	
	Jim McReynolds.	
	Water Resources.	
	Species diversity.	
	Rotation length.	
	Growing trees are good for the planet; carbon neutral.	Environment
	New technology good, but keep current industry here.	Business opportunities
	Increase in population - good for business; increase in demand for wood products.	Demographics
	Forests exist beyond East Texas (biomass).	Business opportunities
	Need to produce electricity.	Business opportunities
	Water resources available here to be able to produce electricity.	Environment
	Research in medicinal use of forest resources.	Research
	Other research at universities.	Research
	Climate issues will drive the market - wood is renewable & that is good.	Climate
	Cap & trade – reward.	Rewards



	Governor's office - economic development programs available to help.	Aid (paid with Taxes)
	Legislators helpful to forest community.	Legislature
	New ownership types will hopefully benefit the forest community (REIT).	Business opportunities
	Wood is heavy - stays local (transportation is expensive).	Transportation
	Growing more trees than we are cutting.	Marketing
	Biomass has not been defined yet (still have opportunity to influence it).	Energy
	Wind energies in Texas.	Energy
	TFA strongly visible in Austin.	Legislature
	Can diversify revenue streams.	Business opportunities
	Pellets made here & exported (doable; exists).	Business opportunities
	Forestry's focus is long-range (30 years to go through one cycle).	Optimism
	People outstanding character in forestry.	Optimism
	Wood summit - shows strength.	Business opportunities
	High use of oil drives need for using renewable energy fuels.	Energy
	Birding, photography, leases, etc.	Multi-use of forest resources
	Local - wide variety of players.	
	Tree planting leader.	
	History of forest use.	
	Excellent resource data.	DATA
	Resource utilization.	
	Academic facilities.	Research
	Good business climate (population, regulations, taxes).	
	Expertise with resource.	Experts
	Strong political action.	Lobbying efforts
	Believe in what we do / proactive / self regulated BMPs.	
	Education / outreach.	
	Proximity to markets / port facilities.	
	Expected population growth.	Demographics
	Less urban sprawl than other areas.	
	Relationship between forest community.	
	Conservative group of people - positive outlook - optimism	
	Demand for pulp up in Q2 2009.	Demand
	Any demand is good.	Demand
	Proven wood supply; e.g., uniform distribution of forest products in East Texas, good management and high productivity.	Wood Supply
	Good TDOT transportation infrastructure & ports.	Transportation
	Private investment less volatile.	Investment
	Texas local economy is good.	
	Emerging biomass market; e.g., pellet mills, need clean chips.	
	Coal conversion.	
	Companies, like Norbord, that have ability to gather large quantities of wood efficiently could partner with biomass mills to provide fuel.	



	Pellet mill being build in Louisiana to go to Sweden.	
	Stacking resources; e.g., diversity of land use, and monetizing value might limit growth in environmental regulation.	
	OSB used within continent manufactured.	
	Saw logs yield greater revenue when allowed to grow five more years after pulpwood -- if there is a market. Pulpwood is what sells.	
	OSB industry was overbuilt.	
<b>Weaknesses</b>	Diminishing logging force.	
	Forest tax structure.	
	Climate (droughts).	
	Environmental reputation (Austin).	
	Land value (development).	
	Fragmentation.	
	Urban sprawl.	
	Difficulty keeping timberland exemption.	
	Percentage of forested TX plays role in overall TX Legislature #.	
	Difficulty in finding revenue in streams from timberland	
	Rural Ag transportation (county roads and access).	
	Fuel costs.	
	State commitment to environmental recreation.	
	School system – education.	
	Weak hardwood market.	
	Hardwood resource/markets.	
	Foreign markets.	
	No emphasis on wood industry by local government.	
	Have not done a good job of telling our story.	Communication
	Wood is heavy - not easily exported.	Transportation
	Taxation may be prohibitive to industry.	Taxes
	Rural areas are under-represented.	Legislature
	Misguided perception about renewability of wood products.	Marketing
	Urban population majority doesn't understand needs of sustainable forestry.	Marketing
	Taxation of "rich" may be hurtful to the whole.	Taxes
	Selling electricity to a power grid - not deregulated.	Legislature
	No one has the answers.	Uncertainty
	Subsidies - someone has to pay for these.	Taxes
	U.S. major user of oil; minor producer of oil.	Economics
	Need money.	Money
	Planned reservoirs negatively impacts reforestation.	Legislature
	Need to tell our story.	
	Work closer with NGOs – engage.	
	Educate outside traditional forest area.	



	Educate local government - taxing forest land - benefits of green space.	
	More competitive methods to raise money.	
	Recruiting younger people to work in forests / logging - training (incentives - fuel / insurance coops).	
	Improve education on SFI certification.	
	Inconsistent message of who we are (not just timber industry).	
	Location of mills is important.	
	Following investments; e.g. real estate investment trusts (REITS) - and determining where to put personal investments.	Correct Opportunities with Niche
	Lower reforestation in NE Texas.	
	Limited credit for small business.	
	Weakness in housing market.	
	Supply chain must survive+B58.	
	Texas was best market at OSB mill at (Broken Bow?) but building dropped except in Dallas/Fort Worth.	
	Hurricanes may have created a marketing blip & funding for recovery is dropping.	
	Volatility of oil market.	
	Business is geared to short-term approach	
	Economic development people need to work with existing business to maintain their viability.	
	Additional demands for pulpwood will create challenges for existing mills.	
	Pellet mill being built in Louisiana to go to Sweden is being subsidized, ultimately benefiting Sweden.	
	Converting coal mills to wood chips.	
	Fair subsidies.	
	Existing mills that generate electricity for in-house use are not close to grid for external distribution.	
<b>Strategies</b>	<b>Education.</b>	<b>Education</b>
	<b>TFA Support.</b>	<b>TFA</b>
	<b>Focus efforts on one product that would encompass all landowner's.</b>	<b>Focus efforts</b>
	<b>Promote East Texas wood products - TX Tax \$\$ would purchase TX products if =</b>	<b>E. TX Products with TX tax \$\$</b>
	<b>Project Learning Tree.</b>	<b>PLT</b>
	<b>Buy Texas grown wood products (buy TX wood for TX projects).</b>	<b>E. TX Products with TX tax \$\$</b>
	<b>Proactive on invasive and native pests.</b>	<b>Invasive &amp; pests</b>
	<b>Put timberland tax on par with ag tax.</b>	<b>Tax</b>
	<b>Keep landowners informed on cost share programs and stackable incentives.</b>	<b>Education</b>
	<b>Working relationship between landowner's and Federal Legislatures.</b>	<b>Relationships</b>
	<b>More rural "voice" in TX Legislature.</b>	<b>Representation</b>
	<b>Vocational training/workforce.</b>	<b>Education</b>
	<b>Rural economic development boards on a region wide basis (cog).</b>	<b>Coordinate Efforts</b>
	<b>Explore foreign markets.</b>	<b>Markets</b>
	<b>Marketing in general.</b>	<b>Marketing</b>



