

B. Social and Economic

1. Recreation

a. Existing Conditions and Trends

Texas is a very large state, yet only 5.7 percent of the total 172 million acres in Texas are public lands open to the public for outdoor recreation opportunities. Of that 5.7 percent, only 2.6 percent are federal lands. The demand for outdoor recreation opportunities on the National Forests and Grassland is currently heaviest on the Sam Houston National Forest (NF) and Lyndon B. Johnson National Grassland (NG) due to their proximity to the large urban areas of Houston and Dallas/Fort Worth. Both the Sam Houston NF and the Lyndon B. Johnson NG are in need of a comprehensive plan to address how they will meet the huge demand for outdoor recreation opportunities that they will see over the next several decades. However, all areas of the NFGT experience demand for a variety of recreation activities including dispersed recreation, particularly hunting and fishing, developed recreation such as camping, as well as trail activities.

Dispersed recreation often occurs along roads that dead end at lakes and reservoirs. Initially, these areas offer access to the lake; in some cases the pressure of more visitors and no facilities can lead to resource issues such as human waste, littering, or erosion from vehicles leaving the roadway. More recently the regulation restricting camping to designated hunter camps during the deer gun season has concentrated use to a few areas on each forest. Opportunities exist for managing these areas more intensely and providing sanitary facilities, trash pickup, or Leave No Trace messages for visitors.

Many of the developed recreation areas on the NFGT were built during the era of the Civilian Conservation Corp, or CCC, during the 1930s. Although facilities have been upgraded and repaired over the years, there is a need for modernizing many of the recreation areas. Many areas need road work to accommodate larger vehicles along campground loops. A number of sites need camping spur renovation to accommodate multiple vehicles at campsites due to extended families and the use of boats and trailers as part of the camping experience. All developed sites need work to address the need for accessible sites that can be used by persons with disabilities.

The NFGT is unique in providing an array of trails opportunities including: hiking, bicycling, horseback riding and motorized trails. With over 400 miles of trail on the NFGT, a forest-wide trail assessment is needed to focus limited resources where they are most needed. Many trails are in need of signing, rehabilitation or relocation of trail segments to improve drainage, repair or replacement of bridges. Opportunities exist to partner with trail users and clubs to improve or expand opportunities.

The National Visitor Use Monitoring (NVUM) project offers reliable information regarding visitor use for the National Forests and Grasslands in Texas (NFGT). The NVUM project was implemented as a response to the need to better understand the use and importance of satisfaction with national forest system recreation opportunities. NVUM methodology and analysis is explained in detail in the research paper entitled *Forest Service National Visitor Use Monitoring Process: Research Method Documentation* by English, Kocis, Zarnoch, and

Arnold; Southern Research Station; May, 2002.

<http://www.fs.fed.us/recreation/programs/nvum>). The first NVUM survey on the NFGT occurred in 2003. The second NVUM survey will occur in 2008.

The results of the 2003 NVUM survey for the NFGT are shown below (Table 16). It is estimated that a total of 686,709 site visits are made to the NFGT annually. For purposes of this study a “site visit” is defined as the entry of one person onto a national forests site or area to participate in recreation activities for an unspecified period of time. A “National Forest visit” is defined as the entry of one person upon a national forest to participate in recreation activities for an unspecified period of time. A “national forest visit” can be composed of multiple “site visits.” Wilderness users were also surveyed.

The results of the NVUM survey are applicable to the entire NFGT, as a whole, but no information is available by District or site level. The gender distribution of NFGT recreation visitors was 81.9 percent male and 18.1 percent female. Nearly 98 percent of visitors were White, 2 percent were Hispanic, and 1.2 percent were Native American. Over 20 percent of users were under age 16, while 32 percent were 16 to 39 years of age, 20 percent were 40 to 49 years of age, and 28 percent were over 50 years of age.

Table 16. Annual Recreation Use Estimate for the National Forests and Grasslands in Texas

VISIT TYPE	VISITS	80% CONFIDENCE INTERVAL
SITE VISITS	686,709	19.7
NATIONAL FOREST VISITS	601,586	18.5
WILDERNESS VISITS	36,425	69.2

1. Dispersed

The National Forests and Grasslands in Texas (NFGT) encompasses approximately 672,800 acres. More than 560,000 acres are open for dispersed recreation activities. The NFGT’s theoretical maximum annual outdoor recreation capacity for dispersed recreation activities is determined by the amount of acreage within each Recreation Opportunity Spectrum(ROS) class. Under the current *Plan* 527,897 acres are classified as *roaded natural*, 33,096 acres are classified as *semi-primitive*, and 2,615 acres are classified as *rural*. The theoretical maximum annual capacity is based on the assumption that the NFGT is used consistently throughout the year by the maximum possible number of people. This condition is unlikely to occur, since most use is grouped into specific time periods, not spread over an entire year.

The NVUM survey participants were asked what activities they engaged in. Below is a list of the top ten activities based on the percentage of respondents that participated (Table 17). Many of these are dispersed outdoor recreation activities associated with hunting or scouting areas for hunting. Many are secondary activities associated with hunting or fishing. Several other activities appeared on the top 20 list including:

primitive camping (6.5% participating), gathering forest products (5.2%), horseback riding (4.1%), motorized water activities (3.3%), nature study (3.1%), backpacking (2.5%), visiting historic sites (2.6%), non-motorized water (2.4%), bicycling (2.1%), and OHV use (2.1%).

Table 17. Top Ten Activities

Activity	Percent Participating	Percent as Main Activity
Hunting	42.1	37.8
Viewing Wildlife	29.8	0
Fishing	21.1	17.3
Relaxing	20.3	1.6
Hiking / Walking	16.9	4.0
Other non-motorized	16.1	12.5
Viewing Natural Features	14.1	2.9
Developed Camping	13.0	6.7
Picnicking	12.8	2.8
Driving for Pleasure	12.3	6.7

2. Developed

The NFGT currently maintains 31 recreation sites across four national forests and two national grasslands. These areas offer nearly 500 improved campsites. In addition, there are 84 primitive campsites, 17 boat launches, 5 swim sites, 17 group picnic shelters, 4 family picnic units, 1 overlook, 3 wildlife viewing areas, and more than 400 miles of trails; these are displayed in Tables 18, 19 and 20.

Table 18. Developed Recreation Areas by Ranger District

Ranger District	Recreation Sites	Improved Camping	Primitive Camping	Boat Launch	Swimming Sites	Group Shelters	Picnic Units	Vistas/Overlooks	Wildlife Viewing Sites
	Number of Units								
Angelina/Sabine	15	177	50	10	2	6	5	1	1
Bayou Boat Ramp (Ang.)	1			1					
Bouton Lake	1		7						
Boykin Springs	1	33			1	1	4		1
Caney Creek	1		28	1					
Harvey Creek	1			1		1			
Sandy Creek	1	10		1		1			

Townsend Park	1	14		1		1			
Boles Field (Sabine)	1	20				1			
East Hamilton Boat Ramp	1			1			1		
Haley's Ferry Boat Ramp	1			1					
Indian Mounds	1	37		1					
Lakeview	1	10							
Red Hill Lake	1	28			1	1			
Ragtown	1	25		1					
Willow Oak	1		15	1					
Caddo/LBJ	7	71	26	3	0	3	7	0	0
Black Creek Lake (LBJ)	1	6		1			7		

Table 18. Developed Recreation Areas by Ranger District (cont').

TADRA	1		26			1			
Valley View	1	17				1			
Bois D'Arc (Caddo)	1	20				1			
Ranger District	Recreation Sites	Improved Camping	Primitive Camping	Boat Launch	Swimming Sites	Group Shelters	Picnic Units	Vistas/Overlooks	Wildlife Viewing Sites
Cofeemill Lake	1	12		1					
East Lk Davy Crockett	1	4		1					
West Lk Davy Crockett	1	12							
Davy Crockett	4	108	0	1	1	2	18	1	0
Neches Bluff Overlook	1							1	
Kickapoo	1						1		
Piney Creek Horse Camp	1	31							
Ratcliff Lake	1	77		1	1	2	17		

Sam Houston	5	142	8	3	2	6	0	0	1
Cagle	1	47		1					
Double Lake	1	65		1	1	2			
Kelly Pond	1		8						
Scott's Ridge Boat Ramp & Day Use area	1			1	1	3			
Stubblefield	1	30				1			
RCW Viewing Area									1
NFGT Total	31	498	84	17	5	17	30	1	2

There are numerous sites across the forests and grasslands offering a variety of outdoor recreation opportunities. As stated earlier, many of these sites are in need of modernizing to improve roadways and camping spurs, to offer swimming sites and other days use activities.

Table 19: Recreation Site Capacity								
		PAOT Days for	PAOT Days for	PAOT Days for	PAOT Days for	PAOT Days for	PAOT Days for	PAOT Days for
	Total PAOT Days	Improved Camp	Primitive Camp	Boat Launch	Swim site	Horse Camp	Trail heads	Fishing Site
NFGT Total	2,344,885	1,291,495	98,550	208,050	0*	158,775	212,065	21,900
Angelina-Sabine	822,470							
(Angelina)	443,110	612,960	98,550	110,960	0	0	0	0
Bayou Boat Launch	19,345			19,345				
Bouton Lake Primitive Campground	12,775		12,775					
Boykin Springs Campground	84,680	84,680						
Caney Campground	116,435	116,435						

Harvey Boat Launch	62,415			62,415				
Sandy Campground	61,685	61,685						
Townsend Campground	85,775		85,775					
(Sabine)	379,360							
Boles Field Campground	36,500	36,500						
East Hamilton	10,950			10,950				
Haley Ferry	18,250			18,250				
Indian Mounds Campground	168,995	168,995						
Lakeview Campground	18,250	18,250						
Ragtown Campground	56,575	56,575						
Red Hills Lake Campground	26,040	26,040						
Willow Oak Campground	43,800	43,800						
C/LBJ	243,090	100,375	0	7,665	0	113,150	18,250	21,900

Table 19: Recreation Site Capacity (cont').

Black Creek Lake Campground								
Black Creek Cottonwood Campground	18,250						18,250	
Bois D'Arc Horse Camp	43,800					43,800		
Clear Lake Fishing Site	21,900							21,900
Coffeemill Campground	47,450	47,450						
Cottonwood Boat Launch	7,665			7,665				
East Lake Davy Crockett Campground	25,550	25,550						
Rhoades Lake	7,300	7,300						
TADRA Point Horse Camp	38,325					38,325		
Valley View Horse Camp	31,025					31,025		
West Lake Davy Crockett Campground	20,075	20,075						
Davy Crockett	425,225	0	0	0	0	45,625	21,900	0

514 Piney Creek HC	18,250					18,250		
566 Piney Creek Horse Camp	27,375					27,375		
Kickapoo Picnic Site	0							
Neches Bluff Overlook	21,900						21,900	
Ratliff Lake Campground	357,700							
Sam Houston	854,100	578,160	0	89,425	0	0	171,915	0
208 Trailhead	38,325						38,325	
233 Trailhead	44,895						44,895	
234 Trailhead	63,875						63,875	
Big Creek Scenic Area Trailhead	5,475						5,475	
Cagle Campground	210,240	210,240						
Double Lake Campground	259,150	259,150						
Kelly's Pond Campground	14,600							
Table 19: Recreation Site Capacity (cont').								
Northwest Trailhead	19,345						19,345	
Scotts Ridge Boat Launch	89,425			89,425				
Stubblefield Campground	108,770	108,770						

*Swim sites are included under PAOTs for the particular campground in which they occur

Table 20 below lists the miles of trails found on each national forest or grassland in the NFGT, by major use type. Trails rely heavily on volunteers for accomplishing most of the work including: brushing, signing, tread maintenance, monitoring, and litter pickup at trail heads. Many of these trails have large bridges. When bridges need major repair, or replacement, the cost is often prohibitive. Several bridges on the Lone Star Hiking Trail have been in need of replacement for several years. A forest-wide look at all trail systems is needed to explore alternatives for better meeting the needs of the public, completing maintenance and monitoring, and replacing expensive bridges; alternatives may include re-routing trail to areas that do not require bridges, adding loops to make the trail system more conducive to short-term recreation opportunities, and offering multiple-use of some trails to address the needs of all users.

