

Chapter II. Monitoring Findings & Recommendations

Issue A. Ecosystem Condition, Health and Sustainability

Sub-Issue 1. Biological Diversity

a. Vegetation Management

(1) Regeneration of Desired Tree Species

Monitoring Item Description - Restoration of longleaf and shortleaf pine ecosystems is monitored by checking regeneration areas at one and three years to determine if any additional treatments are needed to achieve sufficient stocking. The third-year check will be used to certify that successful stand reestablishment has taken place.

Variability - Longleaf stands should have stocking of at least 400 trees per acre, while shortleaf stands should have stocking of at least 300 trees per acre. When stocking levels of longleaf or shortleaf stands are less than these, each deficient stand must be evaluated to determine if there is sufficient stocking in other desirable species or if remedial treatments are needed.

Finding(s) – Third-year stocking exams conducted in 2008 found that 29.6 percent of the stands had adequate stocking of the desired species. First-year survival exams found that 54.9 percent of the stands had adequate survival. Seedling survival was adversely impacted in 2008 by inadequate rainfall. The Angelina County weather station recorded average rainfall in 2008; however, lack of adequate precipitation during the early growing season months (March through May) is a significant cause of seedling mortality. In March 2.59 inches of rain fell, in April 2.97 inches fell, and in May only 2.01 inches fell. Since the NFGT is at the extreme western edge of the natural range for pine species, lack of adequate precipitation makes seedling establishment difficult.

Recommendation(s) – No change needed. Emphasis needs to be placed on planting seedlings in late fall/early winter (November through January) when there is sufficient soil moisture to allow seedlings more time to become established before warmer and drier spring conditions occur. Continue established regeneration checks to assure adequate restocking occurs at required *Plan* levels.

(2) Ten Year Age Class

Monitoring Item Description - Progress in achieving the *Plan's* DFC (Desired Future Condition) for vegetation and a determination that desired diversity for plant communities is being achieved is measured through an evaluation of data obtained from internal reviews and surveys.

Variability - Changes in any ten-year age class greater than one percent per year should be evaluated to determine the cause.

Finding(s) - Age-class distributions was evaluated by reviewing data obtained from FSVeg (Field Sampled Vegetation).

Table 1 illustrates the trends in age class among the four seral stages on the four National Forests.

Table 1. Seral Stage Distribution

<u>Seral Stage</u>	<u>Age Class</u>	<u>1992</u>	<u>2002</u>	<u>2004</u>	<u>2006</u>	<u>2008</u>	<u>Trend</u>
Early Succession	0-20 years	22%	14 %	13 %	11 %	10%	-12 %
Mid Succession	21-50 years	11%	15 %	15 %	17 %	17%	+6 %
Late Succession	51-90 years	61%	54 %	53 %	50 %	49%	-12 %
Very Late Succession	91+ years	6%	17 %	18 %	22 %	24%	+18%

The table and charts show the steady increase in very late seral stage by 18 percent since 1992. The decrease in the late succession is due primarily to stands growing into the very late stage. The decrease in acreage in the early succession stage is due to a decline in regeneration harvests resulting in a reduction in the number of acres in younger age classes.

The FSVeg age-class distribution report for the end of 2008 shows a continuing trend towards an older forest. For instance, the acres in stands over 100 years old have increased from 15,037 acres in 1992 to 68,251 acres in 2008, which is a 354 percent increase. Likewise, the acres in young stands age 0 (currently being regenerated) to 10 years old are just 8 percent of what they were in 1992: 83,612 acres in 1992 to just 6,910 acres in 2008.

Table 2 indicates trends in key forest type groups identified in the *Plan*.

Table 2. Forest Type Group Trends

<i>Forest Type Group</i>	<i>1992</i>	<i>2002</i>	<i>2004</i>	<i>2006</i>	<i>2008</i>	<i>Trend</i>
Longleaf Pine Woodlands	5.6%	5.7%	5.7%	5.2%	5.2%	-0.4 %
Dry-Xeric Oak Pine Forests	25.8%	25.1%	25.1%	25.2%	25.4%	-0.4 %
Mesic Oak-Pine Forests	58.6%	58.3%	58.4%	58.6%	59.2%	+0.6%
Mesic Hardwood Forests	2.9%	3.9%	3.9%	3.9%	3.8%	+0.9 %
Bay-Shrub Wetlands	0.4%	0.4%	0.4%	0.4%	0.4%	No Change
Bottomland/Streamside Forest	6.7%	6.6%	6.5%	6.7%	6.0%	-0.7%

The dry-xeric oak pine forests are composed primarily of shortleaf pine stands and shortleaf pine-oak stands. While this group shows an overall decline of 0.4 percent since 1992, there has been a slight increase in the last four years. The longleaf pine woodlands show a decrease of 0.4 percent since 1992; however, if stands currently being regenerated to longleaf pine were added, this forest type group would likely show an increase instead of a decrease. This is due to the database not including stands where the age year has not been set; this is normally not done until the stands are certified as regenerated.

Recommendation(s) - Change needed. More emphasis needs to be placed upon regeneration harvesting to ensure a more even supply of sizes and ages of trees are provided for suitable habitat for all species. If regeneration shortfalls continue, declining forest vigor of older stands will likely lead to loss of habitat for the endangered RCW.

(3) Prescribed Burning

Monitoring Item Description – Determine if prescribed burning is occurring at required levels to meet the *Plan*'s goals and objectives and the DFCs for vegetation.

Variability - Achieve 80 percent of forest assigned targets, unless weather or other extenuating circumstances prevent this accomplishment. If the forest falls below the 80 percent target, reassess the target.

Finding(s) - The *Plan* set an annual objective of approximately 100,000 acres of prescribed burning per year. This is calculated on a land base of about 500,000 acres for which fire should play an ecological role. The desired return interval for fire is in a three-to-five year range. In FY 08, the forest burned 165,390 acres. The average acres burned over the last nine years is about 91,360 acres. Table 3 displays acres burned each year (by objective) for the past nine years. Most burns accomplish multiple objectives.

Table 3. Prescribed Fire – Acres Burned Annually

FY	Fuel Reduction	Brownsport Control (Longleaf)	Site Prep for Regeneration	Control of Understory	Range Improvement	T&E*	Other Wildlife	Total
2000	21,408	0	98	690	0	2,746	11,424	36,366
2001	40,656	80	92	563	0	3,535	14,230	59,156
2002	50,926	0	704	2,893	0	16,726	4,796	76,045
2003	23,750	0	1,472	0	0	4,360	1,400	30,982
2004	89,392	219	0	1477	0	31,722	4,401	127,211
2005	87,720	0	133	0	0	12,872	65	100,790
2006	95,770	0	479	0	0	435	0	96,684
2007	110,219	0	856	0	0	15,808	2,735	129,618
2008	158,701	0	179	0	0	6,510	0	165,390

*Threatened and Endangered

Recommendation(s) – No change needed. Maintain prescribed burning targets at 100,000 acres per year in order to meet vegetation management objectives.

b. Management Indicators

(1) Diversity of Plant and Animal Communities

Monitoring Item Description - Plant and animal communities are defined through the descriptions of community components by vegetation group in the *Plan*, Chapter V (pgs 306-307). These forest and grassland communities, as defined in the ECS (Ecological Classification System) in *Plan* Appendix A, form the ecological groups monitored through time. Through an evaluation of data obtained from internal reviews and surveys, as well as reports obtained from other state and federal sources, the Forest Service determines if the desired diversity and objectives for plant and animal communities (MI- management indicators, TES-threatened and endangered, and sensitive species) are being maintained.

Variability - Trends, as determined through monitoring, are based on one-to-five years or more of population change. Natural populations fluctuate through time; however, if five or more consecutive years of downward trends are documented, this trend would indicate a need for closer evaluation and possible change in management strategies.

Finding(s) - The majority of management indicators have indicated stable or increasing trends through the past five-to-ten years. With the exception of the wood thrush and Navasota ladies'-tresses, most other species' trends indicate stable or increasing populations (see Appendix A). The red-cockaded woodpecker population is at 332 active clusters, a new milestone for the NFGT.

In the past five years, increased emphasis has been directed at evaluating previous known plant sites, verifying location, documenting and evaluating status, and identifying protection and management needs. In addition, surveys in potential habitat have found a number of new locations for R8 TES and MIS. All new and relocated occurrences have been inventoried using a GPS (Global Positioning System) and added to the corporate database.

Recommendation(s) – Change needed. Continue population monitoring and evaluation to determine if any changes in monitoring strategy or management actions are needed. Cooperative work with other agencies should allow better understanding of range-wide declines in certain species.

(2) Habitat for Management Indicator Species (MIS)

Monitoring Item Description – Annual evaluation of forest habitat change is documented through levels of forest and grassland management actions such as prescribed fire, regeneration cutting and forest thinning. These activities are described in acres within forest compartments or allotments in the GIS (Geographic Information System) spatial database. This database, as well as other USFS (U.S. Forest Service) database information, is updated regularly and evaluated annually. Changes in habitat will directly and indirectly affect management indicator species population trends.

Variability - Five years or more of undesirable trend in any management indicator species habitat would indicate a need for some change. Changes needed could include either modification of habitat described and desired for any particular species in question, or implementation of different management actions.

Finding(s) - Habitat for management indicator species is generally improving throughout the forests and grasslands. Increased prescribed fire efforts are revealing greater improvements in both the number of certain element occurrences and quality of each occurrence for fire-dependent plant species like Louisiana squarehead. Through an evaluation of GIS data and FSveg, communities such as the longleaf pine, shortleaf pine and tallgrass prairie are being restored and increasing. Most species habitat and trends appear to be stable or increasing (see Appendix A).