Educate urbanites about forestry message.	Education
Educate educators - sponsor teachers to attend PLT training.	Education
Market the value of forestland resources to general population (water, etc.).	Marketing
Invite industries outside of forestry to PLT type programs - what do they know about forestry, even if they're utilizing carbon credits.	Education
Target 2-3 new industries, work with legislatures to bring them to Texas.	Legislation
Partner with Dept. of Ag contacts to disseminate education.	Education
Encourage more construction with wood products instead of alternative products (engineered wood, wood poles, etc.). Impress upon them the value of sequestering CO2.	Marketing/Sequestration
Presence in green building conferences	Marketing
Have long-term goals (don't sell too early).	
TFA creates its own "green certification" campaign.	Marketing
Look at other partnerships.	
Legislation for non-restrictive use of a plantation (biomass only or right to choose what trees will be used for).	Legislation
Be pro-active with legislation.	Legislation
Recognizable icon tied to marketing strategy.	Marketing
Ag-electricity bill where power companies pay the going rate for electricity.	Legislation
Increase funding for strategies (increase membership in TFA - from Central Texas, for example).	Membership
Investors in REITS may wish to become members of TFA.	Membership
Send a seedling as reward for joining TFA.	Membership
Encourage markets for "junk" trees (cedars, mesquite that are routinely cleared).	Business opportunities
Tours of forestlands to CFLOA memberships to encourage TFA membership.	Membership
Partner with energy groups (gas, coal entities - EX: Weyerhaeuser/Chevron).	Partnerships
Check next year at annual meeting to see what our weaknesses/strengths are and what strategies have worked.	
Fight misinformation via e-mail contacts.	Communication
Expand TCI - Forests for every classroom.	Education
Expand research on genetic improvement and EWP.	Research
Expand efforts to get more kids in the woods.	Kids in Nature
Connecting parents to nature.	
New branding effort like "Got milk" campaign.	
Increasing membership.	
Cooperative marketing for small landowners like "carbon pools."	
More politically active - grassroots effort – training.	
Improve communication on political issues – webinars.	
Communication message to CLOAs about local government. (roads a big issue).	
Send community leaders to TCI.	
Political action notification to community (Prop 11 - eminent domain).	
Encourage local politicians to participate in CLOA.	
Forest based economic development team - consolidate data for prospective business looking to locate to TX.	





	Look closely at harvest product data to ensure sustainability - are we harvesting too much sawtimber?	
	Attract new non-traditional landowners to TFA (minority landowners).	
	Minority political power.	
	New "billboards" to promote forest - "Treasured Forest" - look for members with key locations.	
	Tax abatements for new AND existing businesses	
	Survival.	
	Existing mills that generate electricity for personal use could produce electricity for grid.	
	Proven technology.	
	Diversification; e.g., hunting leases & recreation leases.	
	Equity for taxes, abatement, & subsidies for all mills.	
	Equitable application of subsidies.	
	Advertise benefits for forest industry & East Texas & water & green building to public and to governmental decision makers.	
	Participate in development of national definitions of Biomass of Forest.	
	Address fragmentation of forest lands & marketing collectively using co-ops.	
	Using land cleared by thinnings for biofuel plants; e.g. sweet sorghum.	
	Water value; court issue is regarding Texas ownership of water in ponds, streams, etc.	
	Look for conservation easement opportunities and monetize it.	
	State needs to pay rent for wildlife they regulate on landowners forest.	
	Monetize externalities - carbon, wildlife, water.	
	Participate in the development of definitions of biofuels and forests to include all 60 million acres.	



Example of Central Texas Woodlands Owner Survey used as a part of the Central Texas Conservation Partnership, “Redesign” competitive allocation proposal and project.

Criterion for those landowners selected for the survey included:

- Land holdings in one of the four selected counties
- Land holdings between 20-1,000 acres
- As of January 1, 2010, ownership has been less than 10 years

Landowner letter:

Dear Williamson County Landowner:

Land ownership comes with the responsibility of conservation: the use of natural resources in a sustainable manner.

The **Central Texas Conservation Partnership** is a collaborative effort of natural resource agencies and organizations partnered to provide you, the landowner, with accessible natural resource information.

Your response to the enclosed survey will assist us in developing and implementing a workshop in Williamson County in September 2010. The kind of event, topics covered, and day of the event are based largely on your response to this survey. Your opinion is important.

Your response also will prove useful in developing content for our partnership website: [www.texasconservation.org](http://www.texasconservation.org). This website will provide you with an array of training opportunities, programs, services, and technical assistance offered by various Central Texas land management agencies and organizations. It will be a convenient, centralized location for natural resources information.

We cannot assist you without your feedback. Please complete and return the survey by Mar. 31, 2010, in the postage-paid envelope. We not only value but **need** your opinion.

Thank you for your response,

The Central Texas Conservation Partnership-Williamson County

Sponsored by The Texas A&M Forest Service in collaboration with:  
Lower Colorado River Authority  
Pedernales Soil & Water Conservation District  
Texas AgriLIFE Extension Service  
Texas Parks & Wildlife Department  
The Nature Conservancy



Landowner survey:

## CONSERVATION PARTNERSHIP SURVEY

Please help us gauge your interest in these topics for future workshop presentations. Rank each topic from 1 to 5, with 1 being a subject of low interest, and 5 being a subject of high interest.

1-----2-----3-----4-----5  
Low Interest                      Moderate                      High Interest

### Wildlife Education and Management

- \_\_\_\_\_ Brush for wildlife – what to keep, what to remove
- \_\_\_\_\_ Endangered species
- \_\_\_\_\_ Wildlife and habitat management
- \_\_\_\_\_ Predator control (coyotes, feral hogs, cowbirds, etc.)
- \_\_\_\_\_ Providing and improving habitat for songbirds
- \_\_\_\_\_ Providing water for wildlife
- \_\_\_\_\_ Texas Wildscapes – enhancing backyard wildlife habitat
- \_\_\_\_\_ White-tailed deer management
- \_\_\_\_\_ Other \_\_\_\_\_

### Tree Care and Landscaping

- \_\_\_\_\_ How to select, plant, and care for individual trees
- \_\_\_\_\_ Mature tree care
- \_\_\_\_\_ Vegetation management along a utility easement
- \_\_\_\_\_ Non-native plant ID and management
- \_\_\_\_\_ Landscaping with natives
- \_\_\_\_\_ Organic gardening
- \_\_\_\_\_ Texas Master Gardener program
- \_\_\_\_\_ Rainwater harvesting for your home or garden
- \_\_\_\_\_ Other \_\_\_\_\_

### Wildfire and Prescribed Fire Issues

- \_\_\_\_\_ Protecting structures from wildfire
- \_\_\_\_\_ What to expect after a fire
- \_\_\_\_\_ Prescribed burning
- \_\_\_\_\_ Other \_\_\_\_\_

### Rangeland Management

- \_\_\_\_\_ Pond/Tank construction and management - water for livestock and humans
- \_\_\_\_\_ Livestock management
- \_\_\_\_\_ Nutrient analysis - Soil, Foliage, and Water testing
- \_\_\_\_\_ Other \_\_\_\_\_

**Land Issues**

- \_\_\_\_\_ Understanding tax valuation options for your property (livestock, wildlife, etc)
- \_\_\_\_\_ Understanding conservation easements
- \_\_\_\_\_ What do I need to know before I build
- \_\_\_\_\_ Enhancing the recreational value of your property
- \_\_\_\_\_ Other \_\_\_\_\_

**Land Stewardship**

- \_\_\_\_\_ Oak Wilt prevention and management
- \_\_\_\_\_ Brush management (cedar, mesquite)
- \_\_\_\_\_ Managing erosion and sedimentation issues
- \_\_\_\_\_ Managing for grasslands, prairies, and savannahs
- \_\_\_\_\_ Texas Master Naturalist program
- \_\_\_\_\_ Conservation cost share programs for land stewardship
- \_\_\_\_\_ Other \_\_\_\_\_

**1. Do you consider your land to be in an urban, suburban, or rural area?**

\_\_\_\_\_

**2. Do you live on your land? \_\_\_\_\_ If not, how often are you on your property?**

\_\_\_\_\_

**3. What is the primary reason for your property? \_\_\_\_\_**

**4. Do you have a written management plan for your property? \_\_\_\_\_**

**5. What day of the week would work best for you to attend a workshop? \_\_\_\_\_**

**Thank you for your participation in this survey. Your timely input will assist us in developing a Williamson County workshop later this year that will address your land management concerns. You will be notified of the workshop in a future mailing.**

**Please contact Rob Grotty, Texas A&M Forest Service, if you have additional questions:**

**Office (512) 339-7807  
Fax (512) 339-6329  
rgrotty@tfs.tamu.edu**



Survey results for Williamson County:

## CONSERVATION PARTNERSHIP SURVEY RESULTS WILLIAMSON COUNTY (East & West)

### TALLY OF TOPICS RECEIVING AN INTEREST LEVEL SCORE OF 4 OR 5

(Topics were ranked from 1 to 5, with 1 being a subject of low interest, and 5 being a subject of high interest.)