Table 20: Trails

By Ranger District							
Ranger District	Trail Name	Length (miles)	Hiking	Horse	ATV/ Motorcycle	Bike	
			Permitted Uses				
Angelina	Sawmill Hiking Trail	5.5	x				
Sabine	Trail Between the Lakes Hiking Trail	28.0	x				
Caddo	Bois D'Arc Horse Trail	16.0	x	x		x	
LBJ	TADRA Horse Trail	60.0	x	x			
	Black Creek Hiking Trail	4.0	x				
Davy Crockett	4-C Hiking Trail	20.0	x				
Sam Houston	Sam Houston Multi-Use Trail	85.0	x	x	x	x	
	Lone Star Hiking Trail	129.0	x				
	Double Lake Mountain Bike Trail	7.0	x			x	
	Cagle Hiking Trail	1.0	x				
Forest Total		408.45					

b. Projected Future Actions

1. Dispersed

The Travel Management Rule required all national forests and grasslands to limit off-road motorized use to designated roads, trails or areas, by vehicle type and season of use, if applicable. Implementation of the Travel Management Rule may impact motorized use opportunities and overall management in the dispersed setting. By restricting motorized travel to designated routes only, maintenance will be reduced in dispersed areas and concentrated on the designated routes. While the maintenance needs on the designated routes may increase, it will be in a controlled area rather than spread throughout a large undetermined area. Some recreational opportunities will be reduced for those relying on motorized vehicles for access to dispersed recreation.

2. Developed

The implementation of the Travel Management Rule may affect developed sites; as motorized access to dispersed sites is eliminated campers may chose developed campsites.

Recent completion of the Scott's Ridge Day Use Area will increase opportunities for day use and swimming opportunities for that area.

c. Reasonably Foreseeable Events Outside Agency Control

Texas has historically led the nation in percent growth of population in the three areas that showed the largest population growth from 1990 to 2000; Dallas-Fort Worth, Houston-Galveston, and the Texas-Mexico border. By 2000, Texas had the second largest total population among the states and also had the third largest Anglo population (11,074,071), the second largest Black population (2,421,653), the second largest Hispanic population (6,669,666), and the fourth largest Other population (685,785). The face of Texas is changing. By 2030, Hispanics will probably be the largest group among an expected 34 million Texans. The growing population and changing cultural diversity of visitors will present challenges in terms of meeting the increasing demand for outdoor recreation opportunities and in addressing the needs of a more diverse visitor audience. Information, websites, brochures, and signing for the Hispanic population will be required. Demand for more day-use and opportunities for family gatherings is likely to increase. The age structure of Texans is changing. In the year 2000, fewer than 1 in 10 Texans were over age 65. By 2040, nearly 1 in 5 Texans will be over age 65. The number of households has increased rapidly in Texas, but households have become smaller and more diverse. From 2000 to 2040, households are projected to increase from 7.4 million to 13.6 million. In the absence of change in socioeconomic differentials, income growth will not keep pace with household growth and average incomes will decline (Murdock et al., 2002).

The Federal Land Recreation Enhancement Act (REA) was passed in the 2005 Consolidated Appropriations Act (PL 108-447) and signed into law by President Bush on December 8, 2004. The 10-year Act authorizes the Secretaries of the Interior and Agriculture to establish, modify, charge and collect recreation fees at federal recreation lands and waters as provided for in the Act. The types of fees and where they will be charged are now closely monitored. Any changes to fees or new fees now will have to go through a rigorous process and come before the Recreation Advisory Committee (RAC). The RAC will meet one-to-two times per year to review and recommend fee changes.

Existing recreation sites and dispersed areas are unprepared for the increase in visitors that will occur over the next few decades. Access to lakes, reservoirs and other water bodies will continue to grow; a number of roads will need repair or upgrading to handle the increased use. Roads within campgrounds will also need repair and upgrading to handle larger vehicles. The need for directional and regulatory signing for recreation areas will increase. Gates, signs, and other means will be increasingly needed to clearly show closed roads on the forest.

2. Scenery

a. Existing Conditions and Trends

Most of the area that is now national forest land had been cleared by timber harvest or for agriculture prior to acquisition by the federal government in the 1930s. Today most of the national forests are perceived visually as a natural, heavily forested, relatively flat-to-gently rolling landscape supporting dominant overstories of loblolly, shortleaf and

longleaf pine with scattered hardwoods. Areas of hardwood overstory occur primarily along river and stream drainages.

On the national forests, the amount of mid-story and understory vegetation primarily determine viewing depth. Loblolly and shortleaf pine typically have heavily vegetated understories (approximately 85% of the national forests), while longleaf pine (approximately 5%) stands have open understories if they're frequently underburned. Periodic prescribed burning creates or maintains sparse understories in pine stands for a brief period of time. In general, the flat-to-gentle terrain, and customarily dense mid-story and understory vegetation limit viewing depths to less than 1/4-mile; long distance views across the national forests are limited.

A sparse mid-story and understory depend on frequent prescribed burning, so the visual character of infrequently burned or unburned areas is much different. Riparian areas and transitional zones not normally exposed to fire often support a dense understory of shrubs and small trees, contributing to the overall visual variety of the landscape.

Due to the dominant evergreen pine overstory of the national forests, fall color displays are not a major scenic attribute, although areas with a heavier deciduous hardwood component sometimes exhibit moderate levels of color. Flowering trees and shrubs – such as dogwood and wild azalea – growing primarily on moister sideslopes and consistently produce impressive spring flower displays.

Within the overall matrix of this landscape, some small areas or inclusions such as bogs and cypress swamps possess unique visual characteristics. This contributes to the variety and attractiveness of the landscape.

The national grasslands (NGs) offer a marked contrast to the national forests; long-distance views are commonly available due primarily to topographic relief. The vegetation on the LBJ NG is a mixture of tall pasture grasses, live oak, black jack oak, post oak, and mesquite. The Caddo NG has a heavier cover of trees, primarily post oak, black jack oak, and eastern red-cedar. The topography on the LBJ NG is more rugged with many straight and steep slopes of considerable linear extent. A substantial amount of scenic variety is present on the national grasslands as a result of the landforms, such as slopes, ridges, mesas, and stream valleys.

The Forest Service has developed and adopted a system for the management of visual or scenic resources: the Scenery Management System, or SMS. The SMS provides an overall framework for the orderly inventory, analysis, and management of scenery. The system applies to every acre of land administered by the agency and to all management activities, including timber harvesting, road building, stream improvements, special-use developments, utility line construction, recreation developments, and fire management. The *Plan Final Environmental Impact Statement (FEIS)* describes the results of scenery analysis on the NFGT. The approximate acreage and percentage of the various *scenic integrity objectives* (SIOs) on the national grasslands and national forests are shown in Table 21. The variations in acreages reveal the overall level of emphasis placed on the protection and enhancement of the scenic resource.

Table 21. Scenic Integrity Objectives

Scenic Integrity	National Grasslands	National Forests
------------------	---------------------	------------------

Objective	Acres	Percentage	Acres	Percentage
Very High – <i>Preservation</i>	380	1.5%	39,550	5.9%
High – <i>Retention</i>	0	0.0%	40,370	6.0%
Medium – <i>Partial Retention</i>	3,370	13.6%	104,810	15.6%
Low – <i>Modification</i>	21,010	84.9%	488,300	72.6%

b. Factors Influencing Conditions and Trends

1. Projected Future Actions

Management activities and projects with potential to cause visual deviations from a natural-appearing landscape would continue to occur, but may vary in size and frequency. Areas with large or frequent alterations would be difficult to mitigate, while areas with small or infrequent alterations would be more easily mitigated. Areas where historic vegetation communities are restored would be beneficial to scenic conditions in the long run, and the overall perceived attractiveness of the landscape, even though initial regeneration activities would produce visual contrasts.

c. Reasonably Foreseeable Events Outside Agency Control

Natural events such as hurricanes, tornadoes, or southern pine beetle infestations are expected to continue. These openings would appear visually out of place in a heavily forested setting. On the other hand, as stated earlier, they would also contribute spatial diversity and opportunities for viewing a progression of successional vegetation stages.

3. Heritage

a. Existing Conditions & Trends

The National Forests and Grasslands in Texas (NFGT) has a large number of archeological and historical sites which have not been evaluated for their eligibility to the National Register of Historic Places. The vast majority of these sites have been discovered as the result of cultural resource surveys undertaken to benefit other resource management activities, such as timber sales, road construction, land exchanges and fire management. From 1995-2007, the forest operated under the terms of a Memorandum of Understanding (MOU) with the Texas Historical Commission (THC) and the Advisory Council on Historic Preservation (ACHP). This MOU, which tiered to the Southern Region Programmatic Agreement, called for the implementation of a set of milestones, described in a Cultural Resource Management Plan (Martin *et al.* 1995), in lieu of following a strict compliance methodology as described in 36 CFR 800.4-800.6. These two documents allowed the forest to initiate and implement a number of streamlined processes for addressing the NFGT’s National Historic Preservation Act (the Act) Section 106 compliance obligations. In exchange, the NFGT would emphasize broader, landscape scale analyses and fuller compliance with Section 110 of the Act. In 2007, the NFGT, THC and ACHP agreed to void the MOU since it was in need of updating to incorporate changes that have occurred as a result of amendments to NHPA since 2000. Since mid-2007, the NFGT has been operating under the standard provisions of 36 CFR

800.4-800.6 on all undertakings. Work has begun on a new forest-level Programmatic Agreement (PA) that will once again provide streamlined efficiencies in the NHPA Section 106 compliance process. As the NFGT has stated that one of its strategic goals for the near future is to see the timber/vegetation management program grow, it is anticipated that such a growth in just these two resource areas would seriously impact the ability to remain in compliance with NHPA Section 106 for all projects.