Recommendation(s) – Change needed. Continue population monitoring and evaluation to determine if any changes in monitoring strategy or management actions are needed. Consider increasing prescribe burning to benefit habitat for plants and other wildlife species such as wild turkey, bobwhite quail and RCW. Also continue cooperative work with other agencies.

(3) Population Trends of Management Indicators

Monitoring Item Description – Population trends of management indicator species are monitored through annual efforts and evaluated and reported on periodically to relate trends to habitat changes.

- Plants - Seasonal botanical surveys are conducted on units in appropriate habitat, based on forest-wide sampling strategies or to support project planning. Numbers of occurrences are tracked over time.
- Animals – Birds are monitored annually with point counts. Northern bobwhite are monitored on the National Grasslands through targeted annual surveys of sight, sound, or sign of targeted species in appropriate habitat.
- Fish – Periodic incidental records, annual netting or electrofishing sampling of water bodies occurs.

Variability - Five years or more of downward population trends would indicate a need for change.

Finding(s) – Most species’ long-term trends appear to be stable or increasing (see Appendix A), with the exception of the wood thrush and Navasota ladies’-tresses. The habitat for these species and especially the many fire-dependent species continues to improve, so the declines are likely due to range-wide considerations (wood thrush) or irregularity of flowering (Navasota ladies’-tresses).

Recommendation(s) – Change needed. Continue monitoring and coordination with other agencies for population monitoring and evaluation to determine if and what changes in survey – sampling strategy are needed to better evaluate the trends as localized or regional in scope.

c. Threatened, Endangered, and Sensitive Species

Monitoring Item Description – Surveys for each T&E and Sensitive Species known to reside on the forests or grasslands are conducted forest-wide and project based. Periodic surveys for some species, such as the American burying beetle that may have the potential to occur but have not been found to date, are conducted if conditions warrant or as indicated in the updated Appendix G Summary Table in the Forest *Plan* (see Appendix B). Through an evaluation of data obtained from these surveys, as well as reports obtained from other state and federal sources, a presence or absence determination can be made for potential species and a judgment can be made whether recovery objectives for resident T&E and Sensitive Species are being met.

Variability - Five years or more of downward population trends would indicate a need for change. Confirming presence of potential T&E and Sensitive Species would identify the need to manage habitat accordingly to facilitate population expansion.

Finding(s) - Most resident T&E and Sensitive Species populations are increasing, with the exception of the Navasota ladies’-tresses (a plant which is difficult to monitor due to flowering cycles that are cyclic and unpredictable). The RCW and bald eagle populations are at an all-time high, with increased sightings of Louisiana black bear (see Appendices A and B). Habitats for other sensitive species/management indicators appear to be stable.

Recommendation(s) – No change needed. Continue annual monitoring and periodic surveys for presence to determine if progress is being made towards recovery objectives.

Sub-Issue 2. Forest and Range Health

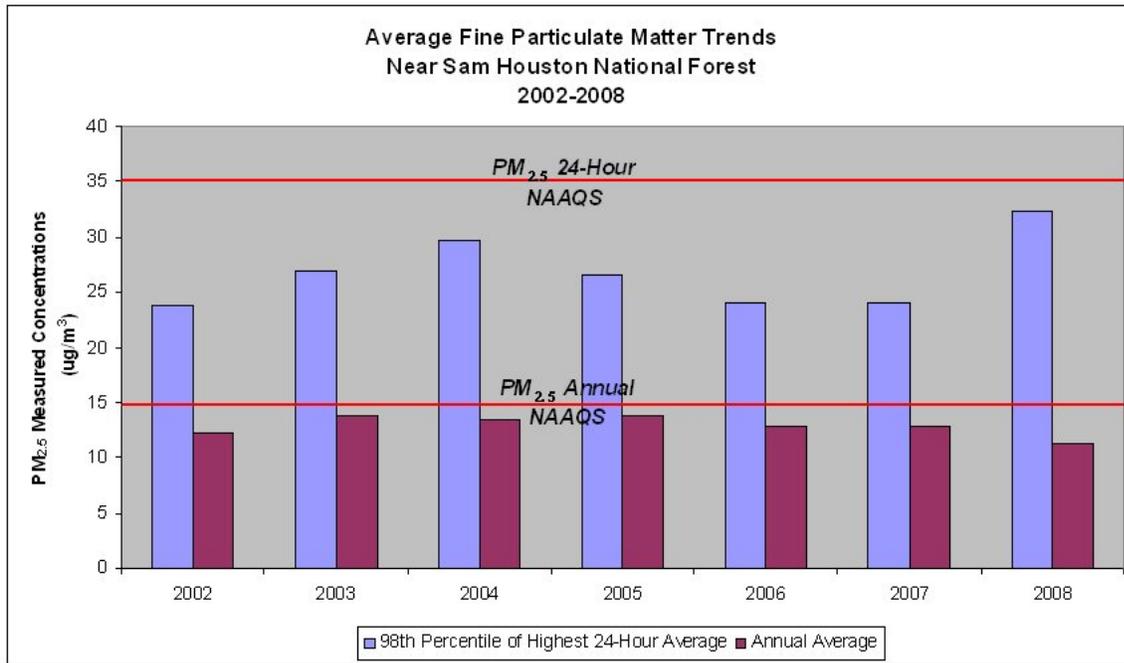
a. Air Quality

(1) General Forest Air Quality

Monitoring Item Description - Determine if NFGT management activities are being conducted to maintain air quality within appropriate standards. Ensure air quality control and compliance activities are being conducted in a manner consistent with all Federal, State, local standards or regulations and *Plan* guidelines.

Variability - Documented fine particulate matter levels in NFGT areas that reach or exceed the National Ambient Air Quality Standards (NAAQS) PM (particulate matter) 2.5 level during state or federal monitoring. The Environmental Protection Agency has established PM_{2.5} NAAQS to protect public health and the environment; the daily standard is set at 35 µg/m³, while the annual standard is set at 15 µg/m³. If PM_{2.5} levels are exceeded, reduce the size of prescribed burns or reduce the size of the fuels consumed (through mulching) until appropriate levels are met.

Finding(s) – The National Forests and Grasslands in Texas consist of four National Forests in east Texas and the Caddo-Lyndon B. Johnson National Grasslands in northeast Texas. The distance from the eastern-most edge of the Sabine National Forest to the western-most boundary of the Lyndon B. Johnson National Grasslands is nearly 300 miles. Because air quality concentrations can vary based on local industry and nearby roads and highways, an assessment of air quality at each individual National Forest and Grassland is warranted. It is generally accepted that air quality monitoring values at a particular location may be representative of the air quality within 40 kilometers (25 miles) of that site. Unfortunately, there are not air quality monitoring sites located within 40 kilometers of each Forest or Grassland. In fact, only one fine particulate matter monitoring site is located within 40 kilometers of any of the National Forests or Grasslands in Texas. The Harris County PM_{2.5} monitor (EPA Site ID #482010024) is located 40 kilometers south of Sam Houston National Forest. The graph below shows the 24-hour and annual trends in fine particulate matter at that monitoring site as compared to the NAAQS. Data are taken from the EPA AirData website (www.epa.gov/air/data).

Table 4. Fine Particulate Matter Trends

As shown, fine particulate matter levels near the Sam Houston National Forest are below both the 24-hour and national air quality standards. Therefore, prescribed burning activities has not caused or contributed to any exceedances of the PM_{2.5} NAAQS at this location.

Within the state of Texas, there are at least 30 air quality monitors that measure fine particulate matter in the air (Figure 1). There are no areas within the state which have been designated as nonattainment with either the 24-hour or annual average PM_{2.5} air quality standard. 2008 data show that no monitor within the state exceeded the annual standard, while three of the 31 monitors exceeded the 24-hour standard. Of those three, the monitor in Ellis County is located nearly 100 kilometers southeast of LBJ Grasslands, while the other two violating monitors are located across the state in Odessa and El Paso, respectively. Because of the great distance from any NFGT to these monitors, it would not appear that prescribed fire activities from the National Forests and Grasslands are impacting any of these monitors.