#### SURVEYS – 240

##### Wildlife Education and Management

- \_119\_\_ Brush for wildlife – what to keep, what to remove
- \_41\_\_ Endangered species
- \_124\_\_ Wildlife and habitat management
- \_161\_\_** Predator control (coyotes, feral hogs, cowbirds, etc.)
- \_70\_\_ Providing and improving habitat for songbirds
- \_95\_\_ Providing water for wildlife
- \_65\_\_ Texas Wildscapes – enhancing backyard wildlife habitat
- \_104\_\_ White-tailed deer management
- \_5\_\_ Other-Quail (2), Snake Control, Turkey, Game Birds\_\_\_\_\_

##### Tree Care and Landscaping

- \_116\_\_ How to select, plant, and care for individual trees
- \_118\_\_** Mature tree care
- \_56\_\_ Vegetation management along a utility easement
- \_69\_\_ Non-native plant ID and management
- \_105\_\_ Landscaping with natives
- \_71\_\_ Organic gardening
- \_61\_\_ Texas Master Gardener program
- \_109\_\_ Rainwater harvesting for your home or garden
- \_3\_\_ Other-Oak Tree Diseases, Cover crops, Soil management\_\_\_\_\_

##### Wildfire and Prescribed Fire Issues

- \_110\_\_ Protecting structures from wildfire
- \_86\_\_ What to expect after a fire
- \_119\_\_** Prescribed burning
- \_2\_\_ Other-Fire liability issues, Educating public @ wildfire\_\_\_\_\_

##### Rangeland Management

- \_190\_\_** Pond/Tank construction and management - water for livestock and humans
- \_144\_\_ Livestock management
- \_143\_\_ Nutrient analysis - Soil, Foliage, and Water testing
- \_11\_\_ Other-Weed control, Ranch fencing, Native grasses (6), Fish management,



Forage crops for livestock, Solar pumps

### Land Issues

- 157** Understanding tax valuation options for your property (livestock, wildlife, etc)
- 105 Understanding conservation easements
- 85 What do I need to know before I build
- 82 Enhancing the recreational value of your property
- 2 Other-Eminent domain, Education \_\_\_\_\_

### Land Stewardship

- 121 Oak Wilt prevention and management
- 153** Brush management (cedar, mesquite)
- 132 Managing erosion and sedimentation issues
- 121 Managing for grasslands, prairies, and savannahs
- 56 Texas Master Naturalist program
- 106 Conservation cost share programs for land stewardship
- 2 Other-Agritourism, Job creation \_\_\_\_\_

### 1. Do you consider your land to be in an urban, suburban, or rural area?

Urban - 5      Suburban - 24      **Rural – 202**

### 2. Do you live on your land? No – 95    **Yes – 129**    If not, how often are you on your property?    Daily - 9    Weekly - 44    Monthly – 22    One to six times/year - 10

### 3. What is the primary reason for your property?    **Livestock – 114**, Homestead–48, Row Crops – 39, Agriculture – 22, Recreation – 20, Investment – 20, Family Estate – 11, Wildlife – 11, Hay – 11, Personal Satisfaction – 8, Income – 7, Privacy – 5, Pecans – 5, Land Restoration – 4, Hunting Lease – 3, Hunting – 3, Leisure – 2, Fishing – 2, Business – 1, Grassland – 1, Rental – 1

### 4. Do you have a written management plan for your property? Yes – 27    **No – 195**

### 5. What day of the week would work best for you to attend a workshop? Sun – 14    Mon - 38    Tues- 43    Wed - 39    Thur - 37    Fri - 39    Sat - 40    **Any – 48**    Not att. – 14 Evenings – 9





**USDA Forest Service, Southern Region  
Review of Draft State-wide Forest Resource Assessments and Strategies  
March 3, 2010 Form Version**

State: Texas  
Review date: March 4, 2010  
Reviewer: RO Review Team Summary  
Review is of:  
( ) Assessment only  
( ) Strategy only  
(X) Both Assessment and Strategy

Instructions to Reviewers: Please provide feedback to the State in the form of bulleted comments under the appropriate headings below:

**I. Required Elements**

1. Includes conditions and trends of forest resources in the State:
  - A. Requirements met?
    - Meets requirements (Assessment pp. 5-27).
  - B. Observations and Suggestions
    - Consider presenting the section describing ownership percentages of the various TX regions (Assessment, pp. 21, 22) in tabular form.
    - Consider inclusion condition and trend data for central and west Texas, when available.
2. Includes threats to forest lands and resources in the State consistent with national priorities:
  - A. Requirements met?
    - Meets requirements (Assessment pp. 33-109).
  - B. Observations and Suggestions
    - Would like to see more discussion about the impact of forest industry land divestiture and possibility of reservoir construction for public water sources.
3. Includes areas or regions of the State that are a priority:
  - A. Requirements met?
    - Meets requirements (Assessment and Strategy, multiple locations).
  - B. Observations and Suggestions
    - Priority area maps and layers used to generate them are credible and meaningful for showing geographical distribution of forest conditions and threats in the State. General use of SFLA data and methods is credible and makes good use of previous work.
    - Geographic priority areas within the State are indicated at 30-m pixel scale, and by counties, watersheds, and ecological regions in the Assessment. Geographic priority areas are repeated for each issue in the Strategy. We'd like to see more discussion as to how these priority areas are used to drive or influence your strategies.
4. Includes any multi-state areas that are a regional priority:
  - A. Requirements met?
    - Needs further documentation.
  - B. Observations and Suggestions
    - There should be some indication of multi-state areas that are a regional priority or an indication that there are none relevant to the State. You may also incorporate any multi-state Redesign projects you are currently involved in.
5. Includes long-term strategies to address threats to forest resources in the State:
  - A. Requirements met?
    - Meets requirements (Strategy, throughout).
  - B. Observations and Suggestions
    - See comment above relative to use of priority areas in strategies.
    - Consider clearly stating the outcomes you hope to achieve as a first step in identifying meaningful priorities. Goals and Objectives may be used for identifying these outcomes. You may generate more partner enthusiasm and public support if Goals and Objectives are refocused as much as possible on desired outcomes for resources and social conditions.
    - As particular examples to illustrate the previous point, Goals in the Population Growth and Urbanization section of the Strategy are not clearly linked to outcomes of slowing urban sprawl and/or retention of green infrastructure. Strategies for Issue 3, Sustainability of Forest Resources in East Texas, are concerned primarily with education, monitoring, and report preparation. It would be useful to understand what forest resource outcomes are desired and what strategies are targeted to achieve them.
    - The reason for switching from Performance Outcomes to Performance Measures in your headings under the Program Section needs clarification—it is not clear whether these are intended to serve the same purpose. Although identification of Performance Measures is not a Farm Bill requirement, they can be very useful in both the grant process and telling the story of your effectiveness to broader audiences. Therefore, you may find it useful to clarify these, and to ensure they are feasible to measure. Alternatively, you could eliminate them to be determined later, but ultimately identification of some measures of success is necessary for meaningful planning.