The NFGT continued working towards establishing formal government-to-government relations with several federally recognized tribes: The Caddo Nation of Oklahoma, Alabama-Coushatta Tribe of Texas, Choctaw Nation of Oklahoma, and the United Keetoowah Band of the Cherokee. In FY2002, the NFGT and the Caddo Nation of Oklahoma completed the repatriation and reburial of human remains and associated objects accidentally excavated in 2001. This singular event contributed greatly to enhancing the government-to-government relationship with the NFGT, and laid the groundwork for additional cooperative efforts with the Tribe. The Forest has also assisted the Caddo Nation, Choctaw Nation, and Alabama-Coushatta Tribe with resolving management issues centered on tribal cemeteries by providing equipment and expertise in the field of geophysical archeological prospection. Through the use of ground penetrating radar, the NFGT staff were able to assist the Tribes with identifying the location of unmarked graves in several tribal cemeteries, enabling them to make informed decisions regarding protection and expansion of those cemeteries.

Sites are monitored during other resource management activities to ensure that there are no inadvertent effects upon site integrity. In addition, condition surveys of specific Priority Heritage Assets are conducted at least once every five years, as per FS Manual direction. In 2005 and 2006, there were 14 recorded incidents of heritage resource vandalism; however, only one citation was actually issued, resulting in a misdemeanor charge and fine under 36 CFR2 61.9(g) & (h). The Heritage Resource and Law Enforcement staffs continue to work together to investigate and eventually prosecute violations of Archaeological Resources Protection Act (ARPA) and the general regulations affecting archeological and historical resources.

The NFGT has a large number of unevaluated archeological sites that are in protected status. These sites should be evaluated; it is the current thought that the vast majority of these will prove to be ineligible for listing in the National Register of Historic Places, and may therefore be removed from protective status. Development of a Historic Preservation Plan will address the needs for such evaluations, and identify specific contexts which may be applied in these determinations. There are also a number of properties, primarily buildings but also some sites, that have been determined eligible, but have never been formally submitted for listing on the Register. Efforts should be made to complete the nomination process for all such properties.

It is NFGT policy that all project reviews and consultations pursuant to Section 106 of the National Historic Preservation Act (NHPA) be completed prior to agency decisions. For most of this review period, the NFGT was able to comply with this direction. Judicious application of the standards and guidelines defined in the Region 8 PA and the

forest-level MOU enable the forest to attain this goal for all of the projects proposed under the *Plan*. Only in rare instances, with the most extenuating circumstances, did the NFGT sign decisions prior to completion of NHPA consultation. Between Fiscal Years 2003 and 2007, 21,019 acres of the NFGT were surveyed for the presence of historic properties. All of these surveys were the result of project proposals by other resource management programs, primarily timber and vegetation management, special uses, and prescribed fire programs. These surveys resulted in the identification of 104 previously unrecorded archeological and historical sites, none of which were thoroughly evaluated for inclusion on the National Register.

b. Factors Influencing Conditions and Trends

1. Disturbances

In September 2005, Hurricane Rita struck the Angelina and Sabine NFs. This singular event shaped the Heritage Resource Management Program for all of fiscal year 2006. Assessment of the storm's damage was conducted on over 200 archeological and historical sites on those two forests and completed by March 2006. The remainder of the year was spent monitoring over 60 timber restoration/reclamation projects ensuring that no historic properties were inadvertently damaged by storm-recovery operations. There were two instances where inadvertent damage occurred, but the effects were quickly mitigated and damage was minimal.

2. Projected Future Actions

Inventories for the presence of historic properties are ongoing. Driving these inventories are the needs of other resource management programs, such as timber, wildlife, engineering, and prescribed fire to remain in compliance with Section 106 of the National Historic Preservation Act of 1966. As the NFGT desires substantial growth in the timber and fire programs in the foreseeable future, there will be a need for substantial growth in the Heritage Resource Management Program to sustain compliance in these resource areas as they grow. One tool for facilitating an expanded Heritage Resource Management Program is the implementation of a new Programmatic Agreement (PA) for streamlining the compliance process and improving site locational strategies. Unlike the recently expired MOU, this PA focuses entirely on the NFGT's strategies for complying with 36 CFR 800.4-800.6 (NHPA S. 106), not with other sections of the Act. Partners in this PA will not only be the State Historic Preservation Office and the Advisory Council on Historic Preservation but also several Tribal partners that have expressed their desire to be consulting parties. Slowly and deliberately, the NFGT is moving toward full integration of survey data and predictive modeling with the forest-wide GIS database, and better site management with the tools provided by I-Web, the agency-wide relational database.

c. Reasonably Foreseeable Events Outside of Agency Control

No reasonably foreseeable events outside of agency control are identified at this time. However, as we have seen in 1998 and again in 2005, severe weather events may cause significant impacts to forest resources and programs. The probabilities for severe weather events will continue to hold steady; however, they are intrinsically unpredictable as to when and where they occur. Any tropical system affecting the upper Texas coast will have a potential effect on historic properties.

4. Forest Products

a. Existing Conditions and Trends

1. Timber

Demand for timber products has generally remained stable during the last five years. Several purchasers of NFGT timber sales have developed their niche in the finished product market. The small roundwood market has shown the largest fluctuation, due in part to mill closures. With the quality of NFGT timber and length of our sales, bidder interest has remained stable to increasing on the Angelina, Davy Crockett and Sabine NFs. Bidder interest on the Sam Houston NF has declined due to mill closures. In addition, the Sam Houston National Forest is located on the western edge of the range of southern yellowpine which limits available processing facilities. During the reporting period, the costs associated with moving the raw material from the woods to a processing facility have shown significant increase due to rising fuel prices.

2. Other Products

Demand for Other Forest Products (Special Forest Products – SFP) on the NFGT is minimal. The most requested SFP is fuelwood, and is usually limited on the NFGT to dead/downed and hazard trees and is restricted to personal use. Available fuelwood material from regeneration areas is minimal due to both the lack of individual areas and the commercial timber removal.

b. Factors Influencing Conditions and Trends

a. Natural Disturbances/Processes

1. Timber

In September, 2005, Hurricanes Rita directly impacted the Angelina and Sabine NFs. NFGT timber sales offered in FY06 were predominately focused on restoration of these storm-damaged areas. Since minimal green timber sales were offered during this period and timber personnel were devoted to storm recovery efforts, this indirectly affected the timber sales offered on the Davy Crockett and Sam Houston National Forests. No long-term effects on NFGT timber sales from Hurricane Rita have been realized.

There has been no major Southern Pine Beetle outbreak in the past 10 years, and none is anticipated in the next year. However, that is always subject to change.

2. Other Products

Since only dead and downed trees are offered for fuelwood, windstorms and other natural disturbances will naturally provide opportunities for offering these products whenever there is an occurrence.

b. Projected Future Actions

1. Timber

Within the Southern Region, the need for timber sales to implement forest plan objectives is significant. The amount of timber offered is limited by funding and target levels.

These levels directly affect the ability to hire adequate personnel to plan, prepare, and administer these sales. At current target levels, the NFGT currently has signed decisions to cover approximately four years.

The sale of green forest products on the NFGT has fluctuated from a low in FY2006 of 3.6 MMBF to a high in FY2007 of 31.1 MMBF. With current personnel, the NFGT is poised to offer 50 MMBF per year. However, recent funding levels have not provided the opportunity to reach this level. If these funding levels remain constant or decline as expected, the backlog of projects that require timber sales will increase.

In FY2007, an Integrated Resource Timber Contract (IRTC) was awarded on the Caddo NG. This stewardship project involves the commercial removal of the invasive Eastern red-cedar (*Juniperus virginiana*). In the past, this material was cut and left on site, with the work accomplished through a service contract. If the market holds, the future for similar sales on the Caddo looks positive.

2. Other Products

There are no plans to increase the number of SFP offered on the NFGT.

c. Reasonably Foreseeable Events Outside Agency Control

1. Timber

Currently, demand for lumber and other construction materials are down due to the downward turn in the housing market. Since the paper manufacturing facilities are outside our current market areas, the demand for paper has little effect on the NFGT timber sale program. The majority of the small roundwood removed from the NFGT is used for dimension lumber and Oriented Strand Board (OSB). Since these products are directly tied to the housing market, they have been negatively affected by downturn in the housing market. Recently, the last remaining East Texas industrial landowner, Temple-Inland, sold approximately 1.3 million acres of land. They have kept their mills and continue to operate at this time. These lands and other divested industrial lands are now managed by Timber Investment Management Organizations (TIMOs) for a profit. As long as it's profitable and their inventory is present, it's anticipated these investment companies will continue to provide raw material. During the reporting period, the costs associated with moving the raw material from the woods to a processing facility have shown significant increase due to rising fuel prices.

2. Other Products

The NFGT does not expect any foreseeable events that may affect SFP in the future.

5. Minerals

a. Existing Conditions and Trends

The National Forests and Grasslands in Texas (NFGT) make up approximately 675,951 acres. Roughly 30 percent or 203,363 acres are reserved or outstanding private minerals, while approximately 70 percent or 472,588 acres are federal minerals. By the end of FY 2007, approximately 283,806 acres of the federal mineral estate were under lease for oil and gas exploration and development. This is approximately 60 percent of the total acres of federal minerals available for lease on the NFGT.

There are many factors which influence the desire by prospective bidders to acquire (by lease) the federal mineral estate. The investment in the potential development of the mineral estate, technological advancements into recovery from abandoned formations and horizontal drilling, commodity prices, drilling costs, transportation considerations (pipelines), surrounding private minerals availability, and geology are all reasons that private entities express an interest in leasing, drilling, and producing on federal mineral estates.

There are currently 305 wells on the NFGT (Table 22), which is down from the total of 335 wells reported ten years ago. Some of the more shallow vertical wells were plugged for economic reasons.

Table 22. Oil and Gas Wells

Administrative Unit	Number of Wells
Caddo National Grassland	0
Lyndon B. Johnson National Grassland	73
Angelina National Forest	13
Davy Crockett National Forest	74
Sabine National Forest	65
Sam Houston National Forest	80
Total	305

There have been 65 wells permitted on the NFGT in the last five years; 47 within the federal mineral estate and 18 within the private mineral estate. Approximately 26 of the 65 wells permitted were for wells to be drilled from common well pads, reducing forest fragmentation. Of the 65 wells permitted, there were approximately 34 newly constructed well pads over the past five years. Approximately 5 of the 65 permitted wells were permitted to document a change in company ownership as the facilities were already in place. Well pads range from 1 acre to 4.5 acres, depending upon the formation drilled into. Table 23 lists oil and gas permitting data by administrative unit and year. In addition, from FY 2003 through FY 2007 there were seven seismic operations permitted that ranged from geophone only to full 3-D Vibroseis.

Table 23. FY 2003-2007 Oil and Gas Permitting

Administrative Unit	2003			2004			2005			2006			2007		
	Exp	R/O	FED	Exp	R/O	FED	Exp	R/O	FED	Exp	R/O	FED	Exp	R/O	FED
Caddo NG															
LBJ NG			2			1							1		1
Angelina NF														2	
Davy Crockett NF						6			2			1			
Sabine NF	2		<u>10</u>			<u>9</u>			<u>5</u>			3			1
Sam Houston NF		<u>3</u>	<u>2</u>	1	2	4		<u>7</u>			1	1		3	2
*Total	2	3	14	1	2	20	0	7	5	2	1	4	2	5	4

Exp – Exploratory wells; **R/O** – Re-entry into old well bores; **FED** – Change in operator ownership on existing facilities

Underlined numbers represent more than one well permitted from a single well pad

*Total (71) is greater than 65 because not all permits were active at the end of Fiscal Year 2007

Tables 24 and 25 display mineral activities that occurred in FY 07 as well as program, permitting and leasing trends since 1997.