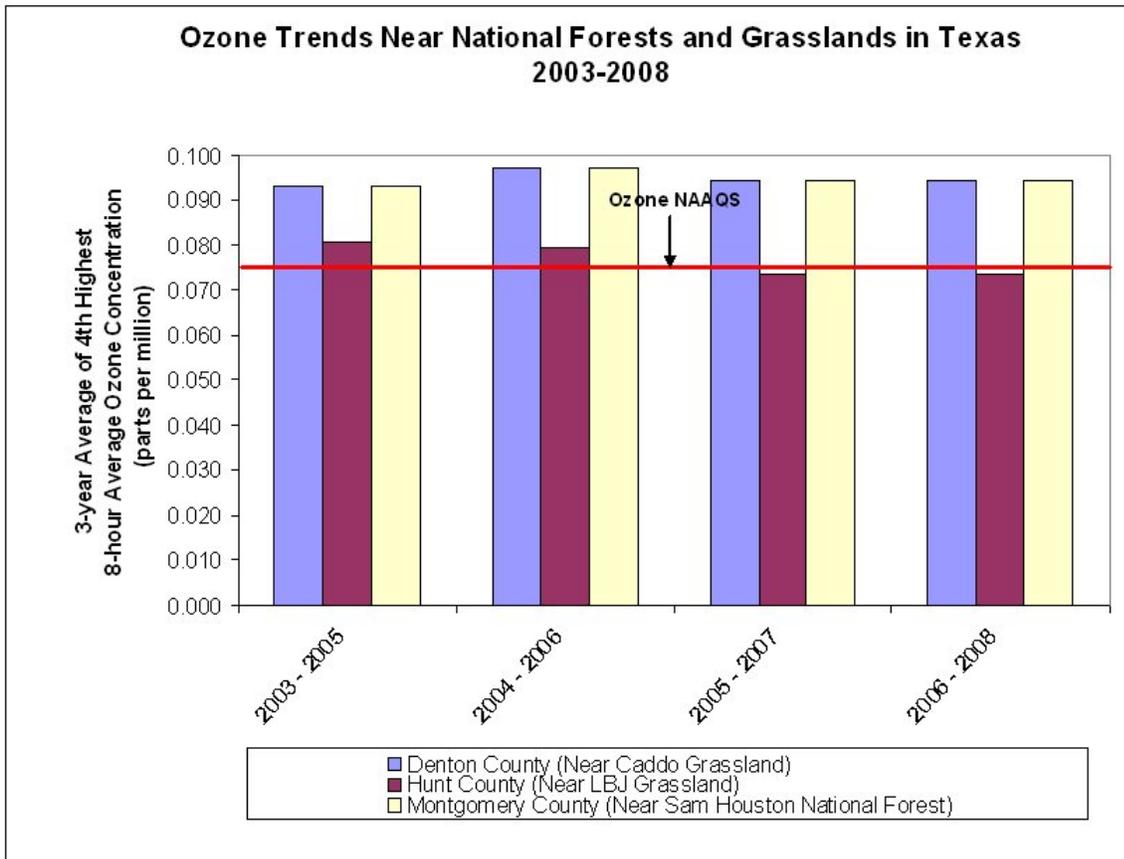
The NFGT coordinated with TCEQ (Texas Commission on Environmental Quality) on air quality monitoring issues. This is an ongoing process. Air quality was addressed during prescribed burning by operating within the burn plan perimeters for smoke dispersion.

Recommendation(s) – No change needed. However, the NFGT needs to work with CENRAP (Central Regional Air Planning Association) and also the TCEQ to have its emissions added to their emissions inventory to insure that activities meet general conformity requirements. Continue to review monitoring data from the EPA (Environmental Protection Agency) monitoring stations to determine if counties are out of compliance with air quality standards and

As discussed above, PM_{2.5} concentrations near the National Forests and Grasslands are not exceeding the NAAQS.

Ozone is monitored extensively throughout Texas, and there are two metropolitan areas that exceed the NAAQS for this pollutant: Dallas-Fort Worth, and Houston-Galveston-Brazoria. A portion of Sam Houston National Forest falls within the nonattainment area near Houston. The ozone monitor located in Montgomery County is only 4 kilometers from the nearest Forest boundary. Ozone is also monitored near both the Caddo and LBJ Grasslands, in Hunt and Denton Counties, respectively. The Hunt County monitor is located 22 kilometers southwest of the closest Grassland boundary, while the Denton County monitor is located 26 kilometers east of the closest Grassland boundary. The graph below shows the ozone trends at all three monitoring sites as compared to the NAAQS. Data are taken from EPA AirData website (www.epa.gov/air/data).

Table 5. Ozone Trends Near the National Forests and Grasslands in Texas.



Although the ozone standard is being exceeded at two of the three monitors, activities on the Forest are not anticipated to exacerbate ozone concentrations. Ozone is a secondary pollutant formed when emissions of nitrogen oxides (mainly from automobiles and power plants) combine

with emissions of volatile organic compounds (again from automobiles as well as naturally occurring sources) in the presence of heat or sunlight. Research suggests that prescribed fire activities do not generate a significant amount of emissions of either pollutant.

Other criteria pollutants monitored in Texas include carbon monoxide, sulfur dioxide, nitrogen dioxide, and lead. The respective NAAQS are not being exceeded for any of these pollutants. Although large amounts of carbon monoxide (CO) are emitted from prescribed fires, concentrations are highest within the burn unit and readily dissipate a short distance beyond the burn. The CO monitor closest to a National Forest is in Harris County, 40 km south of the Sam Houston National Forest; concentrations at this site are well below the CO NAAQS.

Recommendation(s) – No change needed. Continue to monitor the air quality index and the emissions per county per year, as reported on EPA’s website (<http://www.epa.gov/air/data>). [Note: This does not indicate how much of the emissions are from NFGT; it just shows if there is any change.]

b. Forest Pests

(1) Pine Beetles

Monitoring Item Description – Includes actions to protect forest health by reducing the potential impacts of expanding SPB (southern pine beetle) infestations in forest stands and minimizing the threat of other pine bark beetles. Protection will be accomplished through prevention (such as thinning stands with high SPB hazard ratings) and beetle population monitoring. All National Forests must monitor southern pine beetle population levels.

Variability - Reduction of high hazard rated areas should exceed 1,000 acres per year on the NFT (National Forests in Texas.)

Finding(s) – No SPB infestations were detected on the NFT in FY 08. The NFT participated in the spring southern pine beetle survey, and results from the survey predicted extremely low populations, as no SPB were captured. The number of the SPB insects, clerids and predators collected fell from the previous year. The NFT also participated in fall SPB trapping, a new program designed to provide early warning of SPB outbreaks. No SPB were collected in the fall. No detection fights were made due to the low level of SPB activity predicted.

Figure 2 is an aerial view of a SPB infestation (spot) illustrating trees in several age classes. Gray trees in background no longer contain beetles in any stage; red trees contain late developmental stages and beetles ready to emerge; lightly faded trees contain early developmental stages; and green trees in the foreground (at the edge of the spot) are being attacked.

Figure 2. Typical Start of a SPB Spot



Source: <http://www.barkbeetles.org/spb/spbbook/Index.html>

The forests thinned 1,715 acres of dense pine stands as part of their SPB prevention program. A total of 3,123 acres were thinned for multiple benefits, including SPB prevention. Many scattered pines were affected by the prolonged drought, and increased tree mortality due to the combined effects of the drought and *Ips* bark beetles occurred. No other major insect or disease problems or outbreaks occurred on the NFGT in FY 08.

Ten plots were established in FY 08 to track tree mortality through time. Six of the stands had been thinned recently, while the other four had not. Mortality will be checked twice annually. This long-term monitoring will help document impacts of *Ips* bark beetles.

Recommendation(s) – No change needed. Continue SPB monitoring and hazard reduction by thinning densely stocked pine stands in advance of the next outbreak.

(2) Non-Native Invasive Plants (NNIPS)

Monitoring Item Description - Identify and protect forests and rangelands by preventing the introduction of NNIPS, controlling their spread and eradicating any known NNIPS from priority areas.

Variability - If significant growth occurs in areas of existing NNIPS or if new areas of NNIPS are identified that threaten forest or grassland ecosystems, recommendations for control or eradication will need to be developed and (once approved) implemented.

Finding(s) - In FY 08, 38 acres of *Hydrilla verticillata* were treated as part of an ongoing NNIPS control and eradication effort in Ratcliff Lake on the Davy Crockett NF. On the LBJ NG, 57

acres were treated for the noxious weed, *Carduus nutans*, nodding thistle, and 60 acres were treated for an infestation of *Onopordum ananthium*, Scotch thistle. Giant Salvinia and Water Hyacinth were treated at Cagle, Stubblefield and Scotts Ridge Lakes on the Sam Houston National Forest. In addition, NNIPS surveys were conducted forest-wide. This survey focused on primary vectors for infestations such as utility rights-of-ways, special use sites, recreation sites, and road right-of-ways. Approximately 6,600 GPS (Global Positioning System) points were recorded as individual NNIPS infestations across the NFGT in acreages ranging from 0.001 acre (single tree) to 20 acres. An area encompassing more than 25,000 acres was visually surveyed. The NFGT NNIPS Environmental Assessment Decision Notice was signed August 2008.

Figure 3. Giant Salvinia



Scott Robinson
Georgia Department of Natural Resources
www.forestryimages.org

Recommendation(s) – Change needed. Continue the development of a forest-wide NNIPS Management Strategy and begin implementation efforts.

Sub-Issue 3. Watershed Conditions

a. Soil and Water Conservation

Monitoring Item Description - Conduct periodic reviews/inspections of project areas and environmental documents to avoid permanent impairment of site productivity and ensure conservation of soil and water resources.

Variability - Appendix F of the *Plan* “Erosion and Sediment Coefficients” will be used during project planning and monitoring to assure the NFGT does not exceed allowable soil lost tolerance levels that would result in permanent impairment of site productivity. Texas Forest Service BMPs (Best Management Practices) inspection reports will be analyzed and if the

overall inspection results fall below 90 percent, forest specialists will identify the reason and recommend corrective actions that need to be taken.

Finding(s) - No soil and water disturbances occurred that were identified by NFGT personnel as exceeding the soil loss tolerance levels set out in the *Plan*. In 2008, TFS (Texas Forest Service) conducted a BMP (Best Management Practices) compliance review on the Davy Crockett, Sabine and Sam Houston National Forests. The review concluded that all the units were 100% in compliance and received excellent ratings.

As part of the NFGT’s endeavors to protect soil and water resources in FY 08, the Caddo and LBJ NGs continued to implement an active Watershed Improvement Program. The objective of this program is to repair active soil erosion that is the result of weather and poor management activities that have existed for many years. Most of the initial damage predates the establishment of the unit. These accomplishments help the grasslands meet the intent of Section 319 of the Clean Water Act. Actions in FY 08 included the completion of 22 acres of watershed improvement.

Table 6 displays accomplishments on the Caddo/LBJ NGs for the past ten years.