- Would like to see strengthening of the link between programs and integrated efforts on strategic issues. At a minimum, each program should be able to identify clearly their role in addressing each strategic issue.
  - There is inconsistency in having a separate section (issue) with sub-issues for Urban Forestry Sustainability in the Assessment. There seemed to be a lot of overlap in this section with topics discussed under the other issues. Were the other issues meant to address only rural forestlands? Treatment of this issue is not well integrated or consistent with treatment of other issues.
  - A fair number of your strategies involve conducting more analysis and planning. Some “planning to plan” is understandable and necessary given the time frames and challenges of pulling Assessments and Strategies together, but too much may weaken interest and support by partners, the public, and funding sources. More focus on outcomes and strategies involving focused program delivery to achieve these outcomes will help balance necessary strategies involving more assessment and planning.
6. Includes description of resources necessary for the State forester to address the State-wide strategy:
    - A. Requirements met?
      - Meets requirements (Strategy, p. 117).
    - B. Observations and Suggestions
      - The Strategy uses the resource matrix suggested in the regional outline. Ideally this matrix would reflect real indications of intent from specific organizations to provide resources to work together on these strategies. We understand that generalities simply may reflect current uncertainty about potential partner intent. You may want to consider including more information in the matrix on necessary resources by using more than an “X” in relevant cells. Kinds of resources (funding, staffing, materials, etc.) or level of involvement (lead, support, etc.) are two options—whatever might increase the usefulness of this section for encouraging program integration, partner involvement, and procuring of needed resources.
  7. Coordination with State Forest Stewardship Coordinating Committee:
    - A. Requirements met?
      - Meets requirements (Assessment, p.34).
    - B. Observations and Suggestions
      - We assume there will be more on this group’s involvement in the process record to be found in Appendix A of the Strategy when complete.
  8. Coordination with the State Wildlife Agency:
    - A. Requirements met?
      - Needs further development.
    - B. Observations and Suggestions
      - There is good evidence of incorporation of the State Wildlife Action Plan as well as ongoing and future work with Texas Parks and Wildlife, but more documentation of direct coordination with the State Wildlife Agency during development of the Assessment and Strategy is needed. We assume there will be more on this coordination in the process record to be found in Appendix A of the Strategy when complete.
  9. Coordination with the State Technical Committee:
    - A. Requirements met?
      - Needs further development.
    - B. Observations and Suggestions
      - We assume there will be more on this coordination in the process record to be found in Appendix A of the Strategy when complete.
  10. Coordination with the Lead Agency for Forest Legacy Program if not the state forestry agency:
    - A. Requirements met?
      - Not applicable.
    - B. Observations and Suggestions
      - Texas A&M Forest Service is lead agency for Forest Legacy (Assessment, p. 13).
  11. Coordination with applicable Federal land management agencies:
    - A. Requirements met?
      - Needs further development.
    - B. Observations and Suggestions
      - We assume there will be more on this coordination in the process record to be found in Appendix A of the Strategy when complete.
  12. Incorporation of community wildfire protection plans:
    - A. Requirements met?
      - Meets requirements: development of CWPPs was incorporated into the Strategy (pp. 27, 28, 31, 97-100).
    - B. Observations and Suggestions
      - Consider including existing CWPPs as part of assessment analysis of the wildfire issue.
  13. Incorporation of State wildlife action plans:
    - A. Requirements met?
      - Meets requirements (Assessment, pp. 31, 119).
    - B. Observations and Suggestions



14. Incorporation of other forest management plans of the State (including Forest Legacy Program AON):
  - A. Requirements met?
    - Meets requirements. Legacy AON is discussed in the Assessment (p. 13) and Strategy (pp. 81-87).
  - B. Observations and Suggestions
    -

## II. Additional Observations and Suggestions

1. Overall Approach and Presentation:
  - Introductory sections of Assessment and Strategy include discussion on S&PF programs and Redesign precursors to Farm Bill requirements. It may be cleaner and more immediate and relevant with most audiences (especially partners and the public) to simplify these sections to focus solely on the Farm Bill.
  - Assessments and Strategies can be very strategically focused or more comprehensive descriptions of agency roles and programs. These documents appear pretty comprehensive, but in this case it may reflect that Texas A&M Forest Service has generally done well at keeping programs strategically focused. Consider ways that this Assessment/Strategy process might further highlight strategic choices versus describing what TFS does.
2. Fire Prevention and Control:
  - Several places throughout the document identify Wildland/Urban Interface as either WUI or UWI. Please standardize usage.
  - Issue #5, Goal 2: the strategy doesn't seem to lay out any prioritization of communities that need CWPP's.
  - The Texas Interagency Coordination Center (TICC) is explained in the programs section of the strategy document, but it could be included as part of the strategies for issue #5. TICC is a great example of interagency cooperation.
  - Issue #5, Goal 4: the strategy doesn't seem to prioritize or explain the distribution of training and funding.
  - Issue #5, Goal 5: personnel and public safety could also be listed as a performance outcome.
3. Forest Health Protection:
  - Suggestions for future assessments:
    - include known-occurrence maps for non-native invasive plants into FH layer
    - consider adding "new" or potential exotic insects and diseases (EAB, Sirex, Soapwood borer, laurel wilt) into FH layer
    - consider adding a Forest Health layer weight to some of the urban forestry priority assessments.
  - The strategies for dealing with the various forest health issues (SPB, oak wilt, non-native invasive plants and insects) are sound and achievable. Performance measures for these strategies are pertinent and reasonable.
4. Forest Legacy Program:
  - Reviewed separately.
5. Rural Forestry Assistance and Forest Stewardship Program:
  - In the future, it likely will be necessary to identify which priority area analysis products resulting from this effort will be used for generating PMAS measures based on priority areas. You could, but don't necessarily need to, identify these priority areas in the Strategy, but you should know specifically which assessment spatial products you intend to use for PMAS analysis. In making this decision, you should consider what kinds and formats of priority areas will be most useful for focusing Forest Stewardship Program delivery to achieve priority outcomes. If desired, you can modify assessment products for this purpose, but some link to assessment priorities and analysis should be maintained.
  - Longleaf pine restoration gets a very brief mention in the Strategy to target future planning by a subcommittee. You may want to add more specifics based on your recent meetings with partners on this subject. There may be resource outcomes and related strategies for longleaf pine that are appropriate for inclusion under the East Texas issue. As discussed previously, more specifics on this issue may help position you for any future targeted funding efforts.
6. Urban and Community Forestry Assistance:
  - Reviewed separately.
7. GIS Analysis:
  - See comments under item 3.



## **Texas Forestry Council Bylaws**

**04-27-2010**

### **Purpose**

Texas is a state with many outstanding qualities and the spirit of cooperation which exists among government agencies and private organizations with forest resource interests is one of them. A large number of federal, state, and county agencies in Texas, as elsewhere, have authority to address forest resource issues and it is important that these agencies cooperate with each other and with private forest resource interests for the benefit of the state in general and the forest resources in particular.

### **Mission**

*Public agencies working together to sustain and enhance the forest resources of Texas.*

### **Membership**

Membership is determined by the public agency representatives on the Council. Membership is limited to government agency employees.