Table 24. Mineral Activity on NFGT by Fiscal Year

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006*	2007
Minerals Program Budget	\$280,000	\$342,516	\$310,500	\$294,500	\$474,000	\$465,423	\$389,204	\$457,896	\$398,907	\$398,675 +\$75,000	\$457,809
Return to Counties	\$473,597	\$384,981	\$139,881	\$389,533	\$1,032,4066	**	**	**	**	**	**
Total Wells	335	303	295	277	277	285	277	292	308	299	305
U.S. Wells	242	222	213	198	198	195	184	198	209	200	206
Private Wells	93	81	82	79	79	90	93	94	99	99	99
Common Variety Mineral Permits [County Gravel]	2	2	2	2	No data	2	2	2	0	0	0

*In FY 2006, the NFGT received an additional \$75,000 from the National Forests in Mississippi for minerals program work (including contracts for reclamation)

**Information not available from Mineral Management Services

Table 25. Parcels and Acres Offered and Leased on NFGT by Fiscal Year

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Parcels Offered	87	7	66	2	63*	86	57*	16	1	32	57
Parcels Leased	64	2	59	2	61	83	18	15	1	32	57

Acres Offered	81,413	531	30,598	642	51,650	33,152	46,076	18,333	290**	14,797	23,383
Acres Leased	45,389	163	29,564	642	51,593	28,465	51,593	18,278	290**	14,797	23,383
Bid Income	No data	\$4,015	\$292,867	\$9,384	\$1,975,619	\$3,500,248	\$127,248	\$179,239	\$1,740	\$2,179,283	\$3,135,696

*Additional parcels were reported on but not offered due to split mineral estate (*i.e.*, private surface/US mineral ownership); such parcels must have BLM concurrence

** The decrease in acres in FY 2005 was due to an increase of Expressions of Interest which requires additional up-front work before the lease can be awarded; which is reflected as an increase of acres leased in FY 2006

Over the past five years, there have been five undesirable events on the NFGT. In FY 2003, there were three recordable events. Two tanks overflowed on the Sam Houston National Forest (NF) and one damaged pipeline resulted in a leak on the Lyndon B. Johnson National Grassland (NG). In FY 2007, there were two undesirable events; one oil spill on the Sam Houston NF and one pipeline leak on the Angelina NF. All spills or leaks have been cleaned up, revegetated, and monitored to satisfactory standards. Table 26 lists Undesirable Events information on the NFGT.

Table 26. FY2003-2007 Undesirable Events – Leaks and Spills

Administrative Unit	2003	2004	2005	2006	2007
Caddo National Grassland	0	0	0	0	0
Lyndon B. Johnson National Grassland	1	0	0	0	0
Angelina National Forest	0	0	0	0	1
Davy Crockett National Forest	0	0	0	0	0
Sabine National Forest	0	0	0	0	0
Sam Houston National Forest	2	0	0	0	1
Total	3	0	0	0	2

With the exception of oil and gas, there has been little commercial exploitation of mineral resources within the National Forests and Grasslands in Texas. The lack of development is primarily due to the economic factors associated with the limited deposits and competing sources outside the area.

Known to occur within the NFGT are: oil, natural gas, lignite, ceramic clays, non-ceramic (bentonite) clays, iron ore gravel, iron-manganese concretions, asphaltic sand, glauconite, industrial and specialty sands, sources for crushed stone and uranium.

Currently, commercial operations for removal of mineral deposits are limited to oil and gas. The *Plan* does not allow for new quarries to be developed as private land alternatives exist. In 2004 the last remaining sand and gravel pits operated by Angelina and San Augustine Counties on the Angelina NF were formally closed. No pits are currently in operation. The only quarries that would be honored in the future would be on private mineral estates with proof of valid mineral ownership.

b. Factors Influencing Conditions and Trends

1. Projected Future Actions

It is anticipated that requests for oil and gas leases on the NFGT will continue, as will the leasing program. The NFGT has been divided into areas of high, moderate, low, and unknown potential for oil and gas development.

High potential: Geologic environments that are highly favorable for the occurrence of undiscovered oil and/or gas resources. This includes areas previously classified as known geologic structures (KGS). A KGS is defined as "...a trap, either structural or stratigraphic, in which an accumulation of oil or gas has been found to be productive, the limits of which include all acreage that is presumptively productive." Typically, these areas are on or near a producing trend and evidence exists that the geologic controls of reservoir, source, and trap necessary for the accumulation of oil and/or gas are present.

Moderate potential: Indicates the geologic environment is favorable for the occurrence of undiscovered oil and/or gas resources; however, one of the geologic controls necessary for the accumulation of oil and / or gas may be absent.

Low potential: The geologic, geochemical, and geophysical characteristics do not indicate a favorable environment for the accumulation of oil and/or gas resources. Evidence exists that one or more of the geologic controls necessary for the accumulation of oil and / or gas is absent.

Unknown potential: A region where the geologic information is insufficient to otherwise categorize potential.

The **Caddo National Grassland** is not located within any of the eight major plays of the East Texas Basin delineated by the United States Geological Survey (USGS). In fact, it is on the outskirts of the East Texas Basin. There is no production on the Caddo. However, there has been new development on private land adjacent to the district. The potential for oil and gas on the Caddo National Grasslands is **unknown**.

The **Lyndon B. Johnson National Grassland** is totally located within the Lower and Middle Pennsylvanian Fan Delta Sandstone and Conglomerate play of the Fort Worth Basin. The location of the Boonsville, South Alvord and West Chico Fields, in addition to the LBJ being entirely within a KGS verifies the **high** potential on this grassland unit. The Barnett Shale is one of the largest formations in the US and is located in the Fort Worth area extending into Wise County which makes up most of the LBJ Grasslands. There were three new wells drilled over the last five years.

The **Angelina National Forest** contains three geographic areas (Tyler basin structural play, Sabine Uplift oil play, and the Austin-Buda fractured chalk play of the Gulf Coast Basin). The entire Angelina NF has **moderate** potential for the occurrence of oil and gas reserves because it is located on the fringe of those three plays and is limited by other protected resources. There have been no new developments on the Angelina NF over the past five years.

The **Davy Crockett National Forest** is within the Tyler basin structural play (100%), the Woodbine-Eagle Ford play (50%), and the Austin-Buda fractured chalk play of the Gulf

Coast Basin (50%). Within the Tyler basin structural play, there are *Class 6* fields (Decker Switch and South Laura Lavelle). [Note: *The US Geological Survey designates Class 6 and above as oil and gas fields having recoverable quantities of more than one million barrels of oil and natural gas liquids, or more than six billion cubic feet of gas*]. Because of the production on the NGFT, its location within two of the major East Texas Basin plays, as well as within the Austin-Buda fractured chalk play within the Gulf Coast Basin, the Davy Crockett has **high** potential for occurrence of oil and gas. Over the past five years, eight new wells have been drilled on the Davy Crockett NF.

The **Sabine National Forest** is within the Sabine Uplift oil play, the Sabine Uplift gas play, and the Austin-Buda fractured chalk play of the Gulf Coast Basin. At least three *Class 6* fields (Huxley, West Joaquin, and Hemphill) are located within the Sabine NF. In addition, the presences of the Hemphill-Pineland, Brookeland, and Huxley KGSs, at a minimum, indicate the **high** potential of oil and gas occurrences on the Sabine NF. Over the past five years, 14 new wells have been drilled.

The **Sam Houston National Forest** is not located within any of the eight major plays delineated by the US Geological Survey; however, there is continued interest and production mostly from the private mineral estates within the forest. The reservoirs being drilled into are within the sandstones of the Upper Wilcox Group and the Yegua Formation. The traps are domal anticlines formed by regional growth faults of the Wilcox Fault Zone to the south of the forest. The play is considered small and poorly known. The location of the following fields: Coldspring, Coline, Mercy SW, Morgas, Moroil, and Waverly, in addition to the numerous KGS designations, indicate a **high** potential for oil and gas on the Sam Houston NF. There have been nine new wells drilled over the past five years.

There is a relatively high degree of uncertainty in forecasting the rate of drilling on the National Forests and Grasslands in Texas. While several leases have been awarded within the last five years, Applications for Permit to Drill (APDs) have been slow to develop over the past three years. A lease is often pure speculation purchased by someone hoping for a good investment that can sell to a drilling/production company. Approximately 20 percent of leases are drilled upon.

Based on analysis of the geologic data, trends, and other available information, the 10-year mineral prediction within the *Forest Plan FEIS* was relatively accurate, but could not fully take into account at that time the impacts of the Iraq war on the price of oil/gas, the increase in domestic demands, or how far technology would come. The *Plan* prediction in trends was not a threshold or limit for oil and gas development; it was estimation for future development based on known factors up until 1992. The “*Unconstrained Reasonably Foreseeable Development Scenario*” meant that geology and economics rather than the *Plan* alternative will determine the number of wells proposed.

Petroleum and natural gas markets are doing well with \$131/barrel oil and \$8.29/MCF well-head gas, but it takes a long period of sustained higher prices to stimulate smaller drilling programs, especially onshore. It should be noted that it is more expensive to drill on public land than it is on private surface since the environmental controls are more stringent, so sometimes drilling on the national forest becomes a last resort when private

sites are not available. With the utilization of advanced technology more and more wells are being drilled as deviated holes, (directionally or horizontally drilled) depending upon the formation being drained so multiple wells can be drilled from one well-bore also multiple wells can be located on one well pad (which reduces forest fragmentation). Because of the use of horizontal drilling, private lands adjacent to the NFGT are riddled with wells – in many cases so that public lands may be avoided. Companies have become more willing to take risks on re-entering once thought uneconomical wells and to expand the known geologic boundary of where the formation ends with exploratory wells, thus expanding the formation boundaries to include larger areas. With the increased demand for petroleum products, the on-going war in Iraq, the continued rise in the price of oil/gas and the availability of the resource in Texas the oil and gas program on the NFGT will continue to increase until other reservoirs can be tapped or an alternative fuel is readily available to the American people.

c. Reasonably Foreseeable Events Outside Agency Control

As crude oil and natural gas prices continue to rise with the increased demands for petroleum-based products and market uncertainty, we will see more emphasis on increasing domestic supply. While it is difficult to predict the demand for federal minerals under Forest Service lands, site-specific analysis is conducted at the time of each new proposal to offset impacts to other resources.

Existing oil and gas development trends shows the continued demand for more domestic fossil fuels in the United States and leaves the NFGT in the position to assist the nation with it's energy shortfalls and continue to protect and enhance other valuable resources.