Table 6. Caddo/LBJ Watershed Improvement Accomplishments

Year	Acres Treated for Erosion Control	Grade Stabilization Structures	Feet of Terraces Constructed	Number of Gully Plugs Installed
1999	49	11	4,410	0
2000	*	0	0	0
2001	58	1	3,004	8
2002	100	3	6,884	14
2003	*	0	0	0
2004	95	3	7,007	17
2005	*	0	0	0
2006	50	1	3,850	8
2007	50	0	0	0
2008	22	0	0	0

* No budget allocation received.

Recommendation(s) – Change needed. Continue to monitor projects, environmental documents and follow up on other requests made by districts to review areas to assure the *Plan’s* Standards and Guidelines are being used to protect soil and water resources. Increase the amount of on-the-ground monitoring being performed by the Forest Soil Scientist/Watershed Specialist. Also request that the TFS increase the frequency of BMP compliance reviews on the NFGT.

b. Water Quality

Monitoring Item Description - Ensure vegetative manipulation prescriptions and other management actions on the NFGT provide the desired effects on water quality. Water quality will be monitored by routine sampling of the conductivity in streams.

Variability - Identify elevated conductivity levels during routine stream sampling. If conductivity levels reach above 200uS (micro siemens, this is the established unit of measure for conductivity), a forest specialist will investigate the cause and recommend appropriate action.

Finding(s) - There were no identified adverse soil and water occurrences from activities on NFGT lands or to impaired stream segments identified in FY 08. Today, the TCEQ is the primary agency responsible for water quality management in Texas, although it shares the responsibility with other state agencies such as the Texas Parks and Wildlife Department, the General Land Office and the Railroad Commission of Texas.

In FY 08, thirty sites were monitored for baseline data by sampling PH, conductivity and turbidity. To conduct a complete analysis of impacts, however, additional parameters need to be measured. This would require the purchase of additional equipment (which at this time the NFGT does not have the funds to purchase). Baseline monitoring will be continued at the current level of analysis.

Recommendation(s) – Change needed. Continue to monitor projects, environmental documents and follow up on other requests to review areas to assure the *Plan's* Standards and Guidelines are being met to protect water quality. Increase the amount of on-the-ground monitoring being performed by the Forest Soil Scientist/Watershed Specialist.

c. Revegetation of Temporary Roads

Monitoring Item Description - Ensure temporary roads are revegetated in accordance with standards set forth in the *Plan* and BMPs. Review Harvest Inspectors, Timber Sale Administrators and Minerals Operation Inspection Reports to assure timely revegetation of temporary roads occurs.

Variability - Best Management Practice inspections that fall below 90 percent compliance will be reviewed on the ground to identify changes needed to correct deficiencies. Harvest Inspectors, Timber Sale Administrators and Minerals Operation Inspection Reports are reviewed and non-compliance of revegetation of roads is corrected in a timely manner. If not corrected in a timely manner, actions against the operator will be taken.

Finding(s) - In 2008, TFS conducted a BMP compliance review on the Davy Crockett, Sabine and Sam Houston National Forests. The review concluded that all the units were 100% in compliance and received excellent ratings.

Recommendation(s) – No change needed. Continue temporary road revegetation efforts and monitoring procedures in accordance with *Plan* Standards and Guidelines as well as State Recommended BMPs.

Issue B. Sustainable Multiple Forest and Range Benefits

Sub-Issue 1. Outdoor Recreation Opportunities

a. Recreation Uses and Opportunities

Monitoring Item Description - Review recreation opportunities provided by the NFGT and compare them to what the public demands, considering what is feasible based on expected budgets and what is environmentally sustainable. The NFGT is expected to align its recreation program so that it is offering the public recreation opportunities that they desire (within the above parameters). This alignment is tracked annually.

Variability - Recreation construction, reconstruction or decommissioning performed on trails or developed/dispersed recreation areas must follow the NFGT's alignment philosophy. If monitoring identifies deviation from this philosophy, necessary changes must be made to bring the project back into alignment.

Finding(s) - In FY 08, trails data was loaded into the Infrastructure Application (INFRA) database, and trail condition surveys along with the trail bridge survey met protocols. The updating of this database is an annual and ongoing process. The Recreation Enhancement Act (REA) Fee Legislation (that replaced the Fee Demonstration Program) has been implemented. It has been an effective program, as 80 percent of the fees stay on the Forest where they are collected for maintenance improvement, 15 percent goes to the collection of fees, and 5 percent is returned to the Region for special projects and to pay for fee envelopes, etc.

Recommendation(s) – No change needed.

b. Visual Quality Objectives

Monitoring Item Description - Visual character is considered during development of project plans by including *Plan* guidance for the protection of scenic resources. Reviews of project plans occur to assure visual character is protected. Monitoring will also occur on the ground for actions such as timber sales, road projects and other ground-disturbing activities.

Variability - If the on-the-ground post activity monitoring reveals that project implementation fails to meet *Plan* guidelines and objectives, the responsible line officer will be notified and appropriate actions taken to correct instances where the project departs from its original design.

Finding(s) – The *Plan* contains direction for VQO instead of the more current SMS which is tied to GIS. In order to have the most current information SMS should be used.

Recommendation(s) – Move toward implementing SMS. This may require a non-significant Forest Plan amendment.

c. Off-Road Vehicle Use

Monitoring Item Description - Off-road vehicle, (ORV) or off-highway vehicle, (OHV) use and trails are to be monitored to assure no unacceptable damage is occurring that would affect the sustainability or integrity of any resources.

Variability - If unacceptable resource damage is not corrected in a timely manner, consider trail closure.

Finding(s) - The TMR was finalized and published on November 9, 2005 (70 FR 68264) This regulation recognizes OHVs as a legitimate use of the National Forest System lands, but requires that OHV use be carefully managed. The TMR restricts the use of motorized vehicles to designated roads, trails, and areas. The Rule requires the designations be made at the local level, with public involvement, in order to continue to provide the citizens of the country with the use and enjoyment of these public lands, while protecting the important environmental resources, services, values and uses of these public lands.

The TMR requires that each unit of the NFGT (the Sam Houston, Davy Crockett, Sabine, and Angelina NFs as well as the Caddo/LBJ National Grasslands) determine which roads, trails, and areas would be open for motorized vehicle use in a separate process and publish a Motor Vehicle Use Map (MVUM) designating those roads, trails and areas open for motorized vehicle use on each unit. Amendment # 9 was signed on January 4, 2008 which implemented the TMR. MVUM maps have been produced for each unit and distributed to Forest users.

Recommendation(s) – Continue to monitor the road and trail system on the NFGT. Update MVUM maps annually and have new maps ready for distribution in January.

Sub-Issue 2. Infrastructure

a. Road Construction, Reconstruction, and Maintenance

Monitoring Item Description - Ensure that any roads constructed or reconstructed are designed according to their planned uses and in accordance with all *Plan* guidelines, as well as other required specifications. Road maintenance is monitored to insure compliance with the *Plan* Standards and Guidelines.

Variability - Inspections must assure construction and reconstruction follow technical specifications as set out in Table 203-1 of the Forest Service Standard Specifications for Roads and Bridges and that tolerance levels are not exceeded. All roads are designed in accordance with applicable road management objectives and road design criteria. Culverts are designed in accordance with applicable road design criteria. Fish passage design is included in all culvert designs where applicable. Road maintenance is performed according to the “Standard Specifications for Road Maintenance Activities” that is in all road maintenance contracts. Deviations from the above specifications will be documented and approximate actions taken.

Finding(s) - All road construction in FY 08 was in compliance with contract specifications and *Plan* Standards and Guidelines. In FY 08, a total of 1.0 mile of road construction was accomplished. Projects were closely inspected and if a problem was identified, it was immediately corrected.

Over this time period the Forest 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. Road data is maintained with respect to the Regional and WO INFRA protocols. The NFGT is currently at 100 percent of required data input. Annual maintenance including cleaning ditches, mowing, cleaning and repair of culverts, and rock replacement are performed to the standards found in the annual planning process. However, the maintenance backlog assessments (that were done concurrently with the inventories) have identified a need of \$8,963,223 for annual maintenance and \$45,014,582 for deferred maintenance.

In FY 08, a total of 32.1 miles of road reconstruction was accomplished. All of these miles included wing ditches with appropriately designed J-hooks to mitigate potential erosion problems that were identified in previous M&E reports.

The number of miles of roads constructed/reconstructed for the past eleven years is displayed in Table 7.

Table 7. Miles of Road by Activity

Year	Constructed	Reconstructed	Decommissioned	Unauthorized Roads Decommissioned	Unauthorized Roads Added to System	Maintained	Total System
1998	0.4	*173.3	7.0	1.0	0.0	825.0	2390.0
1999	0.8	39.0	11.0	13.0	0.0	815.0	2380.0
2000	1.1	17.8	23.0	0.0	0.0	662.0	2358.0
2001	1.5	18.5	22.0	2.0	0.0	935.0	2330.0
2002	0.0	14.2	9.4	3.1	0.0	850.5	2335.0
2003	1.0	20.5	14.6	4.0	0.0	672.0	2321.4
2004	0.0	0.0	41.0	2.0	0.0	682.0	2280.4
2005	0.0	16.7	0.0	0.0	0.0	543.3	2288.9
2006	0.7	**83.0	2.9	0.0	8.5	602.6	2295.2
2007	1.85	**98.25	0	0	0	884.2	2390.8
2008	1.0	32.1	1.0	1.0	0	771.27	2389.4
Total	8.35	257.05	131.9	26.1	8.5	8242.87	N/A

* This number is high due to the impacts from the windstorm in 1998.

** This number is high due to impacts from Hurricane Rita.

Note: The word “Unauthorized” is synonymous with the word “Unclassified”.