### **Proxies**

Members are authorized to designate proxies on an ad hoc basis to attend meetings and to vote on proposed actions of the Council.

### **Voting**

For all matters of business, a simple majority approval of the Council membership shall govern the action of the Council.

### **Meetings**

Regular meetings of the Council are held quarterly or as deemed necessary by the Council members. Meeting location will rotate among the agencies represented on the Council.

### **Committees**

Standing committees and special committees will form on an as needed basis for a specified duration. The duties of all committees will be described at the time of their appointment.



## **MEMORANDUM OF UNDERSTANDING BETWEEN THE**

### **Texas Forest Service AND THE United States Department of Agriculture, Natural Resources Conservation Service In Texas**

This Memorandum of Understanding (MOU) is made and entered into by and between the two parties: Texas Forest Service (TFS) and the United States Department of Agriculture, Natural Resources Conservation Service in Texas (NRCS-TX), hereafter referred to as The Parties.

#### **I. PURPOSE**

The purpose of this state-level MOU (State MOU) is to recognize and support the principles and actions outlined by the National-level Memorandum of Understanding (National MOU) signed by NRCS, National Association of State Foresters (NASF), the USDA US Forest Service (USFS), and the National Association of Conservation Districts (NACD) on September 29, 2008.

The Parties have a long-term commitment to the conservation and stewardship of Texas' natural resources. This State MOU should strengthen cooperation among TFS and NRCS-TX resulting in coordinated interagency delivery of forestry-related conservation assistance to private landowners in order to sustain the health, diversity, and productivity of Texas' private working lands – forestland, cropland, pasture, and rangeland.

#### **II. BACKGROUND**

TFS and NRCS-TX recognize that healthy forests are a critical component of Texas' landscape and economy. The Parties recognize that privately-owned forests make up a substantial share of the forest resource base of the state and that these forests are increasingly being divided into smaller ownership parcels. The Parties recognize that the owners of all non-industrial private forestland (NIPF) are key customers for our programs/activities. Increased coordination and collaboration is essential so that we can provide assistance to a changing customer/owner base.

The Parties believe that strong partnerships at the State level will make it possible to be more effective in assisting NIPF landowners, thereby increasing natural resource benefits from working forest lands. The Parties also recognize that strong citizen participation, as well as stakeholder-based partnerships operating at the local, State, regional, and other geographic scales are fundamental to successful conservation of natural resources.

Each party delivers to private landowners and land managers technical and financial assistance through their various conservation programs and activities. Increased coordination and collaboration can result in synergistic effects that enable success in achieving broader conservation goals.

#### **III. ROLES AND RESPONSIBILITIES**





This State MOU commits the Parties to the actions expected to enable the Parties to accomplish their individual and collective conservation goals and missions more effectively based on the following guiding principles:

**1. Make the best, most efficient use of all available programs and resources**

- TFS and NRCS-TX will work together to ensure that respective program resources are used in a way that is most effective, strategic and complementary, focusing together on the priority areas identified in Texas Statewide Assessments and Strategies for Forest Resources and the priorities selected for the NRCS-TX Conservation Stewardship Program.
- The Parties are committed to addressing mutual natural resource management concerns and meeting landowner demands for planning and related technical and financial assistance.
- TFS and an NRCS-TX state office representative will meet formally at least two times per year. At the State Stewardship Coordinating Committee meeting, NRCS-TX will be given the opportunity along with other natural resource agencies on the committee to give a presentation about NRCS programs, projects, or current issues. A second meeting between TFS and NRCS-TX will be an individual meeting for planning purposes and program direction review. This meeting should occur at least 30 days prior to the next fiscal year. The purpose of this second meeting shall be to review accomplishments specific to TFS and NRCS-TX of the previous year, agree on strategies for the upcoming year, and discuss any new programs or projects that relate to the partnership between TFS and NRCS-TX forthcoming in the next year.
- After submitting proof of qualifications, at least two TFS foresters per year will be approved as Level 2 Conservation Planners (as per Texas NRCS Conservation Planning policy), pending adequate NRCS and TFS resources. TFS may provide an employee to serve as a shared resource, who is housed in the USDA-NRCS state office in Temple, TX. TFS will pay the salary, benefits and provide a vehicle for its employee; NRCS will provide work space and working tools for this employee. The employee will be supervised by Texas Forest Service in consultation with the NRCS State Resource Conservationist. The NRCS State Resource Conservationist will provide input into the shared employee's annual performance review and annual work plan.
- NRCS will fully support a forum for public providers of forestry assistance that will be established by TFS.
- TFS will serve on the Texas State Technical Advisory Committee.

**2. Forest Stewardship Program is a primary choice for planning assistance on private forest land**

- The USFS's Forest Stewardship Program (FSP) administered by TFS will continue to be a primary federal program through which State forestry agencies, and their well-established network of professional technical assistance providers, provide technical and planning assistance to private forest landowners.
- A Forest Stewardship plan should allow private forest landowners to access financial assistance (e.g., Environmental Quality Incentives Program – EQIP) to implement their plan and other opportunities, including tax incentives, certification, and emerging markets for ecosystem services (e.g., carbon, water, biodiversity).
- NRCS-TX will accept Forest Stewardship Plans and similar private sector plans as satisfying the EQIP requirement for a "forest management plan", before approving





financial assistance to implement conservation practices in that plan (Section 2506, 2008 Farm Bill).

- TFS and NRCS-TX will work together to identify the information needed by NRCS-TX to ensure Forest Stewardship Plan compatibility with NRCS policies. The new [appendix](#) to the FSP national standards and guidelines provides a good basis for state agreements.
- The Parties encourage the use of common state level forest management plan templates that meet the needs/requirements of multiple programs (e.g., FSP, EQIP, American Tree Farm System) and provide landowner access to financial assistance and other incentives and opportunities. The Parties also encourage joint training of employees and Technical Service Providers (TSP), cross-training of selected employees, and coordinated outreach efforts to improve overall delivery of technical assistance.
- NRCS-TX and TFS will work together to define forest conservation activity plans.
- TFS will provide technical assistance for other natural resource programs.

**3. Emphasize FSP for planning assistance and EQIP for financial assistance to implement plans**

- Financial assistance provided through NRCS's Environmental Quality Incentives Program (EQIP) can most clearly complement FSP technical and planning assistance by enabling the landowner to implement practices that are called for in their Forest Stewardship plan, particularly where other incentives or assistance for plan implementation are lacking.
- In Texas counties where landowner demands/needs for planning cannot be met with FSP resources or private sector plans, EQIP financial assistance for the new NRCS Conservation Activity Plan/Forest Management Plan is an option that can be considered.
- The NRCS-TX State Conservationist and TFS State Forester will cooperate to ensure that any financial assistance offered by NRCS-TX for forest management plans is complementary with the assistance offered by TFS through the FSP, and not redundant or confusing to landowners and cooperators.

**4. NRCS-TX and TFS will be able to illustrate both joint and individual program accomplishments**

- If EQIP provides financial assistance to develop forest management plans (e.g., NRCS Conservation Activity Plan/Forest Management Plan), the plans may have different or additional requirements to meet program reporting and accounting purposes.
- Spatial accomplishment tracking, and the ability to share selected spatial data, will allow TFS as an administrator of USFS Programs and NRCS to illustrate how FSP and EQIP are both individually and together providing planning and related technical and financial assistance to achieve outcomes within priority landscapes.
- TFS and NRCS-TX will work together toward the proposed integration of USFS's WebDET planning tool/database or similar tracking system. NRCS's National Conservation Planning database is critical to acquiring this tracking/reporting capability.
- The Parties are committed to an ongoing evaluation of respective program accomplishments and roles in addressing mutual landscape-scale resource management concerns.
- TFS will serve on the technical advisory committee for at least one of the plant materials centers.