6. Grazing

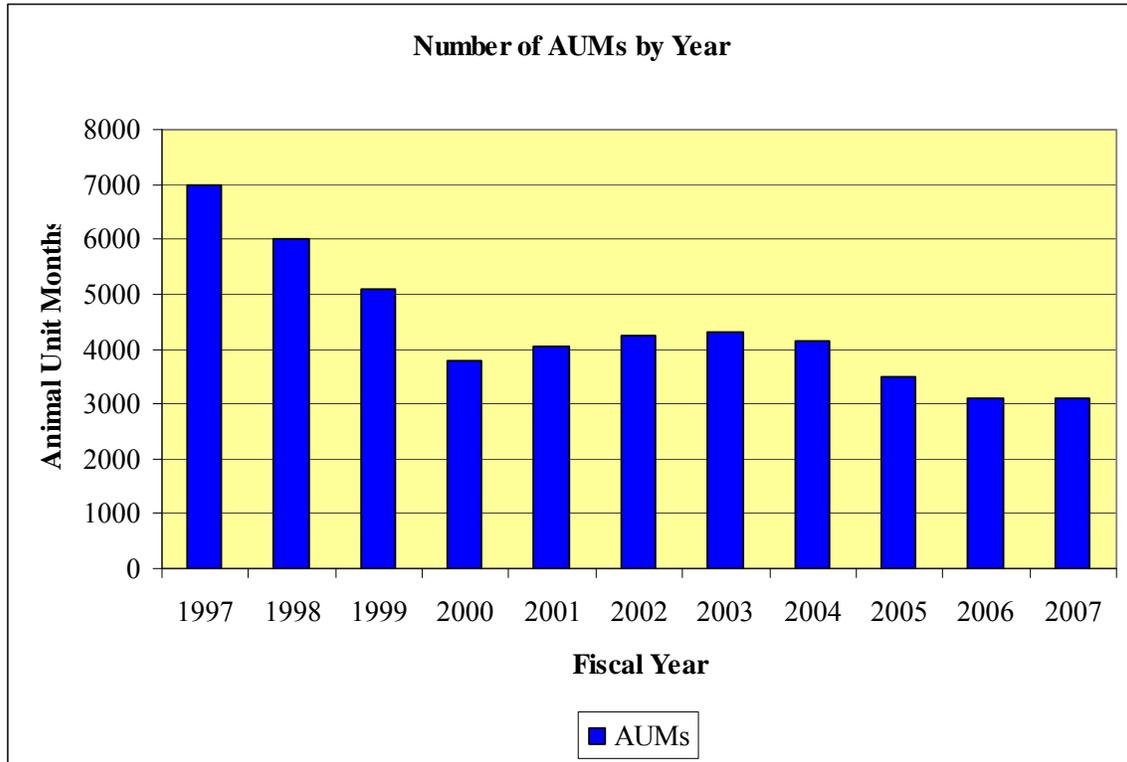
a. Existing Conditions and Trends

Approximately 500 cattle graze on the Caddo/LBJ National Grasslands as authorized under 17 grazing permits. No grazing is allowed to exceed four months on any one allotment/unit.

b. Factors Influencing Conditions and Trends

In 1998, the grasslands initiated a fundamental change in the way cattle grazing is managed. There was a shift from year-round grazing to seasonal grazing. This implemented a high intensity/low duration grazing system that resulted in a higher number of cattle grazing for a shorter grazing period. The change resulted in fewer total AUMs on the grasslands (an Animal Unit Month is a cow-calf pair grazing for one month). The downward trend in AUMs is displayed in Figure 7.

Figure 7. Animal Unit Months on the National Grasslands



c. Projected Future Actions

Concerns for the management of the vegetation on the Caddo/LBJ NGs includes reducing the cedar and oak encroachment, reducing erosion, minimizing the introduction of invasive species and increasing the native forbs and herbaceous cover. Continue cattle grazing as a tool to improve native habitat and reduce flashy fuels. Flashy fuels could potentially result in a catastrophic fire that potentially would threaten private property. The low intensity, long-duration grazing that best describes the grazing method on the Caddo/LBJ NGs has resulted in spot grazing. This means cattle over graze an area while selectively grazing the remainder of the unit. It is therefore the objective of managers to improve the distribution of cattle on any one unit while grazing on the Caddo/LBJ NGs. Reduce motts of persimmon, plum and sumac.

7. Landownership and Special Uses

a. Existing Conditions and Trends

1. Landownership

The National Forests and Grasslands in Texas boundaries encompass 1,915,035 acres; 675,808 acres of which are national forest and national grassland. Intermixed private and NFGT lands results in a patchwork-quilt pattern of ownership. This makes landline maintenance, rights-of-way problems, administration of boundary encroachments and claims, and national forest and grassland management in general more challenging than

in more contiguous forests. During the past fifteen years, approximately 236 acres have been added to the NFGT. This increase resulted from land exchanges, purchases, interagency transfers, and donations. Recently, land-for-land exchanges have become less viable for a variety of reasons. A rise in complexity and the proportion of fixed costs to be borne by the proponent, and closer examination of the net public benefit have resulted in fewer land-for-land exchanges.

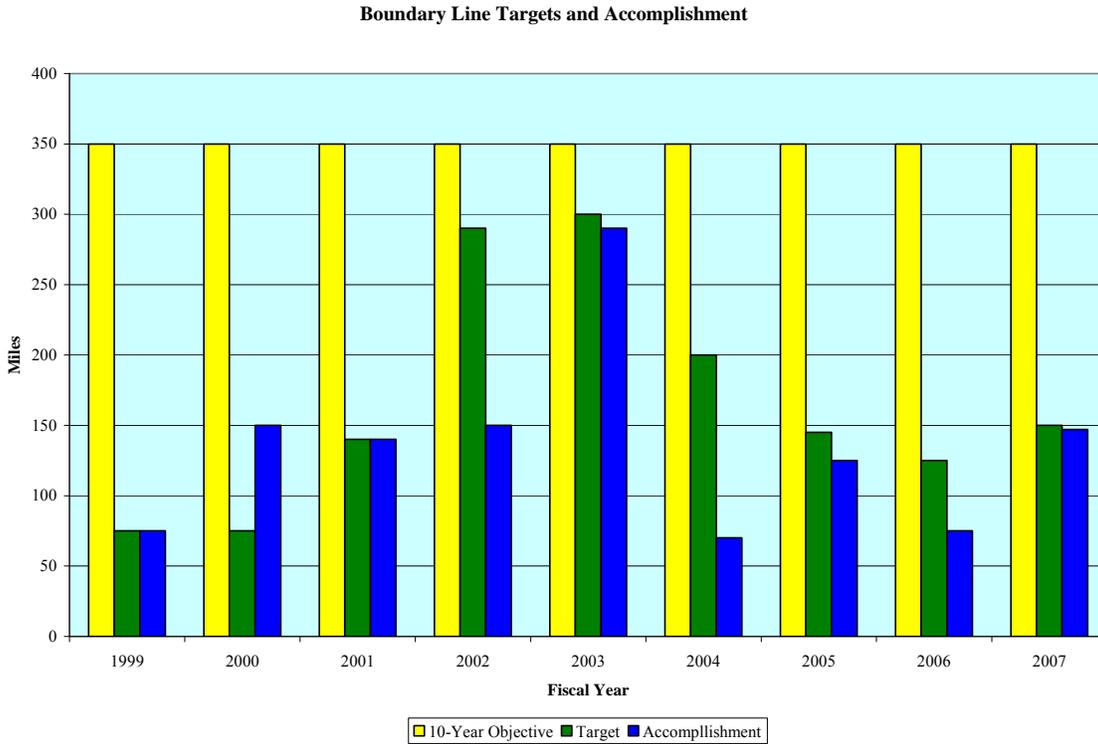
The primary focus of the NFGT's lands program from 2001-2007 was the disposal of administrative sites and lands under legislated authorities (Texas National Forest Improvement Act and Pilot Conveyance Program). The authorities allowed for the conveyance of six residential properties, five administrative work centers, and one youth vocational/technical training center to individuals, corporations, or counties (Table 27). The sale and conveyance of these lands may have minimally increased our administrative boundaries; however, an overall benefit accrued from the reduction of deferred maintenance on facilities and office leasing expenditures.

Table 27. Sites Disposed of Through Legislated Authority

Texas National Forest Improvement Act		
Administrative Site	Tract	Acres
Tenaha Ranger Dwelling	S-1391	0.37
Tenaha Asst Ranger Dwelling	S-1389	1.31
Yellowpine Ranger Dwelling	S-1388	0.61
Yellowpine Asst Ranger Dwelling	S-1390	1.17
Trinity Ranger Dwelling	K-30	4.99
Trinity Asst Ranger Dwelling	K-604	0.30
Gulf Coast Trade Center	J-91 & J-91a	54.70
Zavalla Work Center	A-53	19.00
Old Yellowpine Work Center	S-71	1.75
Subtotal		84.20
Pilot Conveyance Program		
Administrative Site	Tract	Acres
Apple Springs Work Center	K-57	10.23
Dreka Work Center	S-72	6.38
Coldspring Work Center	J-92	6.43
Subtotal		23.04
Total		107.24

There are approximately 3,300 miles where NFGT shares boundary lines with private property. Clearly defined boundaries are essential to managing the national forests and grasslands, and systematic maintenance is necessary to avoid disputes with neighbors and minimize trespasses on federal lands. The ten-year objective is to monument 350 miles of boundary lines per year. However, recent funding levels have not provided the opportunity to reach this objective. Landline maintenance targets and accomplishments for fiscal years 1999-2007 are displayed in Figure 8. In 2005, Hurricane Rita severely affected boundary lines on the Angelina and Sabine NFs creating an urgent need for additional re-monumenting.

Figure 8. Landline Maintenance Targets and Accomplishments



2. Special Uses

Currently, the National Forests and Grasslands in Texas administer approximately 905 permits and easements authorizing the occupancy and use of national forest or national grassland surface. Land use “rental” fees are waived on approximately 30% of these authorizations. A breakdown of the various types of uses is displayed in Table 28. There is a national screening process which subjects each request to a rigorous review process prior to an application being accepted. Part of the screening process is to assess whether or not a request is appropriate for National Forest / Grassland’s surface and if the use must be located on public lands. All attempts to access private land options must be exhausted before an application will be accepted for encumbering public lands. With some proposals that involve landlocked property and no legal access, the screening process is not as complicated as government land is the only access option. More stringent guidelines and scrutiny prevents many initial requests from developing on public lands as a matter of convenience.

Table 28. Number of Special Use Land Authorizations

Land Use	2003	2007
Utility ROWs	160	152
Pipeline ROWs	0	0
Road ROWs Private & Public	491	499
Dept of Transportation & Forest Road / Trail Easement	0	0
Recreation-related Permit	39	54
Churches & Cemeteries	17	17
Agriculture & Residence	7	10
Watershed, Reservoir & Supply	7	8
Mineral – Pipelines, etc.	122	128
Mineral – Seismic Survey	2	1
Communication Sites	4	4
Research	4	4
Other Miscellaneous	25	28
Total	878	905

On February 27, 2006 the National Forests and Grasslands in Texas began to implement Cost Recovery for processing special use requests and for monitoring their construction and reclamation. With the implementation of cost recovery and passing the costs on to an identifiable recipient (the request does not serve the all or the majority of the public), many of the common convenience requests have dwindled.