One hundred percent of National Bridge Inspection System (NBIS) major culverts (those having an end area of 35 square feet or more) were inspected in FY 08. This inspection indicated all

road bridges and major culverts are structurally stable; however, low maintenance applications due to funding levels will continue to accelerate their deterioration. These structures have inspection cycles of two-to-four years. Engineering unit employees will continue to report deficiencies to the RO and work towards a replacement program that will not allow catastrophic failures.

In addition, the Forest-level Roads Analysis Report for the Caddo and LBJ National Grasslands was completed in FY 08.

Recommendation(s) – No change needed. Continue road construction, reconstruction and maintenance in accordance with road management/road design criteria and *Plan* provisions.

b. Facilities

Monitoring Item Description – Safety and maintenance items noted in inspections of administrative facilities are accomplished and administrative facilities are replaced as needed for health and safety of employees.

Variability – Facilities are required to be inspected every five years and entered into the INFRA data base. The *Plan* list three facilities that were scheduled for replacement and states that one facility will be replaced per *Plan* year.

Finding(s) – In FY 08, approximately twenty percent of the NFGT facilities were inspected and the data was entered into the INFRA data base.

Construction of the Sabine District Office began in FY 04 and was completed in FY 05. Due to issues with the construction of the entry road and parking lot the office was not occupied until FY 07. Efforts are also underway to replace the Sabine Work Center. In addition, construction of the new Supervisor's Office on federally-owned land in Lufkin, Texas will begin in early 2009. This new facility will be owned by the NFGT, thus eliminating the current situation of having to rent a facility. This will improve efficiency and provide more funding for on-the-ground project work.

Recommendation(s) – No change needed. The NFGT will continue inspections of its facilities, as required, and will continue to replace the facilities mentioned in the *Plan*.

c. Lands

(1) Property Boundary Maintenance

Monitoring Item Description – Boundary lines will be monitored through activity reviews and management attainment reports to determine if the *Plan* Standards and Guidelines are being met.

Variability – If boundary line maintenance falls below the *Plan's* required 10-year rotation for maintenance, the responsible line officer will be notified and appropriate action taken.

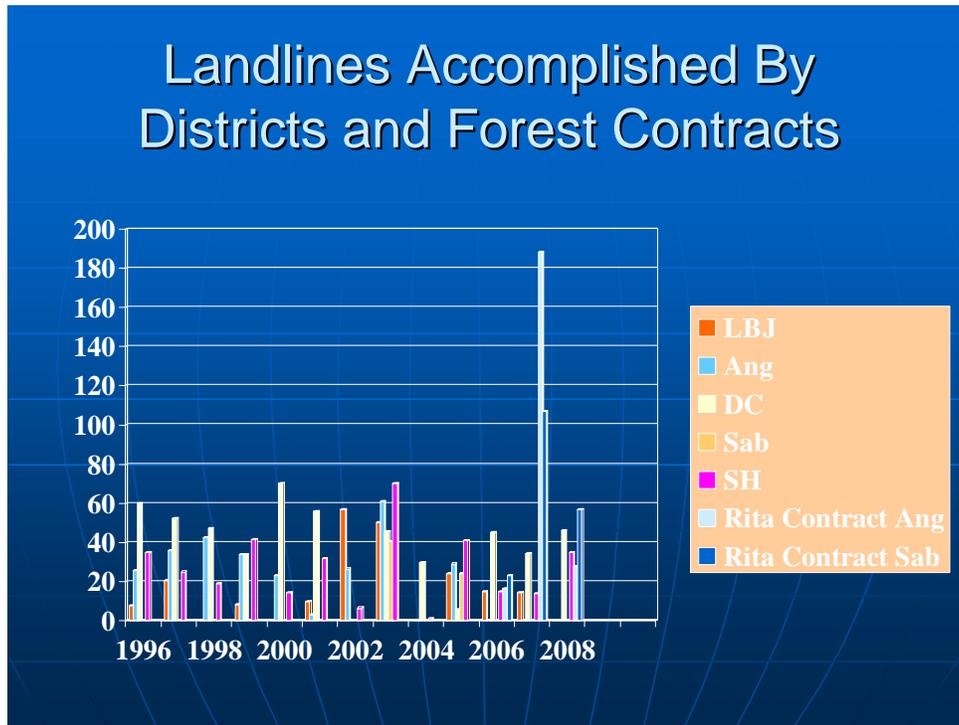
Finding(s) – In FY 08, eighty five miles of boundary line maintenance on the NFGT were accomplished out of an approximate 3,300 miles total. This is only 2.57 percent of the total amount of boundary lines, which is well below the required 10 percent. If these lines are not maintained, additional survey costs are incurred to re-establish them. Also, trespass cases are usually more prevalent as boundary lines deteriorate and these disputes require additional time and funding to resolve.

Table 8 displays: the amount of boundary lines accomplished in miles over a 13 year period by National Forest Target and by Hurricane Rita Contract.

Table 8. NFGT Boundary Line Target 1996-2008

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
LBJ	7.8	20.7	0	8.5	0	9.8	56.9	50.13	0	24	15	14.3	0
Angelina	25.8	36.1	42.4	34.1	23	3.4	26.5	61.1	0	29.08	0	0	0
Davy Crockett	59.8	52.1	47.3	33.8	70.1	55.9	0	45.45	30	6	45	34.5	46.09
Sabine								40.45	0	24	0	0	0
Sam. Houston	35	25	19.1	41.8	14.6	31.7	6.6	70.38	1.4	41	15	14	35
Hurricane. Rita Contract Angelina											16.52	187.88	27.9
Hurricane Rita Contract Sabine											23.25	106.66	56.71
Total	128	134	109	118	108	101	90	268	31	124	115	357	166

Table 9. Boundary Line Target and Accomplishments



Additional Funding came to the NFGT in the form of Hurricane Rita relief dollars for boundary line re-survey work and restoration of damaged lines. Hurricane Rita heavily affected the Angelina and Sabine NFs' property boundary lines. Due to the hurricane, a boundary line re-survey contract for the two units was awarded in FY 06. This contract will provide for re-monumenting approximately 450 miles of boundary lines, re-monumenting approximately 200 corner monuments and the maintenance of 1,600 witness corners. This contract is still on-going and has helped tremendously to keep up with the Landline Maintenance rotation and regain the ground we had lost in monumenting property boundaries.

This hurricane was a catastrophic event and this type of additional funding will probably not be available in the future. A total of 85 miles of boundary lines have been re-surveyed under the Hurricane Rita Contract and another 81 miles of land line maintenance were accomplished under the Forests District Targets giving a total of 166 miles for fiscal year 2008.

On September 13, 2008, Hurricane Ike made landfall and again did damage to our property boundaries but this time impacted mostly the Davy Crockett and Sam Houston National Forests. Initial work had begun to access the damage on both of these National Forests.

Recommendation(s) – Change needed. Additional funding is needed to meet the *Plan's* Standards and Guidelines for boundary management. Continue monitoring and request increased funding allocations to address boundary maintenance needs.

(2) Land Ownership Adjustments

The NFGT is working to develop a Lands Adjustment Strategy, focusing on its goals and objectives. This document will show the direction the Forest Service is headed and by using maps giving detailed information and reasoning as to why it is necessary to pick up valued properties. This strategy plan will be used and tiered along with the Forest Plan when making land management decisions.

In looking at our budgets and overall land program direction given through reviews and audits the recommendation is to prioritize and focus on land exchanges and tripartite land exchanges since there is no pending legislation or current LWCF purchasing monies for land acquisition in Texas. The NFGT is continuing to gain public support along with congressional and third parties. During FY 08 the Forest partnered with The Conservation Fund trying to support NFGT Tripartite Land Acquisition for a 283.6 acre Tract in Angelina County.

The longstanding Mr. Apple Case title claim case was resolved through a settlement agreement trial case, *Apple v. USDA, et al.*, Docket No. 4:06-CV_00487, E.D.TX. February 28, 2008.

(a) Acquired Right-of-Ways

Monitoring Item Description – Acquired right-of-ways are monitored to assure they facilitate more efficient management of NFGT lands.

Variability – All acquired right-of-ways are appropriate to meet access or other public objectives.

Finding(s) – No acquisition of any right-of-ways were obtained through land acquisitions although protection of existing right's-of-ways were made to prevent private landowners from blocking access of forest roads to larger tracts of National Forests system lands. This was accomplished through law enforcement actions.

Recommendation(s) – No change needed. Continue to monitor and take actions to hold and secure public access. Address possible new right-of-way needs as projects develop.

(b) Land Exchanges, Acquisitions, Interchanges, and Donations

Monitoring Item Description – Land exchanges, acquisitions, interchanges and donations are monitored to assure they are improving management, consolidating ownership and result in a net boundary reduction.

Variability – All exchanges, acquisitions, interchanges and donations will comply with land ownership adjustment Standards and Guidelines in the *Plan* and be coordinated with the landownership adjustment map.

Finding(s) – The primary focus for the Lands Program in FY 08 was to acquire lands by implementing Tripartite Land Exchanges and using timber sale receipts to purchase land in holdings. This will help consolidate national forest lands, improve Forest management and reduce boundary line maintenance.

District Rangers scheduled visits to Congressional field offices and county judges' offices to provide briefing packets and information about current NFGT issues. The emphasis was on returns to counties, lands program and the tripartite process, and MVUM. The 5 year extension to the Rural School Secure Act is beneficial to the tripartite land exchange process.