#### IV. GENERAL PROVISIONS

- A. This State MOU takes effect upon the signatures of the Parties and remains in effect for as long as the national MOU remains in effect or 5-years from the date this agreement is signed, whichever comes first. In the event of termination by one of the Parties, the other Party may initiate a new MOU between them.
- B. This agreement can be cancelled by either party at any time with 30-days written notice to the other party.
- C. This State MOU recognizes agreement between the Parties on the general provisions described in the National MOU.
- D. Section 1619 of the Farm Bill prohibits the Secretary of Agriculture and its employees from disclosing certain information that has been provided by agricultural landowners and producers to participate in the U.S. Department of Agriculture's (USDA) programs, except as necessary for delivering technical assistance. Section 1619 of the Farm Bill prohibits the release of information that falls into certain categories. Information that has been provided to USDA by an agricultural producer or owner of agricultural land concerning the operation, practices, or the land itself in order to participate in USDA programs is not to be disclosed by any USDA employee. Geospatial information is also prohibited from disclosure when it has been maintained by the Secretary and concerns the land which an agricultural producer or owner has provided information to participate in a USDA program.
  - a) Despite any provision of this Agreement to the contrary, TFS may disclose Confidential Information as required by law. "Required by law" includes, but is not limited to, disclosures compelled by lawful subpoena, court order, or demand, or any other lawful process; provided, however, that immediately upon receipt of such a subpoena, order, or demand, TFS must notify NRCS of the impending disclosure to allow NRCS an opportunity to prevent the disclosure. TFS is not required to pursue any claim, defense, cause of action, or legal process or proceeding on NRCS's behalf.
  - b) NRCS acknowledges that TFS must strictly comply with the Public Information Act, Chapter 552, *Texas Government Code*, in responding to any request for public information. This obligation supersedes any conflicting provisions of this Agreement.

#### V. AGENCY/ORGANIZATION CONTACTS

TFS: Tom Boggus  
Director and State Forester  
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College Station, Texas 77840  
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Susan Baggett  
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101 South Main  
Temple, TX 76501  
Phone: 254-742-9800

#### VI. AUTHORITIES

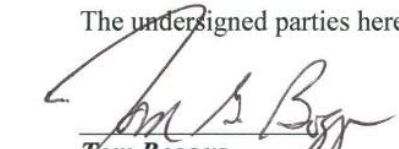


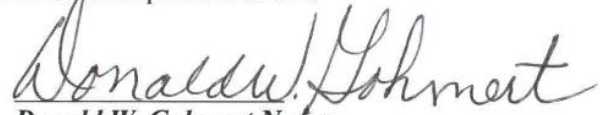


This State MOU is entered into in accordance with the same laws, organizational policy, and Executive Orders recognized in the National MOU. In addition, The Parties agree to adhere to the applicable laws of the state of Texas.

## VII. APPROVAL

The undersigned parties hereby agree to the terms and conditions specified above.

  
**Tom Boggus**  
**Director and State Forester**  
**Texas Forest Service**  
3-31-10  
Date

  
**Donald W. Gohmert Name**  
**State Conservationist**  
**USDA NRCS-TX**  
3/31/10  
Date





## Stakeholder Comments

Page	Section	Text	Comment
n/a	n/a	General comment	TPWD & TWAP need to be put on acronym page at the front of the plan.
n/a	n/a	General comment	Throughout the document, each strategy should roll up directly to each objective, then to each goal. In many of the sections, the relationship up and down the goal-objective-strategy thought chain is not clear.
3  5"	<b>Issue 1: Population Growth &amp; urbanization</b> ( <i>now UFS</i> )  Goal 1: Identify areas of the state that will experience significant urban growth in the next 30 years	Objective 1.1: Focus agency programs into identified communities expected to grow  <i>Identify</i> areas of the state that will experience significant urban growth in the next 30 years	The stated goal is to <i>identify</i> the areas of growth, which they have <i>already</i> done in their analysis and depicted in Figure 3; therefore, they've already met that goal.  The real issue seems to be what they've listed in the Objective 1.1.  Goal should be modified to read more like Objective 1.1 – now that they know where the growth is expected, state their goal to engage and/or modify their programs to address forest conservation needs in those areas.
5	<b>Issue 1: Population Growth &amp; Urbanization</b>  Strategy 1.1.2"	Analyze critical natural resource areas in the state, and the Southern Wildland Fire Risk Assessment System (SWFRA) to measure wildfire danger and other human health and safety risks as they may exist around these communities.	This strategy related only to the urban-wildland interface issue of wildfire. No additional strategies are identified to address forest resource direct loss from development, indirect impacts (positive or negative) of additional recreation needs, indirect impacts of additional services development that create fragmentation (roads, utility corridors, etc.), loss of and impact to resources associated with the forest (wildlife, water quality, habitat). If this strategy is truly about addressing impacts from significant projected urban growth, additional strategies need to be created under this goal to address forest resource impacts from other factors - loss, fragmentation, pressures, etc. Objective 2.1 seems to be a better fit under this than the "outreach" goal.
7	Goal 2: Educate and prepare community leadership for change	Objective 2.1: Conserve, protect, enhance natural resources prior to population growth	Include mention of TPWD Urban biologist and outreach specialists as part of the natural resource assistance network. Replace Page 7 Goal 1 Bullet 1's reference to "forest" health threat with "native ecosystem" health threat to better capture the fact that most rapidly urbanizing areas are actually located in prairie ecosystems, not forest ecosystems. Wildfire risks remain high in both forest and grassland ecosystems.  Tie to WL ssp., especially state and federally threatened, to provide connectivity to the land, watershed and soils.  Goal needs to be more focused for the organization and its partners to be able to act on specific objectives. This goal reads VERY broadly – perhaps with significant growth potential (define significant, e.g. >25% over 5 years?) with an urban-wildland interface.  Objective should be related to the kind of outreach you seek to provide – who is the target audience, what do you hope to accomplish through the outreach? The currently stated objective seems to fit better under Goal 1.
7	<b>Issue 1: Population Growth &amp; Urbanization</b>  Goal 1 Performance Outcome	Emerging communities have a plan to reduce their risks from forest health threats.	This reads as if the forest health threatens the community.  <i>Suggested rewording:</i> Emerging communities work