There has been an effort to reduce the number of cemeteries, churches, mailbox, driveways and other permits especially where it has been determined that alternative access across private land exists or where a land exchange is advantageous.

Many of our cross-country requests have been maneuvered into existing open right-of-ways to reduce the loss of canopy and to better deal with forest fragmentation. Several utilities share already open corridors.

The numbers of new special use permits issued are shown in Table 29. The total number of special use permits issued over the past ten years varies from 20 to 58. This variation is due to the number of requests for permits, which fluctuates unpredictably from year to year.

Table 29. New Lands Special Use Permits Issued

Unit	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	Total
Angelina	1	12	6	7	5	6	9	5	3	1	1	56
Caddo/LBJ	12	8	2	5	10	6	3	9	13	5	6	79
Davy Crockett	1	1	4	4	4	2	1	7	2	2	3	31
Sabine	4	3	6	9	18	13	11	14	4	7	5	94
Sam Houston	5	5	2	8	21	14	11	14	5	9	4	98
Total	23	29	20	33	58	41	35	49	27	24	19	358

b. Factors Influencing Conditions and Trends

1. Landownership

Landownership patterns are changing in eastern Texas. Many owners of large private tracts adjacent to or within the NFGT proclamation boundary had been nationally-based timber companies (*e.g.*, Temple-Inland, International Paper) who have recently decided to divest their land holdings to TIMOs (timberland investment management organizations) and REITs (real estate investment trusts). Forest neighbors who were once large timber companies with similar goals are becoming a myriad of different types of landowners, including subdivisions of private homes. The wildland-urban interface and its associated complexities is increasing in Texas. This is raising new concerns such as increased encroachment (whether intentional or not). It makes forest and grassland management more difficult, including fire suppression and prescribed burning. Any reduction in budgeting for landline maintenance may have far-reaching effects. There are less-visible effects such as increased non-commercial traffic on forest system roads and increased maintenance needs.

Portions of the NFGT are within a one-hour drive from the Houston and Dallas/Fort Worth metropolitan areas. Demand for non-commodity amenities from public lands, such as wildlife watching, hiking, hunting, and protection of ecologically significant lands is growing rapidly; but the land to provide for the public desire is quite limited. Through land exchange or purchase, the area of land available to the public can be modestly increased. Consolidation will improve management effectiveness. Acquisitions (*i.e.*, purchase and exchange) enhance and expand the provision of the amenities the public desires from the national forests and grasslands. At the same time, key tracts (such as those especially suitable to recreation or preservation of an ecologically significant feature) can be acquired.

The NFGT has a limited program of landownership adjustments through acquisition and disposal of lands in order to improve management effectiveness and enhance public benefits. Future acquisitions will be analyzed for meeting Forest Plan desired future condition and inclusion into surrounding management practices.

Mineral ownership also remains a factor in land adjustment. Every effort is made to keep surface and mineral estates together to provide for their unification in the future.

2. Special Uses

The implementation of Cost Recovery will continue. With the money generated from land special use projects that meet the screening protocol, money will return to the forests and grasslands for their use in special use administration. With the recent decline in access requests, the NFGT will need to be ever diligent in ensuring that the proponent has found suitable private land as an alternative and isn't furthering the encroachment situation.

c. Projected future Actions

1. Landownership

Due to the uncertainty of funding for acquisitions, land exchanges and tripartite land exchanges appear to be the most secure vehicles for meeting today's landownership acquisition objectives on a continuing basis. Even though Land and Water Conservation Fund (WLCF) funding is uncertain, occasional opportunities for acquiring key recreation lands do occur. Especially on the national forests, there is a good opportunity for significant exchanges with major landowners (either TIMO's or REIT's) due to their land ownership within national forest boundaries.

The NFGT is exploring the use of tripartite land exchanges using excess timber receipts to acquire land. A list of possibilities is presently being prepared for prioritization. The NFGT timber program is poised to offer up to 50 MMBF annually, which should provide ample opportunities for tripartite land exchanges. Using timber sale receipts to pay for needed land to compensate for habitat loss, recreation, access, and consolidation makes this method for land acquisition a viable choice.

Additionally, the NFGT has worked with the Southern Region to digitize title records.

2. Special Uses

Special Use Requests will continue to go through screening for acceptance and prioritization. All projects that are approved for application submittal will pay Cost Recovery for processing and monitoring. With the increase in oil and gas development and urban interface, requests will need to be analyzed for the best location regardless of cost to the proponent. The NFGT anticipates an increase in special use authorizations.

d. Reasonably Foreseeable Events Outside Agency Control

1. Landownership

The goal of the right-of-way acquisition program is to ensure that public lands are sufficiently accessible. However, the reluctance to grant unrestricted easements for road rights-of-ways across private lands is growing. This could complicate the completion of future acquisitions needed to furnish the legal access desired by the public.

2. Special Uses

Due to oil and gas development on adjacent lands and the urban interface, the NFGT will see more demand to cross federal lands in the future.

8. Access/Travel Management

a. Existing Conditions and Trends

Travel within the NFGT is based upon a transportation network suited to the needs of the user. This network includes U.S. and state highways (including federal aid primary, secondary, and farm-to-market roads); county roads serving farm-to-market and private land access; and Forest Service roads. The total network contains 6,061 miles of road of

which 2,536 miles are under Forest Service jurisdiction (Table 30). The transportation system also includes 27 bridges under Forest Service jurisdiction. While federal, state and county roads provide primary access into the national forest, Forest Service roads provide the intermediate and final avenues needed to administer, manage and protect public lands and resources.

Table 30. Transportation System Jurisdiction

Jurisdiction	Miles	Percentage
State	1,871	31%
County	1,581	26%
Forest Service	2,536	42%
Private	18	0.2%
Unknown	54	0.8%
Other	1	--
Total	6,061	100%

As shown in Table 30, 42% of the total mileage is under Forest Service jurisdiction. While road densities vary from area to area, on average there are approximately 5.7 miles of road per square mile. Of this, the Forest Service has authority to control access on about 2.4 miles of road per square mile. These *Forest Service roads* or *National Forest System Roads* are the roads for which the agency has authority to improve, maintain, and control use.

Roads included in the NFGT’s transportation network are classified as *arterial*, *collector* or *local roads*. Arterial roads are National Forest System roads, U.S. and state highways serving large land areas and providing primary travel routes for business, commerce and for national defense. Collector roads serve smaller land areas, collect traffic from local roads, and usually connect to an arterial road. Local roads serve limited areas or sites and generally connect terminal facilities with collector or arterial roads. Components of the existing Forest Service jurisdiction transportation network by functional classification are displayed in Table 31.

Table 31. Functional Classification of Forest Service Roads

Jurisdiction	Functional Classification			
	Arterial	Collector	Local	Total
Mileage of Forest Service Roads	29	231	2,276	2,536
Percentage of Forest Service Roads	1%	9%	90%	100%

Forest Service roads vary widely in construction standards, ranging from paved surface to primitive wheel tracks. These roads are constructed and maintained to standards appropriate to their planned uses considering safety, cost of transportation, and impacts on land and resources.

Traffic service levels have been defined for each road, characterizing the degree of service a given road is expected to offer and designating the appropriate vehicle for use. Table 32 displays roads by traffic service levels for all National Forest System Roads.

Table 32. Traffic Service Level

Traffic Surface Level	Miles	Percentage
A – Free Flowing Mixed Traffic	20	1%
B – Congested During Heavy Traffic	76	3%
C – Flow Interrupted / Use Limited	578	23%
D – Slow Flow or May Be Blocked	1,862	73%
Total	2,536	100%

Roads in the national forests and national grasslands are maintained as required to assure that planned service levels and user safety are preserved and that impacts to soil and water resources are minimized. Utilizing the annual road maintenance and prescription process, road maintenance needs are identified and cost estimates are prepared. Through the road maintenance planning process, including district interdisciplinary team meetings, priorities are determined and negotiated based upon available funding levels. Each road is assigned a *maintenance level* (1–5) based on road use objectives.

Roads in maintenance level 1 are closed to vehicular traffic and receive custodial maintenance only, primarily for resource protection. Maintenance level 2 roads receive minimum maintenance for limited passage of traffic; for example, high-clearance vehicles such as pickups. These roads are normally unsuited for passenger cars. Based on established priorities, roads in maintenance levels 3, 4 and 5 receive routine work to assure safety and travel efficiency. All types of vehicles use these roads, including those with low clearance, such as passenger cars.

The transportation system on the National Forest and Grasslands in Texas is maintained primarily through service / construction contracts with local contractors. Table 33 displays the miles of Forest Service roads by maintenance level.

Table 33. Operational Maintenance Level

Maintenance Level	Miles	Percentage
1 – Basic Custodial Care (Closed)	965	38%
2 – High Clearance Vehicles	797	31%
3 – Suitable for Passenger Cars	658	26%
4 – Moderate Degree of User Comfort	83	3%
5 – High Degree of User Comfort	33	2%
Total	2,536	100%

The NFGT maintains close working relationships with the counties containing national grassland and national forest lands, for development, maintenance, and operation of selected roads of mutual need. This is accomplished through a Forest Development Road (FDR) Cooperative Agreement.

Certain public roads under state or county jurisdiction, which serve the mutual transportation needs of the public and the Forest Service, may be designated as *forest highways*. Once designated, these roads become eligible for Federal Highway Administration rehabilitation and reconstruction funds, including bridge replacement. Formal concurrence by the Texas Department of Transportation and Development, the Federal Highway Administration, and the Forest Service is required to designate any

potential public road as a forest highway. Currently, 38 Forest Service jurisdiction roads with a total length of 115 miles have been designated as forest highways.

Commercial use of Forest Development Roads is prohibited without a permit or authorization. Commercial users are responsible for making deposits or performing maintenance commensurate with their use.

b. Factors Influencing Conditions and Trends

Transportation management objectives are to plan, develop, and operate a network of roads that provide user safety, convenience, and the efficiency to accomplish the NFGT's land and resource management objectives.

As long as the National Forest and Grasslands in Texas remain managed as federal lands, an effective system of roads would be required to meet public demand and permit agency managers to care for the land. For any road, regardless of type, that is determined to be needed as a permanent facility, periodic improvements would be made as required and road maintenance activities would continue. The development, management and operation of the Forest Service Road System would continue as needed to respond to resource management objectives.

The NFGT's collector road component is in place. There are no plans to construct additional roads in this functional class. To assure that the continuing need for transport and mobility is met, collector roads would require a high degree of reconstruction and maintenance attention in the future. Existing local roads would continue to be developed, improved, maintained and managed as required to meet the demand for limited or intermittent access. In areas where no suitable access exists, minimum design-standard roads would be constructed as required and planned. Where existing permanent roads are causing adverse impacts to the adjacent environment, efforts to relocate or stabilize them would be undertaken.