Recommendation(s) – Change needed. Focus on acquisitions by implementing Tripartite Land Exchanges that use timber sale receipts to purchase land in holdings. This will help consolidate national forest lands, improve management and reduce boundary line maintenance

Sub-Issue 3. Human Influences

a. Law Enforcement

Monitoring Item Description - Evaluate the ability to provide sufficient levels of visitor protection, enforcement of resource regulations and facility protection.

Variability - Activities being conducted are within the administrative boundaries of or are near NFGT lands and are consistent with Federal, state and local laws.

Finding(s) - Activities and conditions presented in the last report remained consistent in FY 08. There is a constant rise in use of NFGT lands that are near large urban areas (such as Dallas, Fort Worth and Houston.) The Sam Houston NF, near Houston, experienced increased use by OHVs - specifically all-terrain vehicles (ATVs) - from people living in nearby subdivisions. This created unauthorized trails and associated resource damage on the forest. Due to this increase of violations, one additional LEO (Law Enforcement Officer) was added and assigned to the Sam Houston NF.

Law Enforcement Officers are still encountering an increased amount of controlled substance use activity on the NFGT. Table 10 shows a significant increase in Felony and Misdemeanor arrests from previous years. This increase in numbers of arrests and search warrants reflects more illegal drug activity and better enforcement of the drug laws.

Table 10. Law Enforcement Arrests and Search Warrants

Fiscal Year	Felony Arrests	Misdemeanor Arrests	Search Warrants
2003	7	14	2
2004	14	18	0
2005	6	25	0
2006	26	27	2
2007	21	152	0
2008	21	114	0

Illegal trash dump sites have been a continual problem on the entire NFGT for many years. Law Enforcement Officers actively monitor sites to enforce trash dumping regulations.

To partially address this continuing problem, two programs have been developed that have been popular events for more than a decade. The Great Forest Trash-off in the Angelina NF and the Rivers, Lakes, Bays 'n Bayous Trash Bash near the shores of Lake Conroe in the Sam Houston NF are one-day events where volunteers remove trash from illegal dumping sites in these forests.

Recommendation(s) – Change needed. In FY 09, pursue funding to hire additional law enforcement personnel (specifically for the Angelina NF) to help deal with increased OHV use, illegal drug issues, trash dumping and other illegal uses on NFGT lands.

b. Land Use Authorizations

Monitoring Item Description – Utilize the land use authorization (special use permits) screening protocol to ensure that only projects that pass the standards are approved. One of these standards is to limit access across National Forests lands where other alternatives are possible. Assure required mitigation measures are a binding part of the authorization to implement proposals on National Forest lands. With the implementation of Cost Recovery, the NFGT have a responsibility to process accepted applications that are complete within 60 days, or request an extension in writing.

Variability – Violations of permit conditions will not be allowed and when discovered, the violations will be addressed with the permit holder for compliance with the terms of their permit. The Forest Service will work with the holder to gain compliance and if the corrections are not performed in a timely manner, a Notice of Non-compliance will be issued. If the problem continues, NFGT personnel will pursue revocation/termination of the permit.

Finding(s) – Inspections in FY 08 indicated that most activities were in compliance with the terms of authorization. Table 11 displays the activities that occurred in FY 08, with trends starting in 2003.

Table 11. Special Use Land Authorizations

Use	2003	2004	2005	2006	2007	2008
Utility ROWs (Power, water, Telephone, Fiber, Sewer)	160	158	148	149	152	152
Road ROWS, Private & Public (DOT, FRTA, FLPMA)	491	489	500	498	499	507
Recreation-related permits (Rec Event, Concess., Filming)	39	43	47	43	54	63
Churches & Cemeteries	17	17	17	17	17	16
Agriculture & Residence (Apiaries)	7	9	11	11	10	10
Watershed, reservoir & supply.	7	7	8	8	8	8
Mineral – pipelines, etc.	122	134	135	132	128	136
Mineral - seismic	2	3	3	1	1	4
Communication Sites	4	4	4	4	4	4
Research	4	4	2	4	4	8
Other Misc. (mailboxes, Sings, glidepath, svc bldg)	25	23	23	26	28	29
Total	878	891	898	893	905	937

At the end of FY 08, the NFGT had 937 active lands special use permits. Also in FY 08, the NFGT issued 63 recreation special use permits. These permits include one day events such as trail rides, motorcycle races, fishing tournaments, and youth camps.

Recommendation(s) – No change needed. Continue monitoring special use permits at existing frequencies.

Sub-Issue 4. Roadless Areas/Wilderness/Wild and Scenic Rivers

Monitoring Item Description - Visitor use in wilderness areas should leave only limited and short-term evidence of passing. This is evaluated through national surveys performed every five years. Locally, visitors are given access to Wildergram cards to report their experiences. Visual observations at sites and study of older information all indicate very low use of wilderness areas.

Variability - Do not exceed maximum allowable limits of visitors, as determined by observation, NVUM (National Visitor Use Monitoring) surveys, or other inventories.

Finding(s) – A NVUM survey was performed in FY 08. Results of the survey will not be available until FY 10.

Recommendation(s) - No change needed. Continue to coordinate with local universities or volunteer groups to collect and interpret Wildergram information and assure that wildernesses are generally maintained in a natural condition.

Sub-Issue 5. Timber

a. Timber Sale Allowable Sale Quantity

Monitoring Item Description – The *Plan* specifies the quantity of timber that may be sold from an area of suitable land during a specified period. This quantity is usually expressed as the ASQ (average annual allowable sale quantity). The NFGT should ensure that the maximum amount of ASQ projected in the *Plan* is not surpassed.

Variability - Do not exceed the maximum ASQ of 1,134 MMBF (million board feet) for the first decade of *Plan* implementation.

Finding(s) – Total volume offered in FY 08 increased above FY 07 offerings due to continued salvage sales associated with Hurricane Rita Restoration Timber Sales. Regular program sales were deferred to a later date in order to expedite salvage operations. The NFGT is still continuing to recover from court orders which prohibited timber harvesting and is therefore not meeting necessary habitat, forest health, age-class distribution and restoration objectives. See Table 12 for Timber Volume Sold vs. ASQ Volume (shown in MMBF).

Table 12. Harvested Timber Volumes

Fiscal Year	Total Volume Sold*	Volume Sold Excluding Salvage*	ASQ Volume**	Volume Sold as a Percent of ASQ	Difference Between Volume Sold & ASQ
2004	7.7	7.3	113.4	6%	-106.1
2005	26.4	19.7	113.4	15%	-93.7
2006	63.6	3.6	113.4	3%	-109.8
2007	34.0	31.1	113.4	27%	-82.3
2008	39.4	38.3	113.4	34%	-75.1
Total	171.1	100.0	567.0	17% (Avg.)	-484.0

* Volume from *Timber Cut & Sold* report.

**ASQ Volume does not include timber volumes sold from salvage sales.

For the last ten years, an average of 17.0 percent of the *Plan* specified ASQ has been sold. Since the probability of exceeding ASQ is unlikely, this is not a real issue for the NFGT.

Recommendation(s) – Change needed. Identify areas of concern and develop associated project plans to build up the timber harvesting program in order to meet *Plan* target levels. This will

help the NFGT move toward meeting its *Plan* management objectives for habitat improvement, forest health, age-class distribution and restoration needs.

b. Silvicultural Practices

Monitoring Item Description - Determine if silvicultural practices are in compliance with the *Plan* by reviewing project plans, prescriptions, environmental assessments and other decision documents. Conduct inspections of silvicultural activities (either during or post treatment).

Variability - General practices determined to be out of compliance with the *Plan* are to be documented and corrected as soon as practicable. Document necessary deviations from *Plan* direction authorized by line officer.

Finding(s) - Project plans, prescriptions, environmental assessments and decision documents that were developed in FY 08 were reviewed and found to be in compliance with the *Plan*. On-site inspections of silvicultural practices, including site preparation and tree planting, found no violations of *Plan* standards.

Recommendation(s) – No change needed. Continue reviews and inspections to assure these activities are performed in compliance with *Plan* direction.

c. Restocking Harvested Lands

Monitoring Item Description –Beginning in FY 2007, regeneration treatments will be incorporated into the Forest Service Activity Tracking System (FACTS). The results of first-year and third-year stocking and survival exams are now be entered into FACTS. The third-year check is used to certify that successful stand reestablishment has taken place. The *Plan* Forest-wide Standard FW-204-1 identifies the target level and lower and upper levels of desirable stems per acre for pine and hardwood species.

Variability - Stands not meeting the lower level of desirable stems per acre must be evaluated after the third-year survival exam is completed and a determination made whether additional treatments to improve stocking warrants the additional cost and site disturbance.

Finding(s) – Third-year stocking exams conducted in 2008 found that 29.6 percent of the stands exceeded the lower level of the FW-204-1 standard for the planted species. Stands that were below minimum survival levels (for planted seedlings) were checked for stocking. Enough natural seedlings were established to increase the total stand stocking levels (planted and natural seedlings) above the *Plan* minimum level for most of the deficient stands. The remaining deficient stands will be monitored to see if sufficient suitable natural seedlings become established to adequately stock the stands. Only in cases where stands are grossly deficient in suitable stocking will additional site preparation and planting be considered.

Recommendation(s) – No change needed. However, emphasis does need to be put on plant seedlings in late fall/early winter (November through January) when there is sufficient soil moisture to allow seedlings more time to become established before warmer and drier spring

conditions occur. Continue established regeneration checks to assure adequate restocking occurs at required *Plan* levels.

d. Maximum Harvest Acres

Monitoring Item Description - Harvest unit sizes are monitored by the Forest Service Activity Tracking System (FACTS).