			with the Texas Forest Service and its natural resources assessment partnership to include measures in community planning that address forest conservation and health, tailored to meet the needs of their constituency and sustainability of forest resources.
9	<b>Issue 2: Central Texas Woodlands Conservation</b>	Central Texas Woodlands Conservation	It is unclear why this particular forest resource merits its own issue/goal(s) when, as it is currently defined, it could be rolled into the emerging growth communities issue. There are some strategies under this goal that do not fit the growth communities and those should be separate under the goals in this issue if they were honed to be more specific. If the idea is to pull specific Ecoregional focus goals out, then Issues 2 and 3 should be worded similarly related to conservation, sustainability and protection.
9	<b>Issue 2: Central Texas Woodlands Conservation</b>	Central Texas Woodlands Conservation	Goals, objectives and strategies under this (and other area-specific statements) may be more effectively implemented if the resources you are targeting are spelled out. Additionally, forest and woodland ecosystem services and other natural resource processes seem to be left out of the assessment, protection strategies, and outreach activities. What resources are "critical" and "at risk" – there are specifics in other plans that could be drawn into this and other goals.
9 10	<b>Issue 2: Central Texas Woodlands Conservation</b>  Goal 1: Identify multi-county areas where resource threats (development, wildfire, pests) will most likely threaten/negatively impact natural resources	Objective 1.1: Prioritize/focus program delivery and agency resources  Identify areas of where resource threats (development, wildfire, pests) will most likely threaten/negatively impact critical forestland and other associated natural resource areas in a multi-county program area of Central Texas Objective 1.1: Prioritize/focus program delivery and agency resources onto high priority landscapes throughout a multi-county region of Central Texas	Page 10 Strategy 1.1.1 replace "forest" with "native ecosystem" cover loss Strategy 1.1.2 replace "forest" with "native ecosystem" health problems  *Especially habitats to state threatened spp. Such as G C Warbler Grammar: Identify areas of where resource Content: Goal needs to specify and/or define the following: "critical?" "other natural resource areas" (is it other areas, or other resources?) "multi-county program area" – how many counties, only one program? Additionally, later in Objective 2.1 you included "west Texas." If the goal is specific to Central TX, then west TX would be separate goal? OR, sync the language.  The strategies listed under this appear to be related to objective in Issue 1.
		Strategy 2.1.2 Establish regional steering committees with representation from diverse public and private stakeholders to coordinate activities in communities and watersheds at risk.	At risk of what? Again, the language should be tied back to the Objective and Goal – What is "critical" what is important to ACT on?
		Strategy 2.1.4 Develop, strengthen, foster and train partners in the region to increase public awareness of the WCI. Potential partners included....	Listing the partners in this strategy could be construed as "exclusive" – better to define the partnership (organizations and agencies with some element of forest resource conservation, protection, and....in their activities).
10	Goal 2: Prioritize current landowner assistance and partnership programs and associated personnel	Objective 2.1: Comprehensive leadership in Central & West Texas multi-county areas	Page 10 Strategy 2.1.3 replace "forest" with native ecosystem" health. Strategy 2.1.4 add Texas Parks & Wildlife to potential partners list. Strategy 2.1.5 replace "forest" with "native ecosystem" health. Strategy 2.1.6 replace "forest" with "native ecosystem" health.
13	<b>Issue 3</b>	Sustainability of Forest Resources in East Texas	Is sustainability the core issue? Does the Central Texas issue need to include sustainability? Does the



			<p>East Texas issue need to include conservation (e.g. bottomland hardwoods)?</p> <p>The entirety of Issue 3 seems to be focused solely on use of timber resources, rather than also including the contribution these resources make to system function, other natural resources' protection (e.g. riparian areas for water quality and quantity, habitat for species of greatest conservation need).</p> <p>Additionally, there is a protection component that appears to be missing in this ecoregion – there are some forest communities that are highly threatened and/or unsustainable at the current rates of loss.</p>
13 14	<p><b>Issue 3: Sustainability of Forest Resources in East Texas</b></p> <p>Goal 1: Determine the impacts of additional wood processing facilities on East Texas timber supply</p>	<p>Objective 1.1: Evaluate how new mills will impact long-term timber supply of Southeast Texas forests</p>	<p>Page 14</p> <p>Strategy 1.2.2 after "besides standing tree" add "in Northeast Texas such as trees, grasses and invasive species in other parts of the state."</p> <p>Background on above suggested addition – there has been some discussion of utilizing invasive juniper, mesquite and forest under story plants such as sweet gum and yaupon as biofuel sources.</p> <p>Is there a reason why biofuel studies are only being done in the NE and not the rest of East Texas?</p> <p>Need to look at BMP's for emerging industries such as woody biomass production, whole tree utilization etc.</p>
		<p>Objective 1.2: Quantify the impact from the addition of biomass utilizing facilities on long-term timber supply of Northeast Texas forests</p>	
	Goal 2, 3 and 4		<p>The objectives and/or strategies under all three goals could be enhanced by including strategies related to ecosystem service and ecosystem processes.</p>
14	Goal 2: Monitor the sustainability of Northeast Texas	<p>Objective 2.1: Analyze how improved regeneration scenarios can impact the sustainability of Northeast Texas forests.</p>	<p>Both of these goals could be enhanced with objectives and strategies to conserve bottomland hardwoods and protect ecosystem processed.</p> <p>Why is NE Texas singled out in Goal 2 – Shouldn't these objective be carried out on all east Texas forests?</p> <p>An objective under this goal could be to work with others who are modeling climate change to determine where the greatest impacts to forest resource sustainability may occur, including impacts to the ecosystem services that forests provide in various vegetation communities.</p>
		<p>Objective 2.2: Monitor regeneration activities within Northeast Texas forests.</p>	
		<p>Objective 2.3 Determine harvest rates within Northeast Texas.</p>	
14	Goal 3: Determine the potential of carbon markets to forest landowners	<p>Objective 3.1: Increase the ability of landowners to analyze how carbon markets can impact their economic investments.</p>	<p>Both of these goals could be enhanced with objectives and strategies to conserve bottomland hardwoods and protect ecosystem processes.</p> <p>Should carbon production software programs be developed for the entire state of Texas rather than just for East Texas?</p> <p>Establishment of LL pine satisfies carbon sequestration as well as restoring historic communities.</p> <p>A strategy under this objective could include working with others who are modeling climate change and carbon sequestration potential to identify areas of greatest natural resource conservation value overlapping carbon sequestration potential.</p>
		<p>Objective 3.2: Conduct an analysis determining the economic feasibility of managing resources for carbon markets</p>	<p>This report should include a section on the potential ecosystem impacts of planting nonnative species, especially in a monoculture, on native forests and</p>





			grassland sites for the purpose of producing carbon credits and biofuel.
15	Goal 4: Monitor the demographics of forest landowners and their desires	Objective 4.1: Determine the range in age, salaries, and interest of East Texas Forest Landowners	This goal and its related objectives and strategies seem to fit better under Issue 1. This and the similar goals, objectives and strategies under Issue 2 that are related to demographics, emerging population growth areas, and forest impacts would make better strategies under Issue 1.
		Objective 4.2: Educate the forestry community about landowner demographics.	
18	<b>Issue 4: Water Quality and Quantity</b>	Objective 1.1: Encourage BMP implementation on forestry operations.	Such BMP's should include measures to protect declining wildlife species and habitats as identified in the TWAP.  We need to be looking forward, writing MPs for total tree utilization/woody biomass production. These industries are coming and we need to be ready with environmental/wildlife friendly BMPs.  Add objective(s) or strategy(is): Review BMP's with the natural resources assessment partnership to ensure that forest health, ecosystem service, and ecological processes are practicably addressed and up-to-date with the state-of-the -practice and supporting science.  Establish/formalize a periodic natural resources assessment partnership BMP review process and stakeholder review process to be able to address emerging conservation issues, contribute to regional water planning processes, and adapt BMPs to suit various ecological systems and threats.  Separate strategic outline into public and private forestry operations: Require BMP implementation (or more stringent controls as developed?) on state-managed forest operations. Encourage, through outreach, workshops and technical guidance, current and emerging BMP implementation on private forestry. Encourage, through outreach, workshops and technical guidance, current and emerging BMP implementation on private forestry operations.
19	Goal 1: Protect water quality		
		Objective 1.2: Encourage BMP implementation on other land operations	Such BMP's should include measures to protect declining wildlife species and habitats as identified in the TWAP and conserve and manage wildlife and fish habitat.
		Objective 1.3: Promote the importance of forests to water quality	Page 20 Strategy 1.3.3 Add "Where ecologically appropriate," before Establish forest around drinking water sources. This is especially true of Balcones Escarpment area which was probably originally a savannah ecosystem.
20	Goal 2: Enhance Water quantity	Objective 2.1: Protect aquifer recharge zones	Strategy 2.2.1 Add "Where ecologically appropriate," before Establish forest around drinking water sources. This is especially true of Balcones Escarpment area which was probably originally a savannah ecosystem.
		Objective 2.2: Properly manage invasive vegetation along riparian areas	Replace Strategy 2.22 with "Partner with federal agencies such as USDA and FWS to assist landowners in the eradication of invasive vegetation."  This appears to be the first mention of invasives management. This is an important issue in all areas of forest management, health, sustainability and outreach. Additionally, more stringent measures should be strategically noted for non-native invasive