Over the past five-year period, the National Forest and Grasslands appropriated road maintenance funding has fluctuated (see Figure 9), while costs of contract road maintenance and administration have increased. Between 2003 and 2005, dollars increased 43 per cent including supplemental road maintenance funding. In 2006, funding was heavily influenced by Hurricane Rita. Between 2006 and 2008, funding decreased by 55 percent, bringing funding in line with 2003 and 2004 levels. At the same time, supplemental road maintenance funding was discontinued. Forest Road Maintenance deposits have been used to supplement funding. Road maintenance deposits are funds set aside and deposited with the Forest Service for access by timber purchasers, oil well companies etc. As appropriated funding decreased, the NFGT has had to rely on deposited funds in order to maintain roads to standard in the light of the increasing cost to maintain roads. Current funding is insufficient to maintain all roads to 100 percent of operation and maintenance objectives. Over this time period, the NFGT has fully maintained approximately 86 percent of its maintenance level 3, 4, and 5 roads, and 9 percent of level 2 roads. Long-term funding trends may require that appropriated funds from benefiting resources be used to maintain a greater share of the road system. Greater portions of the road system may be placed in lower maintenance levels with more roads closed to vehicular traffic.

Bridges and large drainage structures would be inspected on a routine basis and, would be rehabilitated, replaced, or closed as required to assure user safety.

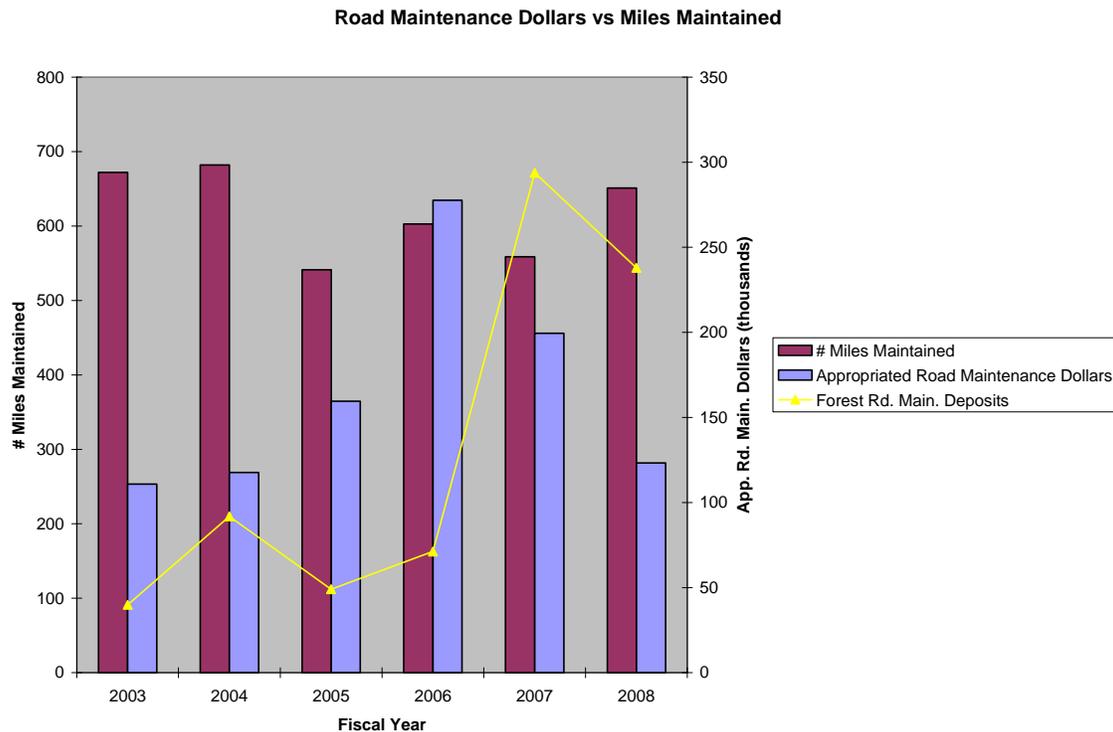
All roads would continue to be inventoried and decisions made about their intended uses. Road management objectives have been developed for each individual road. Based on the desired future condition, certain roads may be:

- Obliterated, allowing the land to be reclaimed for natural resource uses.
- Closed for long periods of time.
- Restricted to use during certain periods or to certain vehicle types.
- Managed as open to all users.

Traffic management methods, such as road closure devices, orders issued restricting or prohibiting use, signing, and law enforcement efforts would be applied to roads according to their intended use and the safety of users.

Through cooperative agreements, the Forest Service would continue to participate with other agencies or local governments to accomplish work on roads of mutual benefit.

Figure 9. Road Maintenance Funding



c. Reasonably Foreseeable Events Outside Agency Control

Road maintenance is primarily accomplished using appropriated funding. Over the past several years, there has been a continued decline in the funding levels for road maintenance. Adjusting for inflation, the decline is even more significant. Future funding

for the National Forests and Grasslands in Texas is expected to continue to decline as a result of a change in the allocation criteria for road maintenance. The NFGT's reliance on Road Maintenance Deposits to supplement appropriated funding is based on deposits available at the beginning of the year. Those funds are decreasing.

While budgets have continued to decline, there has been a significant increase in road maintenance costs in recent years. The demand for materials, equipment and labor has increased dramatically. There has also been a worldwide increase in the demand for construction and maintenance materials, resulting in increased costs of road maintenance.

With the reduced funding levels and increased costs of road maintenance, the miles of roads 'maintained to standard' for all maintenance levels will continue to decrease. Consideration will be given to reducing the number of miles in the transportation system that are maintained for passenger car use.

9. Collaboration

a. Existing Conditions and Trends

Cooperative Relationships

Several partnerships were developed to increase the effectiveness of the NFGT botanical program. Partnerships were developed with The University of North Texas, Bog Research, San Jacinto River Authority, The Nature Conservancy, and Azimuth Forestry that resulted in several projects being completed. Among these were Challenge-Cost Share agreements to re-establish a native legume on the LBJ National Grassland (NG), to complete a floristic inventory of Fox Hunters Hill (a Texas Natural Heritage Area) on the Sabine NF, establishing a native plant materials production area on Clymer Meadow Preserve on the Caddo NG in partnership with The Nature Conservancy, and several smaller contracts that resulted in the completion of additional Threatened and Endangered Species survey work.

The Regional Zone Air Resource Specialist collaborated with Texas Commission on Environmental Quality (TCEQ) on a prescribed fire project on the Sam Houston National Forest to mitigate impacts to air quality in the metropolitan Houston ozone non-attainment area.

The NFGT is working in partnership with Texas Parks and Wildlife and Trails Unlimited (a Forest Service Enterprise Team) to examine areas of the NFGT having suitability for developed trails. The process will involve using GIS technology and existing information on sensitive resources to filter out areas with numerous resources concerns and highlight areas with fewer concerns. District employee and Supervisor's Office specialist input will be used to further narrow the areas of potential trail systems noting areas close to rural towns that would benefit from a trail system, proximity to existing recreation and camping areas, and adequate size to merit consideration.

The NFGT works with various individuals and groups to further the awareness of our cultural heritage resources. Several of these have already been mentioned elsewhere in this report. The partnership with Lake Fannin Wilderness Park, Inc. has been successful at restoring this facility to some usefulness. That partnership continues to grow and

prosper, and recently the group was issued a Granger-Thye permit to allow for continued management and improvements funded by receipts from the use of the complex.

Texas Friends of Passport in Time (TFPIT) came into existence with the express purpose of providing labor and monetary support to the Forest's Passport in Time program. Passport in Time is a volunteer initiative which allows amateur and avocational archeologists to work alongside archeological and historic preservation professionals in the Forest Service on projects which are beneficial and critical to the successful management of heritage resources. TFPIT has contributed funds to support analyses that could not be possible if the NFGT were to rely on appropriated dollars. In addition, they have provided some financial support to the purchase of equipment for Lake Fannin. Since 2002, PIT volunteers have contributed in excess of 10,000 hours of time towards historic preservation programs on the NFGT.

The NFGT continues to have a healthy and productive partnership with the Lake Fannin Wilderness Park volunteer group. Based in Fannin County, this group is providing invaluable assistance in the stabilization and restoration of the Lake Fannin Organizational Camp, a listed National Register of Historic Places property on the Caddo NG, Fannin County, Texas. To date, five cabins have been completely stabilized. The lodge and caretaker's residence have been restored and refurbished so that they are functional buildings – there is a caretaker living in the residence, and the lodge has hosted numerous events in the last three years. The latrine and bathhouse have experienced some stabilization, but more work remains to be done before they too can become completely functional again. A Granger-Thye permit for operation and maintenance has been issued to the Lake Fannin Wilderness Park group, and their future involvement in the maintenance and management of Lake Fannin seems assured.

Heritage Resource management staff have been active participants in local, state, and national efforts to promote historic preservation and cultural resource management. Numerous presentations to civic clubs and school groups have increased public awareness of heritage resource management issues. Staff members have made numerous professional presentations to local and regional archeological societies, as well as at national and international level symposia.

The NFGT works in collaboration with the following organizations, universities, and agencies on various recreation and forest management issues:

National Wild Turkey Federation (NWTF)
Texas Parks and Wildlife Department (TPWD)
Lake Fannin Wilderness Parks of Texas, Inc.
Natural Resources Conservation Service (NRCS)
Fannin Soil & Water Conservation District
Caddo Trail Riders
Texas Arabian Distance Riders Association
(TADRA)
Friends of the Grasslands
Lake Fannin Wilderness Park, Inc.
Wise County Soil & Water Conservation District
Houston Chapter of the Sierra Club
Texas Conservation Alliance

Blue Ribbon Coalition
Greater Houston Off-Road Biking Association
Lone Star Hiking Trail Club
The Nature Conservancy
Texas Forest Service
Texas A & M University
Boy Scouts of America
Audubon Society
San Jacinto River Authority
Trails Unlimited Enterprise Unit
Gulf Coast Trades Center
Sam Houston State University
Stephen F. Austin State University (SFA)

U.S. Fish and Wildlife Service (USFWS)
Angelina College
Friends of the National Forests and Grasslands in
Texas
Angelina Forest Trail Riders
Dallas Off-Road Bicycle Association
University of North Texas
Golden Triangle Chapter, Sierra Club
Lone Star Chapter, Sierra Club
International Mountain Biking Association
Texas Motorized Trails Coalition
Trail Riders of Houston

b. Factors Influencing Conditions and Trends

Declining natural resource budgets make it imperative that the NFGT continues to work with its partners in order to accomplish project work.

c. Projected Future Actions

The Forest Service Planning Rule (36 CFR 219) may change in the near future. Several attempts at revising the Rule have taken place; however, at this time the NFGT is still operating under the 1982 version of the Rule. Changes to this Rule may include: the establishment of an environmental management system (EMS), streamlining the process of developing, amending, or revising a plan; and more explicit collaboration, public participation, and notification methods. Also, in anticipation of forthcoming changes, this report has been formatted so it can also serve as the “Comprehensive Evaluation Report” (CER) if that becomes necessary.

d. Reasonably Foreseeable Events Outside Agency Control

It is likely that ongoing litigation will affect how the forests and grasslands eventually conduct its strategic planning and monitoring activities. At the time of this report, revised national planning direction is being proposed and analyzed.

10. Jobs and Income

a. Existing Conditions and Trends

Table 34 compares some demographic differences between Texas and the rest of the country.