Variability – Do not deviate from limitations on the size of openings created by even-aged regeneration harvests that are found in the *Plan*'s Forest-wide Standard FW-198, which provides that the maximum size opening is 80 acres for the southern yellow pine types and 40 acres for all other species. Document necessary deviations from *Plan* direction authorized by line officer.

Finding(s) - The FY 08, a FACTS report indicated that 162 acres of even-aged regeneration harvests were completed. These harvests took place on four separate stands, the largest of which was 56 acres. Therefore, all individual cutting units conformed to the maximum size limits established in the *Plan*.

Recommendation(s) – No change needed. Continue monitoring FACTS to assure *Plan* limitations are not exceeded.

e. Timber Harvesting on Land Not Classified as Suitable

Monitoring Item Description - Use FACTS to determine if timber harvesting has occurred on lands classified as “not suited” for timber production. The FACTS database is used to report silvicultural accomplishments and includes land suitability classification information.

Variability - No harvesting should occur on lands classified as unsuitable, except for salvage sales or sales necessary to protect other multiple-use values where the *Plan* establishes that such actions are appropriate. Document cases where necessary deviations from *Plan* direction are authorized by a line officer.

Finding(s) - No timber was harvested on unsuitable lands solely for timber management purposes.

Recommendation(s) - No change needed. Continue reviews to assure that no timber is harvested from unsuitable lands (unless the special need is authorized by a line officer.)

f. Classification of Lands as Suitable for Timber Production

Monitoring Item Description - The NFGT uses FSveg (Field Sampled Vegetation) database, which is part of the NRIS (Natural Resource Information System). The FSveg database captures timber suitability information through land class codes. Changes in timber suitability are identified through project plans, prescriptions, environmental assessments and other decision documents.

Variability - Minor changes in land suitability, such as stand boundary changes resulting from improved mapping, may be approved via the National Environmental Policy Act process by a line officer. Large acreage changes in land suitability must be documented and approved in a *Plan* amendment.

Finding(s) – Acres of suitable and unsuitable lands continue to remain constant.

Recommendation(s) – No change needed. Keep the FSVeg database current with any changes that may occur in land suitability classification

Sub-Issue 6. Forage

Monitoring Item Description - Forage production and composition is assessed annually on all grassland allotments through general allotment inspections and in some cases more specific vegetation sampling. Monitoring of the condition of rangeland provides information so specialists can develop management options for prescribed fire, grazing or land deferral. Allotments are classified as either poor, fair, good, or in excellent condition.

Variability – A significant downward trend in range condition for five years or more would indicate a need for change.

Finding(s) - Grassland allotments are being managed to a satisfactory condition of fair to good. In FY 08, the grassland units continued to implement a fundamental change in grazing schemes that began in 1998. The focus changed from year round grazing to a seasonal grazing system. This implemented a high intensity/low duration grazing system which resulted in a higher number of cattle grazing for a shorter grazing period. The change resulted in fewer total AUMs (Animal Unit Months - this is equal to a cow and a calf grazing for one month); however, it still provided for the desired grazing results.

Recommendation(s) - Change needed. The grasslands are adequately monitoring AUMs. However, due to a shortage of personnel and funding the annual monitoring of forage production and composition is not at the desired level. This additional monitoring is needed in order to identify trends in vegetation production and composition. The grasslands will pursue additional funding to fill vacant positions to accomplish this much-needed monitoring.

Sub-Issue 7. Other Products

Monitoring Item Description –Assure implementation of required mitigation measures for ongoing activities for federal mineral rights and private minerals where the U.S. owns the surface rights. This is to be done while adhering to the National Energy Policy of 2005. Ensure that operators are in compliance with the terms of their permit. At a minimum, the NFGT must provide every other day inspections during active drilling operations and annual inspections of additional ongoing activities. The NFGT will inspect problem areas as needed.

Variability – Violations of permit conditions will not be permitted and if discovered, the violations will be addressed with the operator to gain compliance. If the corrections are not performed within a timely manner, a Notice of Non-compliance will be issued and any performance bonds will be collected by the Forest Service to ensure problems are corrected.

Finding(s) – Minerals activities on the NFGT have effects at the national and local levels. These effects include adding additional jobs, increasing revenues to local shops and businesses, providing royalties to local residents, impacting local roads, increasing or decreasing payments in lieu of taxes to local counties.

Inspections in FY 08 indicated most activities were in compliance with operating plans. There were no spills reported or found during FY 08.

Recommendation(s) – No change needed. Continue monitoring mineral operations at existing frequencies. Respond to new requests for operating permits and lease offerings in a timely manner.

Sub-Issue 8. Heritage Resources

Monitoring Item Description - Through project reviews, field surveys, coordination with other resource managers and active monitoring of projects, ensure the protection of significant cultural (heritage) resources (historic properties) from degradation and destruction. A historic property is any archeological or historical site that has been listed on the National Register of Historic Places, or that has been formally determined eligible through consultation under 36 CFR 800.4-800.6.

Variability – No evidence of disturbance or destruction to historic properties is allowed as a result of the implementation of *Plan* guidelines, or as the result of human-caused actions or acts of nature.

Finding(s) - In FY 08, there were no projects which implemented *Plan* Standards and Guidelines that adversely affected historic properties.

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, & fire to remain in compliance with Section 106 of the National Historic Preservation Act of 1966. As the Forest 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 Forest's strategies for complying with 36CFR800.4-800.6 (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 Forest 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.

Recommendation(s) – No change needed. Continue heritage resource coordination and consultation for all projects which implement *Plan* Standards and Guidelines. Continue to work towards implementation of the PA.

Issue C. Organizational Effectiveness

Sub-Issue 1. Economics

Monitoring Item Description – The *Plan* projects the amount of funds needed to accomplish its goals and objectives. Annually, the NFGT should evaluate how well *Plan* projections for funding are being met and whether the NFGT is receiving sufficient monies to meet its *Plan* obligations.

Variability – Receiving allocations less than 100 percent of the *Plan*'s average projected budget can prevent full implementation of the *Plan*.

Finding(s) – Since the NFGT is no longer allocated funds based on a percent of its need (as identified in the *Plan* as funds needed to accomplish its goals and objectives), tracking actual expenditures and comparing them to the average projected budget shown in the *Plan* is the only way the NFGT has to determine how much less than *Plan* projected dollars are received. Table 13 displays this type comparison for the past seven years. The total expenditures include the normal operations on the NFGT and do not include emergency funding (such as fire severity, hurricane recovery, and shuttle recovery operations).

Table 13. Forest Expenditures by Fiscal Year

Fiscal Year	Expenditures	Percent of <i>Plan</i> Projected Average Budget*
2000	\$14,491,972	54
2001	\$14,363,604	54
2002	\$17,925,012	67
2003	\$14,080,375	52
2004	\$18,084,902	68
2005	\$21,177,789	79
2006	\$19,356,826	73
2007	\$21,975,842	82
2008	\$25,134,618	94

**Plan* projected average budget is \$26,657,400.

Recommendation(s) – No change needed. Continue to monitor expenditures to determine where shortfalls may be creating an inability to achieve *Plan* Goals and Objectives.

Sub-Issue 2. Evaluating New Information

a. Emerging Issues, Concerns and Opportunities

Below is information about lawsuits affecting the NFGT. Action has been taken to address and/or adhere to final rulings that have been issued, and lessons learned while continuing litigation support efforts are taken into consideration when planning new projects for implementation of *Plan* Objectives.

(1) NFGT Litigation

Sierra Club, et al v. Jacobs, et al – In this lawsuit, originally filed in 2004, Plaintiffs cited four complaints against the Forest Service. The final district court decision found that the government prevailed on counts 1 and 2, while ruling in favor of the plaintiffs on counts 3 and 4. Both parties appealed the decision to the Fifth Court of Appeals. Through non-binding mediation, a tentative settlement agreement was reached. The two project involved in the lawsuit remain enjoined while all parties are continuing review of this possible agreement.

(2) National Forest System Litigation Affecting the NFGT

Roadless Area Conservation Rule – During 2008, conflicts continued over the 2001 Roadless Area Conservation Rule. A federal district court in Wyoming declared the ruling is set aside and permanently enjoined for the second time. This was in direct conflict with a 2007 ruling from California that reinstated the rule. The government is trying to determine how to proceed in light of these two orders. In the interim, all units were advised to defer from taking any action that would have the potential to create a conflict with either order. The Sam Houston NF has four areas that are affected by these rulings. They are:

- Big Creek Scenic Area,
- Winters Bayou Scenic Area,
- a 200-acre track adjacent to Little Lake Creek Wilderness, and
- the Big Woods Areas in Compartment 80.

b. Changes in Policy or Other Direction

Implementation of the National Travel Management Rule – On January 4, 2008, the NFGT issued a decision to incorporate the Travel Management Rule Regulations (36 CFR Parts 212, 251, 261, and 295) by prohibiting the unrestricted cross-country use of motor vehicles and restricting such use to designated roads, trails, and areas. A non-significant amendment to the *Plan* was made part of the decision and all associated documents can be viewed at: http://www.fs.fed.us/r8/texas/planning/nepa_index.shtml under the section titled, “Travel Management (OHV) Plan Amendment #9.”