			prevention, as well as management. There are areas where TFS programs could participate in non-native invasive plant prevention.
23	<b>Issue 5</b>	<b>Wildfire &amp; Public Safety</b>	<p>Because the wildfire issue is focused on public safety, it seems as if this is more appropriately lumped with Issue 1.</p> <p>There are significant fire (wild and RX) issues related to forest health, sustainability, and other natural resources' protection; therefore, it seems as if there are other strategies missing related to this topic in other goals and objectives throughout the Strategy.</p>
23	<b>Issue 5: Wildfire &amp; Public Safety</b>	Objective 1.1: Determine current and predicted weather conditions throughout the year	
25	Goal 1: Analyze current and predicted weather conditions, wildfire occurrence, development pressure and fuels		
		Objective 1.2: Monitor the condition of wildland fuels and vegetation	
		Objective 1.3: Calculate current and predicted fire behavior	
		Objective 1.4: Identify and document Urban/Wildland Interface areas and communities at risk	
		Objective 1.5: Track fire occurrence and ignition sources	
		Objective 1.6: Disseminate assessment information to cooperators, elected officials, and the public	
26	Goal 2: Continuous wildfire mitigation and prevention programs	Objective 2.1: Assign high priority to mitigation and prevention efforts throughout the year	
		Objective 2.2: Base efforts on local assessment information	
		Objective 2.3: Initiate prevention efforts prior to a developing fire season	
		Objective 2.4: Involve cooperators in designing and delivering programs	
		Objective 2.5: Strive to empower communities and property owners to mitigate hazard in Urban/Wildland Interface areas	Landowner training/promotion of prescribed fire as a prevention tool will not only reduce occurrence and intensity but will benefit numerous plant and wildlife communities. Work with TPWD to promote burn co-ops, aid in training, and acquiring necessary tools for prescribed burn trailers.
		Objective 2.6: Work with cooperators to develop and deliver wildland fuel reduction programs	
28	Goal 3: Work across internal and external boundaries to implement the Texas Wildfire Protection Plan	Objective 3.1: Analyze predictive service and fire occurrence data to determine local and statewide preparedness levels	
		Objective 3.2: Ensure preposition and availability of resources based on analysis	
		Objective 3.3: Maintain a flexible force structure based on risk and occurrence	
		Objective 3.4: Involve local, state, federal and contract resources	
		Objective 3.5: Maintain readiness of resources	
29	Goal 4: Train, equip, and assist local fire departments in support of the Texas Wildfire Protection Plan	Objective 4.1: Assist local fire departments as they are the initial attack resource for rural Texas	
		Objective 4.2: Develop and deliver programs committed to training, equipping,	Could this include training and equipment for TPWD staff that are getting the burn certificates?



		and supporting local fire departments and other cooperators	What about NGO efforts like TNC's burn teams?
		Objective 4.3: Focus TFS fire assistance programs in support of Texas Wildfire Protection Plan	
		Objective 4.4: Encourage partnerships between all federal, state, and local cooperators	
30	Goal5: Ensure rapid and effective response of appropriate resources to suppress and extinguish wildfires in Texas	Objective 5.1: Provide for the safety of emergency responders and citizens	
		Objective 5.2: Conduct response operations in a cost-effective and efficient manner	
		Objective 5.3: Coordinate the efforts of cooperators to minimize losses	
		Objective 5.4: Emphasize aggressive initial attack based on fire behavior to prevent fires that burn for days	
36	<b>Issue 6</b>	<b>Urban Forestry Sustainability</b>	Several of the goals and objective in this section are related to and perhaps better defined under Issue 1 (e.g. monitor land use change, growth, development, etc.). Additionally, the urban forestry issue can be tied to urban wildlife issues and TPWD has a strong urban wildlife program. Specific strategies could be partnered through or advised by the Urban Program.
36	<b>Issue 6: Urban forestry sustainability</b>	Objective 1.1: Monitor land-use change in Texas	
37	Goal1: Reduce the impacts of land-use change, fragmentation, and urbanization on forest landscapes		
		Objective1.2: Encourage "best practices" for protecting high-value forest landscapes in and around urban areas	Page 37 Strategy 1.2.3 add after "forest" "and other intact site appropriate native vegetation" landscapes.
37	Goal 2: Moderate the impacts of catastrophic events	Objective 2.1: Improve disaster preparedness at the state and local level to include trees and tree issues	
		Objective 2.2: Respond quickly and effectively following any major event that damages trees in a community setting	
		Objective 2.3: Establish a program or fund to supply significant numbers of new trees to communities affected by disaster	Page 38 Strategy 2.3.2 replace "tree" with "site appropriate native tree or other plant species" Promote the planting of LL within its historic range which are more disease, fire and storm resistant.
38	Goal 3: Protect and improve air quality	Objective 3.1: Participate in process to write or update State Implementation Plans for non-attainment areas in Texas	Strategy 3.1.2. Add "within urban areas." Requiring tree canopy in air quality zones outside urban areas that are located in grasslands can negatively impact declining native grassland species.
38	Goal 4: Protect and improve water quality	Objective 4.1: Mitigate impaired waterways within urban areas	
		Objective 4.2: Analyze cumulative impact of impervious surfaces within urban watersheds	Page 38 Strategy 4.2.2. Add after trees "forests and other site appropriate native plant communities" toward storm water management.
38	Goal 5: Mitigate climate change and conserve energy	Objective 5.1: Help communities establish large-scale tree planting goals and plans	Add after tree "and native grass, forest and shrub" planting goals...in this objective. Strategy 5.1.2 replace "tree" with "site appropriate native vegetation"
		Objective 5.2: Support tree planting as an energy efficiency practice	
39	Goal 6: Build U&CF program capacity at the local level	Objective 6.1: Establish professional urban foresters and arborists in Texas Communities	
		Objective 6.2: Support scientific inventory systems to provide resource data to develop	



		management plans for local managers	
		Objective 6.3: Promote effective tree care and tree protect	Page 39 Strategy 6.3.2. Add after "tree", and other site appropriate native plant communities' ordinances.
		Objective 6.4: Support local tree advocacy groups	
		Objective 6.5: Support private-sector nursery and arboriculture firms.	



## APPENDIX B: LINKS TO NATIONAL PROGRAM GUIDANCE

1. Forest Stewardship

[http://www.fs.fed.us/spf/coop/library/fsp\\_standards&guidelines.pdf](http://www.fs.fed.us/spf/coop/library/fsp_standards&guidelines.pdf)

2. Forest Legacy

[http://www.fs.fed.us/spf/coop/library/flp\\_guidelines.pdf](http://www.fs.fed.us/spf/coop/library/flp_guidelines.pdf)

3. Urban and Community Forestry

National guidelines are currently under revision. In the interim go to:

<http://www.fs.fed.us/spf/coop/library/SPF-CF%20handbook.pdf>