Table 34: Texas vs. National Demographics *		
People	Texas	USA
Population, 2008 estimate	24,326,974	304,059,724
Population, percent change, April 1, 2000 to July 1, 2008	16.7%	8.0%
Population, 2000	20,851,811	281,424,602
High school graduates, percent of persons age 25+, 2000	75.7%	80.4%
Bachelor's degree or higher, pct of persons age 25+, 2000	23.2%	24.4%
Mean travel time to work (minutes), workers age 16+, 2000	25.4	25.5
Table 34: Texas vs. National Demographics *(cont')		
Homeownership rate, 2000	63.8%	66.2%
Housing units in multi-unit structures, percent, 2000	24.2%	26.4%

Median value of owner-occupied housing units, 2000	\$82,500	\$119,600
Persons per household, 2000	2.74	2.59
Median household income, 2007	\$47,563	\$50,740
Per capita money income, 1999	\$19,617	\$21,587
Persons below poverty, percent, 2007	16.3%	13.0%
Business	Texas	USA
Private nonfarm establishments, 2006	509,080	7,601,160
Private nonfarm employment, 2006	8,711,476	119,917,165
Private nonfarm employment, percent change 2000-2006	8.5%	5.1%
Nonemployer establishments, 2006	1,736,997	20,768,555
Total number of firms, 2002	1,734,509	22,974,655
Black-owned firms, percent, 2002	5.1%	5.2%
American Indian and Alaska Native owned firms, percent, 2002	0.9%	0.9%
Asian-owned firms, percent, 2002	4.5%	4.8%
Hispanic-owned firms, percent, 2002	18.4%	6.8%
Women-owned firms, percent, 2002	27.0%	28.2%
Manufacturers shipments, 2002 (\$1000)	310,815,965	3,916,136,712
Wholesale trade sales, 2002 (\$1000)	397,405,111	4,634,755,112
Retail sales, 2002 (\$1000)	228,694,755	3,056,421,997
Retail sales per capita, 2002	10,528	\$10,615
Accommodation and foodservices sales, 2002 (\$1000)	29,914,774	449,498,718
Building permits, 2007	176,992	1,398,414
Federal spending, 2007 (\$1000)	171,765,961	2,536,629,405
Geography	Texas	USA
Table 34: Texas vs. National Demographics *(cont').		
Land area, 2000 (square miles)	261,797.12	3,537,438.44

Persons per square mile, 2000	79.6	79.6
FIPS Code	48	

*Source: US Census Bureau State & County QuickFacts

Table 35 compares 2000 demographic statistics for exclusively the NFGT's economic impact area (east Texas) with the state as a whole.

Table 35: East Texas vs. Texas Economic Characteristics*		
Angelina, Houston, Jasper, Nacogdoches, Newton, Montgomery, Sabine, San Augustine, San Jacinto, Shelby, Trinity, and Walker Counties.	East Texas - December 2000	State of Texas - December 2000
People QuickFacts		
Population, 2008 estimate	794,991	24,326,974
Population, percent change, April 1, 2000 to July 1, 2008	22.4%	16.7%
Population, 2000	649,377	20,851,811
EMPLOYMENT STATUS		
Population 16 years and over	497,550	15,617,373
In labor force	52.3%	63.6%
Civilian labor force	52.3%	62.9%
Employed	48.4%	59.1%
Unemployed	3.8%	3.8%
Armed Forces	0.05%	0.7%
Not in labor force	47.6%	36.4%
Females 16 years and over	248,922	7,960,900
In labor force	47.1%	56.2%
Civilian labor force	47.1%	56.0%
Employed	43.4%	52.3%
COMMUTING TO WORK		
Workers 16 years and over	269,527	9,157,875
Car, truck, or van -- drove alone	77.0%	77.7%
Car, truck, or van -- carpooled	15.9%	14.5%
Mean travel time to work (minutes)	28.6	25.4
Employed civilian population 16 years and over	274,803	9,234,372
OCCUPATION		
Management, professional, and related occupations	25.7%	33.3%
Service occupations	17.5%	14.6%
Sales and office occupations	23.1%	27.2%
Construction, extraction, maintenance, and repair occupations	13.3%	10.9%
Farming, fishing, and forestry occupations	2.5%	0.7%
Table 35: East Texas vs. Texas Economic Characteristics* (cont')		
Production, transportation, and material moving occupations	17.6%	13.2%

INDUSTRY		
Agriculture, forestry, fishing and hunting, mining	6.7%	2.7%
Construction	9.3%	8.1%
Manufacturing	13.1%	11.8%
Wholesale trade	2.8%	3.9%
Retail trade	12.0%	12.0%
Transportation and warehousing, and utilities	5.4%	5.8%
Finance and insurance, and real estate and rental and leasing	4.1%	6.8%
Professional, scientific, and management, and administrative and waste management services	4.8%	9.5%
Educational services, and health care and social assistance	21.2%	19.3%
Arts, entertainment, and recreation, and accommodation and food services	5.4%	7.3%
Other services (except public administration)	5.3%	5.2%
Public administration	7.9%	4.5%
CLASS OF WORKER		
Private wage and salary workers	69.6%	78.0%
Government workers	20.3%	14.6%
Self-employed workers in own not incorporated business and unpaid family workers	10.1%	7.4%
INCOME AND BENEFITS (IN 1999 INFLATION-ADJUSTED DOLLARS)		
Total households	232,037	7,397,294
Less than \$10,000	15.9%	10.4%
\$10,000 to \$14,999	9.2%	6.6%
\$15,000 to \$24,999	16.2%	13.6%
\$25,000 to \$34,999	14.8%	13.5%
\$35,000 to \$49,999	16.3%	16.5%
\$50,000 to \$74,999	15.4%	18.4%
\$75,000 to \$99,999	6.0%	9.5%
\$100,000 to \$149,999	3.7%	7.2%
\$150,000 to \$199,999	1.0%	2.1%
\$200,000 or more	1.3%	2.2%
Median household income (dollars)	31,215	39,927
Mean household income (dollars)	41,911	53,870
Families	170,943	5,283,474
Less than \$10,000	9.1%	7.0%
\$10,000 to \$14,999	6.7%	5.3%
\$15,000 to \$24,999	15.3%	12.3%
\$25,000 to \$34,999	15.8%	12.8%
\$35,000 to \$49,999	18.9%	16.8%
\$50,000 to \$74,999	19.0%	20.5%
\$75,000 to \$99,999	7.6%	11.3%
\$100,000 to \$149,999	4.7%	8.8%
\$150,000 to \$199,999	1.0%	2.5%
Table 35: East Texas vs. Texas Economic Characteristics* (cont')		
\$200,000 or more	1.5%	2.7%

Median family income (dollars)	37,828	45,861
Per capita income (dollars)	16,006	19,617
Median earnings:		
Male full-time, year-round workers (dollars)	30,650	34,925
Female full-time, year-round workers (dollars)	21,132	26,168
NUMBERS OF FAMILIES AND PEOPLE WHOSE INCOME IN THE PAST 12 MONTHS IS BELOW THE POVERTY LEVEL		
All families	18,199	632,676
With related children under 18 years	13,442	503,911
Families with female householder, no husband present	7,996	266,954
Related children under 18 years	6,926	235,353

*Source: US Census Bureau State & County QuickFacts

The population of Texas grew only slightly after Hurricanes Rita (2005) and Ike (2008) and while some of this growth may be attributable to the hurricanes, Texas is a rapidly growing state so the population increase of less than a half percent following the storms is not significant. Nonetheless, few counties in Texas decreased in population following the hurricanes and most counties in the disaster-declared region saw population increases.

Population and employment growth go hand in hand. Population grows because jobs are available, and jobs are created because of available low-cost labor produced by a growing population. If Texas maintains its average employment-to-population ratio as expected during the next 25 years (around 42.7 percent), the state will add another 4.5 to 5.8 million jobs. Job growth is expected to be stimulated by overall U.S. economic growth and enhanced by Texas' employment-friendly characteristics (compared with most other states):

- Ample supply of relatively low-cost, nonunion labor;
- Continued importance of the energy industry along with energy diversification across the state;
- Relatively low business operating costs and taxes;
- Nonobstructive, probusiness state and local business policies; and
- Affordable housing.

Texas' current employment growth is roughly twice the national rate and should continue that pattern over the coming decades, barring any major upheavals. Texas leads the nation in job creation. The Houston and Dallas metropolitan areas lead U.S. metro areas in creating jobs.

b. Factors Influencing Conditions and Trends

Population Growth

Of the social changes underway, population growth will undoubtedly be the most significant in shaping the future of the South's wildland-urban interface. In April 2000, the population of the United States was estimated to be 281,421,906. Of that number, 91,486,129 lived in the 13 state region from Virginia to Texas (Table 36). Between April 1, 1990 and April 1, 2000, this region's

population grew 13.9 percent and now accounts for 32.5 percent of the national total. The South's population is increasing to relative to the populations of other regions.

Table 36. Population of most heavily populated Southern States, the South, and the United States, 2000.

State/Area	Million ¹
Texas	20.9
Florida	16.0
Georgia	8.2
North Carolina	8.0
Virginia	7.1
South	91.5
United States	281.4

¹Source: U.S. Department of Commerce, Bureau of the Census 2000.

Migration to the South from other regions of this country is highly significant. In 1981, 1.47 million people moved in to this region from other parts of the United States, while approximately 1 million moved out. The net increase was 470,000. People moving into the South from abroad that year totaled 401,000 making a legal net gain of 871,000. In 1998, net internal migration totaled 271,000, while movers from abroad totaled 544,00. The South's net gain, excluding illegal immigration, was 815,000. That total was greater than the totals across all other U.S. regions combined. With migration pressures of this magnitude, mostly to already burgeoning metropolitan areas like Houston and Dallas-Fort Worth, former rural areas and forests are being converted to urban interface zones at unprecedented rates.

A highly significant outcome of population aging is the unprecedented increase in the number of retirees. The overall regional increase was 25.7 percent. The most rapid increases were in most of Florida, along the Atlantic coast, down the Southern Appalachians to Atlanta, along the Gulf Coast, and in eastern Texas. Over the region, the percentage of the population age 65 and over is projected to continue to rise from about 12.5 percent in 2000 to over 17 percent by 2020 (Woods and Poole Economics, 1997). This increase is likely to have profound effects on forest ecosystems. It means continued development of retirement communities, second homes, and recreation facilities like golf courses, all of which lead to the creation of new interface areas. It also means more potential for interactions between interface residents and forest management practices, such as fire, recreation, and timber management (Marcin 1993).

Increasing ethnic diversity is another primary component of social change in the South. The makeup of the population is shifting rapidly. In the 1990s, non-Hispanic whites made up approximately 72.4 percent of the region-wide population. Of minority populations, Hispanic residents made up 8.9 percent, Blacks made up 16.7 percent, and Asian and other races made up

just over 2 percent. The trends now are similar in the south to those in the rest of the United States. Non-Hispanic whites are steadily becoming a smaller percentage of the total population. Research has shown that Whites, Blacks, Hispanics and Asians, and others differ in how each uses and values southern forests and other natural resources (Cordell et al., in press). Resulting changes in collective public positions on natural resource management and protection will likely end up being the social trend with the greatest impact on how we collectively view and use forests.