National Forest System Land and Resources Management Planning Rule – A new rule was published in the Federal Register on April 21, 2008. This final rule describes the National Forest System (NFS) land management planning framework; sets up requirements for sustainability of social, economic, and ecological systems; and gives directions for developing, amending, revising, and monitoring land management plans. It also clarifies that, absent rare circumstances, land management plans under this final rule are strategic in nature and are one stage in an adaptive cycle of planning for management of NFS lands. The intended effects of the rule are to strengthen the role of science in planning; to strengthen collaborative relationships with the public and other governmental entities; to reaffirm the principle of sustainable management consistent with the Multiple-Use Sustained-Yield Act of 1960 (MUSYA) and other authorities; and to streamline and improve the planning process by increasing adaptability to changes in social, economic, and environmental conditions. This rulemaking is the result of a United States District Court of Northern California order dated March 30, 2007, which enjoined the United States Department of Agriculture (the Department, the Agency, or the USDA) from putting into effect and using the land management planning rule published on January 5, 2005 (70 FR 1023) until it complies with the court’s order regarding the National Environmental Policy Act (NEPA), the Endangered Species Act (ESA), and the Administrative Procedure Act (APA) (*Citizens for Better Forestry v. USDA*, 481 F. Supp 2d 1059 (N.D. Cal. 2007)). The purpose of this final rule is to respond to the district court’s ruling. This final rule replaces the 2005 final rule (2005 rule) (70 FR 1022, Jan. 5, 2005), as amended March 3, 2006 (71 FR 10837) (which was enjoined by the district court’s ruling) and the 2000 final rule (2000 rule) adopted on November 9, 2000 (65 FR 67514) as amended on September 29, 2004 (69 FR 58055). This rule became effective April 21, 2008.

c. Significant Changes in Conditions or Demands

A major event happened during FY 08 that significantly changed conditions on the NFGT. The effects of Hurricane Ike are discussed below.

(1) Hurricane Ike

Ike was a long-lived Cape Verde hurricane that caused extensive damage and many deaths across portions of the Caribbean and along the coasts of Texas and Louisiana. It reached its peak intensity as a Category 4 hurricane (on the Saffir-Simpson Hurricane Scale) over the open waters of the central Atlantic, directly impacting the Turks and Caicos Islands and Great Inagua Island in the southeastern Bahamas before affecting much of the island of Cuba. Ike, with its associated storm surge, then caused extensive damage across parts of the Gulf Coast when it made landfall along the Texas coast on Saturday, September 13, 2008 at the upper end of Category 2 intensity. Ike made its way up through East Texas into Northeast Texas, then the storm continued through Arkansas and up into the Ohio River Valley. The National Hurricane Center reported Ike weakened to a tropical storm with 60 mph winds as it moved through East Texas. The Sam Houston and Davy Crockett National Forests (NFs) sustained the hardest hit, followed by the Sabine and Angelina NFs.

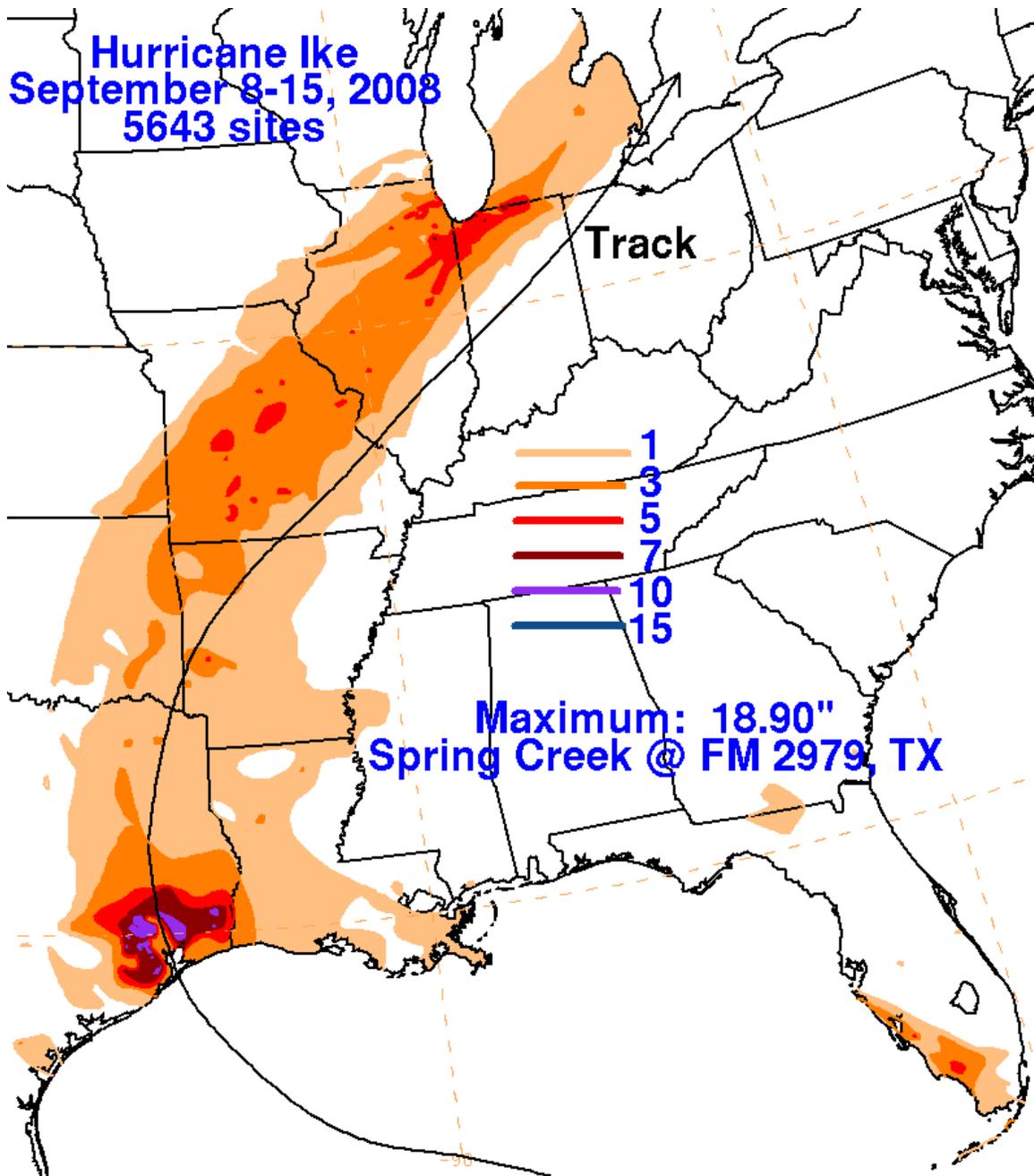
Figure 4. Damage in a Red-cockaded Woodpecker Cluster from Hurricane Ike.



Figure 5. Timber Damage from Hurricane Ike.



Figure 6. Path of Hurricane Ike



Source: Storm total precipitation associated with Hurricane Ike, 1 – 14 September 2008, and its remnants. Figure courtesy of David Roth at the Hydrometeorological Prediction Center.

Even though Hurricane Ike weakened from a Category 5 to a Category 3 hurricane by the time it made landfall, it was still a powerful hurricane as the following satellite image illustrates.

Figure 7. Satellite Image of Hurricane Ike



Source: www.NOAA.gov

Total timber volume damaged by Hurricane Ike was 289 million cubic feet worth approximately \$167 million. This timber damage occurred over 235,000 acres. Total timber volume affected was 323 million cubic feet worth approximately \$184 million. This timber affected occurred over 238,000 acres. The Texas Forest Service found that the worst damage in timber counties occurred in Liberty, Montgomery, Polk, and Hardin counties, which lie just southeast Sam Houston National Forest. This entire assessment is available at the Texas Forest Service web site, <http://texasforestservicetamu.edu>

Initial surveys by the NFGT identified approximately 7,600 acres of moderate to heavy damage on the Sam Houston and Davy Crockett National Forests. Based on these initial surveys, the NFGT developed an action plan to prioritize the recovery work to be done. Top priorities were installing RCW cavity inserts to replace cavities lost or damaged during the storm, clearing primary and secondary roads of damaged trees and hazard trees and salvaging damaged trees. Additional recovery efforts included conducting road condition surveys, preparing road maintenance contracts, performing damage assessments of facilities, administering fuels reduction treatments, accomplishing RCW and bald eagle assessments, and making trail damage assessments. Because Hurricane Ike occurred at the end of FY 08, most of the recovery work happened in FY 09 and will be discussed in the FY 2009 M&E report.

d. Effects of National Forest Management to and from Private Lands

National Forests and Grasslands in Texas management actions affect its lands, resources and adjacent communities. Management activities conducted on nearby lands that are managed by other Federal, State, local governmental agencies, or individuals can also affect NFGT lands and

resources as well. These interactions need to be carefully considered and are discussed in the following issues.

(1) Wildland-Urban Interface

The NFGT is a very fragmented forest and there is an abundance of private land intermingled with its lands. This creates a serious wildfire situation where a fire that starts on the NFGT can easily spread to private land. Conversely, a fire that starts on private land can easily spread to federal lands.

In FY 08, the NFGT conducted numerous prescribed fires that, among other benefits, reduced the potential of wildfire to spread. In addition to prescribed fire, mechanical treatments were performed to reduce fuels to address reducing the potential for damaging wildfires to occur. In FY 09, the NFGT will continue its prescribed fire program and increase efforts to mechanically treat strips of land along federal property boundaries to help mitigate the potential for the spread of wildfire.

(2) Payments to Counties

In FY 08, the NFGT made payments to counties in Texas that contain NFGT lands. Table 14 displays the amounts that were paid by the U.S. Treasury to the involved counties.

Table 14. Payments to Counties in 2008

Counties	Payments
Angelina	\$268,761
Houston	\$756,580
Jasper	\$96,466
Montgomery	\$233,328
Nacogdoches	\$43,122
Newton	\$15,477
Sabine	\$764,885
San Augustine	\$336,316
San Jacinto	\$294,167
Shelby	\$475,892
Trinity	\$543,026
Walker	\$264,867
Total	\$4,092,888